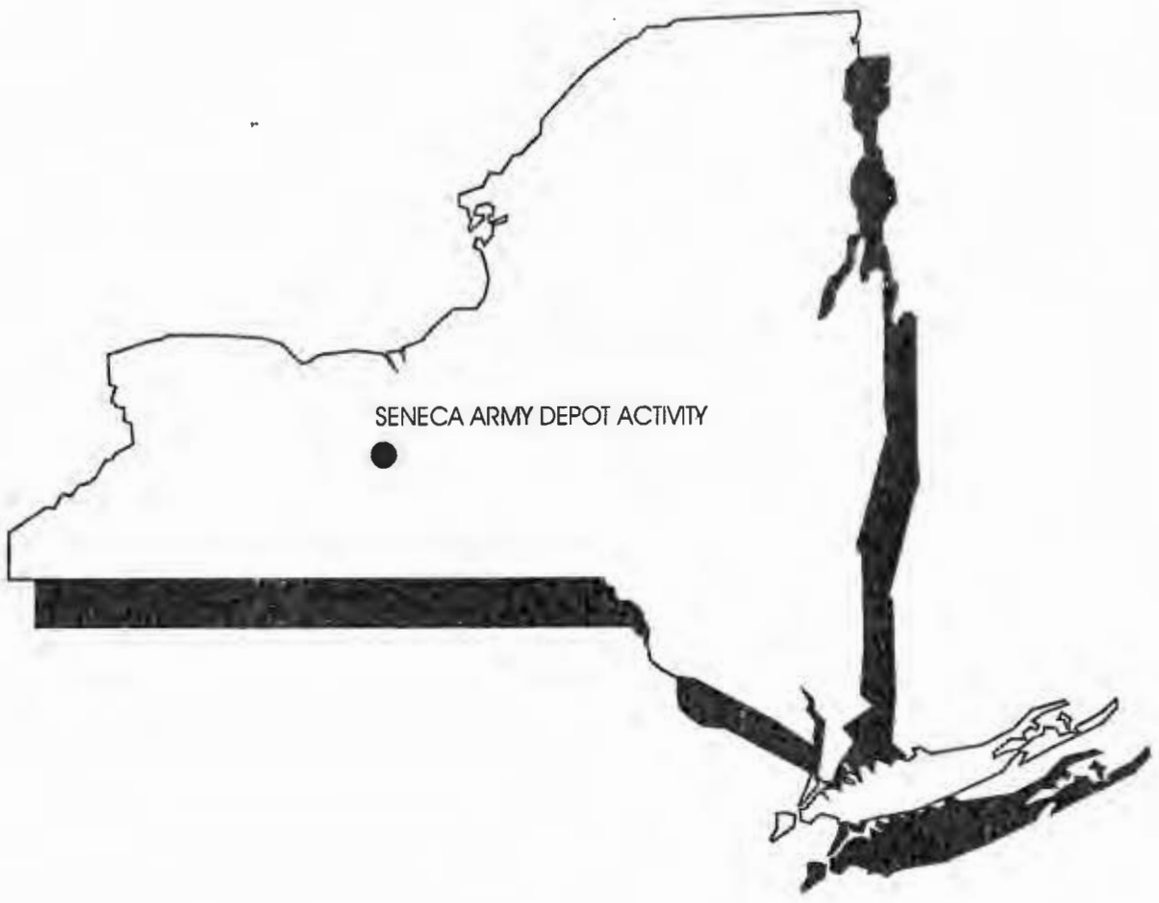
U.S. ARMY ENGINEER DIVISION
HUNTSVILLE, ALABAMA

00453

21



SECTION C - COST ESTIMATE
OPEN BURNING GROUND REMEDIATION PROJECT

SEPTEMBER 1998

PARSONS ENGINEERING SCIENCE, INC.

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

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

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

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%

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

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- 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

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 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 X100%	300/480 X100%	370/480 X100%	410/480 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:

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 01. 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 0 to have your estimate sort by bid form.

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%).

33.01. Mobilize and Preparatory Work	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
<01500 0000 Basic Cost Items>									
CIV AB Field office trailer EODT	3.00	MOS	0	0	0	887	0	887	295.58
USR 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 AB Toilet Portable Chemical EODT	3.00	MO	0	0	0	315	0	315	105.00
USR AA Toilet Portable Chemical Westin	7.00	MO	0	0	0	735	0	735	105.00
<01910 1200 Superintendents>									
MIL AB General Superintendent (P.M.)	3.00	MON	0	0	0	16,695	0	16,695	5565.00
USR AA General Superintendent (P.M.)	7.00	MON	0	0	0	38,955	0	38,955	5565.00
<01910 4300 Misc. Engineering Personnel>									
MIL AB Surveyors EODT	1.00	MON	0	0	0	3,150	0	3,150	3150.00
USR AA Surveyors Westin	1.00	MON	0	0	0	3,150	0	3,150	3150.00
<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.>									
B HTW AB WORK PLAN EODT	80.00	HR	0	6,400	0	0	0	6,400	80.00
B USR AA Work Plan Westin	80.00	HR	0	6,400	0	0	0	6,400	80.00
L HTW AA SOIL SAMPLING PLAN, Westin	40.00	HR	0	3,200	0	0	0	3,200	80.00
L HTW AA Chemical Data Aquisition Plan	16.00	HR	0	1,280	0	0	0	1,280	80.00
L HTW AB SITE SAFETY AND HEALTH PLAN,	40.00	HR	0	3,200	0	0	0	3,200	80.00
L USR AA SITE SAFETY AND HEALTH PLAN,	40.00	HR	0	3,200	0	0	0	3,200	80.00
L HTW AB POLLUTION CONTROL AND MITIGATIO N	40.00	HR	0	3,200	0	0	0	3,200	80.00
L USR AA POLLUTION CONTROL AND MITIGATIO N	40.00	HR	0	3,200	0	0	0	3,200	80.00
L USR AA Daily Quality Control Plan	40.00	HR	0	3,200	0	0	0	3,200	80.00
L HTW AB Daily Quality Control Plan EOD T	40.00	HR	0	3,200	0	0	0	3,200	80.00
TOTAL Phone EODT	3.00	MO	0	0	0	600	0	600	200.00
TOTAL Phone Westin	7.00	MO	0	0	0	1,400	0	1,400	200.00
TOTAL Temporary power EODT	1.00	EA	0	0	0	1,000	0	1,000	1000.00
TOTAL Temporary power Westin	1.00	EA	0	0	0	1,000	0	1,000	1000.00
TOTAL Bottled water EODT	3.00	MO	0	0	0	600	0	600	200.00

33.01. Mobilize and Preparatory Work	QUANTY	UOM	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 Vehicles>									
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	SF	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>									
HTW AA Project photos Westin	4.00	EA	0	0	0	52	0	52	13.09
<01951 1500 First Aid Kits>									
HTW AB 36 Ingredients EODT	1.00	EA	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)>									
HTW AB PVC Overboots (Reusable) EODT	10.00	PR	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>									
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 150	1.00	EA	0	0	0	88	0	88	88.23
USR AA Shoe Covers, Tyvek (bag of 150	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	PR	0	0	0	217	0	217	21.72
USR AA Butyl Gloves(Reusable) Westin	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
USR AA Ear Muffs Westin	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
USR AA Ear Plug(Box Of 200) Westin	1.00	EA	0	0	0	23	0	23	22.50

33.01. Mobilize and Preparatory Work	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
<01951 5800 Misc Protection Equipment>									
HTW AB Hard Hats EODT	10.00	EA	0	0	0	59	0	59	5.88
USR AA Hard Hats Westin	10.00	EA	0	0	0	59	0	59	5.88
<01957 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
<01954 4110 Particulate Samplers>									
HTW AA Digital Dust Sampler	7.00	EA	0	0	0	5,568	0	5,568	795.38
B HTW AA decomission existing wells	31.00	EA	15	206	450	8,138	0	8,793	283.65
<01954 3270 Monitor Well Sampling Equipment Rental>									
AF AA Monitor Well Sampling Equip.	2.00	DAY	0	0	0	168	0	168	84.00
<01954 6300 Sample Collection Using CPT>									
AF AA Mobilize/Demobilize CPT Rig	1.00	EA	0	0	0	3,150	0	3,150	3150.00
AF AA Standby Time for CPT Rig and	8.00	HR	0	0	0	1,260	0	1,260	157.50
AF AA Setup Cost Per Each Hole, CP	7.00	EA	0	0	0	368	0	368	52.50
AF AA Level "D" PPE Rental Per 2-Man	4.00	DAY	0	0	0	1,008	0	1,008	252.00
<02557 5110 Hollow Stem Auger - Normal Soil>									
<Assumes Work To Be Done In Level D Street Clothing. Costs For Drilling Only.>									
HTW AA 4-1/4" ID x 8" OD For 2" Or	160.00	LF	140	1,930	4,221	0	0	6,152	38.45
<02557 5270 Stainless Steel - Flush Threaded>									
HTW AA 2" Dia (50 mm) Casing No. 304	160.00	LF	26	354	774	2,232	0	3,360	21.00
<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	166	363	171	0	700	99.93
<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	0	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	0	0	0	105	0	105	26.16

33.02. Sampling, & Testing by Westin	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
<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	0	0	0	118	0	118	14.75
HTW AA Documentation Package For Q.A.	20.00	EA	0	0	0	3,262	0	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	0	15,068	215.25
<01954 5130 Screw Augers>									
AF AA Hand Auger Rental	90.00	DAY	0	0	0	7,088	0	7,088	78.75
<01954 6120 Field Vehicles>									
AF AA Van or Pickup Rental	90.00	DAY	0	0	0	7,088	0	7,088	78.75
<01954 6140 Sampling Personnel Travel>									
AF AA Personnel Per Diem	90.00	DAY	0	0	0	7,088	0	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 Mouth	20.00	EA	0	0	0	791	0	791	39.55
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
AF AA Plastic Sheeting (Per Roll)	1.00	EA	0	0	0	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	0	1,050	0	1,050	10.50
<01954 6450 Overnight Delivery Service>									
<Pricing Reflects Delivery By Noon Within Lower 48 States. Additional Charges>									
< Could Apply Depending On Size Of Package.>									
HTW AA 21# To 50# Packages	50.00	LB	0	0	0	3,885	0	3,885	77.70
<01954 6470 Coolers And Ice Chests>									
HTW AA 60 Quart Ice Chest	10.00	EA	0	0	0	469	0	469	46.88
HTW AA Blue Ice Soft Packs	20.00	EA	0	0	0	105	0	105	5.27
<01954 7410 Ep Toxicity Analysis>									
<Costs Reflect Lab Portion Only Jumbers In Description Refers To Methods Of T>									
<esting>									
AF AA EP Toxicity, Metals EPA 3010	122.00	EA	0	0	0	19,856	0	19,856	162.75

33.02. Sampling, & Testing by Westin	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
<01954 7420 Toxic Characteristic Leaching Procedure (Tclp)> <Analysis Costs Reflect Lab Portion Only Numbers In Descriptions Refer To Tes> <ting Methods>									
AF AA TCLP (RCRA) (EPA 1311)	12.00	EA	0	0	0	19,719	0	19,719	1643.25
<01954 7600 Soil And Sediment Analysis> <Cost Reflects Lab Portion Only Numbers In Descriptions Refer To Testing Meth> <ods>									
AF AA TAL Metals (6010/7000s)	600.00	EA	0	0	0	148,050	0	148,050	246.75
<02102 1100 Cut Trees - Grub Roots And Stump>									
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 W/O Compaction> <Note - W/Dozer In An Open Area>									
MIL AB Sprd Dumped Fill/Grvl 12" Layer s	322542	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 l	30000	CY	3,999	71,832	124,002	0	0	195,834	6.53
<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>									
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
<02210 2000 Roadway Grading>									
MIL AA Grade Roadway Subbase Courses	5.00	MSY	83	1,207	1,377	0	0	2,584	516.77
MIL AA Finish Grade Roadway	5.00	MSY	121	1,756	2,002	0	0	3,758	751.66
<02611 1000 Prepare And Roll Subbase>									
MIL AA Crushed Stone Paving, Large Are a	5000.00	SY	320	5,369	4,737	1,763	0	11,869	2.37
MIL AB TRK,WTR,OF-HY, 5000GAL,W/CAT613 C	960.00	HR	0	0	32,180	0	0	32,180	33.52
<02082 7210 PLASTIC WASTE PILE COVERS>									
HTW AB PLASTIC LAMINATE WASTE PILE	100000	SF	190	2,350	30	40,950	0	43,330	0.43
<02264 2000 Vinyl Fence>									
MIL AB Silt Fences, Vinyl, 3' High	14000	LF	1,494	18,820	253	4,034	0	23,107	1.65
<02081 2240 Soil and Gravel Cover>									
AF AA Borrow Material, Unclassified	31900	CY	0	0	0	125,941	0	125,941	3.95

33.03. Site Work	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
<02221 6000 Spread Dumped Fill Or Gravel W/O Compaction> <Note - W/Dozer In An Open Area>									
MIL AA Sprd Dumped Fill/Grvl, 6" Layers	290000	SY	1,624	25,984	93,061	0	0	119,045	0.41
<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>									
MIL AA Haul, 16.5 CY (12.6M3) Trk, 6	31900	CY	1,863	21,526	79,319	0	0	100,845	3.16
<02810 1000 Mechanical Seeding>									
USR AA Hydroseed	30.00	ACR	43	540	53	0	60,000	60,593	2019.77
<02820 3000 Furnish And Place Imported Top Soil>									
MIL AA Furn & Pl Imported Topsoil, 4"Dp	15950	CY	2,794	42,323	57,288	293,081	0	392,692	24.62
<02102 1100 Cut Trees - Grub Roots And Stump>									
MIL AA Clear and Grub Lt Trees to 6" D	1.00	ACR	137	1,805	2,115	0	0	3,920	3919.91
<02830 8000 Lawn Maintenance>									
AF AA Mowing	1350.00	MSF	37	587	201	0	0	787	0.58
<02212 2100 By Machine>									
MIL AA Shape Embankment/Slope w/Machine	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	42699	CY	1,029	20,171	64,979	0	0	85,150	1.99
MIL AA TRK,WTR,OF-HY, 5000GAL,W/CAT613C	960.00	HR	0	0	32,180	0	0	32,180	33.52
<02240 0000 Soil Stabilization>									
MIL 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 From Trucks -> <Machine Placed Slope Protection (Keyed) Estimator To Adjust Material> <Costs As Required>									
MIL AA Rip Rap, 10# to 100# Pieces	5.00	CY	1	17	17	121	0	155	30.92
<02264 1000 Vinyl Mats>									
MIL AA Erosion Control,Webbed Revegt	2000.00	SY	35	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

33.03. Site Work	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
<02540 1000 Netting - 100 Sy (83.6M2) Per Roll 4 Ft (1.2M)> <Wide - Stapled>									
MIL AA Erosion Control Netting, 4' Wid e	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 D	160.00	HR	0	0	2,611	0	0	2,611	16.32
MIL AA TRK,WTR,OF-HY, 5000GAL,W/CAT613 C	160.00	HR	0	0	5,363	0	0	5,363	33.52
<01954 9110 Above Ground Wastewater Tanks>									
HTW 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	1.96
MIL AA Shape Embankment/Slope by Hand	1000.00	SY	200	2,521	33	0	0	2,553	2.55
<02221 1200 By Hydraulic Excav 1/2 To 3/4 Cy Capacity>									
MIL AA Trench, 1/2 CY Hyd Exc, Lse Roc k	1166.00	CY	121	2,183	2,603	0	0	4,786	4.10
<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>									
MIL AA Haul, 16.5 CY (12.6M3) Trk, 1 M i	1166.00	CY	34	392	1,444	0	0	1,836	1.57
<15141 6100 Pump C.I. Close Coupling Standard Capacity>									
AF AA Pump C.I. Close Coupling 5 HP	3.00	EA	133	3,498	60	3,320	0	6,879	2292.85
MIL AB LANDCLR,FLAIL MOWER, 57"W, 3"HT	40.00	HR	0	0	56	0	0	56	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	0	0	6,300	0	0	6,300	13.12
<01954 6210 Geophysical Investigations>									
AF 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 l	20732	CY	402	6,079	14,915	0	0	20,993	1.01

33.10. Ordnance removal EODT	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT 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>									
MIL AB Haul, 16.5 CY (12.6M3) Trk, 1 Mi	20732	CY	603	6,970	25,681	0	0	32,651	1.57
<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	0	45,963	1.15
MIL AA GENERATOR, 100 KW, 240/480V,SKID	480.00	HR	0	0	4,751	0	0	4,751	9.90
MIL AA FORK LIFT,YRD 6,000#,13.13'L-HT	480.00	HR	0	0	6,729	0	0	6,729	14.02
MIL AA TRK,WTR,OF-HY, 5000GAL,W/CAT613C	480.00	HR	0	0	16,090	0	0	16,090	33.52
MIL Outside Equip. Operators, Medium	2400.00	HR	2,400	50,915	0	0	0	50,915	21.21
MIL Exc & Ld,3-1/2CY Wh Ldr,Med Matl	16500	CY	381	5,767	14,152	0	0	19,919	1.21
<13275 1110 CEMENT> <FOR FIXATION CEMENT PROCESSES, ONLY TYPE I AND TYPE K (NON-EXPANSION)> <ARE USED.>									
HTW AA PORTLAND CEMENT, TYPE I, BULK,	4100.00	TON	0	0	0	305,655	0	305,655	74.55
<13275 2130 CEMENT KILN DUST>									
HTW AA BULK QUANTITIES of fly ash	4100.00	TON	0	0	0	206,640	0	206,640	50.40
<13275 7110 MOBILE WASTE MIXING EQUIPMENT> <PRICING REFLECTS PURCHASE PRICE FOR EQUIPMENT. NOT INCLUDED ARE COSTS> <FOR OPERATION AND MAINTENANCE.>									
HTW AA 10 CY WASTE MIXER, 3 MONTH	3.00	EA	0	0	0	61,280	0	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	0	0	0	3,150	0	3,150	3150.00
HTW AA WATER PUMP, 2" SELF-PRIMING WITH	1.00	EA	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
<02083 7300 Subcontracted Shipping of Hazardous Waste>									
AF AB Transport 20 CY Bulk Solid Waste	350.00	MI	0	0	0	1,029	0	1,029	2.94
USR AA Transport 20 CY Bulk Solid Waste	34445	MI	0	0	0	101,268	0	101,268	2.94
USR AA Transport 20 CY Bulk Solid Waste	13590	MI	0	0	0	39,955	0	39,955	2.94
USR AA Transport 20 CY Bulk Solid Waste	2750.00	MI	0	0	0	8,085	0	8,085	2.94

33.19. Disposal (Commercial)	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
<13278 8100 DUMP TRUCK HAZWASTE CHARGES>									
AF AB Dump Truck Transportation	800.00	MI	0	0	0	2,226	0	2,226	2.78
<13278 1210 DISPOSAL OF BULK HAZARDOUS WASTE>									
HTW AB HAZARDOUS SOLID BULK WASTE,	40.00	TON	0	0	0	7,980	0	7,980	199.50
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 AB NON-HAZARDOUS SOLID BULK WASTE	135.00	CY	0	0	0	12,758	0	12,758	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
TOTAL Removal Of Temp. Fac. EODT	1.00	EA	0	0	0	5,000	0	5,000	5000.00
<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 Demob of Equip/Facl EODT	1.00	EA	0	0	0	5,000	0	5,000	5000.00
TOTAL Demob Of Personnel EODT	1.00	EA	0	0	0	5,000	0	5,000	5000.00
TOTAL Post-Constr. Submittals EODT	1.00	EA	0	2,500	0	0	0	2,500	2500.00
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	EA	0	5,000	0	0	0	5,000	5000.00
TOTAL OB Grounds Remediation			23,636	419,453	726,051	2,433,697	60,000	3,639,202	

** 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 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
33.01.03 Preconstruc Submi	1.00	EA	43,200	2,160	0	4,540	1,750	3,100	54,740	54741.37
33.01.04 Temporary Utiliti	1.00	EA	18,940	950	0	1,990	770	1,360	24,000	23998.48
33.01.90 General Overhead	1.00	EA	14,150	710	0	1,490	570	1,020	17,930	17934.06
33.01.95 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
33.02.04 Monitoring Wells	1.00	EA	29,880	1,490	0	3,140	1,210	2,140	37,860	37856.69
33.02.05 Sample Surface/Gr	1.00	EA	22,540	1,130	0	2,370	910	1,620	28,560	28556.54
33.02.06 Sampling Soil and	1.00	EA	33,040	1,650	0	3,470	1,340	2,370	41,860	41863.83
33.02.09 Laboratory Chemic	1.00	EA	221,800	11,090	0	23,290	8,970	15,910	281,050	281053.46
TOTAL Sampling, & Testi	1.00	EA	313,830	15,690	0	32,260	12,660	22,470	396,910	396912.39
33.03 Site Work										
33.03.02 Clearing and Grub			2,680	130	0	280	110	190	3,400	
33.03.03 Earthwork EODT			375,540	18,780	0	39,430	15,180	26,940	475,860	
33.03.04 Roads Westin			21,530	1,080	0	2,260	870	1,540	27,280	
33.03.11 Erosion control			117,050	5,850	0	12,290	4,730	8,400	148,310	
33.03.12 Soil cover Westi			944,670	47,230	0	99,190	38,190	67,760	1,197,040	
33.03.17 Clearing and Gru			5,560	280	0	580	220	400	7,050	
33.03.22 Earthwork Westin			126,030	6,300	0	13,230	5,090	9,040	159,700	
33.03.27 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	2110693.16
33.06 groundwater collect										
33.06.07 Pumping/Collectio	1.00	GAL	14,120	710	0	1,480	570	1,010	17,890	17890.25
TOTAL groundwater colle	1.00	EA	14,120	710	0	1,480	570	1,010	17,890	17890.25
33.09 Sediment Removal We	1.00	EA	28,500	1,430	0	2,990	1,150	2,040	36,120	36117.53
33.10 Ordnance removal EO										

** 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
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										
33.19.02 transportation t	19410	TON	180,370	9,020	0	18,940	7,290	12,940	228,550	11.77
33.19.03 Disposal Fees an	19410	CY	813,270	40,660	0	85,390	32,880	58,330	1,030,530	53.09
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	5,950	198.21
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	1.00	EA	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	7519.75
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	7,490	7489.79
TOTAL Demobilization	1.00	EA	56,670	2,830	0	5,950	2,290	4,060	71,810	71809.42
TOTAL Remedial Action	1.00	EA	4,292,360	214,620	0	450,010	173,490	307,830	5,438,310	5438313.44

No errors detected...

* * * END OF ERROR REPORT * * *

SUMMARY REPORTS SUMMARY PAGE

DETAILED ESTIMATE DETAIL PAGE

DETAILED ESTIMATE DETAIL 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**

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%

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

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- 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

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 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 X100%	300/480 X100%	370/480 X100%	410/480 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:

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 01. 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 0 to have your estimate sort by bid form.

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%).

33.01. Mobilize and Preparatory Work	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
<01500 0000 Basic Cost Items>									
CIV AB Field office trailer EODT	3.00	MOS	0	0	0	887	0	887	295.58
<01941 5000 Construction Toilets>									
AF AB Toilet Portable Chemical EODT	3.00	MO	0	0	0	315	0	315	105.00
<01910 1200 Superintendents>									
MIL AB General Superintendent (P.M.)	3.00	MON	0	0	0	16,695	0	16,695	5565.00
<01910 4300 Misc. Engineering Personnel>									
MIL AB Surveyors EODT	1.00	MON	0	0	0	3,150	0	3,150	3150.00
<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.>									
B HTW AB WORK PLAN EODT	80.00	HR	0	6,400	0	0	0	6,400	80.00
L HTW AB SITE SAFETY AND HEALTH PLAN,	40.00	HR	0	3,200	0	0	0	3,200	80.00
L HTW AB POLLUTION CONTROL AND MITIGATIO N	40.00	HR	0	3,200	0	0	0	3,200	80.00
L USR AA POLLUTION CONTROL AND MITIGATIO N	40.00	HR	0	3,200	0	0	0	3,200	80.00
L USR AA Daily Quality Control Plan	40.00	HR	0	3,200	0	0	0	3,200	80.00
L HTW AB Daily Quality Control Plan EOD T	40.00	HR	0	3,200	0	0	0	3,200	80.00
TOTAL Phone EODT	3.00	MO	0	0	0	600	0	600	200.00
TOTAL Temporary power EODT	1.00	EA	0	0	0	1,000	0	1,000	1000.00
TOTAL Bottled water EODT	3.00	MO	0	0	0	600	0	600	200.00
TOTAL Honey Wagon EODT	3.00	MO	0	0	0	3,000	0	3,000	1000.00
<01912 4000 Equipment Maintenance Vehicles>									
M MIL AB Fuel Truck Driver EODT	7.00	MON	0	0	0	7,350	0	7,350	1050.00
<01942 4200 Project Signs>									
AF AB Temporary Construction sign	15.00	SF	0	0	0	170	0	170	11.33
<01951 1500 First Aid Kits>									
HTW AB 36 Ingredients EODT	1.00	EA	0	0	0	134	0	134	134.45
<01951 5100 Boots (Reusable)>									
HTW AB PVC Overboots (Reusable) EODT	10.00	PR	0	0	0	162	0	162	16.17
<01951 5200 Disposable Clothing>									

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
HTW AB 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 0	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
<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>									
HTW AB Hard Hats EODT	10.00	EA	0	0	0	59	0	59	5.88
<01957 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 Stump>									
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 W/O Compaction> <Note - W/Dozer In An Open Area>									
MIL AB Sprd Dumped Fill/Grvl 12" Layer s	322542	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 l	30000	CY	3,999	71,832	124,002	0	0	195,834	6.53
<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>									
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 C	960.00	HR	0	0	32,180	0	0	32,180	33.52
<02082 7210 PLASTIC WASTE PILE COVERS>									
HTW AB PLASTIC LAMINATE WASTE PILE	100000	SF	190	2,350	30	40,950	0	43,330	0.43

33.03. Site Work	QUANTY	UOM	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	1.65
MIL AB LANDCLR,FLAIL MOWER, 57"W, 3"HT	40.00	HR	0	0	56	0	0	56	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	0	0	6,300	0	0	6,300	13.12
<01954 6210 Geophysical Investigations>									
AF 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 l	20732	CY	402	6,079	14,915	0	0	20,993	1.01
<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>									
MIL AB Haul, 16.5 CY (12.6M3) Trk, 1 M i	20732	CY	603	6,970	25,681	0	0	32,651	1.57
<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	0	45,963	1.15
<02083 7300 Subcontracted Shipping of Hazardous Waste>									
AF AB Transport 20 CY Bulk Solid Wast e	350.00	MI	0	0	0	1,029	0	1,029	2.94
<13278 8100 DUMP TRUCK HAZWASTE CHARGES>									
AF AB Dump Truck Transportation	800.00	MI	0	0	0	2,226	0	2,226	2.78
<13278 1210 DISPOSAL OF BULK HAZARDOUS WASTE>									
HTW AB HAZARDOUS SOLID BULK WASTE,	40.00	TON	0	0	0	7,980	0	7,980	199.50
USR AB NON-HAZARDOUS SOLID BULK WASTE	135.00	CY	0	0	0	12,758	0	12,758	94.50
TOTAL Removal Of Temp. Fac. EODT	1.00	EA	0	0	0	5,000	0	5,000	5000.00
TOTAL Demob of Equip/Facl EODT	1.00	EA	0	0	0	5,000	0	5,000	5000.00
TOTAL Demob Of Personnel EODT	1.00	EA	0	0	0	5,000	0	5,000	5000.00
TOTAL Post-Constr. Submittals EODT	1.00	EA	0	2,500	0	0	0	2,500	2500.00
TOTAL OB Grounds Remediation			10,243	179,846	301,879	218,249	0	699,974	

** 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 Action									
33.01 Mobilize and Prepara									
33.01.01 Mob Construction	1.00 EA	1,430	70	0	150	60	100	1,810	1807.33
33.01.02 Mob of Personnel	1.00 EA	23,550	1,180	0	2,470	950	1,690	29,850	29845.89
33.01.03 Preconstruc Submi	1.00 EA	26,670	1,330	0	2,800	1,080	1,910	33,790	33788.84
33.01.04 Temporary Utiliti	1.00 EA	6,170	310	0	650	250	440	7,820	7820.54
33.01.90 General Overhead	1.00 EA	8,930	450	0	940	360	640	11,310	11309.62
33.01.95 Health & Safety	1.00 EA	26,450	1,320	0	2,780	1,070	1,900	33,520	33516.56
TOTAL Mobilize 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 Earthwork EODT		375,540	18,780	0	39,430	15,180	26,940	475,860	
33.03.11 Erosion control		117,050	5,850	0	12,290	4,730	8,400	148,310	
TOTAL Site Work	1.00 EA	495,260	24,760	0	52,000	20,020	35,520	627,570	627572.81
33.10 Ordnance removal EO									
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
33.19 Disposal (Commercial									
33.19.02 transportation t	19410 TON	3,860	190	0	410	160	280	4,900	0.25
33.19.03 Disposal Fees an	19410 CY	24,610	1,230	0	2,580	990	1,770	31,190	1.61
TOTAL Disposal (Commerc	1.00 EA	28,480	1,420	0	2,990	1,150	2,040	36,080	36083.52
33.21 Demobilization									
33.21.01 Removal Of Temp.	1.00 EA	5,930	300	0	620	240	430	7,520	7519.75
33.21.04 Demob of Equip/Fa	1.00 EA	5,930	300	0	620	240	430	7,520	7519.75
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
TOTAL Demobilization	1.00 EA	20,770	1,040	0	2,180	840	1,490	26,320	26319.13
TOTAL Remedial Action	1.00 EA	831,080	41,550	0	87,260	33,600	59,610	1,053,100	1053098.80

No errors detected...

* * * END OF ERROR REPORT * * *

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**

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%

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.

- 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
- 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

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 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 X100%	300/480 X100%	370/480 X100%	410/480 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

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* 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:

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 01. 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).
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and for Superfund projects under $2,000,000 use 1.5%).

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

33.01. Mobilize and Preparatory Work	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
<01500 0000 Basic Cost Items>									
USR 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>									
USR AA Toilet Portable Chemical Westin	7.00	MO	0	0	0	735	0	735	105.00
<01910 1200 Superintendents>									
USR AA General Superintendent (P.M.)	7.00	MON	0	0	0	38,955	0	38,955	5565.00
<01910 4300 Misc. Engineering Personnel>									
USR AA Surveyors Westin	1.00	MON	0	0	0	3,150	0	3,150	3150.00
<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.>									
B USR AA Work Plan Westin	80.00	HR	0	6,400	0	0	0	6,400	80.00
L HTW AA SOIL SAMPLING PLAN, Westin	40.00	HR	0	3,200	0	0	0	3,200	80.00
L HTW AA Chemical Data Aquisition Plan	16.00	HR	0	1,280	0	0	0	1,280	80.00
L USR AA SITE SAFETY AND HEALTH PLAN,	40.00	HR	0	3,200	0	0	0	3,200	80.00
L USR AA POLLUTION CONTROL AND MITIGATIO N	40.00	HR	0	3,200	0	0	0	3,200	80.00
L USR AA Daily Quality Control Plan	40.00	HR	0	3,200	0	0	0	3,200	80.00
TOTAL Phone Westin	7.00	MO	0	0	0	1,400	0	1,400	200.00
TOTAL Temporary power Westin	1.00	EA	0	0	0	1,000	0	1,000	1000.00
TOTAL Bottled water Westin	7.00	MO	0	0	0	1,400	0	1,400	200.00
TOTAL Honey Wagon Westin	7.00	MO	0	0	0	7,000	0	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	0	170	0	170	11.33
<01953 1110 Photographs Processing>									
HTW AA Project photos Westin	4.00	EA	0	0	0	52	0	52	13.09
<01951 1500 First Aid Kits>									
USR AA 36 Ingredients Westin	1.00	EA	0	0	0	134	0	134	134.45

33.01. Mobilize and Preparatory Work	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
<01951 5100 Boots (Reusable)>									
USR AA PVC Overboots (Reusable) Westin	10.00	PR	0	0	0	162	0	162	16.17
<01951 5200 Disposable Clothing>									
USR 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
<01951 5500 Gloves (Reusable)>									
USR AA Butyl Gloves(Reusable) Westin	10.00	PR	0	0	0	217	0	217	21.72
<01951 5600 Ear Protection>									
USR AA Ear Muffs Westin	5.00	EA	0	0	0	54	0	54	10.86
USR AA Ear Plug(Box Of 200) Westin	1.00	EA	0	0	0	23	0	23	22.50
<01951 5800 Misc Protection Equipment>									
USR AA Hard Hats Westin	10.00	EA	0	0	0	59	0	59	5.88
<01957 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
<01954 4110 Particulate Samplers>									
HTW AA Digital Dust Sampler	7.00	EA	0	0	0	5,568	0	5,568	795.38
B HTW AA decomission existing wells	31.00	EA	15	206	450	8,138	0	8,793	283.65
<01954 3270 Monitor Well Sampling Equipment Rental>									
AF AA Monitor Well Sampling Equip.	2.00	DAY	0	0	0	168	0	168	84.00
<01954 6300 Sample Collection Using CPT>									
AF AA Mobilize/Demobilize CPT Rig	1.00	EA	0	0	0	3,150	0	3,150	3150.00
AF AA Standby Time for CPT Rig and	8.00	HR	0	0	0	1,260	0	1,260	157.50
AF AA Setup Cost Per Each Hole, CP	7.00	EA	0	0	0	368	0	368	52.50
AF AA Level "D" PPE Rental Per 2-Man	4.00	DAY	0	0	0	1,008	0	1,008	252.00
<02557 5110 Hollow Stem Auger - Normal Soil>									
<Assumes Work To Be Done In Level D Street Clothing. Costs For Drilling Only.>									
HTW AA 4-1/4" ID x 8" OD For 2" Or	160.00	LF	140	1,930	4,221	0	0	6,152	38.45
<02557 5270 Stainless Steel - Flush Threaded>									
HTW AA 2" Dia (50 mm) Casing No. 304	160.00	LF	26	354	774	2,232	0	3,360	21.00

33.02. Sampling, & Testing by Westin	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT 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	166	363	171	0	700	99.93
<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	0	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	0	0	0	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	0	0	0	118	0	118	14.75
HTW AA Documentation Package For Q.A.	20.00	EA	0	0	0	3,262	0	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	0	15,068	215.25
<01954 5130 Screw Augers>									
AF AA Hand Auger Rental	90.00	DAY	0	0	0	7,088	0	7,088	78.75
<01954 6120 Field Vehicles>									
AF AA Van or Pickup Rental	90.00	DAY	0	0	0	7,088	0	7,088	78.75
<01954 6140 Sampling Personnel Travel>									
AF AA Personnel Per Diem	90.00	DAY	0	0	0	7,088	0	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 Mouth	20.00	EA	0	0	0	791	0	791	39.55
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
AF AA Plastic Sheeting (Per Roll)	1.00	EA	0	0	0	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	0	1,050	0	1,050	10.50

33.02. Sampling, & Testing by Westin	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
<01954 6450 Overnight Delivery Service>									
<Pricing Reflects Delivery By Noon Within Lower 48 States. Additional Charges>									
< Could Apply Depending On Size Of Package.>									
HTW AA 21# To 50# Packages	50.00	LB	0	0	0	3,885	0	3,885	77.70
<01954 6470 Coolers And Ice Chests>									
HTW AA 60 Quart Ice Chest	10.00	EA	0	0	0	469	0	469	46.88
HTW AA Blue Ice Soft Packs	20.00	EA	0	0	0	105	0	105	5.27
<01954 7410 Ep Toxicity Analysis>									
<Costs Reflect Lab Portion Only Jumbers In Description Refers To Methods Of T>									
<esting>									
AF AA EP Toxicity, Metals EPA 3010	122.00	EA	0	0	0	19,856	0	19,856	162.75
<01954 7420 Toxic Characteristic Leaching Procedure (Tclp)>									
<Analysis Costs Reflect Lab Portion Only Numbers In Descriptions Refer To Tes>									
<ting Methods>									
AF AA TCLP (RCRA) (EPA 1311)	12.00	EA	0	0	0	19,719	0	19,719	1643.25
<01954 7600 Soil And Sediment Analysis>									
<Cost Reflects Lab Portion Only Numbers In Descriptions Refer To Testing Meth>									
<ods>									
AF AA TAL Metals (6010/7000s)	600.00	EA	0	0	0	148,050	0	148,050	246.75
<02210 2000 Roadway Grading>									
MIL AA Grade Roadway Subbase Courses	5.00	MSY	83	1,207	1,377	0	0	2,584	516.77
MIL AA Finish Grade Roadway	5.00	MSY	121	1,756	2,002	0	0	3,758	751.66
<02611 1000 Prepare And Roll Subbase>									
MIL AA Crushed Stone Paving, Large Are a	5000.00	SY	320	5,369	4,737	1,763	0	11,869	2.37
<02081 2240 Soil and Gravel Cover>									
AF AA Borrow Material, Unclassified	31900	CY	0	0	0	125,941	0	125,941	3.95
<02221 6000 Spread Dumped Fill Or Gravel W/O Compaction>									
<Note - W/Dozer In An Open Area>									
MIL AA Sprd Dumped Fill/Grvl, 6" Layer s	290000	SY	1,624	25,984	93,061	0	0	119,045	0.41
<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>									
MIL AA Haul, 16.5 CY (12.6M3) Trk, 6	31900	CY	1,863	21,526	79,319	0	0	100,845	3.16
<02810 1000 Mechanical Seeding>									
USR AA Hydroseed	30.00	ACR	43	540	53	0	60,000	60,593	2019.77
<02820 3000 Furnish And Place Imported Top Soil>									

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
<02102 1100 Cut Trees - Grub Roots And Stump>									
MIL AA Clear and Grub Lt Trees to 6" D	1.00	ACR	137	1,805	2,115	0	0	3,920	3919.91
<02830 8000 Lawn Maintenance>									
AF AA Mowing	1350.00	MSF	37	587	201	0	0	787	0.58
<02212 2100 By Machine>									
MIL 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	42699	CY	1,029	20,171	64,979	0	0	85,150	1.99
MIL AA TRK,WTR,OF-HY, 5000GAL,W/CAT613 C	960.00	HR	0	0	32,180	0	0	32,180	33.52
<02240 0000 Soil Stabilization>									
MIL 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 From Trucks -> <Machine Placed Slope Protection (Keyed) Estimator To Adjust Material> <Costs As Required>									
MIL AA Rip Rap, 10# to 100# Pieces	5.00	CY	1	17	17	121	0	155	30.92
<02264 1000 Vinyl Mats>									
MIL AA Erosion Control,Webbed Reveg Ma t	2000.00	SY	35	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 Roll 4 Ft (1.2M)> <Wide - Stapled>									
MIL AA Erosion Control Netting, 4' Wid e	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 D	160.00	HR	0	0	2,611	0	0	2,611	16.32
MIL AA TRK,WTR,OF-HY, 5000GAL,W/CAT613 C	160.00	HR	0	0	5,363	0	0	5,363	33.52
<01954 9110 Above Ground Wastewater Tanks>									
HTW 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	1.96

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
<02221 1200 By Hydraulic Excav 1/2 To 3/4 Cy Capacity>									
MIL AA Trench, 1/2 CY Hyd Exc, Lse Roc k	1166.00	CY	121	2,183	2,603	0	0	4,786	4.10
<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>									
MIL AA Haul, 16.5 CY (12.6M3) Trk, 1 M i	1166.00	CY	34	392	1,444	0	0	1,836	1.57
<15141 6100 Pump C.I. Close Coupling Standard Capacity>									
AF AA Pump C.I. Close Coupling 5 HP	3.00	EA	133	3,498	60	3,320	0	6,879	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 T	480.00	HR	0	0	6,729	0	0	6,729	14.02
MIL AA TRK,WTR,OF-HY, 5000GAL,W/CAT613 C	480.00	HR	0	0	16,090	0	0	16,090	33.52
MIL Outside Equip. Operators, Mediu m	2400.00	HR	2,400	50,915	0	0	0	50,915	21.21
<02225 2340 3-1/2 Cy Capacity>									
MIL Exc & Ld,3-1/2CY Wh Ldr,Med Mat l	16500	CY	381	5,767	14,152	0	0	19,919	1.21
<13275 1110 CEMENT>									
<FOR FIXATION CEMENT PROCESSES, ONLY TYPE I AND TYPE K (NON-EXPANSION)>									
<ARE USED.>									
HTW AA PORTLAND CEMENT, TYPE I, BULK,	4100.00	TON	0	0	0	305,655	0	305,655	74.55
<13275 2130 CEMENT KILN DUST>									
HTW AA BULK QUANTITIES of fly ash	4100.00	TON	0	0	0	206,640	0	206,640	50.40
<13275 7110 MOBILE WASTE MIXING EQUIPMENT>									
<PRICING REFLECTS PURCHASE PRICE FOR EQUIPMENT. NOT INCLUDED ARE COSTS>									
<FOR OPERATION AND MAINTENANCE.>									
HTW AA 10 CY WASTE MIXER, 3 MONTH	3.00	EA	0	0	0	61,280	0	61,280	20426.70
HTW AA BELT FEEDER FOR 10 CY MIXER,	1.00	EA	0	0	0	10,805	0	10,805	10804.50
HTW AA DUST COLLECT WITH 2 HP BLOWER	1.00	EA	0	0	0	3,150	0	3,150	3150.00
HTW AA WATER PUMP, 2" SELF-PRIMING WIT H	1.00	EA	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
<02083 7300 Subcontracted Shipping of Hazardous Waste>									
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

33.19. Disposal (Commercial)	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR AA Transport 20 CY Bulk Solid Waste	2750.00	MI	0	0	0	8,085	0	8,085	2.94
<13278 1210 DISPOSAL OF BULK HAZARDOUS WASTE>									
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	EA	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	

	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	5,950	198.22
TOTAL Site Restoration	1.00	EA	4,690	230	0	490	190	340	5,950	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

No errors detected...

* * * END OF ERROR REPORT * * *

No Backup Reports...

* * * END TABLE OF CONTENTS * * *