479-36

MEMORANDUM FOR RECORD

Date: 19 March 2011

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 2011 data call. The Remedial Action Cost Engineering and Requirements (RACER) 10.4 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 five of a 10-year anticipated commitment. Five years remain. Groundwater monitoring at SEAD 26 was concluded in March 2007. The RFP W91DY-08-D-0003 task Order 0008 (Source 2) was used 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 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.
4. Data call 18 Oct 2010 ACSIM.

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

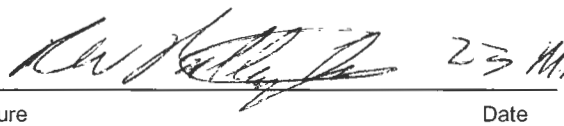
Owner Support Assumptions:
Procurement, S&A, and Contract Closeout for non-RACER estimates are set at 11% of estimated cost and consistent with RACER guidance.

Cost Summary SEAD-25

LTM	
GW Monitoring and LUC management (RFP Contract Cost, Task 2: Source 2) Escalation to FY11 $74,164.47 x 1.0201 Cost = $75,655/yr X 4 yrs	$302,620
GW monitoring, LUC management and 5 Year review (RFP Contract Cost, Task 24: Source 2) Cost per event $103,207 Escalate to FY11 103,207 x 1.02010= 105,281 x (2 events 2016 & 2021) =210,562	$201,562
Site Closeout (RACER)	$36,801
Well Abandonment (RACER)	$58,507
Owner Support Cost (Source #3) 11% of Cost	
LTM Ground Water, LUC& 5 Yr review ($302,620+$210,562) x 0.11= $56,450	$56,450
Total Site Cost	**$654,940** ($655K rounded)

Material Change: No.

Prepared by: Randall Battaglia
Cost Estimator



Signature Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

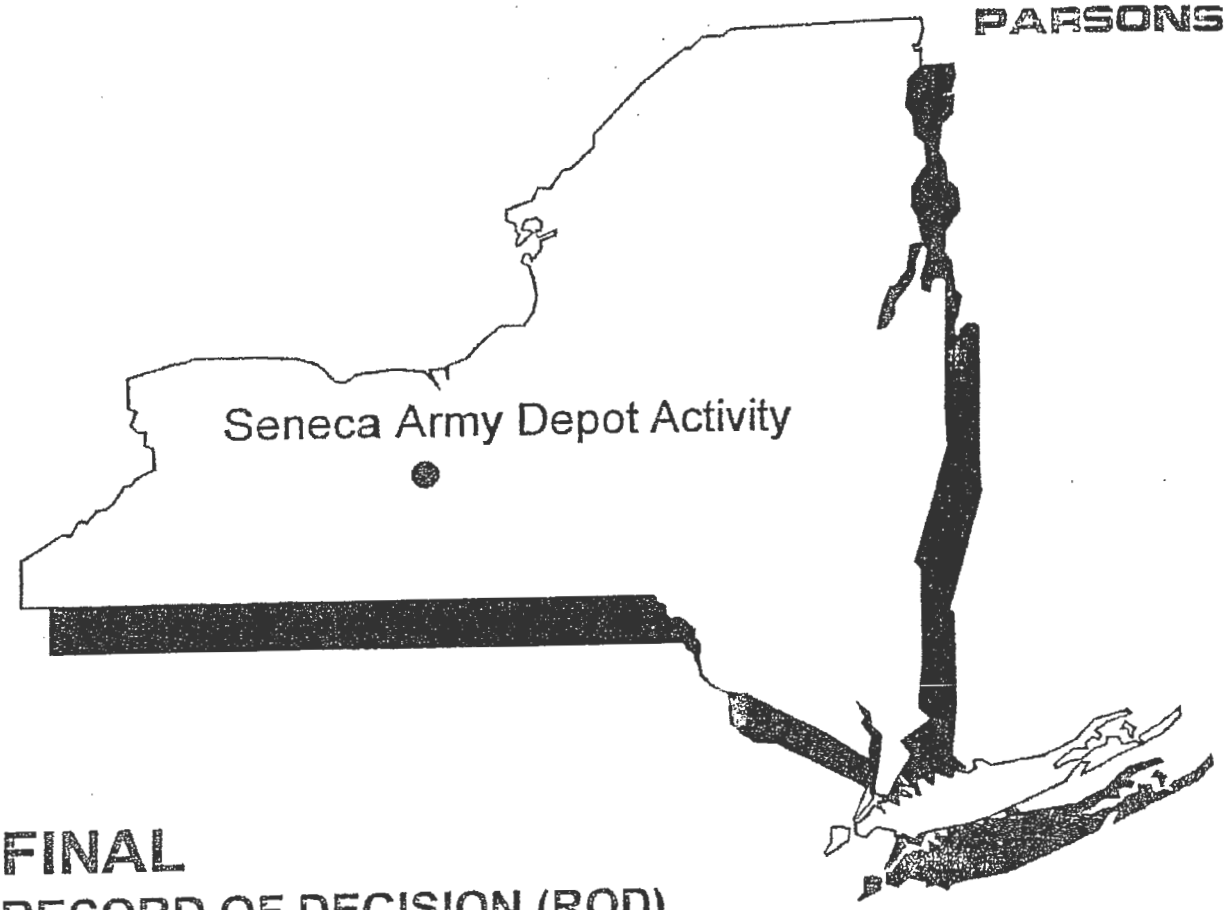
Signature Date

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

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

F.Y. 09 74,164.47

ESCALFACTOR 1.0201

F.Y.11 COST 75,655

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

F.Y. 09 Cost 103,207.02

FY 11 ESC. Factor 1.0201

FY 11 Cost 105,281

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%.

Related Topics

- *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*

Source 4

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

18 OCT 2010

DAIM-IS

S: 8 Apr 11
15 Apr 11
15 Jul 11
31 Aug 11
09 Sep 11
1 Oct 11

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: FY11 Army Environmental Database - Restoration (AEDB-R) and Army Environmental Database - Compliance Cleanup (AEDB-CC) Data Calls

1. The official start of the FY11 Data Call for AEDB-R and AEDB-CC is 8 Nov 10. Enclosures 1-3 provide a timeline for Spring and Fall data submissions based on installation type. Enclosure 1 contains the Legacy Base Realignment and Closure (BRAC) (BRAC 88, 91, 93 and 95) and BRAC 05 submittal schedule. The Active and non-BRAC Excess schedule is provided at Enclosure 2, while the Partial BRAC schedule (combination of Active, Legacy BRAC and/or BRAC 05) is shown at Enclosure 3. Compliance-related Cleanup (CC) program sites will follow the schedule in Enclosure 2. The Spring data submission covers the 1 Oct 10 – 31 Mar 11 period. The Fall data submission covers the 1 Apr 11 – 30 Sep 11 period. Users are strongly encouraged to run the data submission readiness checklists before starting the update and upon data submission.

2. Legacy BRAC/BRAC 05 installations update (refer to Enclosure 1 for the schedule):

a. Spring Submission: Installations must update all BRAC site-level data (Installation Restoration [IR], Munitions Response [MR] and Compliance), including cost-to-complete (CTC) estimates, cost requirements spread, and phase schedules prior to 8 Apr 11. In addition, all CTC estimates must be released before the Spring data submission. The CTC team performs QC reviews and follow-on data validation calls of cost estimates for all BRAC installations prior to the spring submission. Guidelines for developing and updating CTC estimates are provided at Enclosure 4.

b. Fall Submission: Installations must update all non-cost site-level data (IR, MR and Compliance), including phase schedules prior to 31 Aug 11 for all BRAC installations.

c. BRAC Installation Action Plans(BIAP): BRAC Installations requiring a BIAP must update and finalize the BIAP for FY12 by 1 Oct 11 using the IAP tool located on Army Environmental Reporting Online (AERO). To meet this suspense, the AEDB-R must be updated and submitted no later than 31 Aug 2011 so that the BIAP tool will access programmed requirements for FY12 and so the BIAP can be properly staffed through the USACE Public Affairs Office prior to being made available to the public.

3. Active and non-BRAC Excess installations update:

a. Installations are responsible for the updating AEDB-R and AEDD-CC and preparing CTC estimates for IR (including compliance-related restoration (CR)), CC and

DEVELOPING AND UPDATING COST-TO-COMPLETE (CTC) ESTIMATES

Department of Defense guidance requires the Army to use CTC estimates as the basis for the environmental liability portion of the Army's annual financial statement. The CTC estimates when used to report environmental liabilities become accounting estimates and therefore must meet Financial Management Regulation (FMR) requirements. This requires CTC estimates to be complete, up-to-date, and fully and formally documented. Although AEDB-R and AEDB-CC enhancements ensured supporting documentation was attached to all sites, the quality control reviews identified discrepancies with the quality of the documentation and audit trails. Please consider the following procedures when preparing CTC estimates. Information that is more detailed is included in the CTC Guidance document found here (AERO account required): https://www.us.army.mil/suite/doc/12758145.

Documentation and Audit Trails

A Memorandum for Record (MFR)/Summary Document must be provided for all CTC estimates. The MFR must identify the supporting documentation used and provide a good audit trail to show how that information is used to populate AEDB-R and AEDB-CC. The MFR should cover a single site. The MFR must be signed and dated by the estimator and the reviewer who ensures the estimate is supported by documentation. The MFR must be uploaded to the database of record and also placed in the installation's project files. Examples of an MFR and types of supporting documentation are included in the CTC Guidance document.

Current Year Dollars

The CTC estimates shall be reported on a current cost basis (unadjusted for inflation). The following factors should be used to bring previous year costs to the current year.

Base Fiscal Year	Escalation Rate
2006	1.0889
2007	1.0604
2008	1.0354
2009	1.0201
2010	1.0110

FACTOR

Remedial Cost Engineering and Requirements (RACER™) Software

Cost estimators must prepare their RACER™ estimates in accordance with Army-specific requirements to ensure successful import to AEDB-R. All assumptions used to develop RACER™ estimates must be entered into the comment fields in the RACER™ software. Information that is more detailed is included in the CTC Guidance document. A summary of the Army guidelines for developing RACER™ estimates is listed below.

Estimate Documentation Report

System:

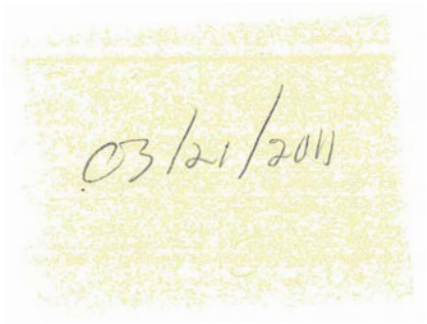
RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 25 FY11

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: 2011
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

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: 03/21/2011

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: 03/22/2011

Reviewer Signature: _____ **Date:** _____

Estimated Costs:

Phase Element Names	Direct Cost	Marked-up Cost
LTM #2	$49,706	$95,309
Total Cost:	$49,706	$95,309

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: $95,309

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: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 25 FY11

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: 2011
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
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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): ☐
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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
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Estimate Prepared Date: 03/21/2011

Site WBS Report
(with Markups)

Estimator Signature: _____ **Date:** _____

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Reviewer Name: Steve Absolom
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Date Reviewed: 03/22/2011

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	$36,801
	Other	Well Abandonment	$58,507
			$95,309
		Total:	$95,309
		HTRW RA WBS Total:	$95,309
		Total:	**$95,309**

MEMORANDUM FOR RECORD

Date: 09 March 2011

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 2011 data call. The Remedial Action Cost Engineering and Requirements (RACER) 10.4 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 three years of LTM occurred in FY 08, FY 09 and FY 10. 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 occurred in FY11. Five-year reviews will occur in 2016 and 2021. GW monitoring will occur for 10 years.

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. ACSIM Data Call 18 OCT 2010 Escalation Factors.

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 FY21.

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 1.0889 = $5,978/yr $5,978/yr x 10 years = $59,780	$59,780
5-year Reviews (Source 1 x FY11 escalation factor) $6,588/event x 1.0889 = $7,174/event $7,174 per event x 2 events	$14,348
Site Closeout (RACER)	$53,441
Well Abandonment (RACER)	$26,661

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

LTM	$59,780
LTM2	$14,348
Subtotal	$74,128

$74,128 x 11%= $8,154

Total Site Cost **$162,384 (rounded to $162K)**

Material Change: Yes
Reason: Change in reporting 5-year review from 1 to 2.

Prepared by: Randall Battaglia
Cost Estimator

Signature 22 MAR 11
Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Signature 3/22/11
Date

DEVELOPING AND UPDATING COST-TO-COMPLETE (CTC) ESTIMATES

Department of Defense guidance requires the Army to use CTC estimates as the basis for the environmental liability portion of the Army's annual financial statement. The CTC estimates when used to report environmental liabilities become accounting estimates and therefore must meet Financial Management Regulation (FMR) requirements. This requires CTC estimates to be complete, up-to-date, and fully and formally documented. Although AEDB-R and AEDB-CC enhancements ensured supporting documentation was attached to all sites, the quality control reviews identified discrepancies with the quality of the documentation and audit trails. Please consider the following procedures when preparing CTC estimates. Information that is more detailed is included in the CTC Guidance document found here (AERO account required): https://www.us.army.mil/suite/doc/12758145.

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Current Year Dollars

The CTC estimates shall be reported on a current cost basis (unadjusted for inflation). The following factors should be used to bring previous year costs to the current year.

Base Fiscal Year	Escalation Rate
2006	1.0889
2007	1.0604
2008	1.0354
2009	1.0201
2010	1.0110

ESCALATION FACTOR

Remedial Cost Engineering and Requirements (RACER™) Software

Cost estimators must prepare their RACER™ estimates in accordance with Army-specific requirements to ensure successful import to AEDB-R. All assumptions used to develop RACER™ estimates must be entered into the comment fields in the RACER™ software. Information that is more detailed is included in the CTC Guidance document. A summary of the Army guidelines for developing RACER™ estimates is listed below.

Source

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.

chosen remedy

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

UNDER "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

SOURCE 4

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

18 OCT 2010

DAIM-IS

S: 8 Apr 11
15 Apr 11
15 Jul 11
31 Aug 11
09 Sep 11
1 Oct 11

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: FY11 Army Environmental Database - Restoration (AEDB-R) and Army Environmental Database - Compliance Cleanup (AEDB-CC) Data Calls

1. The official start of the FY11 Data Call for AEDB-R and AEDB-CC is 8 Nov 10. Enclosures 1-3 provide a timeline for Spring and Fall data submissions based on installation type. Enclosure 1 contains the Legacy Base Realignment and Closure (BRAC) (BRAC 88, 91, 93 and 95) and BRAC 05 submittal schedule. The Active and non-BRAC Excess schedule is provided at Enclosure 2, while the Partial BRAC schedule (combination of Active, Legacy BRAC and/or BRAC 05) is shown at Enclosure 3. Compliance-related Cleanup (CC) program sites will follow the schedule in Enclosure 2. The Spring data submission covers the 1 Oct 10 – 31 Mar 11 period. The Fall data submission covers the 1 Apr 11 – 30 Sep 11 period. Users are strongly encouraged to run the data submission readiness checklists before starting the update and upon data submission.

2. Legacy BRAC/BRAC 05 installations update (refer to Enclosure 1 for the schedule):

a. Spring Submission: Installations must update all BRAC site-level data (Installation Restoration [IR], Munitions Response [MR] and Compliance), including cost-to-complete (CTC) estimates, cost requirements spread, and phase schedules prior to 8 Apr 11. In addition, all CTC estimates must be released before the Spring data submission. The CTC team performs QC reviews and follow-on data validation calls of cost estimates for all BRAC installations prior to the spring submission. Guidelines for developing and updating CTC estimates are provided at Enclosure 4.

b. Fall Submission: Installations must update all non-cost site-level data (IR, MR and Compliance), including phase schedules prior to 31 Aug 11 for all BRAC installations.

c. BRAC Installation Action Plans(BIAP): BRAC Installations requiring a BIAP must update and finalize the BIAP for FY12 by 1 Oct 11 using the IAP tool located on Army Environmental Reporting Online (AERO). To meet this suspense, the AEDB-R must be updated and submitted no later than 31 Aug 2011 so that the BIAP tool will access programmed requirements for FY12 and so the BIAP can be properly staffed through the USACE Public Affairs Office prior to being made available to the public.

3. Active and non-BRAC Excess installations update:

a. Installations are responsible for the updating AEDB-R and AEDD-CC and preparing CTC estimates for IR (including compliance-related restoration (CR)), CC and

DEVELOPING AND UPDATING COST-TO-COMPLETE (CTC) ESTIMATES

Department of Defense guidance requires the Army to use CTC estimates as the basis for the environmental liability portion of the Army's annual financial statement. The CTC estimates when used to report environmental liabilities become accounting estimates and therefore must meet Financial Management Regulation (FMR) requirements. This requires CTC estimates to be complete, up-to-date, and fully and formally documented. Although AEDB-R and AEDB-CC enhancements ensured supporting documentation was attached to all sites, the quality control reviews identified discrepancies with the quality of the documentation and audit trails. Please consider the following procedures when preparing CTC estimates. Information that is more detailed is included in the CTC Guidance document found here (AERO account required): https://www.us.army.mil/suite/doc/12758145.

Documentation and Audit Trails

A Memorandum for Record (MFR)/Summary Document must be provided for all CTC estimates. The MFR must identify the supporting documentation used and provide a good audit trail to show how that information is used to populate AEDB-R and AEDB-CC. The MFR should cover a single site. The MFR must be signed and dated by the estimator and the reviewer who ensures the estimate is supported by documentation. The MFR must be uploaded to the database of record and also placed in the installation's project files. Examples of an MFR and types of supporting documentation are included in the CTC Guidance document.

Current Year Dollars

The CTC estimates shall be reported on a current cost basis (unadjusted for inflation). The following factors should be used to bring previous year costs to the current year.

Base Fiscal Year	Escalation Rate
2006	1.0889
2007	1.0604
2008	1.0354
2009	1.0201
2010	1.0110

ESC. RATE

Remedial Cost Engineering and Requirements (RACER™) Software

Cost estimators must prepare their RACER™ estimates in accordance with Army-specific requirements to ensure successful import to AEDB-R. All assumptions used to develop RACER™ estimates must be entered into the comment fields in the RACER™ software. Information that is more detailed is included in the CTC Guidance document. A summary of the Army guidelines for developing RACER™ estimates is listed below.

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 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 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 DISAD-VANTAGED
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
PURCHASE

This delivery order/call is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.

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. | **28. D.O. VOUCHER NO.** | **30. INITIALS**

PARTIAL ☐ FINAL ☐

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	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

LTM

$5,490 FY06 COST
1.0889 ESC. FACTOR
$5,978 FY 11 COST

5 YEAR REVIEW

$6,588 FY06 COST
1.0889 ESC. FACTOR
$7,174 FY11 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

Site WBS Report (with Markups)

all WBS Reports dtd 03/21/2011

System:

RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 001-R-01 FY11

Project:

Project ID: SEAD-001-R-01
Project Name: SEAD-001-R-01 Deactivation Furnaces
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: 2011
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.

Site WBS Report
(with Markups)

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

Site WBS Report
(with Markups)

Site:

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 Element 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: 03/21/2011

Estimator Signature: _____ **Date:** _____

Site WBS Report
(with Markups)

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: 03/22/2011

Reviewer Signature: _____ **Date:** _____

Site WBS Report
(with Markups)

Phase Element:

Phase Element Type: Long Term Monitoring
Phase Element 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 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	$53,441
	Other	Well Abandonment	$26,661
			$80,102
		Total:	$80,102
		HTRW RA WBS Total:	$80,102
		Total:	**$80,102**

Estimate Documentation Report

System:

RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

03/21/11

Folder:

Folder Name: SEAD 001-R-01 FY11

Project:

Project ID: SEAD-001-R-01
Project Name: SEAD-001-R-01 Deactivation Furnaces
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: 2011
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 Element 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: 03/21/2011

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: 03/22/2011

Reviewer Signature: _____ **Date:** _____

Estimated Costs:

Phase Element Names	Direct Cost	Marked-up Cost
LTM #1	$36,138	$80,102
Total Cost:	$36,138	$80,102

Estimate Documentation Report

Phase Element Documentation:

Phase Element Type: Long Term Monitoring
Phase Element 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 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: $80,102

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: 16 March 2011

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 2011 data call. This site also encompasses SEAD-023 (OB Grounds). The Remedial Action Cost Engineering and Requirements (RACER) 10.4 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 4 are assumed to be the same for years 5 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 (Source 7). After the IRA is completed in 2014, the monitoring will be carried under the LTM phase. In FY 2016, the second 5year 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. Draft 2010 Long Term Monitoring Annual Report for the Open Burning Grounds, December 2010.
8. ACSIM Data Call 18 Oct 2010/ Escalation Factors.

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. Review cycles (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)
$35,778 /event x 3 years = $107,334

Cost to Owner 107,334 x 0.11 (Source 4)=
11,806.74 (rounded to 11,807) $11,807

RI/FS Cost Total (OB Grounds, SEAD-023) $119,140

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 $26,366
(from contract DACA87-02-D-0005 – Source 5)

Monitor wells quarterly 1st year, annually thereafter
(See assumptions and Source 6)
Year 2015, $35,778/event x 4 events/yr $143,112
(SEAD-006-R-01) 6 wells x 4 event= 24 samples
Year 2016-2021, $35,778/event x 1 event/yr x 6 years $214,668
(SEAD-006-R-01) 6 wells x 6 event= 36 samples
Year 2015-2021, $35,778/event x 1 event/yr x 7 years $250,446
(for SEAD-23) 6 wells x 7 events= 42 samples
Sample total 24+36+42=102 samples

Assumption:
Owner Support for GW Monitoring (Source 4)
11% of total LTM Cost
$26,366+$143112+$214668+$250446 x 11%=
634,592 x 0.11= $69,805 $69,805

Monitoring subtotal $704,397

5-year Reviews for MPPEH and CERCLA Reviews (RACER) $138,995
Two five-year reviews for SEAD-23 and SEAD-006-R-01
(FY16 and FY21)

Well Abandonment (RACER) $29,797
Site Closeout (RACER) $53,805

LTM Cost	**$926,994**
Total Site Cost	**$1,046,135**

Material Change: No

Prepared by: Randall Battaglia
Cost Estimator

Signature Date 23 MAR 11

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Signature Date 3/23/11

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 frequ... quarterly fo... the first

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 is quarterly, annual af- the

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

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.

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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.

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, adminstrative, contracting, accounting, etc.).

Cost to OWNER

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

Related Topics

- *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 A. ATKINS — Katherina 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

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

32. PAID BY

33. AMOUNT VERIFIED CORRECT FOR

34. CHECK NUMBER

35. BILL OF LADING NO.

36. I certify this account is correct and proper for payment.
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	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 INSTALLAT 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 FY07
1.0604 Escalation (source 8)
26,365.78 FY 2011 cost
26 366 (rounded)

RFP

OB Ground

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, 86	$ 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

FY 2010 COSTS $35,389.01

ESC. FACTOR (Source 8) 1.0110

FY 2011 COST 35,778.28

Source #8

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

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

18 OCT 2010

DAIM-IS

S: 8 Apr 11
15 Apr 11
15 Jul 11
31 Aug 11
09 Sep 11
1 Oct 11

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: FY11 Army Environmental Database - Restoration (AEDB-R) and Army Environmental Database - Compliance Cleanup (AEDB-CC) Data Calls

1. The official start of the FY11 Data Call for AEDB-R and AEDB-CC is 8 Nov 10. Enclosures 1-3 provide a timeline for Spring and Fall data submissions based on installation type. Enclosure 1 contains the Legacy Base Realignment and Closure (BRAC) (BRAC 88, 91, 93 and 95) and BRAC 05 submittal schedule. The Active and non-BRAC Excess schedule is provided at Enclosure 2, while the Partial BRAC schedule (combination of Active, Legacy BRAC and/or BRAC 05) is shown at Enclosure 3. Compliance-related Cleanup (CC) program sites will follow the schedule in Enclosure 2. The Spring data submission covers the 1 Oct 10 – 31 Mar 11 period. The Fall data submission covers the 1 Apr 11 – 30 Sep 11 period. Users are strongly encouraged to run the data submission readiness checklists before starting the update and upon data submission.

2. Legacy BRAC/BRAC 05 installations update (refer to Enclosure 1 for the schedule):

a. Spring Submission: Installations must update all BRAC site-level data (Installation Restoration [IR], Munitions Response [MR] and Compliance), including cost-to-complete (CTC) estimates, cost requirements spread, and phase schedules prior to 8 Apr 11. In addition, all CTC estimates must be released before the Spring data submission. The CTC team performs QC reviews and follow-on data validation calls of cost estimates for all BRAC installations prior to the spring submission. Guidelines for developing and updating CTC estimates are provided at Enclosure 4.

b. Fall Submission: Installations must update all non-cost site-level data (IR, MR and Compliance), including phase schedules prior to 31 Aug 11 for all BRAC installations.

c. BRAC Installation Action Plans(BIAP): BRAC Installations requiring a BIAP must update and finalize the BIAP for FY12 by 1 Oct 11 using the IAP tool located on Army Environmental Reporting Online (AERO). To meet this suspense, the AEDB-R must be updated and submitted no later than 31 Aug 2011 so that the BIAP tool will access programmed requirements for FY12 and so the BIAP can be properly staffed through the USACE Public Affairs Office prior to being made available to the public.

3. Active and non-BRAC Excess installations update:

a. Installations are responsible for the updating AEDB-R and AEDD-CC and preparing CTC estimates for IR (including compliance-related restoration (CR)), CC and

DEVELOPING AND UPDATING COST-TO-COMPLETE (CTC) ESTIMATES

Department of Defense guidance requires the Army to use CTC estimates as the basis for the environmental liability portion of the Army's annual financial statement. The CTC estimates when used to report environmental liabilities become accounting estimates and therefore must meet Financial Management Regulation (FMR) requirements. This requires CTC estimates to be complete, up-to-date, and fully and formally documented. Although AEDB-R and AEDB-CC enhancements ensured supporting documentation was attached to all sites, the quality control reviews identified discrepancies with the quality of the documentation and audit trails. Please consider the following procedures when preparing CTC estimates. Information that is more detailed is included in the CTC Guidance document found here (AERO account required): https://www.us.army.mil/suite/doc/12758145.

Documentation and Audit Trails

A Memorandum for Record (MFR)/Summary Document must be provided for all CTC estimates. The MFR must identify the supporting documentation used and provide a good audit trail to show how that information is used to populate AEDB-R and AEDB-CC. The MFR should cover a single site. The MFR must be signed and dated by the estimator and the reviewer who ensures the estimate is supported by documentation. The MFR must be uploaded to the database of record and also placed in the installation's project files. Examples of an MFR and types of supporting documentation are included in the CTC Guidance document.

Current Year Dollars

The CTC estimates shall be reported on a current cost basis (unadjusted for inflation). The following factors should be used to bring previous year costs to the current year.

Base Fiscal Year	Escalation Rate
2006	1.0889
2007	1.0604
2008	1.0354
2009	1.0201
2010	1.0110

FACTOR

Remedial Cost Engineering and Requirements (RACER™) Software

Cost estimators must prepare their RACER™ estimates in accordance with Army-specific requirements to ensure successful import to AEDB-R. All assumptions used to develop RACER™ estimates must be entered into the comment fields in the RACER™ software. Information that is more detailed is included in the CTC Guidance document. A summary of the Army guidelines for developing RACER™ estimates is listed below.

Source 8

DRAFT

2010 LONG-TERM MONITORING ANNUAL REPORT

FOR THE OPEN BURNING GROUNDS
SENECA ARMY DEPOT ACTIVITY, ROMULUS, NEW YORK

Prepared for:

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

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. 0008
EPA Site ID# NY0213820830
NY Site ID# 8-50-006

December 2010

6.0 LONG-TERM MONITORING CONCLUSIONS AND RECOMMENDATIONS

Based on the results of fifth round of 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 cover overlying interred contaminated soils at the site was generally intact and there was no evidence that terrestrial wildlife are exposed to the contaminated soils below the 9-inch cover at this time. The minor washout areas noted during in grids I8 and L8 in May 2008 were repaired and were observed again in the August 2010 inspection due to surface water runoff. The Army repaired these location and the existing soil cover in these locations was restored to its original condition;
- The Army will continue to monitor cover erosion, and note any instance of cover erosion or exposed native soil;
- Based on the groundwater data and the cover inspection, there is no evidence to suggest that the OB Grounds may be contributing to the degradation of sediment quality in Reeder Creek.
- Sediment deposition in Reeder Creek adjacent to the OB Grounds was not noted during the August 2010 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.

Based on the result of the LTM events conducted at the OB Grounds, the Army recommends continuing the monitoring frequency of once per year. As presented and summarized above, available monitoring data shows no evidence of lead or copper in the groundwater above the cleanup goals subsequent to the completion of the remedial action for the site. These findings are consistent with the groundwater 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 annual inspections of the soil cover 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

Estimate Documentation Report

System:

RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 006-R-01 FY11

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

03/21/2011

Options
Database: System Costs
Cost Database Date: 2011
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

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

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: 03/21/2011

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: 03/22/2011

Reviewer Signature: _____ **Date:** _____

Estimated Costs:

Phase Element Names	Direct Cost	Marked-up Cost
LTM Well Abandonment, Closeout, 5YR Rev	$94,842	$222,596
Total Cost:	$94,842	$222,596

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: $222,596

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

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:

Site WBS Report
(with Markups)

System:

RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 006-R-01 FY11

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: 2011
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: 03/21/2011

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: 03/22/2011

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	$138,995
	Other	Site Close-Out Documentation	$53,805
331.20.90	Other	Well Abandonment	$29,797
			$222,596
		Total:	$222,596
		HTRW RA WBS Total:	$222,596
		Total:	**$222,596**

MEMORANDUM FOR RECORD

Date: 15 March 2011

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 2011 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.
Escalate to FY 11
$59,224.25 x 1.0201 = 60,414.66
$60,414.66 x 8 years = $483,317.26 (rounded to 483,317) $483,317

Five-year Reviews (Source 3)
Two 5-year review events at $96,592.75 each
Escalate to FY 11
2 x $96,592.75 x 1.0201 = $98,543.26
2 Events x 98,534.26 = $197,068.53 (rounded to 197,069) $197,068

Owner Support (Source 7):
(LUC + 5 year review) x 0.11
($483,317 + $197,168) x 0.11 $74,842

Site Closeout (RACER) $56,901

Total Site Cost
$483,317 + $197,068+ $74,842+ $56,901 $812,128

Material Change: No

Prepared by: Randall Battaglia
Cost Estimator

Signature Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Signature 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.

Site

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.

LU

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)

LUC

A LUC that prohibits unauthorized digging and excavations within the bounds of the SWMU will be imposed for:

- 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)

LUC

LUCs that restrict unauthorized excavation and access to and use of groundwater will be imposed for the:

- 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.

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
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.

LUC Remed

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 Or 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

ESCALATION

F.Y. 09 COST 59,224.25

ESCA-FACTOR 1.0201

FY 11 COST 60,414.66

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

Cost

LUC Inspection
with 5yr review

ESCALATION

F.Y. 09 Cost 96,592.75

F/11 ESC. Factor 1.0201

FY 11 Cost 98,534.26

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

site

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.

LUC

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

Sites

RECORD OF DECISION

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:

PARSONS
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-

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:

Parsons
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.

sites

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: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 009 FY11

Project:

Project ID: SEAD-9
Project Name: SEAD-9
Project Category: Multiple Locations

03/21/2011

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

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2011
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

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: 03/21/2011

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: 03/22/2011

Reviewer Signature: _____ **Date:** _____

Estimated Costs:

Phase Element Names	Direct Cost	Marked-up Cost
LTM #1 Site Closeout Documentation	$23,008	$56,901
Total Cost:	$23,008	$56,901

Estimate Documentation Report

Phase Element Documentation:

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

Total Marked-up Cost: $56,901

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	2	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	2	EA
Review Meetings: Travel		No	n/a
Regulatory Review Meetings		Yes	n/a
Regulatory Review Meetings: Number of Meetings	1	2	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		6	EA
Duration of Storage		30	Yrs

Comments:

Site WBS Report
(with Markups)

System:

RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 009 FY11

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: 2011
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: 03/21/2011

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: 03/22/2011

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	$56,901
		$56,901
	Total:	$56,901
	HTRW RA WBS Total:	$56,901
	Total:	**$56,901**

MEMORANDUM FOR RECORD

Date: 19 March 2011

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 2011 data call. The Remedial Action Cost Engineering and Requirements (RACER) 10.4 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. Ground water wells were removed in FY 10 as indicated in Source 2.

Source:
1. Draft Final Proposed Plan, SEAD 12 and SEAD 72, November 2008 (CERCLA Action)
2. Well Decommissioning Report February 2011
3. Owner cost from RACER
4. ACSIM Data Call 18 OCT 2010

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

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**

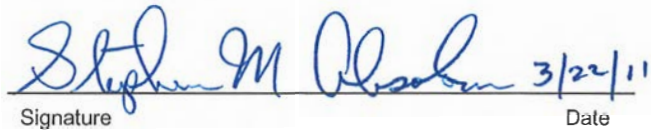
LUC Costs (Source 1) Escalation Factor 1.0201 $37,000 x 1.0201	$37,744
LTM (Source 2) Owner Support Cost $37,744 x 11% = $4,151	$4,151
Site Closeout (RACER)	$55,576
Total Site Cost	**$97,471**

Material Change: Yes
Reason: Decommissioned well in FY 2010.

Prepared by: Randall Battaglia
Cost Estimator

Signature Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

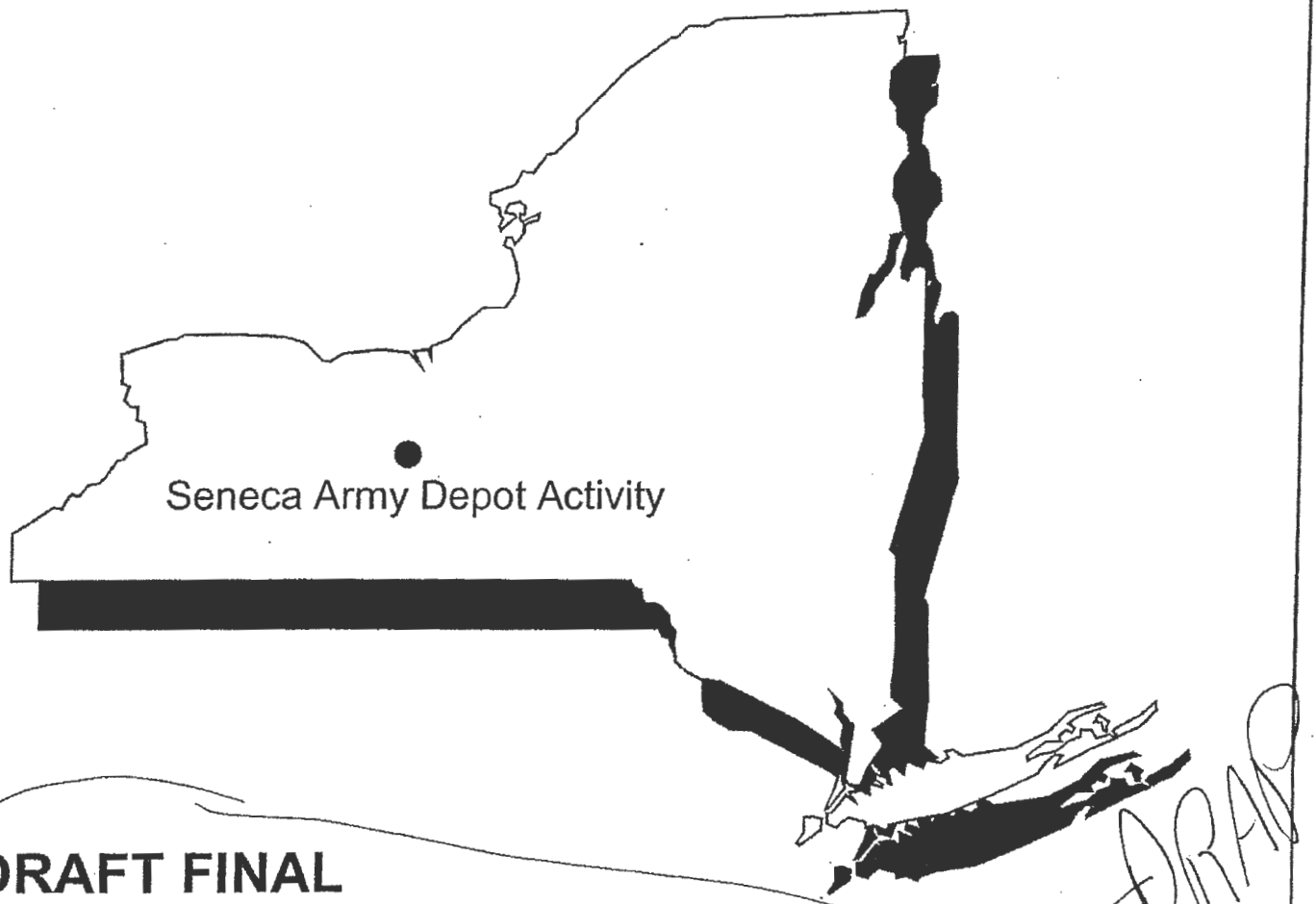


Signature Date

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

PRAP

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

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.

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

LUC 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.

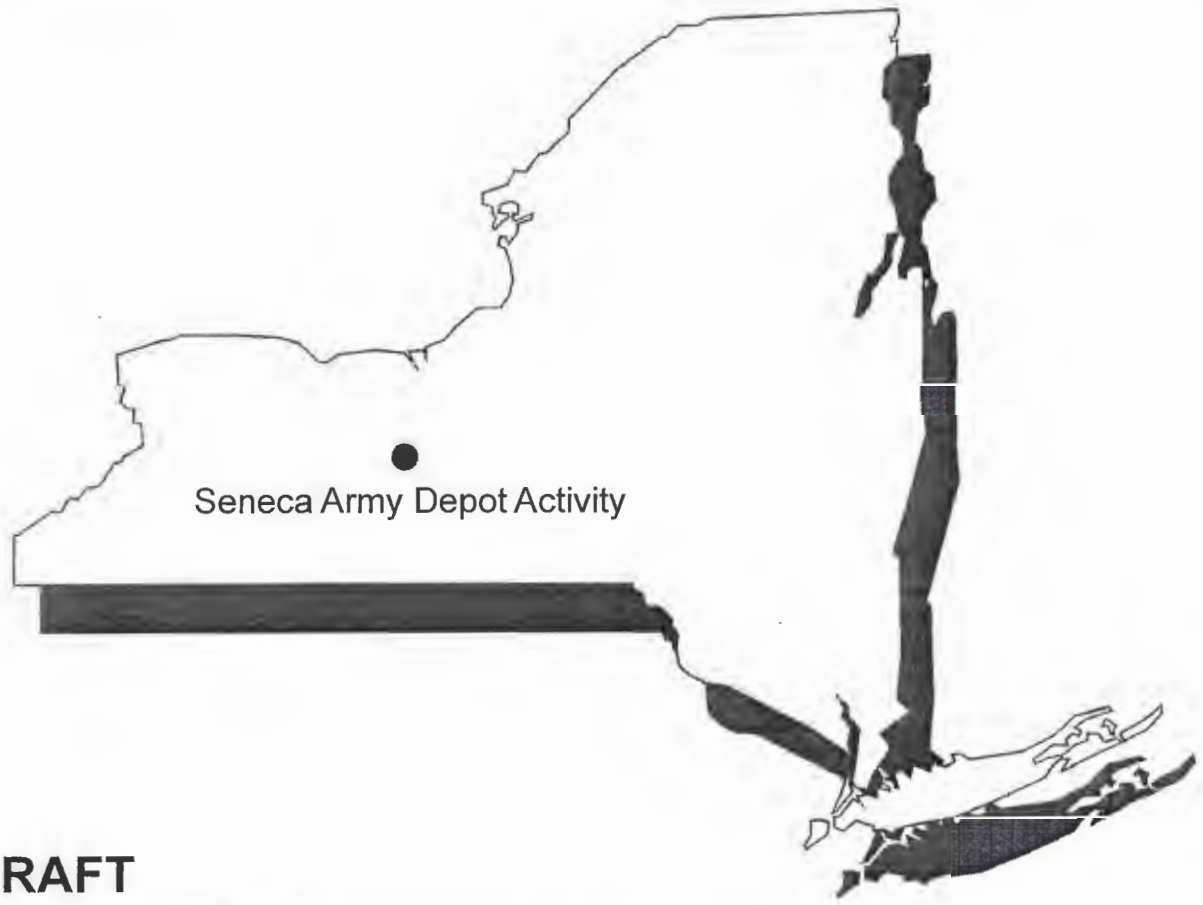
Further, as a separate act from CERCLA, the Army will perform a removal action at Disposal Pit A/B and Disposal Pit C to remove military related components and debris.

NON CERCLA requirement

Source #2

US Army, Engineering & Support Center
Huntsville, AL

Seneca Army Depot Activity
Romulus, NY



DRAFT
WELL DECOMMISSIONING REPORT

ASH LANDFILL OPERABLE UNIT, SEAD-4, SEAD-5, SEAD-11, SEAD-12, SEAD-13, SEAD-24, SEAD-25, SEAD-26, SEAD-27, SEAD-48, SEAD-59, SEAD-63, SEAD-67, SEAD-70, SEAD-71, SEAD-119B, SEAD-121C, & SEAD-122B
SENECA ARMY DEPOT ACTIVITY

Site

Contract No. W912DY-08-D-0003
Task Order No. 0008
EPA Site ID# NY0213820830
NY Site ID# 8-50-006

PARSONS
FEBRUARY 2011

DRAFT

WELL DECOMMISSIONING REPORT

SENECA ARMY DEPOT ACTIVITY
ROMULUS, SENECA COUNTY, NEW YORK

Prepared for:

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

U.S. AIR FORCE CENTER FOR ENGINEERING AND THE ENVIRONMENT
BROOKS CITY BASE, TEXAS

and

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared by:

PARSONS
100 High Street
Boston, MA 02110

USAESCH Contract Number W912DY-08-D-0003
Task Order No. 0003 & 0008
AFCEE Contract Number FA8903-04-D-8675

Task Order No. 31 CDRL A001D
EPA Site ID# NY0213820830
NY Site ID# 8-50-006

March 2011

1.0 INTRODUCTION

This report documents the decommissioning of 145 groundwater monitoring wells located at the former Seneca Army Depot Activity (SEDA or the Depot) in Seneca County, New York (EPA CERCLIS Site ID: NY0213820830; NYS Inactive Waste Site ID: 8-50-006). The monitoring wells were decommissioned because they are no longer needed for long-term monitoring or continuing environmental sampling and analysis purposes associated with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or State of New York Inactive Hazardous Waste Site investigations and studies that continue at the former Depot as the Army fulfills its federal and state environmental assessment, remediation, and long-term monitoring obligations. SEDA was listed as a Federal Facility on the National Priorities List (NPL) in August of 1990, and since its listing, the Army has worked to identify and quantify the levels of environmental contamination that are present, and when determined to be necessary, remediate identified contamination to mitigate or eliminate potential risks and hazards to the public and environment that may be associated with its presence in the media at, and in the vicinity, of the Depot. Under this work, the Army has conducted environmental assessments and evaluations at 112 known or suspected areas of concern (AOCs) located within the bounds of the Depot. As a result of these assessments and evaluations, 27 suspected AOCs were eliminated from further study and analysis, with oversight agency concurrence and approval, after initial assessments and evaluations indicated that suspected contaminants were not present at levels that posed unacceptable levels of threats or risk. The remaining 76 AOCs were assessed under the CERCLA and other aligned regulatory programs, and findings and conclusions of these assessments have led to remedial action decisions that have been documented in Records of Decision (RODs) that have been approved by, or gained concurrence of, oversight regulatory agencies. Of the AOCs processed to RODs, 30 required no action (NA), 17 required no further action (NFA) once interim actions were completed, and the remaining 29 AOCs are subject to land use controls (LUCs) or other continuing regulatory requirements. Long-term groundwater monitoring required under approved RODs is continuing at four AOCs (SEAD-16, former Abandoned Deactivation Furnace Site; SEAD-17, former Existing Deactivation Furnace Site; SEAD-23, former Open Burning [OB] Grounds; and, SEAD-25, former Fire Training and Demonstration Pad) and one operable unit (the Ash Landfill Operable Unit, SEADs 3, 6, 8, 14 and 15). Environmental assessments and final regulatory action and approval are still pending at the remaining nine AOCs.

The decommissioning of the monitoring wells was performed in accordance with the U.S. Army's (Army's) August 2010 Work Plan titled *Well Decommissioning Plan for SEAD-4, SEAD-5, Ash Landfill Operable Unit, SEAD-11, SEAD-12, SEAD-13, SEAD-24, SEAD-25, SEAD-26, SEAD-27, SEAD-48, SEAD-59, SEAD-63, SEAD-67, SEAD-70, SEAD-71, SEAD-119B, SEAD-121C, and SEAD-122B, Seneca Army Depot Activity* (Parsons, 2010). The Work Plan was prepared based on the procedures and recommendations provided in New York State Department of Environmental Conservation's (NYSDEC's) Draft guidance titled *Groundwater Monitoring Well Decommissioning* issued January 8, 2009. The well decommissioning was performed on behalf of the U.S. Army, Seneca Army Depot Activity under Contracts issued by U.S. Army, Engineering and Support Center, Huntsville (USAESCH – W912DY-08-D-0003, Task Orders 2, and 8) and the U.S. Air Force Center

- SEAD-63: Miscellaneous Components Burial Site – approved ROD; NFA with release for land for unrestricted use and unlimited exposures, no groundwater monitoring required.
- SEAD-67: Dump Site east of Sewage Treatment Plant No. 4 – approved ROD; LUCs required no required groundwater monitoring.
- SEAD-70: Fill Area Adjacent to Building T-2110 – regulatory status pending, but no long-term groundwater monitoring anticipated.
- SEAD-71: Alleged Paint Disposal Area – approved ROD; LUCs required no required groundwater monitoring.
- SEAD-119B: Former Small Arms Range at the Lake Housing Area – NA, not a site of interest, no required groundwater monitoring.
- SEAD-121C: Defense Reutilization and Marketing Office (DRMO) Yard – approved ROD; LUCs required, no required groundwater monitoring.
- SEAD-122B: Small Arms Range at the Airfield Parcel – approved ROD; LUCs required, no required groundwater monitoring.

The locations of the affected SEADs are shown on **Figure 1.** Wells decommissioned under this work were either not needed, or designated by the Army as being unlikely to be needed, for continuing monitoring of groundwater quality or conditions at sites where they were installed. Wells designated for decommissioning at SEAD-25 and the Ash Landfill Operable Unit (SEADs 3, 6, 8, 14, & 15) are not included amongst the wells that have been included in the continuing long-term monitoring programs implemented and continuing at these sites. The Army does not anticipate that long-term groundwater monitoring will be required at SEAD-12 or SEAD-70, as past investigations and studies have not suggested that groundwater quality is of concern at either of these sites; however, if future monitoring of groundwater is required at one or both of these sites, once proposed plans or RODs are negotiated and finalized, then new wells will be installed as needed to satisfy the requirements of the groundwater monitoring program proposed.

A complete list of the groundwater wells decommissioned at each SWMU/AOC and data documenting their former location is provided in **Table 1-1**. Additional information pertinent to the decommissioning method is also summarized in the table.

for Engineering and the Environment (AFCEE – FA8903-04-D-8675, Task Order 31) by Parsons Infrastructure & Technology Group Inc. (Parsons) and GeoLogic NY, Inc. Well decommissioning completed at SEAD-4 and SEAD-11 was conducted under work authorized under AFCEE's Contract FA8903-04-D-8675, Task Order 31, while the decommissioning activities completed at SEAD-13 were performed under work authorized under USAESCH's Contract W912DY-08-D-0003, Task Order 2. Well decommissioning activities completed at all of the other sites were performed under work authorized under USAESCH's Contract W912DY-08-D-0003, Task Order 8.

Wells decommissioned under this work were located at 19 former solid waste management units (SWMU) or AOCs within the Depot. SWMU/AOC descriptions corresponding to the SEAD designations are identified below, along with a brief description of the site's current regulatory status:

- SEAD-3, 6, 8, 14 and 15: The Ash Landfill Operable Unit – approved ROD; LUCs and long-term monitoring groundwater monitoring required at designated wells.
- SEAD-4: The Munitions Washout Facility – approved ROD; NFA with release of land for unrestricted use and unlimited exposures, no required groundwater monitoring.
- SEAD-5: Former Sludge Waste Piles – approved ROD; LUCs required, no required groundwater monitoring.
- SEAD-11: Old Construction Debris Landfill – approved ROD; NFA with release of land for unrestricted use and unlimited exposures, no required groundwater monitoring.
- SEAD-12: Radioactive Waste Burial Sites – regulatory status pending, but no long-term groundwater monitoring anticipated necessary.
- SEAD-13: Inhibited Red Fuming Nitric Acid (IRFNA) Disposal Site – approved ROD; LUCs required, no required groundwater monitoring.
- SEAD-24: Abandoned Powder Burning Pit – approved ROD; NFA with release of land for unrestricted use and unlimited exposures, no required groundwater monitoring required.
- SEAD-25: The Fire Training and Demonstration Pad – approved ROD; LUCs and long-term groundwater monitoring required at designated wells.
- SEAD-26: The Fire Training Pit and Area – approved ROD; LUCs required, no required continuing long-term groundwater monitoring.
- SEAD-27: Steam Cleaning Waste Tank in Building 360 – approved ROD; LUCs required, no required groundwater monitoring.
- SEAD-48: Row E0800 Pitchblende Ore Storage Igloos – approved ROD; NFA with land released for unrestricted use and unlimited exposures, no groundwater monitoring required.
- SEAD-59: Fill Area West of Building 135 – approved ROD; LUCs required no required groundwater monitoring.

UNDER "MARKUP TEMPLATES"

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

Source 4

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

18 OCT 2010

DAIM-IS

S: 8 Apr 11
15 Apr 11
15 Jul 11
31 Aug 11
09 Sep 11
1 Oct 11

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: FY11 Army Environmental Database - Restoration (AEDB-R) and Army Environmental Database - Compliance Cleanup (AEDB-CC) Data Calls

1. The official start of the FY11 Data Call for AEDB-R and AEDB-CC is 8 Nov 10. Enclosures 1-3 provide a timeline for Spring and Fall data submissions based on installation type. Enclosure 1 contains the Legacy Base Realignment and Closure (BRAC) (BRAC 88, 91, 93 and 95) and BRAC 05 submittal schedule. The Active and non-BRAC Excess schedule is provided at Enclosure 2, while the Partial BRAC schedule (combination of Active, Legacy BRAC and/or BRAC 05) is shown at Enclosure 3. Compliance-related Cleanup (CC) program sites will follow the schedule in Enclosure 2. The Spring data submission covers the 1 Oct 10 – 31 Mar 11 period. The Fall data submission covers the 1 Apr 11 – 30 Sep 11 period. Users are strongly encouraged to run the data submission readiness checklists before starting the update and upon data submission.

2. Legacy BRAC/BRAC 05 installations update (refer to Enclosure 1 for the schedule):

a. Spring Submission: Installations must update all BRAC site-level data (Installation Restoration [IR], Munitions Response [MR] and Compliance), including cost-to-complete (CTC) estimates, cost requirements spread, and phase schedules prior to 8 Apr 11. In addition, all CTC estimates must be released before the Spring data submission. The CTC team performs QC reviews and follow-on data validation calls of cost estimates for all BRAC installations prior to the spring submission. Guidelines for developing and updating CTC estimates are provided at Enclosure 4.

b. Fall Submission: Installations must update all non-cost site-level data (IR, MR and Compliance), including phase schedules prior to 31 Aug 11 for all BRAC installations.

c. BRAC Installation Action Plans(BIAP): BRAC Installations requiring a BIAP must update and finalize the BIAP for FY12 by 1 Oct 11 using the IAP tool located on Army Environmental Reporting Online (AERO). To meet this suspense, the AEDB-R must be updated and submitted no later than 31 Aug 2011 so that the BIAP tool will access programmed requirements for FY12 and so the BIAP can be properly staffed through the USACE Public Affairs Office prior to being made available to the public.

3. Active and non-BRAC Excess installations update:

a. Installations are responsible for the updating AEDB-R and AEDD-CC and preparing CTC estimates for IR (including compliance-related restoration (CR)), CC and

DEVELOPING AND UPDATING COST-TO-COMPLETE (CTC) ESTIMATES

Department of Defense guidance requires the Army to use CTC estimates as the basis for the environmental liability portion of the Army's annual financial statement. The CTC estimates when used to report environmental liabilities become accounting estimates and therefore must meet Financial Management Regulation (FMR) requirements. This requires CTC estimates to be complete, up-to-date, and fully and formally documented. Although AEDB-R and AEDB-CC enhancements ensured supporting documentation was attached to all sites, the quality control reviews identified discrepancies with the quality of the documentation and audit trails. Please consider the following procedures when preparing CTC estimates. Information that is more detailed is included in the CTC Guidance document found here (AERO account required): https://www.us.army.mil/suite/doc/12758145.

Documentation and Audit Trails

A Memorandum for Record (MFR)/Summary Document must be provided for all CTC estimates. The MFR must identify the supporting documentation used and provide a good audit trail to show how that information is used to populate AEDB-R and AEDB-CC. The MFR should cover a single site. The MFR must be signed and dated by the estimator and the reviewer who ensures the estimate is supported by documentation. The MFR must be uploaded to the database of record and also placed in the installation's project files. Examples of an MFR and types of supporting documentation are included in the CTC Guidance document.

Current Year Dollars

The CTC estimates shall be reported on a current cost basis (unadjusted for inflation). The following factors should be used to bring previous year costs to the current year.

Base Fiscal Year	Escalation Rate
2006	1.0889
2007	1.0604
2008	1.0354
2009	1.0201
2010	1.0110

ESC FACTOR

Remedial Cost Engineering and Requirements (RACER™) Software

Cost estimators must prepare their RACER™ estimates in accordance with Army-specific requirements to ensure successful import to AEDB-R. All assumptions used to develop RACER™ estimates must be entered into the comment fields in the RACER™ software. Information that is more detailed is included in the CTC Guidance document. A summary of the Army guidelines for developing RACER™ estimates is listed below.

Estimate Documentation Report

System:

RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 12 FY11

Project:

Project ID: SEAD-12
Project Name: SEAD-12
Project Category: Institutional/Training

03/21/2011

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

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2011
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 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
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: 03/21/2011

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: 03/22/2011

Reviewer Signature: _____ **Date:** _____

Estimated Costs:

Phase Element Names	Direct Cost	Marked-up Cost
LTM	$21,481	$55,576
Total Cost:	$21,481	$55,576

Estimate Documentation Report

Phase Element Documentation:

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

Total Marked-up Cost: $55,576

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:

Site WBS Report
(with Markups)

System:

RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 12 FY11

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: 2011
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
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: 03/21/2011

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: 03/22/2011

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

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	$55,576
		$55,576
	Total:	$55,576
	HTRW RA WBS Total:	$55,576
	Total:	**$55,576**

MEMORANDUM FOR RECORD

Date: 19 March 2011

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 2011 data call. Future monitoring cost is based on task order pricing for monitoring. The Remedial Action Cost Engineering and Requirements (RACER) 10.4 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), 11 years remain. The required Land Use Control management of this AOC is included in SEAD 009. Twenty-nine monitoring wells not part of the monitoring program were removed (Source 5).

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 2010
4. RACER Guidance Cost to Owner
5. Draft Well Decommissioning Report, March 2011.

RACER Assumptions:

Well Abandonment (LTM)
1. Three well groups: Group 1 (19 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 0008 and 0009)	$65,506	
2 events per year (Source 3)		
Inspection (CLIN 0007)	$4,554	
Annual Report (Source 3,CLIN 0010)	$32,753	
Project Management (CLIN 0006)	$35,567	
	$138,380	
$138,380/yr x 11 years		$1,522,180
Owner Support Cost (Source 4)		
Cost of GW Monitoring $1,522,180		
$1,522,180 x 11%		$167,440

LTM

Site Close-out (RACER)	$58,988
Well Abandonment	$75,668

Total Site Cost **$1,824,276**

Material Change: No

Prepared by: Randall Battaglia
Cost Estimator

Signature Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Signature 3/22/11
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 Mon.

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

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
US ARMY ENGINEERING & SUPPORT CENTER
CEHNC-CT
4820 UNIVERSITY SQUARE
HUNTSVILLE AL 35816-1822

7. ADMINISTERED BY *(if other than 6)* CODE W912DY
DIRECTORATE OF CONTRACTING - HNC
ATTN: LAURA STIEGLER
256-895-1171
HUNTSVILLE AL 35807

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

9. CONTRACTOR CODE 1BVK6 FACILITY
NAME AND ADDRESS
PARSONS INFRASTRUCTURE & TECHNOLOGY GROU
KEN STOCKWELL
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
NET 30 DAYS

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

14. SHIP TO CODE
SEE SCHEDULE

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:

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

f. TELEPHONE NUMBER | g. E-MAIL ADDRESS

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

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

[ ] PARTIAL [ ] FINAL

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

32. PAID BY

33. AMOUNT VERIFIED CORRECT FOR

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	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 CIN: W31RYO814018190001		$112,815.00

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

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				
				NET AMT	$32,027.00

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				
				NET AMT	$32,027.00

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 OPTION		1	Lump Sum	$35,567.00	$35,567.00

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

- 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.

OPTION YEAR FY 12

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.

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.

Source #3

FINAL
ANNUAL REPORT AND YEAR 3 REVIEW
FOR THE
ASH LANDFILL OPERABLE UNIT
SENECA ARMY DEPOT ACTIVITY, ROMULUS, NEW YORK

Site

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 2010

the environment. 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, an inspection of the condition of the vegetative covers, and a 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 three 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 detection limits;
- 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 concentrations of 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 off-site well MW-56 are below Class GA groundwater standards;
- Continued monitoring is required to determine trends in concentrations of COCs at PT-18A, PT-17, and MWT-7;
- 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.

4.2 Recommendations

Based on the first three years of long-term monitoring at the Ash Landfill OU, the Army recommends continuing the semi-annual frequency of monitoring based on the process shown in **Figure 12** (which

is also Figure 7-3 of the RDR). 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), if a recharge is conducted, MWT-26, MWT-27, and MWT-29 would be excluded from the LTM program, as detailed in **Figure 12**. MWT-28 and MWT-23 will continue to be monitored as part of the performance monitoring wells to supplement data that will be used to determine whether additional biowall recharge is required. The recharge evaluation(s) conducted each year after the first biowall recharge would review the chemical and geochemical data at MWT-28 and MWT-23, and determine if the contaminant increase is a result of poor biowall performance or due to other issues such as seasonal variations in groundwater levels, unusual precipitation events, or desorption and back diffusion.

- Performance monitoring wells (PT-17, PT-18A, PT-22, PT-24, MWT-7, MWT-22, MWT-24, and MWT-25) will continue to be monitored on a semi-annual basis in a manner consistent with the Year 3 LTM program. In the three years of LTM events at the Ash Landfill OU, the concentrations of COCs, specifically TCE, in the wells downgradient of the source area (near PT-18A) have decreased.

- The off-site performance monitoring well (MW-56) will continue to be monitored on a semi-annual basis.

- The vegetative covers at the Ash Landfill and the NCFL will be inspected annually to ensure that they remain intact and protective of ecological receptors.

- The frequency of monitoring and the need to recharge the biowalls will be reviewed in the annual report submitted after the completion of the fourth year of LTM, based on the process outlined in **Figure 12**.

5.0 REFERENCES

Kampbell, D.H. and J.T. Wilson, 1998. Analysis of dissolved methane, ethane, ethene in groundwater by a standard gas chromatographic technique. *Journal of Chromatography*, Vol. 36:253-256.

Parsons, 1994. Remedial Investigation Report at the Ash Landfill Site, Final, July 1994.

Parsons, 2004. Record of Decision for the Ash Landfill Operable Unit, Final, July 2004.

Parsons, 2006a. Final Sampling and Analysis Plan for Seneca Army Depot Activity (SAP), October, 2006.

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

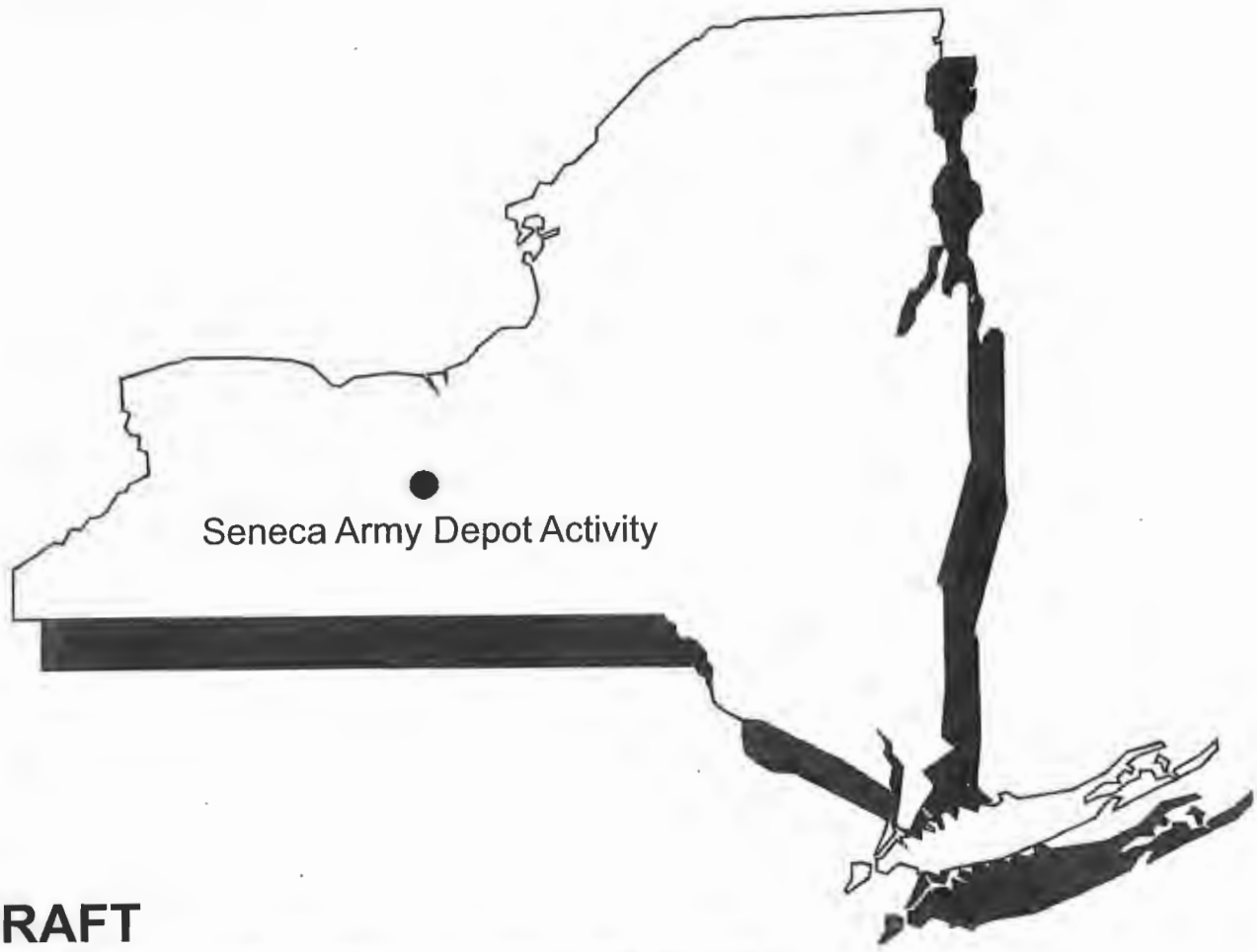
Related Topics

- *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*

SOURCE #5

US Army, Engineering & Support Center
Huntsville, AL

Seneca Army Depot Activity
Romulus, NY



DRAFT
WELL DECOMMISSIONING REPORT

ASH LANDFILL OPERABLE UNIT, SEAD-4, SEAD-5, SEAD-11, SEAD-12, SEAD-13, SEAD-24, SEAD-25, SEAD-26, SEAD-27, SEAD-48, SEAD-59, SEAD-63, SEAD-67, SEAD-70, SEAD-71, SEAD-119B, SEAD-121C, & SEAD-122B
SENECA ARMY DEPOT ACTIVITY

Contract No. W912DY-08-D-0003
Task Order No. 0008
EPA Site ID# NY0213820830
NY Site ID# 8-50-006

PARSONS

MARCH 2011

1.0 INTRODUCTION

This report documents the decommissioning of 145 groundwater monitoring wells located at the former Seneca Army Depot Activity (SEDA or the Depot) in Seneca County, New York (EPA CERCLIS Site ID: NY0213820830; NYS Inactive Waste Site ID: 8-50-006). The monitoring wells were decommissioned because they are no longer needed for long-term monitoring or continuing environmental sampling and analysis purposes associated with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or State of New York Inactive Hazardous Waste Site investigations and studies that continue at the former Depot as the Army fulfills its federal and state environmental assessment, remediation, and long-term monitoring obligations. SEDA was listed as a Federal Facility on the National Priorities List (NPL) in August of 1990, and since its listing, the Army has worked to identify and quantify the levels of environmental contamination that are present, and when determined to be necessary, remediate identified contamination to mitigate or eliminate potential risks and hazards to the public and environment that may be associated with its presence in the media at, and in the vicinity, of the Depot. Under this work, the Army has conducted environmental assessments and evaluations at 112 known or suspected areas of concern (AOCs) located within the bounds of the Depot. As a result of these assessments and evaluations, 27 suspected AOCs were eliminated from further study and analysis, with oversight agency concurrence and approval, after initial assessments and evaluations indicated that suspected contaminants were not present at levels that posed unacceptable levels of threats or risk. The remaining 76 AOCs were assessed under the CERCLA and other aligned regulatory programs, and findings and conclusions of these assessments have led to remedial action decisions that have been documented in Records of Decision (RODs) that have been approved by, or gained concurrence of, oversight regulatory agencies. Of the AOCs processed to RODs, 30 required no action (NA), 17 required no further action (NFA) once interim actions were completed, and the remaining 29 AOCs are subject to land use controls (LUCs) or other continuing regulatory requirements. Long-term groundwater monitoring required under approved RODs is continuing at four AOCs (SEAD-16, former Abandoned Deactivation Furnace Site; SEAD-17, former Existing Deactivation Furnace Site; SEAD-23, former Open Burning [OB] Grounds; and, SEAD-25, former Fire Training and Demonstration Pad) and one operable unit (the Ash Landfill Operable Unit, SEADs 3, 6, 8, 14 and 15). Environmental assessments and final regulatory action and approval are still pending at the remaining nine AOCs.

The decommissioning of the monitoring wells was performed in accordance with the U.S. Army's (Army's) August 2010 Work Plan titled *Well Decommissioning Plan for SEAD-4, SEAD-5, Ash Landfill Operable Unit, SEAD-11, SEAD-12, SEAD-13, SEAD-24, SEAD-25, SEAD-26, SEAD-27, SEAD-48, SEAD-59, SEAD-63, SEAD-67, SEAD-70, SEAD-71, SEAD-119B, SEAD-121C, and SEAD-122B, Seneca Army Depot Activity* (Parsons, 2010). The Work Plan was prepared based on the procedures and recommendations provided in New York State Department of Environmental Conservation's (NYSDEC's) Draft guidance titled *Groundwater Monitoring Well Decommissioning* issued January 8, 2009. The well decommissioning was performed on behalf of the U.S. Army, Seneca Army Depot Activity under Contracts issued by U.S. Army, Engineering and Support Center, Huntsville (USAESCH – W912DY-08-D-0003, Task Orders 2, and 8) and the U.S. Air Force Center

for Engineering and the Environment (AFCEE – FA8903-04-D-8675, Task Order 31) by Parsons Infrastructure & Technology Group Inc. (Parsons) and GeoLogic NY, Inc. Well decommissioning completed at SEAD-4 and SEAD-11 was conducted under work authorized under AFCEE's Contract FA8903-04-D-8675, Task Order 31, while the decommissioning activities completed at SEAD-13 were performed under work authorized under USAESCH's Contract W912DY-08-D-0003, Task Order 2. Well decommissioning activities completed at all of the other sites were performed under work authorized under USAESCH's Contract W912DY-08-D-0003, Task Order 8.

Wells decommissioned under this work were located at 24 former solid waste management units (SWMU) or AOCs within the Depot. SWMU/AOC descriptions corresponding to the SEAD designations are identified below, along with a brief description of the site's current regulatory status:

- SEAD-3, 6, 8, 14 and 15: The Ash Landfill Operable Unit – approved ROD; LUCs and long-term monitoring groundwater monitoring required at designated wells.
- SEAD-4/38: The Munitions Washout Facility/ Building 2079 Boiler Blow Down Pit – approved ROD; NFA with release of land for unrestricted use and unlimited exposures, no required groundwater monitoring.
- SEAD-5: Former Sludge Waste Piles – approved ROD; LUCs required, no required groundwater monitoring.
- SEAD-11: Old Construction Debris Landfill – approved ROD; NFA with release of land for unrestricted use and unlimited exposures, no required groundwater monitoring.
- SEAD-12: Radioactive Waste Burial Sites – regulatory status pending, but no long-term groundwater monitoring anticipated necessary.
- SEAD-13: Inhibited Red Fuming Nitric Acid (IRFNA) Disposal Site – approved ROD; LUCs required, no required groundwater monitoring.
- SEAD-24: Abandoned Powder Burning Pit – approved ROD; NFA with release of land for unrestricted use and unlimited exposures, no required groundwater monitoring required.
- SEAD-25: The Fire Training and Demonstration Pad – approved ROD; LUCs and long-term groundwater monitoring required at designated wells.
- SEAD-26: The Fire Training Pit and Area – approved ROD; LUCs required, no required continuing long-term groundwater monitoring.
- SEAD-27: Steam Cleaning Waste Tank in Building 360 – approved ROD; LUCs required, no required groundwater monitoring.
- SEAD-48: Row E0800 Pitchblende Ore Storage Igloos – approved ROD; NFA with land released for unrestricted use and unlimited exposures, no groundwater monitoring required.
- SEAD-59: Fill Area West of Building 135 – approved ROD; LUCs required no required groundwater monitoring.

- SEAD-63: Miscellaneous Components Burial Site – approved ROD; NFA with release for land for unrestricted use and unlimited exposures, no groundwater monitoring required.
- SEAD-67: Dump Site east of Sewage Treatment Plant No. 4 – approved ROD; LUCs required no required groundwater monitoring.
- SEAD-70: Fill Area Adjacent to Building T-2110 – regulatory status pending, but no long-term groundwater monitoring anticipated.
- SEAD-71: Alleged Paint Disposal Area – approved ROD; LUCs required no required groundwater monitoring.
- SEAD-119B: Former Small Arms Range at the Lake Housing Area – NA, not a site of interest, no required groundwater monitoring.
- SEAD-121C: Defense Reutilization and Marketing Office (DRMO) Yard – approved ROD; LUCs required, no required groundwater monitoring.
- SEAD-122B: Small Arms Range at the Airfield Parcel – approved ROD; LUCs required, no required groundwater monitoring.

The locations of the affected SEADs are shown on **Figure 1.** Wells decommissioned under this work were either not needed, or designated by the Army as being unlikely to be needed, for continuing monitoring of groundwater quality or conditions at sites where they were installed. Wells designated for decommissioning at SEAD-25 and the Ash Landfill Operable Unit (SEADs 3, 6, 8, 14, & 15) are not included amongst the wells that have been included in the continuing long-term monitoring programs implemented and continuing at these sites. The Army does not anticipate that long-term groundwater monitoring will be required at SEAD-12 or SEAD-70, as past investigations and studies have not suggested that groundwater quality is of concern at either of these sites; however, if future monitoring of groundwater is required at one or both of these sites, once proposed plans or RODs are negotiated and finalized, then new wells will be installed as needed to satisfy the requirements of the defined groundwater monitoring program.

A complete list of the groundwater wells decommissioned at each SWMU/AOC and data documenting their former location is provided in **Table 1-1**. Additional information pertinent to the decommissioning method is also summarized in the table.

- Grouting in Place – the well's bottom cap was punctured and then the well casing is grouted from the bottom up by the tremmie pipe method with a Portland cement and Bentonite mixture to a depth of approximately five feet below the ground surface (bgs), cutting the top five feet of casing bgs and removing it and associated well material from the ground.

After the grout was brought to required level, the remaining space was backfilled with native material. A well decommission record was prepared for each well and is provided in **Appendix C**.

A general description of the well abandonment activities is provided in this section; details of specific well abandonment method used for each well is provided in **Table 1-2**. One hundred and twenty (120) of the 145 wells decommissioned were completed via casing pulling (grout, pull, grout – GPG), while seven had grout filled portions of the well left in place after they snapped during the casing pull (GPG/GIP).

- SEAD-13: 11 wells grouted, pulled casing, back grouted – monitoring wells MW13-1 through MW13-7 and MW13-9 through MW13-12.
- SEADs-5, 59, and 71: seven wells grouted, pulled casing, back grouted – monitoringwells MW5-2, MW59-1, MW59-2, MW59-4, MW59-7, MW59-8, MW71-3; pulling casing at one location resulted in part of the grout filled well screen/upriser to separate and be left in the back grouted hole – monitoring well MW71-4.
- SEADs-12, 48, and 63: 39 wells grouted, pulled casing, back grouted – monitoring wells MW12-01, MW12-02, MW12-04, MW12-06, MW12-09, MW12-16 through MW12-27, MW12-29 through MW12-32, MW12-38 through MW12-40, MW12A-02, MW12A-02, MW12A-03, MW12B-01 through MWB-03, MW48-1 through MW48-6, MW48-8, and MW63-1 through MW63-3; pulling casing at three locations resulted in part of the grout filled well screen/upriser to separate and be left in the back grouted hole – monitoring wells MW12-03, MW12-05, and MW48-7.
- SEADs-121C, 122B, and 70: eight wells grouted, pulled casing, back grouted – monitoring wells Monitoring wells MW121C-3 through MW121C-6, MW-2 through MW-3, and MW70-1 and MW-70-4; pulling casing at one location resulted in part of the grout filled well screen/upriser to separate and be left in the back grouted hole – monitoring wells MW-1 at SEAD – 121B.
- SEADs-25 and 26: 11 wells grouted, pulled casing, back grouted – monitoring wells Monitoring wells MW25-11, MW26-01 through MW26-08, MW26-10, and MW26-11.
- SEADs-24 and 67: six wells grouted, pulled casing, back grouted – monitoring wells MW24-01 through MW24-03, and MW67-1through MW67-3.
- Ash Landfill: 17 wells grouted, pulled casing, back grouted – monitoring wells MW-28, MW-30, MW-31, MW-33, MW-34, MW-36, MW-37, MW-38D, MW-43, MW-45, MW-47, MW-53, MW-59, MWT-11, PT-21A, PT-23, andPT-25; pulling casing at two locations

19 wells

resulted in part of the grout filled well screen/upriser to separate and be left in the back grouted hole – monitoring wells PT-11 and PT-15.

- SEADs 119B and 27: five wells grouted, pulled casing, back grouted – monitoring wells MW119B-1 through MW119B-3, MW-1 and MW-2.
- SEAD-4: nine wells grouted, pulled casing, back grouted - monitoring wells MW4-1 through MW4-3, and MW4-5, MW4-7, MW4-9, MW4-11 through MW4-13.
- SEAD-11: seven wells grouted, pulled casing, back grouted – monitoring wells MW11-1 through MW11-7.

The remaining wells were decommissioned by grouting in place. The list below summarizes the sites and wells that were decommissioned by grouting in place:

- SEADs-5, 59, and 71: Monitoring wells MW71-1 and MW71-2.
- SEADs-12, 48, and 63: Monitoring well MW12-35.
- SEADs-25 and 26: Monitoring wells MW25-04D, MW25-07D, MW25-12D, MW25-14D, and MW25-16D.
- Ash Landfill: Monitoring wells MW-35D, MW-41D, MW-42D, MW-49D, MW-50D, MW-51D, MW-52D, MW-54D, MW-55D, and MW-57D.

10 wells

3.3 WASTE GENERATION AND DISPOSAL

The solid waste generated during decommissioning activities included the protective steel casings, bollards, well pipe and screen, and concrete collars. The wastes were disposed as follows:

- No soil was recovered from any of the well installation locations. All soil disturbed around the decommissioned well sites was used as backfill at the location.
- All well installation debris, including protective steel casings, bollards, well pipe, and screen, and concrete collars (tare weight 16.38 tons) was disposed of as construction and demolition debris at a licensed landfill.

Estimate Documentation Report

System:

RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 006 FY11

Project:

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

03/21/2011

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

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2011
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
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Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 03/21/2011

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: 03/22/2011

Reviewer Signature: _____ **Date:** _____

Estimated Costs:

Phase Element Names	Direct Cost	Marked-up Cost
LTM #1 Site Closeout Doc and Well Abandondonment	$71,577	$134,655
Total Cost:	$71,577	$134,655

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: $134,655

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 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
Technology/Group Name		Well Group 1 19 wells	n/a
Number of Wells		19	EA
Well Depth		15	FT
Well Diameter		2	IN
Well Abandonment Method		Overdrill / Removal	n/a
Formation Type		Consolidated	n/a
Karst Formation Type		No	n/a

Comments:

Site WBS Report (with Markups)

System:

RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 006 FY11

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: 2011
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
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Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 03/21/2011

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: 03/22/2011

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	$58,988
	Other	Well Abandonment	$75,668
			$134,655
		Total:	$134,655
		HTRW RA WBS Total:	$134,655
		Total:	**$134,655**

MEMORANDUM FOR RECORD

Date: 14 March 2011

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 2011 data call. The Remedial Action Cost Engineering and Requirements (RACER) 10.4 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)	$53,874
Remedial Action (RA) (RACER)	
Mobilization (Decontamination)	$63,644
Excavation	$17,532
Disposal (includes Load and Haul of the berm and excavation of six inches of underlying soil and Off-site Transportation and Disposal)	$457,565
Prof. Labor support	$64,705
RA Subtotal	$603,446
LTM	
Site Closeout (RACER)	$53,441
Well Abandonment (RACER)	$26,661
Five Year Review for MPPEH (RACER)	$57,311
Total Site Cost	$794,733

Material Change: No

Prepared by: Randall Battaglia
Cost Estimator

Signature Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Signature 3/22/11
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

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.

5yr 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.

Estimate Documentation Report

System:

RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 003-R-01 FY11

Project:

Project ID: SEAD-003-R-01
Project Name: SEAD-003-R-01 SEAD 46,57
Project Category: Conservation

03/21/2011

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

Location Modifier	Default	User
	1.094	1.094

Options
Database: System Costs
Cost Database Date: 2011
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

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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Telephone Number: 607-869-1523
Email Address: randy.w.battaglia@usace.army.mil
Estimate Prepared Date: 03/21/2011

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: 03/22/2011

Reviewer Signature: _____ **Date:** _____

Estimated Costs:

Phase Element Names	Direct Cost	Marked-up Cost
RD	$0	$53,874
RA(C)	$465,614	$603,446
LTM #1 Five Year Reviews	$22,964	$57,311
LTM #2 Site Close-out Doc and well abandonment	$37,137	$81,598
Total Cost:	$525,715	$796,228

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	$538,741	10.00	$53,874	2011

Total Design Cost: $53,874

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: $603,446

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 ($)		331,819	$
Percentage	19.5	19.5	%
Dollar Amount		64,705	$

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: $57,311

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: $81,598

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:

Site WBS Report
(with Markups)

System:

RACER Version: 10.4.0
Database Location: C:\Documents and Settings\e3pperwb\Application Data\AECOM\RACER 10.4\Racer.mdb

Folder:

Folder Name: SEAD 003-R-01 FY11

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: 2011
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: 03/21/2011

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: 03/22/2011

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	$538,741	10.00	$53,874	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	$53,874
		$53,874
	Total:	$53,874
	HTRW RA WBS Total:	$53,874

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	$63,644
			$63,644
331.08	SOLIDS COLLECTION AND CONTAINMENT		
331.08.01	Contaminated Soil Collection	Excavation	$17,532
			$17,532
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	$250,643
			$457,565
331.22	GENERAL REQUIREMENTS (Optional Breakout)		
331.22.03	Warehouse, Materials Handling, and Purchasing	Professional Labor Management	$64,705
			$64,705
		Total:	$603,446
		HTRW RA WBS Total:	$603,446

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	$57,311
			$57,311
		Total:	$57,311
		HTRW RA WBS Total:	$57,311

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	$53,441
	Other	Well Abandonment	$28,157
			$81,598
		Total:	$81,598
		HTRW RA WBS Total:	$81,598
		Total:	**$796,229**