452-16

MEMORANDUM FOR RECORD

Date: March 31, 2015

SUBJECT: Environmental Liabilities for site SEAD-025, 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 Site SEAD 025. Estimators experience is documented on the Estimator Experience Form, per the Financial Accounting Standards Board Handbook (FASB) Technical Release 2 (Enclosure 1). The Remedial Action Cost Engineering and Requirements (RACER) 11.2 system was used to estimate the cost of well abandonment and site close out. Site Closeout and well decommissioning is expected to take place in FY 17 when GW testing is expected to be terminated. The LUC monitoring cost and the five-year review requirements are included with Site SEAD 009 as a single installation activity.

Site History: SEAD-25, Fire Training Area is located in the east-central portion of SEDA covering roughly 7.6 acres and was in use from the late-1960s to the late-1980s. During the 1980s the pad was used for firefighting demonstrations. Results of the 1998 RI indicated the site soil had been impacted by VOCs and SVOCs due to past fire training activities. The presence of VOCs in the soil is considered to be the source of GW impacts that will be mitigated through the removal of the soil. The 2003 ROD (Encl 2) required the removal of impacted soil, monitored natural attenuation of the GW contamination and institute LUCs. The removal of soils was completed in 2005. GW monitoring and LUCs began in May 2007. The GW monitoring is expected to last ten years as identified in the ROD, or through 2016.

Current Condition: SEAD 25 is in RA(O) phase where GW is being sampled annually and Natural Attenuation of the contamination is being monitored.

Exit Strategy: Upon demonstration that GW has met the established cleanup goal, GW sampling will be eliminated and LUC restriction will be eliminated. Monitoring is expected to end in 2016 the Annual Report will document the end of monitoring.

Enclosures:

1. Estimator Experience Form
2. Final Record of Decision, Fire Training and Demonstration Pad (SEAD 25) and the Fire Training Pit and Area (September 2004)
3. Estimate Summary Table
4. Contract W912DY-08-D-0003 Task Order 15 Date 2012 Jun 26
5. RACER Cost To Owner Default discription

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

Cost to Owner: The US Army Corps of Engineers the contracting and oversight Agency for the remaining Ground water sampling. Their cost is assumed to be the default value that is used in RACER to be consistent with the contract close out rates.

Cost Summary SEAD-025

Ground Water sampling FY16 (Encl 4) CLIN 0002b $64,760.19 (Rounded to $64,760)	$64,740
Cost to Owner for Contract management $64,760 X .11 = $7,123.60 (rounded to $7,124)	$7,124
Well Abandonment/Site Closeout (RACER)	$ 112,585
Total Site Cost	$184,449

Material Change: yes

Reason: FY17 Sampling required for 10 year effort and not previously programmed.

Prepared by: Randall Battaglia
Cost Estimator

Signature Date

Reviewed by: Stephen M. Absolom
Cost Estimate Reviewer

Signature Date

ESTIMATOR EXPERIENCE

ESTIMATOR NAME: Randall Battaglia	**POSITION: Project Manager**
LOCATION: USACE NY Seneca Proj. Ofc	**YEARS OF EXPERIENCE: 31 years**
EMAIL: Randy.W.Battaglia@usace.army.mil	**PHONE NUMBER:607-869-1532**

DESCRIPTION: (Insert description of experience here, such as educational background, training, etc.)
B.S. Chemical Engineering, 1982; Certified Project Manager, 2007;

Work Experience: Project Manager, USACE, 1995-Present: Prepare and manage Life-Cycle Cost for HTRW projects; executes the COE project management business process & establishing a project management plan with a project development team consisting of interdisciplinary, regional or other agencies teams to execute & ensure all projects meet customer, budgetary, safety, scope and schedule requirements during the life cycle of the project, under changing management parameters. Represents the Army as an Alternate for the installation manager in all customer/sponsor, congressional, public contacts, including public meetings, organizations, property transfers with the state, EPA, county, & independent organizations interested in the projects.

Environmental Coordinator, Seneca Army Depot, 1985-1995; performed all program management, cost estimation, budget regulatory, permitting, and other management for the environmental program at the active Seneca Army Depot for hazardous waste, TSDF, air, wetlands, CERCLA, RCRA, engineering projects, etc.

Process Engineer, IEC Electronics, 1983-1985 Process engineering for production, product development, personnel, process & quality control

Relevant Continuing Education: Network Systems Analysis; Project Management for Military Projects & HTRW projects; Environmental Auditing; Economic Assessment; Various Project Management & environmental remediation courses; Cost Estimating

SITE TYPE REVIEWED: Insert site number(s) at which experience gained for each site type to the maximum extent possible.

	SITE TYPE	SITE NUMBER		SITE TYPE	SITE NUMBER
	Above Ground Storage Tank	SEAD 5,59,71		Open Burn	SEAD 23, 24, 006-R-01, 003-R-01, 007-R-01
	Burn Area	SEAD 24,45,25,26		Plating Shop	
	Chemical Disposal	SEAD 13,72,4		POL (Petroleum/Lubricant Lines	SEAD 9
	Contaminated Buildings	SEAD 12, 16,17, 3		Radioactive Waste Area	SEAD 012,48,72, 63, NRC License closeout
	Contaminated Fill	SEAD 3, 9,4		Sewage Treatment Plant	SEAD 20,21,22
	Contaminated Groundwater	SEAD 025,006, 001-R-01, 023, 064B&D, 041		Small Arms Range	SEAD 57, 46, 120B,122A,122B
	Contaminated Sediments	SEAD 4, 3,		Soil Contamination After Tank Removal	SEAD 59,
	Contaminated Soil Piles	SEAD 5		Spill Site Area	SEAD 122
	Dip Tank			Storage Area	SEAD 123
	Disposal Pit/Dry Well			Surface Disposal Area	SEAD 023, 006-R-01, 024,
	Explosive Ordnance Disposal Area	SEAD 23, 24, 006-R-01, 003-R-01, 007-R-01		Training and Maneuver Area	
	Fire/Crash Training Area	SEAD 025,026		Underground Storage Tank	SEAD 27
	Firing Range	SEAD 122		Underground Tank Farm	
	Incinerator	SEAD 006, 001-R-01,019, 018		Unexploded Munitions/Ordnance	SEAD 006-R-01, 001-R-01,003-R-01, 007-R-01
	Industrial Discharge			Wash rack	
	Landfill	SEAD 006, 064 A,B&D, 011,		Waste Lines	
	Maintenance Yard	SEAD 122		Waste Treatment Plant	
	Oil Water Separator	SEAD 27,			

Enclosure 1

Contract

ORDER FOR SUPPLIES OR SERVICES

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	0015	2012 Jun 26	See Schedule	

6. ISSUED BY	CODE	7. ADMINISTERED BY (if other than 6)	CODE	8. DELIVERY FOB
US ARMY ENGINEERING & SUPPORT CENTER CEHNC-CT 4820 UNIVERSITY SQUARE HUNTSVILLE AL 35816-1822	W912DY	SEE ITEM 6		[X] DESTINATION [ ] OTHER (See Schedule if other)

9. CONTRACTOR	CODE	FACILITY	10. DELIVER TO FOB POINT BY (Date) (YYYYMMMDD)	11. MARK IF BUSINESS IS
NAME AND ADDRESS PARSONS GOVERNMENT SERVICES INC. KEN STOCKWELL 100 W WALNUT ST PASADENA CA 91124-0001	1BVK6		SEE SCHEDULE 12. DISCOUNT TERMS NET 30 DAYS	[ ] SMALL [ ] SMALL DISADVANTAGED [ ] WOMEN-OWNED

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

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

[ ] 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: EMAIL: BY: CONTRACTING / ORDERING OFFICER	25. TOTAL	$104,815.26
		26. DIFFERENCES	

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

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

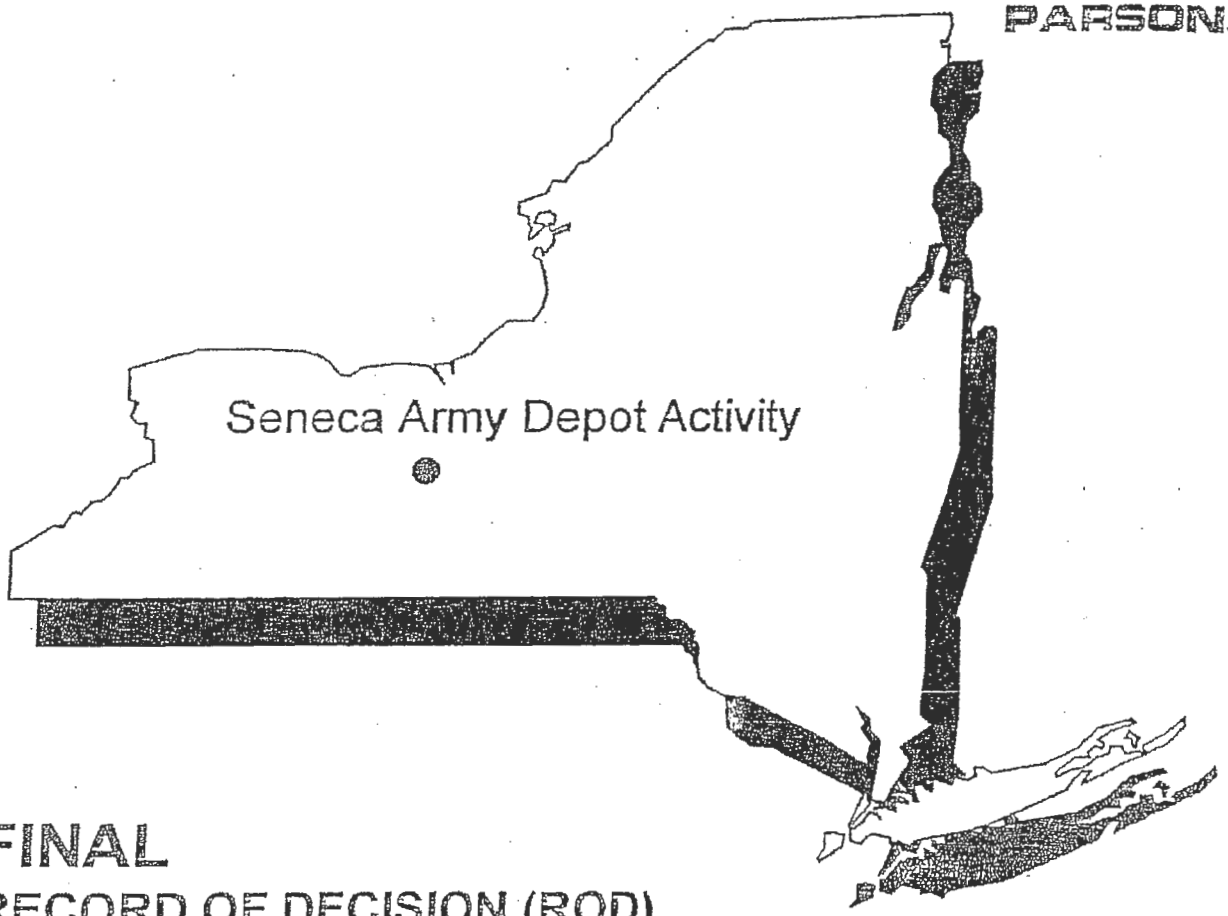
e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE	28. SHIP NO.	29. DO VOUCHER NO.	30. INITIALS
	[ ] PARTIAL [ ] FINAL	32. PAID BY	33. AMOUNT VERIFIED CORRECT FOR
f. TELEPHONE NUMBER / g. E-MAIL ADDRESS	31. PAYMENT [ ] COMPLETE [ ] PARTIAL [ ] FINAL		34. CHECK NUMBER
36. I certify this account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

ENCL 4

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

ENCL 2

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.

Section A - Solicitation/Contract Form

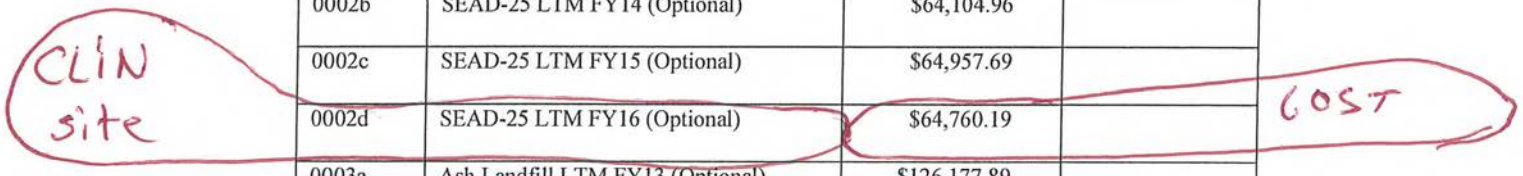
AWARD NARRATIVE

This Task Order 0015, which contains Firm Fixed Price tasks, is being issued to Parsons Government Services, Inc. to complete the Implementation of the Long Term Monitoring Plan for the Open Burning (OB) Grounds, Fire Training Areas, and Various Sites, Seneca Army Depot Activity, Seneca County, New York in accordance with the provided Performance Work Statement (PWS) dated 28 March 2012.

The Period of Performance Completion Date for this Task Order 30 September 2015.

The Contracting Officer Representative and Project Manager for this Task Order is Huntsville Center Project Manger Mr. John S. Nohrstedt. He can be contacted by telephone: (256) 895-1639; or email John.S.Nohrstedt@usace.army.mil.

CLIN	Task	Price	Funded
0001a	OB Grounds LTM FY13	$42,109.07	$42,109.07
0001b	OB Grounds LTM FY14 (Optional)	$42,925.84	
0001c	OB Grounds LTM FY15 (Optional)	$43,744.68	
0001d	OB Grounds LTM FY16 (Optional)	$43,571.42	
0002a	SEAD-25 LTM FY13 (Optional)	$62,783.73	
0002b	SEAD-25 LTM FY14 (Optional)	$64,104.96	
0002c	SEAD-25 LTM FY15 (Optional)	$64,957.69	
0002d	SEAD-25 LTM FY16 (Optional)	$64,760.19	
0003a	Ash Landfill LTM FY13 (Optional)	$126,177.89	
0003b	Ash Landfill LTM FY14 (Optional)	$129,311.13	
0003c	Ash Landfill LTM FY15 (Optional)	$131,539.09	
0003d	Ash Landfill LTM FY16 (Optional)	$136,892.39	
0004a	SEAD-16/17 LTM FY12	$62,706.19	$62,706.19
0004b	SEAD-16/17 LTM FY13 (Optional)	$63,842.00	
0004c	SEAD-16/17 LTM FY14 (Optional)	$65,180.08	
0004d	SEAD-16/17 LTM FY15 (Optional)	$66,639.70	
0004e	SEAD-16/17 LTM FY16 (Optional)	$66,281.16	
0005a	LUC Evaluations FY12 (Optional)	$42,176.01	
0005b	LUC Evaluations FY13 (Optional)	$42,959.89	
0005c	LUC Evaluations FY14 (Optional)	$43,213.13	



- 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.

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.

CTN for site

4.0 (Task 2, CLIN 0002) DESCRIPTION OF SERVICES FOR LONG TERM MONITORING OF THE FIRE TRAINING AND DEMONSTRATION PAD AREA:(Task 2a, CLIN 0002a (FY 13) FIRST ANNUAL GROUNDWATER MONITORING EVENT

First Annual Groundwater Monitoring Event. Upon direction from the KO, the Contractor shall commence the initial 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 the Annual Report - Following completion of the first annual Groundwater Monitoring Event, the Contractor shall prepare and submit an 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.

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.

Task 2b, (Optional) (CLIN 0002b (FY14))) SECOND ANNUAL GROUNDWATER MONITORING EVENT

Second Annual Groundwater Monitoring Event. The Contractor shall commence the second 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 the Annual Report. Following completion of the 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 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.
- 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.

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.

(Task 2c, (Optional) (CLIN 0002c (FY15))) THIRD ANNUAL GROUNDWATER MONITORING EVENT

Third Annual Groundwater Monitoring Event. The Contractor shall commence the third 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 the Annual Report. Following completion of the 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 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.
- 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.

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.

CLIN For FY16

(Task 2d (Optional) (CLIN 0002d (FY16))) FOURTH ANNUAL GROUNDWATER MONITORING EVENT

Fourth Annual Groundwater Monitoring Event. The Contractor shall commence the fourth 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 the Annual Report. Following completion of the 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 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.
- 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.

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, CLIN 0003) DESCRIPTION OF SERVICES FOR LONG TERM MONITORING OF THE ASH LANDFILL OPERABLE UNIT:(Task 3a, CLIN 0003a (FY 13)) FIRST YEAR GROUNDWATER MONITORING EVENT

First Year Groundwater Monitoring Event. Upon direction from the KO, the Contractor shall commence the first year groundwater monitoring which is comprised of a Mid-Year and an End-Of-Year event.

Mid-Year Groundwater Monitoring. The mid-year monitoring event is comprised of the following:
Groundwater Monitoring. The Contractor shall perform the following groundwater monitoring.
Plume Performance Monitoring. The Contractor shall sample and analyze monitoring wells PT-18, 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.

Biowall Process Monitoring. The Contractor shall sample and analyze monitoring wells MWT-12R, MWT-13, MWT-15, MWT-17R and MWT-23 as per the protocols and monitoring wells in the approved plan.

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%~~.

DEFAULT COST

ENCL 5

Estimate Summary Table
Site # SEAD-025

Site Number	Phase	CTC Subtotal ($$K)	Estimate Type	Assumption	Basis of Assumption	Basis of Assumption Document Name	Location of Basis of Assumption Document
SEAD 025	LTM	$64,740	Contract Price	Contract for GW monitoring	TO 15 CLIN (002D)	Contract #: W912DY-08-D-0003, D.O. 015 dated June 26,2012	HNC
							1600 Univerrsity Square
							Huntsville Al
	Close out	$112,585	IGE	RACER	RACER	RACER SEAD-006	USACE NY
							5786 State Route 96
							Romulus, NY 14541
	LTM	$7,124	IGE	COE OVERSITE of Contract	RACER Cost to Owner	RACER	USACE NY
					11% of Contract cost		5786 State Route 96
							Romulus, NY 14541
Total cost to complete		$184,449					
Does the CTC estimate include work through site closure? (Yes/No)		yes					

Enclosure 3