479-31

MEMORANDUM FOR RECORD

Date: 09 February 2010

SUBJECT: Environmental Liabilities for AOC SEAD-001-R-01 Deactivation Furnaces (alias SEAD-16/17)

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for the 2010 data call. The Remedial Action Cost Engineering and Requirements (RACER) 10.3 system was used to estimate the cost of site Close-Out Documentation. LTM cost for groundwater monitoring and LUC review & certification came from the AFCEE contract. The LTM for groundwater cost for 9 years is per the DOD guidance. The AFCEE contract includes five years of GW monitoring. The first and second year of LTM occurred in FY 08 and FY 09. Five-year reviews are required by the ROD. LUCs and GW monitoring are required until soil and ground water standards are met. The first 5-year review is included in the contract and will occur in FY11.

Site: SEAD-001-R-01 Deactivation Furnaces (alias SEAD-16/17) This AOC consist of two ammunition deactivation furnaces. The AOC is LTM requiring the testing for ground water and management of Land Use Controls until soil and ground water standards are met.

Source:
1. AFCEE Contract FA 8903-04-D-8675 CLIN 0001 AC
2. Final ROD for SEAD-16 and SEAD-17 March 2006
3. RACER defined cost to owner
4. DERP Guidance for Interim guidance for estimating program cost dated Dec.14, 2007

LTM and Five-Year Review Assumptions:
LTM and Five-Year review costs are based on escalated costs from AFCEE Contract FA 8903-04-D-8675, CLIN 0001 AC, dated 20 June 2006 (Source 1). LTM costs have been estimated through the end of the second five-year review, which will occur in FY16.

Owner Support Assumptions:
Procurement, S&A and Contract Closeout Costs for non-RACER prepared estimates are set at 11% (Source #3) consistent with RACER calculations estimate.

RACER Assumptions:

Site Closeout Documentation (LTM phase):
1. Site Closeout is moderate complexity

2. Kick-off, review and regulatory meetings included
3. Work Plans and reports-- all RACER default values
4. Documents will be stored for 30 years

Well Abandonment (LTM phase):

1. Number of wells: 12
2. Depth: 15 feet
3. Diameter: 2"
4. Formation type: Unconsolidated
5. Method: Overdrill/removal

Cost Summary **SEAD-001-R-01 (SEAD-16/17)**

LTM (Sources 1, 2, and 4 and)

GW monitoring and LUC Review & Certification Cost taken from Source 1 x FY06 escalation factor $5,490/yr x 1.0780 = $5,918/yr $5,918/yr x 5 years = $29,590	$29,590
5-year Reviews (Source 1 x FY06 escalation factor) $6,588/event x 1.0780 = $7,102/event $7,102 per event x 1 events	$7,102
Site Closeout (RACER)	$53,461
Well Abandonment (RACER)	$26,661

Owner Support (Source 3)
Reported in AEDB-R as Professional Labor Management

LTM	$29,590
LTM2	$7,102
Subtotal	$36,692

$36,692 x 11%= $4,036

Total Site Cost **$120,850 (rounded to $121K)**

Material Change: Yes
Reason: Recalculation of Owner Support and reduction in LTM duration.

Prepared by: Randall Battaglia
Cost Estimator

Signature

3/24/10
Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Signature

3/24/10
Date

Contract

Source 1

ORDER FOR SUPPLIES OR SERVICES

1. CONTRACT/PURCH ORDER/AGREEMENT NO.	2. DELIVERY ORDER/ CALL NO.	3. DATE OF ORDER/CALL (YYYYMMMDD)	4. REQUISITION/PURCH REQUEST NO.	5. PRIORITY
FA8903-04-D-8675	0031	20 JUN 2006	SEE SCHEDULE	DO-C9

6. ISSUED BY CODE FA8903
HSW/PKV-W
AIR FORCE MATERIEL COMMAND
311TH HUMAN SYSTEMS WING/PKV-W
3300 SIDNEY BROOKS
BROOKS CITY BASE TX 78235-5112
EDWIN CUSTODIO (210)536-4493
Edwin.Custodio@hqafcee.brooks.af.mil

7. ADMINISTERED BY *(If Other than 6)* CODE S0512A
DCMA LOS ANGELES
P.O. BOX 9608
MISSION HILLS CA 91346-9608
DCMALOSANGELES@DCMA.MIL

SCD: C PAS: (NONE)

8. DELIVERY FOB
X DESTINATION
OTHER *(See Schedule if other)*

9. CONTRACTOR CODE 1BVK6 FACILITY
NAME AND ADDRESS
PARSONS INFRASTRUCTURE & TECHNOLOGY GROUP INC
100 W WALNUT ST
PASADENA CA 91124-0001
(626) 440-2000

10. DELIVER TO FOB POINT BY *(Date)* (YYYYMMMDD) SEE SCHEDULE

11. X IF BUSINESS IS
SMALL
SMALL DISADVANTAGED
WOMEN-OWNED

12. DISCOUNT ITEMS
N

13. MAIL INVOICES TO ADDRESS IN BLOCK
SEE BLOCK 15 (PAYMENT OFFICE)

14. SHIP TO CODE
SEE SCHEDULE

15. PAYMENT WILL BE MADE BY CODE HQ0339
DFAS COLUMBUS CENTER
DFAS-CO/WEST ENTITLEMENT OPS
P.O. BOX 182381
COLUMBUS OH 43218-2381

EFT:T

MARK ALL PACKAGES AND PAPERS WITH IDENTIFICATION NUMBERS IN BLOCKS 1 AND 2.

16. TYPE OF ORDER
DELIVERY/CALL X — This delivery order/call is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.
PURCHASE — Reference your ____ furnish the following on items specified herein.

ACCEPTANCE. THE CONTRACTOR HEREBY ACCEPTS THE OFFER REPRESENTED BY THE NUMBERED PURCHASE ORDER AS IT MAY PREVIOUSLY HAVE BEEN OR IS NOW MODIFIED, SUBJECT TO ALL OF THE TERMS AND CONDITIONS SET FORTH, AND AGREES TO PERFORM THE SAME.

NAME OF CONTRACTOR | SIGNATURE | TYPED NAME AND TITLE | DATE SIGNED(YYYYMMMDD)

☐ If this box is marked, supplier must sign Acceptance and return the following number of copies:

17. ACCOUNTING AND APPROPRIATION DATA/LOCAL USE
SEE SCHEDULE

18. ITEM NO.	19. SCHEDULE OF SUPPLIES/SERVICES	20. QUANTITY ORDERED/ ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT

*If quantity accepted by the Government is same as quantity ordered, indicate by X. If different, enter actual quantity accepted below quantity ordered and encircle.

24. UNITED STATES OF AMERICA
//signed//
BY: EDWIN CUSTODIO
20 JUN 2006
CONTRACTING/ORDERING OFFICER

25. TOTAL $10,820,000.00

29. DIFFERENCES

26. QUANTITY IN COLUMN 20 HAS BEEN
☐ INSPECTED ☐ RECEIVED ☐ ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED

DATE | SIGNATURE AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE

27. SHIP NO. ☐ PARTIAL ☐ FINAL

28. D.O. VOUCHER NO.

30. INITIALS

32. PAID BY

33. AMOUNT VERIFIED CORRECT FOR

32. PAYMENT ☐ COMPLETE ☐ PARTIAL ☐ FINAL

34. CHECK NUMBER

35. BILL OF LADING

36. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT.

DATE | SIGNATURE AND TITLE OF CERTIFYING OFFICER

37. RECEIVED AT	38. RECEIVED BY *(Print)*	39. DATE RECEIVED (YYYYMMMDD)	40. TOTAL CONTAINERS	41. S/R ACCOUNT NO.	42. S/R VOUCHER NO.

PARSONS

INVOICE

Parsons Infrastructure & Technology Group, Inc.
Remittance Address: PO Box 88954 • Chicago, IL 60695-1954 • www.parsons.com
Wire transfer: Account 323289711 • ABA 021000021

Billed to:
DFAS-Columbus Center
West Entitlement Operations
P.O. Box 182381
Columbus, OH 43218-2381

Invoice date: 2006/10/10
Shipment number: SER0004
Invoice number: 06100626
Client number: 72483
Job number: 745172

Project name: Seneca Army Depot Remedial Actions
Authorization: Contract FA8903-04-D-8675 order 0031

Invoice amount: $ 10,980

	ACRN	Contract amount	Previously billed	Current billing	Cumulative billed
CLIN 0001					
SUMMARY BY ACRN	AA	$ 39,614	$ 39,614	$ -	$ 39,614
	AB	$ 600,000	$ 160,320	$ 10,980	$ 171,300
LTM	AC	$ 548,386	$ -	$ -	$ -
	AD	$ 601,000	$ 107,304	$ -	$ 107,304
	AE	$ 4,870,000	$ 1,017,093	$ -	$ 1,017,093
	AF	$ 4,161,000	$ 397,813	$ -	$ 397,813
		$ 10,820,000	$ 1,722,144	$ 10,980	$ 1,733,124

SEE MILESTONE DETAIL BEGINNING ON NEXT PAGE.

Jesse Perez

Shipment number SER0004, invoice number 06100626, continued

Milestone	ACRN	Milestone payment	Previously billed	Current billing	Cumulative billed
SEAD 16/17 Mobilization (5%)	AA	$ 39,614	$ 39,614	$ -	$ 39,614
SEAD 16/17 Mobilization (5%)	AB	$ 19,786	$ 19,786	$ -	$ 19,786
SEAD 16/17 Insurance/Bonds	AB	$ 134,166	$ 134,166	$ -	$ 134,166
Schedule	AB	$ 6,368	$ 6,368	$ -	$ 6,368
SEAD 16/17 Approval of QPP/Work Plan	AB	$ 10,980	$ -	$ 10,980	$ 10,980
SEAD 16/17 WP Submittal	AB	$ 50,000	$ -	$ -	$ -
SEAD 16/17 RA WP Approval	AB	$ 50,000	$ -	$ -	$ -
SEAD 16/17 Excavation 50% Complete	AB	$ 328,700	$ -	$ -	$ -
SEAD 16/17 Excavation 50% Complete	AC	$ 168,858	$ -	$ -	$ -
SEAD 16/17 Excavation 100% Complete	AC	$ 300,000	$ -	$ -	$ -
SEAD 16/17 RA Report Approval	AC	$ 40,000	$ -	$ -	$ -
Submit SEAD 16/17 Year 1 LTM Report DONE/CK	AC	$ 5,490	$ -	$ -	$ -
Submit SEAD 16/17 Year 2 LTM Report	AC	$ 5,490	$ -	$ -	$ -
Submit SEAD 16/17 Year 3 LTM Report	AC	$ 5,490	$ -	$ -	$ -
Submit SEAD 16/17 Year 4 LTM Report	AC	$ 5,490	$ -	$ -	$ -
Submit SEAD 16/17 Year 5 LTM Report	AC	$ 5,490	$ -	$ -	$ -
Approval of SEAD 16/17 5-Year Report	AC	$ 6,588	$ -	$ -	$ -
Response Complete SEAD 16/17	AC	$ 5,490	$ -	$ -	$ -
SEAD 4/38 Mobilization (5%)	AF	$ 208,050	$ 208,050	$ -	$ 208,050
SEAD 4/38 Insurance/Bonds	AF	$ 129,001	$ 129,001	$ -	$ 129,001
SEAD 4/38 Submittal of WBS and Schedule	AF	$ 22,305	$ 22,305	$ -	$ 22,305
SEAD 4/38 Approval of QPP/Work Plan	AF	$ 38,457	$ 38,457	$ -	$ 38,457
SEAD 4/38 PRAP Submittal	AF	$ 75,000	$ -	$ -	$ -
SEAD 4/38 ROD Approval	AF	$ 75,000	$ -	$ -	$ -
SEAD 4/38 WP Submittal	AF	$ 75,000	$ -	$ -	$ -
SEAD 4/38 RA Work Plan Submittal	AF	$ 50,000	$ -	$ -	$ -
SEAD 4/38 Excavation 25% Complete	AF	$ 1,050,000	$ -	$ -	$ -
SEAD 4/38 Excavation 50% Complete	AF	$ 1,050,000	$ -	$ -	$ -
SEAD 4/38 Excavation 75% Complete	AF	$ 650,000	$ -	$ -	$ -
SEAD 4/38 Excavation 100% Complete	AF	$ 559,745	$ -	$ -	$ -
SEAD 4/38 RA Report Approval	AF	$ 40,000	$ -	$ -	$ -
Submit SEAD 4/38 Year 1 LTM Report	AF	$ 19,228	$ -	$ -	$ -
Submit SEAD 4/38 Year 2 LTM Report	AF	$ 19,228	$ -	$ -	$ -
Submit SEAD 4/38 Year 3 LTM Report	AF	$ 19,228	$ -	$ -	$ -
Submit SEAD 4/38 Year 4 LTM Report	AF	$ 19,228	$ -	$ -	$ -
Submit SEAD 4/38 Year 5 LTM Report	AF	$ 19,228	$ -	$ -	$ -
Approval of SEAD 4/38 5-Year Report	AF	$ 23,074	$ -	$ -	$ -
Response Complete SEAD 4/38	AF	$ 19,228	$ -	$ -	$ -

ANNUAL LTM

5YR REVIEW

5,490 FY 06 COST
1.0674 ESCALATION FACTOR
5,860 FY 09 COST

6588 FY 06 COST
1.0674 ESCALATION FACTOR
7032 FY 09 COST

Shipment number SER0004, invoice number 06100626, continued

Milestone	ACRN	Milestone payment	Previously billed	Current billing	Cumulative billed
SEAD 11 Mobilization (5%)	AE	$ 243,500	$ 243,500	$ -	$ 243,500
SEAD 11 Insurance/Bonds	AE	$ 542,479	$ 542,479	$ -	$ 542,479
SEAD 11 Submittal of WBS and Schedule	AE	$ 56,105	$ 56,105	$ -	$ 56,105
SEAD 11 Approval of QPP/Work Plan	AE	$ 75,009	$ 75,009	$ -	$ 75,009
SEAD 11 RA WP Submittal	AE	$ 100,000	$ 100,000	$ -	$ 100,000
SEAD 11 RA WP Approval	AE	$ 50,000	$ -	$ -	$ -
SEAD 11 Excavation 25% Complete	AE	$ 1,100,000	$ -	$ -	$ -
SEAD 11 Excavation 50% Complete	AE	$ 1,050,000	$ -	$ -	$ -
SEAD 11 Excavation 75% Complete	AE	$ 705,871	$ -	$ -	$ -
SEAD 11 Excavation 100% Complete	AE	$ 685,000	$ -	$ -	$ -
SEAD 11 RA Report Approval	AE	$ 40,000	$ -	$ -	$ -
SEAD 11 PRAP Approval	AE	$ 25,000	$ -	$ -	$ -
SEAD 11 ROD Approval	AE	$ 25,000	$ -	$ -	$ -
SEAD 11 LTM Plan Approval	AE	$ 10,000	$ -	$ -	$ -
Submit SEAD 11 Year 1 LTM Report	AE	$ 22,505	$ -	$ -	$ -
Submit SEAD 11 Year 2 LTM Report	AE	$ 22,505	$ -	$ -	$ -
Submit SEAD 11 Year 3 LTM Report	AE	$ 22,505	$ -	$ -	$ -
Submit SEAD 11 Year 4 LTM Report	AE	$ 22,505	$ -	$ -	$ -
Submit SEAD 11 Year 5 LTM Report	AE	$ 22,505	$ -	$ -	$ -
Approval of SEAD 11 5-Year Report	AE	$ 27,006	$ -	$ -	$ -
Response Complete SEAD 11	AE	$ 22,505	$ -	$ -	$ -
SEAD 121C Mobilization (5%)	AD	$ 30,050	$ 30,050	$ -	$ 30,050
SEAD 121C Insurance/Bonds	AD	$ 68,477	$ 68,477	$ -	$ 68,477
SEAD 121C Submittal of WBS and Schedule	AD	$ 3,222	$ 3,222	$ -	$ 3,222
SEAD 121C Approval of QPP/Work Plan	AD	$ 5,555	$ 5,555	$ -	$ 5,555
SEAD 121C RA WP Approval	AD	$ 30,000	$ -	$ -	$ -
SEAD 121C Excavation 50% Complete	AD	$ 174,100	$ -	$ -	$ -
SEAD 121C Excavation 100% Complete	AD	$ 139,601	$ -	$ -	$ -
SEAD 121C RA Report Approval	AD	$ 40,000	$ -	$ -	$ -
SEAD 121C PRAP Submittal	AD	$ 30,000	$ -	$ -	$ -
SEAD 121C ROD Approval	AD	$ 30,000	$ -	$ -	$ -
SEAD 121C LTM Plan Approval	AD	$ 30,000	$ -	$ -	$ -
Submit SEAD 121C Year 1 LTM Report	AD	$ 2,777	$ -	$ -	$ -
Submit SEAD 121C Year 2 LTM Report	AD	$ 2,777	$ -	$ -	$ -
Submit SEAD 121C Year 3 LTM Report	AD	$ 2,777	$ -	$ -	$ -
Submit SEAD 121C Year 4 LTM Report	AD	$ 2,777	$ -	$ -	$ -
Submit SEAD 121C Year 5 LTM Report	AD	$ 2,777	$ -	$ -	$ -
Approval of SEAD 121C 5-Year Report	AD	$ 3,333	$ -	$ -	$ -
Response Complete 121C	AD	$ 2,777	$ -	$ -	$ -
		$ 10,820,000	$ 1,722,144	$ 10,980	$ 1,733,124

Source 2

FINAL
RECORD OF DECISION

FOR

THE ABANDONED DEACTIVATION FURNACE (SEAD-16) AND
THE ACTIVE DEACTIVATION FURNACE (SEAD-17)

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

and

UNITED STATES ARMY CORPS OF ENGINEERS
4820 UNIVERSITY SQUARE
HUNTSVILLE, ALABAMA

Prepared By:

PARSONS
150 Federal St.
4th Floor
Boston, Massachusetts

Contract Number: DACA87-95-D-0031
Delivery Order 003
USEPA Site ID: NY0213820830; NY Site ID: 8-50-006

March 2006

1.0 DECLARATION OF THE RECORD OF DECISION

Site Name and Location

The Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17)
Seneca Army Depot Activity
CERCLIS ID# NY0213820830
Romulus, Seneca County, New York

Statement of Basis and Purpose

This decision document presents the U.S. Army's (Army's) and the U.S. Environmental Protection Agency's (USEPA's) selected remedy for SEAD-16 and SEAD-17, located at the Seneca Army Depot Activity (SEDA or the Depot) near Romulus, New York. The decision was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended, 42 U.S.C. §9601 et seq., and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator, the Director of the National Capital Region Field Office, and the USEPA Region II have been delegated the authority to approve this Record of Decision (ROD). The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) have concurred with the selected remedy.

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, 5786 State Route 96, Building 123, Romulus, NY 14541. The Administrative Record Index identifies each of the items considered during the selection of the remedial action. This index is included in **Appendix A**.

The State of New York, through the NYSDEC and NYSDOH, has concurred with the selected remedy. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

Site Assessment

The response action selected in this ROD is necessary to protect human health or the environment from actual or threatened releases of hazardous substances into the environment or from actual or threatened releases of pollutants or contaminants from SEAD-16 and SEAD-17, which may present an imminent and substantial endangerment to public health or welfare.

Description of the Selected Remedy

The selected remedy for SEAD-16 and SEAD-17 addresses contaminated soil, building debris, and groundwater. The selected remedy will result in the removal of soil and groundwater as a pathway

for potential receptors. Groundwater will be monitored to ensure that soil contamination left on-site does not further degrade groundwater quality.

The elements that compose this remedy include:

- 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 cubic yards (cy) of ditch soil to a depth of 1 foot (ft.) with lead concentrations greater than 1250 mg/Kg until cleanup standards are achieved;
- Excavate approximately 1760 cy of surface soils to a depth of 1 ft. 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 listed below and in **Table 1-1**;
- Excavate approximately 67 cy of subsurface soils to a depth of 2 ft. to 3 ft. 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 listed below and in **Table 1-1** (**Figure 1-1**);
- Excavate approximately 2590 cy of surface soils to a depth of 1 ft. at SEAD-17 with lead concentrations greater than 1250 mg/Kg and metal concentrations greater than risk-based derived cleanup standards listed below (**Table 1-1**) (**Figure 1-2**);
- Stabilize excavated 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;
- Remediate material potentially presenting an explosive hazard and munitions and explosives of concern to meet the Department of Defense Explosive Safety Board (DDESB) requirements for unrestricted use or to put into place land use restrictions as may be required by DDESB;
- Submit a Completion Report following the remedial action;
- Establish and maintain land use controls (LUCs) to prevent access to or use of the groundwater and to prevent residential use until cleanup standards are met; and
- Complete a review of the selected remedy every 5 years (at minimum), in accordance with Section 121(c) of the CERCLA.

GW monitoring

LUCs

5 year review

Cleanup Standards for Industrial Use at SEAD-16 and SEAD-17

COMPOUNDS	SOIL CLEANUP GOAL
Polycyclic Aromatic Hydrocarbons (PAHs)	
Benzo(a)anthracene (µg/Kg)	20,417
Benzo(a)pyrene (µg/Kg)	2,042
Benzo(b)fluoranthene (µg/Kg)	20,417
Benzo(k)fluoranthene (µg/Kg)	50,000
Chrysene (µg/Kg)	50,000
Dibenz(a,h)anthracene (µg/Kg)	2,042
Indeno(1,2,3-cd)pyrene (µg/Kg)	20,417
Metals	
Antimony (mg/Kg)	29
Arsenic (mg/Kg)	20
Cadmium (mg/Kg)	14
Copper (mg/Kg)	331
Lead (mg/Kg)	1250
Mercury (mg/Kg)	0.54
Thallium (mg/Kg)	2.6
Zinc (mg/kg)	773

To complete Resource Conservation and Recovery Act (RCRA) closure of the deactivation furnace at SEAD-17, the Army will either further decontaminate or demolish and dispose off-site the structures that failed to meet closure standards during the interim closure (i.e., concrete slabs and block walls).

SEAD-16 AND SEAD-17 Land Use Control (LUC) Performance Objectives

The LUC performance objectives for SEAD-16 and SEAD-17 are 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.

The LUCs would be implemented over the area bounded by the boundary at SEAD-16 (**Figure 1-1**) and SEAD-17 (**Figure 1-2**). The boundary of SEAD-16 is defined as the fence; SEAD-17 is bounded by the fence to the east and by natural boundaries, such as ditches. It should be noted that land within the Planned Industrial/Office Development (PID) area, which includes SEAD-16 and SEAD-17, is also subject to a separate Proposed Plan and ROD that include institutional controls (ICs) ["Final ROD for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas" (Parsons, 2004)]. Groundwater use restrictions will continue 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.

To implement the Army's remedy, which includes the imposition of LUCs, a LUC Remedial Design for SEAD-16 and SEAD-17 will be prepared which satisfies the applicable requirements of Paragraphs (a) and (c) of Environmental Conservation Law (ECL) Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for SEAD-16 and SEAD-17, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York and the Army, which will be recorded at the time of the property's transfer from federal ownership. A schedule for completion of the draft SEAD-16 and SEAD-17 LUC Remedial Design Plan (LUC RD) will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the Federal Facilities Agreement (FFA).

The Army shall implement, inspect, report, and enforce the LUCs described in this ROD in accordance with the approved LUC RD. Although the Army may later transfer these responsibilities to another party by contract, property transfer agreement, or through other means, the Army shall retain ultimate responsibility for remedy integrity.

State Concurrence

NYSDOH forwarded a letter of concurrence regarding the selection of a remedial action to NYSDEC, and NYSDEC, in turn, forwarded to USEPA a letter of concurrence regarding the selection of a remedial action in the future. This letter of concurrence has been placed in **Appendix B.**

Declaration

CERCLA and the NCP require each selected remedy to be protective of human health, public welfare, and the environment; be cost effective, comply with other statutory laws; and use permanent solutions, alternative treatment technologies, and resource recovery options to the maximum extent possible. CERCLA and the NCP also state a preference for treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

The selected remedy is consistent with CERCLA and the NCP and is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to the remedial action, is cost-effective, and utilizes permanent solutions. This remedy also reduces the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants.

Because this remedy may result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure for an indeterminate period, a statutory review will be conducted every 5 years after initiation of the remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

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.

To implement the Army's remedy, which includes LUCs, a LUC RD for SEAD-16 and SEAD-17 will be prepared which satisfies the applicable requirements of Paragraphs (a) and (c) of ECL Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for SEAD-16 and SEAD-17, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York and the Army, which will be recorded at the time of SEAD-16's and SEAD-17's transfer from federal ownership. A schedule for completion of the draft SEAD-16 and SEAD-17 LUC RD will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the FFA.

The present worth cost of this alternative is $3,109,400. The capital cost and the present worth O&M cost of Alternative 4 are $1,699,900 and $1,409,500, respectively.

In comparison to other remedies considered in the FS, Alternative 4 has the highest overall ranking. While it does not rank highest for any single evaluation criterion, as Alternatives 2 and 6 do, neither does it rank the lowest for any evaluation criteria considered, which each of the other intrusive alternatives did. Alternative 4 ranks second of all the alternatives for long-term effectiveness and permanence and reduction of mobility of contaminants. It also ranks highest of the three alternatives (2, 4, and 6) for technical feasibility and overall cost. The preferred alternative will eliminate source soils from further impacting SEAD-16 and SEAD-17 by preventing contact with receptors and migration of contaminants to surface water and groundwater. It is a cost-effective, readily available alternative that does not require long-term maintenance aside from groundwater monitoring and maintenance of LUCs, such as groundwater restrictions, and residential/daycare land use restrictions; and, the alternative can be implemented quickly to provide short-term effectiveness. Finally, it is a permanent solution that would significantly reduce the mobility of the contaminants and potential for exposure at SEAD-16 and SEAD-17.

SOURCE #3

"MARKUP TEMPLATES"

Owner Cost

In *RACER*, Owner Cost is the owner's workforce cost to initiate, contract, oversee, direct, implement and closeout the project. Owner costs may include the following categories or items.

- Supervision, Inspection, and Overhead (SIOH),
- Construction management and "Owner's Representative" services,
- Laboratory quality assurance;
- Operations and maintenance manual; and
- Other costs (e.g. technical, real estate, administrative, contracting, accounting, etc.).

The system default percentage for Owner Cost is 11 %. The valid range for the Owner Cost markup factor is 0% to 20%.

Direct Costs
Professional Labor Overhead / G&A
Field Office Overhead / G&A
Prime Contractor Profit
Subcontractor Profit
Contingency
Markup Calculations
Applying Markup Percentages
Adjusting Markups for Each Technology
Creating Custom Markup Templates
Markups Report

Estimate Documentation Report

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-001-R-01
Project Name: SEAD-001-R-01
Project Category: Planned Industrial Area

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

SEAD-001-R-01 Deactivation Furnaces This MMR site was known as SEAD-16 & 17

Since this site is a Military Munitions Rule site, some costs reported have been captured in an OE EE/CA. The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the cost of the Site Close-Out Documentation.

Site: SEAD-001-R-01 Deactivation Furnaces (alias SEAD-16/17)

Source: 1.Final ROD for the Abandon Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), March 2006
2. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
3. Professional judgment based on site knowledge.

Estimate Documentation Report

RACER Assumptions:

Site Closeout Documentation (LTM phase):
1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years
5. Well abandonment includes sub-contractor costs for fieldwork

Well Abandonment (LTM phase):
1. Number of wells: 12
2. Depth: 15 feet
3. Diameter: 2"
4. Unconsolidated
5. Overdrill/removal

Estimate Documentation Report

Site Documentation:

Site ID: SEAD-001-R-01
Site Name: Deactivation Furnaces
Site Type: None

Media/Waste Type
Primary: Groundwater
Secondary: N/A

Contaminant
Primary: Metals
Secondary: None

Phase Names
SI: ☐
RI/FS: ☐
RD: ☐
IRA: ☐
RA(C): ☐
RA(O): ☐
LTM: ☑
Site Closeout: ☐

Documentation
Description: SEAD-001-R-01 Deactivation Furnaces. MMR site (alias SEAD-16/17) will require Long Term Maintenance to include 5- Year Review and Site Closeout Documentation, and Land Use Controls. This estimate is for Site Closeout Documentation.

Support Team: Stephen M. Absolom - BEC for Seneca Army Depot
Randy Battaglia- US Army Corps of Engineers, Project Manager

References: 1.Final ROD for the Abandon Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17), March 2006
2. AFCEE Contract FA 8903-04-D-8675 CLIN 0001 AC
3. Professional judgment based on site knowledge.

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 02/04/2010

Estimator Signature: _____ **Date:** _____

Estimate Documentation Report

Reviewer Information

Reviewer Name: Stephen Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: Seneca Army Depot
5786 Rte 96, Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil
Date Reviewed: 02/05/2010

Reviewer Signature: _____ **Date:** _____

Estimated Costs:

Phase Names	Direct Cost	Marked-up Cost
LTM #1	$36,146	$80,122
Total Cost:	$36,146	$80,122

Estimate Documentation Report

Phase Documentation:

Phase Type: Long Term Monitoring
Phase Name: LTM #1
Description: Well abandonment assumed 12 wells, 2" diameter, 15 ft deep, unconsolidated, overdrill/removal.

Start Date: October, 2038
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Phase Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Total Marked-up Cost: $80,122

Technologies:

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Meetings		Yes	n/a
Work Plans and Reports		Yes	n/a
Documents		Yes	n/a
Site Close-Out Complexity		Moderate	n/a
Meetings			
Required Parameters			
Kick Off/Scoping Meetings		Yes	n/a
Kick Off/Scoping Meetings: Number of Meetings	1	1	EA
Kick Off/Scoping Meetings: Travel		No	n/a
Review Meetings		Yes	n/a
Review Meetings: Number of Meetings	1	1	EA
Review Meetings: Travel		No	n/a
Regulatory Review Meetings		Yes	n/a
Regulatory Review Meetings: Number of Meetings	1	1	EA
Regulatory Review Meetings: Travel		No	n/a
Work Plans & Reports			
Required Parameters			
Work Plans		Yes	n/a
Draft Work Plan		Yes	n/a
Final Work Plan		Yes	n/a
Reports		Yes	n/a
Draft Close-Out Report		Yes	n/a
Draft Final Close-Out Report		Yes	n/a
Final Close-Out Report		Yes	n/a
Progress Reports		Yes	n/a
Project Duration	10	10	months
Documents			
Required Parameters			
Draft Decision Document		Yes	n/a
Draft Final Decision Document		Yes	n/a
Final Decision Document		Yes	n/a

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
Documents			
Required Parameters			
Long Term Document Storage		Yes	n/a
Number of Boxes		5	EA
Duration of Storage		30	Yrs

Comments:

Technology Name: **Well Abandonment (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Safety Level		D	n/a
Abandon Wells			
Required Parameters			
Technology/Group Name		Well Group	n/a
Number of Wells		12	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Unconsolidated	n/a

Comments:

MEMORANDUM FOR RECORD

Date: 19 March 2010

SUBJECT: Environmental Liabilities for site SEAD-25, Fire Training Area at Seneca Army Depot

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for the 2010 data call. The Remedial Action Cost Engineering and Requirements (RACER) 10.3 system was used to estimate the cost of site close out, and LUCs. The groundwater monitoring cost was obtained from the Performance Based Contract. The groundwater monitoring at SEAD-25 began in May 2007 and LTM is in year four of a 10 year anticipated commitment. Six years remain. Groundwater monitoring at SEAD 26 was concluded in March 2007. The RFP W91DY-08-D-0003 task Order 0008 (Source 2) was use to estimate annual monitoring cost and year reviews. Monitoring cost is provided annually for four years (task 2) and the annual monitoring and five-year review are combined for the two years (FY11 and FY16) requiring a five-year review (task 24).

Site: SEAD-25, Fire Training Area. This AOC consists of the area where Fire training and demonstrations were conducted. Groundwater has been impacted by petroleum products. Natural attenuation is being used to treat the groundwater during RA(O). Land use controls will exist on the property until soil and groundwater meet the cleanup criteria.

Source:
1. Final Record of Decision, Fire Training and Demonstration Pad (SEAD 25) and the Fire Training Pit and Area (September 2004)
2. RFP W192Y-08-D-0003 Task Order 0008.
3. Owner cost based on RACER.

RACER Assumptions:

Site Closeout Documentation (LTM):
1. Site Closeout is low complexity
2. Kick-off, review and regulatory meetings included
3. Work Plans and reports to include all RACER default values
4. Two boxes of documents will be stored for 30 years

Well Abandonment (LTM):
1. Number of wells: 30
2. Depth of wells: 15 feet
3. Diameter of wells: 2 inches
4. Formation type: Unconsolidated
5. Method: overdrill/removal

Owner Support Assumptions:
Procurement, S&A, and Contract Closeout for non-RACER estimates are set at 11% of estimated cost and consistent with RACER guidance.

Cost Summary SEAD-25

LTM

GW Monitoring and LUC management (RFP Contract Cost, Task 2: Source 2) Cost= $74,164.47/yr x 4 yrs	$296,656
GW monitoring, LUC management and 5 Year review (RFP Contract Cost, Task 24: Source 2) Cost per event $103,207 X 2 events (Source 2)	$206,414
Site Closeout (RACER)	$38,939
Well Abandonment (RACER)	$58,529

Owner Support Cost (Source #3) 11% of Cost

LTM Ground Water, LUC& 5 Yr review
$296,656 + $206,414 = $503,070
$503,070 x 0.11= $55,338

$55,338

Total Site Cost **$655,876**

Material Change: Yes. Actual cost used for GW monitoring and LTM duration changed per guidance.

Prepared by: Randall Battaglia
Cost Estimator

Signature 4/2/10
Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

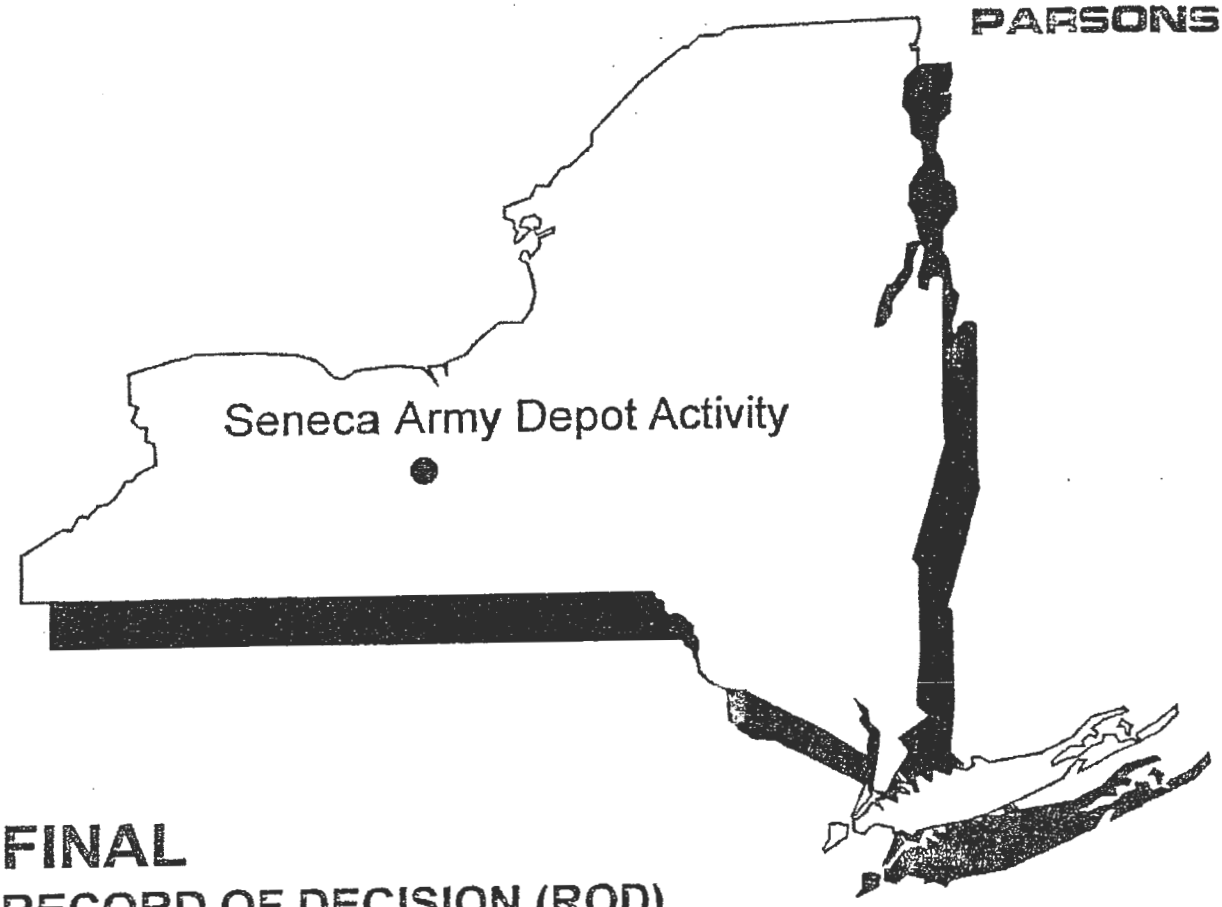
Signature 4/2/2010
Date

Source #1

US Army, Engineering & Support Center
Huntsville, AL

Seneca Army Depot Activity
Romulus, NY

PARSONS



FINAL

RECORD OF DECISION (ROD) THE FIRE TRAINING AND DEMONSTRATION PAD (SEAD 25) AND THE FIRE TRAINING PIT AND AREA (SEAD 26)

SENECA ARMY DEPOT ACTIVITY

EPA Site ID# NY0213820830
NY Site ID# 8-50-006
CONTRACT NO. DACA87-95-D-0031
DELIVERY ORDER NO. 0029

September 2004

1.0 DECLARATION OF THE RECORD OF DECISION

Site Name and Location SITE

The Fire Training and Demonstration Pad (SEAD-25) and the Fire Training Pit and Area (SEAD-26)
Seneca Army Depot Activity
CERCLIS ID# NY0213820830
Romulus, Seneca County, New York

Statement of Basis and Purpose

This decision document presents the U.S. Army's and EPA's selected remedy for soil and groundwater at SEAD-25 and SEAD-26, located at the Seneca Army Depot Activity (SEDA) near Romulus, New York. The decision was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended, 42 U.S.C. §9601 et seq. and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator; the Director of the National Capital Region Field Office, and the U.S. Environmental Protection Agency (USEPA) Region II have been delegated the authority to approve this Record of Decision (ROD); New York State Department of Environmental Conservation (NYSDEC) has concurred with the selected remedial action.

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, Building 123, Romulus, NY. The Administrative Record Index identifies each of the items considered during the selection of the remedial action. This index is included in **Appendix A.**

The State of New York, through the NYSDEC and the New York State Department of Health (NYSDOH), has concurred with the Selected Remedy. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

Site Assessment

The response action selected in this ROD is necessary to protect the public welfare and the environment from actual or threatened releases of hazardous substances into the environment or from actual or threatened releases of pollutants or contaminants from this site that may present an imminent and substantial endangerment to public health or welfare.

11.0 SELECTED REMEDY

SEAD-25

While the goal of the remedial action is to have no residual contamination in soils above TAGM levels, remedial action success will be achieved when soils have been remediated to the level that eliminates an unacceptable risk to human health. Based on the evaluation of the various options, the U.S. Army recommends Alternative RA25-4R (Source Removal, Off-site Disposal, Long-Term Monitoring of Plume, and Sediment Removal) (**Figures 6-1** and **6-2**). The elements that compose the remedy include:

- Excavate soil at the source in an area approximately 60 feet by 100 feet to a depth of 6 feet (approximately 1,350 CY), as depicted in **Figure 6-2**;
- Excavate a volume of sediment approximately 780 feet long, 3 feet wide and 2 feet deep (approximately 175 CY) from the northwest ditch, as depicted in **Figure 6-2**;
- 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;
- 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 groundwater cleanup standards are achieved, the groundwater use restriction may be eliminated.

The frequency of long-term monitoring will be detailed in the RD plan. The cleanup standards for groundwater at the site are NYSDEC Class GA groundwater standards, presented in **Table 1-1B**. Until the contaminant levels in the groundwater meet the cleanup standards, a land use control (or institutional control) in the form of a groundwater use restriction will be a part of the remedy, as specified in the discussion of the remedy for SEAD-25.

A summary of the SEAD-25 and SEAD-26 Land Use Controls is provided below.

The present worth cost of this alternative is $922,200. The capital cost and the O&M cost of RA25-4R are $701,000 and $221,200, respectively.

Source #2

DEPARTMENT OF THE ARMY
ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
4820 University Square
HUNTSVILLE, AL 35816

December 21, 2009

Contract Task Order request

REPLY TO ATTENTION OF

SUBJECT: Request for Proposal for Contract **W912DY-08-D-0003**, New Task Order (0008), Implementation of The Long-Term Monitoring Plan for The Open Burning (OB) Grounds And Fire Training Areas, Annual Land Use Control (LUC) Evaluation, and Abandonment Of Existing Monitoring Wells At Various Sites, Seneca Army Depot Activity Romulus, New York

Mr. Jeff Adams
Parsons Infastructure & Technology Group
150 Federal Street, 4th Floor
Boston, MA 02110-1713

Dear Mr. Adams:

Please submit a firm fixed price proposal for the subject requirement in accordance with the attached Performance Work Statement (PWS), dated 4 December 2009.

Your firm's priced proposal must be submitted in writing and shall include but not be limited to the following: 1) All the labor categories, number of labor hours and labor hour rates, 2) Any Other Direct Costs that may be associated with this Task Order.

It is requested that your proposal be received by this office, no later than 2:00 p.m., local time, on December 28, 2009. This Request for Proposal (RFP) does not in any manner imply or authorize your firm to begin any actions listed or referenced in the PWS. The point of contact for this action is Laura Stiegler, Contract Specialist, (256) 895-1171; Email: Laura.M.Stiegler@usace.army.mil

Sincerely,

/s/
Van E. Pinion
Contracting Officer

Source 2

PERFORMANCE WORK STATEMENT
IMPLEMENTATION OF THE LONG-TERM MONITORING PLAN FOR THE OPEN BURNING (OB) GROUNDS AND FIRE TRAINING AREAS, ANNUAL LAND USE CONTROL (LUC) EVALUATION, AND ABANDONMENT OF EXISTING MONITORING WELLS AT VARIOUS SITES
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Site SEAD 25

04 December 2009

1.0 BACKGROUND AND GENERAL STATEMENT OF WORK: Following remediation of the OB Grounds and Fire Training Area sites, long-term monitoring is required to verify the success of the remedial efforts. Sites at which the remedy involves LUCs requires that site-specific controls and controls necessary to assure the protectiveness of the selected remedy are maintained. At sites where no additional actions are required and/or closeout is recommended, existing monitoring wells will require abandonment and closure in accordance with Federal, State, and local requirements.

1.1 GENERAL DESCRIPTION. SEDA is a US Army facility located in Seneca County, New York. SEDA occupies approximately 10,600 acres. It is bounded on the west by State Route 96A and on the east by State Route 96. The cities of Geneva and Rochester are located to the northwest (14 and 50 miles, respectively); Syracuse is 53 miles to the northeast and Ithaca is 31 miles to the south. The surrounding area is generally used for farming.

1.2 REGULATORY STATUS. The Installation was included on the Federal Facilities National Priorities List on 13 July 1989. Consequently, all work to be performed under this contract shall be performed according to Comprehensive Environmental Response Compensation and Liability Act (CERCLA) guidance as put forth in the EPA Interim Final "Guidance for Conducting Remedial Investigations/ Feasibility Studies under CERCLA", the "Federal Facility Agreement under CERCLA Section 120 in the matter of Seneca Army Depot, Romulus, New York", the Final, "Long Term Monitoring Plan for the Open Burning (OB) Grounds, Seneca Army Depot Activity" (Reference 19.8) and the Final, "Long Term Monitoring Plan for the Fire Training Areas (SEAD-25 and SEAD-26), Seneca Army Depot Activity" (Reference 19.9). The Land Use Control Remedial Design (Reference 19.11, 19.12, 19.13, and 19.14) contains the land use control that are required by the sites Record of Decision (ROD). These Institutional Controls (IC) were chosen in accordance with CERCLA and, to the extent practicable, the National Oil and Hazardous Substance Pollution Contingency Plan.

1.3 SECURITY REQUIREMENTS. Compliance with SEDA security requirements is mandated.

2.0 OBJECTIVES:

a. Long Term Monitoring - The contractor shall implement the approved plan for long-term monitoring at the OB Grounds and Fire Training Areas for a period of one year. Following that year of performance, the contractor shall report annual results and provide recommendations for future Long Term Monitoring needs. All work shall be completed in accordance with (IAW) the approved Long Term Monitoring Plans. All field activities shall be performed IAW the approved Accident Prevention Plan for the Seneca program.

b. Land Use Control – The contractor shall implement the inspection and reporting of the LUCs. All work shall be completed IAW the Record of Decision and the Final Land Use Control Remedial Design for the sites specified in this delivery order.

c. Abandonment of Existing Monitoring Wells – The contractor shall prepare a Work Plan for the abandonment and closure of groundwater monitoring wells at various sites on the installation. The contractor shall complete the closure of groundwater monitoring wells in accordance with applicable Federal, State, and local requirements.

3.0 (Task 1) DESCRIPTION OF SERVICES FOR LONG TERM MONITORING OF THE OB GROUNDS YR2:

a. Vegetative Cap, Drainage Swale Inspections, and Reeder Creek Inspections. The Contractor shall inspect the vegetative cap and drainage swales on the site. Inspection shall include observations pertinent to the integrity of the soil and vegetative covering and the condition of run-off channels, infiltration galleries and swales. The Contractor shall also inspect the streambed of Reeder Creek adjacent to the OB Grounds and assess if there is evidence of sediment deposition within areas that were previously excavated. Additionally, the Contractor will assess the conditions of spillways that

previously connected the OB Grounds to Reeder Creek and allowed surface water and sediment to move into the creek. This inspection should assess if there is evidence that soil/sediment/or debris from the OB Grounds is migrating to Reeder Creek.

b. Annual Groundwater Monitoring. The Contractor shall conduct the annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

c. Preparation of the Annual Report. Following completion of the annual monitoring event, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for down gradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.
- A descriptive account of any noted soil, sediment or debris migration from the ob grounds too Reeder Creek and observation pertinent to the re-deposition of sediment within that portion of Reeder Creek that abuts the OB Grounds and that was excavated to bedrock during the remedial action.
- A recommendation of any changes (e.g. changing frequency of data collection for the OB Grounds LTM Plan, development of a sediment monitoring program, etc.) that are proposed for implementation for the OB Grounds LTM Plan.

d. PROJECT MANAGEMENT The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical *oversight of the work described in the preceding tasks, shall be accounted for in this task.*

4.0 (Task 2) DESCRIPTION OF SERVICES FOR LONG TERM MONITORING OF THE FIRE TRAINING AND DEMONSTRATION PAD AREA YR3:

a. First Semi-Annual Groundwater Monitoring Event. Upon direction from the KO, the Contractor shall commence the initial semi-annual groundwater monitoring event.

LTM

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Reports - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

Preparation of Semi-Annual Report - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend analysis for key chemical concentration data developed for each of the key monitoring wells.
- Trend analysis of key indicator parameter data developed for each of the key monitoring wells.

c. Preparation of the Annual Report. Following completion of the YR4 semi-annual groundwater monitoring events, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring ells.
- Trend plots for all key indicator parameter data developed for each of the key monitoring wells.
- A recommendation of any changes (e.g. changing frequency of data collection to semi annual or annual for the Fire Training and Demonstration Pad (SEAD-25) site, etc.) that are proposed for implementation for the Fire Training and Demonstration Pad (SEAD-25) site.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of *the work described in the preceding tasks, shall be accounted for in this task.*

11.0 (Optional Task 24) DESCRIPTION OF OPTIONAL SERVICES FOR LONG TERM MONITORING OF THE FIRE TRAINING AND DEMONSTRATION PAD AREA YR5:

site

a. First Semi-Annual Groundwater Monitoring Event. Upon direction from the KO, the Contractor shall commence the initial semi-annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Report - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend plots for all chemical concentration data developed for each of the monitoring wells.
- Trend plots of key indicator parameter data developed for each of the monitoring wells.

b. Second Semi-Annual Groundwater Monitoring Event. Approximately six months after the initial semi-annual monitoring event, the Contractor shall commence the second semi-annual groundwater monitoring event. The actual timing of this event may be modified, with the permission of the KO, if insufficient water is found to exist in monitoring wells at the site.

Water Level Monitoring - The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Reports - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend plots for all chemical concentration data developed for each of the monitoring wells.
- Trend plots of key indicator parameter data developed for each of the monitoring wells.

c. Preparation of the Annual Report. Following completion of the YR5 semi-annual groundwater monitoring events, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria values.
- Trend plots for all key chemical concentration data developed for each of the key monitoring ells.
- Trend plots for all key indicator parameter data developed for each of the key monitoring wells.
- A recommendation of any changes (e.g. changing frequency of data collection to semi annual or annual for the Fire Training and Demonstration Pad (SEAD-25) site, etc.) that are proposed for implementation for the Fire Training and Demonstration Pad (SEAD-25) site.

5 yr review included

d. Perform Five Year Review. The contractor shall perform a five-year review in accordance with Federal, State, and local regulatory requirements. The work is required to be performed in accordance with EPA 540-R-01-007, OSWER No. 9355.7-03B-P, June 2001. The purpose of a five-year review 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.

e. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

12.0 (Optional Task 25) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR2.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

13.0 (Optional Task 26) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR3.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

Client: U.S. Army Corps of Engineers

Contract : RFP W912DY-08-D-0003, Task Order 0008

Project: Long-Term Monitoring OB Grounds and FTA
Annual LUC Evaluations
Abandonment of Monitoring Wells

Parsons
Base Year Tasks 1 - 11
Summary Sheet
Supporting Data Format

Printed: 12-Jan-10

TASK		AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Base Year	Task 1 - Long -Term Monitoring OBG (Yr2)	$ 33,363.41	$ 200.00	$ 33,163.41	$ 1,995.80	$ 29.80	$ 35,389.01
Base Year	Task 2 - Long-Term Monitoring FTA (Yr3)	$ 70,086.17	$ 6,114.00	$ 63,972.17	$ 4,021.75	$ 56.55	$ 74,164.47
Base Year	Task 3 - Monitoring of Land Use Controls (Yr 1)	$ 55,817.56	$ -	$ 55,817.56	$ 3,349.05	$ 57.64	$ 59,224.25
Base Year	Task 4 - Well Abandonment S 5, 59, 71	$ 26,739.70	$ 8,773.69	$ 17,966.01	$ 1,341.17	$ 14.23	$ 28,095.11
Base Year	Task 5 - Well Abandonment , S12, 48, 63	$ 101,610.87	$ 33,340.04	$ 68,270.83	$ 5,096.45	$ 54.09	$ 106,761.41
Base Year	Task 6 - Well Abandonment, S121C, 122B, 70	$ 21,391.76	$ 7,018.96	$ 14,372.81	$ 1,072.94	$ 11.39	$ 22,476.09
Base Year	Task 7 - Well Abandonment, S25, s6	$ 32,087.64	$ 10,528.43	$ 21,559.21	$ 1,609.41	$ 17.08	$ 33,714.13
Base Year	Task 8, Well Abandonment, S24, 67	$ 10,695.88	$ 3,509.48	$ 7,186.40	$ 536.47	$ 5.69	$ 11,238.04
Base Year	Task 9 - Well Abandonment, S3, 6, 8, 14, 15	$ 66,849.26	$ 21,934.24	$ 44,915.02	$ 3,352.93	$ 35.58	$ 70,237.77
Base Year	Task 10 - Well Abandonment, S 119B	$ 5,347.94	$ 1,754.74	$ 3,593.20	$ 268.23	$ 2.85	$ 5,619.02
Base Year	Task 11 - Well Abandonment, S27	$ 2,673.97	$ 877.37	$ 1,796.60	$ 134.12	$ 1.42	$ 2,809.51
				$ -			
TOTAL		$ 426,664.16	$ 94,050.94	$ 332,613.22	$ 22,778.32	$286.33	
PROJECT TOTAL							$ 449,728.80

ANNUAL COST

Client: U.S. Army Corps of Engineers

Contract : RFP W912DY-08-D-0003, Task Order 0008

Project: Long-Term Monitoring OB Grounds and FTA
Annual LUC Evaluations
Abandonment of Monitoring Wells

Parsons
Opt Year 2 Tasks 21, 24, 26
Summary Sheet
Supporting Data Format

Printed: 12-Jan-10

TASK	AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Task 21 - Long -Term Monitoring OBG (Yr4)	$ 34,762.47	$ 212.18	$ 34,550.29	$ 2,079.38	$ 18.71	$ 36,860.56
Task 24 - Long-Term Monitoring FTA (Yr5)	$ 97,516.32	$ 6,961.00	$ 90,555.32	$ 5,642.15	$ 48.55	$ 103,207.02
Task 26 - Monitoring of Land Use Controls (Yr 3)	$ 57,915.48	$ -	$ 57,915.48	$ 3,474.93	$ 36.19	$ 61,426.60
TOTAL	$ 190,194.27	$ 7,173.18	$ 183.021.09	$ 11,196.46	$103.45	
PROJECT TOTAL						$ 201,494.18

ANNUAL COST W/ 5YR REVIEW

Source 3

Owner Cost

In *RACER*, Owner Cost is the owner's workforce cost to initiate, contract, oversee, direct, implement and closeout the project. Owner costs may include the following categories or items:

- Supervision, Inspection, and Overhead (SIOH);
- Construction management and "Owner's Representative" services;
- Laboratory quality assurance;
- Operations and maintenance manual; and
- Other costs (e.g. technical, real estate, administrative, contracting, accounting, etc.).

The system default percentage for Owner Cost is 11 %. The valid range for the Owner Cost markup factor is 0% to 20%.

Owner Cost

Direct Costs
Professional Labor Overhead / G&A
Field Office Overhead / G&A
Prime Contractor Profit
Subcontractor Profit
Contingency
Markup Calculations
Applying Markup Percentages
Adjusting Markups for Each Technology
Creating Custom Markup Templates
Markups Report

Markups - Overview

To calculate the total cost for a work package, markups for various categories of indirect costs must be added to the direct cost. The fundamental equation is:

Total Cost = (Direct Cost) + (Markups for Indirect Costs)

Markups are all costs other than direct costs that do not become a permanent part of the facilities nor contribute directly to the study or design activities. The *RACER* Markup Template contains six factors that are used to calculate indirect costs:

- Professional Labor Overhead/G&A
- Field Office Overhead/G&A
- Subcontractor Profit
- Prime Contractor Profit
- Contingency
- Owner Costs

Markup percentages are applied at Level 3 (Phase). If you do not select a markup template at Level 3 (Phase), the System Default Markups will be applied to the phase.

The System Default Markups were developed using remediation and general construction industry data obtained from various educational institutions, professional societies and associations, subject-matter experts, commercial organizations, and government agencies. The data was reviewed by a group consisting of representatives from private industry, the Air Force, the Army Corps of Engineers, and the Department of Energy.

Direct Costs
Professional Labor Overhead / G&A
Field Office Overhead / G&A
Prime Contractor Profit
Subcontractor Profit
Contingency
Owner Cost
Markup Calculations
Applying Markup Percentages
Adjusting Markups for Each Technology
Creating Custom Markup Templates
Markups Report

Estimate Documentation Report

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-25
Project Name: SEAD-25
Project Category: Planned Industrial Area

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

SEAD-25 & 26 - Fire Training and Fire Demonstration areas.

The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the cost of 5-year reviews, site close out, and LUCs. Groundwater monitoring cost obtained from the Performance Based Contract. Note: The Installation Action Plan LTM phase begins 200605 and this phase is included in the current PBC.

Site: SEAD-25/26, Fire Training Areas

Source:
1. Final Record of Decision, Fire Training and Demonstration Pad (SEAD 25) and the Fire Training Pit and Area (September 2004)
2. Performance Based Contract SOW Contract #: FA8903-04-D-8675, January 2005
3. RFP W192Y-08-D-0003 Task Order 0008.

3. RFP W192Y-08-D-0003 Task Order 0008.
4. Guidance for LTM 5 year review.
5. Professional judgment based on site knowledge..

Five year reviews have contract cost documentation.

Additional site information:

Five-Year Review:
1. 2 review cycles
2. Reviews cycle began June 2006 with first review in 2011
3. Low complexity
4. Tasks include Document Review, Interviews and Site Inspections
5. Report for Five Year Review to include all default parameters

Land Use Controls
1. Tasks include Monitoring & Enforcement, and Modification/Termination
2. Monitoring & Enforcement parameters used are Report & Certifications annually
3. Modification/Termination parameters used are Document Evaluation, Modify LUCIP, Amend Decision Documents, and Termination Letters (all with Low complexity)

Site Closeout Documentation:
1. Site Closeout is low complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years
5. Well abandonment includes sub-contractor costs for fieldwork

Estimate Documentation Report

Site Documentation:

Site ID: SEAD-25
Site Name: Fire Training Area
Site Type: None

Media/Waste Type
Primary: N/A
Secondary: N/A

Contaminant
Primary: None
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: Long Term Management will include: 5-year Reviews, Site Closeout documentation, Well Abandonment, and Land Use Controls.

Changes from FY08 estimate:
- updated to FY09 cost basis.
- LUC implementation deleted and M&E period updated.
- 5-year Review costs moved from site closeout phase to phase LTM #1 to run cuncurrently with LUC M&E period

Support Team: Stephen M. Absolom - SEDA BEC
Randy Battaglia, Project Manager, U.S. Army Corps of Engineers

References: 1. Final Record of Decision, Fire Training and Demonstration Pad (SEAD 25) and the Fire Training Pit and Area (September 2004)
2. Performance Based Contract SOW Contract #: FA8903-04-D-8675, January 2005
3. Professional judgment based on site knowledge.

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil

Estimate Documentation Report

Estimate Prepared Date: 02/05/2010

Estimator Signature: **Date:**

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96 Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil
Date Reviewed: 02/05/2010

Reviewer Signature: **Date:**

Estimated Costs:

Phase Element Names		Direct Cost	Marked-up Cost
LTM #2		$49,724	$95,344
	Total Cost:	$49,724	$95,344

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #2
Description: Long Term Managememt includes site closeout documentation and well abandonment. Site closeout and well abandonment in last year of LTM phase.

Start Date: May, 2037
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate

Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Total Marked-up Cost: $95,344

Technologies:

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Meetings		Yes	n/a
Work Plans and Reports		Yes	n/a
Documents		Yes	n/a
Site Close-Out Complexity		Low	n/a
Meetings			
Required Parameters			
Kick Off/Scoping Meetings		Yes	n/a
Kick Off/Scoping Meetings: Number of Meetings	1	1	EA
Kick Off/Scoping Meetings: Travel		No	n/a
Review Meetings		Yes	n/a
Review Meetings: Number of Meetings	1	1	EA
Review Meetings: Travel		No	n/a
Regulatory Review Meetings		Yes	n/a
Regulatory Review Meetings: Number of Meetings	1	1	EA
Regulatory Review Meetings: Travel		No	n/a
Work Plans & Reports			
Required Parameters			
Work Plans		Yes	n/a
Draft Work Plan		Yes	n/a
Final Work Plan		Yes	n/a
Reports		Yes	n/a
Draft Close-Out Report		Yes	n/a
Draft Final Close-Out Report		Yes	n/a
Final Close-Out Report		Yes	n/a
Progress Reports		Yes	n/a
Project Duration	8	8	months
Documents			
Required Parameters			
Draft Decision Document		Yes	n/a
Draft Final Decision Document		Yes	n/a
Final Decision Document		Yes	n/a

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
Documents			
Required Parameters			
Long Term Document Storage		No	n/a

Comments:

Technology Name: **Well Abandonment (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Safety Level		D	n/a
Abandon Wells			
Required Parameters			
Technology/Group Name		Well Group	n/a
Number of Wells		30	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Unconsolidated	n/a

Comments:

Site WBS Report
(with Markups)

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-25
Project Name: SEAD-25
Project Category: Planned Industrial Area

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

SEAD-25 & 26 - Fire Training and Fire Demonstration areas.

The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the cost of 5-year reviews, site close out, and LUCs. Groundwater monitoring cost obtained from the Performance Based Contract. Note: The Installation Action Plan LTM phase begins 200605 and this phase is included in the current PBC.

Site: SEAD-25/26, Fire Training Areas

Source:
1. Final Record of Decision, Fire Training and Demonstration Pad (SEAD 25) and the Fire Training Pit and Area (September 2004)
2. Performance Based Contract SOW Contract #: FA8903-04-D-8675, January 2005
3. RFP W192Y-08-D-0003 Task Order 0008.

4. Guidance for LTM 5 year review.
5. Professional judgment based on site knowledge..

Five year reviews have contract cost documentation.

Additional site information:

Five-Year Review:
1. 2 review cycles
2. Reviews cycle began June 2006 with first review in 2011
3. Low complexity
4. Tasks include Document Review, Interviews and Site Inspections
5. Report for Five Year Review to include all default parameters

Land Use Controls
1. Tasks include Monitoring & Enforcement, and Modification/Termination
2. Monitoring & Enforcement parameters used are Report & Certifications annually
3. Modification/Termination parameters used are Document Evaluation, Modify LUCIP, Amend Decision Documents, and Termination Letters (all with Low complexity)

Site Closeout Documentation:
1. Site Closeout is low complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years
5. Well abandonment includes sub-contractor costs for fieldwork

Site WBS Report
(with Markups)

Site:

Site ID: SEAD-25
Site Name: Fire Training Area
Site Type: None

Media/Waste Type
Primary: N/A
Secondary: N/A

Contaminant
Primary: None
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: Long Term Management will include: 5-year Reviews, Site Closeout documentation, Well Abandonment, and Land Use Controls.

Changes from FY08 estimate:
- updated to FY09 cost basis.
- LUC implementation deleted and M&E period updated.
- 5-year Review costs moved from site closeout phase to phase LTM #1 to run cuncurrently with LUC M&E period

Support Team: Stephen M. Absolom - SEDA BEC
Randy Battaglia, Project Manager, U.S. Army Corps of Engineers

References: 1. Final Record of Decision, Fire Training and Demonstration Pad (SEAD 25) and the Fire Training Pit and Area (September 2004)
2. Performance Based Contract SOW Contract #: FA8903-04-D-8675, January 2005
3. Professional judgment based on site knowledge.

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Estimate Prepared Date: 02/05/2010

Site WBS Report
(with Markups)

Estimator Signature: **Date:**

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96 Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil

Date Reviewed: 02/05/2010

Reviewer Signature: **Date:**

Site WBS Report
(with Markups)

Phase Element:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #2
Description: Long Term Managememt includes site closeout documentation and well abandonment. Site closeout and well abandonment in last year of LTM phase.

Start Date: May, 2037
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate

Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Site WBS Report
(with Markups)

HTRW RA WBS			Marked Up Costs
331	HTRW REMEDIAL ACTION (CONSTRUCTION)		
331.20	SITE RESTORATION		
331.20.90	Other	Site Close-Out Documentation	$36,815
	Other	Well Abandonment	$58,529
			$95,344
		Total:	$95,344
		HTRW RA WBS Total:	$95,344
		Total:	**$95,344**

MEMORANDUM FOR RECORD

Date: 19 March 2010

SUBJECT: Environmental Liabilities for site SEAD-006, Ash Landfill Site (SEAD-3,6,8,14,15) at Seneca Army Depot

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for the 2010 data call. Future monitoring cost is based on task order pricing for monitoring. The Remedial Action Cost Engineering and Requirements (RACER) 10.3 system was used to estimate the cost of the Site Closeout costs including well abandonment. RA(O) in the form of groundwater monitoring costs were obtained from the current task order (Source 2). The ROD implementation was initiated in 2007. Of the 15 years of monitoring expected per the ROD (Source 1), 12 years remain. The required Land Use Control management of this AOC is included in SEAD 009.

Site: SEAD-006, Ash Landfill Site (SEAD-3,6,8,14,15). AOC is a former Municipal Incinerator where ash and other debris from the operation where disposed of. Treatment of ground water and management of LUCs is required until ground water and soil meet cleanup standards.

Source:
1. Final Record of Decision, Ash Landfill, January 2005
2. Contract #: W912DY-08-D-0003, Delivery Order # 0001
3. Annual Report and Year 2 Review for the Ash Landfill dated August 2009
4. RACER Guidance Cost to Owner

RACER Assumptions:

Well Abandonment (LTM)

1. Three well groups: Group 1 (61 wells), Biowall (11 wells), Trench (11 wells)
2. Well depth: 15 feet
3. Well diameter: 2 inches
4. Formation type: Unconsolidated
5. Method: Overdrill/removal

Site Closeout Documentation (LTM phase):

1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings included
3. Work Plans and reports-- all RACER default values
4. Documents (16 Boxes) will be stored for 30 years

Owner Support Assumptions:
Procurement, S&A, and Contract Closeout for non-RACER estimates are set at 11% of estimated cost and consistent with RACER guidance.

Cost Summary SEAD-6, 3, 8, 14, 15

RA(O)

GW Monitoring / year:		
Sampling events (CLINs 0003 and 0004) 2 events per year (Source 3)	$64,054	
Inspection (CLIN 0002)	$3,977	
Annual Report (Source 3,CLIN 0005)	$15,627	
Project Management (CLIN 0006)	$34,918	
	$118,576	
$118,576/yr x 12 years		$1,422,912
Owner Support Cost (Source 4)		
Cost of GW Monitoring $1,422,912		
$1,422,912 x 11%		$156,520

LTM

Site Close-out (RACER)	$58,869
Well Abandonment	$151,688

Total Site Cost **$1,789,989**

Material Change: Yes
Reason: GW monitoring costs are from contract and have been reduced.

Prepared by: Randall Battaglia [signature] 24 March 10
Cost Estimator Signature Date

Reviewed by: Stephen M. Absolom Stephen M Absolom 3/24/2010
Cost Estimate Reviewer Signature Date

Source #1

FINAL

RECORD OF DECISION

FOR

ASH LANDFILL

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

and

UNITED STATES ARMY CORPS OF ENGINEERS
4820 UNIVERSITY SQUARE
HUNTSVILLE, ALABAMA

Prepared By:

PARSONS
150 Federal St, 4th Floor
Boston, Massachusetts

Contract Number: DACA87-95-D-0031
Delivery Order 0022

January 2005

natural biodegradation, since the chemical and biological reactions in the reactive wall release hydrogen, a substance that is used up in microbial dechlorination. This would decrease contaminant levels, which can be expected to significantly reduce the time to achieve ARAR compliance compared to Alternatives MC-3, MC-5 and MC-6.

Alternatives MC-5 and MC-6 include surface water discharge of treated groundwater. Discharge requirements are generally the federal and State AWQC. The discharge from the groundwater treatment system would be designed to meet the federal AWQC and the anti-degradation limits.

Alternatives MC-5 and MC-6 are expected to achieve other ARARs including the RCRA requirements for treatment facilities, the Department of Transportation (DOT) requirements for off-site transportation of any residual materials, and the New York Solid and Hazardous Waste Regulations and the Occupational Safety and Health Act (OSHA). In addition, the operation of the treatment system in Alternative MC-4 would comply with federal and state air standards.

10.2.3 Long- Term Effectiveness and Permanence

Alternatives SC-1, MC-1 and MC-2 would not remove or contain contaminants in the groundwater in a continuous or active manner, with the exception of what would be removed by the reactive barrier wall that is currently in place and operating. Contaminants would continue to migrate and the volume of contaminated groundwater would increase. The No-Action alternative, MC-1, and the alternative water supply alternative, MC-2, are not considered to be effective over the long-term because contaminated groundwater, other than that captured via the reactive barrier wall, remains on-site and some migration off of the property would occur. This condition currently does not affect the drinking water of off-site residents and groundwater modeling has indicated that the concentrations of contaminants would be below drinking water standards by the time the groundwater reaches these wells. These alternatives would require long-term monitoring and sampling.

Alternatives MC-3, MC-5 and MC-6 are all expected to be equal in providing long-term permanence, since each alternative would operate until the desired concentration levels are achieved. The limiting factor in achieving this goal is the rate at which contaminants can be flushed out of the soil matrix. Since the aquifer matrix is glacial till and is high in clay content, diffusion is likely to play an important role in releasing contamination from the aquifer. This means the time for cleanup would be long, estimated to be approximately 45 years. MC 3a is expected to take 15 years. Time - GW monitor

Alternative SC-2 is ranked high for long-term effectiveness and permanence since all materials would be excavated and disposed of in an off-site landfill. Once in the landfill, the contaminated materials are permanently entombed. However, since this alternative does not permanently fix the contaminants and involves such large volume of soil, these wastes may not be as permanently entombed as Alternative SC-4. Therefore, although SC-2 is ranked high for permanence, Alternative

11.0 SELECTED REMEDY

Based on an evaluation of the various options, the selected remedy is Alternative SC-5 for source control and Alternative MC-3a for migration control (**Figure 11-1**). The elements that compose the selected remedy include the following:

- Excavation and off-site disposal of debris piles and establishment and maintenance of a vegetative soil cover for the Ash Landfill and the Non-Combustion Fill Landfill (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 will 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;
- Land Use Controls (LUCs) to attain the remedial action objectives; 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 will conduct a review of the remedy's effectiveness one year after the walls are installed. Subsequent annual reviews will be performed until the first five year review. The typical five year review schedule will be followed thereafter.

Land Use Control Performance Objectives

The LUC performance objectives for the Ash Landfill are to:

- Prevent access 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.
- Maintain the vegetative soil layer over the ash fill areas and the NCFL to limit ecological contact.

The groundwater LUCs will be continued 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.**

LUC Remedial Design

In order to implement the Army's remedy, which includes the imposition of land use controls, a LUC Remedial Design for the Ash Landfill will be prepared which satisfies the applicable requirements of Paragraphs (a) and (c), Environmental Conservation Law (ECL) Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for the Ash Landfill, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York and the Army, which will be recorded at the time of the property's transfer from federal ownership. A schedule for completion of the draft Ash Landfill LUC Remedial Design Plan (LUC RD) will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the Federal Facilities Agreement (FFA).

The Army shall implement, inspect, report, and enforce the LUCs described in this ROD in accordance with the approved LUC RD. Although the Army may later transfer these responsibilities to another party by contract, property transfer agreement, or through other means, the Army shall retain ultimate responsibility for remedy integrity. Should the Army transfer these responsibilities, the Army shall provide timely written notice to the regulators of the transferee which shall include the entity's name, address, and general remedial responsibility.

During the excavation of the Debris Piles, the Incinerator Cooling Water Pond area will be re-graded to fill the pond.

The five-year reviews are intended to evaluate whether the response actions remain protective of public health and the environment, and they will consist of document review, ARAR review, interviews, inspection/technology review, and reporting.

A contingency plan will be developed as part of this preferred alternative. The contingency plan will include additional monitoring and air sparging, as necessary, and implementation of an alternative water supply for potential downgradient receptor (farmhouse), if required based on trigger criteria. Following installation of the reactive walls, groundwater from monitoring well MW-56 will be analyzed, and the VOC results will be compared to the Class GA groundwater standards (trigger criteria). If a statistical analysis of the data for this well shows exceedances of Class GA standards, additional remedial action would be required. Temporary wells will be installed in the vicinity of MW-56, and the results will be used to develop an approach for air sparging. A description of the air sparging process is summarized in Alternative MC-3. If concentrations at MW-56 continue to exceed the trigger values following air sparging, an activated carbon system for the farmhouse water supply system would be installed or public water would be delivered to the house. More extensive air sparging would be performed until trigger values are no longer exceeded.

Alternative SC-5 was selected as the preferred source control alternative because the vegetative cover will be an effective barrier against exposure and is therefore one of the highest ranked alternatives for protectiveness to human and ecological receptors. The alternative minimizes the negative short-term effects, such as truck traffic and dust problems, that a large excavation would cause. SC-5 will be compliant with all ARARs. This alternative also minimizes the amount of off-site land filling that will be required. SC-5 is the easiest to implement and has the lowest cost.

Alternative MC-3a was selected as the preferred management of migration alternative because it will achieve substantial risk reduction by chemically destroying the dissolved chlorinated ethene compounds in groundwater. This alternative is effective in achieving these reductions. The alternative will be protective of human health and the environment by preventing off-site migration of the VOC plume. Monitoring of the plume will ensure that downgradient receptors are protected. The monitoring plan will provide adequate warning should monitoring data indicate that the plume is threatening the drinking water supply wells of site neighbors, i.e., the farmhouse wells.

GW Monitoring

Source #3

FINAL
ANNUAL REPORT AND YEAR 2 REVIEW

site

FOR THE ASH LANDFILL OPERABLE UNIT
SENECA ARMY DEPOT ACTIVITY, ROMULUS, NEW YORK

Prepared for:

U.S. ARMY CORPS OF ENGINEERS, ENGINEERING AND SUPPORT CENTER
HUNTSVILLE, ALABAMA

and

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared by:

PARSONS
100 High Street
Boston, MA 02110

Contract Number W912DY-08-D-0003
Task Order No. 0001
EPA Site ID# NY0213820830
NY Site ID# 8-50-006

August 2009

The CCR also details the construction of the biowalls; deviation from the design resulted in the placement of additional mulch in the biowalls, which were thicker than designed. As this is an enhancement of the design, it is fair to say that the biowalls were constructed as designed. The geochemical data presented and discussed in **Section 3.1** indicates that anaerobic conditions favorable to reductive dechlorination have been established in the areas of the biowalls, which was the expectation of the design of the biowall system.

The remedial action is operating "successfully".

A remedial action may receive USEPA's designation of operating successfully (1) if "a system will achieve the cleanup levels or performance goals delineated in the decision document" and (2) if the remedy is protective of human health and the environment. The data presentation in **Section 3.3** above demonstrates that concentrations of VOCs are decreasing and will eventually meet the Class GA groundwater standards. The time plots presented in **Figure 7 (A** through **I)** show a decreasing trend for the COCs; **Table 4** summarizes the trends in concentrations and provides a time estimate based on exponential regressions of the time plots. The time estimates are not exact dates that Class GA groundwater standards will be achieved; rather they serve to demonstrate that the concentrations in groundwater will eventually meet the groundwater standards.

Recent inspection of the vegetative covers at the Ash Landfill and the NCFL indicate that the covers are preventing ecological receptors from contacting the underlying soil. The LUCs have been maintained and no one is accessing the groundwater; therefore, there is no threat to human health. Based on a review of the site data, inspection of the condition of the vegetative covers, and confirmation that the LUCs are being maintained, the Army believes that the remedial action is operating successfully.

Based on an assessment of the design and construction of the remedial action, as well as an evaluation of the geochemical and analytical data from the two years of groundwater monitoring, the Army believes that the remedial action at the Ash Landfill meets the requirements to be designated as "operating properly and successfully".

4.0 LONG-TERM MONITORING CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

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:

- TCE within the biowalls remains below or close to the limits of detection;
- TCE, cis-DCE, and VC are present in the groundwater at the site at concentrations above respective Class GA groundwater standards;

- Chemical results indicate that the chlorinated ethenes are decreasing as they pass through the biowall systems;

- Geochemical parameters indicate that anaerobic treatment zones have been established within and downgradient of the biowalls, and that conditions suitable for reductive dechlorination to occur have been sustained;

- Concentrations of chlorinated ethenes at the off-site well (MW-56) are below Class GA groundwater standards;

- Additional monitoring is required to determine trends in concentrations of COCs at PT-18A, PT-17, MWT-7, PT-22, and MWT-24;

- Recharge of the biowalls is not necessary at this time; and

- The remedial action continues to meets the requirements of the USEPA's "operating properly and successfully" designation.

Monitoring Frequency

4.2 Recommendations

Based on the first two years of long-term monitoring, the Army recommends continuing the semi-annual frequency of monitoring based on the process detailed in the RDR in Figure 7-3, included in this annual report as **Figure 9**. The recommendations for LTM during year three 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), after recharge is conducted, MWT-26, MWT-27, and MWT-29 would be excluded from the LTM program, as detailed in **Figure 9**. 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 conducted each year after the first biowall recharge is completed 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, recent precipitation events, or desorption.

- 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 2 LTM program. The concentrations of COCs, specifically TCE, detected in the wells located downgradient of the source area (near PT-18A) showed decreasing trends over the two years of LTM events.

USACE "MARKUP TEMPLATES"

SOURCE #4

Owner Cost

In *RACER*, Owner Cost is the owner's workforce cost to initiate, contract, oversee, direct, implement and closeout the project. Owner costs may include the following categories or items:

- Supervision, Inspection, and Overhead (SIOH);
- Construction management and "Owner's Representative" services;
- Laboratory quality assurance;
- Operations and maintenance manual; and
- Other costs (e.g. technical, real estate, administrative, contracting, accounting, etc.).

The system default percentage for Owner Cost is 11 %. The valid range for the Owner Cost markup factor is 0% to 20%.

Direct Costs
Professional Labor Overhead / G&A
Field Office Overhead / G&A
Prime Contractor Profit
Subcontractor Profit
Contingency
Markup Calculations
Applying Markup Percentages
Adjusting Markups for Each Technology
Creating Custom Markup Templates
Markups Report

Contract

Source #2

ORDER FOR SUPPLIES OR SERVICES

PAGE 1 OF 19

1. CONTRACT/PURCH. ORDER/ AGREEMENT NO.	2. DELIVERY ORDER/ CALL NO.	3. DATE OF ORDER/CALL (YYYYMMMDD)	4. REQ./ PURCH. REQUEST NO.	5. PRIORITY
W912DY-08-D-0003	0001	2008 May 22	W31RYO81401819	

6. ISSUED BY	CODE W912DY	7. ADMINISTERED BY (if other than 6)	CODE W912DY	8. DELIVERY FOB
US ARMY ENGINEERING & SUPPORT CENTER CEHNC-CT 4820 UNIVERSITY SQUARE HUNTSVILLE AL 35816-1822		DIRECTORATE OF CONTRACTING - HNC ATTN: LAURA STIEGLER 256-895-1171 HUNTSVILLE AL 35807		[X] DESTINATION [ ] OTHER (See Schedule if other)

9. CONTRACTOR	CODE 1BVK6	FACILITY	10. DELIVER TO FOB POINT BY (Date) (YYYYMMMDD)	11. MARK IF BUSINESS IS
NAME AND ADDRESS PARSONS INFRASTRUCTURE & TECHNOLOGY GROU KEN STOCKWELL 100 W WALNUT STREET PASADENA CA 91124			SEE SCHEDULE 12. DISCOUNT TERMS NET 30 DAYS	[ ] SMALL [ ] SMALL DISADVANTAGED [ ] WOMEN-OWNED
			13. MAIL INVOICES TO THE ADDRESS IN BLOCK See Item 15	

14. SHIP TO	CODE	15. PAYMENT WILL BE MADE BY	CODE 964145	
SEE SCHEDULE		US ARMY ENG & SUP CENTER - FINANCE OFFIC US ARMY CORPS OF ENGRS FINANCE CTR 5722 INTEGRITY DRIVE MILLINGTON TN 38054-5005		MARK ALL PACKAGES AND PAPERS WITH IDENTIFICATION NUMBERS IN BLOCKS 1 AND 2.

16. TYPE OF ORDER			
	DELIVERY/ CALL	X	This delivery order/call is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.
	PURCHASE		Reference your quote dated Furnish the following on terms specified herein. REF:

ACCEPTANCE. THE CONTRACTOR HEREBY ACCEPTS THE OFFER REPRESENTED BY THE NUMBERED PURCHASE ORDER AS IT MAY PREVIOUSLY HAVE BEEN OR IS NOW MODIFIED, SUBJECT TO ALL OF THE TERMS AND CONDITIONS SET FORTH, AND AGREES TO PERFORM THE SAME.

NAME OF CONTRACTOR	SIGNATURE	TYPED NAME AND TITLE	DATE SIGNED (YYYYMMMDD)

[X] If this box is marked, supplier must sign Acceptance and return the following number of copies:

17. ACCOUNTING AND APPROPRIATION DATA/ LOCAL USE

See Schedule

18. ITEM NO.	19. SCHEDULE OF SUPPLIES/ SERVICES	20. QUANTITY ORDERED/ ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT
	SEE SCHEDULE				

* If quantity accepted by the Government is same as quantity ordered, indicate by X. If different, enter actual quantity accepted below quantity ordered and encircle.	24. UNITED STATES OF AMERICA TEL: 256-895-1440 EMAIL: Sharon.H.Butler@usace.army.mil BY: SHARON H BUTLER	Sharon H Butler CONTRACTING / ORDERING OFFICER	25. TOTAL	$112,815.00
			26. DIFFERENCES	

27a. QUANTITY IN COLUMN 20 HAS BEEN

[ ] INSPECTED [ ] RECEIVED [ ] ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED

b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE	c. DATE (YYYYMMMDD)	d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE

e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE	28. SHIP NO.	29. DO VOUCHER NO.	30. INITIALS	
	[ ] PARTIAL [ ] FINAL	32. PAID BY	33. AMOUNT VERIFIED CORRECT FOR	
f. TELEPHONE NUMBER / g. E-MAIL ADDRESS	31. PAYMENT		34. CHECK NUMBER	
36. I certify this account is correct and proper for payment.	[ ] COMPLETE [ ] PARTIAL [ ] FINAL		35. BILL OF LADING NO.	
a. DATE (YYYYMMMDD) / b. SIGNATURE AND TITLE OF CERTIFYING OFFICER				

37. RECEIVED AT	38. RECEIVED BY	39. DATE RECEIVED (YYYYMMMDD)	40. TOTAL CONTAINERS	41. S/R ACCOUNT NO.	42. S/R VOUCHER NO.

Section B - Supplies or Services and Prices

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001		1	Lump Sum	$112,815.00	$112,815.00

Seneca Army Depot Long Term Monitoring
FFP
The contractor shall provide all the labor and material required to implement the approved plan for long-term monitoring at the Ash Landfill operable unit in accordance with the provided statement of work dated 31 March 2008. (Tasks 1 through 5)
FOB: Destination
MILSTRIP: W31RYO81401819
PURCHASE REQUEST NUMBER: W31RYO81401819

NET AMT $112,815.00

ACRN AA $112,815.00
CIN: W31RYO814018190001

cost

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	~~AMOUNT~~
0002		1	Lump Sum	$3,977.00	$3,977.00
OPTION					

Task 6 Annual Remedy Inspection
FFP
The contractor shall provide all the labor and ~~material required to implement~~ the approved plan for long-term monitoring at the Ash Landfill operable unit in accordance with the provided statement of work ~~dated 31 March 2008. (Task 6)~~
FOB: Destination

site

NET AMT $3,977.00

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003		1	Lump Sum	$32,027.00	$32,027.00
OPTION	Task 7 Initial Groundwater Monitoring FFP The contractor shall provide all the labor and material required to implement the approved plan for long-term monitoring at the Ash Landfill operable unit in accordance with the provided statement of work dated 31 March 2008. (Task 7) FOB: Destination				

Semi annual event

Site

NET AMT $32,027.00

COST / EVENT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004		1	Lump Sum	$32,027.00	$32,027.00
OPTION	Task 8 Additional Groundwater Monitoring FFP The contractor shall provide all the labor and material required to implement the approved plan for long-term monitoring at the Ash Landfill operable unit in accordance with the provided statement of work dated 31 March 2008. (Task 8) FOB: Destination				

Semi annual event

Site

NET AMT $32,027.00

COST / EVENT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0005		1	Lump Sum	$15,627.00	$15,627.00
OPTION	Task 9 Preparation of Annual Report FFP The contractor shall provide all the labor and material required to implement the approved plan for long-term monitoring at the Ash Landfill operable unit in accordance with the provided statement of work dated 31 March 2008. (Task 9) FOB: Destination				

NET AMT $15,627.00

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0006		1	Lump Sum	$34,918.00	$34,918.00
OPTION	Task 10 Project Management FFP The contractor shall provide all the labor and material required to implement the approved plan for long-term monitoring at the Ash Landfill operable unit in accordance with the provided statement of work dated 31 March 2008. (Task 10) FOB: Destination				

NET AMT $34,918.00

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0007		1	Lump Sum	$4,554.00	$4,554.00
OPTION	Task 11 Annual Remedy Inspection FFP The contractor shall provide all the labor and material required to implement the approved plan for long-term monitoring at the Ash Landfill operable unit in accordance with the provided statement of work dated 31 March 2008. (Task 11) FOB: Destination				
				NET AMT	$4,554.00

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0008		1	Lump Sum	$32,753.00	$32,753.00
OPTION	Task 12 Initial Groundwater Monitoring FFP The contractor shall provide all the labor and material required to implement the approved plan for long-term monitoring at the Ash Landfill operable unit in accordance with the provided statement of work dated 31 March 2008. (Task 12) FOB: Destination				
				NET AMT	$32,753.00

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0009		1	Lump Sum	$32,753.00	$32,753.00
OPTION	Task 13 Additional Groundwater FFP The contractor shall provide all the labor and material required to implement the approved plan for long-term monitoring at the Ash Landfill operable unit in accordance with the provided statement of work dated 31 March 2008. (Task 13) FOB: Destination				
				NET AMT	$32,753.00

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0010		1	Lump Sum	$32,753.00	$32,753.00
OPTION	Task 14 Preparation of the Annual Report FFP The contractor shall provide all the labor and material required to implement the approved plan for long-term monitoring at the Ash Landfill operable unit in accordance with the provided statement of work dated 31 March 2008. (Task 14) FOB: Destination				
				NET AMT	$32,753.00

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0011		1	Lump Sum	$35,567.00	$35,567.00
OPTION	Task 15 Project Management FFP The contractor shall provide all the labor and material required to implement the approved plan for long-term monitoring at the Ash Landfill operable unit in accordance with the provided statement of work dated 31 March 2008. (Task 15) FOB: Destination				

NET AMT $35,567.00

Section C - Descriptions and Specifications

STATEMENT OF WORK

PERFORMANCE WORK STATEMENTIMPLEMENTATION OF THE POST CLOSURE MONITORING AND MAINTENANCE PLANFOR THE ASH LANDFILL OPERABLE UNITSENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK

31 March 2008

1.0 BACKGROUND AND GENERAL STATEMENT OF SERVICES: Following remediation of the Ash Landfill operable unit, long-term monitoring is required to verify the success of the remedial efforts. **1.1 GENERAL DESCRIPTION.** SEDA is a US Army facility located in Seneca County, New York. SEDA occupies approximately 10,600 acres. It is bounded on the west by State Route 96A and on the east by State Route 96. The cities of Geneva and Rochester are located to the northwest (14 and 50 miles, respectively); Syracuse is 53 miles to the northeast and Ithaca is 31 miles to the south. The surrounding area is generally used for farming.

1.2 REGULATORY STATUS. The Installation was included on the Federal Facilities National Priorities List on 13 July 1989. Consequently, all work to be performed under this contract shall be performed according to Comprehensive Environmental Response Compensation and Liability Act (CERCLA) guidance as put forth in the EPA Interim Final "Guidance for Conducting Remedial Investigations/ Feasibility Studies under CERCLA" and the "Federal Facility Agreement under CERCLA Section 120 in the matter of Seneca Army Depot, Romulus, New York".

1.3 SECURITY REQUIREMENTS. Compliance with SEDA security requirements is mandated. **2.0 OBJECTIVES:**

The Contractor shall implement the approved plan for long-term monitoring at the Ash Landfill operable unit. Following that year of performance, the Contractor shall report annual results and provide recommendations for future Long Term Management needs. All work shall be completed in accordance with (IAW) the approved **Post Closure Monitoring and Maintenance Plan**. All field activities shall be performed IAW the approved **Accident Prevention Plan for the Seneca program**.

3.0 DESCRIPTION OF SERVICES:

3.1 Post Closure Monitoring and Maintenance YR2.

3.1.1 (Task 1) Annual Remedy Inspections

3.1.1.1 Vegetative Cap and Drainage Swale Inspections. The Contractor shall inspect the vegetative soil cover and drainage swales on the site. Inspection shall include observations pertinent to the integrity of the soil and vegetative covering and the condition of run-off channels, infiltration galleries and swales.

3.1.1.2 Biowall Trench Condition. The Contractor shall inspect the condition of the Biowall trenches.

3.1.1.3 Groundwater Monitoring Well Inspections. The Contractor shall inspect the condition of the groundwater monitoring wells.

3.1.2 (Task 2) Initial Groundwater Monitoring Event. The Contractor shall perform an initial groundwater monitoring event.

3.1.2.1 Plume Performance Monitoring. The Contractor shall sample and analyze monitoring wells PT-18A, MWT-22, PT-22, PT-17, MWT-7, PT-24, MWT-24, MWT-25 and MW-56 as per the protocols and monitoring wells in the approved plan.

3.1.2.2 Biowall Process Monitoring. The Contractor shall sample and analyze monitoring wells MWT-26, MWT-27, MWT-28, MWT-29 and MWT-23 as per the protocols and monitoring wells in the approved plan.

3.1.2.3 Preparation of Groundwater Monitoring Reports. Following completion of each Groundwater Monitoring Event, the Contractor shall prepare and submit a report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend analysis for contaminant of concern concentration data developed for key monitoring wells.
- Trend analysis of key indicator parameter data developed for each of the monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.

3.1.3 (Task 3) Second Groundwater Monitoring Event. The Contractor shall perform an initial groundwater monitoring event.

3.1.3.1 Plume Performance Monitoring. The Contractor shall sample and analyze monitoring wells PT-18A, MWT-22, PT-22, PT-17, MWT-7, PT-24, MWT-24, MWT-25 and MW-56 as per the protocols and monitoring wells in the approved plan.

3.1.3.2 Biowall Process Monitoring. The Contractor shall sample and analyze monitoring wells MWT-26, MWT-27, MWT-28, MWT-29 and MWT-23 as per the protocols and monitoring wells in the approved plan.

3.1.3.3 Preparation of Groundwater Monitoring Reports. Following completion of each Groundwater Monitoring Event, the Contractor shall prepare and submit a report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend plots for all chemical concentration data developed for each of the monitoring wells.
- Trend plots of key indicator parameter data developed for each of the monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.

3.1.4 (Task 4) Preparation of the Annual Report. Following completion of a year of groundwater monitoring events, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria values.
- Trend analysis for contaminant of concern concentration data developed for key monitoring wells.
- Trend analysis for key indicator parameter data developed for each of the monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.
- A recommendation of any changes (e.g. changing frequency of data collection to semi annual or annual, development of a sediment monitoring program, etc.) that are proposed for implementation for the OB Grounds LTM Plan.

3.1.5 (Task 5) Project Management. The Contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

3.2 Post Closure Monitoring and Maintenance Event YR3:

3.2.1 (Optional Task 6) Annual Remedy Inspection.

3.2.1.1 Vegetative Cap and Drainage Swale Inspections. The Contractor shall inspect the vegetative soil cover and drainage swales on the site. Inspection shall include observations pertinent to the integrity of the soil and vegetative covering and the condition of run-off channels, infiltration galleries and swales.

3.2.1.2 Biowall Trench Condition. The Contractor shall inspect the condition of the Biowall trenches.

3.2.1.3 Groundwater Monitoring Well Inspections. The Contractor shall inspect the condition of the groundwater monitoring wells.

3.2.2 (Optional Task 7) Initial Groundwater Monitoring Event. The Contractor shall perform an initial groundwater monitoring event.

3.2.2.1 Plume Performance Monitoring. The Contractor shall sample and analyze monitoring wells PT-18A, MWT-22, PT-22, PT-17, MWT-7, PT-24, MWT-24, MWT-25 and MW-56 as per the protocols and monitoring wells in the approved plan.

3.2.2.2 Biowall Process Monitoring. The Contractor shall sample and analyze monitoring wells MWT-26, MWT-27, MWT-28, MWT-29 and MWT-23 as per the protocols and monitoring wells in the approved plan.

3.2.2.3 Preparation of Groundwater Monitoring Reports. Following completion of each Groundwater Monitoring Event, the Contractor shall prepare and submit a report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend analysis for contaminant of concern concentration data developed for key monitoring wells.
- Trend analysis of key indicator parameter data developed for each of the monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.

3.2.3 (Optional Task 8) Additional Groundwater Monitoring Event. The Contractor shall perform an additional groundwater monitoring event.

3.2.3.1 Plume Performance Monitoring. The Contractor shall sample and analyze monitoring wells PT-18A, MWT-22, PT-22, PT-17, MWT-7, PT-24, MWT-24, MWT-25 and MW-56 as per the protocols and monitoring wells in the approved plan.

3.2.3.2 Biowall Process Monitoring. The Contractor shall sample and analyze monitoring wells MWT-26, MWT-27, MWT-28, MWT-29 and MWT-23 as per the protocols and monitoring wells in the approved plan.

3.2.3.3 Preparation of Groundwater Monitoring Reports. Following completion of the additional Groundwater Monitoring Event, the Contractor shall prepare and submit a report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend analysis for contaminant of concern concentration data developed for key monitoring wells.

- Trend analysis of key indicator parameter data developed for each of the monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.

3.2.4 (Optional Task 9) Preparation of the Annual Report. Following completion of a year of groundwater monitoring events, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria values.
- Trend analysis for contaminant of concern concentration data developed for key monitoring wells.
- Trend analysis for key indicator parameter data developed for each of the monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.
- A recommendation of any changes (e.g. changing frequency of data collection to semi annual or annual, development of a sediment monitoring program, etc.) that are proposed for implementation for the OB Grounds LTM Plan.

3.2.5 (Optional Task 10) Project Management. The Contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

3.3 Post Closure Monitoring and Maintenance Event YR4:

3.3.1 (Optional Task 11) Annual Remedy Inspection.

3.3.1.1 Vegetative Cap and Drainage Swale Inspections. The Contractor shall inspect the vegetative soil cover and drainage swales on the site. Inspection shall include observations pertinent to the integrity of the soil and vegetative covering and the condition of run-off channels, infiltration galleries and swales.

3.3.1.2 Biowall Trench Condition. The Contractor shall inspect the condition of the Biowall trenches.

3.3.1.3 Groundwater Monitoring Well Inspections. The Contractor shall inspect the condition of the groundwater monitoring wells.

3.3.2 (Optional Task 12) Initial Groundwater Monitoring Event. The Contractor shall perform an initial groundwater monitoring event.

3.3.2.1 Plume Performance Monitoring. The Contractor shall sample and analyze monitoring wells PT-18A, MWT-22, PT-22, PT-17, MWT-7, PT-24, MWT-24, MWT-25 and MW-56 as per the protocols and monitoring wells in the approved plan.

3.3.2.2 Biowall Process Monitoring. The Contractor shall sample and analyze monitoring wells MWT-26, MWT-27, MWT-28, MWT-29 and MWT-23 as per the protocols and monitoring wells in the approved plan.

3.3.2.3 Preparation of Groundwater Monitoring Reports. Following completion of each Groundwater Monitoring Event, the Contractor shall prepare and submit a report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend analysis for contaminant of concern concentration data developed for key monitoring wells.
- Trend analysis of key indicator parameter data developed for each of the monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.

3.3.3 (Optional Task 13) Additional Groundwater Monitoring Event. The Contractor shall perform an additional groundwater monitoring event.

3.3.3.1 Plume Performance Monitoring. The Contractor shall sample and analyze monitoring wells PT-18A, MWT-22, PT-22, PT-17, MWT-7, PT-24, MWT-24, MWT-25 and MW-56 as per the protocols and monitoring wells in the approved plan.

3.3.3.2 Biowall Process Monitoring. The Contractor shall sample and analyze monitoring wells MWT-26, MWT-27, MWT-28, MWT-29 and MWT-23 as per the protocols and monitoring wells in the approved plan.

3.3.3.3 Preparation of Groundwater Monitoring Reports. Following completion of the additional Groundwater Monitoring Event, the Contractor shall prepare and submit a report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend analysis for contaminant of concern concentration data developed for key monitoring wells.
- Trend analysis of key indicator parameter data developed for each of the monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.

3.3.4 (Optional Task 14) Preparation of the Annual Report. Following completion of a year of groundwater monitoring events, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria values.
- Trend analysis for contaminant of concern concentration data developed for key monitoring wells.
- Trend analysis for key indicator parameter data developed for each of the monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.
- A recommendation of any changes (e.g. changing frequency of data collection to semi annual or annual, development of a sediment monitoring program, etc.) that are proposed for implementation for the OB Grounds LTM Plan.

3.3.5 (Optional Task 15) Project Management. The Contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

Estimate Documentation Report

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-6
Project Name: SEAD-6
Project Category: Development Reserve

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

The Ash Landfill site. This includes SEADs 3,6,8,14, and 15.

The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the cost of the Site Closeout costs and for LUCs. Groundwater monitoring costs were obtained from the current PBC contract.

Site: SEAD-6/3/8/14/15, Ash Landfill Site

Source:
1. Final Record of Decision, Ash Landfill, January 2005
2. Professional judgment based on site knowledge
3. Performance Based Contract SOW Contract #: FA8903-04-D-8675, January 2005

Estimate Documentation Report

All LUCs and Five year reviews have contract cost documentation.

Additional site information:

RACER Assumptions:

Site Closeout Documentation:
1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years
5. Well abandonment includes sub-contractor costs for fieldwork
6. Only two 5 year reviews will be conducted.

Estimate Documentation Report

Site Documentation:

Site ID: SEAD-6
Site Name: Ash Landfill
Site Type: None

Media/Waste Type
Primary: Groundwater
Secondary: N/A

Contaminant
Primary: Volatile Organic Compounds (VOCs)
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: Ash Landfill: RA(O) consists of the two 5-Year reviews and Site Closeout and the LTM phase is for the LUC . LTM #1 added for site closeout and well abandonment.

Support Team: Stephen M. Absolom - BEC, Seneca Army Depot
Randy Battaglia - US Army Corps of Engineers, Project Manager

References: Source:
1. Final Record of Decision, Ash Landfill, January 2005
2. Professional judgment based on site knowledge
3. Performance Based Contract SOW Contract #: FA8903-04-D-8675, January 2005

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 02/10/2010

Estimator Signature: **Date:**

Estimate Documentation Report

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager/BEC
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96, Bldg 123, Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil
Date Reviewed: 02/11/2010

Reviewer Signature: **Date:**

Estimated Costs:

Phase Element Names	Direct Cost	Marked-up Cost
LTM #1 Site Closeout Doc and Well Abandondonment	$119,320	$210,557
Total Cost:	$119,320	$210,557

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #1 Site Closeout Doc and Well Abandondonment
Description: Site Closeout and well abandonment costs in FY2010. Well Abaondonment added as LTM #1.

Start Date: October, 2010
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate

Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Total Marked-up Cost: $210,557

Technologies:

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Meetings		Yes	n/a
Work Plans and Reports		Yes	n/a
Documents		Yes	n/a
Site Close-Out Complexity		Moderate	n/a
Meetings			
Required Parameters			
Kick Off/Scoping Meetings		Yes	n/a
Kick Off/Scoping Meetings: Number of Meetings	1	1	EA
Kick Off/Scoping Meetings: Travel		Yes	n/a
Kick Off/Scoping Meetings: Travelers		2	EA
Kick Off/Scoping Meetings: Days		5	Days
Kick Off/Scoping Meetings: Air Fare		0	$
Review Meetings		Yes	n/a
Review Meetings: Number of Meetings	1	1	EA
Review Meetings: Travel		No	n/a
Regulatory Review Meetings		Yes	n/a
Regulatory Review Meetings: Number of Meetings	1	1	EA
Regulatory Review Meetings: Travel		No	n/a
Work Plans & Reports			
Required Parameters			
Work Plans		Yes	n/a
Draft Work Plan		Yes	n/a
Final Work Plan		Yes	n/a
Reports		Yes	n/a
Draft Close-Out Report		Yes	n/a
Draft Final Close-Out Report		Yes	n/a
Final Close-Out Report		Yes	n/a
Progress Reports		Yes	n/a
Project Duration	10	10	months
Documents			
Required Parameters			

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
Documents			
Required Parameters			
Draft Decision Document		Yes	n/a
Draft Final Decision Document		Yes	n/a
Final Decision Document		Yes	n/a
Long Term Document Storage		Yes	n/a
Number of Boxes		16	EA
Duration of Storage		30	Yrs

Comments:

Estimate Documentation Report

Technology Name: **Well Abandonment (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Safety Level		D	n/a
Abandon Wells			
Required Parameters			
Technology/Group Name		Well Group 1 61 wells	n/a
Number of Wells		61	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Unconsolidated	n/a
Technology/Group Name		Well Group 2 Trench Wells	n/a
Number of Wells		11	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Unconsolidated	n/a
Technology/Group Name		Well Group 3 Biowall wells	n/a
Number of Wells		11	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Unconsolidated	n/a

Comments:

Site WBS Report
(with Markups)

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-6
Project Name: SEAD-6
Project Category: Development Reserve

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

The Ash Landfill site. This includes SEADs 3,6,8,14, and 15.

The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the cost of the Site Closeout costs and for LUCs. Groundwater monitoring costs were obtained from the current PBC contract.

Site: SEAD-6/3/8/14/15, Ash Landfill Site

Source:
1. Final Record of Decision, Ash Landfill, January 2005
2. Professional judgment based on site knowledge
3. Performance Based Contract SOW Contract #: FA8903-04-D-8675, January 2005

Site WBS Report
(with Markups)

All LUCs and Five year reviews have contract cost documentation.

Additional site information:

RACER Assumptions:

Site Closeout Documentation:
1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years
5. Well abandonment includes sub-contractor costs for fieldwork
6. Only two 5 year reviews will be conducted.

Site WBS Report
(with Markups)

Site:

Site ID: SEAD-6
Site Name: Ash Landfill
Site Type: None

Media/Waste Type
Primary: Groundwater
Secondary: N/A

Contaminant
Primary: Volatile Organic Compounds (VOCs)
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: Ash Landfill: RA(O) consists of the two 5-Year reviews and Site Closeout and the LTM phase is for the LUC . LTM #1 added for site closeout and well abandonment.

Support Team: Stephen M. Absolom - BEC, Seneca Army Depot
Randy Battaglia - US Army Corps of Engineers, Project Manager

References: Source:
1. Final Record of Decision, Ash Landfill, January 2005
2. Professional judgment based on site knowledge
3. Performance Based Contract SOW Contract #: FA8903-04-D-8675, January 2005

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 02/10/2010

Estimator Signature: **Date:**

Site WBS Report
(with Markups)

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager/BEC
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96, Bldg 123, Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil

Date Reviewed: 02/11/2010

Reviewer Signature: **Date:**

Site WBS Report
(with Markups)

Phase Element:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #1 Site Closeout Doc and Well Abandondonment
Description: Site Closeout and well abandonment costs in FY2010. Well Abaondonment added as LTM #1.

Start Date: October, 2010
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate

Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Site WBS Report
(with Markups)

HTRW RA WBS			Marked Up Costs
331	HTRW REMEDIAL ACTION (CONSTRUCTION)		
331.20	SITE RESTORATION		
331.20.90	Other	Site Close-Out Documentation	$58,869
	Other	Well Abandonment	$151,688
			$210,557
		Total:	$210,557
		HTRW RA WBS Total:	$210,557
		Total:	**$210,557**

MEMORANDUM FOR RECORD

Date: 29 March 2010

SUBJECT: Environmental Liabilities for site SEAD-006-R-01 RCRA Closure of the OB/OD Grounds (alias SEAD-115) at Seneca Army Depot

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for site SEAD-006-R-01 for the 2010 data call. This site also encompasses SEAD-023 (OB Grounds). The Remedial Action Cost Engineering and Requirements (RACER) 10.3 system was used to estimate the cost of Site Closeout, Well Abandonment, and Land Use controls. The SEAD-23 monitoring program, which was initiated in 2007 under this project, will be carried under the RI/FS phase until completion of the IRA at the end of FY13. In 2014 it is assumed six additional wells will be installed at SEAD 006-R-01 for additional GW monitoring at the site as part of a LTM plan. Monitoring for SEAD 006-R-01 will start in 2015. Contract DACA87-02-D-0005, Delivery Order # 36 (Source 5) provides the cost of the well installation because this effort is consistent with the work that was done at SEAD 23. The cost for the GW monitoring is provided by RFP W912DY-08-D-0003 Task Order 0008 task No. 1. (Source 6) and the requirement for testing is established in the ROD for the OB Grounds (Source 2). The monitoring requirements cost for year 3 are assumed to be the same for years 4 through 21. It is assumed that after the completion of the IRA, monitoring GW for SEAD-006-R-01 will require sampling at a quarterly interval for the first year and then annually in subsequent years with CERCLA 5 years occurring at the same intervals. This assumption is based on the Long Term Plan from SEAD 23 (Source 3). It is further assumed that no change in the monitoring efforts at SEAD 23 will occur. After the IRA is completed in 2014, the monitoring will be carried under the LTM phase. It is assumed that full funding will be provided as indicated in the FY 2010 work plan (Source 7) in May 2010. In FY 2016, the second 5 year review at SEAD 23, will be the first 5 year review for SEAD 006-R-01. Five year reviews will then be coordinated in the same FY and that all 12 monitoring wells will be sampled annually through the second 5 year review for SEAD 006-R-01 which is expected to be 2021.

Site: SEAD-006-R-01 RCRA Closure of the OB/OD Grounds (alias SEAD-115). The Open Burning/ Open Detonation Grounds is an AOC that the Army used to demilitarize old, obsolete, or off spec ammunition and explosives. The site was a RCRA permitted facility. The clean up strategy included the removal of all munitions potentially posing an explosive hazard. Groundwater will require annual testing until results meet cleanup criteria.

Source:

1. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004 (rationale for OE reviews)

2. Final Record of Decision Former Open Burning Grounds Site, January 1999
3. Final Long Term Monitoring Plan for Open Burning Grounds, January 2007
4. RACER Guidance for Cost to Owner
5. Contract DACA87-02-D-0005, Delivery Order # 36, DTD August 22, 2007
6. RFP W912DY-08-D-0003 Task Order 0008.
7. FY 2010 BRAC Work Plan as issued Final Feb 5, 2010.
8. Final Annual Report and One Year Review for the Open Burning Grounds, October 2009.

RACER Assumptions:

Site Closeout Documentation (LTM)
1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports - all default values
4. Documents will be stored for 30 years

Well abandonment (LTM):
1. Number of wells: 12
2. Well depth: 15 feet
3. Well diameter: 2 inches
4. Formation type: Unconsolidated
5. Method: Overdrill/excavation

Five year MPPEH & CERCLA review
1. Three review cycles (1 for SEAD 23 and 2 for SEAD 006-R-01 and SEAD 23 combined)
2. Five year review cycle starts 2006 with first review 2011for SEAD 23
3. Five year review cycle starts 2016 for SEAD 006-R-01 and SEAD 23 combined
4. Site is moderate complexity
5. Reports, reviews, interviews and site inspections include all default parameters
6. UXO review included

Cost Summary **SEAD-006-R-01 (SEAD-115)**

RI/FS

Monitoring OB Grounds, SEAD-023
Years 2011- 2014 inclusive annually
(from contract RFP W912DY-08-D-0003 Task Order 0008 – Source 6)
$35,389 /event x 4 years $141,556

RI/FS Cost Total (OB Grounds, SEAD-023)	**$141,556**
LTM	
Additional GW Monitoring at SEAD-006-R-01 in 2014 6 wells, 15 ft, 2-inch diameter screened entire length Install 6 GW wells (from contract DACA87-02-D-0005 – Source 5)	$26,102
Monitor wells quarterly 1st year, annually thereafter (See assumptions and Source 6)	
Year 2015, $35,389/event x 4 events/yr (SEAD-006-R-01) 6 wells x 4 event= 24 samples	$141,556
Year 2016-2021, $35,389/event x 1 event/yr x 6 years (SEAD-006-R-01) 6 wells x 6 event= 36 samples	$212,334
Year 2015-2021, $35,389/event x 1 event/yr x 7 years (for SEAD-23) 6 wells x 7 events= 42 samples Sample total 24+36+42=102 samples	$247,723
Assumption: Owner Support for GW Monitoring 11% of total LTM Cost $26,102+$141556+$212334+$247,723 x 11%= 627,715x0.11= $69,049	$69,049
Monitoring subtotal	$696,764
5-year Reviews for MPPEH and CERCLA Reviews (RACER) (Costs include one five-year review for SEAD-23 only (FY11) and two five-year reviews for SEAD-23 and SEAD-006-R-01 (FY16 and FY21)	$139,001
Well Abandonment (RACER)	$29,807
Site Closeout (RACER)	$53,824
LTM Cost	**$919,396**
Total Site Cost	**$1,060,952**

Material Change: Yes

Reason: Funding received in FY 2010, LTM duration change, and RACER updated estimates

Prepared by: Randall Battaglia
Cost Estimator

Signature

3/29/10
Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Signature

3/29/2010
Date

Source 1

FINAL

ORDNANCE AND EXPLOSIVES ENGINEERING EVALUATION/ COST ANALYSIS REPORT

SENECA ARMY DEPOT ROMULUS, SENECA COUNTY, NEW YORK

Prepared For:

SENECA ARMY DEPOT ACTIVITY
and
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
and
HUNTSVILLE CENTER

Contract No. DACA87-95-D-0018
Delivery Order No. 0052

Prepared By:

PARSONS ENGINEERING SCIENCE, INC.
100 SUMMER ST
BOSTON, MA 02110

JANUARY 2004

EXECUTIVE SUMMARY

ES1 The 10,587-acre Seneca Army Depot Activity (SEDA) facility was constructed in 1941 and has been owned by the United States Government and operated by the Department of the Army since that date. From its inception in 1941 until 1995, SEDA's primary mission was the receipt, storage, maintenance, and supply of military items, including munitions and equipment. The Depot's mission changed in early 1995 when the Department of Defense (DOD) recommended closure of the Seneca Army Depot under its Base Realignment and Closure (BRAC) process. This recommendation to close Seneca Army Depot Activity was approved by Congress on September 28, 1995 and the Depot was officially closed in July 2000.

ES2 In accordance with the requirements of the BRAC process, 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 plan and oversee the redevelopment of the Depot. The Reuse Plan and Implementation Strategy for Seneca Army Depot was adopted by the LRA and approved by the Seneca County Board of Supervisors on October 22, 1996. Under this plan and subsequent amendment, areas within the Depot were classified as to their most likely future use. These areas included: housing, institutional, industrial, an area for the existing navigational LORAN transmitter, recreational/conservation, and an area designated for a future prison.

ES3 In July of 1998, the U.S. Army Corps of Engineers (USACE) conducted a site visit and historical data collection effort. The findings are documented in the Archives Search Report (ASR). The ASR initially subdivided the depot into 27 Areas of Interest (AOIs) for ordnance contamination based on physical attributes, homogeneity, and current and historical land use. The ASR evaluated each AOI to determine whether the area should or should not be investigated for ordnance and explosives/ unexploded ordnance (OE/UXO). Each AOI was classified as requiring further investigation or not requiring further investigation based on a review of historical documents, aerial photography, and employee interviews. Most of the AOIs were also visited by USACE to determine whether any traces of OE were readily apparent.

ES4 The ASR classified 15 of the areas as uncontaminated. Subsequently, one of the areas recommended for further investigation, SEAD-43, was classified as a no further action site after a geophysical and intrusive investigation in 1999. The remaining 11 AOIs discussed in the ASR were classified as sites where OE might present a safety risk. This Engineering Evaluation and Cost Assessment project was undertaken in order to determine the nature and extent of possible OE contamination at these sites.

ES5 The EE/CA fieldwork used geophysical survey techniques and intrusive investigations to estimate the density of the ordnance in different areas, which was then compared with the current and future activities and anticipated users. Data collected from this characterization project were also used to develop alternatives designed to reduce the risk of possible exposure to UXO within AOIs. These alternatives were then evaluated to determine their effectiveness, implementability, and cost.

ES6 Results of this comparison indicate that there are portions of SEDA where alternatives requiring removal of UXO will be necessary to ensure public safety. The results also indicate that implementation of site-wide institutional controls will be necessary to manage residual risk. Several AOIs within SEDA will not require any OE removal operations to make the property safe for the proposed future uses.

ES7 OE response action alternatives were evaluated for each of the 11 AOIs at SEDA that were investigated during this EE/CA investigation. Each potential alternative was initially screened against the general evaluation criteria of effectiveness, implementability, and cost. The screening of alternatives was used to identify candidate OE response alternatives for further qualitative evaluation. Each of the alternatives remaining after this screening were then compared to each other as far as effectiveness, implementability, and cost. Once the remaining alternatives at each AOI had been compared, one alternative was chosen as the most appropriate response to the existing OE hazard.

ES8 The following response actions have been chosen for the AOIs investigated during the Seneca OE EE/CA:

- NFA – SEAD-53 (Igloo Area) ditches, Demo Range, Indian Creek Burial Area. These sites are no longer under consideration as ordnance sites
- Institutional Controls – Base wide, no individual areas
- Clearance to Depth of 6" – SEADs-16 and –17 (Deactivation Furnaces), EOD Area #2
- Clearance to Depth of Instrument Detection – EOD Area #3, SEAD-44A (QA Function Test Area), SEAD-46 (3.5" Rocket Range), Grenade Range
- Clearance to Depth by Means of Excavation and Mechanical Sorting – SEAD-45 (Open Detonation Area), SEAD-57 (Former EOD Range)

Complete descriptions of each of these alternatives are contained in Section 7.

SECTION 9

RECOMMEDATIONS AND RECURRING REVIEW

9.1 INTRODUCTION

The recommended response actions have been chosen based on the effectiveness and implementability for each of the alternatives considered at each of the AOIs. If two alternatives were equal according to effectiveness and implementability, then cost was used as the determining factor in choosing which alternative to recommend. Following implementation of the chosen response action alternative, the former Seneca Army Depot will be included in the USACE program for recurring reviews. Recurring reviews will be conducted every five years to evaluate the continued effectiveness of the response action to address public safety risk from UXO.

OE 5 year review

9.2 RECOMMENDED RESPONSE ACTIONS

9.2.1 INSTITUTIONAL CONTROLS

Institutional controls were not chosen for any of the individual AOIs. However, base wide controls should be implemented in order to properly educate the public about the potential residual hazards of OE that may exist on site. The Institutional Controls recommended in Section 5 are the ones that should be considered for implementation, and Appendix F analyses the effectiveness of all the institutional controls considered for SEDA. Although the Demo Range, the ditches in SEAD-53, and the rumored Indian Creek Burial area have been considered NFA sites, the base-wide Institutional Controls will cover these areas as well.

9.2.2 CLEARANCE TO DEPTH OF 6 INCHES

The Clearance to a Depth of 6 Inches Alternative has been chosen for two areas, SEADs-16 and –17 and EOD Area #2. At both of these areas, OE was found no deeper than 6 inches below the ground surface. Therefore, it is not considered necessary to investigate any deeper than this depth. A complete investigation of the area not cleared during the EE/CA for each AOI (Figures 9.1 and 9.2) using this alternative will be sufficient to remove the majority of the OE that is present in the areas. Should any OE be discovered after the initial survey, possibly due to natural occurrences (i.e. freeze/thaw), the survey may be repeated as part of the recurring reviews.

Source 2

FINAL RECORD OF DECISION (ROD)
FORMER OPEN BURNING (OB) GROUNDS SITE
SENECA ARMY DEPOT ACTIVITY (SEDA)
ROMULUS, NY

Prepared For:
United States Army Corps of Engineers

Prepared By:
Parsons Engineering Science, Inc.
30 Dan Road
Canton, MA 02021-2809
January 1999
CONTRACT NO. DACA87-92-D-0022

Delivery Order 0010

DESCRIPTION OF THE SELECTED REMEDY

The selected remedy outlined in this ROD addresses potential exposure to elevated levels of metals, such as lead, in the on-site soils and sediment in Reeder Creek. The following describes the significant aspects of the remedy:

- The OB Grounds was used for surface burning of explosive trash and propellants. The concern for OE below the surface, at depth, at this site is small. Although OE is not expected to be found at depth at this site, through a combination geophysics, excavation, sifting, removal and soil cover, the Army will nevertheless remediate OE to meet the Department of Defense 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 Toxicity Characteristic Leaching Procedure (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 Land Disposal Restrictions (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 is 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 PRAP incorrectly identified the area to be covered as 43.8 acres. 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 ug/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 revegatation or the construction of drainage control swales or structures.

STATE CONCURRENCE

NYSDEC has concurred with the selected remedy. **Appendix B** of this Record of Decision contains a copy of the Declaration of Concurrence.

DECLARATION

The selected remedy is consistent with CERCLA and to the extent practicable the NCP, is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost effective. The remedy uses a permanent solution for soil contamination. This remedy will not result in hazardous substances, above cleanup goals, remaining at SEDA. Because these alternatives would result in hazardous substances, pollutants or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, CERCLA requires that the lead agency review the remedial action no less than every five years after its initiation. If justified by the review, remedial actions may be implemented to remove or treat the wastes.

Source 5

FINAL

LONG-TERM MONITORING PLAN FOR OPEN BURNING (OB) GROUNDS SENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK

Prepared for

U.S. Army, Engineering & Support Center, Huntsville

4820 University Square

Huntsville, AL 35816

and

Seneca Army Depot Activity

5786 State Route 96

PO Box 9

Romulus, New York 14541

Prepared by

PARSONS
150 Federal Street, 4th Floor
Boston, MA 02110-1713

Contract DACA87-02-D-0005, Delivery Order 29
USEPA Site ID: NY0213820830; NY Site ID: 8-50-006

January 2007

7.0 SUMMARY OF MONITORING PROGRAM

This section presents a brief summary of the activities to be performed and requirements of the groundwater and vegetated soil cap monitoring program. This section has been prepared to serve as a brief summary of the Plan requirements for current and future field crews and office personnel who will conduct the work associated with the OB Grounds monitoring program. This section is only intended to provide a brief summary for staff personnel. Supervisory and management personnel are expected to review the entire Plan.

7.1 WATER LEVEL MONITORING

Water levels will be obtained from all wells at the OB Grounds during groundwater sampling events. Levels will be collected on a quarterly basis during the baseline period, which will last for at least the first year. Groundwater level monitoring may be reduced after the first year if the wells are shown to be in compliance with the ROD requirements. The locations of the wells to be installed at the OB Grounds are shown on **Figure 5-1**. All water level measurements will be obtained in accordance with the procedures identified in the SOPs included in the Sampling and Analysis Plan (Parsons 2005, included by reference only).

7.2 WATER QUALITY MONITORING

Number of wells = 6

sampling frequency quarterly for the first y

Water quality monitoring will be performed at six wells. These wells are shown on **Figure 5-1**. Samples will be obtained on a quarterly basis for at least the first year and analyzed for the parameters listed on **Table 5-1**. Sampling frequency after the first year may be revised depending on the results and evaluation of data collected during the first year.

Samples will be collected in accordance with the procedures described in the SOPs contained the Sampling and Analysis Plan. Quality control samples will be obtained in accordance with the requirements set forth in the QAPP, which is included in the Sampling and Analysis Plan. Laboratory analyses and data validation will be performed in accordance with the procedures set forth in the QAPP.

7.3 VEGETATED SOIL CAP AND DRAINAGE SWALE INSPECTIONS

The vegetated, compacted soil cap overlying the lead contaminated soil that has been left at the former OB Grounds site will initially be inspected and documented once per quarter for one year, concurrent to the quarterly groundwater monitoring events. Inspection of the surface will include observations pertinent to the integrity of the soil and indigenous vegetative covering, and the condition of surface water run-off channels, infiltration galleries, and swales. Any significant

breach of the vegetated, soil cap or erosion in the run-off and infiltration galleries will be repaired within one month of being noted. After collection of this initial data set and the decision regarding whether the cap is effective in isolating the lead-contaminated soil, the cap inspections will be reduced to an annual basis. After a total of five years of inspections, a decision will be made whether the inspections should be terminated or continued into the next five-year period.

7.4 DATA EVALUATION AND REPORTING

All of the water quality and water level monitoring data obtained pursuant to this plan will be reported in OB Grounds Monitoring Program Reports. During the period of baseline (initial four samples) data collection, Monitoring Reports will be prepared quarterly.

During the baseline reporting period, each quarterly report will present new data and information developed during the most recent monitoring event (as is identified in **Section 5.6**, above), and will provide summary presentations of the data developed to date. Summary presentations will include:

1. trend plots of groundwater elevation data for each of the monitoring wells;
2. trend plots for all chemical concentration data developed for each of the monitoring wells;
3. trend plots for key indicator parameter data developed for each of the monitoring wells; and,
4. a chronological listing of any noted vegetated, soil cap breach or erosion and an indication of the correction action taken to alleviate the identified condition.

All data from the first year of monitoring will be reported in the annual OB Grounds Long-Term Monitoring Report. Upon completion of baseline monitoring, data will be reported in annual reports. Reports will be prepared and submitted to USEPA and NYSDEC on or before the first day of the second month after the end of the monitoring period (quarter or 12-month period) from which the data were obtained (i.e., the Groundwater Monitoring Report for data obtained in the fall quarter is to be submitted by February 1st of the following year). The contents of the annual report will include:

1. Complete tabulations, including the identification of maximum and minimum levels, of all groundwater elevation data developed to date;
2. Trend plots of groundwater elevation data for each of the monitoring wells;
3. A potentiometric map of site groundwater;
4. Complete tabulations of all chemical concentration data developed to date;
5. Complete tabulations of all indicator parameter data developed to date;

6. Summary presentations (e.g., sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc.) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria value;
7. Trend plots for all chemical concentration data developed for each of the monitoring wells;
8. Trend plots for key indicator parameter data developed for each of the monitoring wells;
9. A chronological listing of any noted vegetated, soil cap breach or erosion and an indication of the correction action taken to alleviate the identified condition; and,
10. A recommendation of any changes (e.g., changing frequency of data collection to semi-annual or annual, development of a sediment monitoring program, etc.) that are proposed to be implemented for the OB Grounds LTM Plan.

Groundwater data collected during the RI also indicated that, with the possible exception of two monitoring well locations, groundwater had not been impacted by metal contamination that was then present in the soil. Groundwater data from all but the two well locations indicated lead concentrations ranging from non-detectable to less than the 15 µg/L limit stipulated in the ROD. The two exceptions showed lead concentrations higher than 15 µg/L; however, these samples were highly turbid and results from filtered samples collected at these locations showed lead concentrations below 15 µg/L. Based on these findings, the Army indicated that the turbid nature of the samples resulted in the elevated concentrations of lead identified.

Based on the flow direction of groundwater, the existence of a groundwater divide, the lack of widespread metals contamination in groundwater at the OB Grounds, and the ROD requirement to prevent future degradation of Reeder Creek, the monitoring well network will consist of six wells, all of which will need to be constructed at the site. New wells are required due to abandonment of 32 historic wells during the OB Grounds remedial action (Weston Solutions, June 2005) and due to the lack of maintenance applied to the three remaining well installations at the OB Grounds. The locations of the six new proposed wells are shown on **Figure 5-1**, and they will be positioned as follows:

6 new wells

- Three wells will be installed on the east side of the OB Grounds, between the former grounds, the location of the buried lead contaminated soil, and Reeder Creek. These wells will be used to monitor the groundwater for possible future impacts to Reeder Creek.
- Two wells will be installed on the west side of the OB Grounds, west of the groundwater divide. These wells will be used to monitor groundwater flowing off the OB Grounds to the west southwest.
- One well will be installed south of the OB Grounds, outside the area that formerly contained contaminated soil. This well will serve as a background well for comparison to the five other wells installed at the site.

These wells will adequately monitor the OB Grounds to assess future degradation of groundwater in the area of the former OB Grounds and potential migration of affected groundwater towards Reeder Creek. Collection of groundwater levels and generation of potentiometric maps will be used to check the direction of groundwater flow and be used to evaluate the need for additional wells should the groundwater flow directions alter from that currently anticipated.

The exact details of the final monitoring well installations will be determined and documented once they are installed, and will be contingent on conditions found at the OB Grounds. However, based on details of the historic monitoring well network previously located at the OB Grounds, it is expected that all new wells placed at the former AOC will be installed in the till with the screen top set at a depth of 4 to 5 feet below grade surface (bgs), with the screen length extending down

into the underlying weathered shale horizon. Setting the top of the screen 4 to 5 feet bgs will allow for the construction of a permanent well installation consisting of a 2 foot thick concrete collar, overlying a 1 - 2 foot thick bentonite seal and a minimum of 1 foot of sand pack above the top of the screen. The screen length at each monitoring well location will be set to maximize coverage across the till and weathered shale horizons, and as such screen lengths may vary from 2 feet to 10 feet in length. All wells in the historic monitoring network at the OB Grounds had screen lengths of 5 feet.

5.3 MONITORING ANALYTE LIST

year one 15 quarterly, annual afte that

The ROD stipulated that groundwater at the OB Grounds is required to contain less than 15 µg/L lead, and the sediment in Reeder Creek found to contain more that 16 mg/Kg copper and 31 mg/Kg lead was to be excavated. The ROD also required that these media be analyzed for metals. In accordance with these requirements, the samples of groundwater from the OB Grounds will be analyzed initially for total lead and total copper. If preliminary results suggest that turbidity is potentially affecting the sample results, groundwater analyses will also include the determination of total and dissolved lead and copper in the samples. The State of New York Contract Required Quantitation Limits for lead and copper are shown in **Table 5-1** below.

5.4 MONITORING FREQUENCY

As is indicated above, all wells proposed for monitoring groundwater at the OB Grounds will be new; therefore, the initial sampling frequency will be once per quarter for at least one year until it can be established that the wells meet or exceed the required concentrations limits, within the acceptable error tolerances specified in **Section 4.2** After collection of this initial data set and the decision regarding whether the wells meet the ROD-specified concentration limits, the Army anticipates that the sampling frequency will be reduced to once per year. After a total of five years of sampling, a decision will be made whether the sampling should be terminated or continued into the next five-year period.

The vegetated, compacted soil cap overlying the lead contaminated soil that has been left at the former OB Grounds site will initially be inspected and documented once per quarter, concurrent to the quarterly groundwater monitoring events. Inspection of the surface will include observations pertinent to the integrity of the soil and indigenous vegetative covering, and the condition of surface water run-off channels, infiltration galleries, and swales. Any identified breach of the vegetated, soil cap or erosion in the run-off and infiltration galleries will be repaired within one month of being noted. After collection of this initial data set and the decision regarding whether the cap is effective in isolating the lead-contaminated soil, the cap inspections will be reduced to an annual basis. After a total of five years of inspections, a decision will be made whether the inspections should be terminated or continued into the next five-year period.

Source 3

FINAL

LONG-TERM MONITORING PLAN FOR OPEN BURNING (OB) GROUNDS SENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK

Site SEAD 23 OB Grounds

Prepared for

U.S. Army, Engineering & Support Center, Huntsville

4820 University Square

Huntsville, AL 35816

and

Seneca Army Depot Activity

5786 State Route 96

PO Box 9

Romulus, New York 14541

Prepared by

PARSONS
150 Federal Street, 4th Floor
Boston, MA 02110-1713

Contract DACA87-02-D-0005, Delivery Order 29
USEPA Site ID: NY0213820830; NY Site ID: 8-50-006

January 2007

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1st year frequency

year 2-30 frequency

The vegetated, compacted soil cap overlying the lead contaminated soil that has been left at the former OB Grounds site will initially be inspected and documented once per quarter, concurrent to the quarterly groundwater monitoring events. Inspection of the surface will include observations pertinent to the integrity of the soil and indigenous vegetative covering, and the condition of surface water run-off channels, infiltration galleries, and swales. Any identified breach of the vegetated, soil cap or erosion in the run-off and infiltration galleries will be repaired within one month of being noted. After collection of this initial data set and the decision regarding whether the cap is effective in isolating the lead-contaminated soil, the cap inspections will be reduced to an annual basis. After a total of five years of inspections, a decision will be made whether the inspections should be terminated or continued into the next five-year period.

UNDER "MARKUP TEMPLATES"

SOURCE 4

Owner Cost

In *RACER*, Owner Cost is the owner's workforce cost to initiate, contract, oversee, direct, implement and closeout the project. Owner costs may include the following categories or items:

- Supervision, Inspection, and Overhead (SIOH);
- Construction management and "Owner's Representative" services,
- Laboratory quality assurance;
- Operations and maintenance manual; and
- Other costs (e.g. technical, real estate, administrative, contracting, accounting, etc.).

The system default percentage for Owner Cost is 11 %. The valid range for the Owner Cost markup factor is 0% to 20%.

Direct Costs
Professional Labor Overhead / G&A
Field Office Overhead / G&A
Prime Contractor Profit
Subcontractor Profit
Contingency
Markup Calculations
Applying Markup Percentages
Adjusting Markups for Each Technology
Creating Custom Markup Templates
Markups Report

CONTRACT SOURCE #5

ORDER FOR SUPPLIES OR SERVICES

PAGE 1 OF 14

1. CONTRACT/PURCH. ORDER/ AGREEMENT NO.	2. DELIVERY ORDER/CALL NO.	3. DATE OF ORDER/CALL (YYYYMMMDD)	4. REQ./PURCH. REQUEST NO.	5. PRIORITY
DACA87-02-D-0005	0036	2007 Aug 22	W31RYO71375791	

6. ISSUED BY CODE W912DY
US ARMY ENGINEERING & SUPPORT CENTER
CEHNC-CT
4820 UNIVERSITY SQUARE
HUNTSVILLE AL 35816-1822

7. ADMINISTERED BY *(if other than 6)* CODE W912DY
CT-P/ACQUISITION SUPPORT TEAM
ATTN: DEMETRA HILL
256-895-1165
HUNTSVILLE AL

8. DELIVERY FOB
[X] DESTINATION
[ ] OTHER
(See Schedule if other)

9. CONTRACTOR CODE 1BVK6 FACILITY
NAME AND ADDRESS
PARSONS INFRASTRUCTURE & TECHNOLOGY GROU
CHARLES TERHUNE
100 W WALNUT STREET
PASADENA CA 91124

10. DELIVER TO FOB POINT BY (Date) *(YYYYMMMDD)*
SEE SCHEDULE

11. MARK IF BUSINESS IS
[ ] SMALL
[ ] SMALL DISADVANTAGED
[ ] WOMEN-OWNED

12. DISCOUNT TERMS

13. MAIL INVOICES TO THE ADDRESS IN BLOCK
See Item 15

14. SHIP TO CODE W912DY
US ARMY ENGINEERING & SUPPORT CENTER
NO CONTACT SPECIFIED
CEHNC-CT
4820 UNIVERSITY SQUARE
HUNTSVILLE AL 35816-1822

15. PAYMENT WILL BE MADE BY CODE 964145
US ARMY ENG & SUP CENTER - FINANCE OFFIC
US ARMY CORPS OF ENGRS FINANCE CTR
5722 INTEGRITY DRIVE
MILLINGTON TN 38054-5005

MARK ALL PACKAGES AND PAPERS WITH IDENTIFICATION NUMBERS IN BLOCKS 1 AND 2.

16. TYPE OF ORDER			
	DELIVERY/CALL	X	This delivery order/call is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.
	PURCHASE		Reference your quote dated Furnish the following on terms specified herein. REF:

ACCEPTANCE. THE CONTRACTOR HEREBY ACCEPTS THE OFFER REPRESENTED BY THE NUMBERED PURCHASE ORDER AS IT MAY PREVIOUSLY HAVE BEEN OR IS NOW MODIFIED, SUBJECT TO ALL OF THE TERMS AND CONDITIONS SET FORTH, AND AGREES TO PERFORM THE SAME.

NAME OF CONTRACTOR | SIGNATURE | TYPED NAME AND TITLE | DATE SIGNED (YYYYMMMDD)

[X] If this box is marked, supplier must sign Acceptance and return the following number of copies: 1

17. ACCOUNTING AND APPROPRIATION DATA/ LOCAL USE
See Schedule

18. ITEM NO.	19. SCHEDULE OF SUPPLIES/ SERVICES	20. QUANTITY ORDERED/ ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT
	SEE SCHEDULE				

* *If quantity accepted by the Government is same as quantity ordered, indicate by X. If different, enter actual quantity accepted below quantity ordered and encircle.*

24. UNITED STATES OF AMERICA
TEL: 256-895-1163
EMAIL: K
BY: KATHERINE H. ATKINS katherine.h.atkins@hnd01.usace.army.mil
Katherine H. Atkins
CONTRACTING / ORDERING OFFICER

25. TOTAL $116,181.00
26. DIFFERENCES

27a. QUANTITY IN COLUMN 20 HAS BEEN
[ ] INSPECTED [ ] RECEIVED [ ] ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED

b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE | c. DATE (YYYYMMMDD) | d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE

e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE

f. TELEPHONE NUMBER | g. E-MAIL ADDRESS

28. SHIP NO. | 29. DO VOUCHER NO. | 30. INITIALS

[ ] PARTIAL [ ] FINAL

32. PAID BY

33. AMOUNT VERIFIED CORRECT FOR

36. I certify this account is correct and proper for payment.
a. DATE (YYYYMMMDD) | b. SIGNATURE AND TITLE OF CERTIFYING OFFICER

31. PAYMENT
[ ] COMPLETE [ ] PARTIAL [ ] FINAL

34. CHECK NUMBER

35. BILL OF LADING NO.

37. RECEIVED AT	38. RECEIVED BY	39. DATE RECEIVED (YYYYMMMDD)	40. TOTAL CONTAINERS	41. S/R ACCOUNT NO	42. S/R VOUCHER NO.

Section B - Supplies or Services and Prices

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY	UNIT	UNIT PRICE	MAX AMOUNT
0001		UNDEFINED	Dollars, U.S.	UNDEFINED	UNDEFINED

SENECA ARMY DEPOT

CPFF

CONTRACTOR SHALL PROVIDE SERVICES IN ACCORDANCE WITH THE ATTACHED STATEMENT OF WORK, ENTITLED, "IMPLEMENTATION OF THE LONG-TERM MANAGEMENT PLAN FOR THE OPEN BURNING (OB) GROUNDS AND FIRE TRAINING AREAS, SENECA ARMY DEPOT ACTIVITY, ROMULUS, NEW YORK, AND ADDENDUM, FUNDING OPTIONS SUMMARY, DATED 8 MARCH 2007".

CONTRACTOR SHALL PROVIDE SERVICES FOR OPTION 1. TASK 3.1 LONG TERM MONITORING AT THE OB GROUNDS AND TASK 3.2 LONG TERM MONITORING AT THE FIRE TRAINING AREAS IN ACCORDANCE WITH THE ATTACHED ADDENDUM, FUNDING OPTIONS SUMMARY. OPTION 1 IS FUNDED AT $109,993.00 (COST) PLUS $6,188.00 (FEE) FOR A TOTAL AMOUNT OF $116,181.

THE PERIOD OF PERFORMANCE FOR THIS TASK ORDER IS 31 JULY 2007.

FOB: Destination

MILSTRIP: W31RYO71375791

PURCHASE REQUEST NUMBER: W31RYO71375791

MAX COST	$109,993.00
FIXED FEE	$6,188.00
TOTAL MAX COST + FEE	$116,181.00

ACRN AA $116,181.00

CIN: W31RYO713757910001

Section C - Descriptions and Specifications

SOW

ADDENDUM

IMPLEMENTATION OF THE LONG-TERM MANAGEMENT PLANFOR THE OPEN BURNING (OB) GROUNDS AND FIRE TRAINING AREASSENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK

FUNDING OPTIONS SUMMARY

OPTION 1

3.1 Long Term Monitoring at the OB Grounds
- 3.1.1 (Task 1) Vegetative Cap and Drainage Swale Inspections.....$2,729
- 3.1.2 (Task 2) Perform Monitoring Well Installation.....$24,864
- 3.1.3 Quarterly Groundwater Monitoring
  - 3.1.3.1 (Task 3) Initial Quarterly Groundwater Monitoring Event.$16,908
    - 3.1.3.1.1 (Task 3.1) Water Level Monitoring
    - 3.1.3.1.2 (Task 3.2) Water Quality Monitoring
    - 3.1.3.1.3 (Task 3.3) Preparation of Quarterly Reports

Well INSTALLATION cost FY 07

3.2 Long Term Monitoring at the Fire Training Areas
- 3.2.1 Quarterly Groundwater Monitoring
  - 3.2.1.1 (Task 7) Initial Quarterly Groundwater Monitoring Event...$23,474
    - 3.2.1.1.1 (Task 7.1) Water Level Monitoring
    - 3.2.1.1.2 (Task 7.2) Water Quality Monitoring
    - 3.2.1.1.3 (Task 7.3) Preparation of Quarterly Reports

3.4 (Task 12) PROJECT MANAGEMENT.....$48,206

OPTION 1 TOTAL	$116,181

OPTION 2

Long Term Monitoring at the OB Grounds

3.1.3.2 (Task 4.0) Second Quarterly Groundwater Monitoring Event.....$16,908
- 3.1.3.2.1 (Task 4.1) Water Level Monitoring
- 3.1.3.2.2 (Task 4.2) Water Quality Monitoring
- 3.1.3.2.3 (Task 4.3) Preparation of Quarterly Reports

Long Term Monitoring at the Fire Training Areas

3.2.1.2 (Task 8.0) Second Quarterly Groundwater Monitoring Event.....$23,474
- 3.2.1.2.1 (Task 8.1) Water Level Monitoring
- 3.2.1.2.2 (Task 8.2) Water Quality Monitoring
- 3.2.1.2.3 (Task 8.3) Preparation of Quarterly Reports

OPTION 2 TOTAL	$40,382

OPTION 3

$24,864 COST FY 07
1.0498 ESCALATION
$26,102 FY 2010 COST

RFP
OB Grounds

Client: U.S. Army Corps of Engineers

Contract : RFP W912DY-08-D-0003, Task Order 0008

Project: Long-Term Monitoring OB Grounds and FTA
Annual LUC Evaluations
Abandonment of Monitoring Wells

Parsons
Base Year Tasks 1 - 11
Summary Sheet
Supporting Data Format

Printed: 12-Jan-10

TASK		AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Base Year	Task 1 - Long -Term Monitoring OBG (Yr2)	$ 33,363.41	$ 200.00	$ 33,163.41	$ 1,995.80	$ 29.80	$ 35,389.01
Base Year	Task 2 - Long-Term Monitoring FTA (Yr3)	$ 70,086.17	$ 6,114.00	$ 63,972.17	$ 4,021.75	$ 56.55	$ 74,164.47
Base Year	Task 3 - Monitoring of Land Use Controls (Yr 1)	$ 55,817.56	$ -	$ 55,817.56	$ 3,349.05	$ 57.64	$ 59,224.25
Base Year	Task 4 - Well Abandonment S 5, 59, 71	$ 26,739.70	$ 8,773.69	$ 17,966.01	$ 1,341.17	$ 14.23	$ 28,095.11
Base Year	Task 5 - Well Abandonment , S12, 48, 63	$ 101,610.87	$ 33,340.04	$ 68,270.83	$ 5,096.45	$ 54.09	$ 106,761.41
Base Year	Task 6 - Well Abandonment, S121C, 122B, 70	$ 21,391.76	$ 7,018.96	$ 14,372.81	$ 1,072.94	$ 11.39	$ 22,476.09
Base Year	Task 7 - Well Abandonment, S25, s6	$ 32,087.64	$ 10,528.43	$ 21,559.21	$ 1,609.41	$ 17.08	$ 33,714.13
Base Year	Task 8, Well Abandonment, S24, 67	$ 10,695.88	$ 3,509.48	$ 7,186.40	$ 536.47	$ 5.69	$ 11,238.04
Base Year	Task 9 - Well Abandonment, S3, 6, 8, 14, 15	$ 66,849.26	$ 21,934.24	$ 44,915.02	$ 3,352.93	$ 35.58	$ 70,237.77
Base Year	Task 10 - Well Abandonment, S 119B	$ 5,347.94	$ 1,754.74	$ 3,593.20	$ 268.23	$ 2.85	$ 5,619.02
Base Year	Task 11 - Well Abandonment, S27	$ 2,673.97	$ 877.37	$ 1,796.60	$ 134.12	$ 1.42	$ 2,809.51
				$ -			
TOTAL		$ 426,664.16	$ 94,050.94	$ 332,613.22	$ 22,778.32	$286.33	
PROJECT TOTAL							$ 449,728.80

OB Cost

Source #

DEPARTMENT OF THE ARMY
ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
4820 University Square
HUNTSVILLE, AL 35816

December 21, 2009

Contract Task Order request

REPLY TO ATTENTION OF

SUBJECT: Request for Proposal for Contract **W912DY-08-D-0003**, New Task Order (0008), Implementation of The Long-Term Monitoring Plan for The Open Burning (OB) Grounds And Fire Training Areas, Annual Land Use Control (LUC) Evaluation, and Abandonment Of Existing Monitoring Wells At Various Sites, Seneca Army Depot Activity Romulus, New York

Mr. Jeff Adams
Parsons Infastructure & Technology Group
150 Federal Street, 4th Floor
Boston, MA 02110-1713

Dear Mr. Adams:

Please submit a firm fixed price proposal for the subject requirement in accordance with the attached Performance Work Statement (PWS), dated 4 December 2009.

Your firm's priced proposal must be submitted in writing and shall include but not be limited to the following: 1) All the labor categories, number of labor hours and labor hour rates, 2) Any Other Direct Costs that may be associated with this Task Order.

It is requested that your proposal be received by this office, no later than 2:00 p.m., local time, on December 28, 2009. This Request for Proposal (RFP) does not in any manner imply or authorize your firm to begin any actions listed or referenced in the PWS. The point of contact for this action is Laura Stiegler, Contract Specialist, (256) 895-1171; Email: Laura.M.Stiegler@usace.army.mil

Sincerely,

/s/
Van E. Pinion
Contracting Officer

Source #7

WorkPlan

Legacy BRAC FY10 Work Plan

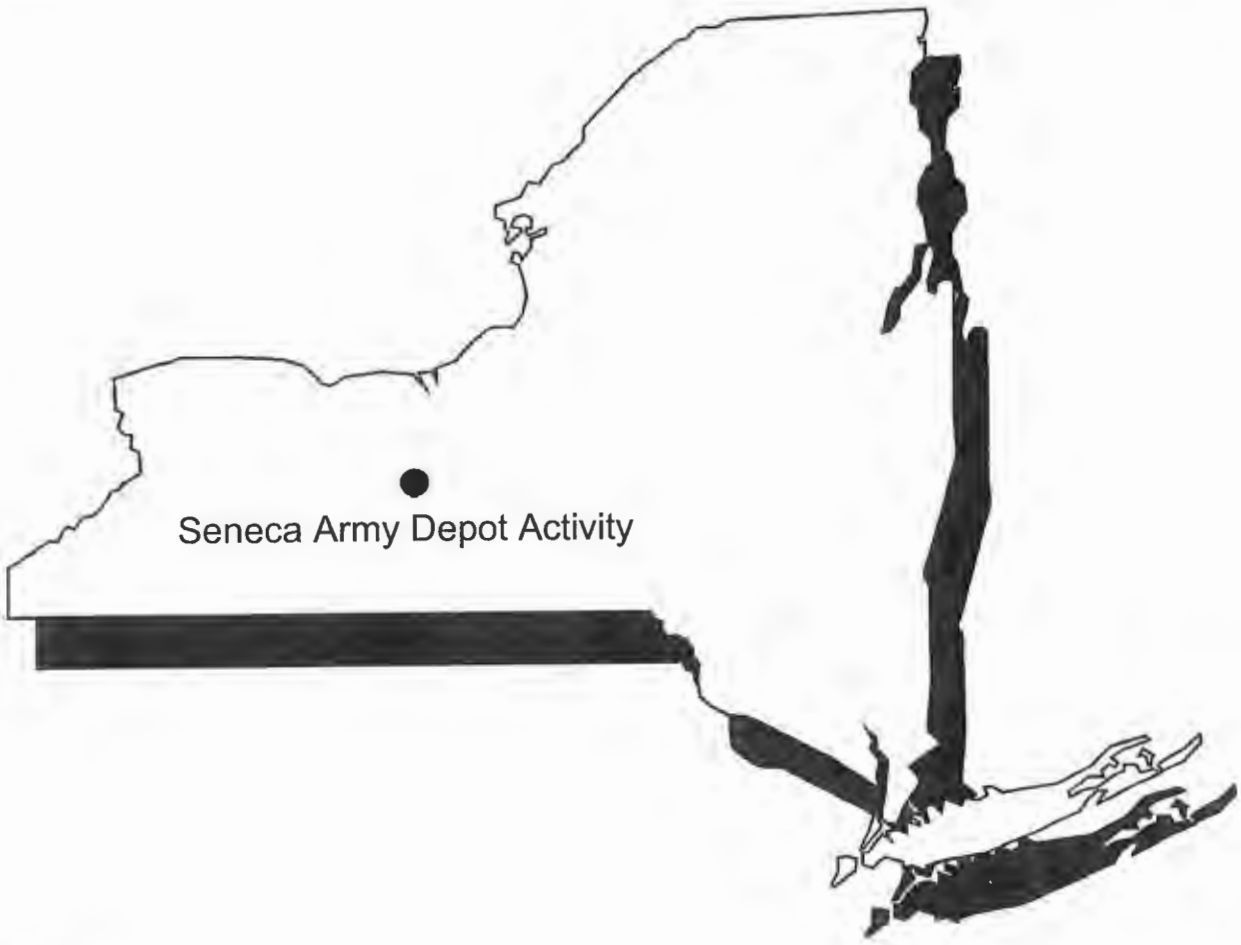
alla Prg	Site	Description	Phase ID	Award Date	AMSCO	Executing Agency	Total Req (K$)	2010*	2011*	2012*	2013*	2014*	2015*
SE MR	SEAD-001-R-01	DEACTIVATION FURNACES	LTM		61366R30	CENAN	420			15	19	12	12
SE MR	SEAD-002-R-01	EAST EOD RANGES	RI/FS										
SE MR	SEAD-002-R-01	EAST EOD RANGES	LTM		61366R01	CENAN	26		2		2		2
SE MR	SEAD-002-R-01	EAST EOD RANGES	IRA										
SE MR	SEAD-003-R-01	EOD RANGE 1	RI/FS										
SE MR	SEAD-003-R-01	EOD RANGE 1	LTM		61366R01	CENAN	104					2	
SE MR	SEAD-003-R-01	EOD RANGE 1	RA(C)		61366R01	CENAN	477		477				
SE MR	SEAD-003-R-01	EOD RANGE 1	RD		61366R01	CENAN	39		39				
SE IR	SEAD-004	MUNITIONS WASHOUT FACILITY LEACH FIEL	LTM		61366R31	CENAN	91				91		
SE IR	SEAD-004	MUNITIONS WASHOUT FACILITY LEACH FIEL	RA(C)										
SE IR	SEAD-005	SEWAGE SLUDGE WASTE PILES	LTM		61366R41	CENAN	61		61				
SE IR	SEAD-005	SEWAGE SLUDGE WASTE PILES	RI/FS										
SE IR	SEAD-006	ASH LANDFILL (SEAD-3,6,8,14,15)	LTM		61360006	CENAN	521						
SE IR	SEAD-006	ASH LANDFILL (SEAD-3,6,8,14,15)	RA(O)	Nov-09	61360006	CENAN	2,972	216	216	263	221	218	216
SE MR	SEAD-006-R-01	OPEN BURN/OPEN DETONATION GROUNDS	IRA	Mar-10	6M360006	CENAN	17,465	17,458	4,327	4,514	1,066		
SE MR	SEAD-006-R-01	OPEN BURN/OPEN DETONATION GROUNDS	RI/FS	Nov-09	6M360006	CENAN	296	80	136	80			
SE MR	SEAD-006-R-01	OPEN BURN/OPEN DETONATION GROUNDS	LTM		6M360006		2,990				146	135	137
SE MR	SEAD-007-R-01	RIFLE GRENADE RANGE	LTM	Mar-10	6M360007	CENAN	26	2	2	2	2	2	
SE MR	SEAD-007-R-01	RIFLE GRENADE RANGE	RI/FS		6M360007								
SE IR	SEAD-009	MULT NFA SITES (OLD SCRAP WD PILE)	LTM	Nov-09	61360009	CENAN	802	18	18	51	19	18	18
SE IR	SEAD-011	OLD CONSTRUCTION DEBRIS LANDFILL	RI/FS										
SE IR	SEAD-012	RADIOACTIVE BURIAL SITES (3)	RI/FS		61360012								
SE IR	SEAD-012	RADIOACTIVE BURIAL SITES (3)	LTM		61360012		207		15	8	8	77	3
SE IR	SEAD-012	RADIOACTIVE BURIAL SITES (3)	RA(C)	Oct-09	61360012	CENAN	708	708					
SE IR	SEAD-013	IRFNA DISPOSAL SITE (6)	LTM										
SE IR	SEAD-024	ABANDONED POWDER BURNING PIT	LTM	Oct-09	61360024	CENAN	69	66	3				
SE IR	SEAD-024	ABANDONED POWDER BURNING PIT	RI/FS		61360024								
SE IR	SEAD-025	FIRE TRAINING AND DEMO PAD	LTM	Nov-09	61360025	CENAN	1,160	75	75	104	75	75	75
SE IR	SEAD-048	PITCHBLEND STORAGE AREAS	RI/FS										
SE IR	SEAD-059	FILL AREA WEST 135	RI/FS		61360059								
SE IR	SEAD-059	FILL AREA WEST 135	LTM	Oct-09	61360059	CENAN	589	84	18	17	17	17	21
SE IR	SEAD-121	EBS SITES- INDUSTRIAL AREA	RI/FS										
							29,023	18,707	5,387	5,054	1,664	556	484
		President's Budget						133,408	68754	66613	61653	66974	72756
		Collection from Other Services - EPA						0					
		Total TOA Available						133,408					

FUNDED

Source # 8

US Army, Engineering & Support Center
Huntsville, AL

Seneca Army Depot Activity
Romulus, NY



FINAL

ANNUAL REPORT AND ONE-YEAR REVIEW

FOR THE OPEN BURNING GROUNDS
SENECA ARMY DEPOT ACTIVITY

Contract No. DACA87-02-D-0005
Delivery Order No. 0036
EPA Site ID# NY0213820830
NY Site ID# 8-50-006

PARSONS

October 2009

6.0 LONG-TERM MONITORING CONCLUSIONS AND RECOMMENDATIONS

Based on the results of Year 1 LTM at the OB Grounds, the following conclusions have been reached:

- Residual lead and copper concentrations remaining in the soils have not impacted groundwater at, or in the immediate vicinity of, the site;
- The integrity of the vegetated soil cap overlying interred contaminated soils at the site was generally intact and there was minimal evidence that terrestrial wildlife are exposed to the contaminated soils below the 9-inch cap at this time. One small mouse hole was noted, and repaired. The washout areas noted during in cells I8, J6, and L8 in May 2008 were repaired and the existing soil cap in these locations was restored to its original condition;
- The Army will continue to monitor cap erosion, and note any instance of cap erosion or exposed native soil;
- Based on the groundwater data and the cap inspection, there is no evidence to suggest that the OB Grounds may be contributing to the degradation of sediment quality in Reeder Creek.
- Sediment deposition in Reeder Creek adjacent to the OB Grounds was not noted during the April 2009 inspection; and,
- 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.

Frequency Change

Based on the result of the LTM events conducted at the OB Grounds, the Army recommends changing the monitoring frequency from once per quarter to once per year. As is presented and summarized above, available monitoring data shows no evidence of lead or copper in the groundwater subsequent to the completion of the remedial action for the site. These findings are consistent with the groundwater sample results obtained during the remedial investigation stage (1990s) of work at the site, indicating that there is no evidence of groundwater quality deterioration over the past 15 years. Further, the quarterly inspections of the soil cap have shown minimal evidence of erosion or animal breaching of the protective soil cover. Additionally, the examination of spillways connecting the OB Grounds to Reeder Creek indicate that measures performed to eliminate overland surface water flow 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 inspections of Reeder Creek indicate that the bedrock that underlies the watercourse adjacent to the OB Grounds continues to be scoured by the perennial flow within the creek. There is no current 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.

Results of the next year's monitoring efforts at the OB Grounds will be evaluated after the second year of LTM, and recommendations of necessary changes to the frequency of monitoring will be made at that time.

7.0 REFERENCES

Final Remedial Investigation Report at the Open Burning (OB) Grounds, Seneca Army Depot Activity, 3 Volumes, Parsons 1994.

Final Record of Decision, Open Burning (OB) Grounds, Seneca Army Depot Activity, Parsons 1999.

Final Long-Term Monitoring Plan for the Open Burning (OB) Grounds, Parsons 2007.

Site WBS Report
(with Markups)

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-006-R-01 ODG
Project Name: SEAD-006-R-01 Open Detonation Grounds
Project Category: Planned Industrial Area

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

SEAD-006-R-01 RCRA Closure of the OB/OD Grounds (alias SEAD-115)

The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the cost of the Groundwater Monitoring and Site Closeout Documentation costs.

Site: SEAD-006-R-01 RCRA Closure of the OB/OD Grounds (alias SEAD-115)

Source:
1. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
2. Final Record of Decision Former Open Burning Grounds Site, January 1999
3. Professional judgment based on site knowledge.

Site WBS Report
(with Markups)

RACER Assumptions:

Site Closeout Documentation (LTM):
1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years

Well abandonment (LTM):
1. Number of wells: 12
2. Depth of wells: 15 ft
3. Diameter of wells: 2"
4. Unconsolidated
5. Overdrill/removal

Five-Year Review (LTM)
1. 2 review cycles
2. Review period begins October 2006 with the first review in 2011
3. Moderate complexity
4. Tasks include Document Review, Interviews and Site Inspections
5. Report for Five Year Review to include all default parameters
6. Included UXO review.

Site WBS Report
(with Markups)

Site:

Site ID: SEAD-006-R-01
Site Name: Open Detonation Grounds
Site Type: None

Media/Waste Type
Primary: Groundwater
Secondary: Sediment/Sludge

Contaminant
Primary: Metals
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: RCRA Closure of OB/OD Grounds and OB Grounds (SEAD-23) are combined. The OBOD Grounds is an AOC that the Army used to demilitarize old, obsolete, or off spec ammunition and explosives. This was a RCRA permitted facility. The cleanup strategy included the removal of all munitions potentially posing an explosive hazard. Groundwater will require annual testing until it meets cleanup criteria.

Site closeout documentation OB/OD- Includes UXO site visits. Five year reviews included one for SEAD 23 in 2011, and two Five Year Reviews in outyears 2016,2021 for combined SEAD 23 and SEAD 006-R-01.

Support Team: Stephen M. Absolom - SEDA BEC
Randy Battaglia - US Army Corps of Engineers, Project Manager

References:
1. Concept Plan, Ordnance and Explosives for A RCRA Closure of the OB/OD Grounds at Seneca Army Depot Activity, Sept. 2002
2. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
3. Draft RCRA Closure Plan Open Burn Tray in SWMU Unit -23 (SEAD-23, OB Grounds), December 2004
4 Professional judgment based on site knowledge.

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District

Site WBS Report
(with Markups)

Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil

Estimate Prepared Date: 02/08/2010

Estimator Signature: **Date:**

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96 Romulus NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil

Date Reviewed: 02/08/2010

Reviewer Signature: **Date:**

Site WBS Report
(with Markups)

Phase Element:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM Well Abandonment, Closeout, 5YR Rev
Description: Site closeout documentation OB/OD- Includes UXO site visits. Five year reviews included one for SEAD 23 in 2011, and two Five Year Reviews in outyears 2016,2021 for combined SEAD 23 and SEAD 006-R-01.

Start Date: December, 2012
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate

Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0
Five-Year Review	Yes	100	0

Site WBS Report
(with Markups)

HTRW RA WBS			Marked Up Costs
331	HTRW REMEDIAL ACTION (CONSTRUCTION)		
331.20	SITE RESTORATION		
331.20.90	Other	Five-Year Review	$139,001
	Other	Site Close-Out Documentation	$53,824
331.20.90	Other	Well Abandonment	$29,807
			$222,633
		Total:	$222,633
		HTRW RA WBS Total:	$222,633
		Total:	**$222,633**

Estimate Documentation Report

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-006-R-01 ODG
Project Name: SEAD-006-R-01 Open Detonation Grounds
Project Category: Planned Industrial Area

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

SEAD-006-R-01 RCRA Closure of the OB/OD Grounds (alias SEAD-115)

The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the cost of the Groundwater Monitoring and Site Closeout Documentation costs.

Site: SEAD-006-R-01 RCRA Closure of the OB/OD Grounds (alias SEAD-115)

Source:
1. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
2. Final Record of Decision Former Open Burning Grounds Site, January 1999
3. Professional judgment based on site knowledge.

Estimate Documentation Report

RACER Assumptions:

Site Closeout Documentation (LTM):
1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years

Well abandonment (LTM):
1. Number of wells: 12
2. Depth of wells: 15 ft
3. Diameter of wells: 2"
4. Unconsolidated
5. Overdrill/removal

Five-Year Review (LTM)
1. 2 review cycles
2. Review period begins October 2006 with the first review in 2011
3. Moderate complexity
4. Tasks include Document Review, Interviews and Site Inspections
5. Report for Five Year Review to include all default parameters
6. Included UXO review.

Estimate Documentation Report

Site Documentation:

Site ID: SEAD-006-R-01
Site Name: Open Detonation Grounds
Site Type: None

Media/Waste Type
Primary: Groundwater
Secondary: Sediment/Sludge

Contaminant
Primary: Metals
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: RCRA Closure of OB/OD Grounds and OB Grounds (SEAD-23) are combined. The OBOD Grounds is an AOC that the Army used to demilitarize old, obsolete, or off spec ammunition and explosives. This was a RCRA permitted facility. The cleanup strategy included the removal of all munitions potentially posing an explosive hazard. Groundwater will require annual testing until it meets cleanup criteria.

Site closeout documentation OB/OD- Includes UXO site visits. Five year reviews included one for SEAD 23 in 2011, and two Five Year Reviews in outyears 2016,2021 for combined SEAD 23 and SEAD 006-R-01.

Support Team: Stephen M. Absolom - SEDA BEC
Randy Battaglia - US Army Corps of Engineers, Project Manager

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2. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
3. Draft RCRA Closure Plan Open Burn Tray in SWMU Unit -23 (SEAD-23, OB Grounds), December 2004
4 Professional judgment based on site knowledge.

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District

Estimate Documentation Report

Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil

Estimate Prepared Date: 02/08/2010

Estimator Signature: **Date:**

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96 Romulus NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil
Date Reviewed: 02/08/2010

Reviewer Signature: **Date:**

Estimated Costs:

Phase Element Names		Direct Cost	Marked-up Cost
LTM Well Abandonment, Closeout, 5YR Rev		$94,857	$222,633
	Total Cost:	$94,857	$222,633

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM Well Abandonment, Closeout, 5YR Rev
Description: Site closeout documentation OB/OD- Includes UXO site visits. Five year reviews included one for SEAD 23 in 2011, and two Five Year Reviews in outyears 2016,2021 for combined SEAD 23 and SEAD 006-R-01.

Start Date: December, 2012
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate

Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0
Five-Year Review	Yes	100	0

Total Marked-up Cost: $222,633

Technologies:

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Meetings		Yes	n/a
Work Plans and Reports		Yes	n/a
Documents		Yes	n/a
Site Close-Out Complexity		Moderate	n/a
Meetings			
Required Parameters			
Kick Off/Scoping Meetings		Yes	n/a
Kick Off/Scoping Meetings: Number of Meetings	1	1	EA
Kick Off/Scoping Meetings: Travel		No	n/a
Review Meetings		Yes	n/a
Review Meetings: Number of Meetings	1	1	EA
Review Meetings: Travel		No	n/a
Regulatory Review Meetings		Yes	n/a
Regulatory Review Meetings: Number of Meetings	1	1	EA
Regulatory Review Meetings: Travel		No	n/a
Work Plans & Reports			
Required Parameters			
Work Plans		Yes	n/a
Draft Work Plan		Yes	n/a
Final Work Plan		Yes	n/a
Reports		Yes	n/a
Draft Close-Out Report		Yes	n/a
Draft Final Close-Out Report		Yes	n/a
Final Close-Out Report		Yes	n/a
Progress Reports		Yes	n/a
Project Duration	10	10	months
Documents			
Required Parameters			
Draft Decision Document		Yes	n/a
Draft Final Decision Document		Yes	n/a
Final Decision Document		Yes	n/a

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
Documents			
Required Parameters			
Long Term Document Storage		Yes	n/a
Number of Boxes		6	EA
Duration of Storage		30	Yrs

Comments:

Technology Name: **Well Abandonment (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Safety Level		D	n/a
Abandon Wells			
Required Parameters			
Technology/Group Name		Well Group ODG	n/a
Number of Wells		8	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Unconsolidated	n/a
Technology/Group Name		Well Group OBG	n/a
Number of Wells		6	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Unconsolidated	n/a

Comments: Two additional wells need to be abandoned. 12 wells total to be abandoned.

Estimate Documentation Report

Technology Name: **Five-Year Review (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Site Complexity		Moderate	n/a
Document Review		Yes	n/a
Interviews		Yes	n/a
Site Inspection		Yes	n/a
Report		Yes	n/a
Travel		Yes	n/a
Rebound Study		No	n/a
Start Date		June-2022	n/a
No. Reviews		3	EA
Document Review			
Required Parameters			
5-Year Review Check List		Yes	n/a
Record of Decision		Yes	n/a
Remedial Action Design & Construction		Yes	n/a
Close-Out Report		Yes	n/a
Operations & Maintenance Manuals & Reports		Yes	n/a
Consent Decree or Settlement Records		Yes	n/a
Groundwater Monitoring & Reports		Yes	n/a
Remedial Action Required		Yes	n/a
Previous 5-Year Review Reports		Yes	n/a
Interviews			
Required Parameters			
Current and Previous Staff Management		Yes	n/a
Community Groups		Yes	n/a
State Contacts		Yes	n/a
Local Government Contacts		Yes	n/a
Operations & Maintenance Contractors		Yes	n/a
PRPs		Yes	n/a
Remedial Design Consultant		Yes	n/a
Site Inspection			
Required Parameters			

Estimate Documentation Report

Technology Name: **Five-Year Review (# 1)**

Description	*Default*	*Value*	*UOM*
Site Inspection			
Required Parameters			
General Site Inspection		Yes	n/a
Containment System Inspection		Yes	n/a
Monitoring Systems Inspection		Yes	n/a
Treatment Systems Inspection		Yes	n/a
Regulatory Compliance		Yes	n/a
Site Visit Documentation (Photos, Diagrams, etc.)		Yes	n/a
Report			
Required Parameters			
Introduction		Yes	n/a
Remedial Objectives		Yes	n/a
ARARs Review		Yes	n/a
Summary of Site Visit		Yes	n/a
Areas of Non Compliance		Yes	n/a
Technology Recommendations		Yes	n/a
Statement of Protectiveness		Yes	n/a
Next Review		Yes	n/a
Implementation Requirements		Yes	n/a
Travel			
Required Parameters			
Number of Travelers		2	EA
Number of Days		5	EA
Air Fare Ticket Price		1,000	$
Need a rental car?		Yes	n/a

Comments:

Conceptual Plan

Ordnance and Explosives for a RCRA Closure of the Open Burning and Open Detonation (OB/OD) Grounds,

Seneca Army Depot Activity

Romulus, New York

September, 2002

Submitted by
Seneca Army Depot Activity

CONTENTS

1. Introduction

This plan is submitted to gain conceptual approval for the placement of a Resource Conservation and Recovery Act (RCRA) cap in the Open Burn/Open Detonation (OB/OD) area at Seneca Army Depot Activity (SEDA). An overall site map showing the general location of the OB/OD grounds is provided as Figure 1. Both New York State and EPA Remedial Project Managers defer Ordnance and Explosives/Unexploded Ordnance (OE/UXO) requirements to the Department of Defense (DoD). If this concept is approved, the Army will submit a standard Explosives Safety Submission (ESS), providing the normally required level of detail to the Department of Defense Explosives Safety Board (DDESB) for approval.

As part of this closure process, a large disposal pile resulting from previous response actions in the OB area will be consolidated and contained beneath the proposed RCRA Cap. The overall closure approach is to level this pile on the OD area where clearance of potential OE is costly and a four-foot thick RCRA cap is the proposed remedy. The large quantity of range residue, demil residue, fragments, and non-OE scrap metal at the OD grounds likely creates a situation where capping, and not removal, is the proposed remedy. The remainder of the OB/OD area will have anomalies investigated and removed to depth such that at the end of the project the area can be certified for surface recreation. This general concept is presented in Figure 2. The essence of this proposed remedy is that a 4-foot cap of clean fill is the equivalent of clearance to 4 feet, which is the default clearance depth to allow unrestricted surface recreation (Chapter 12 of DoD 6055.9 STD, July 1999).

This preliminary determination is requested so that SEDA can begin planning and interfacing with the regulators and the community with a high degree of confidence that the proposed approach is conceptually acceptable internally within the DoD

2. Facility Background

SEDA is a 10,600-acre US Army facility located in Seneca County, New York, Figure 1. It is bounded on the west by State Route 96A and on the east by State Route 96. The cities of Geneva and Rochester are located to the northwest (14 and 50 miles, respectively); Syracuse is 53 miles to the northeast and Ithaca is 31 miles to the south. The surrounding area is generally used for farming.

Open detonation/open burning operations have been conducted from the early 1940s until recently in the munitions destruction area (90 acres) in the northwest portion of the installation. The OD grounds occupy an area of approximately 60 acres within the northern portion of this site and the OB grounds cover an adjacent 30 acres.

At the OB/OD grounds a variety of rounds were demilitarized and there is no Chemical Warfare Materials (CWM) known or suspected at this site.

SEDA currently has an interim RCRA Part B permit for the operation of the OB/OD areas. This area must be closed in accordance with RCRA closure requirements and comply with CERCLA for releases of hazardous substances (primarily metals). However, even though this capping proposal must satisfy environmental regulators, environmental issues are not part of this explosives safety conceptual submission.

SEDA was included on the 1995 Base Realignment and Closure List and is due to be closed. The Seneca County Industrial Development Agency (IDA) has prepared a reuse report entitled "Seneca Army Depot Reuse Plan and Implementation Strategy". In accordance with this plan the majority of the installation will be used for housing developments, industrial development, institutional and conservation/recreation uses upon transfer. The proposed reuse is shown on Figure 1. The OB/OD grounds fall within the area designated for "Conservation/Recreation" and will be included in the transfer of property to the IDA. The intended uses, which fall within the definition of "Conservation/Recreation", are wildlife habitation, wildlife viewing, hiking/walking and picnicking. Although there is currently no plan for establishing camping facilities, the IDA does not wish to restrict such a possibility in the future. Therefore, this Conceptual Plan is based on the conservative assumption that the clearance depth to be used will be based upon the Public Access scenario (e.g. surface recreation/farming, see Chapter 12 of DoD 6055.9 STD, July 1999).

3. **Work Completed to Date**

The remediation of soils contaminated with metals and OE at the OB grounds (an approximately 30 acre area) is in the process of being completed in accordance with the Record of Decision (ROD), February 1999 and the ESS (including modifications) for OE clearance in the OB area only. Because the heavy concentration of metallic debris rendered detectors ineffective, the top layer of soil was removed and sifted to remove OE and oversize material. OE materials and debris were also separated from metals contaminated soils prior to treatment and/or disposal. This resulted in a large pile of debris containing OE. The separated material contained large amounts of rocks, roots, soil clods, scrap metal and OE, and because it could not readily be certified as non-OE, various methods were attempted to further segregate out the OE material. Due to operational constraints for handling OE, these attempts were not completely efficient and proved to be labor intensive and costly. The large pile of debris (approximately 15,666 cubic yards) containing OE from this operation still exists on the adjacent OD area. It is estimated that 5% of this remaining pile is OE and OE related scrap (OES) and other ferrous scrap.

The separation attempts included processing by mechanical screening a minimum of three times. A small portion was also separated by magnet, which proved to be more efficient than other methods for removing the majority of ferromagnetic materials. During this process, the material was repeatedly moved from various staging areas by bucket loaders and conveyors and has been subjected to material handling equipment buckets, tracks and tires as part of the attempts to segregate the OE material. While

improvements in separation and handling were achieved over time during the clearance of the OB grounds, for the debris pile it may be more cost effective to use the alternate approach of consolidation and capping at the OD grounds than is now being proposed (see Section 4 – cost evaluation).

After the initial removal of OE materials from the OB grounds, the entire area (30 acres) was then subjected to geophysical survey and the anomalies that were discovered were flagged. SEDA has just recently completed the investigation and removal of all anomalies to a depth of at least two feet. Initial indications are that based on the type and depth of anomalies being found that clearance of the entire 30 acres to a depth of 4 feet has been accomplished.

An initial survey for OE has been performed at the OD grounds as part of the Ordnance and Explosive Engineering Evaluation and Cost Analysis (May 2000, Parsons Engineering Science, Inc.). An Expanded Site Inspection (ESI) was performed in 1995 to evaluate potential releases of hazardous substances at the OD grounds.

4. Cost Analysis

Alternatives for the handling of the oversized material were evaluated in the "Seneca Validation Report for Mt. Molle Disposal Pile", June 14, 2002. The report focused on the handling of this material separately from the actions at the OD grounds. However since these two areas are an integrated Solid Waste management Unit (SWMU) and overall cost efficiencies can be obtained by handling the oversized material with the OD grounds closure, new alternatives are now being considered. Two alternatives for addressing the oversized material and the OD closure together are summarized below and costs presented for each.

> Alternative 1. Segregate OE materials from oversize pile and dispose according to current procedures. Clear the approximately 76 acres of the central area of the OD area using methods refined during OB grounds clearance. Clearance will be performed such that future use of the area can be unrestricted surface activity. In general this involves: excavating the top 1 foot of soil over the entire area and separating out OE materials; after the top 1 foot is removed, performing a geophysical survey to identify remaining anomalies; intrusively investigating identified anomalies, removing and demilitarizing OE materials found; replacing excavated soils and final grading. During this process soils contaminated with metals will be segregated, stabilized and disposed off-site.
>
> Alternative 2. Cap central area of OD grounds (approximately 76 acres) and consolidate pile of oversized material under the cap at the OD grounds. The cap will meet RCRA requirements for closure of the OD grounds and will have a thickness (four feet) to enable future use as unrestricted surface recreation.

Tables 1 and 2 present the costs for Alternatives 1 and 2 respectively. The total capital cost of Alternative 1 is approximately $17,721,000 and the total capital cost for

Alternative 2 is approximately $18,342,000. The cost of the RCRA cap for Alternative 2 is based on typical unit costs derived from Means Environmental Remediation Cost Data – Unit Price. Alternative 1 was estimated by applying actual cost data from the removal activities at the OB grounds, to the OD grounds. This estimate takes into account the lessons learned during the OB grounds clearance and represents actual costs from the latter stages of that removal action that should represent the most cost effective time periods of that removal effort. The RCRA cap estimate (Alternate 2) should be considered Feasibility Study (FS) quality estimate and is considered an order of magnitude engineering cost estimate.

Alternative 2 will also require long-term operation and maintenance of the RCRA cap which would include inspections to assure that the cap has not been disturbed and that the cover is properly maintained. The annual cost of inspections and maintenance is estimated to be $34,931 and the total present worth (assuming a 30 year period of operation and an interest rate of 5%) is estimated to be $536,957..

Other considerations potentially impacting the costs include the following:

- The removal operations of Alternative 1, have potentially more cost uncertainty associated with this action. The actual costs will be impacted by the nature of the material to be segregated, the number of OE items to be demilitarized, the efficiency of the contractor and the potential for unknowns to be discovered. All of these items can contribute to cost and schedule growth. The overall BRAC experience with clearance/removal options has been that actual costs usually exceed the initial estimates. The installation of a cap of known design should be relatively straightforward and is usually completed with little or no change for unforeseen conditions.

- The placement of a RCRA cap is an engineered land use control that will be formally maintained throughout its life and should provide for a secure isolation of the waste materials (OE and Hazardous Toxic or Radiologic Waste). The basic cap design includes the following layers (from the top to bottom): top soil (erosion control layer – 6 inches); common fill layer (18 inches), filter fabric, drainage layer (sand – 12 inches), geomembrane (20 Mil); low hydraulic conductivity layer (clay – 24 inches). These engineered layers, including the geomembrane should help reduce any potential for upward movement of OE materials due to freeze/thaw cycles.

- The RCRA cap can provide for containment of HTRW materials that may require remediation for RCRA Closure/CERCLA action. A RCRA cap would eliminate the need for treatment and disposal of HTRW soils. The costs of treatment and off-site disposal are included in the Alternate 1 estimate.

- It should be recognized that the cost of the cap under Alternate 2 represents a conservative scenario. During design and implementation, engineering and investigative methods could be employed to reduce the overall area to be capped as follows:

1) The perimeter portions of the area to be addressed could be pushed toward the center, resulting in a smaller area to be capped.
2) The surface (top 1 foot) of the perimeter portions of the area to be addressed could be pushed toward the center followed by clearance. Once again reducing the area to be capped.
3) A more definitive study could be performed identifying the most cost effective mix of clearance and capping. The outer portions of the area to be addressed will likely have a lower cost to clear and may be more cost effectively cleared whereas the more interior portions will likely have the HTRW and higher concentrations of OE and thus may be more cost effectively capped.

Therefore whereas clearance activities are likely to experience cost growth, the cap is likely to come in at a lower overall cost than estimated and overall be more cost effective.

Overall the use of a RCRA cap provides an equivalent level of protection for OE materials at a potential cost savings. In addition, the potential uncertainties with removal of OE materials and the corresponding cost and schedule growth are not necessarily issues with the RCRA cap.

5. **Approach Overview**

The large pile of debris containing OE material generated as part of the cleanup/closure of the OB soils will be leveled and capped with the RCRA cap that is proposed as part of the OD closure.

This conceptual plan proposes the placement of a RCRA cap in the OD area where waste will be left in place. The cap would meet both RCRA Closure requirements, CERCLA remediation requirements (to address metals contaminants in soils at the OD grounds), and OE requirements sufficient for transfer of the property for reuse as a conservation/recreation area with unrestricted surface activity by the public.

The following discussion describes the approach for clearance and capping at the OD grounds and is conceptually shown on Figure 2. OE remediation at the SEDA OD Grounds will take place in the following phases. An OE removal ESS will be prepared covering all actions to accomplish this closure. The phases for such an effort include:

Phase I. The peripheral portions of the extended OD Grounds site (outside the 76 acres proper) will be cleared of vegetation and geophysically mapped.

Phase II. Anomalies identified from Phase I will be intrusively investigated. OE will be removed to depth.

Phase III. The areas encompassing the high-metal concentration and HTRW contamination, predominantly the 76 acres proper of the OD grounds, will have the berm leveled into the smallest footprint, graded appropriately, surface swept for potentially dangerous items, and then covered with a cap that meets the RCRA landfill closure requirements. The pile of oversized material from the OB grounds would also be leveled into this area and consolidated under the cap. The cap will cover an area of approximately 76 acres. The thickness of the cap (minimum of 4 feet) would be designed to meet both RCRA requirements and clearance depths for munitions based on proposed use of the property as a Conservation/Recreation area (i.e. surface recreation). See Section 4 for cap description. A 4-foot cap provides the equivalent of clearance down to 4 feet, thus meeting the intent of Army policy for allowing unrestricted surface recreation.

Phase IV. Concurrent with Phase III, the OB Tray will be cleaned and removed. The concrete containment area will then be cleaned, excavated and disposed of. The area underneath the tray will then be geophysically investigated for OE related items. Any items found will be excavated and removed to depth.

For all phases, OE items that are apparent during the above mentioned activities will be removed, certified, and disposed of in accordance with standard procedures.

6. **Land Use Restrictions**

The closure of the OB/OD area will be in accordance with RCRA (40 CFR 265 Subpart G, Closure and Post Closure and corresponding NYSDEC 373-3). This includes the preparation of a closure plan, which includes requirements for a survey of the waste left in place and description of cap as well as continued maintenance and monitoring of the cap for the post closure period. The survey of the waste/description of the cap must be filed with local authorities and include restrictions which require the owner/operator (in this case the Seneca Industrial Development Authority) to restrict disturbance of the cap. This will restrict activities to surface use/non- intrusive activities. As part of the closure plan, the operation and maintenance activities (including compliance with the deed notice) will be required to be reported to NYSDEC as part of an annual report.

Responsibilities for maintenance and monitoring activities will be placed in the deed. The restrictions will include no digging, maintenance of erosion control (surface vegetative cover), restrictive warning signs regarding hazardous and ordnance safety warnings. Maintenance of the deed restrictions and cover will be responsibility of the future owner. The Army will monitor these provisions during the 5-year reviews. The Army could also require a certification be filed annually with the county clerk and submitted to the Army, noting that the deed restrictions are in place and that the required maintenance is being performed.

The entire site will be released for use and access for the intended use as a conservation/recreation area and associated activities.

7. **Public Involvement**

This removal is being performed under the RCRA and CERCLA requirements since Seneca is a BRAC federal facility on the National Priorities List. The required public involvement mechanisms are already in place including the BRAC Closure Team (BCT), Restoration Advisory Board (RAB).

DEPARTMENT OF THE ARMY
HUNTSVILLE CENTER, CORPS OF ENGINEERS
P.O. BOX 1600
HUNTSVILLE, ALABAMA 35807-4301

File
OB6
SEAD 23

REPLY TO
ATTENTION OF:
CEHNC-OE

MEMORANDUM FOR Commander, Seneca Army Depot Activity, ATTN: SMASE-CO, Commander's Representative, Mr. Steve Absolom, Building 123, P.O. Box 9, 5786 State Route 96, Romulus, NY 14541-5001

SUBJECT: Seneca Army Depot, NY - Final Validation Report for the Mount Molle Disposal Mound

1. This refers to the Seneca Army Depot (AD) project and the Base Realignment and Closure (BRAC) program review in January 2002 and the Seneca AD Burning Grounds meeting of 02 April 2002. An action item from the above meetings was to form a team and evaluate the data and prepare an alternative analysis and cost estimates of the various options to remediate the Mount Molle disposal mound created from the removal action at the Open Burning Grounds at Seneca.

2. Attached is the final report with signatures of the team members endorsing the subject report. Please note that this report initiated the current action of developing a conceptual analysis to be presented to Department of Defense Explosive Safety Board to evaluate the feasibility of implementing the alternative of capping of the Open Burning and Open Detonation areas at Seneca.

3. If you have any questions, please contact me at 256-895-1510 or Mr. Glenn Earhart at 256-895-1577.

Encl

C. DAVID DOUTHAT, P.E., CSP
Director, Ordnance and
Explosives Directorate

CEHNC-OE
SUBJECT: Seneca Army Depot, NY - Final Validation Report for the Mount Molle Disposal Mound

CF (w/encl):
Commander, U.S. Army Engineer District, New York, Seneca Office for Project Management, ATTN: Mr. Randy Battaglia, Building 125, P.O. Box 9, 5786 State Route 96, Romulus, New York, 14541-5001
Commander, Department of the Army, BRAC Office, ATTN: DAIM-B0, Major Douglas Hinnant, 600 Army Pentagon, Room 2D673, Washington, DC 20310-0600
Director, Defense Ammunition Center, ATTN: Ms. Jean Gallagher, Building 35, 1C Tree Road, McAlester, OK 74501
Army Environmental Center, ATTN: Mr. Clayton Kim, 5179 Hoadley Road, Aberdeen Proving Ground, MD 21010
CF (w/o encl):
Commander, U.S. Army Corps of Engineers, ATTN: HTRX-CX, ATTN: Mr. Ed Mead, 12565 West Center Road, Omaha NE 68144-3869
Strategic Management Initiatives, Inc., ATTN: Mr. Joseph Pearson, 845-M Quince Orchard Boulevard, Gaithersburg, Maryland 20878

Seneca Army Depot, New York

Base Realignment & Closure Site (BRAC)

Validation Report for the Mount Motle Disposal Mound

June 2002
Revised August 2002

Submitted to: Department of the Army, Base Environmental Coordinator, Mr. Steve Absolom, Seneca Army Depot, Seneca, NY

Submitted by:

Mr. Glenn Earhart — 05 Aug 02 Date

U S. Army Corps of Engineers, Engineering & Support Center, Huntsville

Ms. Jean Gallagher — 5 Aug 02 Date

U.S. Army Technical Center for Explosives Safety

Mr. Clayton Kim — 6 Aug 02 Date

U.S. Army Environmental Center

Mr. Ed Mead — 12 Aug 02 Date

U.S Army Corps of Engineers, Hazardous, Toxic & Radiological Waste (HTRW) Center of Expertise

Mr. Joseph Pearson — 10 Sept 02 Date

Strategic Management Initiatives, Inc.

Seneca Army Depot, New York

Base Realignment & Closure Site (BRAC)

Validation Report for the Mount Molle Disposal Mound

August 2002

Submitted to: Department of the Army, Base Environmental Coordinator, Mr. Steve Absolom, Seneca Army Depot, Seneca, NY

Submitted by:

Mr. Glenn Earhart — Date: 05 Aug 02

U.S. Army Corps of Engineers, Engineering & Support Center, Huntsville

Ms. Jean Gallagher — Date

U.S. Army Technical Center for Explosives Safety

Mr. Clayton Kim — Date

U.S. Army Environmental Center

Mr. Ed Mead — Date

U.S. Army Corps of Engineers, Hazardous, Toxic & Radiological Waste (HTRW) Center of Expertise

Mr. Joseph Pearson — Date

Strategic Management Initiatives, Inc.

CEHNC-OE 02 August 2002

EXECUTIVE SUMMARY

Seneca Army Depot, located in New York, was designated a Base Realignment and Closure Site (BRAC) by Congress and was directed to be closed and the property transferred. Substantial environmental clean up was required prior to transferring the property. In January 2002, the Department of Army BRAC Office requested a team evaluate and conduct an alternative analysis for remediating a large mound of ordnance-contaminated material (Mt. Molle) resulting from earlier work at the site. A multi-agency team was formed and conducted an evaluation of four (4) options for remediating the large pile of dirt, rock, debris, organic material and ordnance. Option 1 was disposing of the material and capping with clean fill; Option 2 was entombing the material in existing bunkers; Option 3 is the current process being executed and involves sifting the material and isolating and destroying any explosive hazardous material; Option 4 discusses the processing of the material through a low temperature thermal destruction furnace. The four options were evaluated for effectiveness, implementability and cost. Option 3 was ranked highest in effectiveness and implementability and Option 1 and 2 were ranked as the most cost effective. Based on the evaluation, Option 1 is recommended to proceed to the next phase, which is coordinating and obtaining the necessary approvals from Federal, State, local agencies, and the stakeholders. If the current process (Option 3) is the selected process, this option will require an updating of the explosive safety submission and should be evaluated for process improvements.

CEHNC-OE 02 August 2002
SUBJECT: Seneca Validation Report for Mt. Molle Disposal Pile

1. Purpose:

   a. At the Department of the Army, Base Realignment & Closure Office (BRAC) Program Review in January 2002, the Corps of Engineers was tasked to form a team and provide a feasibility and alternative analysis on the recommended response action to remediate Mt. Molle. Information obtained during this analysis may be applied to other response actions in the Open Burning (OB) or the Open Detonation (OD) areas at a later date. The customer is Steve Absolom, BRAC Environmental Coordinator (BEC).

   b. The existing authorities that apply to Seneca Army Depot (SEAD) are listed below. All of the following authorities are applicable at the OB & Mt. Molle areas at SEAD. Specifically, the clean-up of the OB area HTRW contaminated and OE impacted soils is being conducted as a remedial action under CERCLA. Subsequently, the oversized material generated from that clean-up (referred to as Mt. Molle)and is the focus of this report will be addressed as part of the CERCLA remedial action.

      i. Record of Decision
      ii. Federal Facilities Agreement
      iii. National Priority Listed Site
      iv. Resource Conservation & Recovery Act (RCRA)
      v. Comprehensive Environmental Response, Compensation & Liability Act (CERCLA)

2. The following personnel were selected by the team to conduct the feasibility analysis:

   a. Glenn Earhart, U.S. Army Corps of Engineers, Huntsville
   b. Randy Battaglia, U.S Army Corps of Engineer, New York District
   c. Ed Mead, U.S. Army Corps of Engineers, HTRW Center of Expertise
   d. Jean Gallagher, U.S. Army Technical Center for Explosives Safety
   e. Clayton Kim, U.S. Army Environmental Center
   f. Joseph Pearson, Strategic Management Initiatives, Inc.

3. On 02 April 2002, a site visit was conducted to evaluate the site and develop the plan of action to address the feasibility analysis for Seneca Army Depot (SEAD). The agenda was as follows: Introductions, Overview of Seneca, Historic Overview of the OB Grounds, Current Contract at the OB Grounds, Site, Tour, Options Considered, Alternatives Open Discussion. The minutes of the meeting, taskers and milestone for completion

and the responsible action officer are attached as Appendix A.

4. Task 6 and 7 of the April 2nd meeting was to provide a feasibility analysis of the 6 alternatives to remediate Mt. Molle and provide a recommendation to the DA BRAC Office. The preliminary feasibility analysis prepared by the New York District is attached as Appendix B. Each alternative will be evaluated for effectiveness, implementability and cost.

5. Mt. Molle is located at SEAD and is a disposal pile resulting from previous response actions in the OB area. The OB Grounds project involved sifting berms, pads, and one-foot cut of the remainder of the 30-acre site. Oversized material that would not pass through a ½ inch screen was accumulated for hand sorting of OE, OE scrap, and other metallic and non-metallic oversized material. The oversized material was transported by truck to the present location, affectionately named Mt. Molle. In 2001, oversized material was added to Mt. Molle from the site. Mt. Molle was screened to remove fines and hazardous & toxic chemical contamination of concern in the fines. The fines removed were transported to the Case 1 stockpiles for stabilization, treatment & disposal, and the oversized material returned to Mt. Molle. A magnetic separation pilot process was performed, to evaluate separation effectiveness and the composition of the oversized material remaining. A total of 15, 666 cubic yards of oversized material remain in Mt. Molle.

6. Following is a description of the various options developed at the 02 April 2002 validation meeting:

   a. Option 1 - This alternative proposes to place the Mt. Molle material in a disposal area and cover with approximately 4 - 6 feet of clean cover to isolated the material at a depth sufficient to permit the re-use of the property without impacting the OE contaminated material. This scenario is estimated to produce a 3 - 5 acre cap. The alternate scenario would be to grade Mt. Molle and construct an above grade cap. This cap would entail an increased surface area.

   b. Option 2 - This alternative proposes entombing the Mt. Molle material in an igloo or bunker on-site.

   c. Option 3 - This alternative proposes to screen the material and conduct metal separation with a magnet and conduct normal OE disposal techniques with the discovered Unexploded Ordnance (UXO). The other option to this alternative would be entombment of the material in lieu of normal OE disposal. The separation with routine OE

disposal is the process currently being utilized on site.

d. Option 4 - This alternative proposes low temperature thermal treatment at the existing furnace located at SEAD or transporting a mobile furnace to smelt the OE materials on-site.

7. Alternative Screening Process:

a. Each of the alternatives will be evaluated on their ability to meet the minimum requirements of the effectiveness, implementability and cost criteria. After which, a comparative analysis is conducted to determine the relative performance of the alternatives in each of the same criteria. The purpose of this comparison is to determine the advantages and disadvantages of each of the alternatives relative to one another. This analysis is used to support the selection of the preferred alternative.

b. Each alternative will be ranked relative to all of the other alternatives for effectiveness, implementability, and cost. The rankings for the Mt. Molle alternatives will include the four alternatives as follows:

i. RCRA Cap in the Open Burning Area
ii. Entomb Mt. Molle in an approved igloo or bunker
iii. Screening & disposal (current process)
iv. Low temperature thermal treatment

c. The rankings under the effectiveness category involve the consideration of four criteria. A ranking value of 1 through 4 will be assigned to each alternative, with 4 representing the best alternative. In the case of two or more alternatives being equal for a criterion, an average ranking value will be used for each alternative that is of equal value in the criterion. Ranking values will be totaled for each alternative and the one with the highest overall score will be the preferred alternative. The overall effectiveness ranking will then be used in conjunction with the implementability and cost rankings to provide an overall ranking of the alternatives.

d. The rankings under the implementability category involve the consideration of six criteria. A ranking value of 1 through 4 will be assigned to each alternative, with 4 representing the best alternative in the category. The highest overall score indicates the most implementable alternative. The overall implementability rankings will then be used in conjunction with the effectiveness and

cost rankings to derive an overall ranking of the alternatives.

e. The cost estimate for each alternative is an order of magnitude estimate that provides a general estimate of the level of effort that will be required to complete each alternative.

8. The effectiveness, implementability and cost criteria under each evaluation category will be defined and be used to subjectively rank each of the alternatives:

a. Effectiveness:

i. Overall Protection of Public Safety, Human Health and the Environment: Alternatives are evaluated under this criterion on how well they achieve and maintain protection of public safety, human health and the environment;

ii. Regulatory Compliance: Evaluation under this criterion ensures that all requirements can be met. The applications of the regulatory requirements for each alternative will primarily focus on what regulations apply as well as how they will be met.

iii. Long-Term Effectiveness: This criterion measures how an alternative maintains the protection of human health and the environment after the response objective has been met. The analysis focuses on:

1. The permanence of the response action alternative;
2. The magnitude of residual risk following completion of the response action;
3. The adequacy and reliability of controls, if any, used to manage the treated residuals or untreated wastes that remain at the site following the response action.

iv. Short-Term Effectiveness: This criterion addresses the effects of an alternative during the implementation phase. Alternatives are evaluated for their effects on human health and the environment prior to the response objectives being met. More specifically, each alternative will be examined for:

1. Protection of the community and workers during the response action;
2. Adverse impacts resulting from construction and

implementation;
3. The time required meeting the response objectives.

b. Implementability:

i. Technical Feasibility: This criterion evaluates the ease of implementing a specific alternative. The analysis of the technical feasibility for each course of action focuses on difficulties in:

1. The operation and construction of the response action;
2. The reliability of the response action in relation to implementation;
3. The need and ease of conducting future remedial actions/requirements following the initial undertaking.

ii. Administrative Feasibility: This criterion focuses on the planning for a course of action. The evaluation of this criterion considers difficulties in:

1. Obtaining permits applicable to a proposed alternative;
2. Coordinating services needed to carry out an alternative;
3. Arranging the delivery of services in a timely manner.

iii. Availability of Services and Materials: This criterion primarily deals with the availability of services needed to carry out an alternative. Two issues are of primary importance under this criterion:

1. Can the services and materials be delivered conveniently;
2. Are the quantities needed to implement the response action available in a timely manner?

iv. Property Owner Acceptance: Each of the alternatives will have a varying degree of impact on the future use of the site. As a result, each alternative is rated, based on the degree of acceptance by the DA BRAC Office.

v. Local Agency Acceptance: Each alternative is subjectively rated based on the degree of acceptance by the local reuse authority.

vi. Community Acceptance: Each alternative is rated, based on the degree of acceptance by the local community.

c. Cost: An order of magnitude cost estimate is calculated for costs associated with the implementation of each response action. These costs were calculated by the Corps of Engineers and are summarized in Appendix C. We will use a rough-order-magnitude cost range to use in our cost rankings.

9. The following options are evaluated for effectiveness, implementability and cost:

a. OPTION 1 - A standard State concept design of a RCRA cap for capping the Mt. Molle material would require 3 - 5 acres. A separate cost estimate was developed if the cap approval mandated a liner.

i. Effectiveness:

1. Overall Protection of Public Safety - The 4-6 ft cap of the Mt. Molle material would provide protection for the public. However, the cap should not be disturbed without proper notification and appropriate safeguards for any work.

2. Regulatory Compliance - Approval by the State would ensure compliance with the RCRA closure requirements as well as the existing agreements including the Federal Facilities Agreement, Record of Decision, National Priority Listing requirements and CERCLA as appropriate. Coordination is required but approvals for similar activities have been granted. RCRA closure applies and requires State approval for cap. Existing data indicates that migration has not occurred while the material was in the ground. Placing the Mt. Molle material back in the ground would not increase the probability of migration of contaminates. A liner under the cap would further mitigate migration if determined necessary.

3. Long-term effectiveness - The cap would meet

the long-term public safety requirements for the OE hazard for the Army and the Local Reuse Authority (LRA). A notification would be required by the LRA for any documentation of an end use change. A special designation of the area such as a specific habitat development or other special use of the capped area (3-5 acres) would enhance the long-term effectiveness by highlighting the small cap area relative to the entire area. Planned use of the property for surface recreation use with a 4-6 ft clean soil cap over the Mt. Molle material would meet this criterion.

4. Short-term effectiveness - The cap would meet the short-term public safety requirements for the Army relative to the OE hazard as well as the requirements of the LRA. Long-term operation and maintenance will be addressed in the transfer documentation.

ii. Implementability:

1. Technical Feasibility - Technical Feasibility - Cap construction has been routinely conducted in the past with the cap integrity considered long-term;

2. Administrative Feasibility - Federal, State and local approvals have been issued for several applications of caps for OE. No extraordinary requirements exist for the BRAC program to facilitate transfer of the property. DDESB approval would be required prior to construction of the cap;

3. Property Owner Acceptance - Since this would not adversely impact the transfer, DA BRAC should consider this option as acceptable;

4. Local Agency Acceptance - The presence of a 4 - 6 ft. clean cover would require coordination and negotiations with the LRA. Informal discussions with the LRA have indicated a reluctance to accept alternatives that involve transfer of property with residual OE remaining on site. Re-use of the property at a later date with a use that would require increased depth could be evaluated on an individual basis. More importantly, the property transfer documentation would restrict anyone from adversely impacting the cap. Furthermore, if we constructed some special use area (specialized habitat or recreation area) for the 3 - 5 acre site, additional pressures to alter the reuse of the cap site would be mitigated.

5. Community Acceptance - No significant impacts to this criterion. A specialized use of the cap for surface recreation or fish & wildlife use may be a positive impact to the site;

iii. Cost

1. Option 1-A: Cap without a liner - $ 560,000;
2. Option 1-B - Cap with a liner - $ 840,409
3. Cost Range - $ 500,000 - $ 1,000,000.

b. OPTION 2 - Entomb or encapsulate the Mt. Molle material in a bunker or igloo on site.

i. Effectiveness:

1. Overall Protection of Public Safety - Overall protection of public safety would be predicated on excluding public access to the bunkers or igloos or ensuring the material was explosively inactive.

2. Regulatory Compliance - Approval by the State would ensure compliance with the RCRA closure requirements as well as the existing agreements including the Federal Facilities Agreement, Record of Decision, National Priority Listing requirements and CERCLA as appropriate. The State approval would be focused on environmental impacts and availability of contaminates migration off-site. Contaminate fixation has been an environmental acceptable

process in the past.

3. Long-term effectiveness - Long-term public safety requirements for the OE hazard for the Army and LRA would be met by encapsulating the OE within the bunkers mitigating any explosive hazard. Recreational use of the area surrounding the igloos/bunkers would be limited by restricting access to this area. This option also proposes a site closure with the OE hazard still on-site.

4. Short-term effectiveness - Short-term public safety requirements for the OE hazard for the Army and LRA would be met by ensuring a safety and health plan was approved during the entombing process. Short-term impacts to public would be minimal due to the location of the project area and safety controls implemented via the health and safety plan during execution of this option.

ii. Implementability:

1. Technical Feasibility - Contaminate fixation has been used in the past in the hazardous and toxic waste program to eliminate contaminate migration. Transfer of this technical process to the OE arena is feasible.

2. Administrative Feasibility - Federal, State and local approvals have been issued for hazardous and toxic waste contaminates encapsulation in the past. However, very little data exists for encapsulation of OE. DDESB approval is required prior to entombing the material and subsequent property transfer.

3. Property Owner Acceptance - This option would be acceptable to the property owner contingent upon acceptance by the LRA.

4. Local Agency Acceptance - Acceptance by the LRA would be predicated upon an end use of the property consistent with restrictions imposed by the presence of the bunkers with fixated OE. Informal discussions with the LRA have indicated a reluctance to accept alternatives that involve transfer of property with residual OE remaining on site. Negotiations would be

required with the LRA to ensure LRA transfer. Changing the end use of the property at a later date to a use incompatible with the OE bunkers would require a re-evaluation of the selected option.

5. Community Acceptance - Community acceptance of a restricted end use by the presence of the OE filled bunkers would be contingent upon the end use of the property. The area restricted by the bunkers or igloos would be very small compared to the total area of property proposed for recreation end-use.

iii. Cost

1. Option 2 - Entombing the material - $514,000 - Cost Range = $500,000 - $1,000,000

c. OPTION 3 - Screening & current OE disposal techniques (Current process):

i. Effectiveness:

1. Overall Protection of Public Safety - This method ensures protection of public safety for OE by inspecting and certifying free of explosive hazard all the material in Mt. Molle;

2. Regulatory Compliance - Approval by the State would ensure compliance with the RCRA closure requirements as well as the existing agreements including the Federal Facilities Agreement, Record of Decision, National Priority Listing requirements and CERCLA as appropriate. Coordination with the State has been on going. Recycling of the explosive hazard free material is recommended;

3. Long-term effectiveness - This option ensures long-term effectiveness for the Army and Local Reuse Authority (LRA) by ensuring that all of the OE material is inspected and certified. No long term property use issues exist under this option;

4. Short-term effectiveness - This option would meet the short-term public safety requirements for the Army and LRA relative to the OE hazard. No short term property use issues exist under

this option;

ii. Implementability:

1. Technical Feasibility - Technical feasibility is currently being demonstrated. The design of the process should be evaluated for improvements since the process is labor and resource intensive;

2. Administrative Feasibility - Administrative feasibility is currently being demonstrated. Administrative procedures need to be re-evaluated for efficiencies. The existing explosive safety submission will require updating;

3. Property Owner Acceptance - Upon completion of this option and since this would not adversely impact the transfer, DA BRAC has endorsed this option;

4. Local Agency Acceptance - The LRA should not have any objections to this option since they will receive property with no additional restrictions for re-use;

5. Community Acceptance - Community acceptance of this option has already been validated via the Restoration Advisory Board.

iii. Cost - $2,890,000 - Cost Range = $2,500,000 - $5,000,000

d. OPTION 4 - Low Temperature Thermal Treatment:

i. Effectiveness:

1. Overall Protection of Public Safety - This method ensures protection of public safety for OE by inspecting and thermally treating all explosive hazard of the OE materials in Mt. Molle;

2. Regulatory Compliance - Approval by the State would ensure compliance with the RCRA closure requirements as well as the existing agreements including the Federal Facilities Agreement, Record of Decision, National Priority Listing

requirements and CERCLA as appropriate. On similar type projects, thermal treatment has been considered recycling under RCRA.

3. Long-term effectiveness - This option ensures long-term effectiveness for the Army and Local Reuse Authority (LRA) by ensuring that all of the OE material is inspected and certified free of explosive hazard. No long term property use issues exist under this option;

4. Short-term effectiveness - This option would meet the short-term public safety requirements for the Army and LRA relative to the OE hazards. A safety and health plan will be required to address worker and public safety issues associated with low temperature thermal destruction of OE. No short-term property use issues exist under this option;

ii. Implementability:

1. Technical Feasibility - Mobile furnaces as well as an existing on-site furnace exist for this type of treatment. Using the on-site furnace, the material would be required to be inspected and certified prior to being placed in the furnace. A mobile rotary kiln furnace that can treat items safe to move without being inspected is being evaluated. Additional data on this mobile operation is required.

2. Administrative Feasibility - Administrative feasibility is currently being demonstrated with the on-site unit. Similar administrative requirements would be needed for the mobile unit including review and approval by the DDESB. DDESB approval is required prior to using the on-site or mobile unit;

3. Property Owner Acceptance - Upon completion of this option and since this would not adversely impact the transfer, DA BRAC would have no outstanding issues;

4. Local Agency Acceptance - The LRA should not have any objections to this option since they will receive property with no restrictions for re-use;

5. Community Acceptance - Community acceptance of this option has already been validated via the use of the on-site facility to date.

iii. Cost - $ 16,000,000 - Cost Range is estimated at 15,000,000 - 20,000,000.

10. Application of the evaluation criteria by alternative: Each option was evaluated for effectiveness, implementability and cost using the highest feasibility ranking of a 4 and the least feasible ranking of 1.

a. Effectiveness:

i. Option 1 - State approved Cap in the Open Burning Area: Short-term protection of public safety would be addressed in this response. The long-term protection would also be met provided the property owner uses the property for approved use. Any use change would require re-evaluation by the property owner for compliance with the transfer documentation. Since this is a RCRA site, the State also would evaluate the re-use based on the compatibility with potential impacts to the environment. Coordination with the State would be required to obtain the necessary approvals to construct the cap. This regulatory requirement has been routinely issued for this type of action in the past and should present no significant obstacles provided the design criteria are met for Mt. Molle. Migration of contaminates off-site was minimal and should not be a major issue since extensive sampling has been conducted at the OB area. The material being capped was excavated from the OB area and has been pre-treated to a large extent. RCRA caps have been evaluated in the past by the safety community and have been found to be protective of human health and the environment. DDESB's approval is required prior to constructing the cap, but has published guidance for clearance depth based on use of the property. The depth of the clean cover of the cap will be in compliance with DDESB's published criteria.

ii. Option 2 - Entomb Mt. Molle in an approved igloo or bunker: Short term protection of public safety would be addressed in this response provided the bunker or igloo had the appropriate public access restrictions or was constructed to accommodate limited access. Regarding entombment, this process

has been used in the chemical contamination arena with success after an evaluation process. Entombment evaluation and approval would be required of the DDESB prior to implementation. For long-term protection of public safety, specific long-term restrictions would be required of this option. If the material were entombed in an igloo or bunker, the area around the igloo or bunker would be restricted from use. Permits or substantive compliance from the State would be required to obtain the necessary approvals to entomb the material. These regulatory requirements are usually more complicated and include extensive additional criteria to ensure protection of the environment. Again, there is not a significant database available with information regarding environmental impacts of entombment of ordnance. This regulatory requirement would be expected to require extensive coordination and testing for the Army to document no significant environmental impacts. DDESB would require approving and reviewing a detailed evaluation of the requirements to ensure public safety as well as security criteria to address public access to the site. Also, DDESB's experience with entombment and ordnance is not well documented.

iii. Option 3 - Screening & disposal (current process): This process has been used at the site for several years. This alternative provides protection of public health and safety. By completely remediating the explosive hazard of the ordnance, no long-term issues with property re-use are expected. Since this response action has been used or is ongoing, it is assumed that the State has documented the compliance with RCRA closure requirements or consistent with State standards, the Federal Facilities Agreement and the National Priority List conditions.

iv. Option 4 - Low temperature thermal treatment: This alternative provides protection of public health and safety by treating and eliminating the explosive hazard of the ordnance. The State has permitted the existing furnace located at Seneca for this intended use. If a mobile furnace were imported to the site, regulatory compliance with the requirements from the State would be required with furnace operating conditions similar to the existing unit. Also, the State would require the Army to document the effectiveness from an environmental impact

perspective of the mobile furnace. Long and short-term effectiveness would be met with this alternative. The Department of Defense and Army has existing furnace in operation nationwide to conduct demiling operations.

b. Implementability:

i. Option 1 - RCRA Cap in the Open Burning Area: This alternative is both technically and administratively feasible if DDESB approval is obtained and the materials and services necessary to implement this alternative are readily available. This option is acceptable to the Army provided the LRA would accept transfer of the property under the proposed conditions and DDESB approves. The use of the property by the LRA would not be adversely impacted by implementation of this alternative and would be compatible with the use proposed for the transfer agreement. Since this is a RCRA closure site, any change in the re-use of this property would require approval and evaluation by the State and DDESB to ensure concurrence with conditions of the transfer. Coordination with the community would be required but is not expected to be an issue for implementation.

ii. Option 2 - Entomb Mt. Molle in an approved igloo or bunker: Entombing of ordnance from a technical perspective has not been extensively evaluated for public safety or engineering process. This option is acceptable to the Army provided the LRA would accept transfer of the property. Any long-term commitments would require negotiations and approval from the Army. The LRA acceptance and use of the property would require a plan that is not adversely impacted by the presence of a permanent igloo. Acceptance of this property use restriction, while other acceptable options are available, is unlikely. Entombment would require documentation and coordination to address long-term impacts to the community.

iii. Option 3 - Screening & disposal (current process): This process has been used for several years at the site. It is both technically and administratively feasible and the materials and services necessary to implement this alternative are readily available. This option is acceptable to the Army since the LRA has been negotiating and committed to accept

transfer of the property without long-term financial commitments. The use of the property by the LRA would not be adversely impacted by implementation of this alternative and would be compatible with the use proposed for a transfer agreement. Since this is a RCRA closure site, any change in the re-use of this property may require coordination and an evaluation by the State and concurrence with conditions of the transfer.

iv. Option 4 - Low temperature thermal treatment: Since Seneca has an approved furnace operating; this option is both technically and administratively feasible for the existing as well as a mobile furnace. This option is acceptable to the Army since the LRA has been negotiating and is committed to accept transfer of the ordnance free property without long-term commitments from the Army. The use of the property by the LRA would not be adversely impacted by implementation of this alternative and would be compatible with the use proposed for the transfer agreement. Since this is a RCRA closure site, any change in the re-use of this property would require coordination and an evaluation by the State for compliance with the RCRA closure requirements. Coordination with the community would be required but is not expected to be an issue for implementation.

c. Cost:

i. Option 1:

1. Option 1A = $560,000 - RCRA Cap w/o liner;

2. Option 1B = $840,409 - RCRA Cap with liner;

3. Cost Range = $500,000 - 1,000,000

ii. Option 2:

1. Option 2 - Entomb material - $514,000 - Cost Range = $500,000 - $1,000,000

iii. Option 3 - Screening & disposal (current process) - $2,890,000 - Cost Range = $2,500,000 - 5,000,000;

iv. Option 4 - Low temperature thermal treatment - $16,000,000 - Cost Range = $15,000,000 - $20,000,000

11. Alternative Ranking: Table 1, provides the ranking for each of the options for effectiveness, implementability and costs.
    a. Effectiveness: Option 3 was the most effective since all of the OE will be completely inspected and certified as explosive hazard free. Since this option has been coordinated, regulatory compliance has already been granted and the removal process has proved to be effective and met the clean-up goals. Option 4 is the rank second in effectiveness since the all of the OE hazard would be smelted. There are additional regulatory unique requirements associated with this option. Option 1 was ranked 3rd since residual OE will remain on the site similarly to Option 2. However, this option was ranked higher than #2 since the regulatory and technical requirements for constructing RCRA caps vs. encapsulating material are more commonly encountered and used.

Seneca Alternative Rankings

Table 1

	Effectiveness	Implementable	Cost	Total Score
Option 1 - RCRA Cap in the OB area	2	3	3.5	8.5
Option 2 - Entomb Material in a bunker or igloo	1	1	3.5	5.5
Option 3 - Screening & disposal	4	4	2	10
Option 4 - Low temperature thermal treatment	3	2	1	6
Ranking - 4 = most feasible; 1 = least feasible				

b. Option 3 is the easiest to implement since it has been approved and is currently working. Option 1 was ranked second best since capping is standard technology with readily available equipment and contractors. Option 4 was ranked 3rd best since low temperature thermal treatment of OE is just developing as a viable technology in the OE arena. Finally, Option 2 is ranked 4th since encapsulation of OE is not a well used technology and would leave part of the property in-accessible for future use and would likely be less acceptable to the LRA.

c. Option 1 and 2 were ranked highest since the rough order magnitude (ROM) cost range for these options were $500,000 - $1,000,000. Option 3 was ranked next highest with a ROM cost range of $2,500,000 - $5,000,000. Finally, Option 4 had a ROM cost range from $15,000,000 - $20,000,000.

12. Recommendations:

a. Regulatory Issues - Regulatory issues are paramount for all of the options considered. Formal coordination with the State and the DDESB will be required due to the environmental and safety regulatory policies. A conceptual explosives safety submission should be forwarded to DDESB for review before the commitment of financial resources.

i. State of New York - Formal approval will be required for any of the options under existing RCRA authorities. Option # 3 has an existing approval. Options 1, 2, and 4 have had similar applications approved in the past by the State. Specific coordination would be required in advance for the proposed alternatives.

ii. All options will require DDESB approval for eventual transfer of the property. Again, specific coordination would be required in advance for the proposed alternatives. For option 1 & 2, there are several examples of capping landfills with suspected OE at BRAC sites. Option # 3 has DDESB approval but will require an update to the explosive safety submission. Option 4 would require an evaluation of explosives safety considerations such as exclusion zones and worker safety protection.

b. Cost: The cost estimates in Appendix C vary substantially in total costs. However, the range of costs for each of the options varies sufficiently to rank each of the options and the ranking is not adversely impacted by the use of rough order magnitude cost estimates.

c. Based on the preliminary feasibility analysis, it is recommended that Options 1 & 2 have the following actions further evaluated;

   i. Coordination with the State and DDESB to obtain concept approval of the implementation of the screened options;

   ii. Evaluate the cost estimates after regulatory concept and process plans have been coordinated.

   iii. Conduct preliminary and formal coordination with the LRA to determine preliminary acceptability of transfer based on options 1 & 2;

d. Additional analysis with the exception of submission of an updated explosive safety submission for Option #3 is not required since that is the current response action being conducted at the site.

e. Regardless of the selected option, it is recommended that an execution plan with coordination with the State, LRA, and the Restoration Advisory Board be developed prior to initiation of field activities.

f. A comparison of the options evaluated under this analysis should be applied towards the selected response action for the open detonation area, especially recommendation 12c.

Appendix A - Minutes of the 02 April Meeting

Open Burning Grounds Validation Meeting 2 Apr 02

Agenda: Introductions, Overview of Seneca, Historic Overview of the OB Grounds, Current Contract at the OB Grounds, Site, Tour, Options considered, Alternatives open discussion

Attendees: S. Absolom, Seneca; R. Battaglia, T. Battaglia, B. Ebersbach, NAN; Glenn Earhart, MAJ D. Sheets, HNC; Frank Magner, NAB; Jean Gallagher, USATCES; M. Kelly, AEC/Versar; C. Kim, AEC; T. Westenburg, CENWO; Ed Mead, CENWO; Joe Pearson, SMI

The following is a draft summary of the alternatives discussion regarding processing, disposition, and remediation of the oversized material stockpile:

Screening Criteria Used

1. Regulatory (includes public)
2. Cost (+/- 20%)
3. Schedule
4. Technology
5. Construct-ability
6. Other Sites -applicability

The screening was weighed as a general consensus as positive or negative for the following alternatives:

Alternative 1 Magnetic Separation with OE Separation, and OE Disposal

Synopsis: This alternative involves the pilot study that was performed using magnetic separation, hand sorting on a conveyor, hand sorting of ferrous metal and OE, and conventional disposal and demil of OE by perforation.

Screening Results:

1. +
2. +
3. +
4. +
5. +
6. +

Alternative 2 Magnetic Separation with Entombment

Synopsis: This alternative involves magnetic separation of the oversized material and ferrous metal, inspection by conveyor, and followed by entombment of OE off the OB Grounds site, in an ammunition storage igloo.

Screening Results:
1. -
2. +
3. +
4. +
5. -
6. -

Alternative 3 Entombment of all oversized material

Synopsis: This alternative involves entombment of all oversized material, including OE, with no separation, in ammunition igloos.

Screening Results:
1. -
2. +
3. +
4. +
5. -
6. -

Alternative 3 Capping Oversized Material

Synopsis: This alternative involves capping the oversized material, including OE, with a 4-foot cap, sufficient for HTRW and OE requirements.

Screening Results:
1. -
2. +
3. +
4. +
5. -
6. +

Alternative 4 Crush Material and Heat Treat

Synopsis: This alternative involves crushing the oversized material and OE into sizes sufficient to be processed in a kiln or other heat treatment unit without detonations that would damage the equipment.

Screening Results:
1. +
2. -
3. -
4. +
5. -
6. ? (no rating)

Alternative 5 Heat treatment Technology

1. All Metal
2. Dangerous Items
3. All Oversized

Synopsis: Heat treatment technologies were to be evaluated specifically as an alternative. This alternative was put on hold and was not screened, pending information from manufacturers. In-situ vitrification was also discussed.

Tasker- Glenn Earhart, HNC, to contact manufacturers for Net Explosive Weights and Fragmentation requirements.

Alternative 6 Retain Property

Synopsis: This alternative was discussed since the no action alternative for OE sites, with government or transfer to not-for-profit conservation groups continually arises as a discussion item in army BRAC channels.

This alternative was put on hold and not screened pending the tasker below.

Tasker- Ed Mead, CX-Omaha, and Glenn Earhart, HNC, are to obtain legal and regulatory specialist review and comment on this alternative.

Path Forward:

A feasibility study process was optimal to discuss alternatives, options, to identify regulatory issues, to evaluate cost in detail, and to further evaluate screening criteria.

Action Items:

1. Disseminate options to attendees (R. Battaglia) S: 4 Apr 02
2. Conference Call, Path Forward/ Selected Alternative, All attendees, S: 6 Apr 02
3. Safety Review for the options: CENWD CX, OE CX, TCES S: 9 Apr 02
4. Furnace data for Melt-Tech, HNC (Earhart) S: 12 Apr 02
5. Regulatory Issues, RCRA Closure, AEC, CENWD, HNC S: 12 Apr 02
6. Feasibility Analysis, SEAD, NAN S: 23 Apr 02
7. Decision on best alternative (HNC, NAN, SEDA) S: 30 Apr 02
8. Validation Rpt to DABRACO (Mark Jones) HNC-Earhart S: 30 Apr 02

Appendix B - CENAN & SEAD Feasibility Analysis

Feasibility for OE and HTRW options 24 Apr 02
Technologies are screened for feasibility analyses for Effectiveness, Implementability, and Cost.

Open Detonation area, Alternative- cap in place

- RCRA Closure applies
- Munitions are RCRA characteristic wastes IAW the regulations I cited in the information paper
- RCRA Closure can be clean closure (removal of all releases), or waste in place; characteristic wastes can be capped, LDRs kick in for listed wastes (need to verify this)
- Regulators- yes-characteristic waste; need to prove migration won't occur, mercury may be a problem; LTM required and RCRA C standards for the cap for RCRA Closure
- DDESB approvable for capping-did at other LF's, rather than excavate, (Ft. Mead) but we will have to submit hard copy for approval
- Consolidation of on-site OE by bulldozing into the "to-be-capped" area, disposing of OE that is visible should be approvable if written up right
- Trees too if needed, should be able to open burn them too (we still are permitted)
- Traditional mag/flag/disposal/clearance for surrounding area
- Have to send up an ESS for review to get definitive answer
- Mt. Molle can be dozed into the area too
- ROD compliance can be completed for OB regardless of OE process for Mt. Molle
- Waste in place closure, and long term requirements need to be weighed

Bottom Line - Effectiveness: yes;
Implementability: yes;
Cost: needs to be compared to treatment

CAMU Rule for consolidation from other sites:

- Closure is easier than CAMU. The regulators would regulate like this was an operating RCRA landfill. This would be hard for approve-ability. Jim Quinn has already said no to moving wastes from other sites. The reason would be the receiving site has to meet landfill-operating standards. The arguments could be win-able, but this would be a long, hard effort.
- If 4-foot cap with restrictions is acceptable to DDESB, we consolidate 46 and 57 on their respective sites and cap.
- At OB, we know that to remove over-500ppm and cap over-60ppm

is approvable for lead for the regulators. 46 and 57 may have this or other COCs, but if we propose to cap for OE, the same basis for 9 inches of cover at OB for eco risk should apply. Therefore, cap in place should work for these too.

- Traditional mag and flag for perimeter areas
- DDESB may not approve excavation of soil containing OE and moving to another site.
- Same call for DDESB for dozing into a designated fill for high-concentration range residue & OE

Bottom Line - Effectiveness: yes
Implementability: many roadblocks, higher risk of DDESB non-approval
Cost: needs to be compared to treatment and capping

Screening & conventional perforation Alternative

- We need better design data and cost estimates.
- This works- but we need to set it up so that we end up with scrap metal and clean soil, not a smaller pile that still needs to be hand sorted.
- Clean closure obtainable
- Options:
  - All soil, including OE and range residue goes through deactivation, and is certified on exit
    - This may include a screening for any items over the Net Explosive Weight limit of the kiln
    - Need to put a furnace on site than can process larger tonnage per hour than the deactivation furnace at
    - SEAD 17
    - This allows progress at SEAD 17 to continue independently
    - This would be approvable by DDESB and regulators with soil sampling/treatment/disposal of effluent soil for HTRW
    - Currently have OD RD funds to run costs, technical, and feasibility analyses versus capping options and ESS
    - Solves a lot of HTRW COC concerns due to LTTD
    - We will have to prove LTTD is good enough, and incineration standards are not necessary
  - Magnetic separation line was technically effective, but need to compare costs to mixed OE and soil deactivation
    - Need to eliminate resultant mixed scrap and OE stockpile
      - Conventional OE disposal

- Modify with OE-only furnace
- NEW limits would still require conventional perforation

Bottom Line - Effectiveness: yes
Implementability: yes
Cost: risk of cost growth due to conventional perforation of many items; also needs to be compared to treatment and capping; conventional perforation may be cheaper if growth is expected or is

Thermal Treatment by Deactivation /LTTD

- o Combination with screening NEW limited materials may be cost effective, since Thermal treatment for oversized soil only
- o Eliminates predictions on the number of items of OE and range residue
- o Costs need to be compared with capping and conventional
- o Clean closure obtainable

Bottom Line - Effectiveness: yes
Implementability: yes, DDESB and regulatory approvability, but costs may vary with LTTD vs. incineration
issue
Cost: risk of growth minimized due to estimates being not dependent on the number of items; also needs to be compared to treatment and capping; conventional perforation may be cheaper if growth is expected; capping may be cheaper

Other sites:

- 46 and 57 should not need an engineered-RCRA standards-cap only 4 feet for DDESB and 9 inches for eco.
- Dozing into one area on a given site likely would be cheaper than excavating and moving and consolidating.
- Screening option may be cost effective to move site to site.
- Capping and Thermal Treatment of soils and OE have lower risk of cost growth due to predictions of the number of items or range residue
- The advantages and disadvantages of contracting mechanisms need to be weighed. Regardless, design information for scoping, technologies and costs need to be determined; this is more so for fixed pricing.

Appendix C - Detailed Cost Estimates

1. The following rough order-of-magnitude cost estimates for the four options for the Seneca Validation Report for the Mt. Molle disposal pile were provided as estimates by CENWD unless noted otherwise. The estimates were revised for 33,000 cubic yards in lieu of 20,000 used by CENWD and are summarized below:

Option 1-A: Grade Mt. Molle in place and cover with approximately 4-6 ft of clean cover.

Grade Mt. Molle to a depth of three feet (four acres) $3/cu yd + 40% (overhead and profit) = $4.20/cu yd
$4.20 x 20,000 cu yd = **$ 84,000**

Clean cover (borrow material): 6 ft cover x 4 acres x 43,560 /27 = 40,000 cu yd

$4/cu yd x 40,000 cu yd = **$160,000**

Haul for five miles in 12 yd truck $2.53 + 40% = $3.50/cu yd

3.50 x 40,000 cu yd = **$140,000**

spread and compact: $4.20 x 40,000 = **$168,000**

Seed $2000/acre **= $8,000**

Total: $560,000

Option 1-B: Same as Option 1-A with the addition of a 40-mil HDPE liner between the waste and the fill soil.

Assuming a 4 acre cap plus 40% for markups:

40 mil VLDPE installed: $0.41/sf x 4 acres x 43560 sf/acre x 1.40 = $100,014

2-sided geo-composite drainage layer installed: $0.43/sf x 4 acres x 43560 sf/acre x 1.40 = $ 104,892

12" sub grade material @ $4/cy x 1' x 4 acres x 43560 sf/acre x cy/27cf = $25813

Haul sub grade material @ 5 miles: $2.53/cy x 6453 cy x 1.40 = $22587

Spread and compact sub grade material: $3/cy x 6453cy x 1.40 =

$27,103

Total additional cost = $280,409

Total Option 1-B cost = $840,409

Option 2: Entombing the Mt.Molle material in an igloo or bunker: $ 514,000

Option 3: Screen material and conduct metal separation with a magnet and conduct normal OE disposal techniques; Current estimated cost from the site = $ 2,890,000

Note: This option is similar to the operations already conducted on the site. Site personnel provided this data based on current operations.

Option 4: Low temperature incineration at the existing furnace located as SEAD or transporting a mobile furnace to the site to smelt. It is assumed that a unit will be brought on site and the costs of low temperature incineration will be the same as high temperature incineration. The Corps experience is that low temperature incineration is often more costly than high temperature incineration. However, for this order-of-magnitude estimate they are assumed to be the same. We looked at the detail actual costs of incinerating 13,000 cu yd of explosives contaminated soil at the Nebraska Ordnance Depot at Mead, Nebraska. These costs were about $600/cu yd. If we add $200/cu yd to transport the Mt. Molle to/from the incinerator, haul roads, sampling, trailer, explosion protection, etc. the total cost is $800/cu yd.

Total: 20,000 cu yd x $600/cu yd = $16,000,000

2. This data was provided by the New York District and was based on contractor (WESTON) prepared preliminary cost estimates for the following four options. However, the Government estimates were used for the ranking. However, during follow-on detailed evaluations, these costs can be evaluated for cost reality during detailed cost evaluation.

    a. The first option estimated cost to construct a RCRA D or C cap over the material at $500,000 -750,000, not including permits, O & M, monitoring wells, fencing etc.

    b. The second option included costs to haul all of the oversized material to eleven ammunition magazines (igloos) and sealing in place at a cost of $514,000.

c. The third option included costs to process all oversized material through the ferrous materials separator and transporting OE and OE scrap to one igloo and sealing in place at a cost of approximately $783,000.

d. The fourth option to process the material within the current ESS through a ferrous materials separator followed by hand sorting, and conventional demilitarization at a cost of approximately $2,890,000.

PERFORMANCE WORK STATEMENT
IMPLEMENTATION OF THE LONG-TERM MONITORING PLAN
FOR THE OPEN BURNING (OB) GROUNDS AND FIRE TRAINING AREAS,
ANNUAL LAND USE CONTROL (LUC) EVALUATION, AND ABANDONMENT OF EXISTING
MONITORING WELLS AT VARIOUS SITES
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

04 December 2009

1.0 BACKGROUND AND GENERAL STATEMENT OF WORK: Following remediation of the OB Grounds and Fire Training Area sites, long-term monitoring is required to verify the success of the remedial efforts. Sites at which the remedy involves LUCs requires that site-specific controls and controls necessary to assure the protectiveness of the selected remedy are maintained. At sites where no additional actions are required and/or closeout is recommended, existing monitoring wells will require abandonment and closure in accordance with Federal, State, and local requirements.

1.1 GENERAL DESCRIPTION. SEDA is a US Army facility located in Seneca County, New York. SEDA occupies approximately 10,600 acres. It is bounded on the west by State Route 96A and on the east by State Route 96. The cities of Geneva and Rochester are located to the northwest (14 and 50 miles, respectively); Syracuse is 53 miles to the northeast and Ithaca is 31 miles to the south. The surrounding area is generally used for farming.

1.2 REGULATORY STATUS. The Installation was included on the Federal Facilities National Priorities List on 13 July 1989. Consequently, all work to be performed under this contract shall be performed according to Comprehensive Environmental Response Compensation and Liability Act (CERCLA) guidance as put forth in the EPA Interim Final "Guidance for Conducting Remedial Investigations/ Feasibility Studies under CERCLA", the "Federal Facility Agreement under CERCLA Section 120 in the matter of Seneca Army Depot, Romulus, New York", the Final, "Long Term Monitoring Plan for the Open Burning (OB) Grounds, Seneca Army Depot Activity" (Reference 19.8) and the Final, "Long Term Monitoring Plan for the Fire Training Areas (SEAD-25 and SEAD-26), Seneca Army Depot Activity" (Reference 19.9). The Land Use Control Remedial Design (Reference 19.11, 19.12, 19.13, and 19.14) contains the land use control that are required by the sites Record of Decision (ROD). These Institutional Controls (IC) were chosen in accordance with CERCLA and, to the extent practicable, the National Oil and Hazardous Substance Pollution Contingency Plan.

1.3 SECURITY REQUIREMENTS. Compliance with SEDA security requirements is mandated.

2.0 OBJECTIVES:

a. Long Term Monitoring - The contractor shall implement the approved plan for long-term monitoring at the OB Grounds and Fire Training Areas for a period of one year. Following that year of performance, the contractor shall report annual results and provide recommendations for future Long Term Monitoring needs. All work shall be completed in accordance with (IAW) the approved Long Term Monitoring Plans. All field activities shall be performed IAW the approved Accident Prevention Plan for the Seneca program.

b. Land Use Control – The contractor shall implement the inspection and reporting of the LUCs. All work shall be completed IAW the Record of Decision and the Final Land Use Control Remedial Design for the sites specified in this delivery order.

c. Abandonment of Existing Monitoring Wells – The contractor shall prepare a Work Plan for the abandonment and closure of groundwater monitoring wells at various sites on the installation. The contractor shall complete the closure of groundwater monitoring wells in accordance with applicable Federal, State, and local requirements.

3.0 (Task 1) DESCRIPTION OF SERVICES FOR LONG TERM MONITORING OF THE OB GROUNDS YR2:

a. Vegetative Cap, Drainage Swale Inspections, and Reeder Creek Inspections. The Contractor shall inspect the vegetative cap and drainage swales on the site. Inspection shall include observations pertinent to the integrity of the soil and vegetative covering and the condition of run-off channels, infiltration galleries and swales. The Contractor shall also inspect the streambed of Reeder Creek adjacent to the OB Grounds and assess if there is evidence of sediment deposition within areas that were previously excavated. Additionally, the Contractor will assess the conditions of spillways that

previously connected the OB Grounds to Reeder Creek and allowed surface water and sediment to move into the creek. This inspection should assess if there is evidence that soil/sediment/or debris from the OB Grounds is migrating to Reeder Creek.

b. Annual Groundwater Monitoring. The Contractor shall conduct the annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

c. Preparation of the Annual Report. Following completion of the annual monitoring event, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for down gradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.
- A descriptive account of any noted soil, sediment or debris migration from the ob grounds too Reeder Creek and observation pertinent to the re-deposition of sediment within that portion of Reeder Creek that abuts the OB Grounds and that was excavated to bedrock during the remedial action.
- A recommendation of any changes (e.g. changing frequency of data collection for the OB Grounds LTM Plan, development of a sediment monitoring program, etc.) that are proposed for implementation for the OB Grounds LTM Plan.

d. PROJECT MANAGEMENT The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

4.0 (Task 2) DESCRIPTION OF SERVICES FOR LONG TERM MONITORING OF THE FIRE TRAINING AND DEMONSTRATION PAD AREA YR3:

a. First Semi-Annual Groundwater Monitoring Event. Upon direction from the KO, the Contractor shall commence the initial semi-annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Reports - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend analysis for key chemical concentration data developed for each of the key monitoring wells.
- Trend analysis of key indicator parameter data developed for each of the key monitoring wells.

b. Second Semi-Annual Groundwater Monitoring Event. Approximately six months after the initial semi-annual monitoring event, the Contractor shall commence the second semi-annual groundwater monitoring event. The actual timing of this event may be modified, with the permission of the KO, if insufficient water is found to exist in monitoring wells at the site.

Water Level Monitoring - The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Reports - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend analysis for key chemical concentration data developed for each of the key monitoring wells.
- Trend analysis of key indicator parameter data developed for each of the key monitoring wells.

c. Preparation of the Annual Report. Following completion of the YR3 semi-annual groundwater monitoring events, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring wells.
- Trend plots for all key indicator parameter data developed for each of the key monitoring wells.
- A recommendation of any changes (e.g. changing frequency of data collection to semi annual or annual for the Fire Training and Demonstration Pad (SEAD-25) site, etc.) that are proposed for implementation for the Fire Training and Demonstration Pad (SEAD-25) site.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

5.0 (Task 3) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED BELOW:

SITE	DESCRIPTION
SEAD 27	- STEAM JENNY PIT
SEAD 64A	- GARBAGE DISPOSAL AREA
SEAD 66	- PESTICIDE STORAGE AREA
SEAD 25	- FIRE DEMONSTRATION PAD
SEAD 26	- FIRE TRAINING AREA

SEAD 39 - **BUILDING 121 BOILER BLOW DOWN PIT**

SEAD 40 - **BUILDING 319 BOILER BLOW DOWN PIT**

SEAD 41 - **BUILDING 718 BOILER BLOW DOWN PIT**

SEAD 67 - **DUMPSITE EAST OF STP 4**

SEAD 13 - **INHIBITED RED FUMING NITRIC ACID (IRFNA)**

SEAD 64B - **GARBAGE DISPOSAL AREA**

SEAD 64C - **RUMORED GARBAGE DISPOSAL AREA**

SEAD 64D - **GARBAGE DISPOSAL AREA**

SEAD 122B - **AIRFIELD SMALL ARMS RANGE**

SEAD 122E - **DEICING LOCATIONS**

SEAD 44A - **QUALITY ASSURANCE TEST LAB WEST**

SEAD 44B - **QUALITY ASSURANCE TEST LAB**

SEAD 43 - **OLD MISSILE PROPELLANT TEST LAB**

SEAD 56 - **HERBICIDE AND PESTICIDE STORAGE**

SEAD 69 - **BUILDING 606 DISPOSAL AREA**

SEAD 62 - **NICOTINE SULFATE DISPOSAL AREA**

SEAD 52 - **AMMUNTION BREAKDOWN AREA**

SEAD 3, 6, 8, 14, and 15 - **ASH LANDFILL OPERABLE Unit**

a. **LUC Inspections.** The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. **LUC Annual Report.** The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. **Project Management.** The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

6.0 DESCRIPTION OF SERVICES FOR THE ABANDONMENT OF EXISTING MONITORING WELLS AT VARIOUS SITES LISTED BELOW:

(Task 4) Abandonment of Existing Monitoring Wells at SEAD-5

(Task 5) Abandonment of Existing Monitoring Wells at SEAD-6

(Task 6) Abandonment of Existing Monitoring Wells at SEAD-119B

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

14.0 (Optional Task 27) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR4.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

15.0 (Optional Task 28) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR5.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Perform Five Year Review. The contractor shall perform a five-year review in accordance with Federal, State, and local regulatory requirements. The work is required to be performed in accordance with EPA 540-R-01-007, OSWER No. 9355.7-03B-P, June 2001. The purpose of a five-year review 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.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

16.0 SUBMITTALS: The contractor shall furnish copies of all documents to the addressees listed below. One copy of the final documents shall be sent to the CEHNC Project Manager on 3.5-inch computer disk or CD ROM in an acceptable format in addition to the number of hard copies identified below. The contractor shall use express mail services for delivering these documents. Following each submission, comments generated as a result of their review shall be incorporated.

16.1 ADDRESSEES

a) Contracting Officer (KO)
US Army Engineering and Support Center, Huntsville
ATTN: CEHNC-CT-S (MS. Sharon Butler)
4820 University Square,
Huntsville, Alabama, 35816

(Task 7) Abandonment of Existing Monitoring Wells at SEAD-12

(Task 8) Abandonment of Existing Monitoring Wells at SEAD-121C

(Task 9) Abandonment of Existing Monitoring Wells at SEAD-122B

(Task 10) Abandonment of Existing Monitoring Wells at SEAD-24

(Task 11) Abandonment of Existing Monitoring Wells at SEAD-25

(Task 12) Abandonment of Existing Monitoring Wells at SEAD-26

(Task 13) Abandonment of Existing Monitoring Wells at SEAD-27

(Task 14) Abandonment of Existing Monitoring Wells at SEAD-48

(Task 15) Abandonment of Existing Monitoring Wells at SEAD-59

(Task 16) Abandonment of Existing Monitoring Wells at SEAD-63

(Task 17) Abandonment of Existing Monitoring Wells at SEAD-67

(Task 18) Abandonment of Existing Monitoring Wells at SEAD-70

(Task 19) Abandonment of Existing Monitoring Wells at SEAD-71

a. Preparation of Work Plans. The contractor shall prepare a Work Plan to govern the activities to be performed. The work plan and safety plan shall include all Federal, State, and Local requirements to close monitoring wells at the various sites. No field work shall be performed until after the Work Plans are reviewed and approved.

b. Closure of Wells to be Abandoned. Following approval of the Work Plans, the contractor shall perform closure operations in accordance with Federal, State, and local requirements.

c. Closure Report. The contractor shall prepare a letter report describing the activities performed during this effort and presenting the results of the well closures. The contractor shall demonstrate that closures have met regulatory requirements. Documentation and approval shall be included.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

OPTIONAL TASK

7.0 (Optional Task 20) DESCRIPTION OF OPTIONAL SERVICES FOR LONG TERM MONITORING OF THE OB GROUNDS YR3:

a. Vegetative Cap, Drainage Swale Inspections, and Reeder Creek Inspections. The Contractor shall inspect the vegetative cap and drainage swales on the site. Inspection shall include observations pertinent to the integrity of the soil and vegetative covering and the condition of run-off channels, infiltration galleries and swales. The Contractor shall also inspect the streambed of Reeder Creek adjacent to the OB Grounds and assess if there is evidence of sediment deposition within areas that were previously excavated. Additionally, the Contractor will assess the conditions of spillways that previously connected the OB Grounds to Reeder Creek and allowed surface water and sediment to move into the creek. This inspection should assess if there is evidence that soil/sediment/or debris from the OB Grounds is migrating to Reeder Creek.

b. Annual Groundwater Monitoring Event. The Contractor shall conduct the annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

c. Preparation of the Annual Report. Following completion of the annual monitoring event, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for down gradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.
- A descriptive account of any noted soil, sediment or debris migration from the ob grounds too Reeder Creek and observation pertinent to the re-deposition of sediment within that portion of Reeder Creek that abuts the OB Grounds and that was excavated to bedrock during the remedial action.
- A recommendation of any changes (e.g. changing frequency of data collection for the OB Grounds LTM Plan, development of a sediment monitoring program, etc.) that are proposed for implementation for the OB Grounds LTM Plan.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

8.0 (Optional Task 21) DESCRIPTION OF OPTIONAL SERVICES FOR LONG TERM MONITORING OF THE OB GROUNDS YR4:

a. Vegetative Cap, Drainage Swale Inspections, and Reeder Creek Inspections. The Contractor shall inspect the vegetative cap and drainage swales on the site. Inspection shall include observations pertinent to the integrity of the soil and vegetative covering and the condition of run-off channels, infiltration galleries and swales. The Contractor shall also inspect the streambed of Reeder Creek adjacent to the OB Grounds and assess if there is evidence of sediment deposition within areas that were previously excavated. Additionally, the Contractor will assess the conditions of spillways that previously connected the OB Grounds to Reeder Creek and allowed surface water and sediment to move into the creek. This inspection should assess if there is evidence that soil/sediment/or debris from the OB Grounds is migrating to Reeder Creek.

b. Annual Groundwater Monitoring Event. The Contractor shall conduct the annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

c. Preparation of the Annual Report. Following completion of the annual monitoring event, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for down gradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.
- A descriptive account of any noted soil, sediment or debris migration from the ob grounds too Reeder Creek and observation pertinent to the re-deposition of sediment within that portion of Reeder Creek that abuts the OB Grounds and that was excavated to bedrock during the remedial action.
- A recommendation of any changes (e.g. changing frequency of data collection for the OB Grounds LTM Plan, development of a sediment monitoring program, etc.) that are proposed for implementation for the OB Grounds LTM Plan.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

9.0 (Optional Task 22) DESCRIPTION OF OPTIONAL SERVICES FOR LONG TERM MONITORING OF THE OB GROUNDS YR5:

a. Vegetative Cap, Drainage Swale Inspections, and Reeder Creek Inspections. The Contractor shall inspect the vegetative cap and drainage swales on the site. Inspection shall include observations pertinent to the integrity of the soil and vegetative covering and the condition of run-off channels, infiltration galleries and swales. The Contractor shall also inspect the streambed of Reeder Creek adjacent to the OB Grounds and assess if there is evidence of sediment deposition within areas that were previously excavated. Additionally, the Contractor will assess the conditions of spillways that previously connected the OB Grounds to Reeder Creek and allowed surface water and sediment to move into the creek. This inspection should assess if there is evidence that soil/sediment/or debris from the OB Grounds is migrating to Reeder Creek.

b. Annual Groundwater Monitoring Event. The Contractor shall conduct the annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

c. Preparation of the Annual Report. Following completion of the annual monitoring event, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.

- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for down gradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.
- A descriptive account of any noted soil, sediment or debris migration from the ob grounds too Reeder Creek and observation pertinent to the re-deposition of sediment within that portion of Reeder Creek that abuts the OB Grounds and that was excavated to bedrock during the remedial action.
- A recommendation of any changes (e.g. changing frequency of data collection for the OB Grounds LTM Plan, development of a sediment monitoring program, etc.) that are proposed for implementation for the OB Grounds LTM Plan.

d. Perform Five Year Review. The contractor shall perform a five-year review in accordance with Federal, State, and local regulatory requirements. The work is required to be performed in accordance with EPA 540-R-01-007, OSWER No. 9355.7-03B-P, June 2001. The purpose of a five-year review 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.

e. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

10.0 (Optional Task 23) DESCRIPTION OF OPTIONAL SERVICES FOR LONG TERM MONITORING OF THE FIRE TRAINING AND DEMONSTRATION PAD AREA YR4:

a. First Semi-Annual Groundwater Monitoring Event. Upon direction from the KO, the Contractor shall commence the initial semi-annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Report - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend analysis of key groundwater elevation data for each of the key monitoring wells.
- Trend analysis for key chemical concentration data developed for each of the key monitoring wells.
- Trend plots of key indicator parameter data developed for each of the monitoring wells.

b. Second Semi-Annual Groundwater Monitoring Event. Approximately six months after the initial semi-annual monitoring event, the Contractor shall commence the second semi-annual groundwater monitoring event. The actual timing of this event may be modified, with the permission of the KO, if insufficient water is found to exist in monitoring wells at the site.

Water Level Monitoring - The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Report - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend analysis for key chemical concentration data developed for each of the key monitoring wells.
- Trend analysis of key indicator parameter data developed for each of the key monitoring wells.

c. Preparation of the Annual Report. Following completion of the YR4 semi-annual groundwater monitoring events, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring ells.
- Trend plots for all key indicator parameter data developed for each of the key monitoring wells.
- A recommendation of any changes (e.g. changing frequency of data collection to semi annual or annual for the Fire Training and Demonstration Pad (SEAD-25) site, etc.) that are proposed for implementation for the Fire Training and Demonstration Pad (SEAD-25) site.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

11.0 (Optional Task 24) DESCRIPTION OF OPTIONAL SERVICES FOR LONG TERM MONITORING OF THE FIRE TRAINING AND DEMONSTRATION PAD AREA YR5:

a. First Semi-Annual Groundwater Monitoring Event. Upon direction from the KO, the Contractor shall commence the initial semi-annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Report - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend plots for all chemical concentration data developed for each of the monitoring wells.
- Trend plots of key indicator parameter data developed for each of the monitoring wells.

b. Second Semi-Annual Groundwater Monitoring Event. Approximately six months after the initial semi-annual monitoring event, the Contractor shall commence the second semi-annual groundwater monitoring event. The actual timing of this event may be modified, with the permission of the KO, if insufficient water is found to exist in monitoring wells at the site.

Water Level Monitoring - The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Reports - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend plots for all chemical concentration data developed for each of the monitoring wells.
- Trend plots of key indicator parameter data developed for each of the monitoring wells.

c. Preparation of the Annual Report. Following completion of the YR5 semi-annual groundwater monitoring events, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria values.
- Trend plots for all key chemical concentration data developed for each of the key monitoring ells.
- Trend plots for all key indicator parameter data developed for each of the key monitoring wells.
- A recommendation of any changes (e.g. changing frequency of data collection to semi annual or annual for the Fire Training and Demonstration Pad (SEAD-25) site, etc.) that are proposed for implementation for the Fire Training and Demonstration Pad (SEAD-25) site.

d. Perform Five Year Review. The contractor shall perform a five-year review in accordance with Federal, State, and local regulatory requirements. The work is required to be performed in accordance with EPA 540-R-01-007, OSWER No. 9355.7-03B-P, June 2001. The purpose of a five-year review 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.

e. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

12.0 (Optional Task 25) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR2.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

13.0 (Optional Task 26) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR3.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b) Huntsville Center Project Manager (PM)
US Army Engineering and Support Center, Huntsville
ATTN: CEHNC-ED-CS-P (Mr. Steve Nohrstedt)
4820 University Square,
Huntsville, Alabama, 35816

c) Seneca ADA Installation Manager
Commander's Representative
Seneca ADA
ATTN: SMASE-CO (Bld.123, Mr. Absolom)
5786 State Route 96, P.O. Box 9,
Romulus, New York 14541-5001

d) Environmental Health Risk Assessor
Commander
USACHPPM (PROV)
ATTN: MCHB-ME-R (Mr. Hoddinott)
Building E1677
Aberdeen Proving Ground, MD, 21010-5422

e) New York District (CENAN) Project Manager
Commander
US Army Engineer District, New York
Seneca Office for Project Management
ATTN: Mr. R. Battaglia, Bld.125
P.O. Box 9
5786 State Route 96
Romulus, New York, 14541-5001

f) USAEC Representative to Seneca
Commander
U.S. Army Environmental Center,
ATTN: Mr. Roger Walton
Aberdeen Proving Ground, MD, 21010-5422

16.1.1 DOCUMENT AND SUBMITTAL LIST

Organization	Copies
CEHND-ED-CS-P	2
SMASE-CO	2
USACHPPM	2
CENAN	2
USAEC	2

16.2 SUBMITTALS AND DUE DATES: The proposed schedule for the Implementation of the Long-Term Management Plan work is given below. All work and services under this Task Order shall be completed by 31 Jan 2011.

Submittal OD	Due Date
NTP	0
Annual Report	NTP + 360 days

Submittal FTP	Due Date
NTP	0
1st Semi-Annual Monitoring Report	NTP + 180 days
2nd Semi-Annual Monitoring Report	NTP + 360 days
Annual Report	NTP + 360 days

Submittal LUC	Due Date
NTP	0
Annual Report	NTP + 360 days

Submittal Monitor Well Abandonment	Due Date
NTP	0
Work Plan	NTP + 30 days
Closure Report	NTP + 360 days

17.0 QUALITY ASSURANCE (QA): The Government will perform QA of the Contractor's performance under this contract using the method of surveillance specified in the Quality Assurance Surveillance Plan (QASP), Attachment 1, 2, 3, and 4. The Government will conduct QA inspections on all phases and types of work performed. The Government reserves the right to perform QA inspections at any time.

18.0 PUBLIC AFFAIRS: The Contractor shall not conduct Public Affairs activities at the installation. All agencies and/or individuals requesting information concerning the conduct of the project shall be referred to the Seneca Army Depot Activity, Public Affairs Office (PAO) or the U.S. Army Engineering and Support Center, Huntsville, PAO.

19.0 REFERENCES:

19.1 Interim Final, "Guidance for or Conducting Remedial Investigations/Feasibility studies Under CERCLA", U.S. EPA, Office of Solid Waste and Emergency Response, October 1988.

19.2 "Federal Facility Agreement under CERCLA Section 120 in the matter of Seneca Army Depot, Romulus, New York", Docket No. II-CERCLA-FFA-00202, USEPA, U.S. Department of the Army, and the New York State Department of Environmental Conservation, November 1990.

19.3 Final, "Remedial Investigation Report at the Open Burning (OB) Grounds at Seneca Army Depot Activity", dated September 1994.

19.4 Final, "Feasibility Study Report at the Open Burning (OB) Grounds at Seneca Army Depot Activity", dated June 1996.

19.5 Final, "Proposed Remedial Action Plan (PRAP) for the Open Burning (OB) at the Seneca Army Depot Activity (SEDA)", dated January 1997.

19.6 Final, "Record of Decision (ROD) for Seneca Army Depot Activity, Open Burning (OB) Grounds", dated December 1998.

19.7 Final, "Generic Site-Wide Sampling and Analysis Plan, Seneca Army Depot Activity, Romulus, New York", Parsons, December 2005.

19.8 Final, "Long Term Monitoring Plan for the Open Burning Grounds, Seneca Army Depot Activity", Parsons, January 2007.

19.9 Final, "Long Term Monitoring Plan for the Fire Training Areas (SEAD-25 and SEAD-26), Seneca Army Depot Activity", Parsons.

19.10 Draft, "SEAD-25 and SEAD-26 Annual Report", Parsons, January 2007.

19.11 Final, "Land Use Control Remedial Design For SEAD 27, 66, and 64A, Seneca Army Depot Activity", Seneca ADA, December 2006.

19.12 Final, "Land Use Control Remedial Design For SEAD 27, 66, and 64A, Seneca Army Depot Activity", Seneca ADA, December 2006. Addendum 1 – SEAD 25 and SEAD 26, Seneca ADA, May 2007

19.13 Final, "Land Use Control Remedial Design For SEAD 27, 66, and 64A, Seneca Army Depot Activity", Seneca ADA, December 2006. Addendum 2 – SEAD 13, 39, 40, 41,43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E, Seneca ADA, April 2008

19.14 Final, "Land Use Control Remedial Design For SEAD 27, 66, and 64A, Seneca Army Depot Activity", Seneca ADA, December 2006. Addendum 3 – SEADs 3, 6, 8, 14, and 15, Seneca ADA, January 2009

Attachment 1

Quality Assurance Surveillance Plan IMPLEMENTATION OF THE LONG-TERM MANAGEMENT PLAN FOR THE OPEN BURNING (OB) GROUNDS SENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK				
TASK AND/OR ACTIVITY	**METHOD OF SURVEILLANCE**	**PERFORMANCE OBJECTIVES**	**MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM RQMT (AQL)**	**FREQUENCY INSPECTED**
1, Option 20, Option 21, Option 22 – a. Vegetative Cap and Drainage Swale Inspections	Periodic Inspection	Perform inspection in accordance with CERCLA Guidance, the Federal Facility Agreement, the approved Long Term Monitoring Plan and the approved Accident Prevention Plan for the Seneca Program.	Zero Defects	One time, or as needed
1, Option 20, Option 21, Option 22 – b. Annual Groundwater Monitoring Event	Periodic Inspection	Perform groundwater monitoring in accordance with CERCLA Guidance, the Federal Facility Agreement, the approved Long Term Monitoring Plan and the approved Accident Prevention Plan for the Seneca Program.	Zero Defects	One time, or as needed
1, Option 20, Option 21, Option 22 - c. Preparation of the Annual Report	100% Inspection	Prepare annual groundwater monitoring report in accordance with CERCLA Guidance, the Federal Facility Agreement, and the approved Long Term Monitoring Plan.	Zero Defects	One time, or as needed
Option 22 – d. Perform Five Year Review	100% Inspection	Perform Five Year Review in accordance with Federal, State and Local regulatory requirements.	Zero Defects	One time, or as needed
1, Option 20, Option 21 - d. Project Management. Option 22 - e. Project Management	100% Inspection	The contractor shall meet the project management requirements as specified in the contract.	Zero Defects	One time, or as needed

Attachment 2

Quality Assurance Surveillance Plan IMPLEMENTATION OF THE LONG-TERM MANAGEMENT PLAN FOR THE FIRE TRAINING AREAS SENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK				
TASK AND/OR ACTIVITY	**METHOD OF SURVEILLANCE**	**PERFORMANCE OBJECTIVES**	**MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM RQMT (AQL)**	**FREQUENCY INSPECTED**
2, Option 23, Option 24 – a. First Semi-Annual Groundwater Monitoring Event	Periodic Inspection	Perform groundwater monitoring in accordance with CERCLA Guidance, the Federal Facility Agreement, the approved Long Term Monitoring Plan and the approved Accident Prevention Plan for the Seneca Program.	Zero Defects	One time, or as needed
2, Option 23, Option 24 – b. Second Semi-Annual Groundwater Monitoring Event	Periodic Inspection	Perform groundwater monitoring in accordance with CERCLA Guidance, the Federal Facility Agreement, the approved Long Term Monitoring Plan and the approved Accident Prevention Plan for the Seneca Program.	Zero Defects	One time, or as needed
2, Option 23, Option 24 – c. Preparation of the Annual Report	100% Inspection	Prepare annual groundwater monitoring report in accordance with CERCLA Guidance, the Federal Facility Agreement, and the approved Long Term Monitoring Plan.	Zero Defects	One time, or as needed
Option 24 – d. Perform Five Year Review	100% Inspection	Perform Five Year Review in accordance with Federal, State and Local regulatory requirements..	Zero Defects	One time, or as needed
2, Option 23, – d. Project Management Option. Option 24 – e. Project Management.	100% Inspection	The contractor shall meet the project management requirements as specified in the contract.	Zero Defects	One time, or as needed

Attachment 3

Quality Assurance Surveillance Plan LAND USE CONTROL (LUC) SENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK				
TASK AND/OR ACTIVITY	**METHOD OF SURVEILLANCE**	**PERFORMANCE OBJECTIVES**	**MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM RQMT (AQL)**	**FREQUENCY INSPECTED**
3, Option 25, Option 26, Option 27, Option 28 – a. LUC Inspection	Periodic Inspection	Perform LUC Inspection in accordance with CERCLA Guidance, the Federal Facility Agreement, the approved ROD and the approved Final Land Use Control Remedial Design for the Seneca Program.	Zero Defects	One time, or as needed
3, Option 25, Option 26, Option 27, Option 28 – b. Preparation of the Annual Report	100% Inspection	Prepare annual LUC report in accordance with CERCLA Guidance, the Federal Facility Agreement, and the approved ROD and the approved Final Land Use Control Remedial Design for the Seneca Program.	Zero Defects	One time, or as needed
Option 28 – c. Perform Five Year Review	100% Inspection	Perform Five Year Review in accordance with Federal, State and Local regulatory requirements.	Zero Defects	One time, or as needed
3, Option 25, Option 26, Option 27 – c. Project Management. Option 28 – d. Project Management	100% Inspection	The contractor shall meet the project management requirements as specified in the contract.	Zero Defects	One time, or as needed

Attachment 4

Quality Assurance Surveillance Plan ABANDONMENT OF EXISTING MONITORING WELLS SENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK				
TASK AND/OR ACTIVITY	**METHOD OF SURVEILLANCE**	**PERFORMANCE OBJECTIVES**	**MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM RQMT (AQL)**	**FREQUENCY INSPECTED**
4 thru 19 – a. Prepare Work Plan	100% Inspection	Prepare Work Plans in accordance with Federal, State, and Local requirements.	Zero Defects	One time, or as needed
4 thru 19 – b. Close Wells	Periodic Inspection	Perform closure of monitoring wells in accordance with Federal, State, and Local requirements.	Zero Defects	One time, or as needed
4 thru 19 – c. Prepare the Closure Report	100% Inspection	Prepare Closure Reports in accordance with CERCLA Guidance, the Federal Facility Agreement, and Federal, State, and Local requirements for the Seneca Program.	Zero Defects	One time, or as needed
4 thru 19 – d. Project Management.	100% Inspection	The contractor shall meet the project management requirements as specified in the contract.	Zero Defects	One time, or as needed

Client:	U.S. Army Corps of Engineers	Parsons	
		Opt Year 3 Tasks 22, 27	
Contract :	RFP W912DY-08-D-0003, Task Order 0008	Summary Sheet	
		Supporting Data Format	
Project:	Long-Term Monitoring OB Grounds and FTA		
	Annual LUC Evaluations		
	Abandonment of Monitoring Wells	Printed:	12-Jan-10

TASK	AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Option Yr 3 Task 22 Long-Term Monitoring OB Grounds	$ 57,574.20	$ 218.55	$ 57,355.65	$ 3,447.90	$ 32.49	$ 61,054.58
Option Yr 3 Task 27 Monitoring of Land Use Controls (LU	$ 58,296.82	$ -	$ 58,296.82	$ 3,497.81	$ 36.19	$ 61,830.82
				$ -		$ -
TOTAL	$ 115,871.01	$ 218.55	$ 115,652.47	$ 6,945.70	$ 68.68	
PROJECT TOTAL						$ 122,885.40

Client:	U.S. Army Corps of Engineers	Parsons	
		Opt Year 1 Tasks 20, 23, 25	
Contract :	RFP W912DY-08-D-0003, Task Order 0008	Summary Sheet	
		Supporting Data Format	
Project:	Long-Term Monitoring OB Grounds and FTA		
	Annual LUC Evaluations		
	Abandonment of Monitoring Wells	Printed:	12-Jan-10

TASK	AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Task 20 - Long -Term Monitoring OBG (Yr 3)	$ 33,934.65	$ 206.00	$ 33,728.65	$ 2,029.90	$ 18.36	$ 35,982.90
Task 23 - Long-Term Monitoring FTA (Yr 4)	$ 70,195.87	$ 6,630.00	$ 63,565.87	$ 4,012.85	$ 33.38	$ 74,242.11
Task 25 - Monitoring of Land Use Controls (Yr 2)	$ 56,626.21	$ -	$ 56,626.21	$ 3,397.57	$ 35.51	$ 60,059.30
TOTAL	$ 160,756.73	$ 6,836.00	$ 153,920.73	$ 9,440.32	$ 87.25	
PROJECT TOTAL						**$ 170,284.31**

Client: U.S. Army Corps of Engineers

Contract: RFP W912DY-08-D-0003, Task Order 0008

Project: Long-Term Monitoring OB Grounds and FTA
Annual LUC Evaluations
Abandonment of Monitoring Wells

Parsons
Base Year Tasks 1 - 11
Summary Sheet
Supporting Data Format

Printed: 12-Jan-10

TASK		AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Base Year	Task 1 - Long -Term Monitoring OBG (Yr2)	$ 33,363.41	$ 200.00	$ 33,163.41	$ 1,995.80	$ 29.80	$ 35,389.01
Base Year	Task 2 - Long-Term Monitoring FTA (Yr3)	$ 70,086.17	$ 6,114.00	$ 63,972.17	$ 4,021.75	$ 56.55	$ 74,164.47
Base Year	Task 3 - Monitoring of Land Use Controls (Yr 1)	$ 55,817.56	$ -	$ 55,817.56	$ 3,349.05	$ 57.64	$ 59,224.25
Base Year	Task 4 - Well Abandonment S 5, 59, 71	$ 26,739.70	$ 8,773.69	$ 17,966.01	$ 1,341.17	$ 14.23	$ 28,095.11
Base Year	Task 5 - Well Abandonment , S12, 48, 63	$ 101,610.87	$ 33,340.04	$ 68,270.83	$ 5,096.45	$ 54.09	$ 106,761.41
Base Year	Task 6 - Well Abandonment, S121C, 122B, 70	$ 21,391.76	$ 7,018.96	$ 14,372.81	$ 1,072.94	$ 11.39	$ 22,476.09
Base Year	Task 7 - Well Abandonment, S25, s6	$ 32,087.64	$ 10,528.43	$ 21,559.21	$ 1,609.41	$ 17.08	$ 33,714.13
Base Year	Task 8, Well Abandonment, S24, 67	$ 10,695.88	$ 3,509.48	$ 7,186.40	$ 536.47	$ 5.69	$ 11,238.04
Base Year	Task 9 - Well Abandonment, S3, 6, 8, 14, 15	$ 66,849.26	$ 21,934.24	$ 44,915.02	$ 3,352.93	$ 35.58	$ 70,237.77
Base Year	Task 10 - Well Abandonment, S 119B	$ 5,347.94	$ 1,754.74	$ 3,593.20	$ 268.23	$ 2.85	$ 5,619.02
Base Year	Task 11 - Well Abandonment, S27	$ 2,673.97	$ 877.37	$ 1,796.60	$ 134.12	$ 1.42	$ 2,809.51
				$ -			
TOTAL		$ 426,664.16	$ 94,050.94	$ 332,613.22	$ 22,778.32	$286.33	
PROJECT TOTAL							$ 449,728.80

Client: U.S. Army Corps of Engineers

Contract : RFP W912DY-08-D-0003, Task Order 0008

Project: Long-Term Monitoring OB Grounds and FTA
Annual LUC Evaluations
Abandonment of Monitoring Wells

Parsons
Opt Year 2 Tasks 21, 24, 26
Summary Sheet
Supporting Data Format

Printed: 12-Jan-10

TASK	AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Task 21 - Long -Term Monitoring OBG (Yr4)	$ 34,762.47	$ 212.18	$ 34,550.29	$ 2,079.38	$ 18.71	$ 36,860.56
Task 24 - Long-Term Monitoring FTA (Yr5)	$ 97,516.32	$ 6,961.00	$ 90,555.32	$ 5,642.15	$ 48.55	$ 103,207.02
Task 26 - Monitoring of Land Use Controls (Yr 3)	$ 57,915.48	$ -	$ 57,915.48	$ 3,474.93	$ 36.19	$ 61,426.60
TOTAL	$ 190,194.27	$ 7,173.18	$ 183.021.09	$ 11,196.46	$103.45	
PROJECT TOTAL						$ 201,494.18

Client:	U.S. Army Corps of Engineers	Parsons	
		Opt Year 4 Task 28	
Contract :	RFP W912DY-08-D-0003, Task Order 0008	Summary Sheet	
		Supporting Data Format	
Project:	Long-Term Monitoring OB Grounds and FTA		
	Annual LUC Evaluations		
	Abandonment of Monitoring Wells	Printed:	12-Jan-10

TASK	AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Option Yr 4 - Task 28 - Monitoring of Land Use Controls	$ 91,071.34	$ -	$ 91,071.34	$ 5,464.28	$57.13	$ 96,592.75
TOTAL	$ 91,071.34	$ -	$ 91,071.34	$ 5,464.28	$57.13	
PROJECT TOTAL						$96,592.75

PERFORMANCE WORK STATEMENT
IMPLEMENTATION OF THE LONG-TERM MONITORING PLAN
FOR THE OPEN BURNING (OB) GROUNDS AND FIRE TRAINING AREAS,
ANNUAL LAND USE CONTROL (LUC) EVALUATION, AND ABANDONMENT OF EXISTING
MONITORING WELLS AT VARIOUS SITES
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

08 December 2009

1.0 BACKGROUND AND GENERAL STATEMENT OF WORK: Following remediation of the OB Grounds and Fire Training Area sites, long-term monitoring is required to verify the success of the remedial efforts. Sites at which the remedy involves LUCs requires that site-specific controls and controls necessary to assure the protectiveness of the selected remedy are maintained. At sites where no additional actions are required and/or closeout is recommended, existing monitoring wells will require abandonment and closure in accordance with Federal, State, and local requirements. This Performance Work Statement is Cost Plus Fixed Fee. The fixed fee will be based on estimated cost and paid at the completion of the project.

1.1 GENERAL DESCRIPTION. SEDA is a US Army facility located in Seneca County, New York. SEDA occupies approximately 10,600 acres. It is bounded on the west by State Route 96A and on the east by State Route 96. The cities of Geneva and Rochester are located to the northwest (14 and 50 miles, respectively); Syracuse is 53 miles to the northeast and Ithaca is 31 miles to the south. The surrounding area is generally used for farming.

1.2 REGULATORY STATUS. The Installation was included on the Federal Facilities National Priorities List on 13 July 1989. Consequently, all work to be performed under this contract shall be performed according to Comprehensive Environmental Response Compensation and Liability Act (CERCLA) guidance as put forth in the EPA Interim Final "Guidance for Conducting Remedial Investigations/ Feasibility Studies under CERCLA", the "Federal Facility Agreement under CERCLA Section 120 in the matter of Seneca Army Depot, Romulus, New York", the Final, "Long Term Monitoring Plan for the Open Burning (OB) Grounds, Seneca Army Depot Activity" (Reference 19.8) and the Final, "Long Term Monitoring Plan for the Fire Training Areas (SEAD-25 and SEAD-26), Seneca Army Depot Activity" (Reference 19.9). The Land Use Control Remedial Design (Reference 19.11, 19.12, 19.13, and 19.14) contains the land use control that are required by the sites Record of Decision (ROD). These Institutional Controls (IC) were chosen in accordance with CERCLA and, to the extent practicable, the National Oil and Hazardous Substance Pollution Contingency Plan.

1.3 SECURITY REQUIREMENTS. Compliance with SEDA security requirements is mandated.

2.0 OBJECTIVES:

a. Long Term Monitoring - The contractor shall implement the approved plan for long-term monitoring at the OB Grounds and Fire Training Areas for a period of one year. Following that year of performance, the contractor shall report annual results and provide recommendations for future Long Term Monitoring needs. All work shall be completed in accordance with (IAW) the approved Long Term Monitoring Plans. All field activities shall be performed IAW the approved Accident Prevention Plan for the Seneca program.

b. Land Use Control – The contractor shall implement the inspection and reporting of the LUCs. All work shall be completed IAW the Record of Decision and the Final Land Use Control Remedial Design for the sites specified in this delivery order.

c. Abandonment of Existing Monitoring Wells – The contractor shall prepare a Work Plan for the abandonment and closure of groundwater monitoring wells at various sites on the installation. The contractor shall complete the closure of groundwater monitoring wells in accordance with applicable Federal, State, and local requirements.

3.0 (Task 1) DESCRIPTION OF SERVICES FOR LONG TERM MONITORING OF THE OB GROUNDS YR2:

a. Vegetative Cap, Drainage Swale Inspections, and Reeder Creek Inspections. The Contractor shall inspect the vegetative cap and drainage swales on the site. Inspection shall include observations pertinent to the integrity of the soil and vegetative covering and the condition of run-off channels, infiltration galleries and swales. The Contractor shall also

12.0 (Optional Task 17) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR2.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

13.0 (Optional Task 18) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR3.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

14.0 (Optional Task 19) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR4.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

15.0 (Optional Task 20) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR5.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Perform Five Year Review. The contractor shall perform a five-year review in accordance with Federal, State, and local regulatory requirements. The work is required to be performed in accordance with EPA 540-R-01-007, OSWER

No. 9355.7-03B-P, June 2001. The purpose of a five-year review 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.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

16.0 SUBMITTALS: The contractor shall furnish copies of all documents to the addressees listed below. One copy of the final documents shall be sent to the CEHNC Project Manager on 3.5-inch computer disk or CD ROM in an acceptable format in addition to the number of hard copies identified below. The contractor shall use express mail services for delivering these documents. Following each submission, comments generated as a result of their review shall be incorporated.

16.1 ADDRESSEES

a) Contracting Officer (KO)
US Army Engineering and Support Center, Huntsville
ATTN: CEHNC-CT **(Donna Ragucci)**
4820 University Square,
Huntsville, Alabama, 35816

b) Huntsville Center Project Manager (PM)
US Army Engineering and Support Center, Huntsville
ATTN: CEHNC-ED-CS-P (Steve Nohrstedt)
4820 University Square,
Huntsville, Alabama, 35816

c) Seneca ADA Installation Manager
Commander's Representative
Seneca ADA
ATTN: SMASE-CO (Bld.123, Mr. Absolom)
5786 State Route 96, P.O. Box 9,
Romulus, New York 14541-5001

d) Environmental Health Risk Assessor
Commander
USACHPPM (PROV)
ATTN: MCHB-ME-R (Mr. Hoddinott)
Building E1677
Aberdeen Proving Ground, MD, 21010-5422

e) New York District (CENAN) Project Manager
Commander
US Army Engineer District, New York
Seneca Office for Project Management
ATTN: Mr. R. Battaglia, Bld.125
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f) USAEC Representative to Seneca
Commander
U.S. Army Environmental Center,
ATTN: Mr. Roger Walton
Aberdeen Proving Ground, MD, 21010-5422

16.1.1 DOCUMENT AND SUBMITTAL LIST

Client:	U.S. Army Corps of Engineers	Parsons	
		Opt Year 1 Tasks 20, 23, 25	
Contract :	RFP W912DY-08-D-0003, Task Order 0008	Summary Sheet	
		Supporting Data Format	
Project:	Long-Term Monitoring OB Grounds and FTA		
	Annual LUC Evaluations		
	Abandonment of Monitoring Wells	Printed:	12-Jan-10

TASK	AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Task 20 - Long -Term Monitoring OBG (Yr 3)	$ 33,934.65	$ 206.00	$ 33,728.65	$ 2,029.90	$ 18.36	$ 35,982.90
Task 23 - Long-Term Monitoring FTA (Yr 4)	$ 70,195.87	$ 6,630.00	$ 63,565.87	$ 4,012.85	$ 33 38	$ 74,242.11
Task 25 - Monitoring of Land Use Controls (Yr 2)	$ 56,626.21	$ -	$ 56,626.21	$ 3,397.57	$ 35 51	$ 60,059.30
TOTAL	$ 160,756.73	$ 6,836.00	$ 153,920.73	$ 9,440.32	$ 87.25	
PROJECT TOTAL						$ 170,284.31

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PERFORMANCE WORK STATEMENT
IMPLEMENTATION OF THE LONG-TERM MONITORING PLAN
FOR THE OPEN BURNING (OB) GROUNDS AND FIRE TRAINING AREAS,
ANNUAL LAND USE CONTROL (LUC) EVALUATION, AND ABANDONMENT OF EXISTING
MONITORING WELLS AT VARIOUS SITES
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

08 December 2009

1.0 BACKGROUND AND GENERAL STATEMENT OF WORK: Following remediation of the OB Grounds and Fire Training Area sites, long-term monitoring is required to verify the success of the remedial efforts. Sites at which the remedy involves LUCs requires that site-specific controls and controls necessary to assure the protectiveness of the selected remedy are maintained. At sites where no additional actions are required and/or closeout is recommended, existing monitoring wells will require abandonment and closure in accordance with Federal, State, and local requirements. This Performance Work Statement is Cost Plus Fixed Fee. The fixed fee will be based on estimated cost and paid at the completion of the project.

1.1 GENERAL DESCRIPTION. SEDA is a US Army facility located in Seneca County, New York. SEDA occupies approximately 10,600 acres. It is bounded on the west by State Route 96A and on the east by State Route 96. The cities of Geneva and Rochester are located to the northwest (14 and 50 miles, respectively); Syracuse is 53 miles to the northeast and Ithaca is 31 miles to the south. The surrounding area is generally used for farming.

1.2 REGULATORY STATUS. The Installation was included on the Federal Facilities National Priorities List on 13 July 1989. Consequently, all work to be performed under this contract shall be performed according to Comprehensive Environmental Response Compensation and Liability Act (CERCLA) guidance as put forth in the EPA Interim Final "Guidance for Conducting Remedial Investigations/ Feasibility Studies under CERCLA", the "Federal Facility Agreement under CERCLA Section 120 in the matter of Seneca Army Depot, Romulus, New York", the Final, "Long Term Monitoring Plan for the Open Burning (OB) Grounds, Seneca Army Depot Activity" (Reference 19.8) and the Final, "Long Term Monitoring Plan for the Fire Training Areas (SEAD-25 and SEAD-26), Seneca Army Depot Activity" (Reference 19.9). The Land Use Control Remedial Design (Reference 19.11, 19.12, 19.13, and 19.14) contains the land use control that are required by the sites Record of Decision (ROD). These Institutional Controls (IC) were chosen in accordance with CERCLA and, to the extent practicable, the National Oil and Hazardous Substance Pollution Contingency Plan.

1.3 SECURITY REQUIREMENTS. Compliance with SEDA security requirements is mandated.

2.0 OBJECTIVES:

a. Long Term Monitoring - The contractor shall implement the approved plan for long-term monitoring at the OB Grounds and Fire Training Areas for a period of one year. Following that year of performance, the contractor shall report annual results and provide recommendations for future Long Term Monitoring needs. All work shall be completed in accordance with (IAW) the approved Long Term Monitoring Plans. All field activities shall be performed IAW the approved Accident Prevention Plan for the Seneca program.

b. Land Use Control – The contractor shall implement the inspection and reporting of the LUCs. All work shall be completed IAW the Record of Decision and the Final Land Use Control Remedial Design for the sites specified in this delivery order.

c. Abandonment of Existing Monitoring Wells – The contractor shall prepare a Work Plan for the abandonment and closure of groundwater monitoring wells at various sites on the installation. The contractor shall complete the closure of groundwater monitoring wells in accordance with applicable Federal, State, and local requirements.

3.0 (Task 1) DESCRIPTION OF SERVICES FOR LONG TERM MONITORING OF THE OB GROUNDS YR2:

a. Vegetative Cap, Drainage Swale Inspections, and Reeder Creek Inspections. The Contractor shall inspect the vegetative cap and drainage swales on the site. Inspection shall include observations pertinent to the integrity of the soil and vegetative covering and the condition of run-off channels, infiltration galleries and swales. The Contractor shall also

inspect the streambed of Reeder Creek adjacent to the OB Grounds and assess if there is evidence of sediment deposition within areas that were previously excavated. Additionally, the Contractor will assess the conditions of spillways that previously connected the OB Grounds to Reeder Creek and allowed surface water and sediment to move into the creek. This inspection should assess if there is evidence that soil/sediment/or debris from the OB Grounds is migrating to Reeder Creek.

b. Annual Groundwater Monitoring. The Contractor shall conduct the annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

c. Preparation of the Annual Report. Following completion of the annual monitoring event, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for down gradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.
- A descriptive account of any noted soil, sediment or debris migration from the ob grounds too Reeder Creek and observation pertinent to the re-deposition of sediment within that portion of Reeder Creek that abuts the OB Grounds and that was excavated to bedrock during the remedial action.
- A recommendation of any changes (e.g. changing frequency of data collection for the OB Grounds LTM Plan, development of a sediment monitoring program, etc.) that are proposed for implementation for the OB Grounds LTM Plan.

d. PROJECT MANAGEMENT The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

4.0 (Task 2) DESCRIPTION OF SERVICES FOR LONG TERM MONITORING OF THE FIRE TRAINING AND DEMONSTRATION PAD AREA YR3:

a. First Semi-Annual Groundwater Monitoring Event. Upon direction from the KO, the Contractor shall commence the initial semi-annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Reports - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend analysis for key chemical concentration data developed for each of the key monitoring wells.
- Trend analysis of key indicator parameter data developed for each of the key monitoring wells.

b. Second Semi-Annual Groundwater Monitoring Event. Approximately six months after the initial semi-annual monitoring event, the Contractor shall commence the second semi-annual groundwater monitoring event. The actual timing of this event may be modified, with the permission of the KO, if insufficient water is found to exist in monitoring wells at the site.

Water Level Monitoring - The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

c. Preparation of the Annual Report. Following completion of the YR3 semi-annual groundwater monitoring events, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring wells.
- Trend plots for all key indicator parameter data developed for each of the key monitoring wells.
- A recommendation of any changes (e.g. changing frequency of data collection to semi annual or annual for the Fire Training and Demonstration Pad (SEAD-25) site, etc.) that are proposed for implementation for the Fire Training and Demonstration Pad (SEAD-25) site.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

5.0 (Task 3) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED BELOW:

SITE	DESCRIPTION
SEAD 27	**- STEAM JENNY PIT**
SEAD 64A	**- GARBAGE DISPOSAL AREA**
SEAD 66	**- PESTICIDE STORAGE AREA**
SEAD 25	**- FIRE DEMONSTRATION PAD**
SEAD 26	**- FIRE TRAINING AREA**
SEAD 39	**- BUILDING 121 BOILER BLOW DOWN PIT**
SEAD 40	**- BUILDING 319 BOILER BLOW DOWN PIT**

SEAD 41 - **BUILDING 718 BOILER BLOW DOWN PIT**

SEAD 67 - **DUMPSITE EAST OF STP 4**

SEAD 13 - **INHIBITED RED FUMING NITRIC ACID (IRFNA)**

SEAD 64B - **GARBAGE DISPOSAL AREA**

SEAD 64C - **RUMORED GARBAGE DISPOSAL AREA**

SEAD 64D - **GARBAGE DISPOSAL AREA**

SEAD 122B - **AIRFIELD SMALL ARMS RANGE**

SEAD 122E - **DEICING LOCATIONS**

SEAD 44A - **QUALITY ASSURANCE TEST LAB WEST**

SEAD 44B - **QUALITY ASSURANCE TEST LAB**

SEAD 43 - **OLD MISSILE PROPELLANT TEST LAB**

SEAD 56 - **HERBICIDE AND PESTICIDE STORAGE**

SEAD 69 - **BUILDING 606 DISPOSAL AREA**

SEAD 62 - **NICOTINE SULFATE DISPOSAL AREA**

SEAD 52 - **AMMUNTION BREAKDOWN AREA**

SEAD 3, 6, 8, 14, and 15 - **ASH LANDFILL OPERABLE Unit**

a. **LUC Inspections.** The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. **LUC Annual Report.** The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. **Project Management.** The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

6.0 DESCRIPTION OF SERVICES FOR THE ABANDONMENT OF EXISTING MONITORING WELLS AT VARIOUS SITES LISTED BELOW:

Task 4 - Abandonment of Existing Monitoring Wells at SEAD-5, SEAD-59, and SEAD-71 (Sludge Piles)

Task 5 - Abandonment of Existing Monitoring Wells at SEAD-12, SEAD-48, and SEAD-63 (Rad Sites)

Task 6 - Abandonment of Existing Monitoring Wells at SEAD-121C, SEAD-122B, and SEAD-70

Task 7- Abandonment of Existing Monitoring Wells at SEAD-25, and SEAD-26 (Fire Training Area)

Task 8 - Abandonment of Existing Monitoring Wells at SEAD-24, and SEAD-67 (Metals Removal)

Task 9 - Abandonment of Existing Monitoring Wells at SEAD-6

Task 10 - Abandonment of Existing Monitoring Wells at SEAD-119B

Task 11 - Abandonment of Existing Monitoring Wells at SEAD-27

a. Preparation of Work Plans. The contractor shall prepare a Work Plan to govern the activities to be performed. The work plan and safety plan shall include all Federal, State, and Local requirements to close monitoring wells at the various sites. No field work shall be performed until after the Work Plans are reviewed and approved.

b. Closure of Wells to be Abandoned. Following approval of the Work Plans, the contractor shall perform closure operations in accordance with Federal, State, and local requirements.

c. Closure Report. The contractor shall prepare a letter report describing the activities performed during this effort and presenting the results of the well closures. The contractor shall demonstrate that closures have met regulatory requirements. Documentation and approval shall be included.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

OPTIONAL TASK

7.0 (Optional Task 12) DESCRIPTION OF OPTIONAL SERVICES FOR LONG TERM MONITORING OF THE OB GROUNDS YR3:

a. Vegetative Cap, Drainage Swale Inspections, and Reeder Creek Inspections. The Contractor shall inspect the vegetative cap and drainage swales on the site. Inspection shall include observations pertinent to the integrity of the soil and vegetative covering and the condition of run-off channels, infiltration galleries and swales. The Contractor shall also inspect the streambed of Reeder Creek adjacent to the OB Grounds and assess if there is evidence of sediment deposition within areas that were previously excavated. Additionally, the Contractor will assess the conditions of spillways that previously connected the OB Grounds to Reeder Creek and allowed surface water and sediment to move into the creek. This inspection should assess if there is evidence that soil/sediment/or debris from the OB Grounds is migrating to Reeder Creek.

b. Annual Groundwater Monitoring Event. The Contractor shall conduct the annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

c. Preparation of the Annual Report. Following completion of the annual monitoring event, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for down gradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring wells.

- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.
- A descriptive account of any noted soil, sediment or debris migration from the ob grounds too Reeder Creek and observation pertinent to the re-deposition of sediment within that portion of Reeder Creek that abuts the OB Grounds and that was excavated to bedrock during the remedial action.
- A recommendation of any changes (e.g. changing frequency of data collection for the OB Grounds LTM Plan, development of a sediment monitoring program, etc.) that are proposed for implementation for the OB Grounds LTM Plan.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

8.0 (Optional Task 13) DESCRIPTION OF OPTIONAL SERVICES FOR LONG TERM MONITORING OF THE OB GROUNDS YR4:

a. Vegetative Cap, Drainage Swale Inspections, and Reeder Creek Inspections. The Contractor shall inspect the vegetative cap and drainage swales on the site. Inspection shall include observations pertinent to the integrity of the soil and vegetative covering and the condition of run-off channels, infiltration galleries and swales. The Contractor shall also inspect the streambed of Reeder Creek adjacent to the OB Grounds and assess if there is evidence of sediment deposition within areas that were previously excavated. Additionally, the Contractor will assess the conditions of spillways that previously connected the OB Grounds to Reeder Creek and allowed surface water and sediment to move into the creek. This inspection should assess if there is evidence that soil/sediment/or debris from the OB Grounds is migrating to Reeder Creek.

b. Annual Groundwater Monitoring Event. The Contractor shall conduct the annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

c. Preparation of the Annual Report. Following completion of the annual monitoring event, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for down gradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.
- A descriptive account of any noted soil, sediment or debris migration from the ob grounds too Reeder Creek and observation pertinent to the re-deposition of sediment within that portion of Reeder Creek that abuts the OB Grounds and that was excavated to bedrock during the remedial action.
- A recommendation of any changes (e.g. changing frequency of data collection for the OB Grounds LTM Plan, development of a sediment monitoring program, etc.) that are proposed for implementation for the OB Grounds LTM Plan.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

9.0 (Optional Task 14) DESCRIPTION OF OPTIONAL SERVICES FOR LONG TERM MONITORING OF THE OB GROUNDS YR5:

a. Vegetative Cap, Drainage Swale Inspections, and Reeder Creek Inspections. The Contractor shall inspect the vegetative cap and drainage swales on the site. Inspection shall include observations pertinent to the integrity of the soil and vegetative covering and the condition of run-off channels, infiltration galleries and swales. The Contractor shall also inspect the streambed of Reeder Creek adjacent to the OB Grounds and assess if there is evidence of sediment deposition within areas that were previously excavated. Additionally, the Contractor will assess the conditions of spillways that previously connected the OB Grounds to Reeder Creek and allowed surface water and sediment to move into the creek. This inspection should assess if there is evidence that soil/sediment/or debris from the OB Grounds is migrating to Reeder Creek.

b. Annual Groundwater Monitoring Event. The Contractor shall conduct the annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

c. Preparation of the Annual Report. Following completion of the annual monitoring event, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for down gradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.
- A descriptive account of any noted soil, sediment or debris migration from the ob grounds too Reeder Creek and observation pertinent to the re-deposition of sediment within that portion of Reeder Creek that abuts the OB Grounds and that was excavated to bedrock during the remedial action.
- A recommendation of any changes (e.g. changing frequency of data collection for the OB Grounds LTM Plan, development of a sediment monitoring program, etc.) that are proposed for implementation for the OB Grounds LTM Plan.

d. Perform Five Year Review. The contractor shall perform a five-year review in accordance with Federal, State, and local regulatory requirements. The work is required to be performed in accordance with EPA 540-R-01-007, OSWER No. 9355.7-03B-P, June 2001. The purpose of a five-year review 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.

e. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

10.0 (Optional Task 15) DESCRIPTION OF OPTIONAL SERVICES FOR LONG TERM MONITORING OF THE FIRE TRAINING AND DEMONSTRATION PAD AREA YR4:

a. First Semi-Annual Groundwater Monitoring Event. Upon direction from the KO, the Contractor shall commence the initial semi-annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Report - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend analysis of key groundwater elevation data for each of the key monitoring wells.
- Trend analysis for key chemical concentration data developed for each of the key monitoring wells.
- Trend plots of key indicator parameter data developed for each of the monitoring wells.

b. Second Semi-Annual Groundwater Monitoring Event. Approximately six months after the initial semi-annual monitoring event, the Contractor shall commence the second semi-annual groundwater monitoring event. The actual timing of this event may be modified, with the permission of the KO, if insufficient water is found to exist in monitoring wells at the site.

Water Level Monitoring - The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

c. Preparation of the Annual Report. Following completion of the YR4 semi-annual groundwater monitoring events, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring ells.
- Trend plots for all key indicator parameter data developed for each of the key monitoring wells.
- A recommendation of any changes (e.g. changing frequency of data collection to semi annual or annual for the Fire Training and Demonstration Pad (SEAD-25) site, etc.) that are proposed for implementation for the Fire Training and Demonstration Pad (SEAD-25) site.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

11.0 (Optional Task 16) DESCRIPTION OF OPTIONAL SERVICES FOR LONG TERM MONITORING OF THE FIRE TRAINING AND DEMONSTRATION PAD AREA YR5:

a. First Semi-Annual Groundwater Monitoring Event. Upon direction from the KO, the Contractor shall commence the initial semi-annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Report - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend plots for all chemical concentration data developed for each of the monitoring wells.
- Trend plots of key indicator parameter data developed for each of the monitoring wells.

b. Second Semi-Annual Groundwater Monitoring Event. Approximately six months after the initial semi-annual monitoring event, the Contractor shall commence the second semi-annual groundwater monitoring event. The actual timing of this event may be modified, with the permission of the KO, if insufficient water is found to exist in monitoring wells at the site.

Water Level Monitoring - The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

c. Preparation of the Annual Report. Following completion of the YR5 semi-annual groundwater monitoring events, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria values.
- Trend plots for all key chemical concentration data developed for each of the key monitoring ells.
- Trend plots for all key indicator parameter data developed for each of the key monitoring wells.
- A recommendation of any changes (e.g. changing frequency of data collection to semi annual or annual for the Fire Training and Demonstration Pad (SEAD-25) site, etc.) that are proposed for implementation for the Fire Training and Demonstration Pad (SEAD-25) site.

d. Perform Five Year Review. The contractor shall perform a five-year review in accordance with Federal, State, and local regulatory requirements. The work is required to be performed in accordance with EPA 540-R-01-007, OSWER No. 9355.7-03B-P, June 2001. The purpose of a five-year review 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.

e. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

12.0 (Optional Task 17) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR2.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

13.0 (Optional Task 18) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR3.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

14.0 (Optional Task 19) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR4.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

15.0 (Optional Task 20) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR5.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Perform Five Year Review. The contractor shall perform a five-year review in accordance with Federal, State, and local regulatory requirements. The work is required to be performed in accordance with EPA 540-R-01-007, OSWER

No. 9355.7-03B-P, June 2001. The purpose of a five-year review 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.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

16.0 SUBMITTALS: The contractor shall furnish copies of all documents to the addressees listed below. One copy of the final documents shall be sent to the CEHNC Project Manager on 3.5-inch computer disk or CD ROM in an acceptable format in addition to the number of hard copies identified below. The contractor shall use express mail services for delivering these documents. Following each submission, comments generated as a result of their review shall be incorporated.

16.1 ADDRESSEES

a) Contracting Officer (KO)
US Army Engineering and Support Center, Huntsville
ATTN: CEHNC-CT (**Donna Ragucci**)
4820 University Square,
Huntsville, Alabama, 35816

b) Huntsville Center Project Manager (PM)
US Army Engineering and Support Center, Huntsville
ATTN: CEHNC-ED-CS-P (Steve Nohrstedt)
4820 University Square,
Huntsville, Alabama, 35816

c) Seneca ADA Installation Manager
Commander's Representative
Seneca ADA
ATTN: SMASE-CO (Bld.123, Mr. Absolom)
5786 State Route 96, P.O. Box 9,
Romulus, New York 14541-5001

d) Environmental Health Risk Assessor
Commander
USACHPPM (PROV)
ATTN: MCHB-ME-R (Mr. Hoddinott)
Building E1677
Aberdeen Proving Ground, MD, 21010-5422

e) New York District (CENAN) Project Manager
Commander
US Army Engineer District, New York
Seneca Office for Project Management
ATTN: Mr. R. Battaglia, Bld.125
P.O. Box 9
5786 State Route 96
Romulus, New York, 14541-5001

f) USAEC Representative to Seneca
Commander
U.S. Army Environmental Center,
ATTN: Mr. Roger Walton
Aberdeen Proving Ground, MD, 21010-5422

16.1.1 DOCUMENT AND SUBMITTAL LIST

Organization	Copies
CEHND-ED-CS-P	2
SMASE-CO	2
USACHPPM	2
CENAN	2
USAEC	2

16.2 SUBMITTALS AND DUE DATES: The proposed schedule for the Implementation of the Long-Term Management Plan work is given below. All work and services under this Task Order shall be completed by 31 Jan 2011.

Submittal OD	Due Date
NTP	0
Annual Report	NTP + 360 days

Submittal FTP	Due Date
NTP	0
1st Semi-Annual Monitoring Report	NTP + 180 days
2nd Semi-Annual Monitoring Report	NTP + 360 days
Annual Report	NTP + 360 days

Submittal LUC	Due Date
NTP	0
Annual Report	NTP + 360 days

Submittal Monitor Well Abandonment	Due Date
NTP	0
Work Plan	NTP + 30 days
Closure Report	NTP + 360 days

17.0 QUALITY ASSURANCE (QA): The Government will perform QA of the Contractor's performance under this contract using the method of surveillance specified in the Quality Assurance Surveillance Plan (QASP), Attachment 1, 2, 3, and 4. The Government will conduct QA inspections on all phases and types of work performed. The Government reserves the right to perform QA inspections at any time.

18.0 PUBLIC AFFAIRS: The Contractor shall not conduct Public Affairs activities at the installation. All agencies and/or individuals requesting information concerning the conduct of the project shall be referred to the Seneca Army Depot Activity, Public Affairs Office (PAO) or the U.S. Army Engineering and Support Center, Huntsville, PAO.

19.0 REFERENCES:

19.1 Interim Final, "Guidance for or Conducting Remedial Investigations/Feasibility studies Under CERCLA", U.S. EPA, Office of Solid Waste and Emergency Response, October 1988.

19.2 "Federal Facility Agreement under CERCLA Section 120 in the matter of Seneca Army Depot, Romulus, New York", Docket No. II-CERCLA-FFA-00202, USEPA, U.S. Department of the Army, and the New York State Department of Environmental Conservation, November 1990.

19.3 Final, "Remedial Investigation Report at the Open Burning (OB) Grounds at Seneca Army Depot Activity", dated September 1994.

19.4 Final, "Feasibility Study Report at the Open Burning (OB) Grounds at Seneca Army Depot Activity", dated June 1996.

19.5 Final, "Proposed Remedial Action Plan (PRAP) for the Open Burning (OB) at the Seneca Army Depot Activity (SEDA)", dated January 1997.

19.6 Final, "Record of Decision (ROD) for Seneca Army Depot Activity, Open Burning (OB) Grounds", dated December 1998.

19.7 Final, "Generic Site-Wide Sampling and Analysis Plan, Seneca Army Depot Activity, Romulus, New York", Parsons, December 2005.

19.8 Final, "Long Term Monitoring Plan for the Open Burning Grounds, Seneca Army Depot Activity", Parsons, January 2007.

19.9 Final, "Long Term Monitoring Plan for the Fire Training Areas (SEAD-25 and SEAD-26), Seneca Army Depot Activity", Parsons.

19.10 Draft, "SEAD-25 and SEAD-26 Annual Report", Parsons, January 2007.

19.11 Final, "Land Use Control Remedial Design For SEAD 27, 66, and 64A, Seneca Army Depot Activity", Seneca ADA, December 2006.

19.12 Final, "Land Use Control Remedial Design For SEAD 27, 66, and 64A, Seneca Army Depot Activity", Seneca ADA, December 2006. Addendum 1 – SEAD 25 and SEAD 26, Seneca ADA, May 2007

19.13 Final, "Land Use Control Remedial Design For SEAD 27, 66, and 64A, Seneca Army Depot Activity", Seneca ADA, December 2006. Addendum 2 – SEAD 13, 39, 40, 41,43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E, Seneca ADA, April 2008

19.14 Final, "Land Use Control Remedial Design For SEAD 27, 66, and 64A, Seneca Army Depot Activity", Seneca ADA, December 2006. Addendum 3 – SEADs 3, 6, 8, 14, and 15, Seneca ADA, January 2009

Attachment 1

Quality Assurance Surveillance Plan IMPLEMENTATION OF THE LONG-TERM MANAGEMENT PLAN FOR THE OPEN BURNING (OB) GROUNDS SENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK				
TASK AND/OR ACTIVITY	**METHOD OF SURVEILLANCE**	**PERFORMANCE OBJECTIVES**	**MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM RQMT (AQL)**	**FREQUENCY INSPECTED**
1, Option 20, Option 21, Option 22 – a. Vegetative Cap and Drainage Swale Inspections	Periodic Inspection	Perform inspection in accordance with CERCLA Guidance, the Federal Facility Agreement, the approved Long Term Monitoring Plan and the approved Accident Prevention Plan for the Seneca Program.	Zero Defects	One time, or as needed
1, Option 20, Option 21, Option 22 – b. Annual Groundwater Monitoring Event	Periodic Inspection	Perform groundwater monitoring in accordance with CERCLA Guidance, the Federal Facility Agreement, the approved Long Term Monitoring Plan and the approved Accident Prevention Plan for the Seneca Program.	Zero Defects	One time, or as needed
1, Option 20, Option 21, Option 22 - c. Preparation of the Annual Report	100% Inspection	Prepare annual groundwater monitoring report in accordance with CERCLA Guidance, the Federal Facility Agreement, and the approved Long Term Monitoring Plan.	Zero Defects	One time, or as needed
Option 22 – d. Perform Five Year Review	100% Inspection	Perform Five Year Review in accordance with Federal, State and Local regulatory requirements.	Zero Defects	One time, or as needed
1, Option 20, Option 21 - d. Project Management. Option 22 - e. Project Management	100% Inspection	The contractor shall meet the project management requirements as specified in the contract.	Zero Defects	One time, or as needed

Quality Assurance Surveillance Plan IMPLEMENTATION OF THE LONG-TERM MANAGEMENT PLAN FOR THE FIRE TRAINING AREAS SENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK				
TASK AND/OR ACTIVITY	**METHOD OF SURVEILLANCE**	**PERFORMANCE OBJECTIVES**	**MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM RQMT (AQL)**	**FREQUENCY INSPECTED**
2, Option 23, Option 24 – a. First Semi-Annual Groundwater Monitoring Event	Periodic Inspection	Perform groundwater monitoring in accordance with CERCLA Guidance, the Federal Facility Agreement, the approved Long Term Monitoring Plan and the approved Accident Prevention Plan for the Seneca Program.	Zero Defects	One time, or as needed
2, Option 23, Option 24 – b. Second Semi-Annual Groundwater Monitoring Event	Periodic Inspection	Perform groundwater monitoring in accordance with CERCLA Guidance, the Federal Facility Agreement, the approved Long Term Monitoring Plan and the approved Accident Prevention Plan for the Seneca Program.	Zero Defects	One time, or as needed
2, Option 23, Option 24 – c. Preparation of the Annual Report	100% Inspection	Prepare annual groundwater monitoring report in accordance with CERCLA Guidance, the Federal Facility Agreement, and the approved Long Term Monitoring Plan.	Zero Defects	One time, or as needed
Option 24 – d. Perform Five Year Review	100% Inspection	Perform Five Year Review in accordance with Federal, State and Local regulatory requirements..	Zero Defects	One time, or as needed
2, Option 23, – d. Project Management Option. Option 24 – e. Project Management.	100% Inspection	The contractor shall meet the project management requirements as specified in the contract.	Zero Defects	One time, or as needed

Quality Assurance Surveillance Plan LAND USE CONTROL (LUC) SENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK				
TASK AND/OR ACTIVITY	**METHOD OF SURVEILLANCE**	**PERFORMANCE OBJECTIVES**	**MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM RQMT (AQL)**	**FREQUENCY INSPECTED**
3, Option 25, Option 26, Option 27, Option 28 – a. LUC Inspection	Periodic Inspection	Perform LUC Inspection in accordance with CERCLA Guidance, the Federal Facility Agreement, the approved ROD and the approved Final Land Use Control Remedial Design for the Seneca Program.	Zero Defects	One time, or as needed
3, Option 25, Option 26, Option 27, Option 28 – b. Preparation of the Annual Report	100% Inspection	Prepare annual LUC report in accordance with CERCLA Guidance, the Federal Facility Agreement, and the approved ROD and the approved Final Land Use Control Remedial Design for the Seneca Program.	Zero Defects	One time, or as needed
Option 28 – c. Perform Five Year Review	100% Inspection	Perform Five Year Review in accordance with Federal, State and Local regulatory requirements.	Zero Defects	One time, or as needed
3, Option 25, Option 26, Option 27 – c. Project Management. Option 28 – d. Project Management	100% Inspection	The contractor shall meet the project management requirements as specified in the contract.	Zero Defects	One time, or as needed

Quality Assurance Surveillance Plan ABANDONMENT OF EXISTING MONITORING WELLS SENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK				
TASK AND/OR ACTIVITY	**METHOD OF SURVEILLANCE**	**PERFORMANCE OBJECTIVES**	**MAXIMUM ALLOWABLE DEGREE OF DEVIATION FROM RQMT (AQL)**	**FREQUENCY INSPECTED**
4 thru 19 – a. Prepare Work Plan	100% Inspection	Prepare Work Plans in accordance with Federal, State, and Local requirements.	Zero Defects	One time, or as needed
4 thru 19 – b. Close Wells	Periodic Inspection	Perform closure of monitoring wells in accordance with Federal, State, and Local requirements.	Zero Defects	One time, or as needed
4 thru 19 – c. Prepare the Closure Report	100% Inspection	Prepare Closure Reports in accordance with CERCLA Guidance, the Federal Facility Agreement, and Federal, State, and Local requirements for the Seneca Program.	Zero Defects	One time, or as needed
4 thru 19 – d. Project Management.	100% Inspection	The contractor shall meet the project management requirements as specified in the contract.	Zero Defects	One time, or as needed

OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

ACQUISITION,
TECHNOLOGY
AND LOGISTICS

DEC 14 2007

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (INSTALLATIONS AND ENVIRONMENT)
ASSISTANT SECRETARY OF THE NAVY (INSTALLATIONS AND ENVIRONMENT)
ASSISTANT SECRETARY OF THE AIR FORCE (INSTALLATIONS AND ENVIRONMENT)
DIRECTOR, DEFENSE LOGISTICS AGENCY (DSS-E)

SUBJECT: Defense Environmental Restoration Program Interim Guidance for Estimating Program Costs and Environmental Liabilities

Forwarded for your implementation are the following attached policy guidance for the Defense Environmental Restoration Program (DERP):

- Estimating Program Costs and Cost to Complete for the Defense Environmental Restoration Program (Attachment 1).
- Defense Environmental Restoration Program Environmental Liabilities (Attachment 2).

This policy guidance is effective immediately and supersedes Section 15, Cost-to-Complete Estimates and Financial Reporting of Environmental Restoration Liabilities, and Paragraph 24.1.2 in the September 2001 DERP Management Guidance.

The attached policy guidance providing the program management policy framework is intended to promote consistency and transparency in DERP cost estimates, and support the Department's business transformation and sustainable audit readiness efforts. This updated interim guidance incorporates pertinent recommendations by the Government Accountability Office and the Department of Defense Office of the Inspector General, in addition to revised Financial Management Regulation environmental liability policy issued in October 2005. Specifically, this update responds to DoD IG (D-2004-080) and GAO Environmental Liabilities Report (GAO-06-427) by clarifying guidance in existing policy for consistent implementation in the following areas:

- Documentation to be maintained in a Site Audit File that supports cleanup cost estimates used in environmental liability reporting.
- Qualifications for the Cost Estimator and Cost Estimate Reviewer.
- Supervisory review and Segregation of Duties.
- Inclusion of costs intended to be paid with prior year budgetary authority in the financial liability reporting.
- Reconciliation of environmental records to property records to ensure completeness of the environmental liability universe.
- Completeness of cost estimates, particularly of costs after the response complete milestone and and non-site specific management costs.
- Calculation and reporting of current liability estimates.

- Relationship among Financial Improvement and Audit Readiness/Financial Improvement Plans, the Business Process Reengineering implementation plans, and DERP program management information.
- Compliance with OMB Circular No. A-123 on Internal Management Controls.
- Reporting of litigation based Contingent Liabilities.

This guidance was developed with input from the DoD Environmental Liabilities Work Group, and will be incorporated in the next full update of the DERP Management Guidance. My point of contact for environmental liability is Ms. Patricia Huheey at (703) 604-1846 or patricia.huheey@osd.mil.

Philip W. Grone
Deputy Under Secretary of Defense
(Installations and Environment)

Attachments:
As stated

cc:
Assistant Secretary of the Army (Financial Management and Comptroller)
Assistant Secretary of the Navy (Financial Management and Comptroller)
Assistant Secretary of the Air Force (Financial Management and Comptroller)
Assistant to the Secretary of Defense (Nuclear, Chemical and Biological Defense Programs)
Deputy Inspector General for Auditing, DoD (Audit/DFS)
Deputy Chief Financial Officer, OUSD(C)

Attachment 1: Estimating Program Costs and Cost to Complete for the Defense Environmental Restoration Program (DERP)

1.1 Program Costs and Cost-to-complete (CTC) estimates developed by the DoD Components are used for several purposes including to support the DERP planning, programming, budgeting and execution (PPBE) process; DERP environmental liability estimates; and the Defense Environmental Programs Annual Report to Congress (DEP ARC). Program costs include prior year balances, both liquidated and unliquidated, and CTC estimates for future costs. The DERP is managed on a site-level basis; therefore, these costs must be tracked to the site-level. CTC estimates are developed using the current fiscal year uninflated dollars. However, the estimates are adjusted by inflation indices through the FYDP for various reporting requirements such as DEP ARC and PPBE submissions.

1.2 The following business rules apply to CTC estimates:

1.2.1 Cost estimates must include all IRP, MMRP, and BD/DR sites identified in the OSD DERP database and all non-site specific DERP costs. Site-level estimates must be reported by environmental restoration phase.

1.2.2 Cost estimates must include all DERP requirements, regardless of funding source (i.e., DoD Component Environmental Restoration Accounts or BRAC) or availability of funds.

1.2.3 Cost estimates are developed using uninflated dollars based on the current fiscal year.

1.2.4 Cost estimates must reflect the environmental restoration strategy and sequence as presented in the Management Action Plan (MAP) or equivalent, and be based on the chosen remediation approach based on current land use or reasonably anticipated future land use.

1.2.5 Cost estimates are based on existing remediation technologies.

1.2.6 Cost estimates are point estimates.

1.2.6.1 To develop a point estimate when multiple potential cleanup scenarios exist, a hierarchical approach should be used based on either expected or most likely cleanup scenario using site-specific regulatory requirements and current technology; or if one value within a range is not better than another, the minimum amount in the cost range should be used.

1.2.6.2 Any uncertainties associated with the reported value should be explained in a narrative that accompanies the estimate in the Site Audit File (discussed in Paragraph 1.6 below and Paragraph 2.6 of Attachment 2, Defense Environmental Restoration Environmental Liabilities).

1.2.7 Cost estimates must be revised annually to reflect changes in scope, regulation, or technology; updated information or other significant changes at the site; and inflation. If there are no scope, ownership, regulation, technology or other site-level changes, estimates may be brought to the current year estimate using a price escalation factor.

1.2.8 DERP CTC estimates shall only include DERP-eligible activities. These estimates shall not include the costs of environmental compliance, pollution prevention, and conservation activities; treaty obligations or overseas cleanup; operation, management, and sustainment of operational ranges; and contamination or spills associated with current operations that are not DERP-eligible.

1.3 CTC estimates are based on site-specific study or experience with similar site, remediation, and conditions. Methodologies used to develop the cost estimate include engineering estimates, application of estimates from comparable sites, or cost modeling tools.

1.3.1 A cost estimate produced from a site-specific study is generally the most reliable estimate because it is based on a thorough investigation and sampling of the environmental conditions at the site.

1.3.2 If sufficient site-specific data are not available to estimate complete remediation costs, or if remediation technology does not exist to address contamination present at the site, the estimated cost for initial containment and studies needed to develop the complete cleanup plan will be reported for the site. CTC estimates must be based on sufficient site-specific data to substantiate any assumptions.

1.3.3 If the site has similar characteristics to other sites (e.g., has similar factors that drive the cost estimate such as constituent types and concentrations, media, and technology), and documentation exists to support the similarities, cost estimates may be based on historical costs.

1.3.4 The DoD Components shall ensure that any computer models used to calculate CTC estimates are verified, validated, and accredited per DoD Instruction 5000.61 - *DoD Modeling and Simulation Verification, Validation, and Accreditation (VV&A).* Per this instruction, DoD Components shall establish VV&A policies and procedures for any cost modeling tools used to develop CTC estimates. Each DoD Component is responsible for resource planning, review and coordination of policies and procedures, documentation of VV&A implementation and results, and interfacing with the appropriate VV&A agents.

1.4 CTC estimates must be reported for each site in the OSD DERP database by the DoD Component responsible for managing and funding that site. The following costs that can be assigned or allocated reasonably to a site cleanup are to be included in the site CTC estimate:

1.4.1 Costs associated with phases of the environmental restoration process from initial containment through the Response Complete milestone and Long Term Management (LTM), including costs associated with obtaining regulatory concurrence.

1.4.1.1 Costs allocable to sites such as compensation and benefits of government personnel, contractor support, machinery and equipment, utilities (if separately billed), security and surveillance, fees for permits, licenses, and approvals, costs for deletion from the National Priorities List, site-specific overhead/management costs, and other project-specific costs.

1.4.1.2 Overhead/management costs for personnel at all levels of the organization (e.g., installation, intermediate command or regional, and headquarters) that are expected to devote significant time directly to cleanup efforts of specific sites should be included in the site allocated estimates. These costs may include compensation and benefits for government and contractor project or program management staff that are expected to spend a significant amount of time devoted to cleanup activity at that site and associated costs to support their work such as travel, training, and supplies.

1.4.2 Costs for the LTM phase (including Land Use Control (LUC) costs), effective with end-of-FY2009 data submission and reporting after October 1, 2009, need to be estimated and reported for a finite period of time bounded by the next two five-year reviews or a specified fixed period (established in regulatory agreement or requirement, or remedial decision document) until there

are no further DERP-eligible activities and associated costs for the site. Thus, for each two-year Program Objective Memorandum (POM) cycle, the next sequential five-year review will enter into the CTC so there are never more than two five-year reviews included in the cost estimate. The finite period of time included in the CTC will be the same period of time included in the Environmental Liability estimate (see Attachment 2 for further discussion on Environmental Liability reporting). Within the finite period of time, all DERP-eligible costs should be included in the CTC estimate. Note that LTM and LUC costs at DERP sites are eligible for DERP funding until site closeout. Site Closeout signifies that DoD completed active management and monitoring at an environmental restoration site and regulatory concurrence is obtained. For cost estimating purposes, Site Closeout occurs when cleanup goals are achieved that allow unrestricted use of the property (i.e., no further LTM or LUC is required). If DoD Components deviate from the above guidance, they will need to document their justification and rationale for choosing a different period for LTM in their internal control system and Site Audit File (See Paragraph 1.6).

1.5 Indirect and overhead/management costs (see paragraphs 1.4.1.1 and 1.4.1.2) that can not be attributed to specific sites are to be added to rolled-up CTC estimates and reported at the appropriate installation, intermediate command or regional, or program level. These rolled-up costs can be captured in the OSD DERP database in "Program Management Sites." These costs are to be reported effective with end-of-FY2009 data submission and reporting after October 1, 2009

1.6 Documentation that maintains an audit trail is a critical element for both the CTC and financial reporting process. DoD Components must maintain defensible, audit-ready records of approved previous and revised cleanup cost estimates in the Site Audit File. The Site Audit File contains the data sources and assumptions needed to validate the cost estimates.

1.6.1 The Information Repository provides the public with information regarding environmental restoration activities at an installation. It contains most items in the Administrative Record (i.e., the documents that form the basis for the selection of a response action), and may also contain other documents pertinent to activities at the installation. Documentation that supports both selection of a response action and cost estimates should reside in the Information Repository with a reference by location in the Site Audit File.

1.6.2 It is imperative that documentation requested by an auditor be readily available for review (i.e., within a day of the request). Further details on audit trail, documentation, and record retention requirements for CTC estimates are given in Paragraphs 2.6 and 2.7 of Attachment 2, Defense Environmental Restoration Environmental Liabilities.

1.7 Internal Management Controls/Quality Assurance is required across the Department of Defense business processes and particularly for financial reporting, including DERP CTC estimates. Internal controls are used to establish a positive control environment, including commitment by management to competence by requiring personnel to possess and maintain a level of proficiency to accomplish their assigned duties. Details on Internal Controls requirements for CTC estimates are provided in Paragraph 2.8 of Attachment 2, Defense Environmental Restoration Environmental Liabilities.

1.8 DoD Components must ensure that personnel responsible for the development, review, approval, and reporting of DERP CTC estimates are appropriately qualified and trained. Qualifications must be based on the DoD Component established internal management controls and training requirements.

1.8.1 DoD Components must ensure a segregation of duties in that individuals performing review and approval of cost estimates are not directly involved in developing the estimates.

1.8.2 Cost estimate reviewers must additionally, at a minimum:

1.8.2.1 Have familiarity with the project being reviewed; and

1.8.2.2 Verify that the estimator has met the training, education, and experience requirements for estimators.

1.8.2.3 Verify the estimate is reasonable based on the assumptions used to estimate.

1.8.3 DoD Components must be able to demonstrate, through records on the specific personnel qualifications referenced in the Site Audit File, that staff engaged in the development, review, approval, and reporting of CTC estimates appropriately are qualified and trained to make estimates and approve estimates.

1.8.4 DoD Components must implement training programs for staff or contractors that develop, review, or approve or certify CTC estimates or prepare environmental restoration liability reports, including introductory training and annual "refresher" training.

1.9 At a minimum, those that develop, review, and/or approve or certify CTC estimates or prepare environmental restoration liability reports must be qualified (by one, or a combination of training, education, or experience) in the following areas:

1.9.1 General environmental studies courses or training that address contamination, laws and regulations governing cleanup, and cleanup processes.

1.9.2 The environmental program related to the type of estimate being developed (i.e., personnel must have training or experience in the environmental restoration field to develop cost estimates for environmental restoration activities.)

1.9.3 Project planning and management practices established by the DoD Component used in preparing cost estimates.

1.9.4 The cost estimating technique used (i.e., estimates prepared using the cost estimating software must be developed by those trained in the use of the current version of the software.)

1.9.5 Accounting/auditing policies established by the DoD Component for CTC estimates.

Attachment 2: Defense Environmental Restoration Program Environmental Liabilities

2.1 Starting with the 1990 Chief Financial Officers (CFO) Act and subsequent legislation, Congress required federal agencies, including the DoD, to improve financial management and reporting, and provide accurate, complete, reliable, timely, and auditable financial information. For DERP, cost-to-complete estimates, as modified for environmental liability reporting, provide the required auditable financial information.

2.1.1 DoD accounting policy for environmental liability is contained in the DoD Financial Management Regulation (FMR) Volume 4, Chapter 13, "Environmental and Non-Environmental Liabilities." DoD accounting policy is based on the accounting definitions of cleanup costs, hazardous waste, and environmental liability, and Federal Accounting Standards Advisory Board (FASAB) standards for financial reporting purposes based on Generally Accepted Accounting Principles. Accounting definitions, which are generally broader in scope than environmental regulatory definitions, are provided in the Statement of Federal Financial Accounting Standards (SFFAS) Number 5: Accounting for Liabilities of the Federal Government, and SFFAS Number 6: Accounting for Property, Plant, and Equipment. This DERP technical guidance must be used in conjunction with the Department's accounting policy,

2.1.2 The DoD Financial Improvement and Audit Readiness (FIAR) Plan establishes a schedule for achieving an unqualified audit opinion for environmental liabilities estimated in compliance with DoD financial and functional policy that will be sustainable through business process improvement initiatives. The DoD Component Financial Improvement Plan (FIP) provides more detailed milestones by expanding on the steps needed to achieve auditability. The DoD Component FIPs roll up to the FIAR Key Milestone Plan (KMP). The DoD Components are required to meet the key milestones established in the FIAR Plan's KMP.

2.1.3 The DoD *Business Process Reengineering (BPR) Environmental Liabilities Recognition, Valuation and Reporting Requirements (ELRVRR)*, ODUSD(I&E)/Business Enterprise Integration Directorate, July 19, 2006 details the process model, logical data model, data elements and business rules that DoD Components must incorporate into their business processes and information systems in order to enable auditable environmental liability reporting. Each DoD Component must develop a BPR implementation plan using the standard template (see 20 Dec 2006 memorandum, entitled *Environmental Liabilities Implementation Plans*, signed by DUSD(I&E)). Development of the implementation plan is also a key milestone in each DoD Component's FIAR Plan. In areas where the FIAR/FIPs are dependent on the BPR implementation plan, the schedules and capabilities must be consistent between the two plans.

2.2 All DERP costs meet the accounting definition of "hazardous waste cleanup" and shall be reported as environmental liabilities. DoD Components must report DERP CTC estimates, as adjusted based on accounting requirements, from their program feeder systems into financial systems to determine DERP environmental liability.

2.2.1 The environmental functional community is responsible for producing reliable, accurate, and reproducible cost estimates to support environmental liability reporting. The environmental staff is responsible for providing the needed site-level input and supporting this information during financial audits.

2.2.2 The financial community is responsible for the preparation of the financial statement (i.e., the Note 14) based on the information supplied by the functional community to the financial community. Information on the financial statement is

explained in this chapter to allow the environmental community to provide the required information so that financial management may determine the liability to recognize on the financial statement.

2.2.3 Environmental functional communities must coordinate at least quarterly with the financial management community who utilize the cost estimates to prepare the financial statements. Open lines of communication should be maintained so that issues and needs are identified and addressed throughout the process.

2.3 Footnotes or "Notes" to a financial statement present additional disclosures and policy explanations to the reported values on the financial statement. Environmental liabilities are reported on Note 14, entitled "Environmental and Disposal Liabilities," of the DoD financial statement. Note 14 has three main elements: (a) the area where values for each category of liability are reported, called the "Schedule", (b) the Schedule Disclosures table, and (c) the accompanying narrative referred to as General Narrative Disclosures.

2.3.1 Environmental restoration liabilities are reported in the following two categories on the Note 14 Schedule:

2.3.1.1 Accrued Environmental Restoration Liabilities. Accrued environmental restoration (cleanup) liabilities represent the cost to correct past environmental contamination, which is funded from the DoD Component specific Defense Environmental Restoration Account.

2.3.1.2 Base Realignment and Closure (BRAC) Installations. Liabilities represent the cost to fulfill environmental legal obligations funded by the BRAC accounts at bases that are realigning or closing. These liabilities can be from past activities that are part of the DERP or for decommissioning and closure activities not covered by the DERP. This guidance is for DERP-eligible costs only.

2.3.2 The Note 14 Schedule reports current and non-current liabilities. The summation of current and non-current liabilities constitute the total liability. These amounts should be reported using uninflated dollars based on the current fiscal year of the reporting period.

2.3.2.1 The methodology and examples of current liability calculations presented in the DoD *BPR Environmental Liabilities Recognition, Valuation and Reporting Requirements (ELRVRR)* shall be used to estimate DERP current liabilities.

2.3.2.2 Current liabilities are the amounts the entity expects to outlay within one year of the reporting date. The current liability is the value of *Expected Delivery & Acceptance from Undelivered Orders Outstanding* (expected expenditures on existing contracts from obligated and unobligated funds that are not yet accounts payable) plus the *Expected Delivery & Acceptance from Projected Obligations* (future contracts). The projected obligations are from both unobligated balances from prior periods, and expected allocations in the next period. In essence, current liability is the dollar value of work that is expected to be performed and accepted in the next twelve months from the reporting date.

2.3.2.3 To enable this reporting, DoD Components will have to implement internal business process changes to their contract management procedures such that funds expended under contract will be tracked and accounts maintained by DERP site. The steps and schedule for implementing this change will be specified in the DoD Component's BPR Implementation Plan, and FIAR/FIP (see Paragraphs 2.1.2 – 2.1.3). Pending business modernization, DoD Components

will have to update their program systems that feed the OSD DERP database to capture the information needed to support current liability estimates.

2.3.2.4 Non-current liabilities represent the portion of the cost estimates that will be outlaid beyond one year of the reporting date, including Undelivered Orders Outstanding (UOOs) that will be outlaid more than twelve months following the reporting date.

2.3.3 The Note 14 General Narrative Disclosures include text descriptions and disclosures needed to support the recognized environmental liability. The financial community will rely on the functional community to provide information needed for development of these disclosures. Specific required narrative disclosures include:

2.3.3.1 General descriptions of the environmental liabilities included in the financial statement.

2.3.3.2 Applicable laws and regulations for cleanup requirements (i.e., regulatory drivers for the environmental cleanup and disposal requirements.)

2.3.3.3 The methodology used to develop the cost estimate (e.g., cost estimating models, engineering estimates, comparison with similar sites, etc.).

2.3.3.4 Significant changes in the total estimated cleanup costs due to changes in laws, technology, or DoD Component-wide plans (e.g., number of sites, cleanup goals affecting multiple sites).

2.4 DoD Components must be able to demonstrate that a complete universe of DERP environmental liabilities has been identified. A primary element of an audit is assurance that information provided on the financial statement is complete. Information and activities that support due diligence in identifying a complete EL universe may include: reviews of chain-of-custody records, aerial photos and records that may show prior uses, visual site inspections, review of any health complaints, analyses to estimate the existence of uninvestigated sites based on information from known sites, and documentation of investigations conducted for regulatory purposes.

2.5 Each environmental liability shall be reconciled annually with property, plant, and equipment (PP&E) asset records. For DERP sites, environmental records should be reconciled with real property records at the asset level at least annually, and:

2.5.1 The real property records should indicate that each record was reviewed for environmental issues. Any existing environmental restoration sites should be associated with the affected real property record(s) through the unique site identification number.

2.5.2 The responsible environmental program office must also maintain records of each site and associate it with the applicable real property records.

2.6 Documentation is critical to the credibility of DoD environmental liability estimates. Auditors assess relevant factors that may affect the estimate, and seek relevant, sufficient, and reliable data on which the estimate is based. An audit trail must enable verification of a transaction from its source to the resulting record, and from the resulting record or report to the source. Documentation requirements to support the financial statement (e.g., supporting documentation needed to validate environmental liability estimates from source documents such as invoices, cost estimate assumptions, data sources, independent government estimates (IGE), and estimate methodologies with appropriate reviews and approvals) must be maintained by each DoD Component in the Site Audit File. The location of supporting documents referenced but not present in the Site Audit File (e.g., documents in the Information Repository) should be listed and be readily available for audit (also see Paragraph 1.6 of Attachment 1, Estimating Program Costs and Cost to Complete for the Defense Environmental Restoration Program). Site Audit File documentation must include the following:

2.6.1 Overview of the site (e.g., maps, narrative descriptions, and physical units).

2.6.2 Legal requirements (e.g., applicable laws and regulations).

2.6.3 Data sources (e.g., studies, sampling results).

2.6.4 Internal control procedures used to review, approve, change, aggregate and archive the data.

2.6.5 Site's prior year and current year approved estimates. In addition, previously approved estimates and changes in those estimates should be available for review of historical patterns, along with the date prepared and preparer's name for each cost estimate.

2.6.6 Reasons for any fluctuations in cost estimates of ten percent up or down from the last approved estimate for environmental restoration activities and the cause of the fluctuation. Causes for fluctuations may include changes in the following:

- Work planned versus actual expenditures
- Site conditions
- Standards or regulations
- Cleanup technology

2.6.7 Validation of the cost estimate, including project-related documents that support underlying factors and assumptions for each cleanup site, cleanup methodology, estimate elements, costs per unit, and the method for estimating environmental restoration costs (e.g., VV&A'd model, engineering estimate, rationale used, source documents). Documentation must also include the assumptions used as input to cost estimating models.

2.6.8 Quality review and approval of all cost estimates.

2.6.8.1 A checklist is the recommended approach for documenting quality review. Quality review checklists should be developed by the DoD Components based on the requirements in this chapter and any requirements specific to the DoD Component's business process. The checklist should include review steps and questions used by the reviewer to assess the reasonableness of the estimate.

2.6.8.2 Those conducting review and approval of estimates should complete, sign, and date the checklist to reflect final approval, and the checklist should be maintained with the estimate in the Site Audit File.

2.6.9 Qualifications and training met by the estimator, reviewer, and others involved in the preparation or adjustment of the cost estimates (see Paragraph 1.8-1.9 of Attachment 1, Estimating Program Costs and Cost to Complete for the Defense Environmental Restoration Program).

2.6.10 Documentation on feeder systems used to transfer data from DoD Component program systems to financial systems and the OSD DERP database.

2.6.11 Demonstration that a complete universe of environmental restoration sites has been identified and included in the cost estimates.

2.6.12 Other documentation needed to support the Note 14 and narrative disclosures.

2.7 Documentation to support EL recognition and disclosures, including due diligence and management reviews should be maintained for the life of the liability to support the financial statement. Documents must be retained for the longer of the retention time six years, three months and one day after the liability is eliminated based on accounting audit standards of U.S. Department of Treasury, or

the period required by the environmental regulatory requirements, such as fifty years following the establishment of records that characterize the cleanup site pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act record retention requirements (42 USC 9603(d)).

2.8 Internal Management Controls must be established and maintained through DoD and DoD Component organizations to ensure effective business processes, controls over information processing, segregation of duties, and accurate and timely recording of transactions or events. DoDI 5010.40 on the Managers' Internal Control Procedures (January 4, 2006), and OMB Circular No. A-123, Management Accountability and Control (December 21, 2004) establish procedures for improving the accountability and effectiveness of Federal programs and operations by establishing, assessing, correcting, and reporting on internal management controls. Under these instructions, each DoD Component must establish and maintain a process to identify and report internal management control weaknesses through an annual statement of assurance.

2.8.1 To support the assurance of adequate internal management controls, personnel involved in developing approved estimates must ensure the following:

2.8.1.1 Evidence of management communication of the need for proper accounting estimates.

2.8.1.2 Relevant, sufficient, and reliable data and support documentation for a third party to validate estimates.

2.8.1.3 Segregation of duties for estimators, estimate reviewers, and approvers.

2.8.2 Cost estimate reviews must be performed by qualified Cost Estimate Reviewers (see Paragraphs 1.9 and 1.10 of Attachment 1, Estimating Program Costs and Cost to Complete for the Defense Environmental Restoration Program) to verify the following:

2.8.2.1 Determination that estimates comply with DoD policy and guidance.

2.8.2.2 Cost estimators and cost estimate reviewers are qualified.

2.8.2.3 Sources of relevant factors used to develop cost estimates are valid and reasonable.

2.8.2.4 Assumptions and resulting estimates are reasonable.

2.8.2.5 Comparison of prior and current cost estimates supports the reliability of the cost estimate methodology.

2.8.2.6 Management considers the resulting accounting estimate to be consistent with the operational plans of the facility.

2.8.3 Management review and approval of estimates should be documented and maintained as part of the Site Audit File (see Paragraph 2.6), including documentation of changes required based on management review.

2.9 Contingent Liabilities. The Department reports environmental liabilities separately from litigation based contingencies by reporting environmental and disposal liabilities on Note 14. The FMR Volume 6B Chapter 10, "Notes to the Financial Statements" provides instructions for each of the Notes. Questions related to Contingent Liability classification should be coordinated with the DoD Component's Financial Community and Legal Counsel.

2.9.1 Typically, if the litigation based contingent liability is considered reasonably possible (i.e., not remote or probable) it is disclosed on Note 16. If the contingent liability is probable, it is recognized in Note 15. Legal counsel make the determination of remote, possible, or probable.

2.9.2 Payments that will be made by the Judgment Fund are considered to be Contingent Liabilities. Upon settlement and payment from the Judgment Fund, the liability is removed from the financial statement.

MEMORANDUM FOR RECORD

Date: March 29, 2010

SUBJECT: Environmental Liabilities for site SEAD-002-R-01, East EOD Ranges (alias SEAD-118) at Seneca Army Depot

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for the 2010 data call. Since this site is a Military Munitions Rule site, the costs reported have been captured in RACER and the OE EE/CA is the basis for the five review.

Site: SEAD-002-R-01, East EOD Ranges (alias SEAD-118). This includes EOD Area #2 and EOD Area #3. MRS sites were used by EOD units for training. Exit strategy is to perform LTM site visits every five years to verify no Material Potentially Presenting an Explosive Hazard (MPPEH) has come to the surface from frost heave. LTM costs have been estimated to the end of the second five-year review.

Source:
Final Ordnance and Explosives Engineering Evaluation/Cost Analysis (OE EE/CA), January 2004.

RACER Assumptions:

1. Site Complexity is low
2. Document review, interviews etc are RACER default values
3. Site inspections required for MPPEH

Phase: LTM will be an Institutional Control in perpetuity. Initial duration is 10 years for a recurring review every 5 years (see Source).

Cost Summary	**SEAD-002-R-01 (SEAD-118)**
LTM	
Five-Year Review (RACER)	$57,275
SITE TOTAL	$57,275

Material Change: Yes, RACER Estimate Change and guidance change to estimate LTM for 10 years.

Prepared by: Randall Battaglia
Cost Estimator

Signature Date 3/29/10

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Signature Date 3/29/2010

Source # 1

FINAL

ORDNANCE AND EXPLOSIVES ENGINEERING EVALUATION/ COST ANALYSIS REPORT

SENECA ARMY DEPOT ROMULUS, SENECA COUNTY, NEW YORK

Prepared For:

SENECA ARMY DEPOT ACTIVITY
and
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
and
HUNTSVILLE CENTER

Contract No. DACA87-95-D-0018
Delivery Order No. 0052

Prepared By:

PARSONS ENGINEERING SCIENCE, INC.
100 SUMMER ST
BOSTON, MA 02110

JANUARY 2004

Area of Interest	Reason for Classification as No Further Action
Explosive Scrap Furnace	No evidence of ordnance.
Berm near the Bundle Ammo Buildings	No evidence of berm on aerial photography.
R&D Area/Fuze Storage (SEAD-44B)	No evidence of ordnance.

2.2.2.2 Areas Requiring Further Investigation

It was determined that 12 of the AOIs identified in the ASR would need further investigation to determine the exact nature of possible ordnance contamination (Figure 2.2). Of these 12 acres, 11 were investigated during the EE/CA. The last area, the Liquid Propellant Storage Area (SEAD-43) was declared a No DOD Action Indicated (NDAI) site in a memorandum by the Director of the Huntsville Corps of Engineers Ordnance and Explosive Team based on the results of a 1999 investigation (Appendix B). The physical characteristics of the 11 areas included in the EE/CA surveys are described below.

2.2.2.2.1 Geologic Characteristics – All 11 Sites

Characteristics specific to each site, such as topography and vegetation, are described below. However, the geologic characteristics of the 11 sites are fairly similar. As described in Section 2.2.1, the shale bedrock at SEDA is overlain by highly weathered shale and glacial till. Soil borings conducted during previous investigations at a number of the areas included in the OE EE/CA show that the till is typically 5 to 10 feet deep, with only 1 to 2 feet of weathered shale below. None of the components of the till are particularly iron rich, and the effects of native soil on geophysical instruments is minimal. Finally, frost depths in New York State can reach to 4 feet, meaning that frost heaving of any OE remaining in the ground is a concern at all of the sites discussed below.

2.2.2.2.2 SEADs-16 and -17 - Deactivation Furnaces

SEADs-16 and -17 are former popping plants that had been used for ammunition disassembly and demilitarization. The areas comprised of approximately five acres surrounding each of the buildings (Figure 2.2). The main concern at these areas is the possible presence of 20mm rounds, which may have been demilled here as at other similar popping plants. A visual inspection showed spent small arms ammunition of various sizes lying on the surface over much of the area. In addition, large piles of metallic debris, railroad tracks, and drum staging pads are scattered at various locations within the fence surrounding SEAD-16.

2.2.2.2.3 SEAD 44A - QA Function Test Area

At the time of the ASR site visit; SEAD-44A was an approximately 15-acre site that had been used for the QA testing of 40mm rifle-fired grenades, fire devices, and pyrotechnics. The remains of 40mm grenades and spent small arms were evident throughout the area. Subsequent to the ASR visit, most of the land surrounding SEAD-44A was turned over for use as the site for a new prison. A 25-acre fence was put in place in order to segregate the 15 acres of SEAD-44A, as well as a 100-foot buffer zone surrounding the site (Figure 2.2). A project was later undertaken to scrape 1-foot of soil off of that area enclosed by the fence that was believed to have been the former function test range. The soil was put through a sifter in order to remove any OE present and was replaced after the scraped area was geophysically mapped and all anomalies investigated to verify the removal of all OE.

2.2.2.2.4 SEAD-45 - Open Detonation Area

SEAD-45 consists of a large open area approximately 60-acres in size (Figure 2.2) surrounding a large berm that was used to suppress the effects of ordnance demolition activities. Aerial photographs from 1954 show there may have been burn pads that were covered by 1978. A variety of ordnance was destroyed by detonation at this area, including explosives, rockets, and heavy artillery. The blast radius shown on old drawings included in the Archive Search Report is 1800 feet from the center of the demolition berm. OE scrap and fragments of demolished ordnance are prevalent throughout this area.

2.2.2.2.5 SEAD-46 - 3.5" Rocket Range

This site covers approximately 40 acres situated to the northeast of the center of the Depot (Figure 2.2). Depot personnel reported that they have seen spent rocket motors on the ground, although none was noticed during the ASR site visit. Aerial photos taken in 1954 show the site as a long open area in which 3.5" rockets were apparently fired. It is believed that a large berm at the north end of the area was a target berm, into which the rockets were fired. Subsequent to Army use of SEAD-46, a number of small trees have grown up in the area.

2.2.2.2.6 SEAD-53 - Igloo Area

SEAD-53, which incorporates approximately 6,000 acres of the Depot (Figure 2.2), contains over 500 igloos that were once used to house the majority of the munitions stored on base. Most of the land in SEAD-53 is wooded; however, paths have generally been cleared around the igloos themselves. Drainage ditches on either side of most of the igloo access roads are also relatively free of woods or heavy brush. No ordnance was seen during the ASR site visit; although, a Schonstedt magnetometer examination of one of the drainage ditches adjacent to an access road did result in the discovery of several magnetometer hits. The Schonstedt hits are indicative of buried metal, but the actual cause was not examined during the ASR site visit.

2.2.2.2.7 SEAD-57 - Former EOD Range

This area consists of approximately 58 acres northwest of the center of the depot (Figure 2.2). According to former Depot employees, SEAD-57 was used as a demolition range with an

explosive limit of 10 pounds. The primary focus of the investigation in this area is a berm approximately 30 feet in diameter and 6 feet high near the center of the of the 58 acres. This berm does not appear in aerial photos until after 1978. The site visit conducted for the ASR in 1998 found the remains of many flares in and around this berm and in shot holes directly across an access road from the berm. Other shot holes were located at the south side of the access road, and are visible on aerial photographs taken in 1955. As with the SEAD-45 demolition area, it was believed that OE might be encountered as far as 1800 from the berm in SEAD-57.

2.2.2.2.8 Demo Range

The demolition range is a 40-acre wooded lot immediately to the southeast of SEAD-57 (Figure 2.2). It is assumed that this area was used for projectile demolition at some point. A 1963 aerial photograph shows the majority of the area as an open area; however, most of the site has subsequently become fairly heavily wooded. A split-open 75mm projectile was found in this area during the ASR site visit.

2.2.2.2.9 EOD Area #2

A 1963 aerial photo shows EOD Area #2 as a small open area approximately ½-mile to the west of EOD Area #3. Since this photo was taken, the area has been flooded and has become known as the "duck pond" (Figure 2.2). Originally, the area was rumored to be an EOD range where explosive devices were used. Subsequent to the flooding of the area it has been rumored that non-explosive metal projectiles were thrown into the water. Based on comparison of the 1963 aerial photograph with a 1991 photograph, the area occupied by EOD Area #2 should actually be to the northwest of the position indicated in the ASR. This revised location was the one surveyed during the EE/CA fieldwork.

2.2.2.2.10 EOD Area #3

This area is located directly to the north of SEAD-46 (Figure 2.2). The most obvious feature in the approximately 5 acres that make up this site is a 150-foot diameter pit that was reported to be an EOD disposal area. Early photos show the pit and the area surrounding it as clear. While the pit itself was still open at the time of the ASR site visit, large trees and thick brush had grown up around it. No evidence of ordnance was discovered in the visit.

2.2.2.2.11 Grenade Range

The former grenade range consists of approximately 30 acres at which 40mm rifle-fired grenades were used (Figure 2.2). The grenade range is a large open area still containing a number of mannequins, wooden structures, and armored vehicles used as targets during firing exercises at the range. It was assumed that the majority of the 40mm grenades fired at the range were practice grenades, as none of the targets show any evidence of having been damaged by HE. A number of intact 40mm grenades were also found during the ASR site visit.

SECTION 9

RECOMMEDATIONS AND RECURRING REVIEW

9.1 INTRODUCTION

The recommended response actions have been chosen based on the effectiveness and implementability for each of the alternatives considered at each of the AOIs. If two alternatives were equal according to effectiveness and implementability, then cost was used as the determining factor in choosing which alternative to recommend. Following implementation of the chosen response action alternative, the former Seneca Army Depot will be included in the USACE program for recurring reviews. Recurring reviews will be conducted every five years to evaluate the continued effectiveness of the response action to address public safety risk from UXO.

9.2 RECOMMENDED RESPONSE ACTIONS

9.2.1 INSTITUTIONAL CONTROLS

Institutional controls were not chosen for any of the individual AOIs. However, base wide controls should be implemented in order to properly educate the public about the potential residual hazards of OE that may exist on site. The Institutional Controls recommended in Section 5 are the ones that should be considered for implementation, and Appendix F analyses the effectiveness of all the institutional controls considered for SEDA. Although the Demo Range, the ditches in SEAD-53, and the rumored Indian Creek Burial area have been considered NFA sites, the base-wide Institutional Controls will cover these areas as well.

9.2.2 CLEARANCE TO DEPTH OF 6 INCHES

The Clearance to a Depth of 6 Inches Alternative has been chosen for two areas, SEADs-16 and –17 and EOD Area #2. At both of these areas, OE was found no deeper than 6 inches below the ground surface. Therefore, it is not considered necessary to investigate any deeper than this depth. A complete investigation of the area not cleared during the EE/CA for each AOI (Figures 9.1 and 9.2) using this alternative will be sufficient to remove the majority of the OE that is present in the areas. Should any OE be discovered after the initial survey, possibly due to natural occurrences (i.e. freeze/thaw), the survey may be repeated as part of the recurring reviews.

Estimate Documentation Report

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-002-R-01
Project Name: SEAD 002-R-01 East EOD Ranges
Project Category: Multiple Locations

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

SEAD-002-R-01 This MMR site is known as East EOD Ranges (alias SEAD-118).

Since this site is a Military Munitions Rule site, some costs reported have been captured in an OE EE/CA. The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the cost of the Five Year Reviews.

Site: SEAD-002-R-01 East EOD Ranges

Source:
1.Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
2. Professional judgment based on site knowledge.

All LUCs & Well Abaondonment have contract cost documentation.

Estimate Documentation Report

All LUCs & Well Abaondonment have contract cost documentation.

Estimate Documentation Report

Site Documentation:

Site ID: SEAD-002-R-01
Site Name: East EOD Ranges
Site Type: None

Media/Waste Type
Primary: Ordnance (not residual)
Secondary: N/A

Contaminant
Primary: Ordnance (not residual)
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: SEAD-002-R-01 East EOD Ranges. MMR site (alias SEAD-118) will require Long Term Maintenance to include 5- Year Reviews and Site Closeout Documentation, and Land Use Controls.
Support Team: Stephen M. Absolom - BEC for Seneca Army Depot
Randy Battaglia- US Army Corps of Engineers, Project Manager
References: 1. OE EE/CA
2. Professional judgment based on site knowledge.

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 03/11/2010

Estimator Signature: **Date:**

Reviewer Information

Estimate Documentation Report

Reviewer Name: Stephen Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
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5786 Rte 96, Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil

Date Reviewed: 02/05/2010

Reviewer Signature: **Date:**

Estimated Costs:

Phase Element Names		Direct Cost	Marked-up Cost
LTM #1 Five Year Reviews		$22,915	$57,275
	Total Cost:	$22,915	$57,275

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #1 Five Year Reviews
Description: Land Use Control monitoring and enforcement FY2010 through FY2038, with termination in FY2038. Two 5-Year Reviews, first in 2011 added to this phase.

Start Date: October, 2010
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Five-Year Review	Yes	100	0

Total Marked-up Cost: $57,275

Technologies:

Estimate Documentation Report

Technology Name: **Five-Year Review (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Site Complexity		Low	n/a
Document Review		Yes	n/a
Interviews		Yes	n/a
Site Inspection		Yes	n/a
Report		Yes	n/a
Travel		Yes	n/a
Rebound Study		No	n/a
Start Date		October-2011	n/a
No. Reviews		2	EA
Document Review			
Required Parameters			
5-Year Review Check List		Yes	n/a
Record of Decision		Yes	n/a
Remedial Action Design & Construction		Yes	n/a
Close-Out Report		Yes	n/a
Operations & Maintenance Manuals & Reports		Yes	n/a
Consent Decree or Settlement Records		Yes	n/a
Groundwater Monitoring & Reports		Yes	n/a
Remedial Action Required		Yes	n/a
Previous 5-Year Review Reports		Yes	n/a
Interviews			
Required Parameters			
Current and Previous Staff Management		Yes	n/a
Community Groups		Yes	n/a
State Contacts		Yes	n/a
Local Government Contacts		Yes	n/a
Operations & Maintenance Contractors		Yes	n/a
PRPs		Yes	n/a
Remedial Design Consultant		Yes	n/a
Site Inspection			
Required Parameters			

Estimate Documentation Report

Technology Name: **Five-Year Review (# 1)**

Description	*Default*	*Value*	*UOM*
Site Inspection			
Required Parameters			
General Site Inspection		Yes	n/a
Containment System Inspection		Yes	n/a
Monitoring Systems Inspection		Yes	n/a
Treatment Systems Inspection		Yes	n/a
Regulatory Compliance		Yes	n/a
Site Visit Documentation (Photos, Diagrams, etc.)		Yes	n/a
Report			
Required Parameters			
Introduction		Yes	n/a
Remedial Objectives		Yes	n/a
ARARs Review		Yes	n/a
Summary of Site Visit		Yes	n/a
Areas of Non Compliance		Yes	n/a
Technology Recommendations		Yes	n/a
Statement of Protectiveness		Yes	n/a
Next Review		Yes	n/a
Implementation Requirements		Yes	n/a
Travel			
Required Parameters			
Number of Travelers		1	EA
Number of Days		2	EA
Air Fare Ticket Price		1,500	$
Need a rental car?		Yes	n/a

Comments:

MEMORANDUM FOR RECORD

Date: 19 March 2010

SUBJECT: Environmental Liabilities for site SEAD-5, Sewage Sludge Waste Piles

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for the 2010 data call. The Remedial Action Cost Engineering and Requirements (RACER) 10.3 system was used to estimate the Site Closeout and Well Abandonment.

Site: SEAD-5, Sewage Sludge Waste Piles

Source:
1. Record of Decision, Five Former SWMUs—SEADs 1, 2, 5, 24, and 48, April 2009.
2. Expanded Site Investigation Report, Eight Moderately Low Priority Areas of Concern, December 1995.

Assumptions: Regulatory acceptance (pending) of the SEAD-5 Completion Report which discusses the removal of all contaminated soil and covering of the site is anticipated. This site is located within the Planned Industrial Area and will require Land Use Controls in perpetuity, including inspection of required soil cap and compliance with groundwater restrictions (Source 1). LUC monitoring is to be performed as part of SEAD-9 monitoring effort and costs will be tracked under that site. In addition, three groundwater wells will need to be abandoned (Source 2) and site closeout will occur.

RACER Assumptions:
Site Closeout Documentation (LTM):
1. Site Closeout is low complexity
2. Kick-off, review and regulatory meetings included
3. Work Plans and reports- all RACER default values
4. Documents will be stored for 30 years

Well Abandonment (LTM):
1. Number of wells: 3
2. Well depth: 15 feet
3. Well diameter: 2 inches
4. Formation type: Unconsolidated
5. Method: Overdrill/removal

Cost Summary SEAD-5

Well Abandonment (RACER)	$10,738
Site Closeout (RACER)	$39,818
Total Site Cost	**$50,556**

Material Change: Yes
Reason: Combined LTM Cost with SEAD 9

Prepared by: Randall Battaglia
Cost Estimator
Signature Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer
Signature Date

Source 1

RECORD OF DECISION

For

Site SEAD 5

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

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
5786 STATE ROUTE 96
ROMULUS, NEW YORK 14541

and

UNITED STATES ARMY CORPS OF ENGINEERS
4820 UNIVERSITY SQUARE
HUNTSVILLE, ALABAMA 35816

Prepared By:

PARSONS
150 Federal St., 4th Floor
Boston, Massachusetts 02110

Contract Number: DACA87-02-D-0005
Delivery Orders: 0033
EPA Site ID: NY0213820830
NY Site ID: 8-50-006

April 2009

1.0 DECLARATION FOR THE RECORD OF DECISION

Areas of Concern Names and Site Location

SEAD-1 – the former Hazardous Waste Container Storage Facility (Building 307)
SEAD-2 – the former PCB Transformer Storage Facility (Building 301)
SEAD-5 – Sewage Sludge Waste Piles
SEAD-24 – the Abandoned Powder Burn Pit
SEAD-48 – Row E0800 Pitchblende Ore Storage Igloos

Seneca Army Depot Activity
5786 State Route 96
Romulus, New York 14541
CERCLIS ID# NY0213820830; New York Site ID# 8-50-0006

Statement of Basis and Purpose

This Record of Decision (ROD) documents the U.S Army's (Army's) and U.S Environmental Protection Agency's (EPA's) selected remedies for five historic solid waste management units (SWMUs) at the former Seneca Army Depot Activity (the Site, SEDA, or Depot) in the Towns of Varick and Romulus, Seneca County, New York. The decisions were developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended, 42 U.S.C. § 9601, *et seq.*, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Title 40, Protection of Environment, Code of Federal Regulations (CFR) Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator; the Chief, Consolidation Branch, Army BRAC Division; and, the Emergency and Remedial Response Division Director, EPA Region II have been delegated the authority to approve this ROD.

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, 5786 State Route 96, Building 123, Romulus, NY 14541. The Administrative Record Index identifies each of the items considered during the selection of the remedial actions for these historic SWMUs. This index is included in **Appendix A**.

The State of New York, through the New York State Department of Environmental Conservation (NYSDEC), has concurred with the selected remedies. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

AOC Assessment

The selected remedies for three of the historic SWMUs (i.e., SEADs 1, 2, and 5) address contaminated soil and groundwater. The selected remedies for these SEADs will limit soil and groundwater as exposure pathways for potential receptors. The response actions selected in this ROD for SEADs 1, 2, and 5 are necessary to protect human health and the environment from actual or threatened releases of hazardous substances into the environment or from actual or threatened releases of pollutants or contaminants, which may present an imminent and substantial endangerment to public health or welfare.

No Further Action (NFA) is called for at SEAD-24 where a time-critical removal action (TCRA) previously removed soil contaminated with hazardous substances, and where conditions now indicate that the land is suitable for unrestricted use and unlimited exposures. Finally, NFA is also selected for SEAD-48 where radiological decontamination and remedial actions completed as part of the SEDA's Nuclear Regulatory Commission (NRC) radiological license termination process have shown that soils, groundwater, and building surfaces are suitable for unrestricted use and unlimited exposures.

Description of the Selected Remedies

The selected remedies for SEAD-24 (the Abandoned Powder Burning Pit) and SEAD-48 (Row E0800 Pitchblende Ore Storage Igloos) are No Further Action. These selections are based on the Army's and EPA's determination that these sites do not pose a significant threat to human health or the environment. The locations of SEADs 24 and 48 are shown in **Figure 1-1**.

The response actions selected in this ROD for SEAD-1 (the Hazardous Waste Container Storage Facility), SEAD-2 (the PCB Transformer Storage Facility), and SEAD-5 (Sewage Sludge Waste Piles) address contaminated soil and groundwater.

The common elements of the selected remedies at SEADs 1, 2, and 5 include:

- Establishing, maintaining, monitoring, and reporting on a land use control (LUC) that prohibits residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained within the areas of concern (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 requires:

- 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 soil cleanup objectives (SCOs);
- 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.

As the selected remedies for the latter three AOCs (i.e., SEADs 1, 2, and 5) do not allow unrestricted use and unlimited exposures, the Army or its successors will be required to complete a review of the selected remedies at least once every 5 years, in accordance with Section 121(c) of the CERCLA.

Land Use Control (LUC) Performance Objectives:

The common LUC performance objectives for SEADs 1, 2, and 5 are to:

- Prohibit access to, or use of, the groundwater until groundwater cleanup standards are achieved; and,
- Prohibit the use of the land within the AOCs for residential housing, elementary and secondary schools, childcare facilities, and playground activities.

SEAD 5 Remedy

SEAD 5 Remedy

At SEAD-5, the additional LUC performance objective is to:

- Prohibit unauthorized excavation or other activities that could compromise the integrity of the engineered cover.

SEADs 1, 2, and 5 represent a small portion of a larger tract of land located in the east-central portion of the former SEDA that comprises the Planned Industrial / Office Development and Warehousing (PID) Area that has been transferred to the Seneca County Industrial Development Agency (SCIDA), exclusive of any Army retained property. Based on an agreement reached between the Army, the EPA, and the NYSDEC, the entire PID Area, exclusive of Army retained property, is subject to equivalent LUCs (i.e., prohibit groundwater access/use; prohibit residential housing/elementary and secondary schools/childcare facilities/playgrounds) as are proposed for imposition at SEADs 1, 2, and 5. The referenced LUCs comprised the remedy selected in a 2004 ROD [*Final ROD for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas* (Parsons, 2004)] for SEADs 27, 64A, and 66, three other AOCs within the PID Area, due to levels of contaminants that were identified at those AOCs. At the time of the 2004 ROD, the Army, EPA, and NYSDEC agreed that these LUCs should be applied to all land within the greater PID Area, pending the provision and evaluation of new data for specific sites within the PID Area if a future owner or occupant wished to apply for a variance from the specified LUCs. The PID Area LUCs were implemented when the PID Area was transferred to the SCIDA by the Army, but they are not applied to the land comprising SEADs 1, 2, or 5, as these parcels were retained by the Army at the time of the greater PID Area's transfer, pending completion of necessary investigations and studies, the evaluation of potential remedial actions, and the selection of an approved remedy for SEADs 1, 2, and 5. The Army will ensure that the LUCs selected in this ROD will be maintained and enforced, until such time as the Army transfers these properties to other owners. The locations of SEADs 1, 2, and 5, and the land that is subject to institutional controls in the PID Area are shown in **Figure 1-1**.

The unauthorized excavation LUC for SEAD-5 will be implemented only at that location where the protective cover is established over SEAD-5 soils. The location where engineered cover is installed will be documented during the Remedial Design phase, and formally documented subsequent to the completion of the remedial action at this AOC.

The Army shall, through the on-site Commander's representative or other designated official, implement, maintain, inspect, report on, and enforce the remedy described in this ROD. This ROD selects as the remedy for SEAD-1, SEAD-2, and SEAD-5, LUCs (i.e., prohibit unauthorized excavations, SEAD-5 only; and groundwater access/use and land use limitations, SEAD-1, SEAD-2, and SEAD-5) to be imposed by an environmental easement at the time when land comprising SEAD-1, SEAD-2, or SEAD-5 is transferred from Army ownership to another party, as well as the prohibition of any pre-transfer use inconsistent with the LUCs. Although the Army may later transfer these responsibilities to another party, the Army shall retain ultimate responsibility for remedy integrity.

To implement the remedies selected in this Record of Decision, which will include the imposition of LUCs at SEAD-1, SEAD-2, and SEAD-5, a LUC Remedial Design will be prepared which will provide for the recording of an environmental easement which is consistent with Paragraphs (a) and (c) of the

Source #3

EXPANDED SITE INSPECTION REPORT
EIGHT MODERATELY LOW PRIORITY AREAS OF CONCERN
SENECA ARMY DEPOT
ROMULUS, NEW YORK

Prepared For:

Seneca Army Depot
Romulus, New York

Prepared By:

Parsons Engineering Science, Inc.
Prudential Center
Boston, Massachusetts

720519

December 1995

1.0 INTRODUCTION

Parsons Engineering Science, Inc. (Parsons ES) has been retained by the U.S. Army Corps of Engineers (USACOE) to conduct Expanded Site Inspections (ESI) at Solid Waste Management Units (SWMUs) that have been designated as Areas of Concern (AOC) within the Seneca Army Depot (SEDA). This report describes the ESI activities at the following eight (8) moderately low priority AOCs:

- SEAD-5 - Sewage Sludge Waste Piles
- SEAD-9 - Old Scrap Wood Site
- SEAD-12A - Radioactive Waste Burial Sites
- SEAD-12B - Radioactive Waste Burial Sites
- SEAD-43 - Building 606-Old Missile Propellant Test Laboratory (refer to SEAD-56)
- SEAD-56 - Building 606-Herbicide and Pesticide Storage (refer to SEAD-43)
- SEAD-69 - Building 606-Disposal Area
- SEAD-44A - Quality Assurance Test Laboratory (West of Building 616)
- SEAD-44B - Quality Assurance Test Laboratory (Brady Road)
- SEAD-50 - Tank Farm
- SEAD-58 - Debris Area Near Booster Station 2131
- SEAD-59 - Fill Area West of Building 135

The purpose of this report is to discuss the physical characteristics of the sites, interpret the analytical results from the investigation programs, and identify any hazardous constituents or wastes that have been released to the environment at each of the eight (8) AOCs.

In accordance with the decision process outlined in the Interagency Agreement (IAG), ESIs were performed at SWMUs that were classified as AOCs. If the conclusion of this report is that an AOC poses a threat to human health, welfare, or the environment, the Army can perform a removal action to eliminate the threat or can conduct a Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Remedial Investigation (RI).

This work has been performed according to the requirements of the New York State Department of Environmental Conservation (NYSDEC), the U.S. Environmental Protection Agency, Region II (EPA), and the IAG. The steps in this agreement are depicted in Figure 1.1-1. The IAG sets forth an incremental agenda which begins with the initial identification

transport media for the chemicals of concern at SEAD-5 include soil and groundwater. The classification of the groundwater at SEAD-5 is GA, meaning that it is protected for a source of drinking water. However, there are no drinking water wells which exist within the areas influenced by SEAD-5.

2.3.1 Chemicals of Interest

Chemicals of interest include VOCs, SVOs, pesticides/PCBs, cyanides, nitrates, and heavy metals.

2.3.2 Media Investigated

Geophysics

Four (4) 115 foot long seismic refraction profiles were surveyed on 4 lines positioned along each boundary of the AOC. The seismic refraction transect locations are shown in Figure 2.3-1. Data from the survey were used to determine the direction of groundwater flow and to adjust the monitoring well locations to assure that one monitoring well was installed upgradient and two monitoring wells were installed downgradient of the AOC. Because of the relative position SEAD-5 has with SEADs 59 and 71, seismic line locations were selected which would yield the best information without overlap or repetition on bordering SEADS.

Soils

Five (5) test pits were excavated at SEAD-5. The test pit locations are shown in Figure 2.3-2. One excavation was advanced through each of the five sewage sludge piles identified in the 15 SWMU Work Plan. In each case, the test pit bisected the entire pile allowing a complete visual inspection of the fill material. One soil sample was collected from each test pit and submitted for the chemical analyses identified in Section 2.3.3 (Table 2.3-1).

3 MW INSTALLED

Groundwater

Three (3) groundwater monitoring wells were installed at this AOC as shown in Figure 2.3-2. One monitoring well (MW5-1) was installed upgradient of the AOC to obtain background water quality data, while the remaining two monitoring wells were installed adjacent to, and downgradient of, the AOC to determine if hazardous constituents have migrated from the site and to determine the direction of groundwater flow. The presumed direction of groundwater

flow at this AOC was to the southwest. The geophysical survey showed the direction to be more to the west-northwest. Adjustments to the monitoring well locations were based upon the seismic survey interpretation. Specifically, the upgradient monitoring well was placed near the center of the eastern boundary of the AOC and the two downgradient monitoring wells were placed near the northwestern corner and the center of the western boundary of the AOC.

One (1) monitoring well was constructed at each designated location and was screened over the entire thickness of the aquifer above competent bedrock. Following installation and development, one groundwater sample was collected from each well and tested for the parameters listed in Section 2.3.3.

2.3.3 Analytical Program

A total of five (5) soil samples and three (3) groundwater samples were collected from SEAD-5 for chemical analysis. All of the samples were analyzed for TCL VOC's, SVOs, pesticides/PCBs, TAL metals, cyanide and nitrates according to the NYSDEC CLP SOW. A summary of the laboratory analysis for SEAD-5 is presented in Table 2.1.3.

2.4 SEAD 9-OLD SCRAP WOOD SITE

The old scrap wood pile (SEAD 9) is located along East Patrol Road, approximately 400 feet north of East Kendaia Road. This area served as a waste disposal site for construction debris and scrap wood. It was also used for staging fire training exercises, although no historical data exist on the procedures used or material burned. Leaching of rainwater through the debris and into the surrounding soils and groundwater were considered as the primary migration pathways for potential contaminants at SEAD-9. The groundwater at SEAD-9 has been classified as GA, meaning that it is protected for a source of drinking water. However, no drinking water wells exist within the areas influenced by SEAD-9.

2.4.1 Chemical of Interest

Chemical of interest include VOCs, SVOs, pesticides/PCBs, cyanide, and total petroleum hydrocarbons.

Estimate Documentation Report

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-5
Project Name: SEAD-5
Project Category: Planned Industrial Area

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

SEAD-5 Sewage Sludge Waste Piles: Location where SEDA stored the sludge removed from the sewage treatment plants.

Source:
1. Final Completion Report- Industrial Waste Site (Sludge Piles) SEAD-5 Time Critical Removal Action, February 2006
2. Revised Draft Final Proposed Plan Five Former SWMUs- SEADs 1, 2, 5, 24 and 48, November 2007
3. Professional judgment based on site knowledge

Assumptions: Regulatory acceptance of the SEAD-5 Completion Report that discussed the removal of all contaminated soil from the site. The next phase will be to seek a No Further Action designation and close out the site. This site is located within the Planned Industrial Area and will need Institutional Controls (IC). Site will require close out costs only. Cost for

the IC (Land Use Controls) and 5-year reviews programmed under site SEAD-09.

RACER Assumptions:
Site Closeout Documentation (LTM)

1. Site Closeout is low complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years
5. Well abandonment includes sub-contractor costs for fieldwork

Estimate Documentation Report

Site Documentation:

Site ID: SEAD-5
Site Name: Sewage Sludge Waste Piles
Site Type: None

Media/Waste Type
Primary: N/A
Secondary: N/A

Contaminant
Primary: None
Secondary: None

Phase Names
SI: ☐
RI/FS: ☐
RD: ☐
IRA: ☐
RA(C): ☐
RA(O): ☐
LTM: ☑
Site Closeout: ☐

Documentation
Description: SEAD-5
Site Closeout following the soil removal contaminated with metals. No Further Action will be proposed after removal of all contaminants. Site will require Institutional Controls and five year reviews.

LUC and five-year review costs deleted; these costs will be covered under Site SEAD-009.

Support Team: Stephen M. Absolom - BEC, Seneca Army Depot
Randy Battaglia- Project Manager USACE, New York District

References:
1. Final Completion Report- Industrial Waste Site (Sludge Piles) SEAD-5 Time Critical Removal Action, February 2006
2. Revised Draft Final Proposed Plan Five Former SWMUs- SEADs 1, 2, 5, 24, and 48, November 2007
3. Professional judgment based on site knowledge

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 02/04/2010

Estimate Documentation Report

Estimator Signature: _____ **Date:** _____

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96 Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil
Date Reviewed: 02/05/2010

Reviewer Signature: _____ **Date:** _____

Estimated Costs:

Phase Names	Direct Cost	Marked-up Cost
LTM #1	$21,699	$50,556
Total Cost:	$21,699	$50,556

Estimate Documentation Report

Phase Documentation:

Phase Type: Long Term Monitoring
Phase Name: LTM #1
Description: Site Closeout and well abandonment costs in FY2010.

Start Date: October, 2010
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate

Phase Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Total Marked-up Cost: $50,556

Technologies:

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Meetings		Yes	n/a
Work Plans and Reports		Yes	n/a
Documents		Yes	n/a
Site Close-Out Complexity		Low	n/a
Meetings			
Required Parameters			
Kick Off/Scoping Meetings		Yes	n/a
Kick Off/Scoping Meetings: Number of Meetings	1	1	EA
Kick Off/Scoping Meetings: Travel		Yes	n/a
Kick Off/Scoping Meetings: Travelers		2	EA
Kick Off/Scoping Meetings: Days		5	Days
Kick Off/Scoping Meetings: Air Fare		0	$
Review Meetings		Yes	n/a
Review Meetings: Number of Meetings	1	1	EA
Review Meetings: Travel		No	n/a
Regulatory Review Meetings		Yes	n/a
Regulatory Review Meetings: Number of Meetings	1	1	EA
Regulatory Review Meetings: Travel		No	n/a
Work Plans & Reports			
Required Parameters			
Work Plans		Yes	n/a
Draft Work Plan		Yes	n/a
Final Work Plan		Yes	n/a
Reports		Yes	n/a
Draft Close-Out Report		Yes	n/a
Draft Final Close-Out Report		Yes	n/a
Final Close-Out Report		Yes	n/a
Progress Reports		Yes	n/a
Project Duration	8	11	months
Documents			
Required Parameters			

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
Documents			
Required Parameters			
Draft Decision Document		Yes	n/a
Draft Final Decision Document		Yes	n/a
Final Decision Document		Yes	n/a
Long Term Document Storage		Yes	n/a
Number of Boxes		2	EA
Duration of Storage		30	Yrs

Comments:

Technology Name: **Well Abandonment (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Safety Level		D	n/a
Abandon Wells			
Required Parameters			
Technology/Group Name		Well Group	n/a
Number of Wells		3	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Unconsolidated	n/a

Comments:

Site WBS Report
(with Markups)

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-5
Project Name: SEAD-5
Project Category: Planned Industrial Area

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

SEAD-5 Sewage Sludge Waste Piles: Location where SEDA stored the sludge removed from the sewage treatment plants.

Source:
1. Final Completion Report- Industrial Waste Site (Sludge Piles) SEAD-5 Time Critical Removal Action, February 2006
2. Revised Draft Final Proposed Plan Five Former SWMUs- SEADs 1, 2, 5, 24 and 48, November 2007
3. Professional judgment based on site knowledge

Assumptions: Regulatory acceptance of the SEAD-5 Completion Report that discussed the removal of all contaminated soil from the site. The next phase will be to seek a No Further Action designation and close out the site. This site is located within the Planned Industrial Area and will need Institutional Controls (IC). Site will require close out costs only. Cost for the IC (Land Use Controls) and 5-year reviews programmed under site

Site WBS Report
(with Markups)

SEAD-09.

RACER Assumptions:
Site Closeout Documentation (LTM)

1. Site Closeout is low complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years
5. Well abandonment includes sub-contractor costs for fieldwork

Site WBS Report
(with Markups)

Site:

Site ID: SEAD-5
Site Name: Sewage Sludge Waste Piles
Site Type: None

Media/Waste Type
Primary: N/A
Secondary: N/A

Contaminant
Primary: None
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: SEAD-5
Site Closeout following the soil removal contaminated with metals. No Further Action will be proposed after removal of all contaminants. Site will require Institutional Controls and five year reviews.

LUC and five-year review costs deleted; these costs will be covered under Site SEAD-009.

Support Team: Stephen M. Absolom - BEC, Seneca Army Depot
Randy Battaglia- Project Manager USACE, New York District

References:
1. Final Completion Report- Industrial Waste Site (Sludge Piles) SEAD-5 Time Critical Removal Action, February 2006
2. Revised Draft Final Proposed Plan Five Former SWMUs- SEADs 1, 2, 5, 24, and 48, November 2007
3. Professional judgment based on site knowledge

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 02/04/2010

Site WBS Report
(with Markups)

Estimator Signature: **Date:**

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96 Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil
Date Reviewed: 02/05/2010

Reviewer Signature: **Date:**

Site WBS Report
(with Markups)

Phase Element:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #1
Description: Site Closeout and well abandonment costs in FY2010.

Start Date: October, 2010
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate

Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Site WBS Report
(with Markups)

HTRW RA WBS			Marked Up Costs
331	HTRW REMEDIAL ACTION (CONSTRUCTION)		
331.20	SITE RESTORATION		
331.20.90	Other	Site Close-Out Documentation	$39,818
	Other	Well Abandonment	$10,738
			$50,556
		Total:	$50,556
		HTRW RA WBS Total:	$50,556
		Total:	**$50,556**

MEMORANDUM FOR RECORD

Date: 29 March 2010

SUBJECT: Environmental Liabilities for site SEAD-007-R-01, Rifle Grenade Range at Seneca Army Depot

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for the 2010 data call. Since this site is a Military Munitions Rule site, the total costs reported have been captured in RACER and the Ordnance and Explosives Engineering Evaluation/Cost Analysis, (OE EE/CA) serves as the basis of need.

Site: SEAD-007-R-01, Rifle Grenade Range. This AOC was a former practice grenade range. A munitions response action has been completed and the site requires semi-annual inspections to ensure no MPPEH has come to the surface from frost heave.

Source:

Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.

RACER ASSUMPTIONS:

Five Year Reviews:

1. Two five year reviews
2. Site Complexity is low
3. All default values are used for RACER options
4. Site inspections required for MPPEH

Cost Summary SEAD-007-R-01

LTM

5 year review for OE (RACER)	$57,275

Total Site Cost **$57,275**

Material Change: Yes
Reason: RACER estimate change, and change in LTM duration calculation.

Prepared by: Randall Battaglia
Cost Estimator

Randall Battaglia 3/29/10
Signature Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Stephen M Absolom 3/29/2010
Signature Date

Source

FINAL

ORDNANCE AND EXPLOSIVES ENGINEERING EVALUATION/ COST ANALYSIS REPORT

SENECA ARMY DEPOT ROMULUS, SENECA COUNTY, NEW YORK

Prepared For:

SENECA ARMY DEPOT ACTIVITY
and
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
and
HUNTSVILLE CENTER

Contract No. DACA87-95-D-0018
Delivery Order No. 0052

Prepared By:

PARSONS ENGINEERING SCIENCE, INC.
100 SUMMER ST
BOSTON, MA 02110

JANUARY 2004

Area of Interest	Reason for Classification as No Further Action
Explosive Scrap Furnace	No evidence of ordnance.
Berm near the Bundle Ammo Buildings	No evidence of berm on aerial photography.
R&D Area/Fuze Storage (SEAD-44B)	No evidence of ordnance.

2.2.2.2 Areas Requiring Further Investigation

It was determined that 12 of the AOIs identified in the ASR would need further investigation to determine the exact nature of possible ordnance contamination (Figure 2.2). Of these 12 acres, 11 were investigated during the EE/CA. The last area, the Liquid Propellant Storage Area (SEAD-43) was declared a No DOD Action Indicated (NDAI) site in a memorandum by the Director of the Huntsville Corps of Engineers Ordnance and Explosive Team based on the results of a 1999 investigation (Appendix B). The physical characteristics of the 11 areas included in the EE/CA surveys are described below.

2.2.2.2.1 Geologic Characteristics – All 11 Sites

Characteristics specific to each site, such as topography and vegetation, are described below. However, the geologic characteristics of the 11 sites are fairly similar. As described in Section 2.2.1, the shale bedrock at SEDA is overlain by highly weathered shale and glacial till. Soil borings conducted during previous investigations at a number of the areas included in the OE EE/CA show that the till is typically 5 to 10 feet deep, with only 1 to 2 feet of weathered shale below. None of the components of the till are particularly iron rich, and the effects of native soil on geophysical instruments is minimal. Finally, frost depths in New York State can reach to 4 feet, meaning that frost heaving of any OE remaining in the ground is a concern at all of the sites discussed below.

2.2.2.2.2 SEADs-16 and -17 - Deactivation Furnaces

SEADs-16 and -17 are former popping plants that had been used for ammunition disassembly and demilitarization. The areas comprised of approximately five acres surrounding each of the buildings (Figure 2.2). The main concern at these areas is the possible presence of 20mm rounds, which may have been demilled here as at other similar popping plants. A visual inspection showed spent small arms ammunition of various sizes lying on the surface over much of the area. In addition, large piles of metallic debris, railroad tracks, and drum staging pads are scattered at various locations within the fence surrounding SEAD-16.

2.2.2.2.3 SEAD 44A - QA Function Test Area

At the time of the ASR site visit; SEAD-44A was an approximately 15-acre site that had been used for the QA testing of 40mm rifle-fired grenades, fire devices, and pyrotechnics. The remains of 40mm grenades and spent small arms were evident throughout the area. Subsequent to the ASR visit, most of the land surrounding SEAD-44A was turned over for use as the site for a new prison. A 25-acre fence was put in place in order to segregate the 15 acres of SEAD-44A, as well as a 100-foot buffer zone surrounding the site (Figure 2.2). A project was later undertaken to scrape 1-foot of soil off of that area enclosed by the fence that was believed to have been the former function test range. The soil was put through a sifter in order to remove any OE present and was replaced after the scraped area was geophysically mapped and all anomalies investigated to verify the removal of all OE.

2.2.2.2.4 SEAD-45 - Open Detonation Area

SEAD-45 consists of a large open area approximately 60-acres in size (Figure 2.2) surrounding a large berm that was used to suppress the effects of ordnance demolition activities. Aerial photographs from 1954 show there may have been burn pads that were covered by 1978. A variety of ordnance was destroyed by detonation at this area, including explosives, rockets, and heavy artillery. The blast radius shown on old drawings included in the Archive Search Report is 1800 feet from the center of the demolition berm. OE scrap and fragments of demolished ordnance are prevalent throughout this area.

2.2.2.2.5 SEAD-46 - 3.5" Rocket Range

This site covers approximately 40 acres situated to the northeast of the center of the Depot (Figure 2.2). Depot personnel reported that they have seen spent rocket motors on the ground, although none was noticed during the ASR site visit. Aerial photos taken in 1954 show the site as a long open area in which 3.5" rockets were apparently fired. It is believed that a large berm at the north end of the area was a target berm, into which the rockets were fired. Subsequent to Army use of SEAD-46, a number of small trees have grown up in the area.

2.2.2.2.6 SEAD-53 - Igloo Area

SEAD-53, which incorporates approximately 6,000 acres of the Depot (Figure 2.2), contains over 500 igloos that were once used to house the majority of the munitions stored on base. Most of the land in SEAD-53 is wooded; however, paths have generally been cleared around the igloos themselves. Drainage ditches on either side of most of the igloo access roads are also relatively free of woods or heavy brush. No ordnance was seen during the ASR site visit; although, a Schonstedt magnetometer examination of one of the drainage ditches adjacent to an access road did result in the discovery of several magnetometer hits. The Schonstedt hits are indicative of buried metal, but the actual cause was not examined during the ASR site visit.

2.2.2.2.7 SEAD-57 - Former EOD Range

This area consists of approximately 58 acres northwest of the center of the depot (Figure 2.2). According to former Depot employees, SEAD-57 was used as a demolition range with an

explosive limit of 10 pounds. The primary focus of the investigation in this area is a berm approximately 30 feet in diameter and 6 feet high near the center of the of the 58 acres. This berm does not appear in aerial photos until after 1978. The site visit conducted for the ASR in 1998 found the remains of many flares in and around this berm and in shot holes directly across an access road from the berm. Other shot holes were located at the south side of the access road, and are visible on aerial photographs taken in 1955. As with the SEAD-45 demolition area, it was believed that OE might be encountered as far as 1800 from the berm in SEAD-57.

2.2.2.2.8 Demo Range

The demolition range is a 40-acre wooded lot immediately to the southeast of SEAD-57 (Figure 2.2). It is assumed that this area was used for projectile demolition at some point. A 1963 aerial photograph shows the majority of the area as an open area; however, most of the site has subsequently become fairly heavily wooded. A split-open 75mm projectile was found in this area during the ASR site visit.

2.2.2.2.9 EOD Area #2

A 1963 aerial photo shows EOD Area #2 as a small open area approximately ½-mile to the west of EOD Area #3. Since this photo was taken, the area has been flooded and has become known as the "duck pond" (Figure 2.2). Originally, the area was rumored to be an EOD range where explosive devices were used. Subsequent to the flooding of the area it has been rumored that non-explosive metal projectiles were thrown into the water. Based on comparison of the 1963 aerial photograph with a 1991 photograph, the area occupied by EOD Area #2 should actually be to the northwest of the position indicated in the ASR. This revised location was the one surveyed during the EE/CA fieldwork.

2.2.2.2.10 EOD Area #3

This area is located directly to the north of SEAD-46 (Figure 2.2). The most obvious feature in the approximately 5 acres that make up this site is a 150-foot diameter pit that was reported to be an EOD disposal area. Early photos show the pit and the area surrounding it as clear. While the pit itself was still open at the time of the ASR site visit, large trees and thick brush had grown up around it. No evidence of ordnance was discovered in the visit.

2.2.2.2.11 Grenade Range

The former grenade range consists of approximately 30 acres at which 40mm rifle-fired grenades were used (Figure 2.2). The grenade range is a large open area still containing a number of mannequins, wooden structures, and armored vehicles used as targets during firing exercises at the range. It was assumed that the majority of the 40mm grenades fired at the range were practice grenades, as none of the targets show any evidence of having been damaged by HE. A number of intact 40mm grenades were also found during the ASR site visit.

SECTION 9

RECOMMEDATIONS AND RECURRING REVIEW

9.1 INTRODUCTION

The recommended response actions have been chosen based on the effectiveness and implementability for each of the alternatives considered at each of the AOIs. If two alternatives were equal according to effectiveness and implementability, then cost was used as the determining factor in choosing which alternative to recommend. Following implementation of the chosen response action alternative, the former Seneca Army Depot will be included in the USACE program for recurring reviews. Recurring reviews will be conducted every five years to evaluate the continued effectiveness of the response action to address public safety risk from UXO.

9.2 RECOMMENDED RESPONSE ACTIONS

9.2.1 INSTITUTIONAL CONTROLS

Institutional controls were not chosen for any of the individual AOIs. However, base wide controls should be implemented in order to properly educate the public about the potential residual hazards of OE that may exist on site. The Institutional Controls recommended in Section 5 are the ones that should be considered for implementation, and Appendix F analyses the effectiveness of all the institutional controls considered for SEDA. Although the Demo Range, the ditches in SEAD-53, and the rumored Indian Creek Burial area have been considered NFA sites, the base-wide Institutional Controls will cover these areas as well.

9.2.2 CLEARANCE TO DEPTH OF 6 INCHES

The Clearance to a Depth of 6 Inches Alternative has been chosen for two areas, SEADs-16 and –17 and EOD Area #2. At both of these areas, OE was found no deeper than 6 inches below the ground surface. Therefore, it is not considered necessary to investigate any deeper than this depth. A complete investigation of the area not cleared during the EE/CA for each AOI (Figures 9.1 and 9.2) using this alternative will be sufficient to remove the majority of the OE that is present in the areas. Should any OE be discovered after the initial survey, possibly due to natural occurrences (i.e. freeze/thaw), the survey may be repeated as part of the recurring reviews.

Estimate Documentation Report

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-007-R-01
Project Name: SEAD-007-R-01 Rifle Grenade Range
Project Category: Multiple Locations

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

SEAD-007-R-01 Rifle Grenade Range

Since this site is a Military Munitions Rule site, some costs reported have been captured in an OE EE/CA. The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the cost of the Site Close-Out Documentation.

Source:
1. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
2. Professional judgment based on site knowledge.

All LUCs and Well Abaondonment have contract cost documentation.

Estimate Documentation Report

Site Documentation:

Site ID: SEAD-007-R-01
Site Name: Rifle Grenade Range
Site Type: None

Media/Waste Type
Primary: Ordnance (not residual)
Secondary: N/A

Contaminant
Primary: Ordnance (not residual)
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: SEAD-007-R-01 Rifle Grenade Range

This MMR site will require Long Term Maintenance for 5- Year Reviews.
Support Team: Stephen M. Absolom - BEC for Seneca Army Depot
Randy Battaglia- US Army Corps of Engineers, Project Manager
References: 1. Draft Final Construction Completion Report
2. Professional judgment based on site knowledge.

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 03/11/2010

Estimator Signature: **Date:**

Reviewer Information

Estimate Documentation Report

Reviewer Name: Stephen Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: Seneca Army Depot
5786 Rte 96, Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil

Date Reviewed: 02/05/2010

Reviewer Signature: **Date:**

Estimated Costs:

Phase Element Names		Direct Cost	Marked-up Cost
LTM #1 Five Year Review		$22,915	$57,275
	Total Cost:	$22,915	$57,275

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #1 Five Year Review
Description: Land Use Control monitoring and enforcement FY2010 through FY2038, with termination in FY2038. Two 5-Year Reviews, first in 2011 added to this phase.

Start Date: October, 2010
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Five-Year Review	Yes	100	0

Total Marked-up Cost: $57,275

Technologies:

Estimate Documentation Report

Technology Name: **Five-Year Review (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Site Complexity		Low	n/a
Document Review		Yes	n/a
Interviews		Yes	n/a
Site Inspection		Yes	n/a
Report		Yes	n/a
Travel		Yes	n/a
Rebound Study		No	n/a
Start Date		October-2011	n/a
No. Reviews		2	EA
Document Review			
Required Parameters			
5-Year Review Check List		Yes	n/a
Record of Decision		Yes	n/a
Remedial Action Design & Construction		Yes	n/a
Close-Out Report		Yes	n/a
Operations & Maintenance Manuals & Reports		Yes	n/a
Consent Decree or Settlement Records		Yes	n/a
Groundwater Monitoring & Reports		Yes	n/a
Remedial Action Required		Yes	n/a
Previous 5-Year Review Reports		Yes	n/a
Interviews			
Required Parameters			
Current and Previous Staff Management		Yes	n/a
Community Groups		Yes	n/a
State Contacts		Yes	n/a
Local Government Contacts		Yes	n/a
Operations & Maintenance Contractors		Yes	n/a
PRPs		Yes	n/a
Remedial Design Consultant		Yes	n/a
Site Inspection			
Required Parameters			

Estimate Documentation Report

Technology Name: **Five-Year Review (# 1)**

Description	*Default*	*Value*	*UOM*
Site Inspection			
Required Parameters			
General Site Inspection		Yes	n/a
Containment System Inspection		Yes	n/a
Monitoring Systems Inspection		Yes	n/a
Treatment Systems Inspection		Yes	n/a
Regulatory Compliance		Yes	n/a
Site Visit Documentation (Photos, Diagrams, etc.)		Yes	n/a
Report			
Required Parameters			
Introduction		Yes	n/a
Remedial Objectives		Yes	n/a
ARARs Review		Yes	n/a
Summary of Site Visit		Yes	n/a
Areas of Non Compliance		Yes	n/a
Technology Recommendations		Yes	n/a
Statement of Protectiveness		Yes	n/a
Next Review		Yes	n/a
Implementation Requirements		Yes	n/a
Travel			
Required Parameters			
Number of Travelers		1	EA
Number of Days		2	EA
Air Fare Ticket Price		1,500	$
Need a rental car?		Yes	n/a

Comments:

Site WBS Report
(with Markups)

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-007-R-01
Project Name: SEAD-007-R-01 Rifle Grenade Range
Project Category: Multiple Locations

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

SEAD-007-R-01 Rifle Grenade Range

Since this site is a Military Munitions Rule site, some costs reported have been captured in an OE EE/CA. The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the cost of the Site Close-Out Documentation.

Source:
1. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
2. Professional judgment based on site knowledge.

All LUCs and Well Abaondonment have contract cost documentation.

Site WBS Report
(with Markups)

Site:

Site ID: SEAD-007-R-01
Site Name: Rifle Grenade Range
Site Type: None

Media/Waste Type
Primary: Ordnance (not residual)
Secondary: N/A

Contaminant
Primary: Ordnance (not residual)
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: SEAD-007-R-01 Rifle Grenade Range

This MMR site will require Long Term Maintenance for 5- Year Reviews.
Support Team: Stephen M. Absolom - BEC for Seneca Army Depot
Randy Battaglia- US Army Corps of Engineers, Project Manager
References: 1. Draft Final Construction Completion Report
2. Professional judgment based on site knowledge.

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 03/11/2010

Estimator Signature: **Date:**

Reviewer Information
Reviewer Name: Stephen Absolom

Site WBS Report
(with Markups)

Reviewer Title:	Installation Manager
Agency/Org./Office:	Seneca Army Depot Activity
Business Address:	Seneca Army Depot 5786 Rte 96, Romulus, NY 14541
Telephone Number:	(607) 869-1309
Email Address:	stephen.m.absolom@us.army.mil
Date Reviewed:	02/05/2010

Reviewer Signature: **Date:**

Site WBS Report
(with Markups)

Phase Element:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #1 Five Year Review
Description: Land Use Control monitoring and enforcement FY2010 through FY2038, with termination in FY2038. Two 5-Year Reviews, first in 2011 added to this phase.

Start Date: October, 2010
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate

Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Five-Year Review	Yes	100	0

Site WBS Report
(with Markups)

HTRW RA WBS		Marked Up Costs
331 HTRW REMEDIAL ACTION (CONSTRUCTION)		
331.20 SITE RESTORATION		
331.20.90 Other	Five-Year Review	$57,275
		$57,275
	Total:	$57,275
	HTRW RA WBS Total:	$57,275
	Total:	**$57,275**

Do Not Submit

COMPLETION REPORT

MUNITIONS RESPONSE

SEAD 002-R-01, SEAD 57, SEAD 46 AND SEAD 007-R-01

SENECA ARMY DEPOT ACTIVITY, ROMULUS, NEW YORK

April 2007

Prepared by:

PARSONS
150 Federal Street
Boston, MA 02110

TABLES OF CONTENTS

3.0 ORDNANCE AND EXPLOSIVES DEMILITARIZATION AND DISPOSAL

All MD and scrap metal items collected by UXO technicians on a daily basis were transferred to a staging area, inspected by both the SUXOS and UXO QC Supervisor, and placed into a locked storage area for temporary storage. Additional inspections were performed by the Senior UXO Supervisor (SUXOS), and again by the Senior QC (UXOQCS) Supervisor prior to being transferred to drums where a 1348-1A form was issued, Section 3.2 describes the final disposal procedures for all explosives and MD scrap metal

3.1 INTENTIONAL DETONATIONS

Demolition operations for MPPEH were conducted at the Open Detonation Hill (OD) to the north of the former Open Burning Grounds (OBG). In accordance with "Procedures for Demolition of Multiple Rounds (Consolidate Shots) on UXO Sites", dated August 1998 and approved by DDESB on 27 October 1998. Explosives Consumption Records are included in Appendix D. A table showing the suspected MPPEH items and the date they were vented is included as Table 2-2. Venting with a shape charge was used to distinguish MEC from MD.

All demolition explosives were transferred from the Army to Parsons/USA Environmental and kept in a secure storage bunker provided by the Army. All explosives were inspected weekly while in storage and transported in accordance with the State of New York's Department of Labor, Industrial Rule 39 and the Department of Treasury, Bureau of Alcohol, Tobacco, and Firearms (ATF) regulations.

3.2 OTHER DEMILITARIZATION PROCEDURES

All projectiles and intact MD were demilitarized by either explosive venting or by the removal/deformation of the rotating bands and fuse wells following inspections.

Following venting of all MPPEH items, thermal treatment of small arms, and/or physical demilitarization procedures, all items were disposed of off-site. A total of 4,180 pounds of cultural debris scrap metal, 618 pounds of aluminum MD and 2,689 pounds of ferrous MD scrap metal was disposed off-site. A 1348-1A form, chain of custody form, and certificate of destruction for this material is included in Appendix D.

Demobilization

Demobilization occurred in November 2006 following completion of the 10% QC inspection for all six sites.

3.3 CONCLUSIONS

Between May 2006 and November 2006, Parsons performed munitions removal operations in accordance with the ESS requirements. In general, the results of the munitions removal project performed at Seneca Amy Depot for SEAD 46, SEAD 57, SEAD 007-R-01 and SEAD 002-R-01 indicate that all MPPEH has been cleared from these sites. A total of two of the 11,739 identified anomalies which were investigated were found to be MEC. This indicates that these sites were free of MEC with the exception of an area north of SEAD 57 buffer area and not part of this project. The

Army believes that no additional munitions response activities are required at these sites. The conclusions from each individual site are provided below.

SEAD 57 (Former EOD Range) and the SEAD-57 Buffer Area

The only MEC items encountered during this project were found north of SEAD 57 including one fused unfired 37mm projectile in Grid 57 K-16 and one MKII grenade located in 57K-18 as shown on Figure 1-4c. Most ferrous MD items at SEAD 57 were found north of Building T011 and were not found within the high density 1,000 foot kick out radius from the SEAD 57 berm. Figure 1-4c identifies all ferrous and aluminum MD items that were recovered as part of the SEAD 57 investigation. The ferrous MD items are shown in this figure. The pattern of the aluminum MD clearly radiates out from the center of the SEAD 57 berm in a circular pattern. The 43 other MPPEH items (listed on Table 2-2) found at SEAD 57 were all determined to be MD upon venting of the items during the disposal process. SEAD 57 is considered cleared of MPPEH.

SEAD 46 (Former 3.5-inch Rocket Range)

During the investigation of SEAD 46, 22 MPPEH items were found from the 1,611 geophysical anomalies investigated. All 22 items were found to be MD after they were vented. No MEC items were found at SEAD 46. The locations of the MD suggest that the SEAD 46 berm was not used as a target for anything other than small arms practice. The MD items are actually found in areas located away from the berm. Based on the discovery of inert landmines and a sign that identifies the area as a practice minefield for EOD and military training exercises, this was most likely the use of the site. There is no evidence that it was used as a rocket range as previously identified. Based on the results of the past three investigations SEAD 46 is considered cleared of MPPEH.

SEAD 002-R-01 (EOD Areas 2 and 3)

Two MPPEH items (an electric Squibb) were found at EOD Area 2 and it was later determined to be expended. The second item, a M16 APERS, was found by the survey team conducting a boundary survey of the pond low water mark. This item was found without a fuse but due to the mud and debris that filled the case, the item was vented to dispose of any explosive residue that may have remained. It was determined to be inert. At EOD Area 3, no MPPEH items were found during the geophysical anomaly investigation or the expanded handheld investigation of the unmapped area. SEAD 002-R-01 is considered cleared of MPPEH.

SEAD 007-R-01 (Grenade Range)

During the anomaly investigation of the Grenade Range, a total of 221 MPPEH items were found. All MPPEH were related to the M73 Practice LAW Rocket. The 40mm practice grenade found at this site has an inertia driven expelling system with no explosive material. The M73 Practice LAW Rocket has a 1.5 gram spotting charge. The 1.5 gram spotting charge is designed to produce only a flash, smoke, and noise at the time of impact initiated by an inertia driven firing pin. Of the 221 M73 Sub-caliber rounds found, none were found to have the rocket motor intact, all had been functioned previously. Based on these reasons, all of the MPPEH items were reclassified as MD. All 221 of

these rounds were brought to the demolition area and disposed of by detonation. SEAD 007-R-01 is considered cleared of MPPEH.

Local Training Areas

Six individual MD items were found in the Local Training Areas B through L. The items were 37mm and 57mm TPT (target practice) rounds that contained no explosives. The remaining MD items were all small arms ammunition (50 cal.) both ball and incendiary ammunition that were thermally treated before disposal. The Local Training Areas B-7 through L-7are considered free of MPPEH.

MEMORANDUM FOR RECORD

Date: 19 March 2010

SUBJECT: Environmental Liabilities for site SEAD-4 (Munitions Washout Facility) and SEAD-38 (Boiler Blowdown Pit).

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for the 2010 data call. A Performance Based contract was procured to take this site to Response Complete. All planned costs for groundwater monitoring for five years and one Five Year Review have been funded in the performance based contract, AFCEE Contract FA 8903-04-D-8675 dated 20 June 2006, CLIN AF. No further monitoring or review costs beyond that are anticipated. The Remedial Action Cost Engineering and Requirements (RACER) 10.3 system was used to estimate the cost of the well abandonment and site closeout.

Site: SEAD-4 (Munitions Washout Facility) and SEAD-38 (Boiler Blowdown Pit). NOTE: SEAD-38 is now included with SEAD-4 project. The boiler house and blowdown pit are located within the Munitions Washout Facility complex at Building 2079 and will be addressed with the performance based remediation contract for this site.

Source:
1. Record of Decision Munitions Washout Facility (SEAD-4) and Building 2079 Boiler Blowdown Pit (SEAD-38) August 2008
2. RACER estimate for Site Closeout based on professional judgment and site knowledge

RACER Assumptions:

Site Closeout Documentation (LTM):
1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings included
3. Work Plans and reports—all RACER default values
4. Two boxes of documents will be stored for 30 years.

Well Abandonment (LTM phase):
1. Number of wells: 13
2. Depth of wells: 15 feet
3. Diameter of wells: 2”
4. Formation type: Unconsolidated
5. Method: Overdrill/removal

Estimate Documentation Report

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-4
Project Name: SEAD-4
Project Category: Training Area

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

Munitions Washout Facility- Location where munition items were disassembled in addition to other munitions maintenance operations.

Site: SEAD-4, Munitions Washout Facility and SEAD-38 (Boiler Blowdown Pit). NOTE: SEAD-38 is now included with SEAD-4 project. The boiler house and blowdown pit are located within the Munitions Washout Facility complex at Building 2079 and will be addressed with the upcoming PBC remediation contract for this site. As with the other Boiler Blowdown Pits, NFA at SEAD-38 will be proposed following the remediation.

Source:
1. Final Feasibility Study at the Munitions Washout Facility, March 2005
2. RACER estimate for Site Closeout based on professional judgment and on site knowledge.

Groundwater Monitoring Assumptions:

Estimate Documentation Report

Groundwater Monitoring Assumptions:
Groundwater monitoring cost was calculated based on the cost per year noted in the FS. Duration is for five years of data for the five year review period.

RACER Assumptions:

Site Closeout Documentation (LTM):
1. Site Closeout is low complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years
5. Well abandonment includes sub-contractor costs for fieldwork

Estimate Documentation Report

Site Documentation:

Site ID: SEAD-4
Site Name: Munitions Washout Facility
Site Type: None

Media/Waste Type
Primary: Soil
Secondary: N/A

Contaminant
Primary: Metals
Secondary: None

Phase Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: SEAD-4 Munitions Washout Facility
SEAD-38- Boiler Blowdown Pits at SEAD-4.
Support Team: Stephen M. Absolom- SEDA BEC
Randy Battaglia, Project Manager, US Army Coprs of Engineers
References: Source:
1. Draft Record of Decision Munitions Washout Facility (SEAD-4) and Building 2079 Boiler Blowdown Pit (SEAD-38) August 2007
2. RACER estimate for Site Closeout based on professional judgment and on site knowledge.

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 02/05/2010

Estimator Signature: **Date:**

Estimate Documentation Report

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96 Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil
Date Reviewed: 02/05/2010

Reviewer Signature: **Date:**

Estimated Costs:

Phase Names		Direct Cost	Marked-up Cost
LTM		$37,772	$81,929
	Total Cost:	$37,772	$81,929

Estimate Documentation Report

Phase Documentation:

Phase Type: Long Term Monitoring
Phase Name: LTM
Description: Site Close-out documentation and well abandonment in last year of LTM

Start Date: October, 2012
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Phase Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Total Marked-up Cost: $81,929

Technologies:

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Meetings		Yes	n/a
Work Plans and Reports		Yes	n/a
Documents		Yes	n/a
Site Close-Out Complexity		Moderate	n/a
Meetings			
Required Parameters			
Kick Off/Scoping Meetings		Yes	n/a
Kick Off/Scoping Meetings: Number of Meetings	1	1	EA
Kick Off/Scoping Meetings: Travel		Yes	n/a
Kick Off/Scoping Meetings: Travelers		2	EA
Kick Off/Scoping Meetings: Days		5	Days
Kick Off/Scoping Meetings: Air Fare		0	$
Review Meetings		Yes	n/a
Review Meetings: Number of Meetings	1	1	EA
Review Meetings: Travel		No	n/a
Regulatory Review Meetings		Yes	n/a
Regulatory Review Meetings: Number of Meetings	1	1	EA
Regulatory Review Meetings: Travel		No	n/a
Work Plans & Reports			
Required Parameters			
Work Plans		Yes	n/a
Draft Work Plan		Yes	n/a
Final Work Plan		Yes	n/a
Reports		Yes	n/a
Draft Close-Out Report		Yes	n/a
Draft Final Close-Out Report		Yes	n/a
Final Close-Out Report		Yes	n/a
Progress Reports		Yes	n/a
Project Duration	10	10	months
Documents			
Required Parameters			

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
Documents			
Required Parameters			
Draft Decision Document		Yes	n/a
Draft Final Decision Document		Yes	n/a
Final Decision Document		Yes	n/a
Long Term Document Storage		Yes	n/a
Number of Boxes		2	EA
Duration of Storage		30	Yrs

Comments:

Technology Name: **Well Abandonment (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Safety Level		D	n/a
Abandon Wells			
Required Parameters			
Technology/Group Name		Well Group	n/a
Number of Wells		13	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Unconsolidated	n/a

Comments:

Site WBS Report
(with Markups)

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-4
Project Name: SEAD-4
Project Category: Training Area

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

Munitions Washout Facility- Location where munition items were disassembled in addition to other munitions maintenance operations.

Site: SEAD-4, Munitions Washout Facility and SEAD-38 (Boiler Blowdown Pit). NOTE: SEAD-38 is now included with SEAD-4 project. The boiler house and blowdown pit are located within the Munitions Washout Facility complex at Building 2079 and will be addressed with the upcoming PBC remediation contract for this site. As with the other Boiler Blowdown Pits, NFA at SEAD-38 will be proposed following the remediation.

Source:
1. Final Feasibility Study at the Munitions Washout Facility, March 2005
2. RACER estimate for Site Closeout based on professional judgment and on site knowledge.

Groundwater Monitoring Assumptions:

Site WBS Report
(with Markups)

Groundwater monitoring cost was calculated based on the cost per year noted in the FS. Duration is for five years of data for the five year review period.

RACER Assumptions:

Site Closeout Documentation (LTM):

1. Site Closeout is low complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years
5. Well abandonment includes sub-contractor costs for fieldwork

Site WBS Report
(with Markups)

Site:

Site ID: SEAD-4
Site Name: Munitions Washout Facility
Site Type: None

Media/Waste Type
Primary: Soil
Secondary: N/A

Contaminant
Primary: Metals
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: SEAD-4 Munitions Washout Facility
SEAD-38- Boiler Blowdown Pits at SEAD-4.
Support Team: Stephen M. Absolom- SEDA BEC
Randy Battaglia, Project Manager, US Army Coprs of Engineers
References: Source:
1. Draft Record of Decision Munitions Washout Facility (SEAD-4) and Building 2079 Boiler Blowdown Pit (SEAD-38) August 2007
2. RACER estimate for Site Closeout based on professional judgment and on site knowledge.

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 02/05/2010

Estimator Signature: **Date:**

Reviewer Information

Site WBS Report
(with Markups)

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96 Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil

Date Reviewed: 02/05/2010

Reviewer Signature: **Date:**

Site WBS Report
(with Markups)

Phase Element:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM
Description: Site Close-out documentation and well abandonment in last year of LTM

Start Date: October, 2012
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate

Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Site WBS Report
(with Markups)

HTRW RA WBS			Marked Up Costs
331	HTRW REMEDIAL ACTION (CONSTRUCTION)		
331.20	SITE RESTORATION		
331.20.90	Other	Site Close-Out Documentation	$53,762
	Other	Well Abandonment	$28,167
			$81,929
		Total:	$81,929
		HTRW RA WBS Total:	$81,929
		Total:	**$81,929**

Cost Summary **SEAD-4**

LTM

Site Closeout (RACER)	$53,762
Well Abandonment (RACER)	$28,167

Total Site Cost **$81,929**

Material Change: None.

Prepared by: Randall Battaglia
Cost Estimator
Signature Date 24 MAR 10

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer
Signature Date 3/24/2010

Source 1

RECORD OF DECISION

FOR

THE MUNITIONS WASHOUT FACILITY (SEAD-4) AND THE BUILDING 2079 BOILER BLOWDOWN PIT (SEAD-38)

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
5786 STATE ROUTE 96
ROMULUS, NEW YORK 14541

and

AIR FORCE CENTER FOR ENGINEERING AND THE ENVIRONMENT
3300 SIDNEY BROOKS, BUILDING 532
BROOKS CITY-BASE, TX 78235-5122

Prepared By:

PARSONS
150 Federal St., 4th Floor
Boston, Massachusetts 02110

Contract Number: FA8903-04-D-8675
Task Order: 0031
CDRL: A001C
EPA Site ID: NY0213820830
NY Site ID: 8-50-006

August 2008

1.0 DECLARATION OF THE RECORD OF DECISION

Name and Location of Areas of Concern (AOCs)

The Munitions Washout Facility (SEAD-4) and the Building 2079 Boiler Blowdown Pit (SEAD-38)
Seneca Army Depot Activity
5786 State Route 96
Romulus, New York 14541
EPA Site ID: NY0213820830; NY Site ID: 8-50-006

Statement of Basis and Purpose

This Record of Decision (ROD) documents the U.S. Army's (Army's) and the U.S. Environmental Protection Agency's (EPA's) selection of a remedy for the Munitions Washout Facility (SEAD-4) and the Building 2079 Boiler Blowdown Pit (SEAD-38) located in the Seneca Army Depot Activity (SEDA), Romulus, New York. The remedies selected for the two Areas of Concern were chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. Section 9601, *et seq.* and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator, the Chief of the Consolidations Branch, BRAC Division, and the Director of Emergency and Remedial Response Division of EPA Region II have been delegated the authority to approve this ROD.

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, 5786 State Route 96, Building 123, Romulus, NY 14541. The Administrative Record Index identifies each of the items considered during the selection of the remedial actions. This index is included in **Appendix A**.

The New York State Department of Environmental Conservation (NYSDEC) was consulted on the planned remedies in accordance with CERCLA Section 121(f), 42 U.S.C. Section 9621(f) and concurred with the selected remedial action. The NYSDEC concurrence letter is included in **Appendix B**.

AOC Assessment

The response actions selected in this ROD are necessary to protect human health and the environment from actual or threatened releases of hazardous substances into the environment from SEAD-4 and SEAD-38 (hereafter referred to as SEAD-4/38), or from actual or threatened releases of pollutants or contaminants, which may present an imminent and substantial endangerment to public health or welfare.

Description of the Selected Remedy

The selected remedy for SEAD-4 addresses contaminated soil, ditch soil, and lagoon soil. The selected remedy would result in the elimination of soil, ditch soil, and lagoon soil as media of concern for potential receptors. The selected remedy for SEAD-4 includes the following components:

- Excavating ditch soil until the cleanup goal (60 mg/kg) for total chromium (hereafter referred to as chromium) is reached;
- Excavating surface and subsurface soils until the cleanup goals for lead and chromium (167 mg/kg and 60 mg/kg, respectively) are achieved;
- Dewatering the man-made lagoon and allowing water to drain into the existing drainage ditches outside the excavation areas;
- Once the lagoon is empty, excavating soil from the man-made lagoon until the chromium cleanup goal of 60 mg/kg is achieved;
- Removing the temporary berm at the end of the lagoon and allowing the man-made lagoon to return to its natural condition;
- Stabilizing soils, ditch soil, and lagoon soil exceeding the waste characterization criteria listed in 40CFR261.21 through 40CFR261.24;
- Disposing the excavated soils in an off-site licensed landfill;
- Backfilling excavation areas that cannot be graded to promote positive drainage and excavation areas deeper than 4 feet near the road or buildings as necessary with clean backfill that meets the cleanup goals for chromium and lead, the residual metal concentrations at SEAD-4 for other metals, and the NYSDEC Unrestricted Use Soil Cleanup Objectives (SCOs) for SVOCs; and
- Submitting a Completion Report once the remedial action is completed.

The following actions were previously identified as part of the proposed remedy in the Proposed Plan, but have now been completed as a result of interim actions that have already been undertaken at SEAD-4:

- Removing, characterizing, and disposing of debris located in vacant Buildings 2073, 2076, 2078, 2084, and 2085, and sweeping and vacuuming building floors; and
- Demolishing Building 2079.

These above-referenced actions have been successfully completed at SEAD-4 and the detailed discussion of what was done and the results of the interim actions are presented in Section 3 and Section 6, respectively.

The selected remedy for SEAD-38 is excavation of the hot spot soil SD4-28 with vanadium concentrations greater than 150 mg/kg.

At the completion of the selected remedies for SEAD-4 and SEAD-38, the AOCs would be suitable for unrestricted uses and unlimited exposures.

State Concurrence

NYSDEC forwarded to EPA a letter of concurrence regarding the selected remedies for SEAD-4 and SEAD-38. This letter of concurrence has been placed in **Appendix B**.

µg/kg. The 95% UCLs for benzo(a)pyrene and dibenz(a,h)anthracene are above the Region IX Residential PRGs but are below the NYSDEC Unrestricted Use SCOs. The above compounds with NYSDEC Unrestricted Use SCO exceedances or EPA Region IX Residential PRG exceedances do not pose significant risks to either human health (including potential residents) or the environment.

Subsurface soil is generally less contaminated compared with surface soil. As shown in **Table 4**, with the exception of the polycyclic aromatic hydrocarbons (PAHs), the 95% UCLs for total soil are generally less than the 95% UCLs for surface soil. The 95% UCLs of PAHs in total soil are all below the NYSDEC Unrestricted SCOs.

2004 SEAD-4 Test Pitting Results

A total of 11 samples were collected from SEAD-4 during the 2004 test pitting activity to verify the presence/absence of a PCB source area around MW4-10. All samples were analyzed for PCBs and one sample (TP4-4-04) was also analyzed for VOCs, SVOCs, pesticides, and metals.

PCBs were not detected in any of the samples collected. Several PAHs were detected above the NYSDEC Unrestricted Use SCOs or/and EPA Region IX Residential PRGs; the observed concentrations were generally consistent with the concentrations observed in soil at other SEAD-4 locations.

Drainage Ditch Soil Investigation

The ditch soil results are summarized in **Table 5**. A total of 50 ditch soil samples were collected at the depth intervals of 0-2 or 0-6 inches bgs. from the drainage ditches at SEAD-4/38. Each of the ditch soil samples was analyzed for VOCs, SVOCs, pesticides, PCBs, explosives, and metals. Six ditch soil samples were also analyzed for herbicides. The 95% UCLs for limited compounds were above the NYSDEC Unrestricted SCOs or/and the EPA Region IX Residential PRGs; with the exception of chromium, none of these compounds pose significant risks to human health or the environment.

The highest ditch soil concentrations of PAHs and metals such as iron and vanadium were detected in the samples collected from locations within the drainage ditch at the northern edge of the AOCs. The maximum chromium concentration (4,800 mg/kg) was detected in the drainage ditch located to the southwest of Building T30.

13 WELLS to CLOSE

Groundwater

Groundwater samples were collected from thirteen monitoring wells during the ESI, RI, and 2004 sampling events at SEAD-4. The maximum concentrations were compared to federal and state criteria including New York State Class GA Groundwater Standards and federal Maximum Contaminant Levels (MCLs). The groundwater results from the ESI (1994) and RI (1999) investigations at SEAD-4 are presented in **Tables 6A** and **6B**, respectively.

The extent of SEAD-38 is comparatively small, and it is fully surrounded by land and activities that comprise SEAD-4. There are no groundwater wells located within the bounds of SEAD-38; the closest upgradient and downgradient wells are roughly 200 to 400 feet beyond the bounds of SEAD-38 and within the bounds of SEAD-4. Based on the soil data collected within SEAD-38 bounds, the nature of the

SEAD-38 operations (boiler blowdown), and the groundwater results from the adjacent wells, it is concluded that SEAD-38 groundwater is not impacted.

SEAD-4 groundwater results are discussed in detail below.

ESI and RI Results

Nine metals (i.e., antimony, beryllium, cadmium, chromium, iron, manganese, selenium, sodium and thallium) were detected in at least one groundwater sample at concentrations that exceeded their respective NYSDEC Class GA Ambient Water Quality Standards (AWQSs) or federal MCL values. Antimony results from three samples, collected from three different wells exceeded the State's GA standard, but none of these exceedances were repeated during subsequent sampling events at the same well. Similarly, vanadium results for three samples collected during the March/April RI sampling event exceeded the State's GA vanadium standard, but these exceedances were not confirmed during the July 1999 RI sampling event. For beryllium and cadmium, there was only one exceedance, which was observed at MW4-3 during the ESI; beryllium or cadmium was not detected in this same well (i.e., MW4-3) during the two rounds conducted in 1999. The maximum chromium concentration (260 µg/L) was observed at MW4-9 in March 1999; the chromium concentration detected at this same well in July 1999 was below the NYSDEC GA Standard (21.8 µg/L vs. 50 µg/L). The chromium concentrations detected in all the other wells at SEAD-4 were below the GA Standard.

Concentrations of benzene, ethylbenzene, 4-nitrotoluene, and nitrobenzene exceeded their respective NYSDEC GA Standards during the RI sampling event. However, these compounds were only detected in one monitoring well (i.e., MW4-10) during one round of sampling (March 1999). None of these SVOCs were detected in MW4-10 or any other groundwater monitoring wells during the second round of groundwater sampling in July 1999 or during the ESI sampling event. Further, the concentrations of these compounds in SEAD-4 groundwater do not pose significant risk to potential receptors.

Aroclor-1260 was detected in July 1999 at 0.079 µg/L in MW4-10. The detected concentration was lower than the NYSDEC GA Standard, which is 0.09 µg/L for the sum of PCBs.

2004 Additional Investigation Groundwater Results

The 2004 analytical results indicated that PCBs were not present in the well MW4-10, where Aroclor-1260 was detected in July 1999 at 0.079 µg/L. Based on these results, Aroclor-1260 is not considered present in groundwater at SEAD-4/38.

Surface Water

Table 7A and **Table 7B** summarize comparison of the SEAD-4/38 surface water concentrations and the NYSDEC AWQSs values for Class C surface water for the 1993 ESI sampling event and 1998 RI sampling event, respectively.

Benzo(a)pyrene was detected during the RI in a single surface water sample collected from location SW4-13, which was within the east-west trending drainage ditch located near the northern boundary of SEAD-4/38. The detected concentration was above the NYSDEC guidance value of 0.0012 µg/L, which is based

SEAD 004

Phase	2010	2011	2012	2013	2014	2015	2016	Outyears
LTM		86 77						
COE S;H		5						
COE contr		8	X					
		86	1					

SEAD 4

Phase	2011	2012	2013	2014	2015	2016	2017	Outyears
			54					
			57					
	72							

MEMORANDUM FOR RECORD

Date: 19 March 2010

SUBJECT: Environmental Liabilities for site SEAD-12, Radioactive Waste Burial Pits including SEAD-72, Building 803 at Seneca Army Depot

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for the 2010 data call. The Remedial Action Cost Engineering and Requirements (RACER) 10.3 system was used to estimate the cost of site close out and well abandonment. The Proposed Plan identifies CERCLA requirements for LTM (Source 1).

Site: SEAD-12, Radioactive Waste Burial Pits including SEAD-72, Building 803. The AOC encompasses the former Special Weapons Storage site. Classified components were buried on site after demilitarization. Painting activity within the AOC resulted in soil and ground water contamination. Exit strategy is to restrict use of building 813/814 until a vapor intrusion study is performed by a future reuser and restrict the use of ground water until cleanup standards are met.

Source:
1. Draft Final Proposed Plan, SEAD 12 and SEAD 72, November 2008 (CERCLA Action)
2. Owner cost from RACER

RACER Assumptions:
Site Closeout will be required following the SEAD-12 Removal Action. Post remediation monitoring is expected as contaminants are associated with the soil and Ground Water under a building which requires Long Term Management.

Site Closeout Documentation (LTM):
1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings included
3. Work Plans and reports- all RACER default values
4. Five boxes of documents will be stored for 30 years

Well Abandonment (LTM):
1. Number of wells: 45
2. Well depth: 15 feet
3. Well diameter: 2 inches
4. Formation type: Unconsolidated
5. Method: Overdrill/removal

Owner Support Cost Assumptions:
Owner support costs, which are not included in CERCLA Decision Documents, are calculated to be 11% of Project Cost as described in RACER.

Cost Summary **SEAD-12**

LUC Costs (Source 1)	
Escalation Factor 1.0100	
$37,000 x 1.0100	$37,370
LTM (Source 2)	
Owner Support Cost	
$37,370 x 11% = $4,111	$4,111
Site Closeout (RACER)	$55,439
Well Abandonment (RACER)	$84,816
Total Site Cost	**$181,736**

Material Change: Yes
Reason: Received Removal Funding

Prepared by: Randall Battaglia
Cost Estimator

Randall W. Battaglia 2/4/2010
Signature Date

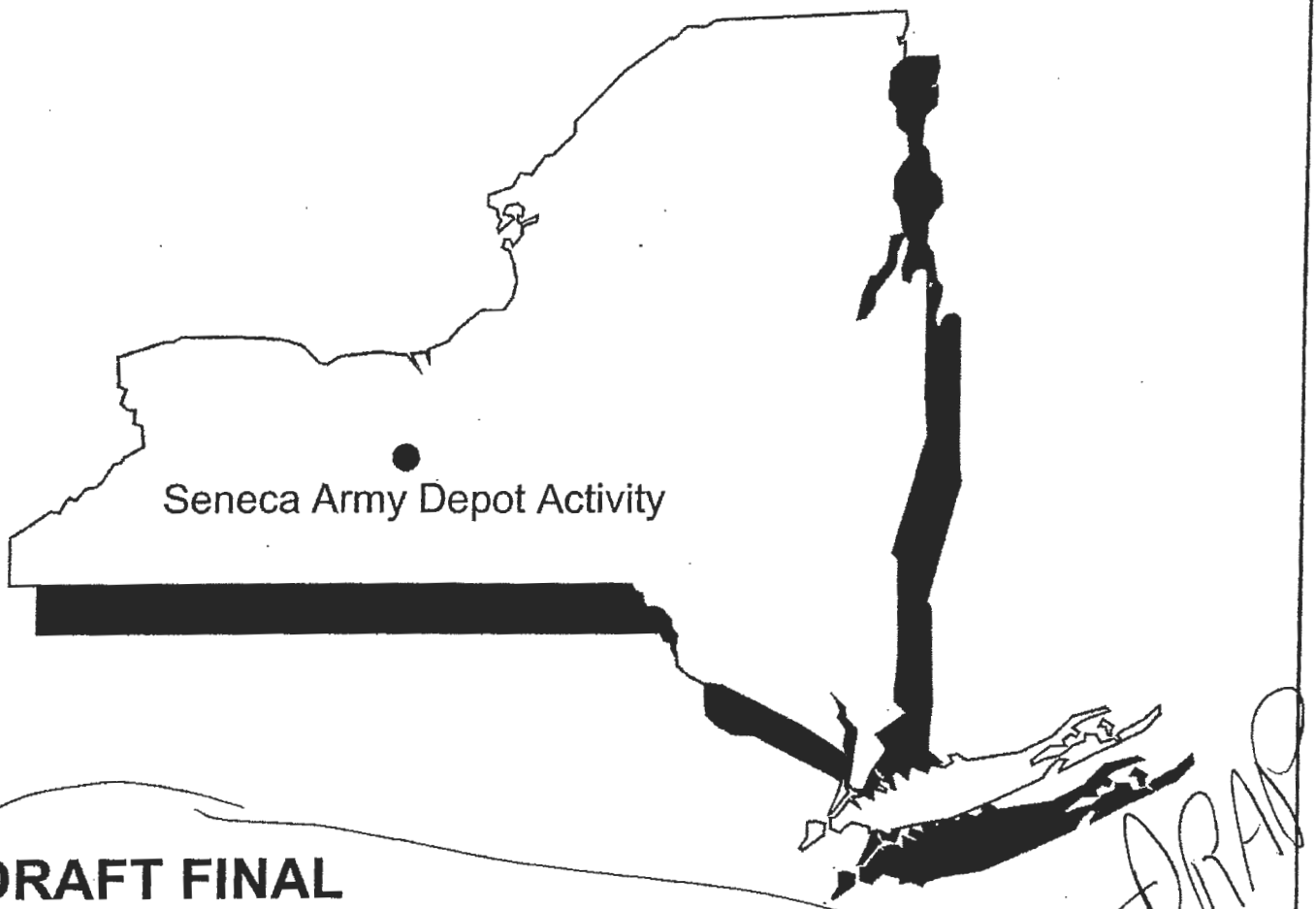
Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Stephen M Absolom 3/24/2010
Signature Date

Source #1

US Army, Engineering & Support Center
Huntsville, AL

Seneca Army Depot Activity
Romulus, NY



DRAFT FINAL
PROPOSED PLAN

RADIOLOGICAL WASTE BURIAL SITES (SEAD-12) AND MIXED WASTE STORAGE FACILITY (SEAD-72) SENECA ARMY DEPOT ACTIVITY

DRAFT

EPA Site ID# NY0213820830
NY Site ID# 8-50-006
Contract No. DACA87-02-D-0005
Delivery Order No. 0031

PARSONS
November 2008

##########

Proposed Plan – Draft Final

THE RADIOACTIVE WASTE BURIAL SITES (SEAD-12) AND THE MIXED WASTE STORAGE FACILITY (SEAD-72) SENECA ARMY DEPOT ACTIVITY (SEDA) ROMULUS, NEW YORK

November 2008

##########

PURPOSE OF THIS DOCUMENT

site

This Proposed Plan describes the remedial alternative selected for two areas of concern (AOCs), SEAD-12 (the Radioactive Waste Burial Sites) and SEAD-72 (the Mixed Waste Storage Facility), at the Seneca Army Depot Activity (SEDA or Depot) Superfund Site. This Proposed Plan was developed by the U.S. Army (Army) and the U.S. Environmental Protection Agency (EPA) in consultation with the New York State Department of Environmental Conservation (NYSDEC). The Army and the EPA are issuing this Proposed Plan as part of their public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Action (CERCLA) of 1980, as amended, and Sections 300.430(f) and 300.435(c) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The nature and extent of the contamination at SEAD-12 and SEAD-72 are described in the August 2002 Remedial Investigation (RI) Report, the March 2003 Radiological Survey Report, the October 2006 Supplemental RI (SRI) Report, and the January 2008 Feasibility Study (FS) Report. The Army, EPA, and NYSDEC encourage the public to review these documents to gain a more comprehensive understanding of the AOCs and the Superfund activities that have been completed.

This Proposed Plan is being provided as a supplement to the RI, Radiological Survey, SRI, and FS reports to inform the public of the Army's, EPA's, and NYSDEC's preferred remedy for the AOCs and to solicit public comments pertinent to the selected remedies. The preferred remedy for SEAD-12 consists of an environmental easement to prevent access to and use of Buildings 813/814 or newly constructed buildings within the area, and to prohibit access to and use of groundwater in the vicinity of Buildings 813/814 and former monitoring well MW12-37. For SEAD-72, the Army would complete the RCRA Closure of Building 803 in accordance with the previously submitted Closure Plan. Changes to the preferred remedy, or a change from the preferred remedy to another remedy, may be made if public comments or additional data indicate that such a change will result in a more appropriate remedial action. The final decision regarding the selected remedies for SEAD-12 and SEAD-72 will be made after the Army and the EPA have taken all public comments into consideration. The Army and the EPA are soliciting comments because the Army, EPA, and NYSDEC may select remedies other than the preferred remedies for SEAD-12 and SEAD-72 presented in this Proposed Plan.

A risk assessment was not performed to evaluate potential risks via the indoor air exposure pathway at Buildings 813/814. Currently, the vapor intrusion exposure pathway is not complete as no receptors are identified and the building is not in use. It is the Army's position that potential future receptors would be determined when the existing buildings were either designated for re-use, or when new buildings were considered for construction over the existing footprints of Buildings 813/814, which are suspected to be underlain by soil containing elevated levels of TCE. It will be the responsibility of the organization making the determination to occupy the buildings to perform such an analysis prior to use of the buildings.

REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) are specific goals to protect human health and the environment. These objectives are based on available information and standards, such as applicable or relevant and appropriate requirements (ARARs), to-be-considered guidance, and site-specific risk-based levels.

Results of the 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 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 (**Figure 3**) are located.

Access to and use of Building 813 and 814 should be restricted until additional data is provided to quantify risks that may exist to potential future users or occupants of these buildings due to the presence of volatile organic compounds, including trichloroethene, in the soil beneath these buildings. Further, while an interim remedial action was performed exterior of Buildings 813 and 814 to eliminate soil that was found to contain trichloroethene and that was shown to affect groundwater in the immediate area of former monitoring well MW12-37, there is a continuing potential for recontamination of groundwater due to possible outward migration of VOCs from below the building slabs. Therefore, access to and use of the groundwater in an area surrounding these existing buildings will also be implemented and maintained until additional data is provided to confirm that there has been is no indication of recontamination of soil and groundwater beyond the edge of the buildings.

LUC AS

LTM

The remedial action objectives established for SEAD-12 are as follows:

- Prohibit potential exposure to volatile organic compounds in the indoor air at existing Buildings 813/814 or in potential newly constructed buildings above the footprints of the existing buildings (**Figure 3**) that may present a potential human health risk.
- Prohibit access to and use of groundwater in the vicinity of Buildings 813 and 814, and the location of former monitoring well location MW12-37.
- Release SEAD-12, other than the area shown in **Figure 3**, for unrestricted use.
- Implement and complete the RCRA Closure of Building 803 (SEAD-72)

Further, as test pit investigations completed in SEAD-12 indicate that Disposal Pit A/B and Disposal Pit C contain significant quantities of debris and some of the debris can be characterized as "military related components", the Army will excavate Disposal Pit A/B and Disposal Pit C to remove military related components and debris as a non-CERCLA activity.

For SEAD-72, the Army will conduct and complete RCRA Closure at Building 803 in accordance with the previously submitted Closure Plan. The final Closure Plan for Building 803, the former Mixed Waste Storage Facility, was submitted to the NYSDEC and EPA in October 2005. After the implementation of this plan, the Army anticipates that a permanent solution will be achieved at Building 803 to safeguard against any future contaminant release. Building 803 currently is unoccupied, unused and void of any discernible regulated waste; there is visible evidence of neglect including dust, debris and peeling paint. There is a remote potential that trace levels of hazardous VOC solvents may remain in the building. Building decontamination procedures will be implemented to eliminate any trace solvents that remain. The efficacy of the decontamination process will be confirmed by subsequent sampling and analysis for the VOCs of concern. The anticipated present-worth cost associated with the closure is $58,000. The anticipated construction time is less than one month, with an overall completion time of six months. Once clean closure is documented, there will be no further actions required at Building 803.

The proposed actions for Building 803 and Disposal Pit A/B and Disposal Pit C are not CERCLA actions and therefore are not discussed in the following remedial alternative evaluation section.

SUMMARY OF SEAD-12 REMEDIAL ALTERNATIVES

CERCLA §121(b)(1),42U.S.C. § 9621(b)(1), mandates that remedial actions must be protective of human health and the environment, cost-effective, comply with ARARs, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions which employ, as a principal element, treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants and contaminants at a site. CERCLA §121(d), further specified that a remedial action must attain a level or standard of control of the hazardous substances, pollutants, and contaminants, which at least attains ARARs under federal and state laws, unless a waiver can be justified pursuant to CERCLA §121(d)(4), 42 U.S.C. § 9621(d)(4).

Detailed descriptions of the remedial alternatives for addressing the former isolated groundwater anomaly identified in the vicinity of Buildings 813/814 can be found in the FS report. The FS report presents and evaluates four remedial alternatives for Buildings 813/814 as well as Disposal Pits A/B and C. Because the proposed actions for Disposal Pits A/B and C are not CERCLA actions, the non-CERCLA portions of the alternatives (i.e., actions that address Disposal Pits A/B and C) are not discussed in this section. The CERCLA action for Alternatives 2 and 3 are the same; therefore, these two alternatives are presented in this Proposed Plan as one alternative, named as Alternative 2/3.

The construction time for each alternative reflects only the time required to construct or implement the remedy and does not include the time required to design the remedy, negotiate the performance of the remedy, or procure contracts for design and construction.

The alternatives, along with the technologies and processes that make up each alternative, are:

Alternative 1: No Action

The Superfund program requires that the "no-action" alternative be considered as a baseline for comparison with the other alternatives. The no-action remedial alternative for soil does not include any physical remedial measures that address the problem of contamination at SEAD-12.

Because this alternative would result in contaminants remaining above levels that allow for unrestricted use and unlimited exposure, CERCLA requires that the alternative be reviewed at least once every five years. If justified by the review, remedial actions may be implemented to remove, treat, or contain the contaminated media.

SEAD-12, Alternative 1 Costs

Capital Cost	$0
Annual Long-Term Monitoring (LTM)	$0
Present-Worth Cost of LTM	$0
Construction Time	0 months

Alternative 2/3: Environmental Easement

Alternative 2/3 involves an environmental easement that will be established to a designated area including Buildings 813/814 (as shown in **Figure 3**). The environmental easement would prohibit access to or use of Buildings 813/814 or any newly constructed building over the footprint of Buildings 813/814 and prohibit the access to and use of groundwater use in the vicinity of Buildings 813/814 (as shown in **Figure 3**). The groundwater restriction would remain in effect until data were provided that indicated that groundwater quality in the vicinity of Buildings 813 and 814 met GA standards. The easement will state that an investigation of vapor intrusion potential and indoor air quality must be performed before the existing buildings, or any newly constructed buildings in the area, were occupied.

SEAD-12, Alternative 2/3 Costs

Annual LTM Cost	$3,000
Present-Worth Cost of LTM	$37,000
Total Cost	$37,000
Construction Time	1 month

LVC COST

Alternative 4: Building Demolition for Unrestricted Use

Alternative 4 involves a vapor intrusion study and a probable action that would alleviate the need for land use controls (i.e., building demolition and soil excavation and disposal). Alternative 4 would restore SEAD-12 for unrestricted use by future property users.

The vapor intrusion study would be conducted to determine whether the potential for vapor intrusion to the indoor environment exists, and to evaluate other contributing factors that may play a role in the volatile vapors inside of Buildings 813 and 814, if any. The vapor intrusion study would start with a building inventory inspection. Following the inspection, sources or potential sources of volatile vapors would be removed from the buildings and surrounding area (or otherwise mitigated) to the extent practicable. Direct measurements of VOC concentrations present in sub slab vapors below the building foundations along with indoor and outdoor air would be obtained. Inspections and sampling would be conducted in accordance with protocols and procedures provided in *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDOH, 2006).

If warranted, based on the vapor intrusion investigation results, Buildings 813 and 814 would be demolished. The buildings would be demolished to the slab or to the existing grade using conventional demolition techniques. Soil underneath the foundation of Building 813 where elevated TCE concentrations were detected would be excavated. Confirmatory samples would then be collected to ensure that the residual concentrations of VOCs are consistent with NYSDEC SCOs for the unrestricted use scenarios. The demolition material would be sorted, as necessary and loaded

Compared to Alternative 2/3, Alternative 4 was ranked lower in this category as it potentially includes the demolition of Buildings 813/814. Excavation and building demolition would increase short-term risks to workers relative to no action, even with use of dust controls and personal protection equipment, due to the increase in concentrations of airborne soil particulates.

Implementability

The technical feasibility for Alternative 1 ranked the highest among the alternatives. However, the administrative feasibility of the alternative is not considered favorable since extensive coordination with local, state, and regional agencies would be required in the attempt to support and justify no remedial action at SEAD-12.

Alternatives 2/3 and 4 can be constructed easily, though Alternative 4 involves more excavation, testing, transportation, and disposal. In addition, a licensed off-site landfill capable of accepting the building debris and soil from SEAD-12 would be needed for Alternative 4.

Cost

Capital costs, operating costs, and administrative costs were estimated for Alternatives 1, 2/3, and 4. Capital costs include those costs for professional labor, construction and equipment, field work, monitoring and testing, and treatment and disposal. Operating costs include costs for administrative and professional labor, monitoring, and utilities. Administrative costs include the costs for land use restrictions.

Alternative 1 (no action) is the least costly alternative and incurs no cost for SEAD-12. The costs for the Buildings 813/814 area remediation are $37,000 and $440,000 for Alternative 2/3 and Alternative 4, respectively.

State Acceptance

NYSDEC concurs with the preferred remedial alternative (i.e., Alternative 2/3).

Community Acceptance

Community acceptance of the preferred alternative will be assessed in the ROD following review of the public comments received on the RI report, SRI report, FS report, and this Proposed Plan.

PROPOSED REMEDY

SEAD-12 is suitable for unrestricted use, exclusive of the area proposed in **Figure 3** where a future vapor intrusion risk analysis may be needed if a future user/occupant is identified in existing or newly constructed buildings within the area. Since TCE was detected in soil underneath Buildings 813/814; the Army is proposing to reduce potential risks, if any, associated with indoor air exposure.

Both the environmental easement (Alternative 2/3) and the Buildings 813/814 vapor intrusion study and building demolition (Alternative 4) alternatives were evaluated together with the no-action alternative (Alternative 1) for SEAD-12. Based on the comparative alternative analysis, Alternatives 2/3 and 4 have the similar rankings and both ranked higher than the no-action alternative. The costs are $37,000 and $440,000 for Alternative 2/3 and Alternative 4, respectively. The cost of Alternative 4 is approximately twelve times of the cost for Alternative 2/3. Alternative 2/3 is comparatively cost effective in reducing potential risks associated with indoor air exposure. As a result, Alternative 2/3 is the recommended alternative.

In summary, the preferred remedy at SEAD-12 is to establish an environmental easement to prohibit access to and use of Buildings 813/814 or any newly constructed building overlying the footprint of the existing buildings until such time as a vapor intrusion study is conducted in the building(s) and showed that potential risks from volatile organic compound, including trichloroethene, intrusion did not pose risks to future receptors. Additionally, a separate LUC that prohibits access to and use of groundwater in the vicinity of Buildings 813/814 (as shown in **Figure 3**) would also be implemented nad maintained.

The vapor intrusion easement will state that an investigation of vapor intrusion potential and indoor air quality must be performed by the property owner at the time of the use determination before the buildings, or any newly constructed buildings in the designated area, are occupied. The groundwater access and use restriction will be maintained until new analytical data are provided to, and approved by, the Army, EPA, and NYSDEC to indicate that groundwater in the vicinity of Building 813 and 814, and former well MW12-37 meets GA groundwater standards.

To implement the remedy selected in this Proposed Plan, which includes the imposition of LUCs at SEAD-12, a LUC RD Plan will be prepared which is consistent with Paragraphs (a) and (c) of the New York State Environmental Conservation Law (ECL) Article 27, Section 1318: Institutional and Engineering Controls. The LUC RD Plan will include: a Site Description; the Institutional Control (IC) Land Use Restrictions; the LUC Mechanism to ensure that the land use restrictions are not violated in the future; implementation and maintenance actions, including periodic inspections; periodic certifications that the institutional engineering controls are in-place and being maintained by the owner or persons implementing the remedy; and, Reporting/Notification requirements. In addition, the Army will prepare an environmental easement for SEAD-12, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York and the Army, which will be recorded at the time of the property's transfer from Federal ownership. The easement will provide that EPA and the Army will be third-party beneficiaries of the easement. A schedule for completion of the draft SEAD-12 LUC Remedial Design Plan covering the AOC will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the FFA. In accordance with the FFA and CERCLA §121(c), the remedial action (including ICs) will be reviewed no less often than every 5 years. After such reviews, modifications may be implemented to the remedial program, if appropriate.

The Army shall implement, inspect, report, and enforce the LUC described in this Proposed Plan in accordance with the approved LUC RD. Although the Army may later transfer these responsibilities to another party by contract, property transfer agreement, or through other means, the Army shall retain ultimate responsibility for remedy integrity.

SEAD 72 ACTION

The Army will implement and complete the RCRA Closure of Building 803, the former Mixed Waste Storage facility, in accordance with the previously submitted Closure Plan for SEAD-72.

Further, as a separate act from CERCLA, the Army will perform a removal action at Disposal Pit A/B and Disposal Pit C to remove military related components and debris.

NON CERCLA Requirement

UNDER "MARKUP TEMPLATES"

SOURCE #2

Owner Cost

In *RACER*, Owner Cost is the owner's workforce cost to initiate, contract, oversee, direct, implement and closeout the project. Owner costs may include the following categories or items:

- Supervision, Inspection, and Overhead (SIOH),
- Construction management and "Owner's Representative" services;
- Laboratory quality assurance;
- Operations and maintenance manual; and
- Other costs (e.g. technical, real estate, administrative, contracting, accounting, etc.).

The system default percentage for Owner Cost is 11 %. The valid range for the Owner Cost markup factor is 0% to 20%.

OWNER COST

Direct Costs
Professional Labor Overhead / G&A
Field Office Overhead / G&A
Prime Contractor Profit
Subcontractor Profit
Contingency
Markup Calculations
Applying Markup Percentages
Adjusting Markups for Each Technology
Creating Custom Markup Templates
Markups Report

Estimate Documentation Report

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-12
Project Name: SEAD-12
Project Category: Institutional/Training

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

SEAD-12, Radioactive Waste Burial Sites and SEAD-72, Building 803

The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the cost of site close out. RD/RA costs were obtained from the RI/FS and RCRA Closure Plan.

Site: SEAD-12, Radioactive Waste Burial Pits including SEAD-72, Building 803

Source:
1. Final Feasibility Study Report, SEAD-12, January 2008
2. RCRA Closure Plan, Building 803, Mixed Waste Storage Facility, December 2004
3. Corps of Engineers S&A letter dated 31 March 2004
4. Professional judgment based on site knowledge

Estimate Documentation Report

Note: Building 803 (SEAD-72) is included with SEAD-12. The RCRA Closure of SEAD-72 will require funding for the cleaning as addressed in the Closure Plan. In addition, the Draft Final Supplemental RI for SEAD-12 addressed a TCE contaminated area at Bldg. 813/814. This Supplemental RI concludes that No Further Action will be required at Bldg. 813/814 site.

RACER Assumptions:
Site Closeout will be required following the SEAD-12 Removal Action. No post remediation monitoring is expected as contaminants are associated with the soil and the proposed plan will be to excavate all contaminated soil and dispose off-site.

Site Closeout Documentation (LTM):
1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years

Well abandonment (LTM):
1. Number of wells: 45
2. Well depth: 15 feet
3. Well diameter: 2"
4. Unconsolidated
5. Overdrill/removal

Estimate Documentation Report

Site Documentation:

Site ID: SEAD-12
Site Name: Radioactive Waste Burial Sites
Site Type: None

Media/Waste Type
Primary: Solids
Secondary: N/A

Contaminant
Primary: Radioactive (Low Level)
Secondary: None

Phase Names
SI: ☐
RI/FS: ☐
RD: ☐
IRA: ☐
RA(C): ☐
RA(O): ☐
LTM: ☑
Site Closeout: ☐

Documentation
Description: Site Closeout Documentation for SEAD-12 (SEAD-72 is included as part of SEAD-12. It is a RCRA permitted Mixed Waste Storage Building located within the SEAD-12 boundry and Closure Costs are captured in Reference #2 document noted below).

Support Team: Stephen M. Absolom - BEC, Seneca Army Depot
Randy Battaglia, US Army Corps of Engineers, Project Manager

References:
1. Final Feasibility Study Report, SEAD-12, January 2008
2. RCRA Closure Plan, Building 803, Mixed Waste Storage Facility, December 2004

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
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Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 02/05/2010

Estimator Signature: _____ **Date:** _____

Estimate Documentation Report

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96, Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil
Date Reviewed: 02/05/2010

Reviewer Signature: _____ **Date:** _____

Estimated Costs:

Phase Names		Direct Cost	Marked-up Cost
LTM		$74,515	$140,255
	Total Cost:	$74,515	$140,255

Estimate Documentation Report

Phase Documentation:

Phase Type: Long Term Monitoring
Phase Name: LTM
Description: Site Closeout Documentation in last year of LTM Phase

Start Date: October, 2009
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Phase Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Total Marked-up Cost: $140,255

Technologies:

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Meetings		Yes	n/a
Work Plans and Reports		Yes	n/a
Documents		Yes	n/a
Site Close-Out Complexity		Moderate	n/a
Meetings			
Required Parameters			
Kick Off/Scoping Meetings		Yes	n/a
Kick Off/Scoping Meetings: Number of Meetings	1	1	EA
Kick Off/Scoping Meetings: Travel		Yes	n/a
Kick Off/Scoping Meetings: Travelers		2	EA
Kick Off/Scoping Meetings: Days		5	Days
Kick Off/Scoping Meetings: Air Fare		0	$
Review Meetings		Yes	n/a
Review Meetings: Number of Meetings	1	1	EA
Review Meetings: Travel		No	n/a
Regulatory Review Meetings		Yes	n/a
Regulatory Review Meetings: Number of Meetings	1	1	EA
Regulatory Review Meetings: Travel		No	n/a
Work Plans & Reports			
Required Parameters			
Work Plans		Yes	n/a
Draft Work Plan		Yes	n/a
Final Work Plan		Yes	n/a
Reports		Yes	n/a
Draft Close-Out Report		Yes	n/a
Draft Final Close-Out Report		Yes	n/a
Final Close-Out Report		Yes	n/a
Progress Reports		Yes	n/a
Project Duration	10	12	months
Documents			
Required Parameters			

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
Documents			
Required Parameters			
Draft Decision Document		Yes	n/a
Draft Final Decision Document		Yes	n/a
Final Decision Document		Yes	n/a
Long Term Document Storage		Yes	n/a
Number of Boxes		5	EA
Duration of Storage		30	Yrs

Comments:

Technology Name: **Well Abandonment (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Safety Level		D	n/a
Abandon Wells			
Required Parameters			
Technology/Group Name		Well Group	n/a
Number of Wells		45	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Unconsolidated	n/a

Comments:

Site WBS Report
(with Markups)

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-12
Project Name: SEAD-12
Project Category: Institutional/Training

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

SEAD-12, Radioactive Waste Burial Sites and SEAD-72, Building 803

The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the cost of site close out. RD/RA costs were obtained from the RI/FS and RCRA Closure Plan.

Site: SEAD-12, Radioactive Waste Burial Pits including SEAD-72, Building 803

Source:
1. Final Feasibility Study Report, SEAD-12, January 2008
2. RCRA Closure Plan, Building 803, Mixed Waste Storage Facility, December 2004
3. Corps of Engineers S&A letter dated 31 March 2004
4. Professional judgment based on site knowledge

Site WBS Report
(with Markups)

Note: Building 803 (SEAD-72) is included with SEAD-12. The RCRA Closure of SEAD-72 will require funding for the cleaning as addressed in the Closure Plan. In addition, the Draft Final Supplemental RI for SEAD-12 addressed a TCE contaminated area at Bldg. 813/814. This Supplemental RI concludes that No Further Action will be required at Bldg. 813/814 site.

RACER Assumptions:
Site Closeout will be required following the SEAD-12 Removal Action. No post remediation monitoring is expected as contaminants are associated with the soil and the proposed plan will be to excavate all contaminated soil and dispose off-site.

Site Closeout Documentation (LTM):
1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years

Well abandonment (LTM):
1. Number of wells: 45
2. Well depth: 15 feet
3. Well diameter: 2"
4. Unconsolidated
5. Overdrill/removal

Site WBS Report
(with Markups)

Site:

Site ID: SEAD-12
Site Name: Radioactive Waste Burial Sites
Site Type: None

Media/Waste Type
Primary: Solids
Secondary: N/A

Contaminant
Primary: Radioactive (Low Level)
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: Site Closeout Documentation for SEAD-12 (SEAD-72 is included as part of SEAD-12. It is a RCRA permitted Mixed Waste Storage Building located within the SEAD-12 boundry and Closure Costs are captured in Reference #2 document noted below).

Support Team: Stephen M. Absolom - BEC, Seneca Army Depot
Randy Battaglia, US Army Corps of Engineers, Project Manager

References:
1. Final Feasibility Study Report, SEAD-12, January 2008
2. RCRA Closure Plan, Building 803, Mixed Waste Storage Facility, December 2004

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
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Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 02/05/2010

Estimator Signature: **Date:**

Site WBS Report
(with Markups)

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96, Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil

Date Reviewed: 02/05/2010

Reviewer Signature: **Date:**

Site WBS Report
(with Markups)

Phase Element:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM
Description: Site Closeout Documentation in last year of LTM Phase

Start Date: October, 2009
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate

Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Site WBS Report
(with Markups)

HTRW RA WBS			Marked Up Costs
331	HTRW REMEDIAL ACTION (CONSTRUCTION)		
331.20	SITE RESTORATION		
331.20.90	Other	Site Close-Out Documentation	$55,439
	Other	Well Abandonment	$84,816
			$140,255
		Total:	$140,255
		HTRW RA WBS Total:	$140,255
		Total:	**$140,255**

MEMORANDUM FOR RECORD

Date: 29 March 2010

SUBJECT: Environmental Liabilities for site SEAD-003-R-01, Former EOD Range (alias SEAD-57) and the 3.5" Rocket Range (alias SEAD-46) at Seneca Army Depot

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for the 2010 data call. The Remedial Action Cost Engineering and Requirements (RACER) 10.3 system was used to estimate the costs for this site.

Site: SEAD-003-R-01, Former EOD Range (alias SEAD-57) and the 3.5" Rocket Range (alias SEAD-46)

Source:
1. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004. (for LTM concept)

Phase: LTM will be an Institutional Control in perpetuity. Initial duration is 10 years for a recurring review every 5 years. LTM costs have been estimated through the end of the second five-year review.

RACER Assumptions:
Remedial Design/ Remedial Action:
RA(C): The HTRW component of this site is the soil contaminants with metals in and below the EOD berm area at SEAD-57. The RACER technologies include soil excavation, load and haul, disposal off site and decontamination of equipment. It is assumed that once the berm and soils below the berm have been removed and disposed of at an off-site landfill, the COCs will pose no threat to the groundwater. Therefore, no groundwater monitoring will be required after the HTRW removal. The berm is approximately 250' x 30' x 5' (approximately 1,400 cubic yards [cy]) and will be loaded and transported to the offsite landfill. The area around and under the berm to be excavated is approximately 100' x 150' x 0.5' and consists of silt/silty clay mixture. Off-site transportation and disposal is expected to include both the berm material (1400 Cyds) and the excavated material(278 cyds) of non-hazardous soil transported 75 miles one-way with a dump charge of $65 per cy. Decontamination is anticipated to require a decontamination facility pad with a medium equipment rating, and operations are estimated to be 24 weeks. Professional Labor Management for oversight of the work is estimated using the RACER default value.

RD: RACER calculated per the RA cost total for the HTRW component. Design percentage equals 10% of RA(C) costs (excluding Professional Labor Management).

Well Abandonment (LTM phase):

1. Number of wells: 13
2. Depth of wells: 15 feet
3. Diameter of wells: 2 inches
4. Formation type: Unconsolidated
5. Method: Overdrill/removal

Five Year Review for MPPEH

The MRS requires 5 year reviews to determine if MPPEH is moved to the surface as a result of frost heave.

1. Site complexity is low
2. Kick-off, review and regulatory meetings
3. All site inspections, interviews etc are RACER default values
4. Interviews of property owners will be required

Site Closeout Documentation (LTM)

1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings included
3. Work Plans and reports- all RACER default values
4. Five boxes of documents will be stored for 30 years

Cost Summary	**SEAD-003-R-01 (SEAD-46/57)**
Remedial Design (RACER)	$53,886
Remedial Action (RA) (RACER)	
Mobilization (Decontamination)	$63,667
Excavation	$17,539
Disposal (includes Load and Haul of the berm and excavation of six inches of underlying soil and Off-site Transportation and Disposal)	$457,656
Prof. Labor support	$64,728
RA Subtotal	$603,590
LTM	
Site Closeout (RACER)	$53,461
Well Abandonment (RACER)	$28,167
Five Year Review for MPPEH (RACER)	$57,275

Total Site Cost $796,379

Material Change: Yes
Reason: RACER estimate change, and change in LTM duration calculation.

Prepared by: Randall Battaglia
Cost Estimator

Signature Date 3/29/10

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Signature Date 3/29/2010

Source 1

FINAL

ORDNANCE AND EXPLOSIVES ENGINEERING EVALUATION/ COST ANALYSIS REPORT

SENECA ARMY DEPOT ROMULUS, SENECA COUNTY, NEW YORK

Prepared For:

SENECA ARMY DEPOT ACTIVITY
and
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
and
HUNTSVILLE CENTER

Contract No. DACA87-95-D-0018
Delivery Order No. 0052

Prepared By:

PARSONS ENGINEERING SCIENCE, INC.
100 SUMMER ST
BOSTON, MA 02110

JANUARY 2004

Area of Interest	Reason for Classification as No Further Action
Explosive Scrap Furnace	No evidence of ordnance.
Berm near the Bundle Ammo Buildings	No evidence of berm on aerial photography.
R&D Area/Fuze Storage (SEAD-44B)	No evidence of ordnance.

2.2.2.2 Areas Requiring Further Investigation

It was determined that 12 of the AOIs identified in the ASR would need further investigation to determine the exact nature of possible ordnance contamination (Figure 2.2). Of these 12 acres, 11 were investigated during the EE/CA. The last area, the Liquid Propellant Storage Area (SEAD-43) was declared a No DOD Action Indicated (NDAI) site in a memorandum by the Director of the Huntsville Corps of Engineers Ordnance and Explosive Team based on the results of a 1999 investigation (Appendix B). The physical characteristics of the 11 areas included in the EE/CA surveys are described below.

2.2.2.2.1 Geologic Characteristics – All 11 Sites

Characteristics specific to each site, such as topography and vegetation, are described below. However, the geologic characteristics of the 11 sites are fairly similar. As described in Section 2.2.1, the shale bedrock at SEDA is overlain by highly weathered shale and glacial till. Soil borings conducted during previous investigations at a number of the areas included in the OE EE/CA show that the till is typically 5 to 10 feet deep, with only 1 to 2 feet of weathered shale below. None of the components of the till are particularly iron rich, and the effects of native soil on geophysical instruments is minimal. Finally, frost depths in New York State can reach to 4 feet, meaning that frost heaving of any OE remaining in the ground is a concern at all of the sites discussed below.

2.2.2.2.2 SEADs-16 and -17 - Deactivation Furnaces

SEADs-16 and -17 are former popping plants that had been used for ammunition disassembly and demilitarization. The areas comprised of approximately five acres surrounding each of the buildings (Figure 2.2). The main concern at these areas is the possible presence of 20mm rounds, which may have been demilled here as at other similar popping plants. A visual inspection showed spent small arms ammunition of various sizes lying on the surface over much of the area. In addition, large piles of metallic debris, railroad tracks, and drum staging pads are scattered at various locations within the fence surrounding SEAD-16.

2.2.2.2.3 SEAD 44A - QA Function Test Area

At the time of the ASR site visit; SEAD-44A was an approximately 15-acre site that had been used for the QA testing of 40mm rifle-fired grenades, fire devices, and pyrotechnics. The remains of 40mm grenades and spent small arms were evident throughout the area. Subsequent to the ASR visit, most of the land surrounding SEAD-44A was turned over for use as the site for a new prison. A 25-acre fence was put in place in order to segregate the 15 acres of SEAD-44A, as well as a 100-foot buffer zone surrounding the site (Figure 2.2). A project was later undertaken to scrape 1-foot of soil off of that area enclosed by the fence that was believed to have been the former function test range. The soil was put through a sifter in order to remove any OE present and was replaced after the scraped area was geophysically mapped and all anomalies investigated to verify the removal of all OE.

2.2.2.2.4 SEAD-45 - Open Detonation Area

SEAD-45 consists of a large open area approximately 60-acres in size (Figure 2.2) surrounding a large berm that was used to suppress the effects of ordnance demolition activities. Aerial photographs from 1954 show there may have been burn pads that were covered by 1978. A variety of ordnance was destroyed by detonation at this area, including explosives, rockets, and heavy artillery. The blast radius shown on old drawings included in the Archive Search Report is 1800 feet from the center of the demolition berm. OE scrap and fragments of demolished ordnance are prevalent throughout this area.

2.2.2.2.5 SEAD-46 - 3.5" Rocket Range

This site covers approximately 40 acres situated to the northeast of the center of the Depot (Figure 2.2). Depot personnel reported that they have seen spent rocket motors on the ground, although none was noticed during the ASR site visit. Aerial photos taken in 1954 show the site as a long open area in which 3.5" rockets were apparently fired. It is believed that a large berm at the north end of the area was a target berm, into which the rockets were fired. Subsequent to Army use of SEAD-46, a number of small trees have grown up in the area.

2.2.2.2.6 SEAD-53 - Igloo Area

SEAD-53, which incorporates approximately 6,000 acres of the Depot (Figure 2.2), contains over 500 igloos that were once used to house the majority of the munitions stored on base. Most of the land in SEAD-53 is wooded; however, paths have generally been cleared around the igloos themselves. Drainage ditches on either side of most of the igloo access roads are also relatively free of woods or heavy brush. No ordnance was seen during the ASR site visit; although, a Schonstedt magnetometer examination of one of the drainage ditches adjacent to an access road did result in the discovery of several magnetometer hits. The Schonstedt hits are indicative of buried metal, but the actual cause was not examined during the ASR site visit.

2.2.2.2.7 SEAD-57 - Former EOD Range

AOC

This area consists of approximately 58 acres northwest of the center of the depot (Figure 2.2). According to former Depot employees, SEAD-57 was used as a demolition range with an

explosive limit of 10 pounds. The primary focus of the investigation in this area is a berm approximately 30 feet in diameter and 6 feet high near the center of the of the 58 acres. This berm does not appear in aerial photos until after 1978. The site visit conducted for the ASR in 1998 found the remains of many flares in and around this berm and in shot holes directly across an access road from the berm. Other shot holes were located at the south side of the access road, and are visible on aerial photographs taken in 1955. As with the SEAD-45 demolition area, it was believed that OE might be encountered as far as 1800 from the berm in SEAD-57.

2.2.2.2.8 Demo Range

The demolition range is a 40-acre wooded lot immediately to the southeast of SEAD-57 (Figure 2.2). It is assumed that this area was used for projectile demolition at some point. A 1963 aerial photograph shows the majority of the area as an open area; however, most of the site has subsequently become fairly heavily wooded. A split-open 75mm projectile was found in this area during the ASR site visit.

2.2.2.2.9 EOD Area #2

A 1963 aerial photo shows EOD Area #2 as a small open area approximately ½-mile to the west of EOD Area #3. Since this photo was taken, the area has been flooded and has become known as the "duck pond" (Figure 2.2). Originally, the area was rumored to be an EOD range where explosive devices were used. Subsequent to the flooding of the area it has been rumored that non-explosive metal projectiles were thrown into the water. Based on comparison of the 1963 aerial photograph with a 1991 photograph, the area occupied by EOD Area #2 should actually be to the northwest of the position indicated in the ASR. This revised location was the one surveyed during the EE/CA fieldwork.

2.2.2.2.10 EOD Area #3

This area is located directly to the north of SEAD-46 (Figure 2.2). The most obvious feature in the approximately 5 acres that make up this site is a 150-foot diameter pit that was reported to be an EOD disposal area. Early photos show the pit and the area surrounding it as clear. While the pit itself was still open at the time of the ASR site visit, large trees and thick brush had grown up around it. No evidence of ordnance was discovered in the visit.

2.2.2.2.11 Grenade Range

The former grenade range consists of approximately 30 acres at which 40mm rifle-fired grenades were used (Figure 2.2). The grenade range is a large open area still containing a number of mannequins, wooden structures, and armored vehicles used as targets during firing exercises at the range. It was assumed that the majority of the 40mm grenades fired at the range were practice grenades, as none of the targets show any evidence of having been damaged by HE. A number of intact 40mm grenades were also found during the ASR site visit.

SECTION 9

RECOMMEDATIONS AND RECURRING REVIEW

9.1 INTRODUCTION

The recommended response actions have been chosen based on the effectiveness and implementability for each of the alternatives considered at each of the AOIs. If two alternatives were equal according to effectiveness and implementability, then cost was used as the determining factor in choosing which alternative to recommend. Following implementation of the chosen response action alternative, the former Seneca Army Depot will be included in the USACE program for recurring reviews. Recurring reviews will be conducted every five years to evaluate the continued effectiveness of the response action to address public safety risk from UXO.

5 yr review

9.2 RECOMMENDED RESPONSE ACTIONS

9.2.1 INSTITUTIONAL CONTROLS

Institutional controls were not chosen for any of the individual AOIs. However, base wide controls should be implemented in order to properly educate the public about the potential residual hazards of OE that may exist on site. The Institutional Controls recommended in Section 5 are the ones that should be considered for implementation, and Appendix F analyses the effectiveness of all the institutional controls considered for SEDA. Although the Demo Range, the ditches in SEAD-53, and the rumored Indian Creek Burial area have been considered NFA sites, the base-wide Institutional Controls will cover these areas as well.

9.2.2 CLEARANCE TO DEPTH OF 6 INCHES

The Clearance to a Depth of 6 Inches Alternative has been chosen for two areas, SEADs-16 and –17 and EOD Area #2. At both of these areas, OE was found no deeper than 6 inches below the ground surface. Therefore, it is not considered necessary to investigate any deeper than this depth. A complete investigation of the area not cleared during the EE/CA for each AOI (Figures 9.1 and 9.2) using this alternative will be sufficient to remove the majority of the OE that is present in the areas. Should any OE be discovered after the initial survey, possibly due to natural occurrences (i.e. freeze/thaw), the survey may be repeated as part of the recurring reviews.

Site WBS Report (with Markups)

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-003-R-01
Project Name: SEAD-003-R-01 SEAD 46,57
Project Category: Conservation

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

SEAD-003-R-01 Explosive Ordnanc Range (EOD) Range (alias SEAD-57) This site also includes the 3.5" Rocket Range (alias SEAD-46)

Since this site is a Military Munitions Rule site, total OE costs reported have been captured in an OE EE/CA. The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the RD/RA HTRW component.

Site: SEAD-003-R-01, Former EOD Range (alias SEAD-57) and the 3.5" Rocket Range (alias SEAD-46)

Source:
1. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
2. Completion Report, Munitions Response and CERCLA Closure: SEAD 002-R-01, SEAD 57, SEAD 46, and SEAD 007-R-01, April 2007

3. Professional judgment based on site knowledge.

Phase: LTM will be an Institutional Control in perpetuity. Initial duration is 30 years for a recurring review every 2 years.

All LUCs have contract cost documentation.

Additional site information:

RACER Assumptions:
Remedial Design/ Remedial Action:
RA: The HTRW component of this site is the soils contaminates with metals in and below the berm area at the EOD berm at SEAD-57. Assume that once the berm and soils below the berm have been removed and disposed of at an off-site landfill, the COC's will pose no threat to the groundwater. Therefore, no gw monitoring or 5-year reviews will be required for the HTRW removal. The berm is approximately 250' x 30' x 5' and the area around and under the berm are approximately 100 x 150 x 5' as shown in Figure 4-7 of the RI report.
RD: RACER calculated per the RA cost total for the HTRW component. Design percentage equals 10%.

Five year reviews and Long term mangement needed for OE.
Well abaondonment and site closeout documentation needed for 13 wells, 15 feet deep, 2 inch diameter, unconsolidated fill, removal.

Site WBS Report
(with Markups)

Site:

Site ID: SEAD-57
Site Name: EOD Range
Site Type: None

Media/Waste Type
Primary: Soil
Secondary: N/A

Contaminant
Primary: Metals
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: SEAD-003-R-01 SEADs 46/57 The EOD Range and 3.5 inch rocket range will require HTRW contamination addressed in addition to the OE during the removal action.

Five year reviews will be neededed for OE.
Support Team: Stephen M. Absolom - SEDA BEC
Randy Battaglia- US Army Corps of Engineers, Project Manager
References: 1. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
2. Completion Report, Munitions Response and CERCLA Closure, SEAD 002-R-01, SEAD 57, SEAD 46, and SEAD 007-R-01, April 2007
3. Professional judgment based on site knowledge.

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 02/04/2010

Estimator Signature: **Date:**

Site WBS Report
(with Markups)

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96 Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil

Date Reviewed: 02/05/2010

Reviewer Signature: **Date:**

Site WBS Report
(with Markups)

Phase Element:

Phase Element Type: Design Percent Method
Phase Element Name: RD
Description: Design for the removal of the berm and below the berm soils contaminated with metals.

Total Capital Costs are the marked up costs for the items listed below, excluding the Professional Labor Management, Administrative Land Use Controls, and Operations and Maintenance technologies. Only the first year costs are included for cost-over-time technologies.

Phase Element Name	Phase Element Date	Design Approach	Total Capital Cost	Design %	Design Costs	Design Cost Year
RA(C)	September, 2012	Ex Situ Removal - Off-site Treatment or Disposal	$538,862	10.00	$53,886	2011

Site WBS Report
(with Markups)

HTRW RA WBS		Marked Up Costs
333	SUPERVISION AND ADMINISTRATION (S&A) (CONSTRUCTION MANAGEMENT)	
333.30	REMEDIAL DESIGN	
333.30.91	Other	
	Design Costs	$53,886
		$53,886
	Total:	$53,886
	HTRW RA WBS Total:	$53,886

Phase Element:

Phase Element Type: Remedial Action
Phase Element Name: RA(C)
Description: Removal of contaminated soils in and below the berm.

Approach: Ex Situ
Start Date: September, 2012
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate

Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Excavation	Yes	100	0
Off-site Transportation and Waste Disposal	Yes	100	0
Decontamination Facilities	Yes	100	0
Professional Labor Management	Yes	100	0
Load and Haul	Yes	100	0

Site WBS Report
(with Markups)

HTRW RA WBS			Marked Up Costs
331	HTRW REMEDIAL ACTION (CONSTRUCTION)		
331.01	MOBILIZATION AND PREPARATORY WORK		
331.01.04	Setup/Construct Temporary Facilities	Decontamination Facilities	$63,667
			$63,667
331.08	SOLIDS COLLECTION AND CONTAINMENT		
331.08.01	Contaminated Soil Collection	Excavation	$17,539
			$17,539
331.19	DISPOSAL (COMMERCIAL)		
331.19.21	Transportation to Storage/Disposal Facility	Load and Haul	$206,922
331.19.22	Disposal Fees and Taxes	Off-site Transportation and Waste Disposal	$250,735
			$457,656
331.22	GENERAL REQUIREMENTS (Optional Breakout)		
331.22.03	Warehouse, Materials Handling, and Purchasing	Professional Labor Management	$64,728
			$64,728
		Total:	$603,590
		HTRW RA WBS Total:	$603,590

Site WBS Report
(with Markups)

Phase Element:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #1 Five Year Reviews
Description: Land Use Control monitoring and enforcement FY2010 through FY2038, with termination in FY2038. Two 5-Year Reviews, first in 2011 added to this phase.

Start Date: October, 2010
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate

Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Five-Year Review	Yes	100	0

Site WBS Report
(with Markups)

HTRW RA WBS			Marked Up Costs
331	HTRW REMEDIAL ACTION (CONSTRUCTION)		
331.20	SITE RESTORATION		
331.20.90	Other	Five-Year Review	$57,275
			$57,275
		Total:	$57,275
		HTRW RA WBS Total:	$57,275

Phase Element:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #2 Site Close-out Doc and well abandonment
Description: Well abandonment assumed 13 wells, 2" diameter, 15 ft deep, unconsolidated, overdrill/removal.

Start Date: October, 2038
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Site WBS Report
(with Markups)

HTRW RA WBS			Marked Up Costs
331	HTRW REMEDIAL ACTION (CONSTRUCTION)		
331.20	SITE RESTORATION		
331.20.90	Other	Site Close-Out Documentation	$53,461
	Other	Well Abandonment	$28,167
			$81,628
		Total:	$81,628
		HTRW RA WBS Total:	$81,628
		Total:	**$796,379**

Estimate Documentation Report

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-003-R-01
Project Name: SEAD-003-R-01 SEAD 46,57
Project Category: Conservation

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

SEAD-003-R-01 Explosive Ordnanc Range (EOD) Range (alias SEAD-57) This site also includes the 3.5" Rocket Range (alias SEAD-46)

Since this site is a Military Munitions Rule site, total OE costs reported have been captured in an OE EE/CA. The Remedial Action Cost Engineering and Requirements (RACER) system was used to estimate the RD/RA HTRW component.

Site: SEAD-003-R-01, Former EOD Range (alias SEAD-57) and the 3.5" Rocket Range (alias SEAD-46)

Source:
1. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
2. Completion Report, Munitions Response and CERCLA Closure: SEAD 002-R-01, SEAD 57, SEAD 46, and SEAD 007-R-01, April 2007

Estimate Documentation Report

002-R-01, SEAD 57, SEAD 46, and SEAD 007-R-01, April 2007
3. Professional judgment based on site knowledge.

Phase: LTM will be an Institutional Control in perpetuity. Initial duration is 30 years for a recurring review every 2 years.

All LUCs have contract cost documentation.

Additional site information:

RACER Assumptions:
Remedial Design/ Remedial Action:
RA: The HTRW component of this site is the soils contaminates with metals in and below the berm area at the EOD berm at SEAD-57. Assume that once the berm and soils below the berm have been removed and disposed of at an off-site landfill, the COC's will pose no threat to the groundwater. Therefore, no gw monitoring or 5-year reviews will be required for the HTRW removal. The berm is approximately 250' x 30' x 5' and the area around and under the berm are approximately 100 x 150 x 5' as shown in Figure 4-7 of the RI report.
RD: RACER calculated per the RA cost total for the HTRW component. Design percentage equals 10%.

Five year reviews and Long term mangement needed for OE.
Well abaondonment and site closeout documentation needed for 13 wells, 15 feet deep, 2 inch diameter, unconsolidated fill, removal.

Estimate Documentation Report

Site Documentation:

Site ID: SEAD-57
Site Name: EOD Range
Site Type: None

Media/Waste Type
Primary: Soil
Secondary: N/A

Contaminant
Primary: Metals
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: SEAD-003-R-01 SEADs 46/57 The EOD Range and 3.5 inch rocket range will require HTRW contamination addressed in addition to the OE during the removal action.

Five year reviews will be neededed for OE.
Support Team: Stephen M. Absolom - SEDA BEC
Randy Battaglia- US Army Corps of Engineers, Project Manager
References: 1. Final Ordnance and Explosives Engineering Evaluation/Cost Analysis, January 2004.
2. Completion Report, Munitions Response and CERCLA Closure, SEAD 002-R-01, SEAD 57, SEAD 46, and SEAD 007-R-01, April 2007
3. Professional judgment based on site knowledge.

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
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Estimate Prepared Date: 02/04/2010

Estimator Signature: **Date:**

Estimate Documentation Report

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96 Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil

Date Reviewed: 02/05/2010

Reviewer Signature: **Date:**

Estimated Costs:

Phase Element Names		Direct Cost	Marked-up Cost
RD		$0	$53,886
RA(C)		$465,734	$603,590
LTM #1 Five Year Reviews		$22,915	$57,275
LTM #2 Site Close-out Doc and well abandonment		$37,150	$81,628
	Total Cost:	$525,799	$796,379

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Design Percent Method
Phase Element Name: RD
Description: Design for the removal of the berm and below the berm soils contaminated with metals.

Total Capital Costs are the marked up costs for the items listed below, excluding the Professional Labor Management, Administrative Land Use Controls, and Operations and Maintenance technologies. Only the first year costs are included for cost-over-time technologies.

Phase Element Name	Phase Element Date	Design Approach	Total Capital Cost	Design %	Design Costs	Design Cost Year
RA(C)	September, 2012	Ex Situ Removal - Off-site Treatment or Disposal	$538,862	10.00	$53,886	2011

Total Design Cost: $53,886

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Remedial Action
Phase Element Name: RA(C)
Description: Removal of contaminated soils in and below the berm.

Approach: Ex Situ
Start Date: September, 2012
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate

Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Excavation	Yes	100	0
Off-site Transportation and Waste Disposal	Yes	100	0
Decontamination Facilities	Yes	100	0
Professional Labor Management	Yes	100	0
Load and Haul	Yes	100	0

Total Marked-up Cost: $603,590

Technologies:

Estimate Documentation Report

Technology Name: **Excavation (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Estimating Method		Length / Width / Depth	n/a
Length		150	FT
Width		100	FT
Depth		0.5	FT
Soil Type		Silt/Silty-Clay Mixture	n/a
Safety Level		D	n/a
Excavation			
Secondary Parameters			
Existing Cover	Soil/Gravel	Soil/Gravel	n/a
Replacement Cover	Soil/Seeding	Soil/Seeding	n/a
Sidewall Protection	None	None	n/a
% of Excavated Material To Be Used as Backfill	0	0	%
Source of Additional Fill	Off Site	Off Site	n/a
Backfill Hauling Distance (one way)	10	10	MI
Dewatering Required	No	No	n/a
Analytical			
Secondary Parameters			
Primary Analytical Template	System Soil - Metals	System Soil - Metals	n/a
Secondary Analytical Template	None	None	n/a
Number of Sampling Points/Locations	25	25	EA
Number of Composites Submitted to Lab	7	7	EA
Turnaround Time	Standard (21 Days)	Standard (21 Days)	n/a
Submit Data Electronically	Yes	Yes	n/a
Data Package / QC	Stage 1	Stage 1	n/a
Lab Data Review	Stage 1	Stage 1	n/a
Sampling Reports	Abbreviated	Abbreviated	n/a

Comments: This is to remove the soils below the berm footprint that is to be removed. The depth of the excacation is 0.5 feet. The area to be excavcavated is 100' by 150' wide.

Estimate Documentation Report

Technology Name: **Off-site Transportation and Waste Disposal (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Waste Type		Non-Hazardous	n/a
Waste Form		Solid	n/a
Condition of Waste		Bulk to remain as bulk	n/a
Volume of Bulk Solid Waste		1,678	CY
Stabilization		Not Required	n/a
Transportation Type		Truck	n/a
Truck Distance (One-way)		75	MI
Safety Level		D	n/a

Comments: For disposal of the contaminated soil below the berm surface.

Estimate Documentation Report

Technology Name: **Decontamination Facilities (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
New Decontamination Facility Pad Construction		Yes	n/a
Equipment Rating		Medium Equipment Rating	n/a
Equipment Decontamination Operations		Yes	n/a
Equipment Decontamination Operations: Duration		24	weeks
Personnel Decontamination Trailers		No	n/a
Personnel Decontamination Trailers: Average Crew Size		0	per shift
Personnel Decontamination Trailers: Duration		0	weeks
Safety Level		D	n/a
Decon Pad			
Secondary Parameters			
Area of Decontamination Pad	800	800	SF
Use Flexible Membrane Liner	Yes	Yes	n/a
Percentage of Time Decontamination Pad in Use	25	25	%
Work Shifts			
Secondary Parameters			
Equipment Decontamination		One Shift per Day	n/a
Personnel Decontamination		n/a	n/a

Comments:

Technology Name: **Professional Labor Management (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Markedup Construction Cost ($)		331,941	$
Percentage	19.5	19.5	%
Dollar Amount		64,728	$

Comments:

Estimate Documentation Report

Technology Name: **Load and Haul (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Truck Type		Highway	n/a
Volume		1,400	CY
One-way Haul Distance		75	MI
Dump Charge		65	$/CY
Safety Level		D	n/a

Comments: To remove berm, above ground mound. Approx. size is 250' x 30 ' x 5' with slighlty sloped sides. This will need to be removed and disposed of off-site.

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #1 Five Year Reviews
Description: Land Use Control monitoring and enforcement FY2010 through FY2038, with termination in FY2038. Two 5-Year Reviews, first in 2011 added to this phase.

Start Date: October, 2010
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Five-Year Review	Yes	100	0

Total Marked-up Cost: $57,275

Technologies:

Estimate Documentation Report

Technology Name: **Five-Year Review (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Site Complexity		Low	n/a
Document Review		Yes	n/a
Interviews		Yes	n/a
Site Inspection		Yes	n/a
Report		Yes	n/a
Travel		Yes	n/a
Rebound Study		No	n/a
Start Date		October-2011	n/a
No. Reviews		2	EA
Document Review			
Required Parameters			
5-Year Review Check List		Yes	n/a
Record of Decision		Yes	n/a
Remedial Action Design & Construction		Yes	n/a
Close-Out Report		Yes	n/a
Operations & Maintenance Manuals & Reports		Yes	n/a
Consent Decree or Settlement Records		Yes	n/a
Groundwater Monitoring & Reports		Yes	n/a
Remedial Action Required		Yes	n/a
Previous 5-Year Review Reports		Yes	n/a
Interviews			
Required Parameters			
Current and Previous Staff Management		Yes	n/a
Community Groups		Yes	n/a
State Contacts		Yes	n/a
Local Government Contacts		Yes	n/a
Operations & Maintenance Contractors		Yes	n/a
PRPs		Yes	n/a
Remedial Design Consultant		Yes	n/a
Site Inspection			
Required Parameters			

Estimate Documentation Report

Technology Name: **Five-Year Review (# 1)**

Description	*Default*	*Value*	*UOM*
Site Inspection			
Required Parameters			
General Site Inspection		Yes	n/a
Containment System Inspection		Yes	n/a
Monitoring Systems Inspection		Yes	n/a
Treatment Systems Inspection		Yes	n/a
Regulatory Compliance		Yes	n/a
Site Visit Documentation (Photos, Diagrams, etc.)		Yes	n/a
Report			
Required Parameters			
Introduction		Yes	n/a
Remedial Objectives		Yes	n/a
ARARs Review		Yes	n/a
Summary of Site Visit		Yes	n/a
Areas of Non Compliance		Yes	n/a
Technology Recommendations		Yes	n/a
Statement of Protectiveness		Yes	n/a
Next Review		Yes	n/a
Implementation Requirements		Yes	n/a
Travel			
Required Parameters			
Number of Travelers		1	EA
Number of Days		2	EA
Air Fare Ticket Price		1,500	$
Need a rental car?		Yes	n/a

Comments:

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #2 Site Close-out Doc and well abandonment
Description: Well abandonment assumed 13 wells, 2" diameter, 15 ft deep, unconsolidated, overdrill/removal.

Start Date: October, 2038
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0
Well Abandonment	Yes	100	0

Total Marked-up Cost: $81,628

Technologies:

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Meetings		Yes	n/a
Work Plans and Reports		Yes	n/a
Documents		Yes	n/a
Site Close-Out Complexity		Moderate	n/a
Meetings			
Required Parameters			
Kick Off/Scoping Meetings		Yes	n/a
Kick Off/Scoping Meetings: Number of Meetings	1	1	EA
Kick Off/Scoping Meetings: Travel		No	n/a
Review Meetings		Yes	n/a
Review Meetings: Number of Meetings	1	1	EA
Review Meetings: Travel		No	n/a
Regulatory Review Meetings		Yes	n/a
Regulatory Review Meetings: Number of Meetings	1	1	EA
Regulatory Review Meetings: Travel		No	n/a
Work Plans & Reports			
Required Parameters			
Work Plans		Yes	n/a
Draft Work Plan		Yes	n/a
Final Work Plan		Yes	n/a
Reports		Yes	n/a
Draft Close-Out Report		Yes	n/a
Draft Final Close-Out Report		Yes	n/a
Final Close-Out Report		Yes	n/a
Progress Reports		Yes	n/a
Project Duration	10	10	months
Documents			
Required Parameters			
Draft Decision Document		Yes	n/a
Draft Final Decision Document		Yes	n/a
Final Decision Document		Yes	n/a

Estimate Documentation Report

Technology Name: **Site Close-Out Documentation (# 1)**

Description	*Default*	*Value*	*UOM*
Documents			
Required Parameters			
Long Term Document Storage		Yes	n/a
Number of Boxes		5	EA
Duration of Storage		30	Yrs

Comments:

Technology Name: **Well Abandonment (# 1)**

Description	*Default*	*Value*	*UOM*
System Definition			
Required Parameters			
Safety Level		D	n/a
Abandon Wells			
Required Parameters			
Technology/Group Name		Well Group	n/a
Number of Wells		13	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Unconsolidated	n/a

Comments:

STATEMENT OF WORK

MUNITIONS RESPONSE AND CERCLA CLOSURE

At

SENECA ARMY DEPOT, NY

Do Not Submit

CONTRACT: FA8903-04-D-8675
TASK ORDER: 0026
Project Numbers: AMSCO 61366R62, AMSCO 61366R01, AND AMSCO 61366R02

5 August 2005

SEAD-003-R-01
= SEAD-46, 57

1.0 SCOPE

This task order statement of work (SOW) defines the scope of construction and environmental activities necessary to remediate the Seneca Army Depot Activity (SEDA), NY.

1.2 General

Several geophysical investigations have been conducted at SEAD 46, SEAD 002-R-01, SEAD 57, and SEAD 007-R-01 to provide detailed coordinates of subsurface anomalies and define site boundaries for further investigation and/or removal actions. It is anticipated that after Munitions Response actions are completed, the soils remaining on the sites will be suitable for inclusion in a Preliminary Remedial Action Plan (PRAP) and Record of Decision (ROD) documenting that no further actins are required under CERCLA.

The SEAD OE EE/CA, February 2004 and the Geophysical Investigation SEAD 46 and 57, April 2005 is available to the Contractor to estimate the types and amounts of effort required. The subsurface objects/anomalies are to be presumed to be MPPEH (UXO, DMM, MC) at SEAD 57 and SEAD 007-R-01. SEAD 46 and SEAD 002-R-01 are presumed to contain Munitions Debris only and will be conducted with On-call Construction Support requirements unless MPPEH items are encountered as work progresses. The USACE will provide a DOD approved Explosives Safety Plan for incorporation into the contractor's Site Safety Plan under this concept.

The scope of work is to complete the subsurface investigations previously referenced, reacquire known and new targets, excavate the locations (max 2'radius, 4' depth) until a target object is identified, record the results while providing appropriate QC and Safety oversight of the UXO teams. In addition, soil excavation, MMR clearance, and soil transport and disposal is necessary for saturated response areas (metal contamination). General project requirements include; review and incorporation of the Final Reports and SEAD OE EE/CA, February 2004 and Geophysical Investigations Munitions Destruction Areas, SEAD 46 and 57, development of detailed project work plans and cost proposals, mobilization, mowing and grubbing as necessary, general site security, performance of appropriate intrusive investigations for all anomalies over 50 Mv response, excavation, clearance, and disposal of soil and debris in areas with more than 600 anomalies per acre, sampling and analysis of excavated and surface soils for disposition and closure of the sites, and preparation of all draft and final project reports including the PRAP and ROD, data, surveys and mapping.

1.2. Background

The work required under this scope of work falls under the Base Realignment and Closure (BRAC) program. Unexploded ordnance is a safety hazard and may constitute danger to site personnel and the local population if improperly managed. All activities involving work in areas potentially containing MPPEH shall be conducted in full compliance with USACE, DA and DOD requirements regarding personnel, equipment, and safety procedures. 29 CFR 1910 and

COMPLETION REPORT

MUNITIONS RESPONSE

SEAD 002-R-01, SEAD 57, SEAD 46 AND SEAD 007-R-01

SENECA ARMY DEPOT ACTIVITY,
ROMULUS, NEW YORK

April 2007

Prepared by:

PARSONS
150 Federal Street
Boston, MA 02110

TABLES OF CONTENTS

3.0 ORDNANCE AND EXPLOSIVES DEMILITARIZATION AND DISPOSAL

All MD and scrap metal items collected by UXO technicians on a daily basis were transferred to a staging area, inspected by both the SUXOS and UXO QC Supervisor, and placed into a locked storage area for temporary storage. Additional inspections were performed by the Senior UXO Supervisor (SUXOS), and again by the Senior QC (UXOQCS) Supervisor prior to being transferred to drums where a 1348-1A form was issued, Section 3.2 describes the final disposal procedures for all explosives and MD scrap metal

3.1 INTENTIONAL DETONATIONS

Demolition operations for MPPEH were conducted at the Open Detonation Hill (OD) to the north of the former Open Burning Grounds (OBG). In accordance with "Procedures for Demolition of Multiple Rounds (Consolidate Shots) on UXO Sites", dated August 1998 and approved by DDESB on 27 October 1998. Explosives Consumption Records are included in Appendix D. A table showing the suspected MPPEH items and the date they were vented is included as Table 2-2. Venting with a shape charge was used to distinguish MEC from MD.

All demolition explosives were transferred from the Army to Parsons/USA Environmental and kept in a secure storage bunker provided by the Army. All explosives were inspected weekly while in storage and transported in accordance with the State of New York's Department of Labor, Industrial Rule 39 and the Department of Treasury, Bureau of Alcohol, Tobacco, and Firearms (ATF) regulations.

3.2 OTHER DEMILITARIZATION PROCEDURES

All projectiles and intact MD were demilitarized by either explosive venting or by the removal/deformation of the rotating bands and fuse wells following inspections.

Following venting of all MPPEH items, thermal treatment of small arms, and/or physical demilitarization procedures, all items were disposed of off-site. A total of 4,180 pounds of cultural debris scrap metal, 618 pounds of aluminum MD and 2,689 pounds of ferrous MD scrap metal was disposed off-site. A 1348-1A form, chain of custody form, and certificate of destruction for this material is included in Appendix D.

Demobilization

Demobilization occurred in November 2006 following completion of the 10% QC inspection for all six sites.

3.3 CONCLUSIONS

Between May 2006 and November 2006, Parsons performed munitions removal operations in accordance with the ESS requirements. In general, the results of the munitions removal project performed at Seneca Army Depot for SEAD 46, SEAD 57, SEAD 007-R-01 and SEAD 002-R-01 indicate that all MPPEH has been cleared from these sites. A total of two of the 11,739 identified anomalies which were investigated were found to be MEC. This indicates that these sites were free of MEC with the exception of an area north of SEAD 57 buffer area and not part of this project. The

Army believes that no additional munitions response activities are required at these sites. The conclusions from each individual site are provided below.

SEAD 57 (Former EOD Range) and the SEAD-57 Buffer Area

The only MEC items encountered during this project were found north of SEAD 57 including one fused unfired 37mm projectile in Grid 57 K-16 and one MKII grenade located in 57K-18 as shown on Figure 1-4c. Most ferrous MD items at SEAD 57 were found north of Building T011 and were not found within the high density 1,000 foot kick out radius from the SEAD 57 berm. Figure 1-4c identifies all ferrous and aluminum MD items that were recovered as part of the SEAD 57 investigation. The ferrous MD items are shown in this figure. The pattern of the aluminum MD clearly radiates out from the center of the SEAD 57 berm in a circular pattern. The 43 other MPPEH items (listed on Table 2-2) found at SEAD 57 were all determined to be MD upon venting of the items during the disposal process. SEAD 57 is considered cleared of MPPEH.

SEAD 46 (Former 3.5-inch Rocket Range)

During the investigation of SEAD 46, 22 MPPEH items were found from the 1,611 geophysical anomalies investigated. All 22 items were found to be MD after they were vented. No MEC items were found at SEAD 46. The locations of the MD suggest that the SEAD 46 berm was not used as a target for anything other than small arms practice. The MD items are actually found in areas located away from the berm. Based on the discovery of inert landmines and a sign that identifies the area as a practice minefield for EOD and military training exercises, this was most likely the use of the site. There is no evidence that it was used as a rocket range as previously identified. Based on the results of the past three investigations SEAD 46 is considered cleared of MPPEH.

SEAD 002-R-01 (EOD Areas 2 and 3)

Two MPPEH items (an electric Squibb) were found at EOD Area 2 and it was later determined to be expended. The second item, a M16 APERS, was found by the survey team conducting a boundary survey of the pond low water mark. This item was found without a fuse but due to the mud and debris that filled the case, the item was vented to dispose of any explosive residue that may have remained. It was determined to be inert. At EOD Area 3, no MPPEH items were found during the geophysical anomaly investigation or the expanded handheld investigation of the unmapped area. SEAD 002-R-01 is considered cleared of MPPEH.

SEAD 007-R-01 (Grenade Range)

During the anomaly investigation of the Grenade Range, a total of 221 MPPEH items were found. All MPPEH were related to the M73 Practice LAW Rocket. The 40mm practice grenade found at this site has an inertia driven expelling system with no explosive material. The M73 Practice LAW Rocket has a 1.5 gram spotting charge. The 1.5 gram spotting charge is designed to produce only a flash, smoke, and noise at the time of impact initiated by an inertia driven firing pin. Of the 221 M73 Sub-caliber rounds found, none were found to have the rocket motor intact, all had been functioned previously. Based on these reasons, all of the MPPEH items were reclassified as MD. All 221 of

these rounds were brought to the demolition area and disposed of by detonation. SEAD 007-R-01 is considered cleared of MPPEH.

Local Training Areas

Six individual MD items were found in the Local Training Areas B through L. The items were 37mm and 57mm TPT (target practice) rounds that contained no explosives. The remaining MD items were all small arms ammunition (50 cal.) both ball and incendiary ammunition that were thermally treated before disposal. The Local Training Areas B-7 through L-7are considered free of MPPEH.

CONTRACT

ORDER FOR SUPPLIES OR SERVICES

1. CONTRACT/PURCH ORDER/AGREEMENT NO.	2. DELIVERY ORDER/ CALL NO.	3. DATE OF ORDER/CALL (YYYYMMMDD)	4. REQUISITION/PURCH REQUEST NO.	5. PRIORITY
FA8903-04-D-8675	0026	16 FEB 2006	SEE SCHEDULE	DO-G3

6. ISSUED BY ~~HSW/PKV-W~~ CODE FA8903
AIR FORCE MATERIEL COMMAND
311TH HUMAN SYSTEMS WING/PKV-W
3300 SIDNEY BROOKS
BROOKS CITY BASE TX 78235-5112
EDWIN CUSTODIO (210)536-4493
Edwin.Custodio@hqafcee.brooks.af.mil

7. ADMINISTERED BY *(If Other than 6)* CODE FA8903
DEPARTMENT OF THE AIR FORCE
AFMC 311 HUMAN SYSTEMS WING/PKV-W
3300 SIDNEY BROOKS
BROOKS CITY BASE TX 78235-5112

SCD: C PAS: (NONE)

8. DELIVERY FOB
X DESTINATION
OTHER *(See Schedule if other)*

9. CONTRACTOR CODE 1BVK6 FACILITY
NAME AND ADDRESS
PARSONS INFRASTRUCTURE & TECHNOLOGY GROUP INC
100 W WALNUT ST
PASADENA CA 91124-0001
(626) 440-2000

10. DELIVER TO FOB POINT BY *(Date)*
(YYYYMMMDD) SEE SCHEDULE

11. X IF BUSINESS IS
SMALL
SMALL DISAD-VANTAGED
WOMEN-OWNED

12. DISCOUNT ITEMS
N

13. MAIL INVOICES TO ADDRESS IN BLOCK
See Field 15 (Payment Office) and Section G

14. SHIP TO CODE
SEE SCHEDULE

15. PAYMENT WILL BE MADE BY CODE W916TX
PR W1J5 USACE FIN CTR
5722 INTEGRITY DRIVE
BLDG 787; PARENT CODE 2100
MILLINGTON TN 38054-5005

EFT:T

MARK ALL PACKAGES AND PAPERS WITH IDENTIFICATION NUMBERS IN BLOCKS 1 AND 2.

16. TYPE OF ORDER
DELIVERY/CALL X — This delivery order/call is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.
PURCHASE — Reference your furnish the following on items specified herein.

ACCEPTANCE. THE CONTRACTOR HEREBY ACCEPTS THE OFFER REPRESENTED BY THE NUMBERED PURCHASE ORDER AS IT MAY PREVIOUSLY HAVE BEEN OR IS NOW MODIFIED, SUBJECT TO ALL OF THE TERMS AND CONDITIONS SET FORTH, AND AGREES TO PERFORM THE SAME.

NAME OF CONTRACTOR | SIGNATURE | TYPED NAME AND TITLE | DATE SIGNED(YYYYMMMDD)

☐ If this box is marked, supplier must sign Acceptance and return the following number of copies:

17. ACCOUNTING AND APPROPRIATION DATA/LOCAL USE
SEE SCHEDULE

18. ITEM NO.	19. SCHEDULE OF SUPPLIES/SERVICES	20. QUANTITY ORDERED/ ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT

*If quantity accepted by the Government is same as quantity ordered, indicate by X. If different, enter actual quantity accepted below quantity ordered and encircle.

24. UNITED STATES OF AMERICA
//signed//
BY: CLIFFORD R. TRIMBLE 16 FEB 2006
CONTRACTING/ORDERING OFFICER

25. TOTAL $2,304,100.00

29. DIFFERENCES

26. QUANTITY IN COLUMN 20 HAS BEEN
☐ INSPECTED ☐ RECEIVED ☐ ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED

DATE SIGNATURE AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE

27. SHIP NO. ☐ PARTIAL ☐ FINAL

28. D.O. VOUCHER NO.

30. INITIALS

32. PAID BY

33. AMOUNT VERIFIED CORRECT FOR

32. PAYMENT ☐ COMPLETE ☐ PARTIAL ☐ FINAL

34. CHECK NUMBER

35. BILL OF LADING

36. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT.

DATE SIGNATURE AND TITLE OF CERTIFYING OFFICER

37. RECEIVED AT	38. RECEIVED BY *(Print)*	39. DATE RECEIVED *(YYYYMMMDD)*	40. TOTAL CONTAINERS	41. S/R ACCOUNT NO.	42. S/R VOUCHER NO.

1. In accordance with the terms and conditions of the Basic Contract FA8903-04-D-8675 and this task order 0026, the contractor shall accomplish the effort described in the attached Statement of Work (SOW) dated 5 August 2005 at a total Cost Plus Fixed Fee amount of $2,304,100.00.

2. **SECTION B - Supplies/Services:**

Pursuant to FAR 52.232-20, entitled "Limitation of Cost", estimated cost is $2,180,163.00.

The estimated cost and fee for this Task Order is shown below. The applicable fixed fee set for target fee set forth below may be increased or decreased only by negotiation and modification of the contract for added or deleted work. As determined by the Contracting Officer, it shall be paid as it accrues, in regular installments based upon the percentage of the completion of work (or the expiration of the agreed-upon periods(s) for term contracts).

Cost:	$2,180,163.00
Fixed Fee:	$ 123,937.00
Total CPFF:	$2,304,100.00

ITEM	SUPPLIES OR SERVICES	Qty Purch Unit	Unit Price Total Item Amount
0005		1 Lot	EST $2,304,100.00 EST $2,304,100.00
	Noun:	ENVIRONMENTAL REMEDIATION AND CONSTRUCTION EFFORTS	
	NSN:	N - Not Applicable	
	Contract type:	U - COST PLUS FIXED FEE	
	Inspection:	DESTINATION	
	Acceptance:	DESTINATION	
	FOB:	DESTINATION	
	Item project mgr.:	IWA	
	Descriptive Data:		
	The contractor shall provide the necessary effort for environmental remediation in accordance with the Statement of Work, dated 5 August 2005.		
000501			
	Noun:	Funding Info Only	
	ACRN:	AA $194,644.00	
	PR/MIPR:	F1JFAA6019B0AC	$194,644.00
000502			
	Noun:	Funding Info Only	
	ACRN:	AB $144,007.00	
	PR/MIPR:	F1JFAA6019B0AC	$144,007.00
000503			
	Noun:	Funding Info Only	
	ACRN:	AC $150,686.00	
	PR/MIPR:	F1JFAA6019B0AC	$150,686.00

ITEM	SUPPLIES OR SERVICES	Qty Purch Unit	Unit Price Total Item Amount
000504			
	Noun:	Funding Info Only	
	ACRN:	AD $600,000.00	
	PR/MIPR:	F1JFAA6019B0AC	$600,000.00
000505			
	Noun:	Funding Info Only	
	ACRN:	AE $781,893.00	
	PR/MIPR:	F1JFAA6019B0AC	$781,893.00
000506			
	Noun:	Funding Info Only	
	ACRN:	AF $283,790.00	
	PR/MIPR:	F1JFAA6019B0AC	$283,790.00
000507			
	Noun:	Funding Info Only	
	ACRN:	AG $149,080.00	
	PR/MIPR:	F1JFAA6019B0AC	$149,080.00
0006		1 Lot	NSP NSP
	Noun:	DATA	
	ACRN:	U	
	NSN:	N - Not Applicable	
	Contract type:	U - COST PLUS FIXED FEE	
	Inspection:	DESTINATION	
	Acceptance:	DESTINATION	
	FOB:	DESTINATION	
	Item project mgr.:	IWA	
	Descriptive Data:		
	The contractor shall provide data in accordance with CDRL Tables in Exhibits A, B, and C, and as implemented by direction provided in the SOW. This CLIN is Not Separately Priced (NSP). The prices associated with this CLIN are included in CLIN 0005.		

3. **SECTION C - Description/Specs/Work Statement**: Work is to be performed in accordance with the Statement of Work (SOW) dated 5 August 2005 "Munitions Response and CERCLA Closure at Seneca Army Depot, NY". Projects: AMSCO 61366R62, AMSCO 61366R01, AMSCO 61366R02

4. **SECTION D - Packaging and Marking**:

a. D-001 entitled, "PRESERVATION, PACKAGING, PACKING AND MARKING REQUIREMENTS (FEB 1997)":

PKV-D1 MARKING OF SHIPMENTS (ALTERNATE I)(SEP 2000)".

(a) The contractor shall mark all shipments under this contract in accordance with MIL-STD-129 entitled "Marking for Shipment and Storage".

(b) Each shipment of material and/or data/reports shall be clearly marked to show the following information:

SHIP TO: AFCEE/IWA
3300 Sidney Brooks
Brooks-City Base, TX 78235-5112

MARK FOR: Contract Number: FA8903-04-D-8675
Task Order No: 0026
Data Item No: (see block 1 of CDRL Table for data item no.)
Title/Subtitle (as applicable): (see blocks 2 & 3 for title and/or subtitle)

b. All shipments submitted under this order shall be forwarded prepaid.

5. **SECTION E - Inspection and Acceptance:**

Inspection and acceptance (including the pre-final) will be performed by the Contracting Officer's designated representative. Final inspection and acceptance location is at Seneca Army Depot, NY.

6. **SECTION F - Schedule Data:**

ITEM	SUPPLIES SCHEDULE DATA	QTY	SHIP TO	MARK FOR	TRANS PRI	DATE
0005		1	F1JFAA			28 Feb 2007
	Noun:	ENVIRONMENTAL REMEDIATION AND CONSTRUCTION EFFORTS				
	ACRN:	9				
	Descriptive Data: The contractor shall deliver the remediation effort in accordance with the Statement of Work, dated 5 August 2005.					
0006		1	F1JFAA			28 Feb 2007
	Noun:	DATA				
	ACRN:	U				
	Descriptive Data: The contractor shall deliver data in accordance with the CDRL Tables, Exhibits A, B, and C, and as directed by the SOW.					

7. **SECTION G- Accounting and Appropriation Data:**

This task order is not Wide Area Work Flow (WAWF) eligible at this time.

a. Submit cost vouchers and invoices electronically to the AFCEE Contract Administrator with the pertinent supporting documentation, cost/schedule/status reports, as attachments in one e-mail to:

(1). AFCEE_ACW_INVOICES @brooks.af.mil
(2). cc: (Contracting Officer Representative) [COR]@brooks.af.mil
(3). cc: Base POC if applicable
(4). cc: AFCEE.MSCMSCS@brooks.af.mil

b. Ensure the subject line is in the following format:
FA8903-04-D-8675-0026, Invoice/Voucher #*, Seneca Army Depot NY, NONAF, CPFF
(#* use actual number)

c. All other documents are to be submitted per the CDRL tables.

d. Incomplete submissions will be rejected and returned.

ACRN	Appropriation/Lmt Subhead/Supplemental Accounting Data	Obligation Amount
AA		$194,644.00
	97 X0510 40B1 E3199608801161366R6200025GZC8541CNAS190160 *Funding breakdown:* On CLIN 000501: $194,644.00 *PR/MIPR:* F1JFAA6019B0AC $194,644.00 *PR Long line:* 97 X0510 40B1 E3199608801161366R6200025GZC8541CNAS1901600008735 *Descriptive data:* MSR Control # Army 06-154/155/156 W16ROE53563491, Basic, Dtd 22 Dec 2005, expires 30 Nov 2008 $194,644.00 Project AMSCO 61366R62 PR Complete	
AB		$144,007.00
	97 X0510 40E1 E3199908801161366R6200025FBC8541CNAS190160 *Funding breakdown:* On CLIN 000502: $144,007.00 *PR/MIPR:* F1JFAA6019B0AC $144,007.00 *PR Long line:* 97 X0510 40E1 E3199908801161366R6200025FBC8541CNAS1901600008735 *Descriptive data:* MSR Control # Army 06-154/155/156 W16ROE53563491, Basic, Dtd 22 Dec 2005, expires 30 Nov 2008 $144,007.00 Project AMSCO 61366R62 PR Complete	
AC		$150,686.00
	97 X0510 0000 E3200008801161366R6200025FBC8541CNAS190160 *Funding breakdown:* On CLIN 000503: $150,686.00 *PR/MIPR:* F1JFAA6019B0AC $150,686.00 *PR Long line:* 97 X0510 0000 E3200008801161366R6200025FBC8541CNAS1901600008735 *Descriptive data:* MSR Control # Army 06-154/155/156 W16ROE53563491, Basic, Dtd 22 Dec 2005, expires 30 Nov 2008 $150,686.00 Project AMSCO 61366R62 PR Complete	

ACRN	Appropriation/Lmt Subhead/Supplemental Accounting Data	Obligation Amount
AD		$600,000.00

97 X0510 40G1 E3200108801161366R6200025FBC8541CNAS190160
Funding breakdown: On CLIN 000504: $600,000.00
PR/MIPR: F1JFAA6019B0AC $600,000.00
PR Long line: 97 X0510 40G1
E3200108801161366R6200025FBC8541CNAS1901600008735
Descriptive data:
MSR Control # Army 06-154/155/156
W16ROE53563491, Basic, Dtd 22 Dec 2005, expires 30 Nov 2008 $600,000.00
Project AMSCO 61366R62
PR Complete

AE $781,893.00

97 X0510 40K1 E3200508801161366R6200025FBC8541CNAS190160
Funding breakdown: On CLIN 000505: $781,893.00
PR/MIPR: F1JFAA6019B0AC $781,893.00
PR Long line: 97 X0510 40K1
E3200508801161366R6200025FBC8541CNAS1901600008735
Descriptive data:
MSR Control # Army 06-154/155/156
W16ROE53563491, Basic, Dtd 22 Dec 2005, expires 30 Nov 2008 $781,893.00
Project AMSCO 61366R62
PR Complete

AF $283,790.00

97 X0510 40K1 E3200508801161364R0200025FBFKBB50NAS190160
Funding breakdown: On CLIN 000506: $283,790.00
PR/MIPR: F1JFAA6019B0AC $283,790.00
PR Long line: 97 X0510 40K1
E3200508801161364R0200025FBFKBB50NAS1901600008735
Descriptive data:
MSR Control # Army 06-154/155/156
W16ROE53493245, Basic, Dtd 15 Dec 2005, expires 30 Dec 2007 $283,790.00
Project AMSCO 61364R02000
PR Complete

AG $149,080.00

97 X0510 40K1 E3200508801161366R0100025FBHF572DNAS190160
Funding breakdown: On CLIN 000507: $149,080.00
PR/MIPR: F1JFAA6019B0AC $149,080.00
PR Long line: 97 X0510 40K1
E3200508801161366R0100025FBHF572DNAS1901600008735
Descriptive data:
MSR Control # Army 06-154/155/156
W16ROE53493241, Basic, Dtd 15 Dec 2005, expires 30 Dec 2007 $149,080.00
Project AMSCO 61366R01000
PR Complete

MEMORANDUM FOR RECORD

Date: 19 March 2010

SUBJECT: Environmental Liabilities for site SEAD-9 Old Scrap Wood Pile at Seneca Army Depot

This memorandum serves as formal documentation of the information used to develop the Cost-To-Complete (CTC) estimate for the 2010 data call. The following sites are included with SEAD-9: SEADs 1,2,5,13,27,39,40,41,42,44A, 44B,52,56,59,62,64A,64B,64C,64D,66,67,71,121C,121I,122B and 122E. Each site has a Land Use Control which requires annual reporting and documentation. The RFP W91DY-08-D-0003 Task Order 0008 (Source 3) was used to estimate annual monitoring cost and year reviews. Monitoring cost is provided annually for 4 years in task number 3 and annual monitoring and 5-year review are combined in optional task number 28 for years requiring 5 year review.

Site: SEAD-9 Old Scrap Wood Pile. This AOC combines and includes all AOCs where Land Use Controls that restrict use of the property and access to the ground water and limit excavation are the only remaining activity (Sources 1, 2, and 4 through 6). Exit strategy is to manage LUCs until soil and ground water meet clean up criteria. Landfill covers and excavation restrictions will require LUC management in perpetuity.

Source:

1. Final ROD For Seventeen SWMUs Requiring Institutional Controls, SEADs-13,39,40,43/56/69,44A,44B,52,62,64B,64C,64D,67,122B,122E; March 2007.
2. Final ROD Five Former SWMUs SEADs-1, 2, 5, 24 and 48, April 2009.
3. RFP W91DY-08-D-0003 task Order 0008 LTM OB/FTA, annual evaluations
4. Final ROD for sites requiring Institutional Controls in Planned Industrial/Office Development or Warehousing Area, July 2004
5. Final ROD for DRMO Yard (SEAD-121C) and Rumored Cosmoline Oil Disposal Area (SEAD-121I), June 2008
6. Final ROD Fill Area West of BLDG 135 (SEAD 59) and the Alleged Paint Disposal Area (SEAD 71)
7. RACER Cost to Owner Guidance
8. Final Record of Decision, Ash Landfill, January 2005

NOTE:

1. SEAD-1, SEAD-2, SEAD-5 and SEAD-67 have been included with this site for LTM.
2. SEAD 121C and SEAD 121I have been included with this site for LTM.
3. SEAD 59 and SEAD 71 have been included with this site for LTM.
4. SEAD 006 Ash Landfill is included in this site for LUC management and reporting.

Owner Cost Assumptions:
Contract Activity and S&A costs are included for all onsite efforts. Cost as established by RACER markup guidance.

RACER Assumptions:

Site Closeout Documentation (LTM)
1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings included
3. Work Plans and reports- all RACER default values
4. Sixteen boxes of documents will be stored for 30 years

Cost Summary SEAD-9

LTM

Land Use Controls (Source 3) To monitor environmental easement for 8 yrs. $59,224.25/year x 8 years	$473,794
Five-year Reviews (Source 3) Two 5-year review events at $96,592.75 each 2 x $96,592.75 = $193,185.5 (rounded to $193,186)	$193,186
Owner Support (Source 7): (LUC + 5 year review) x 0.11 ($473,794 + $193,186) x 0.11	$73,368
Site Closeout (RACER)	$56,625
Total Site Cost $473,794 + $193,186+ $73,368+ $56,625	**$796,973**

Material Change: Yes
Reason: Contract cost used and LTM duration change

Prepared by: Randall Battaglia
Cost Estimator
Signature Date 24 MAR 10

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer
Signature Stephen M Absolom 3/24/2010 Date

Source #1

FINAL
RECORD OF DECISION
FOR
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)

Sites

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
5786 STATE ROUTE 96
ROMULUS, NEW YORK 14541

and

UNITED STATES ARMY CORPS OF ENGINEERS
4820 UNIVERSITY SQUARE
HUNTSVILLE, ALABAMA 35816

Prepared By:

PARSONS
150 Federal St., 4th Floor
Boston, Massachusetts 02110

Contract Number: DACA87-02-D-0005
Delivery Orders: 0026
USEPA Site ID: NY0213820830; NY Site ID: 8-50-006

March 2007

1.0 DECLARATION OF THE RECORD OF DECISION

Site Names and Location

Seneca Army Depot Activity
CERCLIS ID# NY0213820830
New York Site ID# 8-50-0006
Romulus, Seneca County, New York

This Record of Decision (ROD) formalizes and documents the U.S Army's (Army's) and U.S Environmental Protection Agency's (USEPA's) selected remedy for 17 historic solid waste management units (SWMUs) at the former Seneca Army Depot Activity (SEDA). Each of the Army's selected remedies for the 17 former SWMUs requires the definition and use of Land Use Controls (LUCs). The 17 former SWMUs discussed in this ROD include:

- SEAD-13, Inhibited Red-Fuming Nitric Acid (IRFNA) Disposal Site;
- SEAD-39, Building 121 Boiler Blowdown Leach Pit;
- SEAD-40, Building 319 Boiler Blowdown Leach Pit;
- SEAD-41, Building 718 Boiler Blowdown Leaching Pit;
- SEADs-43/56/69, Building 606 – Old Missile Propellant Test Laboratory/Herbicide and Pesticide Storage/Disposal Area;
- SEAD-44A, Quality Assurance Test Laboratory;
- SEAD-44B, Quality Assurance Test Laboratory;
- SEAD-52, Buildings 608 and 612 – Ammunition Breakdown Area;
- SEAD-62, Nicotine Sulfate Disposal Area near Buildings 606 and 612;
- SEAD-64B, Garbage Disposal Area;
- SEAD-64C, Garbage Disposal Area;
- SEAD-64D, Garbage Disposal Area;
- SEAD-67, Dump Site East of Sewage Treatment Plant No. 4;
- SEAD-122B, Small Arms Range, Airfield Parcel; and
- SEAD-122E, Plane Deicing Area.

sites

These SWMUs are also referred to below as "Areas of Concern" or "AOCs" or individually as an "Area of Concern" or "AOC."

Statement of Basis and Purpose

This decision document presents the Army's and the USEPA's selected remedy for SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E (or the AOCs), located at the Seneca Army Depot Activity (SEDA or the Depot) in the Towns of Romulus and Varick, Seneca County, New York. The decisions were developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended, 42 U.S.C. §9601 et seq., and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP),

40 CFR Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator, the Chief, Alpha Branch, Army BRAC Division, and the USEPA Region 2 have been delegated the authority to approve this Record of Decision (ROD).

This ROD is based on the Administrative Record that has been developed by the Army in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, 5786 State Route 96, Building 123, Romulus, NY 14541. The Administrative Record Index identifies each of the items considered during the selection of the remedial action. This index is included in **Appendix A.**

The New York State Department of Environmental Conservation (NYSDEC) has concurred with the selected remedy. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

Site Assessment

The response action selected for each SWMU identified in this ROD is necessary to protect human health or the environment from actual or threatened releases of hazardous substances into the environment or from actual or threatened releases of pollutants or contaminants from these SWMUs, which may present an imminent and substantial endangerment to public health or welfare.

Description of the Selected Remedy

The selected remedy for each of the 17 AOCs discussed in this ROD is either No Action (NA) or No Further Action (NFA) combined with the establishment, maintenance, and monitoring of Land Use Controls (LUCs). AOCs where the selected remedy is NA with LUCs include:

- SEAD-13, Inhibited Red-Fuming Nitric Acid (IRFNA) Disposal Site;
- SEADs-43/56/69, Building 606 – Old Missile Propellant Test Laboratory/Herbicide and Pesticide Storage/Disposal Area;
- SEAD-44B, Quality Assurance Test Laboratory;
- SEAD-52, Buildings 608 and 612 – Ammunition Breakdown Area;
- SEAD-62, Nicotine Sulfate Disposal Area near Buildings 606 and 612;
- SEAD-64C, Garbage Disposal Area; and
- SEAD-122E, Plane Deicing Area.

LUCs sites

AOCs where the Army's selected remedy is NFA with LUCs include:

- SEAD-39, Building 121 Boiler Blowdown Leach Pit;
- SEAD-40, Building 319 Boiler Blowdown Leach Pit;
- SEAD-41, Building 718 Boiler Blowdown Leaching Pit;
- SEAD-44A, Quality Assurance Test Laboratory;
- SEAD-64B, Garbage Disposal Area;
- SEAD-64D, Garbage Disposal Area;
- SEAD-67, Dump Site East of Sewage Treatment Plant No. 4; and,
- SEAD-122B, Small Arms Range, Airfield Parcel.

LUCs sites

At 12 of the AOCs (i.e., SEADs 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64C, and 67), LUCs previously documented by the Army will be imposed, monitored, and maintained until the concentrations of hazardous substances remaining at the site allow for the unlimited exposure and unrestricted use. It is also recommended that other LUCs previously not documented be imposed at five AOCs (i.e., SEADs 13, 64B, 64C, 122B and 122E) that are subject of this ROD.

The Army has previously documented and imposed LUCs within three portions of the former Depot: in the southeastern corner of the Depot where the Five Points Correctional Facility ("Prison Area") currently is located; in the east central potion of the Depot where the Planned Industrial/Office Development (PID Area) and Warehousing Area is located; and in the north-central portion (i.e., "North End Barracks" Area) of the Depot where the Hillside Children's Center is currently located. One or more of the 12 AOCs defined above (i.e., SEADs 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64C, and 67) are located within land covered by existing LUCs within these three parcels of the former Depot. Within this ROD, the Army formalizes and documents its intention to impose the existing LUCs on the AOCs located within each of these parcels under CERCLA. Land within the "Prison Area" and the area currently occupied by the Hillside Children's Center have been transferred to the community [i.e., to the people of the State of New York and Seneca County Industrial Development Agency (SCIDA), respectively] under deeds that have been recorded by the Seneca County Clerk. Land within the PID and Warehousing Area of the Depot has not yet been transferred to the community, but LUCs including a residential activity use restriction and a groundwater use/access restriction have been identified and documented within the "Final Record of Decision for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Area, Seneca Army Depot Activity" (September 2004).

New LUCs are proposed for the remaining five AOCs (SEADs 13, 64B, 64D, 122B, and 122E) discussed within this ROD. The groundwater use/access restriction proposed for SEAD-13 and SEAD-64D, and the residential use/activity restriction proposed for SEAD-122E result from the Army's determination that potential risks to human health or the environment exist due to the presence of hazardous substances at the historic SWMUs. The Army further recommends that the residential use/activity restriction proposed for SEAD-122E be imposed throughout the area occupied by the former Sampson / Seneca Army Depot Airfield to facilitate its transfer to the SCIDA; this LUC would encompass the entire parcel known as the Airfield. The LUC proposed for implementation at SEAD-64B (no unauthorized excavation and maintenance of cover) results from historic requirements of New York State Solid Waste Management Regulations; this LUC will also be applied along with the groundwater access/use restriction at SEAD-64D.

The specific LUCs selected for each AOC are summarized in **Table 1-1** and described more completely as follows:

"Prison Area" Land Use Controls (SEADs 43/56/69, 44A, 44B, 52, 62, and 64C):

Existing Deed with Reversionary Clause

The "Prison Area" property was transferred under a public benefit conveyance. The United States used a deed with a reversionary clause, as is required under Federal implementing regulations[1], to convey land in the southeastern part of the former Depot (i.e., Prison Area, see **Figure 1-1)** to the people of the State of New York for the construction of the Five Points Correctional Facility. It includes language that requires that the "property shall be used and maintained for a correction facility in perpetuity"[2] and that "the property shall not be sold, leased, mortgaged, assigned or otherwise disposed of"[3] without the prior consent of the Federal Government. In the event that any condition of the deed is breached "as to all or any portion or portions of the described property by New York or its successors or assigns,"[4] the "title and interest to such portion or portions of the property, in its existing condition, including all improvements thereon, shall revert to, and become property of, the Government at the option of and upon demand made in writing by the General Services Administration, or its successor in function."[5] } LUC

Provisions of the deed apply to the following SWMUs, which were transferred prior to a ROD being prepared and which are currently located within the bounds of New York's Five Points Correctional Facility Parcel:

- SEAD-43: Building 606 – Old Missile Propellant Test Laboratory;
- SEAD-44A: Quality Assurance Test Laboratory;
- SEAD-44B: Quality Assurance Test Laboratory;
- SEAD-52: Buildings 608 and 612 – Ammunition Breakdown Area;
- SEAD-56: Building 606 – Herbicide and Pesticide Storage;
- SEAD-62: Nicotine Sulfate Disposal Area near Buildings 606 and 612;
- SEAD-64C: Garbage Disposal Area; and,
- SEAD-69: Building 606 – Disposal Area.

Hazardous substances may be present at one or more of the listed historic SWMUs at concentrations that do not allow for unlimited exposure and unrestricted use. However, based on the results of previous investigations, risk assessments, and/or removal actions, these sites 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. The deed with the reversionary clause was recorded by the Seneca County Clerk on 26 September 2000 (see Seneca County Liber 612 Page 014 through page 031). Pursuant to the terms of the deed, the prison use restriction remains in effect for these AOCs in perpetuity, or the property ownership reverts to the United States.

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[1] Title 41 Code of Federal Regulations, Part 101-47 Federal Property Management Regulations, Utilization and Disposal of Real Property, Section Sec. 101-47.308-9 Property for correctional facility use.
[2] Seneca County Clerk, Waterloo, New York, Deed, United States of America to People of the State of New York, September 26, 2000, Liber 612, Page 019.
[3] Ibid.
[4] Ibid.
[5] Ibid.

"PID Area" Land Use Controls (SEADs 39, 40 and 67):

Residential Use and Groundwater Access/Use Restrictions

A ROD was signed by the Army and USEPA in 2004 for land within the Planned Industrial/Office Development (PID) and Warehousing Area (see **Figure 1-1**) of the former Depot. The PID Area encompasses numerous historic Seneca Army Depot SWMUs. The PID Area-wide land use restriction imposes LUCs that:

- Prohibit residential housing, elementary and secondary schools, childcare facilities and playgrounds activities; and,
- Prohibit access to or use of the groundwater until Class GA Groundwater Standards are met.

LUC

These LUCs are documented in the "Final, Record of Decision for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Area, Seneca Army Depot Activity" (September 2004).

These use restrictions result from determinations made specifically for SWMUs designated as SEAD-27 (Building 360 Steam Cleaning Waste Tank), SEAD-64A (Garbage Disposal Area), and SEAD-66 (Pesticide Storage near Buildings 5 and 6) in the PID Area. These land use restrictions will now be applied to three AOCs discussed in this Record of Decision and designated as:

- SEAD-39 (Building 121 Boiler Blow Down Pit);
- SEAD-40 (Building 319 Boiler Blow Down Pit); and
- SEAD-67 (Dump Site East of Sewage Treatment Plant No. 4).

Future land owners or users of sites located in the PID Area may request a variance to the LUCs identified above on a location-by-location basis. However, the future owner/user seeking the variance will need to provide relevant data to substantiate the validity of its request. Once a request is received, the Army, USEPA, and NYSDEC will evaluate and assess waiver requests for land in the PID Area on a case-by-case basis. Otherwise, the LUCs will remain in effect until the concentrations of hazardous substances in the soil and the groundwater beneath the sites have been reduced to levels that allow for unlimited exposure and unrestricted use of the land.

"North End Barracks" Area Land Use Controls (SEAD-41):

Existing Deed with Groundwater Notification

A deed was used to document the transfer of the land currently used for the Hillside Children's Center (i.e., former "North End Barracks" Area, see **Figure 1-1**) at the north end of the former Depot to the SCIDA. In the deed, the Army notified SCIDA that groundwater contamination had been identified in the vicinity of the former Building 718. This determination was made 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 parts per billion [ppb]) were present in the upper aquifer of the

groundwater. The Army applied the deed notification, based on the water quality from sampling, to all property located within the "North End Barracks" parcel. A public water supply services the entire area. This includes the area of the former SWMU SEAD-41, Building 718 Boiler Blowdown Pit.

The reported level of TPH at SEAD-41 exceeds the New York State Public Water System standards for unspecified organic contamination of 100 ppb. The deed further states "The Grantee, its successors and assigns, agree that in the event they use the groundwater as a public water supply source at the Property, they will comply with all applicable laws and regulations." 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. It is recommended that the LUC documented in the existing deed for the "North End Barracks" parcel be continued until the concentrations of hazardous substances in groundwater have been reduced to levels that allow for unrestricted use.

Land Use Controls (SEADs 13, 64B, 64D, 122B and 122E):

Groundwater Use/Access Restriction (SEAD-13)

A groundwater use/access restriction is also proposed at the following site:

- SEAD-13: Inhibited Red-Fuming Nitric Acid (IRFNA) Disposal Site.

LUC

The proposed groundwater use/access restriction is intended to eliminate human contact with groundwater, thereby reducing risk to 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 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 downgradient of SEAD-13-East and the Duck Pond. Chemical analysis of surface water in the Duck Pond indicated that the nitrate/nitrite-nitrogen concentrations are below the levels established for drinking water sources nationally and within the State of New York.

Therefore, a LUC will be implemented over the geographic area of SEAD-13 to prohibit 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 unlimited exposure and unrestricted use. Once groundwater cleanup standards are achieved, the groundwater use/access restriction may be eliminated, with USEPA approval.

Residential Activities Restriction (SEAD-122B and SEAD-122E)

The development and use of property for residential housing, elementary or secondary schools, child care facilities, and playgrounds will be prohibited in the following two AOCs:

LUC

- SEAD-122B: Small Arms Range, Airfield Parcel
- SEAD-122E: Plane Deicing Area

The proposed residential activities LUC will be implemented over the entire Airfield Parcel, which extends beyond the bounds of SEAD-122B and SEAD-122E. This LUC will be applied to all areas within the former Airfield, and will continue until such time as the concentrations of hazardous substances are reduced to levels that allow for unlimited exposure and unrestricted use. Future owners or users of land within the Airfield may request a waiver from the LUC on a location-by-location basis. At the time of the waiver request, the applicant must develop and submit sufficient data and information, subject to review and approval by the Army and the USEPA, to substantiate its request that the identified location is suitable for unlimited exposure and unrestricted use.

The boundary of the Airfield Area is defined as the boundary of the Airfield Special Events, Institutional, and Training area highlighted on **Figure 1-1.**

Unauthorized Digging Restriction (SEAD-64B)

A LUC that prohibits unauthorized digging and excavations within the bounds of the SWMU will be imposed for:

LUC

- SEAD-64B: Garbage Disposal Area.

SEAD-64B is a former solid waste disposal area that was closed by the Army prior to 1979. As a historic solid waste landfill, this SWMU is subject to requirements of the New York State's Solid Waste Regulations (6 NYCRR Part 360) in effect at the date of closure. Under New York's Solid Waste Regulations effective in 1979, a soil and vegetative cover was required to be placed on and maintained above the closed landfill. The proposed LUC would prohibit digging within the bounds of the former solid waste site. The LUC will continue at the AOC until solid wastes are removed, and concentrations of hazardous substances allow for unlimited exposure and unrestricted use.

Unauthorized Digging and Groundwater Access/Use Restriction (SEAD-64D)

LUCs that restrict unauthorized excavation and access to and use of groundwater will be imposed for the:

LUC

- SEAD-64D: Garbage Disposal Area.

Results of the mini risk assessment for this AOC indicate that ingestion of groundwater could pose a risk to future receptors. Furthermore, as a historic solid waste landfill, this SWMU is subject to requirements of the New York State's Solid Waste Regulations (6 NYCRR Part 360), as were in effect in 1979 when it was closed. Under New York's 1979 Solid Waste Regulations, a soil and vegetative cover must be placed on and maintained above the closed landfill.

The proposed groundwater use/access restriction will be implemented over the geographic area of SEAD-64D to prohibit access to or use of the groundwater until the levels of hazardous substances are reduced to levels that allow for unlimited exposure and unrestricted use. The restriction to prohibit unauthorized excavation at the SWMU will remain in effect as long as solid waste remains at the SWMU. The reduction of groundwater contamination to levels that allow for unlimited exposure and unrestricted use,

and the removal of solid waste must be completed before unlimited exposure and unrestricted use can be allowed at this SWMU.

Land Use Control Performance Objectives

The land use control (LUC) performance objectives at these 17 SWMUs, which will be (or have been) incorporated into leases and/or deeds for the parcels of real property that comprise these AOCs, as appropriate, are as follows:

- Comply with the use limitations documented and imposed in the Deed used to transfer property containing SEADs 43/56/69, 44A, 44B, 52, 62 and 64C from the U.S. Government to the people of the State of New York for the construction of a correctional facility (See Seneca County Liber 612 Page 014 through 031);
- Prohibit access to or use of groundwater at SEADs 39, 40, 41, 64D, and 67 until concentrations of hazardous substances contained are reduced to levels that allow unrestricted use;
- Prohibit residential housing, elementary and secondary schools, childcare facilities, and playgrounds activities at SEADs 39, 40, 67, 122B, and 122E until levels of hazardous substances found at the former SWMUs allow for unlimited exposure and unrestricted use; and
- Prohibit unauthorized excavation at SEADs 64B and 64D.

LUC

The Army and USEPA's selected remedy for each AOC discussed in this ROD includes LUCs. To implement the Army's selected remedy at these AOCs (i.e., SEADs 13, 39, 40, 41, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, and 122E), a LUC Remedial Design (RD) for each LUC combination identified (e.g., reversionary deed; groundwater use/access restriction only; groundwater use/access restriction and residential activities restriction; residential activities restriction only; digging restriction only; and digging and groundwater use/access restriction) will be prepared. The LUC RD Plan will include: a site description; land use restrictions; mechanism to ensure that the land use restrictions are not violated in the future; implementation and maintenance actions, including periodic inspections; and reporting/notification requirements. In addition, the Army will prepare an environmental easement for each AOC as needed, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York and the Army, which will be recorded at the time of transfer of the AOCs from federal ownership. A schedule for completion of the draft LUC RD covering the individual AOCs will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the Federal Facilities Agreement (FFA). In accordance with the FFA and CERCLA §121(c), the remedial action (including ICs) will be reviewed no less often than every five years. After such reviews, modifications may be implemented to the remedial program, if appropriate.

The Army shall implement, inspect, maintain, report, and enforce the ICs described in this ROD in accordance with the approved LUC RD. Although the Army may later transfer these responsibilities to another party by contract, property transfer agreement, or other means, the Army shall retain ultimate responsibility for remedy integrity.

Source #2

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

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
5786 STATE ROUTE 96
ROMULUS, NEW YORK 14541

and

UNITED STATES ARMY CORPS OF ENGINEERS
4820 UNIVERSITY SQUARE
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PARSONS
150 Federal St., 4th Floor
Boston, Massachusetts 02110

Contract Number: DACA87-02-D-0005
Delivery Orders: 0033
EPA Site ID: NY0213820830
NY Site ID: 8-50-006

April 2009

1.0 DECLARATION FOR THE RECORD OF DECISION

Areas of Concern Names and Site Location

SEAD-1 – the former Hazardous Waste Container Storage Facility (Building 307)
SEAD-2 – the former PCB Transformer Storage Facility (Building 301)
SEAD-5 – Sewage Sludge Waste Piles
SEAD-24 – the Abandoned Powder Burn Pit
SEAD-48 – Row E0800 Pitchblende Ore Storage Igloos

Seneca Army Depot Activity
5786 State Route 96
Romulus, New York 14541
CERCLIS ID# NY0213820830; New York Site ID# 8-50-0006

Statement of Basis and Purpose

This Record of Decision (ROD) documents the U.S Army's (Army's) and U.S Environmental Protection Agency's (EPA's) selected remedies for five historic solid waste management units (SWMUs) at the former Seneca Army Depot Activity (the Site, SEDA, or Depot) in the Towns of Varick and Romulus, Seneca County, New York. The decisions were developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended, 42 U.S.C. § 9601, *et seq.*, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Title 40, Protection of Environment, Code of Federal Regulations (CFR) Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator; the Chief, Consolidation Branch, Army BRAC Division; and, the Emergency and Remedial Response Division Director, EPA Region II have been delegated the authority to approve this ROD.

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, 5786 State Route 96, Building 123, Romulus, NY 14541. The Administrative Record Index identifies each of the items considered during the selection of the remedial actions for these historic SWMUs. This index is included in **Appendix A**.

The State of New York, through the New York State Department of Environmental Conservation (NYSDEC), has concurred with the selected remedies. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

AOC Assessment

The selected remedies for three of the historic SWMUs (i.e., SEADs 1, 2, and 5) address contaminated soil and groundwater. The selected remedies for these SEADs will limit soil and groundwater as exposure pathways for potential receptors. The response actions selected in this ROD for SEADs 1, 2, and 5 are necessary to protect human health and the environment from actual or threatened releases of hazardous substances into the environment or from actual or threatened releases of pollutants or contaminants, which may present an imminent and substantial endangerment to public health or welfare.

No Further Action (NFA) is called for at SEAD-24 where a time-critical removal action (TCRA) previously removed soil contaminated with hazardous substances, and where conditions now indicate that the land is suitable for unrestricted use and unlimited exposures. Finally, NFA is also selected for SEAD-48 where radiological decontamination and remedial actions completed as part of the SEDA's Nuclear Regulatory Commission (NRC) radiological license termination process have shown that soils, groundwater, and building surfaces are suitable for unrestricted use and unlimited exposures.

Description of the Selected Remedies

The selected remedies for SEAD-24 (the Abandoned Powder Burning Pit) and SEAD-48 (Row E0800 Pitchblende Ore Storage Igloos) are No Further Action. These selections are based on the Army's and EPA's determination that these sites do not pose a significant threat to human health or the environment. The locations of SEADs 24 and 48 are shown in **Figure 1-1**.

The response actions selected in this ROD for SEAD-1 (the Hazardous Waste Container Storage Facility), SEAD-2 (the PCB Transformer Storage Facility), and SEAD-5 (Sewage Sludge Waste Piles) address contaminated soil and groundwater.

LUC Remedy

The common elements of the selected remedies at SEADs 1, 2, and 5 include:

- Establishing, maintaining, monitoring, and reporting on a land use control (LUC) that prohibits residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained within the areas of concern (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 requires:

- 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 soil cleanup objectives (SCOs);
- 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.

As the selected remedies for the latter three AOCs (i.e., SEADs 1, 2, and 5) do not allow unrestricted use and unlimited exposures, the Army or its successors will be required to complete a review of the selected remedies at least once every 5 years, in accordance with Section 121(c) of the CERCLA.

Land Use Control (LUC) Performance Objectives:

The common LUC performance objectives for SEADs 1, 2, and 5 are to:

- Prohibit access to, or use of, the groundwater until groundwater cleanup standards are achieved; and,
- Prohibit the use of the land within the AOCs for residential housing, elementary and secondary schools, childcare facilities, and playground activities.

LUC REMEDY

At SEAD-5, the additional LUC performance objective is to:

- Prohibit unauthorized excavation or other activities that could compromise the integrity of the engineered cover.

SEADs 1, 2, and 5 represent a small portion of a larger tract of land located in the east-central portion of the former SEDA that comprises the Planned Industrial / Office Development and Warehousing (PID) Area that has been transferred to the Seneca County Industrial Development Agency (SCIDA), exclusive of any Army retained property. Based on an agreement reached between the Army, the EPA, and the NYSDEC, the entire PID Area, exclusive of Army retained property, is subject to equivalent LUCs (i.e., prohibit groundwater access/use; prohibit residential housing/elementary and secondary schools/childcare facilities/playgrounds) as are proposed for imposition at SEADs 1, 2, and 5. The referenced LUCs comprised the remedy selected in a 2004 ROD [*Final ROD for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas* (Parsons, 2004)] for SEADs 27, 64A, and 66, three other AOCs within the PID Area, due to levels of contaminants that were identified at those AOCs. At the time of the 2004 ROD, the Army, EPA, and NYSDEC agreed that these LUCs should be applied to all land within the greater PID Area, pending the provision and evaluation of new data for specific sites within the PID Area if a future owner or occupant wished to apply for a variance from the specified LUCs. The PID Area LUCs were implemented when the PID Area was transferred to the SCIDA by the Army, but they are not applied to the land comprising SEADs 1, 2, or 5, as these parcels were retained by the Army at the time of the greater PID Area's transfer, pending completion of necessary investigations and studies, the evaluation of potential remedial actions, and the selection of an approved remedy for SEADs 1, 2, and 5. The Army will ensure that the LUCs selected in this ROD will be maintained and enforced, until such time as the Army transfers these properties to other owners. The locations of SEADs 1, 2, and 5, and the land that is subject to institutional controls in the PID Area are shown in **Figure 1-1**.

The unauthorized excavation LUC for SEAD-5 will be implemented only at that location where the protective cover is established over SEAD-5 soils. The location where engineered cover is installed will be documented during the Remedial Design phase, and formally documented subsequent to the completion of the remedial action at this AOC.

The Army shall, through the on-site Commander's representative or other designated official, implement, maintain, inspect, report on, and enforce the remedy described in this ROD. This ROD selects as the remedy for SEAD-1, SEAD-2, and SEAD-5, LUCs (i.e., prohibit unauthorized excavations, SEAD-5 only; and groundwater access/use and land use limitations, SEAD-1, SEAD-2, and SEAD-5) to be imposed by an environmental easement at the time when land comprising SEAD-1, SEAD-2, or SEAD-5 is transferred from Army ownership to another party, as well as the prohibition of any pre-transfer use inconsistent with the LUCs. Although the Army may later transfer these responsibilities to another party, the Army shall retain ultimate responsibility for remedy integrity.

To implement the remedies selected in this Record of Decision, which will include the imposition of LUCs at SEAD-1, SEAD-2, and SEAD-5, a LUC Remedial Design will be prepared which will provide for the recording of an environmental easement which is consistent with Paragraphs (a) and (c) of the

New York State Environmental Conservation Law (ECL) Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for SEAD-1, SEAD-2, and SEAD-5, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York, which will be recorded at the time of the property's transfer from Federal ownership and which will require the owner and/or any person responsible for implementing the LUCs set forth in this ROD to periodically certify that such institutional controls are in place. The Army and the EPA will be named as third-party beneficiaries on the environmental easement. A schedule for completion of the draft SEAD-1, SEAD-2, and SEAD-5 LUC Remedial Design Plan (LUC RD) will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the Federal Facilities Agreement (FFA). To implement the remedy prior to transfer, the Army, as the owner and operator of the property at SEAD-1, SEAD-2, and SEAD-5, will through the on-site Commander's representative or other designated official, ensure that the LUCs are implemented by monitoring the property at SEAD-1, SEAD-2, and SEAD 5 and restricting development or use on this property if inconsistent with the LUCs.

State Concurrence

NYSDEC forwarded a letter of concurrence to the EPA regarding the selection of the remedial actions. This letter of concurrence has been placed in **Appendix B**.

Declaration

The remedies selected in this ROD are, as required by CERCLA and the NCP, protective of human health and the environment; cost effective; compliant with applicable or relevant and appropriate requirements, criteria or limitations promulgated under federal or state laws (ARARs) unless waived; and, use permanent solutions, alternative treatment technologies, and resource recovery options to the maximum extent possible. CERCLA and the NCP also state a preference for treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

The remedies identified for SEADs 1, 2, and 5 will result in hazardous substances and pollutants or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure for an indeterminate period. A review of the AOCs and the selected remedies will be conducted within five years after the signing of this ROD to ensure that the remedy is, or will be, protective of human health and the environment, with consideration given to each AOC's continuing and planned future use.

5 year review

The remedies identified for SEAD-24 and SEAD-48 do not result in hazardous substances and pollutants or contaminants remaining on-site. The selected remedies for SEAD-24 and SEAD-48 (NFA) are protective of human health and the environment, comply with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and are cost effective. The remedy uses permanent solutions. Insofar as contamination does not remain at these SWMUs at concentrations above levels that provide for unrestricted use and unlimited exposure, institutional controls and five-year reviews are not necessary.

The estimated cost associated with implementing, monitoring, assessing and reporting on the continued suitability of the actions selected for SEADs 1, 2, and 5 is $379,380 in total. There are no estimated costs for the implementation of remedies selected (i.e., NFA) for SEADs 24 and 48.

Source# 3

DEPARTMENT OF THE ARMY
ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
4820 University Square
HUNTSVILLE, AL 35816

December 21, 2009

Contract Task Order request

REPLY TO ATTENTION OF

SUBJECT: Request for Proposal for Contract **W912DY-08-D-0003**, New Task Order (0008), Implementation of The Long-Term Monitoring Plan for The Open Burning (OB) Grounds And Fire Training Areas, Annual Land Use Control (LUC) Evaluation, and Abandonment Of Existing Monitoring Wells At Various Sites, Seneca Army Depot Activity Romulus, New York

Mr. Jeff Adams
Parsons Infastructure & Technology Group
150 Federal Street, 4th Floor
Boston, MA 02110-1713

Dear Mr. Adams:

Please submit a firm fixed price proposal for the subject requirement in accordance with the attached Performance Work Statement (PWS), dated 4 December 2009.

Your firm's priced proposal must be submitted in writing and shall include but not be limited to the following: 1) All the labor categories, number of labor hours and labor hour rates, 2) Any Other Direct Costs that may be associated with this Task Order.

It is requested that your proposal be received by this office, no later than 2:00 p.m., local time, on December 28, 2009. This Request for Proposal (RFP) does not in any manner imply or authorize your firm to begin any actions listed or referenced in the PWS. The point of contact for this action is Laura Stiegler, Contract Specialist, (256) 895-1171; Email: Laura.M.Stiegler@usace.army.mil

Sincerely,

/s/
Van E. Pinion
Contracting Officer

Source #3

PERFORMANCE WORK STATEMENT
IMPLEMENTATION OF THE LONG-TERM MONITORING PLAN
FOR THE OPEN BURNING (OB) GROUNDS AND FIRE TRAINING AREAS,
ANNUAL LAND USE CONTROL (LUC) EVALUATION, AND ABANDONMENT OF EXISTING
MONITORING WELLS AT VARIOUS SITES
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

04 December 2009

1.0 BACKGROUND AND GENERAL STATEMENT OF WORK: Following remediation of the OB Grounds and Fire Training Area sites, long-term monitoring is required to verify the success of the remedial efforts. Sites at which the remedy involves LUCs requires that site-specific controls and controls necessary to assure the protectiveness of the selected remedy are maintained. At sites where no additional actions are required and/or closeout is recommended, existing monitoring wells will require abandonment and closure in accordance with Federal, State, and local requirements.

1.1 GENERAL DESCRIPTION. SEDA is a US Army facility located in Seneca County, New York. SEDA occupies approximately 10,600 acres. It is bounded on the west by State Route 96A and on the east by State Route 96. The cities of Geneva and Rochester are located to the northwest (14 and 50 miles, respectively); Syracuse is 53 miles to the northeast and Ithaca is 31 miles to the south. The surrounding area is generally used for farming.

1.2 REGULATORY STATUS. The Installation was included on the Federal Facilities National Priorities List on 13 July 1989. Consequently, all work to be performed under this contract shall be performed according to Comprehensive Environmental Response Compensation and Liability Act (CERCLA) guidance as put forth in the EPA Interim Final "Guidance for Conducting Remedial Investigations/ Feasibility Studies under CERCLA", the "Federal Facility Agreement under CERCLA Section 120 in the matter of Seneca Army Depot, Romulus, New York", the Final, "Long Term Monitoring Plan for the Open Burning (OB) Grounds, Seneca Army Depot Activity" (Reference 19.8) and the Final, "Long Term Monitoring Plan for the Fire Training Areas (SEAD-25 and SEAD-26), Seneca Army Depot Activity" (Reference 19.9). The Land Use Control Remedial Design (Reference 19.11, 19.12, 19.13, and 19.14) contains the land use control that are required by the sites Record of Decision (ROD). These Institutional Controls (IC) were chosen in accordance with CERCLA and, to the extent practicable, the National Oil and Hazardous Substance Pollution Contingency Plan.

1.3 SECURITY REQUIREMENTS. Compliance with SEDA security requirements is mandated.

2.0 OBJECTIVES:

a. Long Term Monitoring - The contractor shall implement the approved plan for long-term monitoring at the OB Grounds and Fire Training Areas for a period of one year. Following that year of performance, the contractor shall report annual results and provide recommendations for future Long Term Monitoring needs. All work shall be completed in accordance with (IAW) the approved Long Term Monitoring Plans. All field activities shall be performed IAW the approved Accident Prevention Plan for the Seneca program.

b. Land Use Control – The contractor shall implement the inspection and reporting of the LUCs. All work shall be completed IAW the Record of Decision and the Final Land Use Control Remedial Design for the sites specified in this delivery order.

c. Abandonment of Existing Monitoring Wells – The contractor shall prepare a Work Plan for the abandonment and closure of groundwater monitoring wells at various sites on the installation. The contractor shall complete the closure of groundwater monitoring wells in accordance with applicable Federal, State, and local requirements.

3.0 (Task 1) DESCRIPTION OF SERVICES FOR LONG TERM MONITORING OF THE OB GROUNDS YR2:

a. Vegetative Cap, Drainage Swale Inspections, and Reeder Creek Inspections. The Contractor shall inspect the vegetative cap and drainage swales on the site. Inspection shall include observations pertinent to the integrity of the soil and vegetative covering and the condition of run-off channels, infiltration galleries and swales. The Contractor shall also inspect the streambed of Reeder Creek adjacent to the OB Grounds and assess if there is evidence of sediment deposition within areas that were previously excavated. Additionally, the Contractor will assess the conditions of spillways that

previously connected the OB Grounds to Reeder Creek and allowed surface water and sediment to move into the creek. This inspection should assess if there is evidence that soil/sediment/or debris from the OB Grounds is migrating to Reeder Creek.

b. Annual Groundwater Monitoring. The Contractor shall conduct the annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

c. Preparation of the Annual Report. Following completion of the annual monitoring event, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for down gradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring wells.
- A chronological listing of any noted breach or erosion of the vegetative cap and an indication of the corrective action recommended or taken to alleviate the identified condition.
- A descriptive account of any noted soil, sediment or debris migration from the ob grounds too Reeder Creek and observation pertinent to the re-deposition of sediment within that portion of Reeder Creek that abuts the OB Grounds and that was excavated to bedrock during the remedial action.
- A recommendation of any changes (e.g. changing frequency of data collection for the OB Grounds LTM Plan, development of a sediment monitoring program, etc.) that are proposed for implementation for the OB Grounds LTM Plan.

d. PROJECT MANAGEMENT The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

4.0 (Task 2) DESCRIPTION OF SERVICES FOR LONG TERM MONITORING OF THE FIRE TRAINING AND DEMONSTRATION PAD AREA YR3:

a. First Semi-Annual Groundwater Monitoring Event. Upon direction from the KO, the Contractor shall commence the initial semi-annual groundwater monitoring event.

Water Level Monitoring - The Contractor shall assess and document the physical condition of each monitoring well. Observation indicating possible deterioration of the well integrity shall be reported to the Army SEDA BEC. The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Reports - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend analysis for key chemical concentration data developed for each of the key monitoring wells.
- Trend analysis of key indicator parameter data developed for each of the key monitoring wells.

b. Second Semi-Annual Groundwater Monitoring Event. Approximately six months after the initial semi-annual monitoring event, the Contractor shall commence the second semi-annual groundwater monitoring event. The actual timing of this event may be modified, with the permission of the KO, if insufficient water is found to exist in monitoring wells at the site.

Water Level Monitoring - The Contractor shall measure water levels from all wells at the site in order to generate potentiometric maps as part of the analysis and reporting phases.

Water Quality Monitoring - The Contractor shall sample and analyze the water quality at all wells as described in the approved plan. This effort shall include required indicator parameters. All sampling and analysis shall be performed IAW the programmatic Sampling and Analysis Plan (Reference 19.7).

Preparation of Semi-Annual Reports - Following completion of each semi-annual Groundwater Monitoring Event, the Contractor shall prepare and submit a semi-annual report which summarizes and analyzes the data collected and observations made. Presentation shall include:

- Trend plots of groundwater elevation data for each of the monitoring wells.
- Trend analysis for key chemical concentration data developed for each of the key monitoring wells.
- Trend analysis of key indicator parameter data developed for each of the key monitoring wells.

c. Preparation of the Annual Report. Following completion of the YR3 semi-annual groundwater monitoring events, the Contractor shall prepare and submit an annual report which summarizes and analyzes the data collected and observations made over the year's effort. Presentation shall include:

- Complete tabulations, including maximum and minimum levels, of all groundwater elevation data developed.
- Trend plots of groundwater elevation data for each of the monitoring wells.
- A potentiometric map of site groundwater.
- Complete tabulations of all chemical concentration data developed to date.
- Complete tabulations of all indicator parameter data developed to date.
- Summary presentations (e.g. Sample population, maximums, minimums, median, mean, standard deviation, coefficient of variation, etc) of all chemical concentration data developed to date for downgradient and background wells versus the regulatory criteria values.
- Trend plots for key chemical concentration data developed for each of the key monitoring wells.
- Trend plots for all key indicator parameter data developed for each of the key monitoring wells.
- A recommendation of any changes (e.g. changing frequency of data collection to semi annual or annual for the Fire Training and Demonstration Pad (SEAD-25) site, etc.) that are proposed for implementation for the Fire Training and Demonstration Pad (SEAD-25) site.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

5.0 (Task 3) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED BELOW:

SITE	DESCRIPTION
SEAD 27	- STEAM JENNY PIT
SEAD 64A	- GARBAGE DISPOSAL AREA
SEAD 66	- PESTICIDE STORAGE AREA
SEAD 25	- FIRE DEMONSTRATION PAD
SEAD 26	- FIRE TRAINING AREA

TASK w/ sites.

SEAD 39 - **BUILDING 121 BOILER BLOW DOWN PIT**

SEAD 40 - **BUILDING 319 BOILER BLOW DOWN PIT**

SEAD 41 - **BUILDING 718 BOILER BLOW DOWN PIT**

SEAD 67 - **DUMPSITE EAST OF STP 4**

SEAD 13 - **INHIBITED RED FUMING NITRIC ACID (IRFNA)**

SEAD 64B - **GARBAGE DISPOSAL AREA**

SEAD 64C - **RUMORED GARBAGE DISPOSAL AREA**

SEAD 64D - **GARBAGE DISPOSAL AREA**

SEAD 122B - **AIRFIELD SMALL ARMS RANGE**

SEAD 122E - **DEICING LOCATIONS**

SEAD 44A - **QUALITY ASSURANCE TEST LAB WEST**

SEAD 44B - **QUALITY ASSURANCE TEST LAB**

SEAD 43 - **OLD MISSILE PROPELLANT TEST LAB**

SEAD 56 - **HERBICIDE AND PESTICIDE STORAGE**

SEAD 69 - **BUILDING 606 DISPOSAL AREA**

SEAD 62 - **NICOTINE SULFATE DISPOSAL AREA**

SEAD 52 - **AMMUNTION BREAKDOWN AREA**

SEAD 3, 6, 8, 14, and 15 - **ASH LANDFILL OPERABLE Unit**

LUC Inspections

a. **LUC Inspections.** The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. **LUC Annual Report.** The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. **Project Management.** The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

6.0 DESCRIPTION OF SERVICES FOR THE ABANDONMENT OF EXISTING MONITORING WELLS AT VARIOUS SITES LISTED BELOW:

(Task 4) Abandonment of Existing Monitoring Wells at SEAD-5

(Task 5) Abandonment of Existing Monitoring Wells at SEAD-6

(Task 6) Abandonment of Existing Monitoring Wells at SEAD-119B

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

14.0 (Optional Task 27) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR4.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

c. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

15.0 (Optional Task 28) DESCRIPTION OF SERVICES FOR THE MONITORING OF LAND USE CONTROLS (LUCs) AT THE SITES LISTED IN SECTION 5.0 (TASK 3) YR5.

a. LUC Inspections. The Contractor shall inspect the above list of LUC sites. Inspection shall include observations pertinent to the LUC Objectives and Restrictions for a particular site as per the Record of Decision and the Final Land Use Control Remedial Design including Addendum 1-3. (See Reference 19.11, 19.12, 19.13, 19.14)

b. LUC Annual Report. The contractor shall prepare a report describing the activities performed during this effort and presenting the results of the LUC inspections. The contractor shall demonstrate that LUCs have met regulatory requirements.

5 yr review

c. Perform Five Year Review. The contractor shall perform a five-year review in accordance with Federal, State, and local regulatory requirements. The work is required to be performed in accordance with EPA 540-R-01-007, OSWER No. 9355.7-03B-P, June 2001. The purpose of a five-year review 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.

d. Project Management. The contractor shall manage the delivery order in accordance with the basic contract statement of work. All project management associated with the delivery order, with the exception of the direct technical oversight of the work described in the preceding tasks, shall be accounted for in this task.

16.0 SUBMITTALS: The contractor shall furnish copies of all documents to the addressees listed below. One copy of the final documents shall be sent to the CEHNC Project Manager on 3.5-inch computer disk or CD ROM in an acceptable format in addition to the number of hard copies identified below. The contractor shall use express mail services for delivering these documents. Following each submission, comments generated as a result of their review shall be incorporated.

16.1 ADDRESSEES

a) Contracting Officer (KO)
US Army Engineering and Support Center, Huntsville
ATTN: CEHNC-CT-S (MS. Sharon Butler)
4820 University Square,
Huntsville, Alabama, 35816

LUC Inspection with 5 yr review

Client: U.S. Army Corps of Engineers

Contract : RFP W912DY-08-D-0003, Task Order 0008

Project: Long-Term Monitoring OB Grounds and FTA
Annual LUC Evaluations
Abandonment of Monitoring Wells

Parsons
Base Year Tasks 1 - 11
Summary Sheet
Supporting Data Format

Printed: 12-Jan-10

TASK		AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Base Year	Task 1 - Long -Term Monitoring OBG (Yr2)	$ 33,363.41	$ 200.00	$ 33,163.41	$ 1,995.80	$ 29.80	$ 35,389.01
Base Year	Task 2 - Long-Term Monitoring FTA (Yr3)	$ 70,086.17	$ 6,114.00	$ 63,972.17	$ 4,021.75	$ 56.55	$ 74,164.47
Base Year	Task 3 - Monitoring of Land Use Controls (Yr 1)	$ 55,817.56	$ -	$ 55,817.56	$ 3,349.05	$ 57.64	$ 59,224.25
Base Year	Task 4 - Well Abandonment S 5, 59, 71	$ 26,739.70	$ 8,773.69	$ 17,966.01	$ 1,341.17	$ 14.23	$ 28,095.11
Base Year	Task 5 - Well Abandonment , S12, 48, 63	$ 101,610.87	$ 33,340.04	$ 68,270.83	$ 5,096.45	$ 54.09	$ 106,761.41
Base Year	Task 6 - Well Abandonment, S121C, 122B, 70	$ 21,391.76	$ 7,018.96	$ 14,372.81	$ 1,072.94	$ 11.39	$ 22,476.09
Base Year	Task 7 - Well Abandonment, S25, s6	$ 32,087.64	$ 10,528.43	$ 21,559.21	$ 1,609.41	$ 17.08	$ 33,714.13
Base Year	Task 8, Well Abandonment, S24, 67	$ 10,695.88	$ 3,509.48	$ 7,186.40	$ 536.47	$ 5.69	$ 11,238.04
Base Year	Task 9 - Well Abandonment, S3, 6, 8, 14, 15	$ 66,849.26	$ 21,934.24	$ 44,915.02	$ 3,352.93	$ 35.58	$ 70,237.77
Base Year	Task 10 - Well Abandonment, S 119B	$ 5,347.94	$ 1,754.74	$ 3,593.20	$ 268.23	$ 2.85	$ 5,619.02
Base Year	Task 11 - Well Abandonment, S27	$ 2,673.97	$ 877.37	$ 1,796.60	$ 134.12	$ 1.42	$ 2,809.51
				$ -			
TOTAL		$ 426,664.16	$ 94,050.94	$ 332,613.22	$ 22,778.32	$286.33	
PROJECT TOTAL							$ 449,728.80

LUC INSPECTION COST

Client: U.S. Army Corps of Engineers

Contract : RFP W912DY-08-D-0003, Task Order 0008

Project: Long-Term Monitoring OB Grounds and FTA
Annual LUC Evaluations
Abandonment of Monitoring Wells

Parsons
Opt Year 4 Task 28
Summary Sheet
Supporting Data Format

Printed: 12-Jan-10

TASK	AMOUNT	SUBCONTRACTOR	AMT W/O SUBCONTRACTOR	FEE	FCCM	TOTAL
Option Yr 4 Task 28 - Monitoring of Land Use Controls	$ 91,071.34	$ -	$ 91,071.34	$ 5,464.28	$57.13	$ 96,592.75
TOTAL	$ 91,071.34	$ -	$ 91,071.34	$ 5,464.28	$57.13	
PROJECT TOTAL						$96,592.75

LUC Inspection with 5yr review

Cost

Source 4

FINAL

RECORD OF DECISION
FOR
SITES REQUIRING INSTITUTIONAL CONTROLS IN THE PLANNED INDUSTRIAL/OFFICE DEVELOPMENT OR WAREHOUSING AREAS
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

and

UNITED STATES ARMY ENGINEERING & SUPPORT CENTER
4820 UNIVERSITY SQUARE
HUNTSVILLE, ALABAMA

Prepared By:

PARSONS
100 Summer St, Suite 800
Boston, Massachusetts

EPA Site ID No.: NY0213820830
NY Site ID No.: 8-50-006
DACA87-95-D-0031, Delivery Order 21
736026

July 2004

sites

1.0 DECLARATION OF THE RECORD OF DECISION

Site Name and Location

Building 360 – Steam Cleaning Waste Tank (SEAD-27), the Garbage Disposal Area (SEAD-64A), and the Pesticide Storage Area Near Building 5 and 6 (SEAD-66).

Seneca Army Depot Activity (SEDA)
CERCLIS ID# NY0213820830
NY State ID# 8-50-006
Romulus, Seneca County, New York

Statement of Basis and Purpose

This decision document presents the U.S. Army's and EPA's selected remedy for Building 360 – Steam Cleaning Waste Tank (SEAD-27), the Garbage Disposal Area (SEAD-64A), and the Pesticide Storage Area Near Building 5 and 6 (SEAD-66), located at the Seneca Army Depot Activity (SEDA) near Romulus, New York. The decision was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended, 42 United States Code (USC) §9601 et seq. and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator; the Director, National Capital Region Field Office; and the U.S. Environmental Protection Agency (USEPA) Region II have been delegated the authority to approve this Record of Decision (ROD.

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, Building 123, Romulus, NY. The Administrative Record Index identifies each of the items considered during the selection of the remedial action. This index is included in **Appendix A.**

The State of New York, through NYSDEC and the New York State Department of Health (NYSDOH), has concurred with the Selected Remedy. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

Site Assessment

The response action selected in this ROD is necessary to protect the public health and the environment from actual or threatened releases of hazardous substances into the environment or from actual or threatened releases of pollutants or contaminants from this site that may present an imminent and substantial endangerment to public health or welfare.

Description of the Selected Remedy

The Army recommends establishing institutional controls (ICs) in the form of land use controls (LUCs) at SEADs 27, 64A, and 66. The LUCs will be applied area wide. A map showing the location of SEADs 27, 64A, and 66 and the LUC boundary is provided at **Figure 1-1.** Five year reviews of this remedy will be conducted in accordance with Section 120(c) of CERCLA.

LUCs

Land Use Control Performance Objectives

The LUC performance objectives at these sites are as follows and will also be incorporated into deeds and/or leases for this property:

- Prevent residential housing, elementary and secondary schools, childcare facilities and playgrounds activities at the SEAD 27, 64a, and 66 sites.
- Prevent access to or use of the groundwater at the SEAD 27, 64a, and 66 sites until Class GA Groundwater Standards are met.
- Prevent unauthorized excavation at the SEAD 64a site.

The LUCs will continue until the concentration of hazardous substances in the soil and the groundwater beneath have been reduced to levels that allow for unlimited exposure and unrestricted use.

Land Use Control Remedial Design

In order to implement the Army's remedy, which includes the imposition of land use controls, a LUC Remedial Design for the Sites Requiring Institutional Controls in the Planned Industrial/Office or Warehousing Area ("PID Area"), will be prepared which satisfies the applicable requirements of Paragraphs (a) and (c), Environmental Conservation Law (ECL) Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for the PID Area, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York and the Army, which will be recorded at the time of the property's transfer from federal ownership.

A schedule for completion of the draft Institutional Control Remedial Design Plan will be completed within 21 days of the ROD signature consistent with Section 14.4 of the Federal Facilities Agreement (FFA).

The Army shall be responsible for implementing, inspecting, reporting on and enforcing the LUCs described in this ROD in accordance with the approved LUC remedial design. Although the Army may later transfer these responsibilities to another party by contract, property transfer agreement, or

Source #5

RECORD OF DECISION

Sites

FOR

THE DEFENSE REUTILIZATION AND MARKETING OFFICE (DRMO) YARD (SEAD 121C)
AND
THE RUMORED COSMOLINE OIL DISPOSAL AREA (SEAD 121I)

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

and

UNITED STATES AIR FORCE CENTER FOR ENGINEERING AND THE ENVIRONMENT
3300 SYDNEY BROOKS
BROOKS CITY-BASE, TEXAS 78235

Prepared By:

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150 Federal Street, 4th Floor
Boston, Massachusetts

Contract Number: FA8903-04-D-8675
Task Order: 0031
CDRL: A001C
EPA Site ID: NY0213820830; NY Site ID: 8-50-006

June 2008

1 DECLARATION OF THE RECORD OF DECISION

Site Name and Location

The Defense Reutilization and Market Office (DRMO) Yard (SEAD 121C) and the Rumored Cosmoline Oil Disposal Area (SEAD 121I)
Seneca Army Depot Activity
CERCLIS ID# NY0213820830
Romulus, Seneca County, New York

Statement of Basis and Purpose

This decision document presents the U.S. Army's (Army's) and the U.S. Environmental Protection Agency's (EPA's) selected remedies for two areas of concern (AOCs), SEAD 121C and SEAD 121I located at the Seneca Army Depot Activity (SEDA or the Depot) in the Towns of Varick and Romulus, Seneca County, New York. The decisions were developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended, 42 U.S.C. §9601 et seq., and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator, the Chief, Consolidations Branch, Army BRAC Division, and the Acting Director, EPA Region II have been delegated the authority to approve this Record of Decision (ROD).

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, 5786 State Route 96, Building 123, Romulus, NY 14541. The Administrative Record Index identifies each of the items considered during the selection of the remedial actions. This index is included in **Appendix A.**

The State of New York, through the New York State Department of Environmental Conservation (NYSDEC), has concurred with the selected remedy. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

Site Assessment

The response actions selected in this ROD are necessary to protect human health and the environment from actual or threatened releases of hazardous substances into the environment or from actual or threatened releases of pollutants or contaminants from SEAD 121C and SEAD 121I, which may present an imminent and substantial endangerment to public health or welfare.

Description of the Selected Remedy

Remed-1

The ~~selected remedies for SEAD~~ 121C and SEAD 121I address contaminated soil and groundwater. The selected remedies will result in the elimination of soil and groundwater as exposure pathways for potential receptors.

Source 6

RECORD OF DECISION

FOR

THE FILL AREA WEST OF BUILDING 135 (SEAD-59) AND THE ALLEGED PAINT DISPOSAL AREA (SEAD-71)

ROD for Site

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
5786 STATE ROUTE 96
ROMULUS, NEW YORK 14541

and

UNITED STATES ARMY CORPS OF ENGINEERS
4820 UNIVERSITY SQUARE
HUNTSVILLE, ALABAMA 35816

Prepared By:

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150 Federal St., 4th Floor
Boston, Massachusetts 02110

Contract Number: DACA87-02-D-0005
Delivery Orders: 0013
USEPA Site ID: NY0213820830
NY Site ID: 8-50-006

March 2009

1.0 DECLARATION OF THE RECORD OF DECISION

Areas of Concern Name and Location

The Fill Area West of Building 135 (SEAD-59) and the Alleged Paint Disposal Area (SEAD-71)
Seneca Army Depot Activity
5786 State Route 96
Romulus, New York 14541
USEPA Site ID: NY0213820830; NY Site ID: 8-50-006

Statement of Basis and Purpose

This Record of Decision (ROD) documents the U.S. Army's (Army's) and the U.S. Environmental Protection Agency's (USEPA's) selected remedies for the Fill Area West of Building 135 (SEAD-59) and the Alleged Paint Disposal Area (SEAD-71) located at the Seneca Army Depot Activity (SEDA or the Depot) in the Towns of Varick and Romulus, Seneca County, New York. The decisions for these two areas of concern (AOCs) were developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended, 42 U.S.C. Section 9601, *et seq.* and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. The Base Realignment and Closure (BRAC) Environmental Coordinator, the Chief, Consolidations Branch, BRAC Division, and the USEPA Region II have been delegated the authority to approve this Record of Decision (ROD).

This ROD is based on the Administrative Record that has been developed in accordance with Section 113(k) of CERCLA. The Administrative Record is available for public review at the Seneca Army Depot Activity, 5786 State Route 96, Building 123, Romulus, NY 14541. The Administrative Record Index identifies each of the items considered during the selection of the remedial actions. This index is included in **Appendix A**.

The State of New York, through the New York State Department of Environmental Conservation (NYSDEC), has concurred with the selected remedies. The NYSDEC Declaration of Concurrence is provided in **Appendix B** of this ROD.

AOC Assessment

The response actions selected in this ROD are necessary to protect human health and the environment from actual or threatened releases of hazardous substances into the environment from SEAD-59 and SEAD-71 or from actual or threatened releases of pollutants or contaminants, which may present an imminent and substantial endangerment to public health or welfare.

Description of the Selected Remedies

The selected remedies for SEAD-59 and SEAD-71 address contaminated soil and groundwater. The selected remedies will result in the removal of soil and groundwater as exposure pathways for potential receptors.

The elements that compose the selected remedies at SEAD-59 and SEAD-71 include:

LUC

- Establish, monitor, and maintain land use controls (LUCs) that:
  - Prohibit access to or use of the groundwater until unrestricted use and unlimited exposure criteria are attained; and,
  - Prohibit the development or use of the property for residential housing, elementary and secondary schools, childcare facilities and playgrounds until unrestricted use and unlimited exposure criteria are attained at SEAD-59 and SEAD-71.

Soils excavated from SEAD-59 and SEAD-71 that remain staged in stockpiles in the vicinity of the two AOCs will be moved to SEAD-5 where they will continue to be managed by the Army. Although these soils contain measureable concentrations of hazardous substances, they are not hazardous by characteristic determinations (i.e., toxicity characteristic, ignitability, corrosivity, reactivity). It is possible that the stockpiled soil will subsequently be used as part of a multi-layered cap that may be constructed over SEAD-5 soil to address conditions that have been identified at that AOC.

SEAD-59 and SEAD-71 represent a small portion of a larger tract of land located in the east-central portion of the former SEDA that comprises the Planned Industrial / Office Development and Warehousing (PID) Area that has been transferred to the Seneca County Industrial Development Agency (SCIDA), exclusive of any Army retained property. Based on an agreement reached between the Army, the USEPA, and the NYSDEC, the entire PID Area, exclusive of Army retained property, is subject to equivalent LUCs (i.e., prohibit groundwater access/use; prohibit residential housing/elementary and secondary schools/childcare facilities/playgrounds) as are proposed for imposition at SEAD-59 and SEAD-71 in this ROD. The referenced LUCs were the remedy selected in a 2004 ROD [*Final ROD for Sites Requiring Institutional Controls in the Planned Industrial/Office Development or Warehousing Areas* (Parsons, 2004)] for SEAD 27, 64A, and 66, three other AOCs within the PID Area, due to levels of contaminants that were identified at those AOCs. At the time of the 2004 ROD, the Army, USEPA, and NYSDEC agreed that these LUCs should be applied to all land within the greater PID Area, pending the provision and evaluation of new data for specific sites within the PID Area if a future owner or occupant wished to apply for a variance from the specified LUCs. The PID Area LUCs were implemented when the PID Area was transferred to the SCIDA by the Army, but they are not applied to the land comprising SEAD-59 and SEAD-71, as these parcels were retained by the Army at the time of the greater PID Area's transfer, pending completion of necessary investigations and studies, the evaluation of potential remedial actions, and the selection of an approved remedy for SEAD-59 and SEAD-71.

The Army shall, through the on-site Commander's representative or other designated official, implement, inspect, report on, and enforce the remedy described in this ROD. This ROD selects as the remedy for SEAD-59 and SEAD-71 LUCs (i.e., groundwater access/use and land use limitations) to be imposed by an environmental easement at the time when land comprising SEAD-59 or SEAD-71 is transferred from Army ownership to another party, as well as the prohibition of any pre-transfer use inconsistent with the LUCs. Although the Army may later transfer these responsibilities to another party, the Army shall retain ultimate responsibility for remedy integrity.

To implement the remedies selected in this Record of Decision, which will include the imposition of LUCs at SEAD-59 and SEAD-71, a LUC Remedial Design will be prepared which will provide for the recording of an environmental easement which is consistent with Paragraphs (a) and (c) of the New York State Environmental Conservation Law (ECL) Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for SEAD-59 and SEAD-71, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York, which will be recorded at the time of the property's transfer from Federal ownership and which will require the owner and/or any person responsible for implementing the LUCs set forth in this ROD to periodically certify that such institutional controls are in place. The Army and the USEPA will be named as third-party beneficiaries on the environmental easement. A schedule for completion of the draft SEAD-59 and SEAD-71 LUC Remedial Design Plan (LUC RD) will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the Federal Facilities Agreement (FFA). To implement the remedy prior to transfer, the Army, as the owner and operator of the property at SEAD-59 and SEAD-71, will through the on-site Commander's representative or other designated official, ensure that the LUCs are implemented by monitoring the property at SEAD 59 and SEAD 71 and restricting development or use on this property if inconsistent with the LUCs.

Once the selected remedies are applied, a review of the selected remedies will be made at least once every five years in accordance with Section 121(c) of the CERCLA. The periodic reviews of the remedies are required by CERCLA at sites where contamination remains in order to assure the protectiveness of the selected remedy.

The groundwater access/use restriction and the restriction prohibiting residential housing, elementary and secondary schools, childcare facilities and playgrounds may be eliminated, on a site-by-site basis, if data is provided to, and approved by, the Army, USEPA, and the NYSDEC that documents that groundwater quality achieves applicable groundwater standard levels and that soil data allows for unrestricted use and unlimited exposures.

The Army and USEPA expect that remedial action will be needed at SEAD-5 to address soils currently in the ground at that AOC that represent a potential risk to human health. One of the potential remedial actions that may be taken at SEAD-5 is to spread the stockpiled soils staged at SEAD-59 out over soils in SEAD-5 that pose the potential threat. The stockpiled soil would become part of a multi-layered cover that would be placed over the contaminated soil to prohibit access and exposure to future users or occupants. The SEAD-5 remedial action would be followed by the imposition of a LUC to restrict allowable activities at that AOC, and an imposition of a LUC to protect the soil cover and the demarcation fabric above such interred soils. The remedial action for SEAD-5 will be addressed in a separate Record of Decision to be issued pursuant to CERCLA for that AOC.

State Concurrence

NYSDEC forwarded to USEPA a letter of concurrence regarding the selection of a remedial action in the future. This letter of concurrence has been placed in **Appendix B**.

Source #7

Owner Cost

In *RACER*, Owner Cost is the owner's workforce cost to initiate, contract, oversee, direct, implement and closeout the project. Owner costs may include the following categories or items:

- Supervision, Inspection, and Overhead (SIOH);
- Construction management and "Owner's Representative" services;
- Laboratory quality assurance;
- Operations and maintenance manual; and
- Other costs (e.g. technical, real estate, administrative, contracting, accounting, etc.).

The system default percentage for Owner Cost is 11 %. The valid range for the Owner Cost markup factor is 0% to 20%.

- Direct Costs
- Professional Labor Overhead / G&A
- Field Office Overhead / G&A
- Prime Contractor Profit
- Subcontractor Profit
- Contingency
- Markup Calculations
- Applying Markup Percentages
- Adjusting Markups for Each Technology
- Creating Custom Markup Templates
- Markups Report

Markups - Overview

To calculate the total cost for a work package, markups for various categories of indirect costs must be added to the direct cost. The fundamental equation is:

Total Cost = (Direct Cost) + (Markups for Indirect Costs)

Markups are all costs other than direct costs that do not become a permanent part of the facilities nor contribute directly to the study or design activities. The *RACER* Markup Template contains six factors that are used to calculate indirect costs:

- Professional Labor Overhead/G&A
- Field Office Overhead/G&A
- Subcontractor Profit
- Prime Contractor Profit
- Contingency
- Owner Costs

Markup percentages are applied at Level 3 (Phase). If you do not select a markup template at Level 3 (Phase), the System Default Markups will be applied to the phase.

The System Default Markups were developed using remediation and general construction industry data obtained from various educational institutions, professional societies and associations, subject-matter experts, commercial organizations, and government agencies. The data was reviewed by a group consisting of representatives from private industry, the Air Force, the Army Corps of Engineers, and the Department of Energy.

- Direct Costs
- Professional Labor Overhead / G&A
- Field Office Overhead / G&A
- Prime Contractor Profit
- Subcontractor Profit
- Contingency
- Owner Cost
- Markup Calculations
- Applying Markup Percentages
- Adjusting Markups for Each Technology
- Creating Custom Markup Templates
- Markups Report

Source #8

FINAL

RECORD OF DECISION

FOR

ASH LANDFILL

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

and

UNITED STATES ARMY CORPS OF ENGINEERS
4820 UNIVERSITY SQUARE
HUNTSVILLE, ALABAMA

Prepared By:

PARSONS
100 Summer Street, 8th Floor
Boston, Massachusetts

Contract Number: DACA87-95-D-0031
Delivery Order 0010

July 2004

The Ash Landfill Operable Unit includes SEADs 3, 6, 8, 14 and 15, which are described in **Section 2.0** of this ROD.

Site

Description of the Selected Remedy

The selected remedy for the Ash Landfill Operable Unit consists of a combination of one source control alternative and one migration control alternative. The selected remedy removes potential sources of soil and groundwater contamination and addresses residually-contaminated soil and groundwater. The selected remedy for the Ash Landfill Operable Unit consists of the following elements:

- Excavation and off-site disposal of Debris Piles, and establishment and maintenance of a vegetative soil cover for the Ash Landfill and the Non-Combustion Fill Landfill (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;
- Backfilling and re-grading the Incinerator Cooling Water Pond (SEAD-3) to fill the pond during the excavation of the debris piles;
- A Contingency Plan will 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;
- Land Use Controls (LUCs) to attain the remedial action objectives; 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 will conduct a review of the remedy's effectiveness one year after the walls are installed. Subsequent annual reviews will be performed until the first five year review. The typical five year review schedule will be followed thereafter.

LUC

5 yr review

Land Use Control Performance Objectives

The LUC performance objectives for the Ash Landfill 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.

The groundwater LUCs will be continued 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.**

LUC Remedial Design

In order to implement the Army's remedy, which includes the imposition of land use controls, a LUC Remedial Design for the Ash Landfill will be prepared which satisfies the applicable requirements of Paragraphs (a) and (c), Environmental Conservation Law (ECL) Article 27, Section 1318: Institutional and Engineering Controls. In addition, the Army will prepare an environmental easement for the Ash Landfill, consistent with Section 27-1318(b) and Article 71, Title 36 of ECL, in favor of the State of New York and the Army, which will be recorded at the time of the property's transfer from federal ownership. A schedule for completion of the draft Ash Landfill LUC Remedial Design Plan (LUC RD) will be completed within 21 days of the ROD signature, consistent with Section 14.4 of the Federal Facilities Agreement (FFA).

The Army shall implement, inspect, report, and enforce the LUCs described in this ROD in accordance with the approved LUC RD. Although the Army may later transfer these responsibilities to another party by contract, property transfer agreement, or through other means, the Army shall retain ultimate responsibility for remedy integrity. Should the Army transfer these responsibilities, the Army shall provide timely written notice to the regulators of the transferee which shall include the entity's name, address, and general remedial responsibility.

The five-year reviews are intended to evaluate whether the response actions remain protective of public health and the environment, and they would consist of document review, ARAR review, interviews, inspection/technology review, and reporting.

State Concurrence

NYSDOH forwarded a letter of concurrence regarding the selection of a remedial action to NYSDEC, and NYSDEC, in turn, forwarded to EPA a letter of concurrence regarding the selection of a remedial action. This letter of concurrence has been placed in **Appendix B**.

Declaration

The selected remedy is consistent with CERCLA and, to the extent practicable, with the NCP, and it is protective of human health and the environment, complies with federal and state requirements that

Estimate Documentation Report

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-9
Project Name: SEAD-9
Project Category: Multiple Locations

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

Multiple Sites - these sites were grouped into sites that will proceed to a No Action ROD or No Further Action ROD after acceptance of PRAP.

Site: SEAD- 9 Old Scrap Wood Pile

1. Record of Decision for Twenty No Action SWMUs (SEADs 7, 9, 10, 18, 19, 20, 21, 22, 23, 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) September 2003
2. Final ROD For Seventeen SWMUs Requiring Institutional Controls, SEADs- 13, 39, 40, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, 122E; July 2007
3. Final PRAP Five Former SWMUs- 1, 2, 5, 24 and 48, October 2007
4. Professional judgment based on site knowledge
5. Final ROD for sites requiring Institutional Controls in Planned Industrial/Office Development or Warehousing Area, July 2004

Estimate Documentation Report

Industrial/Office Development or Warehousing Area, July 2004

NOTE:
1. SEAD-1 and SEAD-2 and SEAD-67 are included with this site for LTM.

All LUCs, Well Abaondonment, and Five year reviews have contract cost documentation.

Additional site information:

RACER Assumptions:

Site Closeout Documentation (LTM)
1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years

Estimate Documentation Report

Site Documentation:

Site ID: SEAD-9
Site Name: Old Scrap Wood Pile (Multiple sites)
Site Type: None

Media/Waste Type
Primary: N/A
Secondary: N/A

Contaminant
Primary: None
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: SEAD- 9 Old Scrap Wood Pile .

LUC operation period to run from 2010 through 2037.
Support Team: Stephen M. Absolom- SEDA BEC
Randy Battaglia- US Army Corps of Engineers, Project Manager
References:
1. Record of Decision for Twenty No Action SWMUs (SEADs7,9,10,18,19,20,21,22,23,33,35,36,37,42,47,49,51,53,55,65, and 68) and Eight No Further Action SWMUs (SEADs 28,29,30,31,32,34,60, and 61) September 2003
2. Draft Proposed Plan No Action/No Further Action for SWMU's SEAD-13, 39, 40, 43, 44A, 44B, 56, 67, and 122B at the Seneca Army Depot Activity, March 2005
3. Draft PRAP For Seventeen SWMUs Requiring Institutional Controls, SEADs-13,39,40,43/56/69,44A,44B,52,62,64B,64C,64D,67,122B,122E; October 2005
4. Draft PRAP No Action/Further Action for SWMUs SEAD-58 and SEAD-63; October 2005
5. Professional judgment based on site knowledge

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541

Estimate Documentation Report

Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 02/05/2010

Estimator Signature: **Date:**

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96 Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil
Date Reviewed: 02/05/2010

Reviewer Signature: **Date:**

Estimated Costs:

Phase Element Names		Direct Cost	Marked-up Cost
LTM #1 Site Closeout Documentation		$22,729	$56,625
	Total Cost:	$22,729	$56,625

Site WBS Report
(with Markups)

System:

RACER Version: 10.3.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.3\Racer.mdb

Folder:

Folder Name: Seneca Army Depot

Project:

Project ID: SEAD-9
Project Name: SEAD-9
Project Category: Multiple Locations

Location
State / Country: NEW YORK
City: SENECA ARMY DEPOT

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2010
Report Option: Fiscal

Description

Multiple Sites - these sites were grouped into sites that will proceed to a No Action ROD or No Further Action ROD after acceptance of PRAP.

Site: SEAD- 9 Old Scrap Wood Pile

1. Record of Decision for Twenty No Action SWMUs (SEADs 7, 9, 10, 18, 19, 20, 21, 22, 23, 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) September 2003
2. Final ROD For Seventeen SWMUs Requiring Institutional Controls, SEADs- 13, 39, 40, 43/56/69, 44A, 44B, 52, 62, 64B, 64C, 64D, 67, 122B, 122E; July 2007
3. Final PRAP Five Former SWMUs- 1, 2, 5, 24 and 48, October 2007
4. Professional judgment based on site knowledge
5. Final ROD for sites requiring Institutional Controls in Planned Industrial/Office Development or Warehousing Area, July 2004

Site WBS Report
(with Markups)

NOTE:
1. SEAD-1 and SEAD-2 and SEAD-67 are included with this site for LTM.

All LUCs, Well Abaondonment, and Five year reviews have contract cost documentation.

Additional site information:

RACER Assumptions:

Site Closeout Documentation (LTM)
1. Site Closeout is moderate complexity
2. Kick-off, review and regulatory meetings
3. Work Plans and reports- all default values
4. Documents will be stored for 30 years

Site WBS Report
(with Markups)

Site:

Site ID: SEAD-9
Site Name: Old Scrap Wood Pile (Multiple sites)
Site Type: None

Media/Waste Type
Primary: N/A
Secondary: N/A

Contaminant
Primary: None
Secondary: None

Phase Element Names
SI:
RI/FS:
RD:
IRA:
RA(C):
RA(O):
LTM:
Site Closeout:

Documentation
Description: SEAD- 9 Old Scrap Wood Pile .

LUC operation period to run from 2010 through 2037.
Support Team: Stephen M. Absolom- SEDA BEC
Randy Battaglia- US Army Corps of Engineers, Project Manager
References: 1. Record of Decision for Twenty No Action SWMUs (SEADs7,9,10,18,19,20,21,22,23,33,35,36,37,42,47,49,51,53,55,65, and 68) and Eight No Further Action SWMUs (SEADs 28,29,30,31,32,34,60, and 61) September 2003
2. Draft Proposed Plan No Action/No Further Action for SWMU's SEAD-13, 39, 40, 43, 44A, 44B, 56, 67, and 122B at the Seneca Army Depot Activity, March 2005
3. Draft PRAP For Seventeen SWMUs Requiring Institutional Controls, SEADs-13,39,40,43/56/69,44A,44B,52,62,64B,64C,64D,67,122B,122E; October 2005
4. Draft PRAP No Action/Further Action for SWMUs SEAD-58 and SEAD-63; October 2005
5. Professional judgment based on site knowledge

Estimator Information
Estimator Name: Randy Battaglia
Estimator Title: Project Manager
Agency/Org./Office: US Army Corps of Engineers/ New York District
Business Address: USACE, Seneca Army Depot, 5786 Rte 96, Romulus, NY 14541
Telephone Number: 607-869-1523

Site WBS Report
(with Markups)

Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 02/05/2010

Estimator Signature: **Date:**

Reviewer Information

Reviewer Name: Steve Absolom
Reviewer Title: Installation Manager
Agency/Org./Office: Seneca Army Depot Activity
Business Address: 5786 Rte 96 Romulus, NY 14541
Telephone Number: (607) 869-1309
Email Address: stephen.m.absolom@us.army.mil
Date Reviewed: 02/05/2010

Reviewer Signature: **Date:**

Site WBS Report
(with Markups)

Phase Element:

Phase Element Type: Long Term Monitoring
Phase Element Name: LTM #1 Site Closeout Documentation
Description: Site close out documentation for Multiple Sites, SEAD 9.

Start Date: October, 2010
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate

Phase Element Markups: System Defaults

Technology Markups	Markup	% Prime	% Sub.
Site Close-Out Documentation	Yes	100	0

Site WBS Report
(with Markups)

HTRW RA WBS		Marked Up Costs
331	HTRW REMEDIAL ACTION (CONSTRUCTION)	
331.20	SITE RESTORATION	
331.20.90	Other	
	Site Close-Out Documentation	$56,625
		$56,625
	Total:	$56,625
	HTRW RA WBS Total:	$56,625
	Total:	**$56,625**

FINAL

RECORD OF DECISION

FOR

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)

SENECA ARMY DEPOT ACTIVITY

ROMULUS, NEW YORK

Prepared for:

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

and

UNITED STATES ARMY CORPS OF ENGINEERS
4820 UNIVERSITY SQUARE
HUNTSVILLE, ALABAMA

Prepared By:

PARSONS
100 Summer Street, Suite 800
Boston, Massachusetts 02110

Contract Number: DACA87-95-D-0031
Delivery Order 0021

September 2003

TABLE 1

NO ACTION (NA) AND NO FURTHER ACTION (NFA) SWMUs CONSIDERED IN THIS ROD

UNIT NUMBER	UNIT NAME	Recommendation	Basis of NA/NFA Determination [1]	Reference [2]
SEAD-7	Shale Pit	No Action	A	Parsons, 2002c
SEAD-9	Old Scrap Wood Site	No Action	D	Parsons, 2002b
SEAD-10	Present Scrap Wood Site	No Action	C	Parsons, 2002c
SEAD-18	Building 709 – Classified Document Incinerator	No Action	C	Parsons, 2002c
SEAD-19	Building 801 – Classified Document Incinerator	No Action	C	Parsons, 2002c
SEAD-20	Sewage Treatment Plant No. 4	No Action	A	Parsons, 2002c
SEAD-21	Sewage Treatment Plant No. 715	No Action	A	Parsons, 2002c
SEAD-22	Sewage Treatment Plant No. 314	No Action	A	Parsons, 2002c
SEAD-28	Building 360 – Underground Waste Oil Tanks (2)	No Further Action	C, E	Parsons, 2002b
SEAD-29	Building 732 - Underground Waste Oil Tanks (2 units)	No Further Action	E	Parsons, 2002c
SEAD-30	Building 118 – Underground Waste Oil Tank	No Further Action	E	Parsons, 2002c
SEAD-31	Building 117 – Underground Waste Oil Tank	No Further Action	E	Parsons, 2002c
SEAD-32	Building 718 – Underground Waste Oil Tanks	No Further Action	C, E	Parsons, 2002b
SEAD-33	Building 121 – Underground Waste Oil Tank	No Action	C	Parsons, 2002b
SEAD-34	Building 319 – Underground Waste Oil Tanks (2)	No Further Action	C, E	Parsons, 2002b
SEAD-35	Building 718 - Waste Oil-Burning Boilers (3 units)	No Action	A	Parsons, 2002c
SEAD-36	Building 121 - Waste Oil-Burning Boilers (2 units)	No Action	A	Parsons, 2002c
SEAD-37	Building 319 - Waste Oil-Burning Boilers (2 units)	No Action	A	Parsons, 2002c
SEAD-42	Building 106 - Preventive Medicine Laboratory	No Action	B	Parsons, 2002c
SEAD-47	Buildings 321 And 806 – Radiation Calibration Source Storage	No Action	C	Parsons, 2003
SEAD-49	Building 356 – Columbite Ore Storage	No Action	C	Parsons, 2002c
SEAD-51	Herbicide Usage Area – Perimeter of High Security Area	No Action	C	Parsons, 1994 and EPA 2003

TABLE 1 (continued)

NO ACTION (NA) AND NO FURTHER ACTION (NFA) SWMUs
CONSIDERED IN THIS ROD

UNIT NUMBER	UNIT NAME	Recommendation	Basis of NA/NFA Determination [1]	Reference [2]
SEAD-53	Munitions Storage Igloos	No Action	A	NRC, 2003
SEAD-55	Building 357 - Tannin Storage	No Action	A	Parsons, 2002c
SEAD-60	Oil Discharge Adjacent to Building 609	No Further Action	E	Parsons, 2002b
SEAD-61	Building 718 - Underground Waste Oil Tank	No Further Action	A, E	Parsons, 2002c
SEAD-65	Acid Storage Areas	No Action	A	Parsons, 2002c
SEAD-68	Building S-335 Old Pest Control Shop	No Action	D	Parsons, 2002b

Notes:

1. The SWMU was determined No Action (NA) or No Further Action (NFA) based on compliance with at least one of the following five criteria:

   A - Some sites initially listed were based on a 1980 Army report listing suspect or potential sites (USATHAMA, 1980). Subsequent evaluation of historic records and information indicate that there is no evidence or indication of petroleum product, hazardous materials or solid wastes present or released to the environment. These SWMUs would be classified as No Action (NA).

   B – Interviews or records suggested the presence of a potential site or SWMU, however no identifiable location was found. This SWMU is recommended for No Action

   C – Based on the analysis of collected sampling data, the Army has determined that there are no instances where hazardous materials have been detected; or if hazardous chemicals have been detected in specific media, the concentrations at which they have been found do not exceed promulgated regulatory criteria determined [e.g., New York Class C surface water criteria, New York GA Groundwater Standards, federal Maximum Contaminant Levels (MCLs), etc.] by the State of New York or the federal government. This SWMU is recommended for No Action.

   D - If data indicates that hazardous chemicals are present above criteria limits, the results of a human health risk assessment indicate that the land encompassed by the identified SWMU is suitable for unrestricted use (residential use). This SWMU is recommended for No Action

   E - Action on a site was taken, and the site was closed out under another regulatory program (e.g., tank removal). This SWMU is recommended for No Further Action

2. See Appendix A, Administrative Record