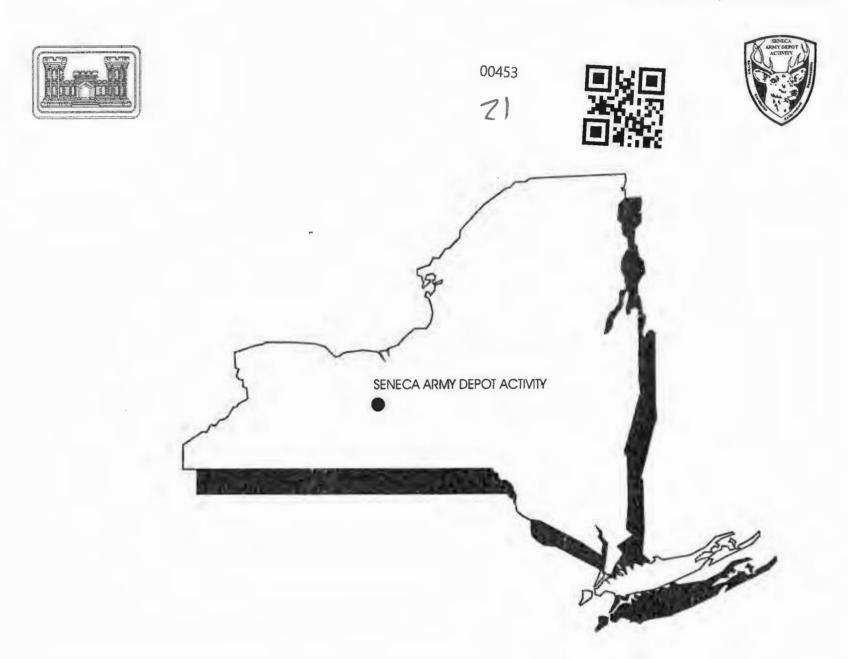
U.S. ARMY ENGINEER DIVISION HUNTSVILLE, ALABAMA



SECTION C - COST ESTIMATE
OPEN BURNING GROUND REMEDIATION PROJECT

30 Dan Road • Canton. Massachusetts 02021-2809 • (781) 401-3200 • Fax; (781) 401-2575

September 16, 1998

Commander

U.S. Army Corps of Engineers Huntsville Division ATTN: Ms. Alicia Allen (CEHND-PM-ND)

4820 University Square Huntsville, Alabama 35816

SUBJECT:

Huntsville COE/Contract DACA87-95-D-0031 Delivery Order 009, Final Cost Estimate for the Remedial Action at the Open Burning (OB) Grounds, SEAD 23, at the Seneca Army Depot Activity, Romulus, New York

Dear Ms. Allen:

Enclosed are four copies of the final cost estimate for Delivery Order 9, Preparation of the Cost Estimate for the Remedial Action at the Open Burning (OB) Grounds, SEAD 23, located at the Seneca Army Depot Activity (SEDA), Romulus, NY. The work performed is described in the Statement of Work (SOW) for Delivery Order 009 of the above referenced contract. Copies of this document have not been issued to either the EPA or NYSDEC.

The estimate has been revised to reflect the following changes in the project's scope of work.

- The soil cover has been changed from 9 inches to 12 inches.
- The lead criteria for soil requiring solidification has been changed to 800 mg/kg of lead.

The estimate is presented in three parts with the first part covering both the work of EODT and Weston, the second and third part of the estimate present separate estimates for EODT and Weston.

Parsons Engineering Science, Inc. (Parsons ES) appreciates the opportunity to provide you with this cost estimate. Please do not hesitate to contact me at (617) 859-2492 should you have any questions.

Sincerely,

PARSONS ENGINEERING SCIENCE, INC.

Michael Duchesneau, P.E.

Project Manager

MD/pdm/Decision

cc:

Mr. Steve Absolom, SDSSE-HE

Mr. Keith Hoddinott, USACHPPM (Prov.)

Mr. Randall Battaglia, CENAN-PP-E

Mr. John Buck, AEC

Mr. Gary Lacroix, Engineering Management Division



Seneca Army Depot Section C - Cost Estimate Open Burning Grounds Remediation Project

Table of Contents

Section 1	Cost Estimate	for the	Combined	Work o	of EODT	and	Weston

Section 2 Cost Estimate for EODT only

Section 3 Cost Estimate for Weston only

Seneca Army Depot Section C - Cost Estimate Open Burning Grounds Remediation Project

Section 1 Cost Estimate For The Combined Work Of EODT And Weston

TITLE PAGE

.....

OB Grounds Remediation
Soil and Sediment Removal and
Installation of a Soil Cover
(Cost for both EODT and
Westin's Work)

Designed By: Parsons ES Estimated By: Parsons ES

Prepared By: Parsons ES

Preparation Date: 09/01/98
Effective Date of Pricing: 12/04/97
Est Construction Time: 100 Days

Sales Tax: 5.0%

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2

TITLE PAGE

PROJECT BREAKDOWN:

Fri 11 Sep 1998

PROJECT NOTES

Eff. Date 12/04/97

The estimate is structured as follows and uses a 2 digit number at each level. The 2 digit numbers for the first 3 title levels are taken from the HTRW Remedial Action Work Breakdown Structure. The 2 digit numbers for the remaining title levels are user defined. The detail items are at LEVEL 6.

LEVEL 1 - WBS Level 1 (Account)

LEVEL 2 - WBS Level 2 (System)

LEVEL 3 - WBS Level 3 (Subsystem)

LEVEL 4 - User Defined (Assembly Category or Other)

LEVEL 5 - User Defined (Assembly or Other)

PROJECT DESCRIPTION:

The scope of work is presented by contractor, there will be two contractors on this project. EODT will be the UXO contractor and Westin will be the remediation contractor on this project. The scope of work for both the contractors is summarized below.

The following is a summary of the activities that are presently included in the UXO contractor's scope of work.

- · Layout the areas to be excavated
- · Excavation and screening of soil with lead less than 500 mg/kg such as the low lying hills.
- · Excavation and screening of soils with lead over 500 mg/kg
- · Placing all screened soils into 200 cubic yard piles for testing
- · Based on the testing results consolidate the soil piles as required into three types of piles with the first pile(s) containing soil that has lead at less than 500 mg/kg which will be used for backfill (low lying hills), the second pile(s) will contain non-hazardous soil with lead greater than 500 mg/kg, and the third pile(s) will contain soils that are a characteristic

hazardous waste due to toxicity.

- · Stormwater management at the excavations, at the soil screening operation, and at the soil stockpiles
- · Disposal of the screened material including scrap metal, ordnance, stone, sod, etc.
- · Backfilling the excavation with the soil that has less than 500 mg/kg of lead and/or off site borrow (off site borrow will be furnished by the remediation contractor but placed and compacted by the UXO contractor).

The following activities are included in the remediation contractor's scope of work, these activities will require close coordination with the UXO contractor to assure that the objectives of the remediation project are met. These activities will be performed before the UXO contractor has completely cleared the site of ordnance.

· Collect the confirmatory soil samples from the excavation and have them analyzed

TITLE PAGE 3

- Layout additional soil excavation, if required, based on the results of the confirmatory sampling
- Collect and analyze soil samples from the screened 200 cubic yard soil piles
- \cdot Maintain all sampling records during the excavation including sampling locations

and sampling results

 \cdot Classify each 200 cubic yard pile as either hazardous or non-hazardous or soil

with less than 500 mg/kg of lead.

- · Dewater the excavations and the excavated materials.
- Treat and discharge the water collected from the excavations and excavated material
- · Furnish off site fill at the excavations as required to backfill the excavations

(placement of the fill and compaction of the fill will be by the UXO contractor)

The remediation contractor shall be responsible for the following activities which will be performed either off site or after the site has been cleared of ordnance.

- Preconstruction tasks including; wastewater discharge permits, wetlands permitting; soils solidification treatability testing; landfill sellection; locating a borrow pit, and required submittals
- Load the non-hazardous soils onto trucks and dispose of the soil at an off site disposal facility (trucks to be decontaminated before leaving the site)
- · Prepare the area for the soil solidification/stabilization process
- Layout the area that will receive the 12 inch soil cover and collect soil samples to confirm the limits of the proposed area (goal is to cover all soil with lead over 60 mg/kg of lead)
- · Installation of the 12 inch soil cover including the storm water management system for the areas to be covered both during and after construction
- · Solidify/stabilize the soils that are a characteristic hazardous waste
- · Confirmatory sampling and testing of solidified/stabilized soils
- · Disposal of solidified/stabilized soils at an off site disposal facility
- · Install the Reeder Creek dewatering system
- · Dewater Reeder Creek
- · Excavate Reeder Creek sediments
- · Dewater excavated sediments
- · Stockpile, test and dispose of the excavated sediments
- · Restore Reeder Creek stream banks
- · Remove the Reeder Creek dewatering system
- Construct new wetlands to replace the wetlands disturbed by the remediation project
- · Install 7 groundwater monitoring wells and decommission the existing wells
- · Stormwater detention basins and sediment control system during construction of the soil cover

TITLE PAGE

PRODUCTIVITY:

Productivity, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required, productivity for appropriate activities will be adjusted for this project as follows:

- Level of Protection A Productivity ___%
- 2. Level of Protection B Productivity ___%
- Level of Protection C Productivity ____%
- 4. Level of Protection D Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

	Level	A Level	B Level	C Level D
Availiable Time (minutes)	480	480	480	480
Non-Productive Time (minutes):				
Safety meetings	20	20	10	10
Suit-up/off	60	60	40	10
Air tank change	160	20	0	0
*Breaks	60	60	40	30
Cleanup/decontamination	20	20	20	20
Productive Time (minutes)	160	300	370	410
Productivity:	160/480	300/480	370/480	410/480
	X100%	X100%	X100%	X100%
	33%	63%	77%	85%
Example:				
Normal Production Rate (CY	/HR) 250	250	250	250
X Productivity	.33	.63	.77	.85
=Reduced Production Rate(CY	/HR) 83	158	193	213
* Break time ranges (minutes)	60-140	60-140	40-140	30-70

ESCALATION:

Escalation is input into the progrm based on starting the project in April 1999 and completeing by the end of October 1999.

Contingency:

Contingency rates are variable and are applied at level 2 of the estimate Contingences are shown for both Design Contingencies and Construction contingencies.

The following list the areas where there is the biggest potential for changes in cost due to uncertainties .

Quantities of soil over 500 mg/kg could increase based on the results of the confirmatory sampling done in the excavation.

The Quanities of soil requiring solidification/stabilization could increase based on the results of the confirmatory sampling done in the soil piles.

The area requiring the 12 inch soil cover could increase based on the results of the confirmatory sampling done along the perimeter of the soil cover.

BID FORM:

This estimate, when run in conjunction with the Assemblies Database file "HTRW TEMPLATE - BID FORM", will generate a system summary report which splits the estimate detail into the proper bid items. When the estimate is prepared in the applicable Work Breakdown Structure (WBS), it is possible to have your estimate emulate the bid schedule. After the estimate is prepared, perform the following steps:

- Create a file in the Assemblies Database with the level ID length set for two characters.
- Build the bid schedule in the Assemblies Database numbering the level ID beginning with 01. Always use two characters.
- Copy each Assembly title to the second level of the assemblies database direct under the level one title. Use the same level ID number that was used at the preceding level one title, (ie. 01).
- 4. Enter your project database. For each detail item in your project, place the corresponding two digit level ID number in the Work Category field. For faster entry, use the detail level browse screen and label in the column titled WCAT, (work category).

Specify the Indirect System Summary Report for Level ${\tt 0}$ to have your estimate sort by bid form.

Fri 11 Sep 1998 Eff. Date 12/04/97 PROJECT NOTES

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA5: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

TIME 09:42:44

TITLE PAGE

OTHER GOVERNMENT COSTS:

Other Government Costs consist of:

*Engineering and Design During Construction (EDC)	1.0%
As-Builts	0.5%
Operation and Maintenance (O&M) Manuals	0.5%
Laboratory Quality Assurance	1.0%
Total	3.5%

*Use .5% (except for Superfund projects over \$2,000,000 use 1.0% and for Superfund projects under \$2,000,000 use 1.5%).

CONSTRUCTION MANAGEMENT:

Use 8% (except for Superfund projects over \$2,000,000 use 6%).

LABOR ID: NAT94A EQUIP ID: NAT95A

Currency in DOLLARS

CREW ID: NAT95A UPB ID: NAT95A

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA5: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

TIME 09:42:44

DETAIL PAGE 1

CREW ID: NAT95A UPB ID: NAT95A

33. Remedial Action

	. Mobilize and Preparatory Work	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
	0 0000 Basic Cost Items>									
	AB Field office trailer EODT	3.00		0	0	0	887	0	887	295.58
USR	R AA Field office trailer Westin	7.00	MOS	0	0	0	2,069	0	2,069	295.58
<01941	3120 Tool Trailer - Contractor>									
AF	AA Temp Const Stor. Van 16 X 8	7.00	MO	0	0	0	708	0	708	101.16
01941	5000 Construction Toilets>									
AF		3.00	MO	0	0	0	315	0	315	105.00
USR	R AA Toilet Portable Chemical Westin			0	0	0	735	0	735	105.00
<01910) 1200 Superintendents>									
	AB General Superintendent (P.M.)	3.00	MON	0	0	0	16,695	0	16,695	5565.00
	R AA General Superintendent (P.M.)	7.00		0	0	0	38,955	0	38,955	5565.00
-01010	/300 Nice Francisco Descensols									
) 4300 Misc. Engineering Personnel> . AB Surveyors EODT	1.00	MON	0	0	0	7 150	0	7 450	7450.00
	AA Surveyors Westin	1.00		0	0	0	3,150 3,150	0	3,150 3,150	3150.00 3150.00
01930	1110 MISCELLANEOUS PLANS>									
01936	<prices a<br="" for="" plans="" technical=""><to 100="" complete<br="" man-hours="" to=""><of be="" can="" in<="" involved="" people="" td=""><td>DEPENDI</td><td>NG ON</td><td>IT'S COMF</td><td>LEXITY.</td><td>A VARIETY></td><td></td><td></td><td></td><td></td></of></to></prices>	DEPENDI	NG ON	IT'S COMF	LEXITY.	A VARIETY>				
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B HTW B USR L HTW	<pre></pre>	DEPENDIN PLAN DEV G, GRAPH 80.00 80.00 40.00	NG ON VELOR ING, HR HR	N IT'S COMP PMENT. PEOF ORGANIZING 0 0 0	PLEXITY. PLE ARE NO 6,400 6,400 3,200	A VARIETY> IEEDED TO> ITC.> 0 0	0 0	0	6,400 3,200	80.00
B HTW B USR L HTW L HTW	<pre></pre>	DEPENDII PLAN DEV G, GRAPH 80.00 80.00 40.00 16.00	NG ON VELOF ING, HR HR HR	N IT'S COMP PMENT. PEOF ORGANIZING 0 0 0	PLEXITY. PLE ARE N G DATA, E 6,400 6,400 3,200 1,280	A VARIETY> IEEDED TO> ITC.> 0 0 0	0 0 0	0 0 0	6,400 3,200 1,280	80.00 80.00 80.00
B HTW B USR L HTW L HTW	<pre></pre>	DEPENDII PLAN DEV G, GRAPH 80.00 80.00 40.00 16.00 40.00	NG ON VELOF ING, HR HR HR	N IT'S COMP PMENT. PEOF ORGANIZING 0 0 0 0	PLEXITY. PLE ARE N G DATA, E 6,400 6,400 3,200 1,280 3,200	A VARIETY> IEEDED TO> ITC.> 0 0 0 0	0 0 0 0	0 0 0	6,400 3,200 1,280 3,200	80.00 80.00 80.00
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Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA5: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

33. Remedial Action

TIME 09:42:44

22.50

22.50

23

CREW ID: NAT95A UPB ID: NAT95A

DETAIL PAGE

33.01. Mobilize and Preparatory Work	QUANTY	MOU	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
TOTAL Bottled water Westin	7.00	MO	0	0	0	1,400	0	1,400	200.00
TOTAL Honey Wagon EODT	3.00	MO	0	0	0	3,000	0	3,000	1000.00
TOTAL Honey Wagon Westin	7.00	MO	0	0	0	7,000	0	7,000	1000.00
<01912 4000 Equipment Maintenance Vehicle	es>								
M MIL AB Fuel Truck Driver EODT	7.00	MON	0	0	0	7,350	0	7,350	1050.00
USR AA Fuel Truck Driver Westin	4.00	MON	0	0	0	4,200	0	4,200	1050.00
<01942 4200 Project Signs>									
AF AB Temporary Construction sign	15.00		0	0	0	170	0	170	11.33
USR AA Temporary Construction sign	15.00	SF	0	0	0	170	0	170	11.33
<01953 1110 Photographs Processing>	/ 00	F A	0	0	0	52	0	52	13.09
HTW AA Project photos Westin	4.00	EA	0	U	U	52	U	32	13.09
<01951 1500 First Aid Kits>									
HTW AB 36 Ingredients EODT	1.00		0	0	0	134	0	134	134.45
USR AA 36 Ingredients Westin	1.00	EA	0	0	0	134	0	134	134.45
<01951 5100 Boots (Reusable)>						4/0		440	44.4
HTW AB PVC Overboots (Reusable) EODT	10.00		0	0	0	162	0	162	16.17
USR AA PVC Overboots (Reusable) Westin	10.00	PR	0	0	0	162	0	162	16.17
<01951 5200 Disposable Clothing>	10-00								45 45
HTW AB Boot Covers, Tyvek (Bag Of 10Pr)	10.00	EA	0	0	0	121	0	121	12.13
USR AA Boot Covers, Tyvek (Bag Of 10Pr	10.00	EA	0	0	0	121	0	121	12.13
HTW AB Coveralls, Tyvek (Case Of 25)	25.00	EA	0	0	0	3,875	0	3,875	155.00
USR AA Coveralls, Tyvek (Case Of 25)	25.00	EA	0	0	0	3,875	0	3,875	155.00
HTW AB Shoe Covers, Tyvek (bag of 15	1.00	EA	0	0	0	88	0	88	88.23
USR AA Shoe Covers, Tyvek (bag of 15	1.00	EA	0	0	0	88	0	88	88.23
<01951 5400 Eye Protection>									
HTW AB Safety Glasses EODT	15.00	EA	0	0	0	46	0	46	3.09
USR AA Safety Glasses Westin	15.00	EA	0	0	0	46	0	46	3.09
<01951 5500 Gloves (Reusable)>									
HTW AB Butyl Gloves(Reusable) EODT	10.00		0	0	0	217			21.72
USR AA Butyl Gloves(Reusable) Westin	10.00	PR	0	0	0	217	0	217	21.7
<01951 5600 Ear Protection>									
HTW AB Ear Muffs EODT	5.00		0	0	0				10.86
USR AA Ear Muffs Westin	5.00	EA	0	0	0	54	0	54	10.86

HTW AA Ear Plug(Box Of 200) EODT

USR AA Ear Plug(Box Of 200) Westin

23

1.00 EA

1.00 EA

Fri 11 Sep 1998 DETAILED ESTIMATE

Tri-Service Automated Cost Engineering System (TRACES) Eff. Date 12/04/97 PROJECT SENCA5: OB Grounds Remediation - Soil and Sediment Removal and

Seneca OB Grounds DETAIL PAGE 3

TIME 09:42:44

33	Remedial	Action
22.	Kemediat	ACLION

	obilize and Preparatory Work		OM MANHOUR					TOTAL COST	UNIT COST
×01051 5	800 Misc Protection Equipment>								
	B Hard Hats EODT	10.00 E	Α 0	0	0	59	0	59	5.88
	A Hard Hats Westin	10.00 E		0		59	0	59	5.88
<01957 3	100 Spray Washers>								
AF A	A Diesel, 3000 Psi, 4-1/2 GPM	1.00 E	A 0	0	0	3,360	0	3,360	3360.00
	300 Decontamination Trailers>	7			•	47.0/5	•	47.0/5	4005 0
HTW A	A 8' x 24', 4 Showers, HVAC,	7.00 E	A 0	0	0	13,965	0	13,965	1995.0
	110 Particulate Samplers>	7 00 5		0	0	F F/0	0	F F/0	705 7
	A Digital Dust Sampler	7.00 E		0	0	5,568	0	5,568	795.38
B HTW A	A decomission existing wells	31.00 E	A 15	206	450	8,138	0	8,793	283.6
	270 Monitor Well Sampling Equipm			0	0	149	0	140	84.0
AF A	A Monitor Well Sampling Equip.	2.00 D	AY 0	0	0	168	0	168	84.0
	300 Sample Collection Using CPT>			0	0	7 150	0	7 450	7450.0
	A Mobilize/Demobilize CPT Rig	1.00 E		0		3,150	0	3,150	3150.0
	A Standby Time for CPT Rig and	7.00 E		0		1,260 368	0	1,260 368	157.5 52.5
	A Setup Cost Per Each Hole, CP A Level "D" PPE Rental Per 2-Man	4.00 D		0	0	1,008	0	1,008	252.0
<02557 5	110 Hollow Stem Auger - Normal S	oil>							
	<assumes be="" done="" in="" l<="" td="" to="" work=""><td>evel D Str</td><td>eet Clothing</td><td>. Costs F</td><td>or Drillin</td><td>ng Only.></td><td></td><td></td><td></td></assumes>	evel D Str	eet Clothing	. Costs F	or Drillin	ng Only.>			
HTW A	A 4-1/4" ID x 8" OD For 2" Or	160.00 L	F 140	1,930	4,221	0	0	6,152	38.4
02557 5	270 Stainless Steel - Flush Thre	aded>							
HTW A	A 2" Dia (50 mm) Casing No. 304	160.00 L	F 26	354	774	2,232	0	3,360	21.0
02557 5	480 Filter Wrap>								
	<pre><filter in<="" is="" pre="" purchased="" sock=""></filter></pre>			47	7.1			47	2 (
HTW A	A 2" Dia Filter Sock	25.00 L	F 1	17	36	14	0	67	2.6
	710 Locking Caps>					474		700	
HTW A	A 4" Expandable Locking Cap With	7.00 E	A 12	166	363	171	0	700	99.9
<02557 6	110 Filter Sand>			(0) 0 7	1000 11-10-				
UTLLA	<pre><filter -<="" 2="" a="" be="" figure="" morie="" no.="" pre="" sand="" should="" silica=""></filter></pre>	0.20 T		22	48		0	143	714.6
HIW A	A NO. 2 MOTTE STITCE Sand -	0.20	ON Z	22	40	12	· ·	143	/14.0
:02557 6	120 Bentonite> <sealants and="" are="" grouts="" reco<="" td=""><td>mmended Fo</td><td>r Isolatina</td><td>Screened</td><td>Intervals</td><td>Of Moni></td><td></td><td></td><td></td></sealants>	mmended Fo	r Isolatina	Screened	Intervals	Of Moni>			
						OI HOITE			
	<toring chips="" for="" shal<="" td="" wells.=""><td>IOW HOTERO</td><td>les And Ahan</td><td>doned Wel</td><td>Is.></td><td></td><td></td><td></td><td></td></toring>	IOW HOTERO	les And Ahan	doned Wel	Is.>				

CREW ID: NAT95A UPB ID: NAT95A

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA5: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

33. Remedial Action

DETAIL PAGE 4

TIME 09:42:44

33.02. Sampling, & Testing by Westin	QUANTY UOM MA						TOTAL COST	UNIT COST
<01954 6410 Sample Packaging, Vials,	Pottlos							
<pre><prices pre="" precleaning<="" reflect=""></prices></pre>		v Precle	enina le	Not The	Full Env			
<a assurance="" quality="" th="" trea<=""><th></th><th>y. Fiecti</th><th>calling 15</th><th>NOT THE</th><th>rutt Ep></th><th></th><th></th><th></th>		y. Fiecti	calling 15	NOT THE	rutt Ep>			
HTW AA 1 Liter (32 Oz) HDPE Bottle		0	0	0	614	0	614	30.7
HTW AA Custody Seals (Package Of 1		0	0	0	2	0	2	1.19
HTW AA Safe Transport Can Filled W		0	0	0	118	0	118	14.75
HTW AA Documentation Package For Q		0	0	0	3,262	0	3,262	163.08
<01954 7100 Waste And Waste Water An	alyisis>							
<costs laboratory<="" reflect="" td=""><td>Portion Only></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></costs>	Portion Only>							
AF AA TAL Metals (6010/7000s)	70.00 EA	0	0	0	15,068	0	15,068	215.2
<01954 5130 Screw Augers>								
AF AA Hand Auger Rental	90.00 DAY	0	0	0	7,088	0	7,088	78.7
<01954 6120 Field Vehicles>					- 2460		(920)	
AF AA Van or Pickup Rental	90.00 DAY	0	0	0	7,088	0	7,088	78.7
<01954 6140 Sampling Personnel Trave	l>				•			
AF AA Personnel Per Diem	90.00 DAY	0	0	0	7,088	0	7,088	78.7
<01954 6410 Sample Packaging, Vials,								
<pre><prices <a="" assurance="" pre="" precleani="" quality="" reflect="" trea<=""></prices></pre>	- ' '	ly. Precle	eaning Is	Not The	Full Ep>			
HTW AA 1 Liter (32 Oz) Clear Wide (0	0	0	791	0	791	39.5
HTW AA Custody Seals (Package Of 1	0) 12.00 EA	0	0	0	14	0	14	1.19
HTW AA Safe Transport Can Filled W		0	0	0	177	0	177	14.7
AF AA Packing Tape Per Roll	12.00 EA	0	0	0	50	0	50	4.20
AF AA Plastic Sheeting (Per Roll)		0	0	0	17	0	17	16.8
AF AA Isopropanl	4.00 GAL	0	0	0	126	0	126	31.5
AF AA Deionized Water	100.00 GAL	0	0	0	1,050	0	1,050	10.5
<01954 6450 Overnight Delivery Servi	ce>							
<pricing deliver<="" reflects="" td=""><td></td><td></td><td>tates. Ad</td><td>ditional</td><td>Charges></td><td></td><td></td><td></td></pricing>			tates. Ad	ditional	Charges>			
< Could Apply Depending O								
HTW AA 21# To 50# Packages	50.00 LB	0	0	0	3,885	0	3,885	77.7
<01954 6470 Coolers And Ice Chests>	40.00							
HTW AA 60 Quart Ice Chest	10.00 EA	0	0	0	469	0	469	46.8
HTW AA Blue Ice Soft Packs	20.00 EA	0	0	0	105	0	105	5.2
<pre><01954 7410 Ep Toxicity Analysis></pre>	n Only Jumbers In I	Descripti	on Pefers	To Mothe	nde Of Th			
<pre><esting></esting></pre>	in only dumbers in i	rescript i	on kerers	TO MELIC	Jus Uf 17			
AF AA EP Toxicity, Metals EPA 301	0 122.00 EA	0	0	0	19,856	0	19,856	162.7

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA5: OB Grounds Remediation - Soil and Sediment Removal and

Seneca OB Grounds

33. Remedial Action

DETAIL PAGE 5

CREW ID: NAT95A UPB ID: NAT95A

TIME 09:42:44

33.02.	Sampling, & Testing by Westin	QUANTY U	OM MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
<01954	7420 Toxic Characteristic Leachin	ng Procedur	e (Tclp)>						
	<pre><analysis <ting="" costs="" f="" lab="" methods="" reflect=""></analysis></pre>			n Descript	ions Refer	To Tes>			
AF	AA TCLP (RCRA) (EPA 1311)	12.00 E	Α 0	0	0	19,719	0	19,719	1643.2
<01954	7600 Soil And Sediment Analysis> <cost <ods="" lab="" or="" portion="" reflects=""></cost>	nly Numbers	In Descrip	tions Refe	er To Testi	ng Meth>			
AF	AA TAL Metals (6010/7000s)	600.00 E	Α 0	0	0	148,050	0	148,050	246.7
<02102	1100 Cut Trees - Grub Roots And S	Stump>							
	AB Clearing - Light Brush w/o Grub		CR 85	1,164	1,095	0	0	2,259	75.3
<02221	6000 Spread Dumped Fill Or Gravel <note -="" an="" ar<="" dozer="" in="" open="" td="" w=""><td></td><td>action></td><td></td><td></td><td></td><td></td><td></td><td></td></note>		action>						
MIL	AB Sprd Dumped Fill/Grvl 12" Layer s		SF 806	12,966	46,414	0	0	59,380	0.18
	2110 1 Cy Capacity>							154 4224	
MIL	AB Exc & Load,1 CY Hyd Exc,Wet Mat	30000 0	Y 3,999	71,832	124,002	0	0	195,834	6.5
	3100 Select Distance Or Cycle Tim <speed <embankments="" <for="" distance.="" excav="" hauling="" swell="" varies="" when="" with=""></speed>	Production	n Based On L Shrinkage W	hen Haulin		0	0	/7 2/7	1.5
MIL	AB Haul, 16.5 CY (12.6M3) Trk, 1	30000 (.1	10,086	37,101	Ü	0	47,247	1.5
	1000 Steel Wheel Tandem Roller>								
	AB Compaction by 5 Ton Steel Wheel	11946 (CY 667	10,099	3,847	0	0	13,946	1.1
	2000 Roadway Grading>								
	AA Grade Roadway Subbase Courses	5.00 N		1,207	1,377				516.7
MIL	AA Finish Grade Roadway	5.00 N	121	1,756	2,002	0	0	3,758	751.6
	1000 Prepare And Roll Subbase>								
MIL	AA Crushed Stone Paving, Large Are	e 5000.00 s	SY 320	5,369	4,737	1,763	0	11,869	2.3
MIL	AB TRK, WTR, OF-HY, 5000GAL, W/CAT613	3 960.00 1	HR O	0	32,180	0	0	32,180	33.5
<02082	7210 PLASTIC WASTE PILE COVERS>								
HTW	AB PLASTIC LAMINATE WASTE PILE	100000	SF 190	2,350	30	40,950	0	43,330	0.4
	2000 Vinyl Fence>								
MIL	AB Silt Fences, Vinyl, 3' High	14000	LF 1,494	18,820	253	4,034	0	23,107	1.6
	2240 Soil and Gravel Cover>	74000				407 6			
AF	AA Borrow Material, Unclassified	31900	CY O	0	0	125,941	0	125,941	3.9

LABOR ID: NAT94A EQUIP ID: NAT95A

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA5: OB Grounds Remediation - Soil and Sediment Removal and

Seneca OB Grounds DETAIL PAGE 6

TIME 09:42:44

33.	Remedial	Antion
.3.3.	Kemedial	ACLION

33.03.	Site Work	QUANTY	UOM MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
<02221	6000 Spread Dumped Fill Or Gravel <note -="" an="" are<="" dozer="" in="" open="" td="" w=""><td></td><td>action></td><td></td><td></td><td></td><td></td><td></td><td></td></note>		action>						
MIL	AA Sprd Dumped Fill/Grvl, 6" Layer s		SY 1,624	25,984	93,061	0	0	119,045	0.41
<02225	3100 Select Distance Or Cycle Time <speed distance.="" p<br="" varies="" with=""><for excava<br="" hauling="" swell="" when=""><embankments></embankments></for></speed>	roductio	n Based On L			>			
MIL	AA Haul, 16.5 CY (12.6M3) Trk, 6	31900	CY 1,863	21,526	79,319	0	0	100,845	3.16
	1000 Mechanical Seeding> AA Hydroseed	30.00	ACR 43	540	53	0	60,000	60,593	2019.77
	3000 Furnish And Place Imported To AA Furn & Pl Imported Topsoil, 4"D p		CY 2,794	42,323	57,288	293,081	0	392,692	24.62
	1100 Cut Trees - Grub Roots And St AA Clear and Grub Lt Trees to 6" D		ACR 137	1,805	2,115	0	0	3,920	3919.91
	8000 Lawn Maintenance>	1350.00	MSF 37	587	201	0	0	787	0.58
	2100 By Machine> AA Shape Embankment/Slope w/Machin e	20000	SY 800	11,690	9,774	0	0	21,464	1.07
<02225	4370 Dozer W/U-Blade, 460Hp, (D-9L)>							
CIV	AA Mass Exc, D-9l Dozer, Light AA TRK,WTR,OF-HY, 5000GAL,W/CAT613 C	42699	•	20,171 0		0	0	,	1.99 33.52
	0000 Soil Stabilization> AA Soil Stabil w/Crushed Rock	500.00	CY 80	1,159	3,394	2,494	0	7,047	14.09
<02261	1000 Random - Filter Stone Dumped <machine placed="" protecti<="" slope="" td=""><td></td><td></td><td>· To Adjust</td><td>t Material></td><td>•</td><td></td><td></td><td></td></machine>			· To Adjust	t Material>	•			
MIL	<pre><costs as="" required=""> AA Rip Rap, 10# to 100# Pieces</costs></pre>	5.00	CY 1	17	17	121	0	155	30.92
	1000 Vinyl Mats> AA Erosion Control, Webbed Reveg Ma	2000.00	SY 35	438	6	9,549	0	9,993	5.00
CIV	t AA Erosion Control, Slope Stakes	2000.00	EA 0	0	0	642	0	642	0.32

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA5: OB Grounds Remediation - Soil and Sediment Removal and

Seneca OB Grounds

33. Remedial Action

DETAIL PAGE

CREW ID: NAT95A UPB ID: NAT95A

TIME 09:42:44

33.03.	Site Work	QUANTY	UOM MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
.025/0	4000	- B-11 /	F4 44 7000						
<02540	1000 Netting - 100 Sy (83.6M2) Per <pre><wide -="" stapled=""></wide></pre>	r KOLL 4	Ft (1.2M)>						
MIL	AA Erosion Control Netting, 4' Wid	9000.00	SY 202	2,535	1,995	6,899	0	11,429	1.27
UPB	AA PUMP, CENTRF, DW, 6"D, 100GPM/40"H	160.00	HR 0	0	2,611	0	0	2,611	16.32
MIL	AA TRK,WTR,OF-HY, 5000GAL,W/CAT613	160.00	HR 0	0	5,363	0	0	5,363	33.52
<01954	9110 Above Ground Wastewater Tanks	s>							
	AA 21,000 Gallon (500Bbl), Steel,	3.00	EA 0	0	0	3,969	0	3,969	1323.00
<02212	2100 By Machine>								
MIL	AA Shape Embankment/Slope w/Machin e	2000.00	SY 80	1,169	977	0	0	2,146	1.07
MIL	AA Shape Embankment/Slope w/Machin e	2000.00	SY 33	784	3,163	0	0	3,947	1.97
<02212	2200 By Hand>								
MIL	AA Shape Embankment/Slope by Hand	1000.00	SY 154	1,939	25	0	0	1,964	1.90
MIL	AA Shape Embankment/Slope by Hand	1000.00	SY 200	2,521	33	0	0	2,553	2.5
<02221	1200 By Hydraulic Excav 1/2 To 3/4	4 Cy Capa	city>						
MIL	AA Trench, 1/2 CY Hyd Exc, Lse Rock	1166.00	CY 121	2,183	2,603	0	0	4,786	4.10
<02225	3100 Select Distance Or Cycle Time	e Accimec	Averages						
VOLLED	<pre><speed <embankments="" <for="" distance.="" excav="" hauling="" i="" swell="" varies="" when="" with=""></speed></pre>	Productio	n Based On L			l>			
MIL	AA Haul, 16.5 CY (12.6M3) Trk, 1 M	1166.00	CY 34	392	1,444	0	0	1,836	1.57
<15141	6100 Pump C.I. Close Coupling Star	ndard Cap	acitv>						
	AA Pump C.I. Close Coupling 5 HP			3,498	60	3,320	0	6,879	2292.8
	AB LANDCLR, FLAIL MOWER, 57"W, 3"HT			0			0	•	1.39
UPB	AB PORT STACKING CONVEYOR, 36"X100	960.00	HR 0	0	9,714	0	0	9,714	10.12
MIL	AB MOBILE SCREEN PLANT 120 CY/HR	480.00	HR O	0	6,300	0	0	6,300	13.12
<01954	6210 Geophysical Investigations>								
	AB Magnetometer	30.00	DAY 0	0	0	47,250	0	47,250	1575.00
<02225	2340 3-1/2 Cy Capacity>								
MIL	AB Exc & Ld,3-1/2CY Wh Ldr, Lt Mat	20732	CY 402	6,079	14,915	0	0	20,993	1.01

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Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA5: OB Grounds Remediation - Soil and Sediment Removal and

TIME 09:42:44

8

DETAIL PAGE

JECT SENCAS: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

33. Remedial Action

..... UNIT COST 33.10. Ordnance removal EODT QUANTY UOM MANHOUR LABOR EQUIPMNT MATERIAL SUBCONTR TOTAL COST <02225 3100 Select Distance Or Cycle Time Assumes Average> <Speed Varies With Distance. Production Based On Loose Cubic Yards All> <For Swell When Hauling Excavation And Shrinkage When Hauling To> <Embankments> 6,970 MIL AB Haul, 16.5 CY (12.6M3) Trk, 1 M 20732 CY 603 25,681 Λ 32,651 1.57 i <02545 1000 High Density Polyethylene Liners For Surface> <Impoundments, Landfills, & Mining Applications. Prices Based On> <100,000 Sf Or Greater> CIV AB 100 Mil HD Polyethylene Liners 40000 SF 1,124 14,580 232 31,151 45,963 1.15 MIL AA GENERATOR, 100 KW, 240/480V, SKI 480.00 HR 0 4,751 0 4,751 9.90 MIL AA FORK LIFT, YRD 6,000#, 13.13'L-H 480.00 HR 0 0 6,729 0 6,729 14.02 16,090 MIL AA TRK, WTR, OF-HY, 5000GAL, W/CAT613 480.00 HR 0 0 0 0 16,090 33.52 C MIL Outside Equip. Operators, Mediu 2400.00 HR 2,400 50,915 0 0 0 50,915 21.21 5.767 0 19,919 MII Exc & Ld,3-1/2CY Wh Ldr, Med Mat 16500 CY 381 14.152 1.21 l <13275 1110 CEMENT> <FOR FIXATION CEMENT PROCESSES, ONLY TYPE I AND TYPE K (NON-EXPANSION)> <ARF USED.> HTW AA PORTLAND CEMENT, TYPE I, BULK, 4100.00 TON n n 305,655 305,655 74.55 <13275 2130 CEMENT KILN DUST> HTW AA BULK QUANTITIES of fly ash 4100.00 TON n n Ω 206,640 O 206,640 50.40 <13275 7110 MOBILE WASTE MIXING EQUIPMENT> <PRICING REFLECTS PURCHASE PRICE FOR EQUIPMENT. NOT INCLUDED ARE COSTS> <FOR OPERATION AND MAINTENANCE.> 61,280 HTW AA 10 CY WASTE MIXER, 3 MONTH 3.00 EA Λ n n n 61,280 20426.70 HTW AA BELT FEEDER FOR 10 CY MIXER, 3.00 EA 0 0 0 32,414 0 32,414 10804.50 HTW AA DUST COLLECT WITH 2 HP BLOWER 1.00 EA n O 0 3,150 0 3.150 3150.00 HTW AA WATER PUMP, 2" SELF-PRIMING WIT n n Ω 3,276 O 1.00 EA 3,276 3276.00 Н AF AA Solidification/Stabilization 1.00 EA 0 O 0 6,300 6,300 6300.00 <02083 7300 Subcontracted Shipping of Hazardous Waste> AF AB Transport 20 CY Bulk Solid Wast 350.00 MI O 0 Ω 1,029 1,029 2.94 USR AA Transport 20 CY Bulk Solid Wast 34445 MI 0 0 0 101,268 0 101,268 2.94 USR AA Transport 20 CY Bulk Solid Wast 13590 MI 0 0 0 39,955 Ω 39,955 2.94 USR AA Transport 20 CY Bulk Solid Wast 2750.00 MI 0 Λ Λ 8,085 0 8,085 2 94

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA5: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

TIME 09:42:44

DETAIL PAGE 9

CREW ID: NAT95A UPB ID: NAT95A

33.	Remedial	Action

33.19. Disposal (Commercial)	QUANTY							TOTAL COST	UNIT COS
x13278 8100 DUMP TRUCK HAZWASTE CHARGES									
AF AB Dump Truck Transportation	800.00	MI	0	0	0	2,226	0	2,226	2.7
13278 1210 DISPOSAL OF BULK HAZARDOUS V	ASTE>								
HTW AB HAZARDOUS SOLID BULK WASTE,	40.00	TON	0	0	0	7,980	0	7,980	199.5
USR AA NON-HAZARDOUS SOLID BULK WASTE	5436.00	TON	0	0	0	513,702	0	513,702	94.
USR AA NON-HAZARDOUS SOLID BULK WASTE	1096.00	CY	0	0	0	103,572	0	103,572	94.
USR AB NON-HAZARDOUS SOLID BULK WASTE	135.00	CY	0	0	0	12,758	0	12,758	94.
USR AA NON-HAZARDOUS SOLID BULK WASTE	3166.00	TON	0	0	0	49,865	0	49,865	15.7
:02830 8000 Lawn Maintenance>									
AF AA Watering By Truck	1350.00	MSF	. 108	1,466	2,503	0	0	3,970	2.
TOTAL Removal Of Temp. Fac. EODT	1.00	EA	0	0	0	5,000	0	5,000	5000.
<01720 1000 General>									
AF AA Site Debris Clean-Up & Removal	30.00	AC	384	5,091	5,277	0	0	10,368	345.
TOTAL Demob of Equip/Facl EODT	1.00	EA	0	0	0	5,000	0	5,000	5000.
TOTAL Demob Of Personnel EODT	1.00	EA	0	0	0	5,000	0	5,000	5000.
TOTAL Post-Constr. Submittals EODT	1.00	EA	0	2,500	0	0	0	2,500	2500.
TOTAL Removal Of Temp. Fac. Westin	1.00	EA	0	5,000	0	0	0	5,000	5000.
TOTAL Demob of Equip/Facl Westin	1.00	EA	0	0	. 0	5,000	0	5,000	5000.
TOTAL Demob Of Personnel Westin	1.00	EA	0	0	0	5,000	0	5,000	5000.
TOTAL Post-Constr. Submittals Westin	1.00	EA	0	5,000	0	0	0	5,000	5000.
TOTAL OB Grounds Remediation			23,636	419,453	726,051	2,433,697	60,000	3,639,202	

Fri 11 Sep 1998

Tri-Service Automated Cost Engineering System (TRACES) Fri 11 Sep 1998 Tri-Service Automated Cost Engineering System (TRACES) Eff. Date 12/04/97 PROJECT SENCA5: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

TIME 09:42:44

SUMMARY PAGE 1

CREW ID: NAT95A UPB ID: NAT95A

** PROJECT OWNER SUMMARY - SUBSYSTM (Rounded to 10's) **

33 Remedial Action									
33.01 Mobilize and Prepara									
33.01.01 Mob Construction	1.00 EA	5,580	280	0	590	230	400	7,070	7068.35
33.01.02 Mob of Personnel	1.00 EA	73,330	3,670	0	7,700	2,960	5,260	92,920	92917.38
3.01.03 Preconstruc Submi	1.00 EA	43,200	2,160	0	4,540	1,750	3,100	54,740	54741.37
3.01.04 Temporary Utiliti	1.00 EA	18,940	950	0	1,990	770	1,360	24,000	23998.48
3.01.90 General Overhead	1.00 EA	14,150	710	0	1,490	570	1,020	17,930	17934.00
3.01.95 Health & Safety	1.00 EA	31,800	1,590	0	3,340	1,290	2,280	40,300	40300.55
TOTAL Mobilize and Prep	1.00 EA	187,000	9,350	0	19,640	7,560	13,410	236,960	236960.18
33.02 Sampling, & Testing									
33.02.03 Air Monitoring &	1.00 EA	6,580	330	0	0	.240	430	7,580	7581.88
3.02.04 Monitoring Wells	1.00 EA	29,880	1,490	0	3,140	1,210	2,140	37,860	37856.6
3.02.05 Sample Surface/Gr	1.00 EA	22,540	1,130	0	2,370	910	1,620	28,560	28556.5
3.02.06 Sampling Soil and	1.00 EA	33,040	1,650	0	3,470	1,340	2,370	41,860	41863.8
3.02.09 Laboratory Chemic	1.00 EA	221,800	11,090	0	23,290	8,970	15,910	281,050	281053.4
TOTAL Sampling, & Testi	1.00 EA	313,830	15,690	0	32,260	12,660	22,470	396,910	396912.3
33.03 Site Work									
33.03.02 Clearing and Grub		2,680	130	0	280	110	190	3,400	
3.03.03 Earthwork EODT		375,540	18,780	0	39,430	15,180	26,940	475,860	
3.03.04 Roads Westin		21,530	1,080	0	2,260	870	1,540	27,280	
3.03.11 Erosion control		117,050	5,850	0	12,290	4,730	8,400	148,310	
3.03.12 Soil cover Westi		944,670	47,230	0	99,190	38,190	67,760	1,197,040	
3.03.17 Clearing and Gru		5,560	280	0	580	220	400	7,050	
3.03.22 Earthwork Westin		126,030	6,300	0	13,230	5,090	9,040	159,700	
3.03.27 Erosion control		72,640	3,630	0	7,630	2,940	5,210	92,040	
TOTAL Site Work	1.00 EA	1,665,700	83,290	0	174,900	67,340	119,470	2,110,690	2110693.1
33.06 groundwater collect									
33.06.07 Pumping/Collectio	1.00 GAL	14,120	710	0	1,480	570	1,010	17,890	17890.2
TOTAL groundwater colle	1.00 EA	14,120	710	0	1,480	570	1,010	17,890	17890.2
33.09 Sediment Removal We	1.00 EA	28,500	1,430	0	2,990	1,150	2,040	36,120	36117.5

Fri 11 Sep 1998

Tri-Service Automated Cost Engineering System (TRACES) Fri 11 Sep 1998 Tri-Service Automated Cost Engineering System (TRACES) Eff. Date 12/04/97 PROJECT SENCA5: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

TIME 09:42:44

SUMMARY PAGE 2

** PROJECT OWNER SUMMARY - SUBSYSTM (Rounded to 10's) **

	QUANTY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
						·			
33.10.05 Ordnance Removal	33.00 ACR	193,370	9,670	0	20,300	7,820	13,870	245,030	7425.29
TOTAL Ordnance removal	1.00 EA	193,370	9,670	0	20,300	7,820	13,870	245,030	245034.56
TOTAL OF GRANE FERIOVAL	1.00 EA	175,570	7,010	Ü	20,500	7,020	15,670	243,030	243034.30
33.13 Treatment of Haz Was	1.00 EA	834,840	41,740	0	87,660	33,750	59,880	1,057,860	1057864.29
33.19 Disposal (Commercial									
77 10 02	10/10 TON	100 770	0.020	0	18 0/0	7 200	13.0/0	220 550	44 77
33.19.02 transportation t 33.19.03 Disposal Fees an	19410 TON 19410 CY	180,370 813,270	9,020 40,660	0	18,940 85,390	7,290 32,880	12,940 58,330	228,550 1,030,530	11.77 53.09
33.19.03 Disposat rees all	19410 01	013,210				32,000	36,330	1,030,330	33.09
TOTAL Disposal (Commerc	1.00 EA	993,640	49,680	0	104,330	40,170	71,270	1,259,090	1259085.25
33.20 Site Restoration We									
33.20.06 Post-Construction	30.00 ACR	4,690	230	0	490	190	340	5,9 50	198.21
33.20.00 7031 001311 0011011	30:00 ACK								170.21
TOTAL Site Restoration	1.00 EA	4,690	230	0	490	190	340	5,950	5946.40
33.21 Demobilization									
33.21.01 Removal Of Temp.	1.00 EA	5,930	300	0	620	240	430	7,520	7519.75
33.21.03 Final Decontamin		12,260	610	0	1,290	500	880	15,530	15531.15
33.21.04 Demob of Equip/Fa	1.00 EA	5,930	300	0	620	240	430	7,520	75 19.7 5
33.21.05 Demob Of Personne	1.00 EA	5,930	300	0	620	240	430	7,520	7519.75
33.21.06 Post-Constr. Subm	1.00 EA	2,970	150	0	310	120	210	3,760	3759.88
33.21.11 Removal Of Temp.	1.00 EA	5,910	300	0	620	240	420	7,490	7489.79
33.21.16 Demob of Equip/Fa	1.00 EA	5,910	300	0	620	240	420	7,490	7489.79
33.21.21 Demob Of Personne	1.00 EA	5,910	300	0	620	240	420	7,490	7489.79
33.21.26 Post-Constr. Subm	1.00 EA	5,910	300	0	620	240	420		7489.79
TOTAL Demobilization	1.00 EA	56,670	2,830	0	5,950	2,290	4,060	71,810	71809.42
TOTAL - D 12 - 1 - 1 - 1	4 60 51	/ 202 7/2	24/ /22		/50.040	177 /00	707.070		E/70747 /:
TOTAL Remedial Action	1.00 EA	4,292,360	214,620	0	450,010	173,490	307,830	5,438,310	5438313.44

Fri 11 Sep 1998 ERROR REPORT

Tri-Service Automated Cost Engineering System (TRACES) Eff. Date 12/04/97 PROJECT SENCA5: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

TIME 09:42:44

ERROR PAGE 1

No errors detected...

* * * END OF ERROR REPORT * * *

LABOR ID: NAT94A EQUIP ID: NAT95A Currency in DOLLARS

CREW ID: NAT95A UPB ID: NAT95A

SUMMARY REPORTS SUMMARY PAGE DETAIL PAGE DETAILED ESTIMATE 33. Remedial Action 01. Mobilize and Preparatory Work 02. Mob of Personnel.....1 04. Temporary Utilities 15. Temporary power EODT......1 25. Bottled water EODT......1 30. Bottled water Westin.....1 35. Honey Wagon EODT......2 90. General Overhead......2 95. Health & Safety......2 02. Sampling, & Testing by Westin 06. Sampling Soil and Sediment.....4 09. Laboratory Chemical Anaysis.....4 03. Site Work 02. Clearing and Grubbing EODT......5 03. Earthwork EODT......5 Westin......5 04. Roads 11. Erosion control EODT......5 12. Soil cover Westin......5 06. groundwater collect Westin 07. Pumping/Collection......7 10. Ordnance removal EODT 05. Ordnance Removal......7 13. Treatment of Haz Waste Westin......8 19. Disposal (Commercial) 02. transportation to dispo......8 03. Disposal Fees and Taxes.....9 20. Site Restoration Westin 06. Post-Construction Maintenance......9 21. Demobilization O1. Removal Of Temp. Fac. EODT......9 03. Final Decontamination Westin......9

EQUIP ID: NAT95A

LABOR ID: NAT94A

04. Demob of Equip/Facl EODT.....9

Fri 11 Sep 1998 Eff. Date 12/04/97 TABLE OF CONTENTS

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA5: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

TIME 09:42:44

CONTENTS PAGE

No Backup Reports...

* * * END TABLE OF CONTENTS * * *

Seneca Army Depot Section C - Cost Estimate Open Burning Grounds Remediation Project

Section 2

Cost Estimate For EODT Only

Tue 08 Sep 1998 Eff. Date 12/04/97

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA6: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

TIME 13:05:28

TITLE PAGE 1

OB Grounds Remediation Soil and Sediment Removal and Installation of a Soil Cover (Cost For EODT's Work Only)

Designed By: Parsons ES Estimated By: Parsons ES

Prepared By: Parsons ES

Preparation Date: 09/01/98 Effective Date of Pricing: 12/04/97 Est Construction Time: 100 Days

Sales Tax: 5.0%

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2

TITLE PAGE

PROJECT BREAKDOWN:

The estimate is structured as follows and uses a 2 digit number at each level. The 2 digit numbers for the first 3 title levels are taken from the HTRW Remedial Action Work Breakdown Structure. The 2 digit numbers for the remaining title levels are user defined. The detail items are at LEVEL 6.

LEVEL 1 - WBS Level 1 (Account)

LEVEL 2 - WBS Level 2 (System)

LEVEL 3 - WBS Level 3 (Subsystem)

LEVEL 4 - User Defined (Assembly Category or Other)

LEVEL 5 - User Defined (Assembly or Other)

PROJECT DESCRIPTION:

The scope of work is presented by contractor, there will be two contractors on this project. EODT will be the UXO contractor and Westin will be the remediation contractor on this project. The scope of work for both the contractors is summarized below.

The following is a summary of the activities that are presently included in the UXO contractor's scope of work.

- · Layout the areas to be excavated
- Excavation and screening of soil with lead less than 500 mg/kg such as the low lying hills.
- · Excavation and screening of soils with lead over 500 mg/kg
- · Placing all screened soils into 200 cubic yard piles for testing
- · Based on the testing results consolidate the soil piles as required into three types of piles with the first pile(s) containing soil that has lead at less than 500 mg/kg which will be used for backfill (low lying hills), the second pile(s) will contain non-hazardous soil with lead greater than 500 mg/kg,and the third pile(s) will contain soils that are a

characteristic

hazardous waste due to toxicity.

- Stormwater management at the excavations, at the soil screening operation, and at the soil stockpiles
- Disposal of the screened material including scrap metal, ordnance, stone, sod, etc.
- Backfilling the excavation with the soil that has less than 500 mg/kg of lead and/or off site borrow (off site borrow will be furnished by the remediation contractor but placed and compacted by the UXO contractor).

The following activities are included in the remediation contractor's scope of work, these activities will require close coordination with the UXO contractor to assure that the objectives of the remediation project are met. These activities will be performed before the UXO contractor has completely cleared the site of ordnance.

 Collect the confirmatory soil samples from the excavation and have them analyzed

3

- Layout additional soil excavation, if required, based on the results of the confirmatory sampling
- Collect and analyze soil samples from the screened 200 cubic yard soil piles
- · Maintain all sampling records during the excavation including sampling locations

and sampling results

· Classify each 200 cubic yard pile as either hazardous or non-hazardous or soil

with less than 500 mg/kg of lead.

- · Dewater the excavations and the excavated materials.
- Treat and discharge the water collected from the excavations and excavated material
- · Furnish off site fill at the excavations as required to backfill the excavations

(placement of the fill and compaction of the fill will be by the UXO contractor)

The remediation contractor shall be responsible for the following activities which will be performed either off site or after the site has been cleared of ordnance.

- Preconstruction tasks including; wastewater discharge permits, wetlands permitting; soils solidification treatability testing; landfill sellection; locating a borrow pit, and required submittals
- Load the non-hazardous soils onto trucks and dispose of the soil at an off site disposal facility (trucks to be decontaminated before leaving the site)
- · Prepare the area for the soil solidification/stabilization process
- Layout the area that will receive the 12 inch soil cover and collect soil samples to confirm the limits of the proposed area (goal is to cover all soil with lead over 60 mg/kg of lead)
- · Installation of the 12 inch soil cover including the storm water management system for the areas to be covered both during and after construction
- · Solidify/stabilize the soils that are a characteristic hazardous waste
- · Confirmatory sampling and testing of solidified/stabilized soils
- · Disposal of solidified/stabilized soils at an off site disposal facility
- · Install the Reeder Creek dewatering system
- · Dewater Reeder Creek
- · Excavate Reeder Creek sediments
- · Dewater excavated sediments
- · Stockpile, test and dispose of the excavated sediments
- · Restore Reeder Creek stream banks
- Remove the Reeder Creek dewatering system
- Construct new wetlands to replace the wetlands disturbed by the remediation project
- · Install 7 groundwater monitoring wells and decommission the existing wells
- Stormwater detention basins and sediment control system during construction of the soil cover

TITLE PAGE

PRODUCTIVITY:

Productivity, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required, productivity for appropriate activities will be adjusted for this project as follows:

- 1. Level of Protection A Productivity ___%
- 2. Level of Protection B Productivity ___%
- 3. Level of Protection C Productivity ___%
- 4. Level of Protection D Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

	Level	A Level	B Level	C Level
Availiable Time (minutes)	480	480	480	480
Non-Productive Time (minutes):				
Safety meetings	20	20	10	10
Suit-up/off	60	60	40	10
Air tank change	160	20	0	0
*Breaks	60	60	40	30
Cleanup/decontamination	20	20	20	20
Productive Time (minutes)	160	300	370	410
Productivity:	160/480	300/480	10.00	
	X100%	x100%	X100%	X100%
	33%	63%	77%	85%
Example:				
Normal Production Rate (CY	/HR) 250	250	250	250
X Productivity	.33	.63	.77	.85
=Reduced Production Rate(CY	/HR) 83	158	193	213
* Break time ranges (minutes)	60-140	60-140	40-140	30-70

TIME 13:05:28

TITLE PAGE 5

ESCALATION:

Escalation is input into the progrm based on starting the project in April 1999 and completeing by the end of October 1999.

Contingency:

Contingency rates are variable and are applied at level 2 of the estimate Contingences are shown for both Design Contingencies and Construction contingencies.

The following list the areas where there is the biggest potential for changes in cost due to uncertainties .

Quantities of soil over 500 mg/kg could increase based on the results of the confirmatory sampling done in the excavation.

The Quanities of soil requiring solidification/stabilization could increase based on the results of the confirmatory sampling done in the soil piles.

The area requiring the 12 inch soil cover could increase based on the results of the confirmatory sampling done along the perimeter of the soil cover.

BID FORM:

This estimate, when run in conjunction with the Assemblies Database file "HTRW TEMPLATE - BID FORM", will generate a system summary report which splits the estimate detail into the proper bid items. When the estimate is prepared in the applicable Work Breakdown Structure (WBS), it is possible to have your estimate emulate the bid schedule. After the estimate is prepared, perform the following steps:

- Create a file in the Assemblies Database with the level ID length set for two characters.
- Build the bid schedule in the Assemblies Database numbering the level ID beginning with 01. Always use two characters.
- Copy each Assembly title to the second level of the assemblies database direct under the level one title. Use the same level ID number that was used at the preceding level one title, (ie. 01).
- 4. Enter your project database. For each detail item in your project, place the corresponding two digit level ID number in the Work Category field. For faster entry, use the detail level browse screen and label in the column titled WCAT, (work category).

Specify the Indirect System Summary Report for Level 0 to have your estimate sort by bid form.

Tue 08 Sep 1998 PROJECT NOTES

Tri-Service Automated Cost Engineering System (TRACES) Eff. Date 12/04/97 PROJECT SENCA6: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

TIME 13:05:28

TITLE PAGE 6

OTHER GOVERNMENT COSTS:

Other Government Costs consist of:

*Engineering and Design During Construction (EDC)	1.0%
As-Builts	0.5%
Operation and Maintenance (O&M) Manuals	0.5%
Laboratory Quality Assurance	1.0%
Total	3.5%

*Use .5% (except for Superfund projects over \$2,000,000 use 1.0% and for Superfund projects under \$2,000,000 use 1.5%).

CONSTRUCTION MANAGEMENT:

Use 8% (except for Superfund projects over \$2,000,000 use 6%).

Tue 08 Sep 1998 Eff. Date 12/04/97 DETAILED ESTIMATE

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA6: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

Seneca OB Grounds DETAIL PAGE 1
33. Remedial Action

TIME 13:05:28

3.01. Mobilize and Preparatory Work					MATERIAL SU			UNIT COST
01500 0000 Basic Cost Items> CIV AB Field office trailer EODT	3.00 MOS	0	0	0	887	0	887	295.58
CIV AB THEE STITLE CLARKET LODI	3.00 HOS	Ü	Ü	·	007	o	007	275.50
01941 5000 Construction Toilets>								
AF AB Toilet Portable Chemical EODT	3.00 MO	0	0	0	315	0	315	105.0
01910 1200 Superintendents>								
MIL AB General Superintendent (P.M.)	3.00 MON	0	0	0	16,695	0	16,695	5565.0
01910 4300 Misc. Engineering Personnel>								
MIL AB Surveyors EODT	1.00 MON	0	0	0	3,150	0	3,150	3150.0
1956 1110 MISCELLANEOUS PLANS>								
<pre><prices ar<="" for="" plans="" pre="" technical=""></prices></pre>								
<to 100="" complete<br="" man-hours="" to=""><of be="" can="" in<="" involved="" people="" td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></of></to>								
<pre><develop maps,="" pre="" processing<="" word=""></develop></pre>								
HTW AB WORK PLAN EODT	80.00 HR	0	6,400	0	0	0	6,400	80.
. HTW AB SITE SAFETY AND HEALTH PLAN,	40.00 HR	0	3,200	0	0	0	3,200	80.
HTW AB POLLUTION CONTROL AND MITIGATION			3,200	0	0	0	3,200	80.
USR AA POLLUTION CONTROL AND MITIGATIO	40.00 HR	0	3,200	0	0	0	3,200	80.
USR AA Daily Quality Control Plan	40.00 HR	0	3,200	0	0	0	3,200	80.
. HTW AB Daily Quality Control Plan EOD T	40.00 HR	0	3,200	0	0	0	3,200	80.
TOTAL Phone EODT	3.00 MO	0	0	0	600	0	600	200.
TOTAL Temporary power EODT	1.00 EA	0	0	0	1,000	0	1,000	1000.
TOTAL Bottled water EODT	3.00 MO	0	0	0	600	0	600	200.
TOTAL Honey Wagon EODT	3.00 MO	0	0	0	3,000	0	3,000	1000.
01912 4000 Equipment Maintenance Vehicle	es>							
MIL AB Fuel Truck Driver EODT	7.00 MON	0	0	0	7,350	0	7,350	1050.
01942 4200 Project Signs>								
AF AB Temporary Construction sign	15.00 SF	0	0	0	170	0	170	. 11.
01951 1500 First Aid Kits>								
HTW AB 36 Ingredients EODT	1.00 EA	0	0	0	134	0	134	134.
01951 5100 Boots (Reusable)>								
HTW AB PVC Overboots (Reusable) EODT	10.00 PR	0	0	0	162	0	162	16.
04054 5300 05								
01951 5200 Disposable Clothing>								

LABOR ID: NAT94A EQUIP ID: NAT95A

Currency in DOLLARS

CREW ID: NAT95A UPB ID: NAT95A

Tue 08 Sep 1998 Eff. Date 12/04/97 DETAILED ESTIMATE

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA6: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

33. Remedial Action

TIME 13:05:28

DETAIL PAGE 2

33.01.	Mobilize and Preparatory Work	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
HTW	AB Boot Covers, Tyvek (Bag Of 10Pr	10.00	EA	0	0	0	121	0	121	12.13
)									
	AB Coveralls, Tyvek (Case Of 25)	25.00		0	0	0	3,875	0	3,875	155.00
нты	AB Shoe Covers, Tyvek (bag of 15	1.00	EA	0	0	0	88	0	88	88.23
	5400 Eye Protection>									-
HTW	AB Safety Glasses EODT	15.00	EA	0	0	0	46	0	46	3.09
<01951	5500 Gloves (Reusable)>									
HTW	AB Butyl Gloves(Reusable) EODT	10.00	PR	0	0	0	217	0	217	21.72
<01951	5600 Ear Protection>									
HTW	AB Ear Muffs EODT	5.00	EA	0	0	0	54	0	54	10.86
HTW	AA Ear Plug(Box Of 200) EODT	1.00	EA	0	0	0	23	0	23	22.50
<01951	5800 Misc Protection Equipment>									
	AB Hard Hats EODT	10.00	EA	0	0	0	59	0	59	5.88
	3100 Spray Washers>									
AF	AA Diesel, 3000 Psi, 4-1/2 GPM	1.00	EA	0	0	0	3,360	0	3,360	3360.00
<01957	4300 Decontamination Trailers>									
HTW	AA 8' x 24', 4 Showers, HVAC,	7.00	EA	0	0	0	13,965	0	13,965	1995.00
<02102	1100 Cut Trees - Grub Roots And St	ump>								
AF	AB Clearing - Light Brush w/o Grub	30.00	ACR	85	1,164	1,095	0	0	2,259	75.31
<02221	6000 Spread Dumped Fill Or Gravel <note -="" an="" are<="" dozer="" in="" open="" td="" w=""><td></td><td>oac t</td><td>ion></td><td></td><td></td><td></td><td></td><td></td><td></td></note>		oac t	ion>						
MIL	AB Sprd Dumped Fill/Grvl 12" Layer		SF	806	12,966	46,414	0	0	59,380	0.18
<02225	2110 1 Cy Capacity>									
MIL	AB Exc & Load,1 CY Hyd Exc,Wet Mat	30000	CY	3,999	71,832	124,002	0	0	195,834	6.53
<02225	3100 Select Distance Or Cycle Time			and the second second						
	<pre><speed <embankments="" <for="" distance.="" excava="" hauling="" p="" swell="" varies="" when="" with=""></speed></pre>						,>			
MIL	AB Haul, 16.5 CY (12.6M3) Trk, 1	30000	CY	873	10,086	37,161	0	0	47,247	1.57
<02227	1000 Steel Wheel Tandem Roller>									
AF	AB Compaction by 5 Ton Steel Wheel	11946	CY	667	10,099	3,847	0	0	13,946	1.17
MIL	AB TRK, WTR, OF-HY, 5000GAL, W/CAT613	960.00	HR	0	0	32,180	0	0	32,180	33.52
<02082	7210 PLASTIC WASTE PILE COVERS>									
нты	AB PLASTIC LAMINATE WASTE PILE	100000	SF	190	2,350	30	40,950	0	43,330	0.43

Tue 08 Sep 1998 Eff. Date 12/04/97 DETAILED ESTIMATE

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA6: OB Grounds Remediation - Soil and Sediment Removal and

33. Remedial Action

Seneca OB Grounds DETAIL PAGE

3

TIME 13:05:28

33.03. Site Work		QUANTY	MOU	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
:02264 2000 Vinyl Fence>										
MIL AB Silt Fences, Vinyl	, 3' High	14000	LF	1,494	18,820	253	4,034	0	23,107	1.6
MIL AB LANDCLR, FLAIL MOWE		40.00		0	0	56	0	0	56	1.3
UPB AB PORT STACKING CONVI		960.00	HR	0	0	9,714	0	0	9,714	10.1
MIL AB MOBILE SCREEN PLAN		480.00	HR	0	0	6,300	0	0	6,300	13.1
01954 6210 Geophysical Inve	estigations>									
AF AB Magnetometer		30.00	DAY	0	0	0	47,250	0	47,250	1575.0
02225 2340 3-1/2 Cy Capaci	ty>									
MIL AB Exc & Ld,3-1/2CY W	n Ldr, Lt Mat	20732	CY	402	6,079	14,915	0	0	20,993	1.0
02225 3100 Select Distance	Or Cycle Time	Assumes	s Av	erage>						
<speed td="" varies="" wi<=""><td></td><td></td><td></td><td></td><td></td><td></td><td>></td><td></td><td></td><td></td></speed>							>			
<pre><for !="" <embankments="" swell="" when=""></for></pre>	Hauling Excava	tion And	3 Sn	rinkage wn	en Hautin	ig 10>				
MIL AB Haul, 16.5 CY (12.0	5M3) Trk, 1 M	20732	CY	603	6,970	25,681	0	0	32,651	1.5
:02545 1000 High Density Po <impoundments, la<="" td=""><td></td><td></td><td></td><td></td><td>ices Base</td><td>ed On></td><td></td><td></td><td></td><td></td></impoundments,>					ices Base	ed On>				
<100,000 Sf Or G		inia vei			7000 0000					
CIV AB 100 Mil HD Polyeth	ylene Liners	40000	SF	1,124	14,580	232	31,151	0	45,963	1.1
02083 7300 Subcontracted Si	nipping of Haz	ardous V	Wast	e>						
AF AB Transport 20 CY Bu e	lk Solid Wast	350.00	MI	0	0	0	1,029	0	1,029	2.9
13278 8100 DUMP TRUCK HAZW	ASTE CHARGES>									
AF AB Dump Truck Transpo	rtation	800.00	MI	0	0	0	2,226	0	2,226	2.7
13278 1210 DISPOSAL OF BUL	K HAZARDOUS WA	STE>								
HTW AB HAZARDOUS SOLID BU	LK WASTE,	40.00	TON	0	0	0	7,980	0	7,980	199.5
USR AB NON-HAZARDOUS SOLI	BULK WASTE	135.00	CY	0	0	0	12,758	0	12,758	94.5
TOTAL Removal Of Temp. F	ac. EODT	1.00	EA	0	0	0	5,000	0	5,000	5000.0
TOTAL Demob of Equip/Fac	l EODT	1.00	EA	0	0	0	5,000	0	5,000	5000.0
TOTAL Demob Of Personnel	EODT	1.00	EA	0	0	0	5,000	0	5,000	5000.0
TOTAL Post-Constr. Submi	ttals EODT	1.00	EA	0	2,500	0	0	0	2,500	2500.0

Tue 08 Sep 1998 Eff. Date 12/04/97

LABOR ID: NAT94A EQUIP ID: NAT95A

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA6: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

TIME 13:05:28

SUMMARY PAGE

** PROJECT OWNER SUMMARY - SUBSYSTM (Rounded to 10's) **

		QUANTY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
33 Remedial Acti	ion									
33.01 Mobilize ar	nd Prepara									
33.01.01 Mob Cons	struction	1.00 EA	1,430	70	0	150	60	100	1,810	1807.33
3.01.02 Mob of F	Personnel	1.00 EA	23,550	1,180	0	2,470	950	1,690	29,850	29845.89
3.01.03 Preconst	truc Submi	1.00 EA	26,670	1,330	0	2,800	1,080	1,910	33,790	33788.84
3.01.04 Temporar	ry Utiliti	1.00 EA	6,170	310	0	650	250	440	7,820	7820.54
33.01.90 General		1.00 EA	8,930	450	0	940	360	640	11,310	11309.62
33.01.95 Health 8	& Safety	1.00 EA	26,450	1,320	0	2,780	1,070	1,900	33,520	33516.56
TOTAL Mobilize	e and Prep	1.00 EA	93,190	4,660	0	9,790	3,770	6,680	118,090	118088.78
33.03 Site Work										
33.03.02 Clearing	and Grub		2,680	130	0	280	110	190	3,400	
33.03.03 Earthwor			375,540	18,780	0	39,430	15,180	26,940	475,860	
33.03.11 Erosion			117,050	5,850	0	12,290	4,730	8,400	148,310	
TOTAL Site Wor	rk	1.00 EA	495,260	24,760	0	52,000	20,020	35,520	627,570	627572.81
33.10 Ordnance re	emoval EO									
33.10.05 Ordnance	e Removal	33.00 ACR	193,370	9,670	0	20,300	7,820	13,870	245,030	7425.29
TOTAL Ordnance	e removal	1.00 EA	193,370	9,670	0	20,300	7,820	13,870	245,030	245034.56
33.19 Disposal (Commercial									
33.19.02 transpo	ortation t	19410 TON	3,860		0	410	160	280	4,900	0.25
33.19.03 Disposa	al Fees an	19410 CY	24,610	1,230	0	2,580	990	1,770	31,190	1.61
TOTAL Disposa	l (Commerc	1.00 EA	28,480	1,420	0	2,990	1,150	2,040	36,080	36083.52
33.21 Demobiliza	tion									
33.21.01 Removal	Of Temp.	1.00 EA	5,930	300	0	620	240	430	7,520	7519.75
33.21.04 Demob o	f Equip/Fa	1.00 EA	5,930	300	0	620	240	430	7,520	7519.75
33.21.05 Demob O	f Personne	1.00 EA	5,930	300	0	620	240	430	7,520	7519.75
33.21.06 Post-Co	nstr. Subm	1.00 EA	2,970	150	0	310	120	210	3,760	3759.88
TOTAL Demobil	ization	1.00 EA	20,770	1,040	0	2,180	840	1,490	26,320	26319.13
	al Action	1.00 EA	831,080	41,550	0	87,260	33,600	59,610	1,053,100	1053098.80

Tue 08 Sep 1998 ERROR REPORT

Tri-Service Automated Cost Engineering System (TRACES) Eff. Date 12/04/97 PROJECT SENCA6: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

TIME 13:05:28

ERROR PAGE 1

No errors detected...

* * * END OF ERROR REPORT

CONTENTS PAGE

SUMMARY REPORTS SUMMARY PAGE DETAILED ESTIMATE DETAIL PAGE 33. Remedial Action 01. Mobilize and Preparatory Work 01. Mob Construction Equip & Fac.....1 02. Mob of Personnel.....1 04. Temporary Utilities 15. Temporary power EODT.....1 25. Bottled water EODT.....1 90. General Overhead.....1 95. Health & Safety......1 03. Site Work 02. Clearing and Grubbing EODT.....2 03. Earthwork EODT.....2 11. Erosion control EODT......2 10. Ordnance removal EODT 19. Disposal (Commercial) 21. Demobilization

No Backup Reports...

* * * END TABLE OF CONTENTS * * *

Seneca Army Depot Section C - Cost Estimate Open Burning Grounds Remediation Project

Section 3

Cost Estimate For Weston only

TITLE PAGE

CREW ID: NAT95A UPB ID: NAT95A

OB Grounds Remediation Soil and Sediment Removal and Installation of a Soil Cover (Costs For Westin's Work Only)

Designed By: Parsons ES Estimated By: Parsons ES

Prepared By: Parsons ES

Preparation Date: 09/01/98
Effective Date of Pricing: 12/04/97
Est Construction Time: 100 Days

Sales Tax: 5.0%

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TITLE PAGE 2

PROJECT BREAKDOWN:

The estimate is structured as follows and uses a 2 digit number at each level. The 2 digit numbers for the first 3 title levels are taken from the HTRW Remedial Action Work Breakdown Structure. The 2 digit numbers for the remaining title levels are user defined. The detail items are at LEVEL 6.

LEVEL 1 - WBS Level 1 (Account)
LEVEL 2 - WBS Level 2 (System)
LEVEL 3 - WBS Level 3 (Subsystem)
LEVEL 4 - User Defined (Assembly Category or Other)
LEVEL 5 - User Defined (Assembly or Other)

PROJECT DESCRIPTION:

The scope of work is presented by contractor, there will be two contractors on this project. EODT will be the UXO contractor and Westin will be the remediation contractor on this project. The scope of work for both the contractors is summarized below. The estimate only presents the costs for Westin, the remediation contractor. All costs for EODT have been taken out of this estimate.

The following is a summary of the activities that are presently included in the UXO contractor's scope of work.

- · Layout the areas to be excavated
- Excavation and screening of soil with lead less than 500 mg/kg such as the low lying hills.
- · Excavation and screening of soils with lead over 500 mg/kg
- · Placing all screened soils into 200 cubic yard piles for testing
- Based on the testing results consolidate the soil piles as required into three types of piles with the first pile(s) containing soil that has lead at less than 500 mg/kg which will be used for backfill (low lying hills), the second pile(s) will contain non-hazardous soil with lead greater than 500 mg/kg, and the third pile(s) will contain soils that are a characteristic

hazardous waste due to toxicity.

- · Stormwater management at the excavations, at the soil screening operation, and at the soil stockpiles
- Disposal of the screened material including scrap metal, ordnance, stone, sod, etc.
- · Backfilling the excavation with the soil that has less than 500 mg/kg of lead and/or off site borrow (off site borrow will be furnished by the remediation contractor but placed and compacted by the UXO contractor).

The following activities are included in the remediation contractor's scope of work, these activities will require close coordination with the UXO contractor to assure that the objectives of the remediation project are met. These activities will be performed before the UXO contractor has completely cleared the site of ordnance.

3

TITLE PAGE

- Collect the confirmatory soil samples from the excavation and have them analyzed
- Layout additional soil excavation, if required, based on the results of the confirmatory sampling
- Collect and analyze soil samples from the screened 200 cubic yard soil piles
- \cdot Maintain all sampling records during the excavation including sampling locations

and sampling results

· Classify each 200 cubic yard pile as either hazardous or non-hazardous or soil

with less than 500 mg/kg of lead.

- · Dewater the excavations and the excavated materials.
- · Treat and discharge the water collected from the excavations and excavated material
- · Furnish off site fill at the excavations as required to backfill the excavations

(placement of the fill and compaction of the fill will be by the UXO contractor)

The remediation contractor shall be responsible for the following activities which will be performed either off site or after the site has been cleared of ordnance.

- Preconstruction tasks including; wastewater discharge permits, wetlands permitting; soils solidification treatability testing; landfill sellection; locating a borrow pit, and required submittals
- Load the non-hazardous soils onto trucks and dispose of the soil at an off site disposal facility (trucks to be decontaminated before leaving the site)
- · Prepare the area for the soil solidification/stabilization process
- Layout the area that will receive the 12 inch soil cover and collect soil samples to confirm the limits of the proposed area (goal is to cover all soil with lead over 60 mg/kg of lead)
- Installation of the 12 inch soil cover including the storm water management system for the areas to be covered both during and after construction
- · Solidify/stabilize the soils that are a characteristic hazardous waste
- · Confirmatory sampling and testing of solidified/stabilized soils
- · Disposal of solidified/stabilized soils at an off site disposal facility
- · Install the Reeder Creek dewatering system
- · Dewater Reeder Creek
- · Excavate Reeder Creek sediments
- · Dewater excavated sediments
- · Stockpile, test and dispose of the excavated sediments
- · Restore Reeder Creek stream banks
- · Remove the Reeder Creek dewatering system
- Construct new wetlands to replace the wetlands disturbed by the remediation project
- · Instalt 7 groundwater monitoring wells and decommission the existing wells
- Stormwater detention basins and sediment control system during construction of the soil cover

TITLE PAGE

PRODUCTIVITY:

Productivity, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required, productivity for appropriate activities will be adjusted for this project as follows:

- Level of Protection A Productivity ____%
- 2. Level of Protection B Productivity ___%
- 3. Level of Protection C Productivity ___%
- 4. Level of Protection D Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

	Level	A Level	B Level	C Level D
Availiable Time (minutes)	480	480	480	480
Non-Productive Time (minutes):				
Safety meetings	20	20	10	10
Suit-up/off	60	60	40	10
Air tank change	160	20	0	0
*Breaks	60	60	40	30
Cleanup/decontamination	20	20	20	20
Productive Time (minutes)	160	300	370	410
Productivity:	160/480	300/480	370/480	410/480
	X100%	X100%	X100%	X100%
	33%	63%	77%	85%
Example:				
Normal Production Rate (CY/	HR) 250	250	250	250
X Productivity	.33	.63	.77	.85
=Reduced Production Rate(CY/	HR) 83	158	193	213

5

CREW ID: NAT95A UPB ID: NAT95A

* Break time ranges (minutes) 60-140 60-140 40-140 30-70

ESCALATION:

Escalation is input into the progrm based on starting the project in April and completeing by the end of October 1999.

Contingency:

Contingency rates are variable and are applied at level 2 of the estimate Contingences are shown for both Design Contingencies and Construction contingencies.

The following list the areas where there is the biggest potential for changes in cost due to uncertainties .

Quantities of soil over 500 mg/kg could increase based on the results of the confirmatory sampling done in the excavation.

The Quanities of soil requiring solidification/stabilization could increase based on the results of the confirmatory sampling done in the soil piles.

The area requiring the 12 inch soil cover could increase based on the results of the confirmatory sampling done along the perimeter of the soil cover.

BID FORM:

This estimate, when run in conjunction with the Assemblies Database file "HTRW TEMPLATE - BID FORM", will generate a system summary report which splits the estimate detail into the proper bid items. When the estimate is prepared in the applicable Work Breakdown Structure (WBS), it is possible to have your estimate emulate the bid schedule. After the estimate is prepared, perform the following steps:

- 1. Create a file in the Assemblies Database with the level ID length set for two characters.
- 2. Build the bid schedule in the Assemblies Database numbering the level ID beginning with O1. Always use two characters.
- 3. Copy each Assembly title to the second level of the assemblies database direct under the level one title. Use the same level ID number that was used at the preceeding level one title, (ie. 01).
- 4. Enter your project database. For each detail item in your project, place the corresponding two digit level ID number in the Work Category field. For faster entry, use the detail level browse screen and label in the column titled WCAT, (work category).

Specify the Indirect System Summary Report for Level O to have your estimate sort by bid form.

Tri-Service Automated Cost Engineering System (TRACES) Eff. Date 12/04/97 PROJECT SENCA4: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

TIME 09:41:28

TITLE PAGE

OTHER GOVERNMENT COSTS:

Other Government Costs consist of:

*Engineering and Design During Construction	(EDC)	1.0%
As-Builts	•	0.5%
Operation and Maintenance (O&M) Manuals		0.5%
Laboratory Quality Assurance		1.0%
Total		3.5%

*Use .5% (except for Superfund projects over \$2,000,000 use 1.0% and for Superfund projects under \$2,000,000 use 1.5%).

CONSTRUCTION MANAGEMENT:

Use 8% (except for Superfund projects over \$2,000,000 use 6%).

LABOR ID: NAT94A EQUIP ID: NAT95A

Currency in DOLLARS

CREW ID: NAT95A UPB ID: NAT95A

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA4: OB Grounds Remediation - Soil and Sediment Removal and

Seneca OB Grounds

33. Remedial Action

TIME 09:41:28

1

DETAIL PAGE

...... QUANTY UOM MANHOUR LABOR EQUIPMNT MATERIAL SUBCONTR TOTAL COST 33.01. Mobilize and Preparatory Work <01500 0000 Basic Cost Items> USR AA Field office trailer Westin 7.00 MOS Ω n Ω 2,069 0 2,069 295.58 <01941 3120 Tool Trailer - Contractor> 708 n Ω 708 n 101.16 AF AA Temp Const Stor. Van 16 X 8 7.00 MO Ω <01941 5000 Construction Toilets> n 105.00 USR AA Toilet Portable Chemical Westin 7.00 MO Ω Λ 735 Λ 735 <01910 1200 Superintendents> 7.00 MON 38,955 0 38,955 5565.00 USR AA General Superintendent (P.M.) <01910 4300 Misc. Engineering Personnel> 1.00 MON 0 0 3,150 0 3,150 3150.00 USR AA Surveyors Westin <01956 1110 MISCELLANEOUS PLANS> <PRICES FOR TECHNICAL PLANS ARE ESTIMATED BY TIME. A PLAN WILL TAKE 24> <TO 100 MAN-HOURS TO COMPLETE DEPENDING ON IT'S COMPLEXITY. A VARIETY> <OF PEOPLE CAN BE INVOLVED IN PLAN DEVELOPMENT. PEOPLE ARE NEEDED TO> <DEVELOP MAPS, WORD PROCESSING, GRAPHING, ORGANIZING DATA, ETC.> n B USR AA Work Plan Westin 80.00 HR 0 6,400 Ω 0 6,400 80.00 40.00 HR 0 3,200 0 0 0 3,200 80.00 L HTW AA SOIL SAMPLING PLAN, Westin 16.00 HR 0 1,280 0 Ω n 1,280 80.00 L HTW AA Chemical Data Aquisition Plan L USR AA SITE SAFETY AND HEALTH PLAN, 40.00 HR Ω 3,200 0 0 0 3,200 80.00 Λ 0 80.00 L USR AA POLLUTION CONTROL AND MITIGATIO 40.00 HR 0 3,200 0 3,200 L USR AA Daily Quality Control Plan 40.00 HR 3,200 0 3,200 80.00 7.00 MO 0 0 0 1,400 0 1,400 200.00 TOTAL Phone Westin 1.00 EA 0 0 0 1,000 0 1,000 1000.00 TOTAL Temporary power Westin 7.00 MO Λ Λ Λ 1,400 Λ 1,400 200.00 TOTAL Bottled water Westin TOTAL Honey Wagon Westin 7.00 MO O Λ 0 7,000 7,000 1000.00 <01912 4000 Equipment Maintenance Vehicles> USR AA Fuel Truck Driver Westin 4.00 MON 0 0 0 4,200 0 4,200 1050.00 <01942 4200 Project Signs> USR AA Temporary Construction sign 15.00 SF 0 0 Λ 170 0 170 11.33 <01953 1110 Photographs Processing> 0 HTW AA Project photos Westin 4.00 FA 0 0 52 0 52 13.09 <01951 1500 First Aid Kits> USR AA 36 Ingredients Westin 1.00 EA Ω N Λ 134 134 134.45

LABOR ID: NAT94A EQUIP ID: NAT95A Currency in DOLLARS CREW ID: NAT95A UPB ID: NAT95A

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA4: OB Grounds Remediation - Soil and Sediment Removal and

33. Remedial Action

Seneca OB Grounds

DETAIL PAGE 2

CREW ID: NAT95A UPB ID: NAT95A

TIME 09:41:28

33.01.	Mobilize and Preparatory Work		UOM MAN	IHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
<01951	5100 Boots (Reusable)>									
	AA PVC Overboots (Reusable) Westin	10.00	PR	0	0	0	162	0	162	16.17
<01951	5200 Disposable Clothing>									
	AA Boot Covers, Tyvek (Bag Of 10Pr	10.00	EA	0	0	0	121	0	121	12.13
USR	AA Coveralls, Tyvek (Case Of 25)	25.00	EA	0	0	0	3,875	0	3,875	155.00
USR	AA Shoe Covers, Tyvek (bag of 15 0	1.00	EA	0	0	0	88	0	88	88.23
<01951	5400 Eye Protection>									
USR	AA Safety Glasses Westin	15.00	EA	0	0	0	46	0	46	3.09
	5500 Gloves (Reusable)>									
USR	AA Butyl Gloves(Reusable) Westin	10.00	PR	0	0	0	217	0	217	21.72
	5600 Ear Protection>		201							
	AA Ear Muffs Westin	5.00		0	0	0	54	0	54	10.8
USR	AA Ear Plug(Box Of 200) Westin	1.00	EA	0	0	0	23	0	23	22.5
	5800 Misc Protection Equipment>	40.00		•		0	,		50	-
USR	AA Hard Hats Westin	10.00	EA	0	0	0	59	0	59	5.8
	3100 Spray Washers>									
AF	AA Diesel, 3000 Psi, 4-1/2 GPM	1.00	EA	0	0	0	3,360	0	3,360	3360.0
<01957	4300 Decontamination Trailers>									
HTW	AA 8' x 24', 4 Showers, HVAC,	7.00	EA	0	0	0	13,965	0	13,965	1995.0
<01954	4110 Particulate Samplers>									
	AA Digital Dust Sampler	7.00	EA	0	0	0	5,568	0	5,568	795.3
B HTW	AA decomission existing wells	31.00	EA	15	206	450	8,138	0	8,793	283.6
<01954	3270 Monitor Well Sampling Equipme	ent Renta	al>							
AF	AA Monitor Well Sampling Equip.	2.00	DAY	0	0	0	168	0	168	84.0
<01954	6300 Sample Collection Using CPT>									
AF	AA Mobilize/Demobilize CPT Rig	1.00	EA	0	0	0	3,150	0	3,150	3150.0
AF	AA Standby Time for CPT Rig and	8.00	HR	0	0	0	1,260	0	1,260	157.5
AF	AA Setup Cost Per Each Hole, CP	7.00	EA	0	0	0	368			52.5
AF	AA Level "D" PPE Rental Per 2-Man	4.00	DAY	0	0	0	1,008	. 0	1,008	252.0
<02557	5110 Hollow Stem Auger - Normal Sc									
	<assumes be="" done="" in="" lo<="" td="" to="" work=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></assumes>									
HTW	AA 4-1/4" ID x 8" OD For 2" Or	160.00	LF	140	1,930	4,221	0	0	6,152	38.4
	5270 Stainless Steel - Flush Three									
HTW	AA 2" Dia (50 mm) Casing No. 304	160.00	LF	26	354	774	2,232	0	3,360	21.0

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA4: OB Grounds Remediation - Soil and Sediment Removal and

Seneca OR Grounds

TIME 09:41:28

3

DETAIL PAGE

33. Remedial Action

33.02. Sampling, & Testing by Westin QUANTY UOM MANHOUR LABOR EQUIPMNT MATERIAL SUBCONTR TOTAL COST <02557 5480 Filter Wrap> <Filter Sock Is Purchased In 100 Ft Rolls.> HTW AA 2" Dia Filter Sock 25.00 LF 1 17 36 14 0 67 2.69 <02557 5710 Locking Caps> HTW AA 4" Expandable Locking Cap With 7.00 EA 12 171 Λ 700 99.93 166 363 <02557 6110 Filter Sand> <Filter Sand Should Be Figured At The Rate Of 110 Lb/Cf Or 3000 Lb/Cy.> HTW AA No. 2 Morie Silica Sand -0.20 TON 2 22 48 72 n 143 714.64 <02557 6120 Bentonite> <Sealants And Grouts Are Recommended For Isolating Screened Intervals Of Moni> <toring Wells. Chips For Shallow Boreholes And Abandoned Wells.> HTW AA Bentonite Grout - 50# Bags 4.00 EA 105 0 105 26.16 <01954 6410 Sample Packaging, Vials, Bottles> <Prices Reflect Precleaning To Epa Specs Only. Precleaning Is Not The Full Ep> <a Quality Assurance Treatment.> HTW AA 1 Liter (32 Oz) HDPE Bottle 20.00 EA 0 0 0 614 0 614 30,71 HTW AA Custody Seals (Package Of 10) 2.00 EA 0 0 0 2 0 2 1.19 HTW AA Safe Transport Can Filled With 8.00 EA n 0 0 0 118 118 14.75 HTW AA Documentation Package For Q.A. 20.00 EA 0 0 0 0 3,262 3,262 163.08 <01954 7100 Waste And Waste Water Analyisis> <Costs Reflect Laboratory Portion Only> AF AA TAL Metals (6010/7000s) 70.00 EA 0 0 0 15,068 15,068 215.25 <01954 5130 Screw Augers> AF AA Hand Auger Rental 90.00 DAY 0 0 Ω 7,088 0 7,088 78.75 <01954 6120 Field Vehicles> AF AA Van or Pickup Rental 90.00 DAY 0 0 7,088 0 7,088 78.75 <01954 6140 Sampling Personnel Travel> 90.00 DAY AF AA Personnel Per Diem 7.088 7,088 78.75 <01954 6410 Sample Packaging, Vials, Bottles> <Prices Reflect Precleaning To Epa Specs Only. Precleaning Is Not The Full Ep> <a Quality Assurance Treatment.> HTW AA 1 Liter (32 Oz) Clear Wide Mout 20.00 EA 0 0 n 791 Ω 791 39.55 h HTW AA Custody Seals (Package Of 10) 12.00 EA 0 0 0 14 0 14 1.19 HTW AA Safe Transport Can Filled With 12.00 EA 0 0 0 177 0 177 14.75 AF AA Packing Tape Per Roll 12.00 EA 0 0 0 50 0 50 4.20 n AF AA Plastic Sheeting (Per Roll) 1.00 EA Λ Λ 17 0 17 16.80 AF AA Isopropanl 4.00 GAL 0 0 0 126 0 126 31.50 AF AA Deionized Water 100.00 GAL 0 0 1,050 0 1.050 10.50

CREW ID: NAT95A

UPB ID: NAT95A

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA4: OB Grounds Remediation - Soil and Sediment Removal and

Seneca OB Grounds

DETAIL PAGE 4

CREW ID: NAT95A UPB ID: NAT95A

TIME 09:41:28

33. Remedial Action

33.02.	Sampl	ing, & Testing by Westin	QUANTY U	IOM MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COS
010E/	4/50	Overnight Delivery Services								
01934		Overnight Delivery Service> <pricing by<="" delivery="" reflects="" td=""><td>Noon With</td><td>in lower 48</td><td>States A</td><td>dditional</td><td>Charges></td><td></td><td></td><td></td></pricing>	Noon With	in lower 48	States A	dditional	Charges>			
		< Could Apply Depending On Si			States. A	Gartronat	char ges			
HTW		# To 50# Packages	50.00 L		0	0	3,885	0	3,885	77.7
		Coolers And Ice Chests>	40.00				440		440	,, ,
		Quart Ice Chest	10.00 E		0	0	469	0	469 105	46.8
HIW	AA BI	ue Ice Soft Packs	20.00 E	A U	U	U	105	U	105	3.2
01954		Ep Toxicity Analysis> <costs lab="" on<="" portion="" reflect="" td=""><td>ly Jumbers</td><td>In Descript</td><td>tion Refer</td><td>s To Metho</td><td>ods Of T></td><td></td><td></td><td></td></costs>	ly Jumbers	In Descript	tion Refer	s To Metho	ods Of T>			
		<esting></esting>	122 00 5				40.854	0	10.05/	4/2 7
AF	AA EP	Toxicity, Metals EPA 3010	122.00 E	A 0	0	0	19,856	U	19,856	162.7
01954	7420	Toxic Characteristic Leachin	g Procedur	e (Tclp)>						
		<pre><analysis <ting="" costs="" lab="" methods="" p="" reflect=""></analysis></pre>	ortion Onl	y Numbers I	Descript	ions Refer	To Tes>			
AF	AA TC	LP (RCRA) (EPA 1311)	12.00 E	A 0	0	0	19,719	0	19,719	1643.2
01954	7600	Soil And Sediment Analysis>								
		<cost lab="" on<="" portion="" reflects="" td=""><td>ly Numbers</td><td>In Descrip</td><td>tions Refe</td><td>er To Testi</td><td>ing Meth></td><td></td><td></td><td></td></cost>	ly Numbers	In Descrip	tions Refe	er To Testi	ing Meth>			
AF	AA TA	L Metals (6010/7000s)	600.00 E	A 0	0	0	148,050	0	148,050	246.7
00040	2000									
		Roadway Grading>	5 00 8	cv 97	1,207	1,377	0	0	2,584	516.7
		ade Roadway Subbase Courses nish Grade Roadway	5.00 M 5.00 M		1,756	2,002		0	10000	751.6
HIL	AA II	mish didde Roddidy	3.00 1	121	1,150	2,002			3,130	,,,,,,
02611	1000	Prepare And Roll Subbase>								
MIL	AA Cr	ushed Stone Paving, Large Are	5000.00 9	320 Y	5,369	4,737	1,763	0	11,869	2.3
	а									
02081	2240	Soil and Gravel Cover>								
AF	AA Bo	rrow Material, Unclassified	31900 0	Y 0	0	0	125,941	0	125,941	3.9
.02224	4000	Spread Dumped Fill Or Gravel	U/O Compo	otion						
02221		<note -="" an="" ar<="" dozer="" in="" open="" td="" w=""><td></td><td>IC C TOTAL</td><td></td><td></td><td></td><td></td><td></td><td></td></note>		IC C TOTAL						
MIL		rd Dumped Fill/Grvl, 6" Layer		1,624	25,984	93,061	0	0	119,045	0.4
	s									
02225	3100	Select Distance Or Cycle Tim	e Assumes	Average>						
		<pre><speed <embankments="" <for="" distance.="" excav="" hauling="" swell="" varies="" when="" with=""></speed></pre>					(>			
MIL		ul, 16.5 CY (12.6M3) Trk, 6	31900 0	Y 1,863	21,526	79,319	0	0	100,845	3.1
.02046	4000	Markovical Continue								
		Mechanical Seeding>	70 00	CD /7	E/0	57	0	40.000	40 E03	2040 7
USR	аа ну	droseed	30.00 A	ICR 43	540	53	0	60,000	60,593	2019.7
	7000	Furnish And Place Imported T	am Cails							

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA4: OB Grounds Remediation - Soil and Sediment Removal and

Seneca OB Grounds
33. Remedial Action

DETAIL PAGE 5

TIME 09:41:28

33.03.	Site Work	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
MIL	AA Furn & Pl Imported Topsoil, 4"D p	15950	CY	2,794	42,323	57,288	293,081	0	392,692	24.62
	1100 Cut Trees - Grub Roots And St AA Clear and Grub Lt Trees to 6" D	•	ACR	137	1,805	2,115	0	0	3,920	3919.91
	8000 Lawn Maintenance> AA Mowing	1350.00	MSF	37	587	201	0	0	787	0.58
	2100 By Machine> AA Shape Embankment/Slope w/Machin e	20000	SY	800	11,690	9,774	0	0	21,464	1.07
CIV	4370 Dozer W/U-Blade, 460Hp, (D-9L AA Mass Exc, D-9l Dozer, Light AA TRK,WTR,OF-HY, 5000GAL,W/CAT613 C	42699		1,029 0	20,171 0	64,979 32,180	0	0	85,150 32,180	1.99 33.52
	0000 Soil Stabilization> AA Soil Stabil w/Crushed Rock	500.00	СҮ	80	1,159	3,394	2,494	0	7,047	14.09
<02261	1000 Random - Filter Stone Dumped <machine placed="" protecti<="" slope="" td=""><td></td><td></td><td></td><td>To Adjust</td><td>Material></td><td></td><td></td><td></td><td></td></machine>				To Adjust	Material>				
MIL	<pre><costs as="" required=""> AA Rip Rap, 10# to 100# Pieces</costs></pre>	5.00	CY	1	17	17	121	0	155	30.92
	1000 Vinyl Mats> AA Erosion Control, Webbed Reveg Ma	2000.00	SY	3 5	438	6	9,549	0	9,993	5.00
CIV	AA Erosion Control, Slope Stakes	2000.00	EA	0	0	0	642	0	642	0.32
<02540	1000 Netting - 100 Sy (83.6M2) Per <wide -="" stapled=""></wide>	Roll 4	Ft ((1.2M)>						
MIL	AA Erosion Control Netting, 4' Wid	9000.00	SY	202	2,535	1,995	6,899	0	11,429	1.27
UPB	AA PUMP, CENTRF, DW, 6"D, 100GPM/40"H	160.00	HR	0	0	2,611	0	0	2,611	16.32
MIL	AA TRK,WTR,OF-HY, 5000GAL,W/CAT613	160.00	HR	0	0	5,363	0	0	5,363	33.52
	9110 Above Ground Wastewater Tanks AA 21,000 Gallon (500Bbl), Steel,	3.00	ΕA	0	0	0	3,969	0	3,969	1323.00
	2100 By Machine> AA Shape Embankment/Slope w/Machin e	2000.00	SY	80	1,169	977	0	0	2,146	1.07
MIL	AA Shape Embankment/Slope w/Machin e	2000.00	SY	33	784	3,163	0	0	3,947	1.97
	2200 By Hand> AA Shape Embankment/Slope by Hand	1000.00	SY	154	1,939	25	0	0	1,964	1.96

LABOR ID: NAT94A EQUIP ID: NAT95A Currency in DOLLARS CREW ID: NAT95A UPB ID: NAT95A

Fri 11 Sep 1998 DETAILED ESTIMATE

Tri-Service Automated Cost Engineering System (TRACES) Eff. Date 12/04/97 PROJECT SENCA4: OB Grounds Remediation - Soil and Sediment Removal and Seneca OB Grounds

TIME 09:41:28 DETAIL PAGE 6

33. Remedial Action

33.09.	Sediment Removal Westin	QUANTY UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
MIL	AA Shape Embankment/Slope by Hand	1000.00 SY	200	2,521	33	0	0	2,553	2.55
	1200 By Hydraulic Excav 1/2 To 3/			2 197	2,603	0	0	4,786	4.10
MIL	AA Trench, 1/2 CY Hyd Exc, Lse Rock	1100.00 C1	121	2,183	2,003	O	U	4,700	4.10
<02225	3100 Select Distance Or Cycle Tim <speed <embankments="" <for="" distance.="" excav="" hauling="" swell="" varies="" when="" with=""></speed>	Production B	ased On Lo			>			
MIL	AA Haul, 16.5 CY (12.6M3) Trk, 1 M	1166.00 CY	34	392	1,444	0	0	1,836	1.57
<15141	6100 Pump C.I. Close Coupling Sta	ndard Capaci	ty>						
	AA Pump C.I. Close Coupling 5 HP		133	3,498		,	0	-,	2292.85
MIL	AA GENERATOR, 100 KW, 240/480V,SKI D	480.00 HR	0	0	4,751	0	0	4,751	9.90
MIL	AA FORK LIFT, YRD 6,000#,13.13'L-H	480.00 HR	0	0	6,729	. 0	0	6,729	14.02
MIL	AA TRK,WTR,OF-HY, 5000GAL,W/CAT613	480.00 HR	0	0	16,090	0	0	16,090	33.52
MIL		2400.00 HR	2,400	50,915	0	0	0	50,915	21.21
<02225 MIL	2340 3-1/2 Cy Capacity> Exc & Ld,3-1/2CY Wh Ldr,Med Mat	16500 CY	381	5,767	14,152	0	0	19,919	1.21
<13275	1110 CEMENT>								
	<pre><for <are="" cement="" fixation="" processe="" used.=""></for></pre>	S, ONLY TYPE	I AND TYP	E K (NON-	EXPANSION)	>			
нт₩	AA PORTLAND CEMENT, TYPE I, BULK,	4100.00 TON	0	0	0	305,655	0	305,655	74.55
<13275	2130 CEMENT KILN DUST>								
кт₩	AA BULK QUANTITIES of fly ash	4100.00 TON	0	0	0	206,640	0	206,640	50.40
<13275	7110 MOBILE WASTE MIXING EQUIPMEN <pricing **corp.="" **to<="" **total="" and="" maintenance.**="" operation="" pr="" purchase="" reflects="" td=""><td>ICE FOR EQUI</td><td>PMENT. NOT</td><td>INCLUDED</td><td>ARE COSTS</td><td>S></td><td></td><td></td><td></td></pricing>	ICE FOR EQUI	PMENT. NOT	INCLUDED	ARE COSTS	S>			
HTU	<pre><for 10="" 3="" aa="" and="" cy="" maintenanc="" mixer,="" month<="" operation="" pre="" waste=""></for></pre>	3.00 EA	0	0	0	61,280	0	61,280	20426.70
	AA BELT FEEDER FOR 10 CY MIXER,	1.00 EA	0	0	0	10,805	0	10,805	10804.50
	AA DUST COLLECT WITH 2 HP BLOWER	1.00 EA	0	0	0	3,150	0	3,150	3150.00
	AA WATER PUMP, 2" SELF-PRIMING WIT		0	0	0	3,276	0	3,276	3276.00
AF	.AA Solidification/Stabilization	1.00 EA	0	0	0	6,300	0	6,300	6300.00
	7300 Subcontracted Shipping of Ha					45			
USR	AA Transport 20 CY Bulk Solid Wast e	34445 MI	0	0	0	101,268	0	101,268	2.94
USR	AA Transport 20 CY Bulk Solid Wast e	13590 MI	0	0	0	39,955	0	39,955	2.94

Tri-Service Automated Cost Engineering System (TRACES) PROJECT SENCA4: OB Grounds Remediation - Soil and Sediment Removal and

nds Remediation - Soil and Sediment Removal and Seneca OB Grounds

33. Remedial Action

DETAIL PAGE 7

CREW ID: NAT95A UPB ID: NAT95A

TIME 09:41:28

33.19. Disposal (Commercial)	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
							•••••		
USR AA Transport 20 CY Bulk Solid Wast e	2750.00	MI	0	0	0	8,085	0	8,085	2.94
<13278 1210 DISPOSAL OF BULK HAZARDOUS W	ASTE>								
USR AA NON-HAZARDOUS SOLID BULK WASTE	5436.00	TON	0	0	0	513,702	0	513,702	94.50
USR AA NON-HAZARDOUS SOLID BULK WASTE	1096.00	CY	0	0	0	103,572	0	103,572	94.50
USR AA NON-HAZARDOUS SOLID BULK WASTE	3166.00	TON	0	0	0	49,865	0	49,865	15.75
<02830 8000 Lawn Maintenance>									
AF AA Watering By Truck	1350.00	MSF	108	1,466	2,503	0	0	3,970	2.94
<01720 1000 General>									
AF AA Site Debris Clean-Up & Removal	30.00	AC	384	5,091	5,277	0	0	10,368	345.61
TOTAL Removal Of Temp. Fac. Westin	1.00	EA	0	5,000	0	0	0	5,000	5000.00
TOTAL Demob of Equip/Facl Westin	1.00	EA	0	0	0	5,000	0	5,000	5000.00
TOTAL Demob Of Personnel Westin	1.00	EA	0	0	0	5,000	0	5,000	5000.00
TOTAL Post-Constr. Submittals Westin	1.00	ΕA	0	5,000	0	0	0	5,000	5000.00
TOTAL OB Grounds Remediation			13,393	246,007	424,172	2,211,164	60,000	2,941,343	

Fri 11 Sep 1998 Tri-Service Automated Cost Engineering System (TRACES)

Eff. Date 12/04/97 PROJECT SENCA4: OB Grounds Remediation - Soil and Sediment Removal and

Seneca OB Grounds

** PROJECT OWNER SUMMARY - SUBSYSTM (Rounded to 10's) **

SUMMARY PAGE 2

TIME 09:41:28

	QUANTY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
TOTAL Disposal (Commerc	1.00 EA	965,180	48,260	0	101,340	39,020	69,230	1,223,030	1223028.01
33.20 Site Restoration We									
33.20.06 Post-Construction	30.00 ACR	4,690	230	0	490	190	340	5 ,9 50	198.22
TOTAL Site Restoration	1.00 EA	4,690	230	0	490	190	340	5,9 50	5946.53
33.21 Demobilization									
33.21.03 Final Decontamin	1.00 EA	12,260	610	0	1,290	500	880	15,530	15531.49
33.21.11 Removal Of Temp.	1.00 EA	5,910	300	0	620	240	420	7,490	7489.95
33.21.16 Demob of Equip/Fa	1.00 EA	5,910	300	0	620	240	420	7,490	7489.95
33.21.21 Demob Of Personne	1.00 EA	5,910	300	0	620	240	420	7,490	7489.95
33.21.26 Post-Constr. Subm	1.00 EA	5,910	300	0	620	240	420	7,490	7489.95
TOTAL Demobilization	1.00 EA	35,900	1,800	0	3,770	1,450	2,570	45,490	45491.27
TOTAL Remedial Action	1.00 EA	3,464,270	173,210	0	363,060	140,020	248,430	4,388,990	4388991.38

ERROR REPORT

Fri 11 Sep 1998 Tri-Service Automated Cost Engineering System (TRACES)

Eff. Date 12/04/97 PROJECT SENCA4: OB Grounds Remediation - Soil and Sediment Removal and Tri-Service Automated Cost Engineering System (TRACES) Seneca OB Grounds

TIME 09:41:28

ERROR PAGE 1

No errors detected...

* * * END OF ERROR REPORT * * *

CONTENTS PAGE

SUMMARY	REPORTS SUMMARY PAGE
PROJECT	OWNER SUMMARY - SUBSYSTM
DETAILE	D ESTIMATE DETAIL PAGE
33. Re	medial Action
01.	Mobilize and Preparatory Work
	01. Mob Construction Equip & Fac
	02. Mob of Personnel1
	03. Preconstruc Submittals/Impl Plan1
	04. Temporary Utilities
	10. Phone Westin1
	20. Temporary power Westin1
	30. Bottled water Westin
	40. Honey Wagon Westin
	90. General Overhead1
	95. Health & Safety1
02.	Sampling, & Testing by Westin
	03. Air Monitoring & Sampling
	05. Sample Surface/Grndwtr
	06. Sampling Soil and Sediment
	09. Laboratory Chemical Anaysis
03	Site Work
05.	04. Roads Westin
	12. Soil cover Westin
	17. Clearing and Grubbing Westin5
	22. Earthwork Westin
	27. Erosion control Westin5
06.	groundwater collect Westin
	07. Pumping/Collection5
09.	Sediment Removal Westin5
10.	Ordnance removal EODT
13.	Treatment of Haz Waste Westin6
19.	Disposal (Commercial)
	02. transportation to dispo6
	03. Disposal Fees and Taxes7
20.	Site Restoration Westin
	06. Post-Construction Maintenance7
21.	Demobilization
	03. Final Decontamination Westin
	11. Removal Of Temp. Fac. Westin
	16. Demob of Equip/Fact Westin
	21. Demob Of Personnel Westin
	26. Post-Constr. Submittals Westin