

FINAL

BASIS OF DESIGN

**SOIL REMEDIATION AT
OPERABLE UNIT NO. 10, SITE 35
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA**

CONTRACT TASK ORDER 0275

DECEMBER 21, 1994

Prepared For:

**DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES
ENGINEERING COMMAND
*Norfolk, Virginia***

Under:

**LANTDIV CLEAN Program
Contract N62470-89-D-4814**

Prepared by:

**BAKER ENVIRONMENTAL, INC.
*Coraopolis, Pennsylvania***

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**BASIS OF DESIGN
SOIL REMEDIATION AT
OPERABLE UNIT NO. 10, (SITE 35)
MARINE CORPS BASE,
CAMP LEJEUNE, NORTH CAROLINA**

INTRODUCTION

This document presents the Basis of Design for soil remediation at Operable Unit (OU) No. 10, Site 35 - Camp Geiger Area Fuel Farm, Marine Corps Base (MCB), Camp Lejeune, North Carolina. It has been prepared by Baker Environmental, Inc. (Baker) for presentation to the Department of the Navy (DON), Naval Facilities Engineering Command, Atlantic Division (LANTDIV) under Navy CLEAN Contract Number N62470, and in accordance with LANTDIV's Scope of Work dated June 23, 1994.

Contaminated soil at OU No. 10 was the focus of the Interim Remedial Action Remedial Investigation/Feasibility Study (RI/FS) conducted by Baker in 1993/94. This study culminated in the identification of Source Removal and Off-Site Soil Recycling as the Selected Remedial Action Alternative (RAA) under the Final Interim Record of Decision (ROD) prepared by Baker (August 1994). The ROD was signed by MCB Camp Lejeune Commanding General L.H. Livingston on September 15, 1994.

Under this RAA, areas identified as containing contaminated soil will be cleared of vegetation and other obstructions. Soil excavation will take place to remove contaminated soil which, in general, is expected to be present below a layer of clean (uncontaminated) soil. The contaminated and uncontaminated soils will be transported to an on-site staging area for segregation, sampling and analysis. Contaminated soil will be shipped to an off-site soil recycling facility; whereas, the clean soil will be used, if appropriate, as backfill. It is anticipated that additional borrow soil will also be required as backfill to restore the site to roughly original grade. The areas disturbed by the work performed will be reseeded to provide for erosion protection.

PURPOSE

The purpose of the Basis of Design is to present and describe the most important elements of the remedial design for review by LANTDIV. The Basis of Design is not intended to be part of the project plans and specifications to be utilized by the Remedial Action Contractor for the execution of the remedial action.

BACKGROUND

MCB Camp Lejeune is a training base (also referred to as the "Activity") for the U.S. Marine Corps, located in Onslow County, North Carolina. The Activity covers approximately 236 square miles and includes 14 miles of coastline. MCB Camp Lejeune is bounded to the southeast by the Atlantic Ocean, to the northeast by State Route 24, and to the west by U.S. Route 17. The town of Jacksonville, North Carolina is located north of the Activity.

Camp Geiger is located at the extreme northwest corner of MCB Camp Lejeune. The main entrance to Camp Geiger is off U.S. Route 17, approximately 3.5 miles southeast Jacksonville. OU No. 10, Site 35, the Camp Geiger Area Fuel Farm, refers primarily to five, 15,000-gallon aboveground storage tanks

(ASTs), a pump house, and a fuel unloading pad situated within Camp Geiger just north of the intersection of Fourth and "G" Streets. OU No. 10 is one of 13 operable units within MCB Camp Lejeune. An "operable unit" as defined by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) is a discrete action that comprises an incremental step toward comprehensively addressing site problems.

Construction of Camp Geiger was completed in 1945, four years after construction of MCB Camp Lejeune was initiated. Originally, the ASTs were used for the storage of No. 6 fuel oil, but, were later converted for storage of other petroleum products including unleaded gasoline, diesel fuel, and kerosene. The date of their conversion is not known. The ASTs currently in use at the site are reported to be the original tanks.

Routinely, the ASTs at Site 35 supply fuel to an adjacent dispensing pump. A leak in the underground line from the ASTs to the dispensing island was reportedly responsible for the loss of roughly 30 gallons per day of gasoline over an unspecified period. The leaking line was subsequently sealed and replaced.

The ASTs at Site 35 are currently used to dispense gasoline, diesel and kerosene to government vehicles and to supply USTs in use at Camp Geiger and the nearby New River Marine Corps Air Station. The ASTs are supplied by commercial carrier trucks which deliver product to fill ports located on the fuel unloading pad at the southern end of the facility. Six, short-run (120 feet maximum), underground fuel lines are currently utilized to distribute the product from the unloading pad to the ASTs and visa versa.

Reports of a release from an underground distribution line near one of the ASTs date back to 1957-58. Apparently, the leak occurred as the result of damage to a dispensing pump. At that time the Camp Lejeune Fire Department estimated that thousands of gallons of fuel were released although records of the incident cannot be located. The fuel reportedly migrated to the east and northeast toward Brinson Creek along the top of shallow groundwater. Shallow groundwater interceptor trenches were reportedly excavated to capture the fuel which was then ignited and burned.

Another abandoned underground distribution line extended west from the ASTs to the former Mess Hall Heating Plant, located adjacent to "D" Street, between Third and Fourth Streets. This underground line dispensed No. 6 fuel oil to an underground storage tank (UST) which fueled the Mess Hall boiler. The Mess Hall, located across "D" Street to the west, was demolished along with its Heating Plant in the 1960s.

In April 1990, an undetermined amount of fuel was discovered by Camp Geiger personnel along unnamed drainage channels located north of the Fuel Farm. Apparently, the source of the fuel, believed to be diesel or jet fuel, was an unauthorized discharge from a tanker truck that was never identified. The Activity reportedly initiated an emergency clean-up which included the removal of approximately 20 cubic yards of soil.

Decommissioning and dismantling of the Fuel Farm is scheduled to commence in April 1995. Plans are currently being prepared to empty, clean, dismantle, and remove the ASTs along with the concrete foundations, slabs on grade, berms and associated underground piping. The Fuel Farm is being removed to make way for a six lane divided highway proposed by the North Carolina Department of Transportation (NCDOT).

The surface topography at Site 35 is generally flat to the south and west of the ASTs. The ground surface dips rapidly to the north and east in the direction of Brinson Creek. Surface water runoff flows toward Brinson Creek.

The shallow soil stratigraphy at Site 35 consists of fine to medium-grained sands (15 to 30 feet thick), underlain by oolitic, fossiliferous limestone (6 to 20 feet thick), which in turn is underlain by a unit of silty sand.

Shallow groundwater flow direction is generally west to east across the site in the direction of Brinson Creek. The top of groundwater is encountered roughly 8 to 10 feet below the ground surface across the flat portion of the site and at lesser depths as the surface topography converges with Brinson Creek.

Baker was retained to conduct an Interim Remedial Action Remedial Investigation/Feasibility Study (RI/FS) in December of 1993. The analytical data generated as part of the Interim Remedial Action/Feasibility Study combined with data obtained during previous investigations conducted at Site 35 identified the presence of petroleum contaminated soil in the vicinity of the Fuel Farm ASTs and to the north and northwest in a broad area extending from the former UST adjacent to Building G480 to the vicinity of monitoring well MW-25. In general, the analytical data suggests that the majority of the contaminated soil is present within a narrow zone that begins just above the top of the shallow groundwater table. It can be assumed that seasonal fluctuations in the contaminated groundwater table are responsible for in the contamination of soil in this narrow zone above the groundwater table.

Three areas of soil contamination requiring remediation have been identified as depicted on Drawing No. C-1. The first area is located in the vicinity of the Fuel Farms ASTs. The two other areas are located north of the Fuel Farm. The larger of these two areas is located along "F" Street in the vicinity of monitoring well MW-11; the smaller area is in the area of monitoring well MW-25. Baker has estimated that approximately 3,600 cubic yards (4,900 tons) of contaminated soil is present in these three areas. A fourth area of contamination, located immediately north of Building G480, was also identified in the ROD. Although not included in this design, this area will be addressed under a separate investigation and possibly a follow-up remediation if appropriate.

The DON is implementing a remedial action at Operable Unit (OU) No. 10, Site 35, the Camp Geiger Area Fuel Farm, under the Installation Restoration Program using a Remedial Action Contract (RAC). The goal of this removal action is to remediate the contaminated soil with concentrations of total petroleum hydrocarbons (TPH) in excess of 40 mg/kg (milligrams per kilogram) as measured by EPA Method 5030/8015 (Low Boiling Point Hydrocarbons) and 160 mg/kg as measured by EPA Method 3550/8015 (High Boiling Point Hydrocarbons).

The following sections of this basis of design present the elements of the remedial action by Hazardous, Toxic, and Radiological Waste (HTRW) account as defined in the Remedial Action Contracts Delivery Order Requirements Package Guide, NEESA 20.2-062, June 1992.

1.0 MOBILIZATION AND PREPARATORY WORK

Mobilization involves the acquisition, delivery to the site, and setup of the necessary construction equipment, material, staging area, stockpile area, and personnel to accomplish the Removal Action Contract (RAC) scope of work.

The equipment recommended to accomplish this work in the most cost- and time-effective manner may include, but not be limited to, excavators, front-end loaders, bulldozers, and dump trucks. The excavators will be used for removing contaminated soils. The loaders will be used to transfer the contaminated soils into dump trucks. The bulldozers will be used for site preparation and final site grading.

The Contractor shall provide temporary facilities, including a Contractor staging/decontamination area, a stockpile area, and temporary utilities, as necessary to complete the work.

2.0 MONITORING, SAMPLING, TESTING, AND ANALYSIS

The Contractor shall be required to submit to LANTDIV for approval, a Sampling and Analysis Plan (SAP) describing the Contractor's sampling, analytical, and quality control procedures for the chemical data collected during the performance of work required by the specifications. The SAP shall ensure that all chemical data generated are scientifically accurate and legally defensible. The SAP shall describe the quantity, frequency, and location of soil and water samples to be collected and analyses to be performed.

The type and quantity of testing shall be based on the requirements set forth in the specifications (and the Contractor's Health and Safety Plan and Air Monitoring Plan) and as required during the project. All required testing, documentation, and submittal of test results will be the responsibility of the Contractor.

Air Monitoring

The Contractor shall develop and implement an Air Monitoring Plan to characterize site air with regard to personnel safety and off-site (perimeter of the active work area) migration of contaminants as a result of site activities. The Contractor shall perform real-time monitoring for organic vapors with a PID- or FID-type volatile organic chemical detector and for explosive atmospheres with an explosimeter. Action levels shall be identified in the Contractor's Health and Safety Plan and Air Monitoring Plan subject to the approval of the Navy Technical Representative (NTR).

Air Sampling

High-volume air sampling shall be used to quantify any release of toxic particulates associated with remedial work at the project site in accordance with OSHA requirements for worker health and safety.

Water Sampling

The Contractor shall collect water samples for chemical analysis from the water generated as part of the remedial action including, but not limited to, spent decontamination fluids and water collected from dewatering activities (i.e., surface water from the existing trench and rainfall accumulated in open excavations). Sampling shall occur at a frequency of one composite sample per tanker or one composite sample per 10 drums.

Soil Sampling

The Contractor shall collect soil samples for chemical analysis from:

1. Soil excavated by the Contractor to characterize as contaminated versus uncontaminated (clean). One sample shall be collected for every 200 cubic yards of excavated uncontaminated soil that may be reutilized as backfill. This single sample shall be comprised of a mixture of six randomly chosen primary samples of approximately equal size. Sampling frequency of contaminated soil shall be determined by the soil recycling facility.
2. The limits of excavated areas to verify that contaminated soil has been removed (i.e., confirmation sampling) within the limits of excavation. Only excavation sidewalls will be sampled because the base of the excavation is expected to be remediated under a future remedial action focused on groundwater. One soil sample shall be collected for every 50 lineal feet of sidewall excavation.

Testing and Analysis

The Contractor shall adhere to EPA chain-of-custody procedures during the collection, transport, and analyses of all samples. The Contractor shall arrange laboratory analyses of all samples to conform with NEESA Level C Quality Assurance Requirements. Samples shall be analyzed as follows:

Soil Testing

1. Soil excavated by the Contractor and stockpiled in the soil staging area to characterize as contaminated versus uncontaminated (clean). Sampling frequency of contaminated soil shall be determined by the off-site soil recycling facility. One sample shall be collected for every 200 cubic yards of uncontaminated soil that may be reutilized as backfill.
 - TPH - EPA Method 5030/8015
 - TPH - EPA Method 3550/8015
 - TCLP Metals - EPA Methods 7060, 7080, 7130, 7190, 7420, 7470, 7741, 7760
 - TCLP VOAs - EPA Method 8240
 - TCLP SVOAs - EPA Method 8270
 - RCRA Hazardous Waste Characteristics (i.e., ignitability, corrosivity, and reactivity)

If the results of the above analysis indicate that the excavated soil is uncontaminated (i.e., TPH levels determined via EPA Method 5030/8015 are less than 40 mg/kg; TPH levels determined via EPA Method 3550/8015 are less than 160 mg/kg; and TCLP limits as per 40 CFR 261.24 are not exceeded), the portion of the excavated soil represented by the above analyses may be used as backfill. Excavated soil targeted for reuse as backfill shall adhere to the physical requirements for backfill identified in the specifications.

In addition to the above analyses, the Contractor shall be responsible for performing any additional analyses required by the off-site soil recycling facility. These additional analyses shall be identified in the Contractor's Sampling and Analysis Plan.

2. Laboratory confirmation testing to verify the limits of excavated areas (one sample for every 50 lineal feet of sidewall excavation):

a. In-field Screening Techniques

- TPH - by ENSYS rapid immunoassay in-field screening testing for petroleum fuels (PETRO RIS Soil Test System) - EPA Proposed Method 4030

The ENSYS in-field screening tests will be used primarily as a guidance for the Contractor in determining when the limits of excavation has been encountered (i.e., if ENSYS test results are positive, continue excavating; if the results are negative, stop excavating and collect a confirmation sample for laboratory analysis for TPH by EPA Methods 5030/8015 and 3550/8015 to verify excavation limits). The ENSYS tests will also be used to aid in the segregation of contaminated versus clean soils at the soil staging area.

b. Laboratory Confirmation Samples

- TPH - EPA Method 5030/8015
- TPH - EPA Method 3550/8015

Incidental Testing

Potentially contaminated water generated during the remedial action including, but not limited to, water from decontamination of personnel and equipment, existing surface water impounded near Area B, and surface water accumulated in the open excavations. This also includes Contractor generated waste such as personal protective equipment (PPE), but not general refuse.

- TCLP Metals - EPA Methods 7060, 7080, 7130, 7190, 7420, 7470, 7741, 7760
- TCLP VOAs - EPA Method 8240
- TCLP SVOAs - EPA Method 8270

Water shall be pumped into a tank or tanker truck, where one composite sample shall be collected to determine if the water qualifies as a hazardous waste. Site water determined to be a hazardous waste will be disposed of at an appropriate facility permitted to accept hazardous fluids. Site water that is analyzed and found to be non-hazardous will be disposed of at an appropriate public-owned treatment works.

3.0 SITE WORK

Site work includes all clearing and grubbing and construction of the laydown/decontamination area, excavated soil staging area and fencing. Clearing and grubbing will be limited to approximately 1.3 acres where access and excavation is required. Trees suitable for use as board lumber (tree trunks greater than six inches in diameter, less the tops and roots) will be removed from the site by the Activity prior to the commencement of work. The Contractor shall transport the remaining tops and roots to the

wood chipper located at the base sanitary landfill. The Contractor shall propose disposal options for remaining vegetation to the Forestry Division, EMD, at MCB, Camp Lejeune, as part of the Contractor's Work Plan.

4.0 SURFACE WATER COLLECTION AND CONTROL

The Contractor shall be required to provide devices or facilities as necessary to reduce the possibility of surface water from contacting contaminated materials (i.e., soil, equipment, etc.) during the remediation and flowing off site. The Contractor shall be required to keep the excavated areas dry during construction and to collect, sample, analyze, and dispose of water accumulated in the excavation and staging areas.

5.0 GROUNDWATER COLLECTION AND CONTROL

No groundwater collection is anticipated in this project.

6.0 AIR POLLUTION/GAS COLLECTION AND CONTROL

The excavation and loading activities will most likely generate some dust emissions. Soil, haul roads, and other areas disturbed by operations shall be treated, as needed, with dust suppressants such as water to minimize emissions.

7.0 SOLIDS COLLECTION AND CONTAINMENT

Contaminated soil excavation shall be performed with appropriate earth moving equipment, such as excavators, bulldozers, and front-end loaders. The areas of contamination to be excavated is delineated on Drawing No. C-1. The areal extent of the excavation will likely vary from that depicted on Drawing No. C-1 as this drawing is an approximation based on limited data. However, based on the limits depicted on Drawing No. C-1, it is estimated that the total volume of soil to be excavated is 9,100 cubic yards, of which approximately 3,600 cubic yards (4,900 tons) will be contaminated and approximately 5,500 cubic yards will be clean. Prior to the start of excavation, the Contractor shall stake the estimated bounds of the contaminated soil. The on-site Navy Technical Representative (NTR) will visually verify the extent of the initial area of contaminated soil to be excavated. Excavation will be limited to soils in the unsaturated soil zone located above the seasonal high shallow groundwater table. Based on this criteria, excavation will be limited to approximately the top six feet of soil (lesser amounts in low-lying areas). All impacted soil located at or below the seasonal high shallow groundwater table will be addressed as part of a future overall groundwater remediation program at Site 35. Excavated soil will be segregated as clean or contaminated and placed on plastic (or other impermeable material) sheets at a designated staging area near the excavation. Both clean and contaminated soils will be sampled in the staging area to verify that only clean soil will be returned to the excavation as backfill. The Contractor shall specifically address the means by which clean and contaminated soil will be segregated in his Work Plan.

An estimate of the seasonal high groundwater has been made based on the water level readings obtained to date at monitoring well locations across the site and from an evaluation of the extent of soil and groundwater contamination identified under previous investigations. In general, seasonal high groundwater is estimated to be approximately one to two feet above the top of the shallow groundwater as measured by Baker in 1994.

Once the Contractor has completely excavated the contaminated soil within the bounds depicted on Drawing Nos. C-2 and C-3, excavation will stop and an on-site analysis consisting of a visual inspection coupled with field screening for TPH by ENSYS rapid immunoassay in-field screening tests for petroleum fuels (PETRO RIS Soil Test System) will be performed on the surrounding soil. If the visual inspection and/or the ENSYS test kits reveal remaining contaminated soil, the Contractor will consult the on-site NTR to determine an additional amount of soil to be excavated. Excavation shall continue until no evidence of contaminated soil along the sidewalls of the excavation is present. At that time, soil samples will be collected to confirm the clean condition (i.e., TPH concentration less than 40 mg/kg by EPA Method 5030/8015 and 160 mg/kg by EPA Method 3550/8015), as per Section 2.0. Contaminated soil is expected to be encountered along the base of the excavation which is defined as the upper limits of seasonal high groundwater. This contaminated soil shall be left in place for remediation as part of a future groundwater remedial action.

Excavated soil shall be transported to an on-site staging area where it shall be preliminarily segregated as potentially clean (uncontaminated) and potentially contaminated using the ENSYS tests, photoionization detector, and visual observations. Soil samples from the preliminarily segregated soil shall be collected to determine if additional segregation is needed. Soil failing the criteria for clean status will ultimately be loaded onto trucks for off-site disposal.

8.0 DECONTAMINATION WATER COLLECTION AND CONTAINMENT

The Contractor shall provide a decontamination pad to collect liquids from the decontamination of personnel, earth-moving equipment, transportation trucks, and sampling equipment. The fluids will be collected in tanker trucks, drums, or other appropriate containers for off-site disposal at an appropriately permitted facility subject to LANTDIV and MCB Camp Lejeune approval.

9.0 DRUMS, TANKS, AND MISCELLANEOUS DEMOLITION AND DISPOSAL

No drums, tanks, or miscellaneous demolition and disposal are anticipated in this project except for spent personal protective equipment (PPE) and other nonhazardous solid waste which shall be disposed of in accordance with EPA Guidance (EPA Publication 9345.3-03FS).

10.0 OFF-SITE TREATMENT/DISPOSAL

Contaminated soil shall be loaded onto trucks at an on-site staging area and transported to an off-site soil recycling facility. Manifesting is not required if the contaminated soil does not meet the characteristics of a hazardous waste, as defined in 40 CFR 261. Miscellaneous non-contaminated waste (i.e., refuse and spent PPE) shall be loaded onto trucks or roll-off containers and transported to a North Carolina-permitted solid waste landfill or other appropriate facility subject to LANTDIV and MCB Camp Lejeune approval.

11.0 SITE RESTORATION

The excavated areas shall be backfilled with non-contaminated, previously excavated soil or off-site borrow material and regraded to the contours shown on the reference drawings. Fill material will be placed and compacted in accordance with the contract specifications.

12.0 DEMOBILIZATION

The temporary facilities, equipment, and supplies acquired for this contract shall be removed from the site upon completion of the remedial action.

Post-construction submittals shall include (1) a punch list showing correction of all listed items; (2) a letter from the Contractor certifying completion of all contracted work in accordance with the contract conditions, applicable regulations, and standards of practice; (3) a completed project current condition with an as-built survey for the site; (4) submittal, in one collated document, of quality control daily reports, samples, results of the analysis of samples, corrective actions (if required, taken to correct deviations from the plans and specifications that were pre-approved by LANTDIV), and results of corrective actions; and, (5) submittal in one collated document of quality assurance samples, and corrective actions (if required, taken to correct unacceptable deviations from required quality standards).

The Contractor shall submit to LANTDIV a report summarizing the remedial action, lessons learned, and recommendations for inclusion in future similar contracts.

APPENDIX A
COST ESTIMATE SUMMARY

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA		DESIGN STATUS: Final
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35		DATE: 21-DEC-94
CONTRACT NUMBER: CTO-0275		PREPARED BY: Baker Environmental, Inc.
LABOR		
1	Direct Labor	\$87,340
2	Indirect Costs	\$82,837
3	TOTAL LABOR (1 + 2)	\$170,178
SUBCONTRACTOR COSTS		
4	TOTAL SUBCONTRACTOR COSTS	\$339,542
TRAVEL COSTS		
5	TRAVEL COSTS (Air Fares + Per Diem [Meals, Lodging])	\$33,138
OTHER DIRECT COSTS		
6	Equipment	
7	Site Operations Costs	
8	Operating & Maintenance Costs	
9	TOTAL OTHER DIRECT COSTS (6 + 7 + 8)	\$106,787
TOTAL COSTS LESS AWARD FEES & FCCOM		
10	SUBTOTAL (3 + 4 + 5 + 9)	\$649,644
11	G & A COSTS	\$41,188
12	SUBTOTAL COST LESS AWARD FEES & FCCOM (10 + 11)	\$690,832
MAXIMUM AWARD FEES		
13	Contractor Award Fee	\$31,815
14	Contractor Award Fee on Subs	\$16,977
15	TOTAL MAXIMUM AWARD FEES (13 + 14)	\$48,792
FCCOM		
16	FCCOM Labor	\$932
17	FCCOM Equipment	\$0
18	FCCOM G & A	\$642
19	FCCOM Project Supplies	\$64
20	TOTAL FCCOM (16 + 17 + 18 + 19)	\$1,639
21	TOTAL ESTIMATED COST INCLUDING AWARD FEES (12 + 15 + 20)	\$741,263

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CONTRACT NUMBER: CTO-0275						PREPARED BY: Baker Environmental, Inc.				
HTRW ACCT. NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	TOTAL MAT'L COST(\$)	TOTAL LABOR COST(\$)	TOTAL EQUIP. COST(\$)	TOTAL SUBCON. COST(\$)	TOTAL TRAVEL COST(\$)	TOTAL CONTRACT COST(\$)
33.01	MOBILIZATION AND PREPARATORY WORK	1	LS	61,365	36,227	14,519	1,827	7,855	938	61,365
33.02	MONITORING, SAMPLING, TESTING, ANALYSIS	1	LS	63,186	2,720	2,760		57,706		63,186
33.03	SITE WORK	1	LS	10,210		3,216	3,874	3,120		10,210
33.05	SURFACE WATER COLLECTION AND CONTROL	1	LS	4,560	1,920	2,640				4,560
33.08	SOLIDS COLLECTION AND CONTAINMENT	1	LS	54,691		20,111	34,580			54,691
33.19	DISPOSAL (COMMERCIAL)	1	LS	175,980				175,980		175,980
33.20	SITE RESTORATION	1	LS	114,427	5,887	10,578	15,800	82,162		114,427
33.21	DEMOBILIZATION	1	LS	8,647		4,857	22	3,581	188	8,647
33.99	DISTRIBUTIVE COSTS	1	LS	69,811		28,660		9,138	32,013	69,811
SUBTOTAL					46,753	87,340	56,103	339,542	33,138	562,877

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33.01.--	MOBILIZATION AND PREPARATORY WORK									
33.01.01.--	MOBILIZATION - CONSTRUCT. EQUIP. AND FACIL.									
33.01.01.90	2 - Backhoes (track - 3/4 CY), 2 - Off-Road Rear Dump Trucks, Dozer, FE Loader (wheel - 1 CY), Compactor, Skid Loader (bobcat), Water Buffalo	1	LS	2,400				2,400		2,400
33.01.01.91	Site Office Trailer	1	LS	100				100		100
33.01.02.01	Relocation of Supervisory Personnel	2	EA	131		200			63	263
33.01.02.91	Relocation of Labor Crew	4	EA	111		320			125	445
33.01.03--	PRECONSTRUCTION SUBMITTALS									
33.01.03.04	Environmental Protection Plan	1	LS	400		400				400
33.01.03.08	Site Safety and Health Plan	1	LS	800		800				800
33.01.03.13	General Site Work Plan	1	LS	3,200		3,200				3,200
33.01.03.14	Construction Quality Control Plan	1	LS	800		800				800
33.01.03.30	Local Permits	1	LS	800		800				800
33.01.03.90	Site Visit, Miscellaneous	1	LS	2,010		1,260			750	2,010
33.01.03.91	Complete Remedial Design Plans	1	LS	1,352		1,352				1,352

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33.01.04.--	SETUP/CONSTRUCT TEMPORARY FACILITIES									
33.01.04.01	Office Trailer	1	EA	60		60				60
33.01.04.05	Decontamination Facilities for Construction Equipment/Vehicles	1	LS	990	150	265	75	500		990
33.01.04.24	Security Fencing (Temporary Safety Fencing)	1,550	LF	2.37	1,782	1,891				3,674
33.01.04.25	Roads and Parking (including Laydown Area)	350	SY	2.42		315	532			847
33.01.04.90	Temporary Excavated Soil Stockpile Area	4,700	SY	8	33,699	2,679	1,175			37,553
33.01.04.91	Fuel Storage Area	45	SY	17	545	147	45			736
33.01.05.--	CONSTRUCT TEMPORARY UTILITIES									
33.01.05.02	Power Connection/Distribution	1	LS	4,285				4,285		4,285
33.01.05.03	Telephone/Communications Hookup	1	LS	570				570		570
33.01.05.04	Water Connection/Distribution	1	EA	80	50	30				80

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA						DESIGN STATUS: Final				
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35						DATE: 21-Dec-94				
CONTRACT NUMBER: CTO-0275						PREPARED BY: Baker Environmental, Inc.				
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	TOTAL MAT'L COST(\$)	TOTAL LABOR COST(\$)	TOTAL EQUIP. COST(\$)	TOTAL SUBCON. COST(\$)	TOTAL TRAVEL COST(\$)	TOTAL CONTRACT COST(\$)
33.02.--	MONITORING,SAMPLING,TESTING, ANALYSIS									
33.02.06.--	SAMPLING SOIL AND SEDIMENT									
33.02.06.04	Shipping and Handling	10	EA	75				750		750
33.02.06.90	Excavation Material - Confirmation Samples (obtained from excavation sidewalls)	29	EA	40	290	870				1,160
33.02.06.91	Excavation Material - Characterization Samples of Contaminated Soil	5	EA	40	50	150				200
33.02.06.92	Excavation Material - Samples for Characterization of Potentially Clean Soil	28	EA	40	280	840				1,120
33.02.06.93	Incidental Wastes - Decon/Dewatering Samples	5	EA	40	50	150				200
33.02.06.94	Field Screening Test Kits - TPH	50	SAMPLES	56	2,050	750				2,800
33.02.09.--	LABORATORY CHEMICAL ANALYSIS									
33.02.09.03	Incidental Wastes Analysis (water) TCLP - Total Profile	5	EA	877				4,385		4,385
33.02.09.05	Waste Characterization Analysis (soil) Hazardous Waste (RCRA) Analysis							43,494		43,494
	TCLP - Total Profile	33	EA	877						
	RCRA Characteristics	33	EA	115						
	TPH (5030/8015)	33	EA	152						
	TPH (3550/8015)	33	EA	174						
33.02.09.07	Confirmation Analysis (soil)							9,077		9,077
	TPH (5030/8015)	29	EA	145						
	TPH (3550/8015)	29	EA	168						

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA
 PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35
 CONTRACT NUMBER: CTO-0275

DESIGN STATUS: Final
 DATE: 21-Dec-94
 PREPARED BY: Baker Environmental, Inc.

HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	TOTAL MAT'L. COST(\$)	TOTAL LABOR COST(\$)	TOTAL EQUIP. COST(\$)	TOTAL SUBCON. COST(\$)	TOTAL TRAVEL COST(\$)	TOTAL CONTRACT COST(\$)
33.03.--	SITE WORK									
33.03.01.-- 33.03.01.90	DEMOLITION Remove F Street at Area A	584	SY	3.90		934	1,343			2,278
33.03.02.-- 33.03.02.01	CLEARING AND GRUBBING Clear and Grub Work Areas	1.25	AC	3,850		2,281	2,531			4,813
33.03.05.--	FENCING Assume existing fencing removed by others prior to start of this contract.									
33.03.90.-- 33.03.90.90	WELL ABANDONMENT Remove Existing Monitoring Wells and Grout	4	EA	780				3120		3,120

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA
 PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35
 CONTRACT NUMBER: CTO-0275

DESIGN STATUS: Final
 DATE: 21-Dec-94
 PREPARED BY: Baker Environmental, Inc.

HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	TOTAL MAT'L COST(\$)	TOTAL LABOR COST(\$)	TOTAL EQUIP. COST(\$)	TOTAL SUBCON. COST(\$)	TOTAL TRAVEL COST(\$)	TOTAL CONTRACT COST(\$)
33.05.--	SURFACE WATER COLLECTION AND CONTROL									
33.05.07.--	SEDIMENT BARRIERS									
33.05.07.01	Silt Fence	960	LF	4.75	1,920	2,640				4,560

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA						DESIGN STATUS: Final				
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35						DATE: 21-Dec-94				
CONTRACT NUMBER: CTO-0275						PREPARED BY: Baker Environmental, Inc.				
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	TOTAL MAT'L COST(\$)	TOTAL LABOR COST(\$)	TOTAL EQUIP. COST(\$)	TOTAL SUBCON. COST(\$)	TOTAL TRAVEL COST(\$)	TOTAL CONTRACT COST(\$)
33.08.--	SOLIDS COLLECTION AND CONTAINMENT									
33.08.01.--	EXCAVATION									
33.08.01.90	Excavation by backhoe (track)	9,100	CY	4.97		15,743	29,484			45,227
33.08.01.91	Segregation of Clean/Contaminated Soils at Stockpile Area	9,100	CY	1.04		4,368	5,096			9,464

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA						DESIGN STATUS: Final				
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35						DATE: 21-DEC-94				
CONTRACT NUMBER: CTO-0275						PREPARED BY: Baker Environmental, Inc.				
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	TOTAL MAT'L COST(\$)	TOTAL LABOR COST(\$)	TOTAL EQUIP. COST(\$)	TOTAL SUBCON. COST(\$)	TOTAL TRAVEL COST(\$)	TOTAL CONTRACT COST(\$)
33.19.--	DISPOSAL (COMMERCIAL)									
33.19.02--	TRANSPORT TO STORAGE/DISPOSAL FACILITY									
33.19.02.01	Hauling/Unloading of Solids (Contaminated Soil)	4,860	TON	10				48,600		48,600
33.19.02.90	Hauling - Site Restoration Wastes	196	TON	10				1,960		1,960
33.19.03--	DISPOSAL FEES & TAXES									
33.19.03.01	Landfill - Site Restoration Wastes	196	TON	20				3,920		3,920
33.19.03.90	Disposal of Contaminated Soil - Soil Recycling	4,860	TON	25				121,500		121,500

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA						DESIGN STATUS: Final				
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35						DATE: 21-DEC-94				
CONTRACT NUMBER: CTO-0275						PREPARED BY: Baker Environmental, Inc.				
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	TOTAL MAT'L COST(\$)	TOTAL LABOR COST(\$)	TOTAL EQUIP. COST(\$)	TOTAL SUBCON. COST(\$)	TOTAL TRAVEL COST(\$)	TOTAL CONTRACT COST(\$)
33.20.--	SITE RESTORATION									
33.20.01.--	EARTHWORK									
33.20.01.03	Backfill	9,100	CY	11.58		9,289	14,969	81,108		105,366
33.20.03.--	RE-ESTABLISH ROADS / STRUCTURES / UTILITIES									
33.20.03.90	Reconstruct F Street	584	SY	12	5,887	537	479			6,903
33.20.04.--	REVEGETATION									
33.20.04.01	Seeding/Mulch/Fertilizer	49	MSF	22				1,054		1,054
33.20.90.--	REMOVAL OF STOCKPILE LINER & COVER									
33.20.90.90	Removal of Stockpile Liner	4,700	SY	0.19		611	282			893
33.20.90.91	Removal of Stockpile Cover	2,350	SY	0.09		141	71			212

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA						DESIGN STATUS: Final				
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35						DATE: 21-DEC-94				
CONTRACT NUMBER: CTO-0275						PREPARED BY: Baker Environmental, Inc.				
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	TOTAL MAT'L COST(\$)	TOTAL LABOR COST(\$)	TOTAL EQUIP. COST(\$)	TOTAL SUBCON. COST(\$)	TOTAL TRAVEL COST(\$)	TOTAL CONTRACT COST(\$)
33.21.--	DEMOBILIZATION									
33.21.01.--	REMOVAL OF TEMPORARY FACILITIES									
33.21.01.01	Office Trailer	2	ls	147		120		100		220
33.21.01.05	Decontamination Facilities for Construction Equipment	1	LS	667		145	22	500		667
33.21.01.24	Security Fencing (Temporary Safety Fencing)	1,550	LF	0.61		946				946
33.21.01.90	Silt Fencing	960	LF	0.25		240				240
33.21.02.--	REMOVAL OF TEMPORARY UTILITIES									
33.21.02.02	Power Connection/Distribution	1	LS	432				432		432
33.21.02.03	Telephone/Communications Hookup	1	LS	150				150		150
33.21.02.04	Water Connection/Distribution	1	LS	30		30				30

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA					DESIGN STATUS: Final					
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35					DATE: 21-DEC-94					
CONTRACT NUMBER: CTO-0275					PREPARED BY: Baker Environmental, Inc.					
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	TOTAL MAT'L COST(\$)	TOTAL LABOR COST(\$)	TOTAL EQUIP. COST(\$)	TOTAL SUBCON. COST(\$)	TOTAL TRAVEL COST(\$)	TOTAL CONTRACT COST(\$)
33.21.04.-- 33.21.04.07	DEMOBILIZATION OF CONSTRUCTION EQUIP. Construction Equipment	1	LS	2,880		480		2,400		2,880
33.21.05.-- 33.21.05.01	DEMOBILIZATION OF PERSONNEL Relocation of Supervisory Personnel	1	LS	263		200			63	263
33.21.05.92	Relocation of Labor Crew	1	LS	445		320			125	445
33.21.06.--	POST-CONSTRUCTION SUBMITTALS									
33.21.06.01	Punch List	1	LS	180		180				180
33.21.06.03	Post-Construction Documentation (Disposal Certifications)	1	LS	180		180				180
33.21.06.06	Construction Documentation Report (Final Engineering Report)	1	LS	1,810		1,810				1,810
33.21.06.07	As Built Drawings	1	LS	206		206				206

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA						DESIGN STATUS: Final				
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35						DATE: 21-DEC-94				
CONTRACT NUMBER: CTO-0275						PREPARED BY: Baker Environmental, Inc.				
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	TOTAL MAT'L COST(\$)	TOTAL LABOR COST(\$)	TOTAL EQUIP. COST(\$)	TOTAL SUBCON. COST(\$)	TOTAL TRAVEL COST(\$)	TOTAL CONTRACT COST(\$)
33.99.--	DISTRIBUTIVE COSTS									
33.99.01.--	SUPERVISION/MANAGEMENT									
33.99.01.01	Project Manager	1	EA	3,150		3,150				3,150
33.99.01.02	General Superintendent (Site Supervisor)	1	EA	13,200		13,200				13,200
	Field Engineer (Project Control Tech)	1	EA	8,800		8,800				8,800
33.99.03.--	OFFICE MANAGEMENT									
33.99.03.03	Accountant	1	EA	660		660				660
33.99.03.09	Typist/Secretary	1	EA	440		440				440
33.99.04.--	ENGINEERING									
33.99.04.02	Civil Engineer	1	EA	440		440				440
33.99.04.17	Quality Control Engineer	1	EA	550		550				550
33.99.05.--	PURCHASING									
33.99.05.02	Purchasing Agent	1	EA	275		275				275
33.99.07.--	EQUIPMENT MAINTENANCE AND MOTOR POOL									
33.99.07.02	Mechanic	1	EA	165		165				165
33.99.08.--	TEMPORARY CONSTRUCTION FACILITIES									
33.99.08.01	Office Trailer	3	MO	171				513		513
33.99.08.09	Toilets (Portable)	3	MO	78				234		234
33.99.08.17	Office Equipment/Furnishings	3	MO	154				462		462

PROJECT LOCATION: MOB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA					DESIGN STATUS: Final					
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35					DATE: 21-DEC-94					
CONTRACT NUMBER: CTO-0275					PREPARED BY: Baker Environmental, Inc.					
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	TOTAL MAT'L COST(\$)	TOTAL LABOR COST(\$)	TOTAL EQUIP. COST(\$)	TOTAL SUBCON. COST(\$)	TOTAL TRAVEL COST(\$)	TOTAL CONTRACT COST(\$)
33.99.09.--	TEMPORARY UTILITIES									
33.99.09.01	Power	2.5	MO	200				500		500
33.99.09.02	Water	2.5	MO	56				140		140
33.99.09.04	Telephone	2.5	MO	259				648		648
33.99.13.--	VEHICLES FOR PERSONNEL									
33.99.13.01	Pickup Trucks (1)	2.75	MO	555				1,526		1,526
33.99.15.--	HEALTH AND SAFETY									
33.99.15.01	Certified Industrial Hygienist	1	EA	220		220				220
33.99.15.10	Site Safety & Health Officer	1	EA	220		220				220
33.99.15.17	Personnel Protective Equipment (HNU, LEL, vent fans)	1	LS	5115				5,115		5,115
33.99.16.--	MISCELLANEOUS COSTS									
33.99.16.06	Project Travel - Home Office Personnel	3	EA	780		540			1,800	2,340
33.99.16.90	Per Diem - Home Office Personnel	3	EA	171					513	513
33.99.16.92	Site Personnel Per Diem (Meals)	450	DAY	26					11,700	11,700
33.99.16.93	Site Personnel Per Diem (Lodging)	450	DAY	40					18,000	18,000
TOTAL					46,753	87,340	56,103	339,542	33,138	562,877

APPENDIX B
COST ESTIMATE BACKUP

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA					DESIGN STATUS: Final					
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35					DATE: 21-DEC-94					
CONTRACT NUMBER: CTO-0275					PREPARED BY: Baker Environmental, Inc.					
HTRW ACCT. NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	TOTAL MAT'L COST(\$)	TOTAL LABOR COST(\$)	TOTAL EQUIP. COST(\$)	TOTAL SUBCON. COST(\$)	TOTAL TRAVEL COST(\$)	TOTAL CONTRACT COST(\$)
33.01	MOBILIZATION AND PREPARATORY WORK	1	LS	61,365	36,227	14,519	1,827	7,855	938	61,365
33.02	MONITORING, SAMPLING, TESTING, ANALYSIS	1	LS	63,186	2,720	2,760		57,706		63,186
33.03	SITE WORK	1	LS	10,210		3,216	3,874	3,120		10,210
33.05	SURFACE WATER COLLECTION AND CONTROL	1	LS	4,560	1,920	2,640				4,560
33.08	SOLIDS COLLECTION AND CONTAINMENT	1	LS	54,691		20,111	34,580			54,691
33.19	DISPOSAL (COMMERCIAL)	1	LS	175,980				175,980		175,980
33.20	SITE RESTORATION	1	LS	114,427	5,887	10,578	15,800	82,162		114,427
33.21	DEMOBILIZATION	1	LS	8,647		4,857	22	3,581	188	8,647
33.99	DISTRIBUTIVE COSTS	1	LS	69,811		28,660		9,138	32,013	69,811
	SUBTOTAL				46,753	87,340	56,103	339,542	33,138	562,877

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA										DESIGN STATUS: Final			
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35										DATE: 21-DEC-84			
CONTRACT NUMBER: CTO-0275										PREPARED BY: Baker Environmental, Inc.			
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST(\$)
33.01.01	MOBILIZATION AND PREPARATORY WORK												
33.01.01	MOBILIZATION - CONSTRUCT. EQUIP. AND FACIL			2,400	Sum/Mob Equipment								2,400
33.01.01.90	2 - Backhoes (track - 3/4 CY), 2 - Off-Road Rear Dump Trucks, Dozer, FE Loader (wheel - 1 CY), Compactor, Skid Loader (bobcat), Water Buffalo	1	LS	2400	Backhoe (3/4 CY)	Means 022-274-0900 (3/4 CY) Mob up to 25 miles	Y		60	249			
		2	EA	299	Off-Road Rear Dump Truck	Assume Means 022-274-0800 will cover Mob up to 25 miles	Y		60	290			
		2	EA	400	Dozer	Means 022-274-0020 (105 HP) Mob up to 25 miles	Y		60	219			
		1	EA	306	Loader (1 CY)	Means 022-274-1200 (1 CY) Mob up to 25 miles	Y		40	199			
		1	EA	273	Compactor	Assume Means 022-274-0020 will cover Mob up to 25 miles	Y		60	219			
		1	EA	306	Skid Loader (Bobcat)	Rental Tools & Equipment Co. Local Delivery charge for delivery by TR-Bed Truck	Y					75	
		1	EA	75	Water Buffalos	Rental Tools & Equipment Co. Local Delivery charge for delivery by TR-Bed Truck (based on 2 per load at \$75/load)	Y					36	
33.01.01.91	Site Office Trailer	1	LS	100	Sum/Office Trailers								100
		1	EA	100	32' X 8' Office Trailer	Means 015-904-0900; \$1.65/mile Assume 60 miles = \$100	Y					100	
33.01.02.01	Relocation of Supervisory Personnel	2	EA	131	Sum/Supervisory Personnel	Assume 1/2-day (4-hr.) mobilization, drive from Raleigh, NC							263
		1	EA	151	Site Supervisor	Assume 1-Site Supervisor (General Superintendent) at \$30/hr 4 hr X \$30/hr = \$120 Mileage: 125 miles at \$0.25/mi = \$31.25	N		120			31	
		1	EA	111	Project Control Tech Tech - Excavation & Sampling	Assume 1-Project Control Tech (Field Engineer) for Excavation & Sampling at \$20/hr 4 hr X \$20/hr = \$80 Mileage: 125 miles at \$0.25/mi = \$31.25	N		80			31	
33.01.02.91	Relocation of Labor Crew	4	EA	111	Sum/Labor Crew	Assume 1/2-day (4-hr.) mobilization, drive from Raleigh, NC							445
		2	EA	91	Recovery Tech (RT)	Assume 1-Recovery Tech at \$15/hr 4 hr X \$15/hr = \$60 Mileage: 125 miles at \$0.25/mi = \$31.25	N		60			31	
		2	EA	131	Equipment Operator (EO)	Assume 1-Equipment Operator at \$25/hr 4 hr X \$25/hr = \$100 Mileage: 125 miles at \$0.25/mi = \$31.25	N		100			31	

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA							DESIGN STATUS: Final						
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35							DATE: 21-DEC-94						
CONTRACT NUMBER: CTO-0276							PREPARED BY: Baker Environmental Inc.						
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST(\$)
33.01.03-	PRECONSTRUCTION SUBMITTALS												
33.01.03.04	Environmental Protection Plan	1	LS	400	Environmental Protection Plan	Assume 20 hr x \$20/hr = \$400	N		400				400
33.01.03.08	Site Safety and Health Plan	1	LS	800	Site Safety and Health Plan	Assume 40 hr x \$20/hr = \$800	N		800				800
33.01.03.13	General Site Work Plan	1	LS	3,200	General Site Work Plan	Assume 160 hr x \$20/hr = \$3,200	N		3,200				3,200
33.01.03.14	Construction Quality Control Plan	1	LS	800	Construction Quality Control Plan	Assume 40 hr x \$20/hr = \$800	N		800				800
33.01.03.30	Local Permits	1	LS	800	Local Permits	Assume 40 hr x \$20/hr = \$800	N		800				800
33.01.03.90	Site Visit, Miscellaneous	1	LS	2,010	Site Visit, Misc.	Assume 1-Site Visit Trip by Proj. Mgr. Assume (12 hr + 24 hr) x \$36/hr = \$1,280 Proj. Mgr. Labor Assume Per Diem = \$150 Assume Plane Fare = \$600	N		1,280			750	2,010
33.01.03.91	Complete Remedial Design Plans	1	LS	1,352	Complete Remedial Design Plans	Complete Remedial Design Plans							1,352
		8	HR	35	Proj. Mgr.	Assume Proj. Mgr. at \$36/hr	N		35				
		24	HR	20	Civil Engr.	Assume Civil Engr. at \$20/hr	N		20				
		8	HR	19	Cost Engr.	Assume Cost Engr. at \$19/hr	N		19				
		20	HR	13	Draftsman - CADD	Assume Draftsman - CADD at \$13/hr	N		13				
		20	HR	9	Word Processor/Clerical	Assume Word Processor/Clerical at \$9/hr	N		9				
33.01.04- 33.01.04.01	SETUP/CONSTRUCT TEMPORARY FACILITIES Office Trailer	1	EA	60	32' x 8' Office Trailer	Assume 2-RTs 24hr each to level & block up trailer Labor - 2 x 2 hr x \$15/hr = \$60	N		60				60

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA										DESIGN STATUS: Final			
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35										DATE: 21-DEC-94			
CONTRACT NUMBER: CTO-0275										PREPARED BY: Baker Environmental, Inc.			
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST(\$)
33.01.04.06	Decontamination Facilities for Construction Equipment/Vehicles	1	LS	990	Steel Decon Sections furnished by Contractor Note: On asphalt area - No grading, stabilization fabric, stone base	Assume steel sections furnished by Contractor setup on asphalt laydown area. Steel Decon Pans: 8' x 24' steel sections connected by clamps in field Assume: Steel Erection - 2-RTs, 1-hr each 1-Equipment Operator, 1-hr Excavator or cherry picker to erect 1-hr Rental + Operating Costs Shipping for Steel Sections = \$500 (Sub) Steel Erection: Means 016-408-0100 Equip: 1 x (\$55+\$20)/hr = \$ 75 Labor: 2 x 1-hr x \$15/hr = \$ 30 1 x 1-hr x \$25/hr = \$ 25 Wood "flooring" & side rails: Assume: 2 x 4 wood grating & side rails 40 - 10' 2x4s @ \$3 ea. 2 x 6 wood bottom bracing 5 - 10' 2x6 @ \$6 ea. Wood installation - 2-RTs, 7-hr each Mat'l: 40 x \$3 ea + 5 x \$6 ea = \$150 Labor: 2 x 7-hr x \$15/hr = \$210	N	150	265	75	500		990
							Pans Wood	150	55	75	500		

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA						DESIGN STATUS: Final							
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35						DATE: 21-DEC-84							
CONTRACT NUMBER: CTO-0275						PREPARED BY: Baker Environmental, Inc.							
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST(\$)
33.01.04.24	Security Fencing (Temporary Safety Fencing)	1,550	LF	2.37	Temporary Safety Fencing Area A = 700 LF Area B = 350 LF Area C = 500 LF Total = 1,550 LF	Assume orange plastic fencing Assume Means 028-320-4800, 4' high snow fence approximates costs Mat'l: \$1.15/LF Labor: \$1.22/LF	N	1	1				3,674
33.01.04.25	Roads and Parking (Including Laydown Area)	350	SY	2.42	Temp. Access Road to Area B from F St. 15' x 160' = 257 SY Temp. Access Road to Area C from F St. 15' x 50' = 83 SY Total = 350 SY	Temporary access roads - assume grading & compaction, no stone or stabilization fabric. Means 022-304-0010, double due to small areas. Labor: \$0.45/SY x 2 = \$0.90/SY Equip: \$0.78/SY x 2 = \$1.52/SY Laydown Area: Laydown & soil stockpile areas to be located on asphalt pad approximately 1,000' x 70'. Laydown area to be located within approx. 400' x 70' area of the pad not used for soil stockpiling; assume no liner, stone or berm.	N		0.90	1.52			847

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA
 PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35
 CONTRACT NUMBER: CTO-0275

DESIGN STATUS: Final
 DATE: 21-DEC-04
 PREPARED BY: Baker Environmental, Inc.

HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST(\$)	
33.01.04.91	Fuel Storage Area	45	SY	17	Fuel Storage Area (20' x 20' on existing laydown area)	Assume area = 20' x 20' in laydown area (ie, no base preparation required). Assume spill containment provided by geomembrane liner anchored by soil/gravel over straw bale berm. Geomembrane Liner: 90' x 90' = 100 SY Oversize Factor = 100 SY/44.4 SY = 2.25 Assume - Mat'l: \$4.00/SY x 2.25 = \$9.00/SY Labor: 2-RTs 1 hr each to install 2 x 1 hr x \$15/hr = \$30 \$30/44.4 SY = \$0.70/SY Straw Bales (90 LF/3LF per bale = 27 bales) Mat'l: Assume \$5/bale delivered 27 bales x \$5/bale = \$135 \$135/44.4 SY = \$3.00/SY Labor: 2-RTs 1 hr each to install 2 x 1 hr x \$15/hr = \$30 \$30/44.4 SY = \$0.70/SY 1-Equip.Operator 1-hr 1 x 1 hr x \$25/hr = \$25 \$25/44.4 SY = \$0.60/SY Means 016-408-0400, utility tractor Equip: 1-utility tractor 1-hr. Rent/hr = \$595/40 hr = \$15/hr Operating Cost = \$7/hr Total = 15 + 7 = \$22 \$22/44.4 SY = \$0.50/SY Gravel Means 022-038-1530, bank run gravel Mat'l: \$10.50/CY x 1 CY = \$11 \$11/44.4 SY = \$0.25/SY Labor: 2-RTs 1 hr each to install 2 x 1 hr x \$15/hr = \$30 \$30/44.4 SY = \$0.70/SY 1-Equip.Operator 1-hr 1 x 1 hr x \$25/hr = \$25 \$25/44.4 SY = \$0.60/SY Equip: 1-utility tractor 1-hr. Rent/hr = \$595/40 hr = \$15/hr Operating Cost = \$7/hr Total = 15 + 7 = \$22 \$22/44.4 SY = \$0.50/SY Total Unit Costs: Mat'l: 9.00 + 3.00 + 0.25 = \$12.25/SY Labor: 0.70+0.70+0.60+0.70+0.60=\$3.30/SY Equip: 0.50 + 0.50 = \$1.00/SY	N	12.25	3.00	1.00				799

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA
 PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35
 CONTRACT NUMBER: CTO-0275

DESIGN STATUS: Final
 DATE: 21-DEC-84
 PREPARED BY: Baker Environmental, Inc.

HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST(\$)
33.01.06.-	CONSTRUCT TEMPORARY UTILITIES												
33.01.06.02	Power Connector/Distribution	1	LS	4,285	Sum/Temporary Electric	Assume 300' to electric/phone sources - 3 poles							4,285
		1	EA	209	100 amp Service Feed for Office Trailer	Office Trailer Service Feed Means 167-130-0880, office trailer 100 amp service feed Mat'l: \$115 ea Labor: \$94 ea	Y	115	94				
		2	EA	788	20' high pole	Install 20' high Power/Phone Pole Means 169-110-0100, dig hole for pole in earth Labor: \$116 ea Equip: \$77 ea Means 167-110-2000, furnish & install pole (no crossbar) Mat'l: \$332 ea Labor: \$221 ea Equip: \$42 ea Total install Pole: Mat'l: \$332 ea Labor: 116 + 221 = \$337 ea Equip: 77 + 42 = \$119 ea	Y	332	337	119			
		200	LF	13	Electric Conductors, copper, 2/0 + 2/0 neutral, insulated	Install Electric Conductors Assume 100-200 amp service, 300-500 LF run Means 161-145-4400 copper, 2/0 + 2/0 neutral Mat'l: \$937/CLF Labor: \$313/CLF	Y	937	313				
33.01.06.03	Telephone/Communications Hookup	1	LS	570	Sum/Temporary Phone								570
		1	EA	250	Phone Hookup	Temporary Phone Hookup Assume use same pole installed for temporary electric Assume electrical sub does work Assume Mat'l: \$ 50 ea Labor: \$200 ea	Y	50	200				
		200	LF	1.80	Phone Line	Install Phone Line Assume 50 % of Means 161-145-2400 approximate costs Mat'l: \$ 61/CLF Labor: \$ 99/CLF	Y	61	99				
33.01.06.04	Water Connection/Distribution	1	EA	80	Temporary Water Hookup to Fire Hydrant	Temporary Water Hookup to Fire Hydrant Assume hookup at nearby fire hydrant for water tanker or decon area; does not include any piping or greater than 25' hoses. Assume Mat'l: \$ 50 ea Labor: \$ 30 ea	N	50	30				80

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA
 PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35
 CONTRACT NUMBER: CTO-0276

DESIGN STATUS: Final
 DATE: 21-Dec-84
 PREPARED BY: Baker Environmental, Inc.

HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST (\$)
33.02.--	MONITORING, SAMPLING, TESTING, ANALYSIS												
33.02.06-- 33.02.06.04	SAMPLING SOIL AND SEDIMENT Shipping and Handling	10	EA	75	FEDEX - Cooler	Assume \$75/cooler Excavation/disposal scheduled for approx. 6 weeks. Assume 1-month for excavation activities; coolers avg. 2.5/week	Y				75		750
33.02.06.90	Excavation Material - Confirmation Samples (obtained from excavation sidewalls)	29	EA	40	Confirmation Sampling-Labor & Misc. Expenses Required: 1 sample per 50 LF of sidewall Area A: 650 LF/50 = 13 samples Area B: 270 LF/50 = 6 samples Area C: 480 LF/50 = 10 samples No floor confirmation samples required	Sampling-Labor Assume Recovery Tech 2-hr/sample @ \$15/hr = \$30 Misc. Sampling & Decon Expenses @ \$10/sample	N	10	30				1,180
33.02.06.91	Excavation Material - Characterization Samples of Contaminated Soil	5	EA	40	Sampling-Labor	Sampling-Labor Assume Recovery Tech 2-hr/sample @ \$15/hr = \$30 Misc. Sampling & Decon Expenses @ \$10/sample	N	10	30				200
33.02.06.92	Excavation Material - Samples for Characterization of Potentially Clean Soil	28	EA	40	Sampling-Labor	Sampling-Labor Assume Recovery Tech 2-hr/sample @ \$15/hr = \$30 Misc. Sampling & Decon Expenses @ \$10/sample	N	10	30				1,120
33.02.06.93	Incidental Wastes - Decon/Dewatering Samples	5	EA	40	Sampling-Labor	Sampling-Labor Assume Recovery Tech 2-hr/sample @ \$15/hr = \$30 Misc. Sampling & Decon Expenses @ \$10/sample	N	10	30				200
33.02.06.94	Field Screening Test Kits - TPH	50	SAMPLES	56	Ensys Immuno-Assay Test Kits - TPH Assume 2 samples per test kit	Sampling-Labor & Materials (test kits) Assume Recovery Tech 1-hr/sample @ \$15/hr = \$15 Assume test kit cost = \$82 each = \$41/sample Assume 30 samples in the excavations Assume 20 samples in the stockpile area	N	41	15				2,800
33.02.09-- 33.02.09.03	LABORATORY CHEMICAL ANALYSIS Incidental Wastes Analysis (water) TCLP - Total Profile	5	EA	877	Sum/Priority Pollutant Analysis Sources - Decon/Dewatering	TCL - VOAs & SVOAs Baker BOA \$877.00 ea Includes data validation	Y				877		4,385
33.02.09.05	Waste Characterization Analysis (soil) Hazardous Waste (RCRA) Analysis TCLP - Total Profile RCRA Characteristics TPH (5030/8015) TPH (3550/8015)	33 33 33 33	EA EA EA EA	877 115 152 174	28 clean soil samples + 5 contaminated soil samples	TCLP - Total Profile Baker BOA \$877.00 RCRA Characteristics Baker BOAs \$115.00 TPH (5030/8015) Baker BOA \$86 x 2 = \$132 + \$13 = \$145 TPH (3550/8015) Baker BOA \$77 x 2 = \$154 + \$14 = \$168 Above include data validation	Y Y Y Y				877 115 152 174		43,494
33.02.09.07	Confirmation Analysis (soil) TPH (5030/8015) TPH (3550/8015)	29 29	EA EA	145 188	29 sidewall confirmation samples	Baker BOA x 2 for 7 day or less turn around TPH (5030/8015) Baker BOA \$86 x 2 = \$132 + \$13 = \$145 TPH (3550/8015) Baker BOA \$77 x 2 = \$154 + \$14 = \$168 Both include data validation	Y Y				145 188		9,077

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA
 PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35
 CONTRACT NUMBER: CTO-0275

DESIGN STATUS: Final
 DATE: 21-Dec-94
 PREPARED BY: Baker Environmental, Inc.

HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/ UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST(\$)
33.03.--	SITE WORK												
33.03.01.-	DEMOLITION Assume AST Fuel Farm and appurtenances removed prior to the start of this contract. Assume all utilities removed by others prior to the start of this contract.												
33.03.01.90	Remove F Street at Area A	584	SY	3.90	Demo Roadway	Demo Roadway 6,256 SF = 584 SY Means 020-554-1710 pavement removal, 3" bituminous Labor: \$1.60/SY Equip: \$2.30/SY	N		1.60	2.30			2,278
33.03.02.- 33.03.02.01	CLEARING AND GRUBBING Clear and Grub Work Areas	1.25	AC	3,850	Clear & Grub - medium trees	Means 021-104-0200 clear & grub medium brush & stumps, trees to 12' dia., cut & chip Labor: \$1,825/acre Equip: \$2,025/acre	N		1,825	2,025			4,813

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA										DESIGN STATUS: Final			
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35										DATE: 21-Dec-94			
CONTRACT NUMBER: CTO-0275										PREPARED BY: Baker Environmental, Inc.			
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST(\$)
33.03.05--	FENCING Assume existing fencing removed by others prior to start of this contract.												
33.03.90-- 33.03.90.90	WELL ABANDONMENT Remove Existing Monitoring Wells and Grout	4	EA	780	Sum/Remove Monitoring Well, Grout	Assume wells 30' deep.							3,120
		1	EA	300		Baker BOA costs & Vendor quote: Mobilization of personnel, equipment & supplies	Y				300		
		30	LF	6		Abandonment of 2" dia. PVC wells - Includes well stick-up removal, PVC casing/screen removal, tremie grout borehole to surface.	Y				6		
		2	HR	150		Includes well stick-up removal, PVC casing/screen removal, tremie grout borehole to surface. Standby time, site cleanup	Y				150		

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA										DESIGN STATUS: Final			
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35										DATE: 21-Dec-94			
CONTRACT NUMBER: CTO-0275										PREPARED BY: Baker Environmental, Inc.			
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/ UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST(\$)
33.05.--	SURFACE WATER COLLECTION AND CONTROL												
33.05.07.- 33.05.07.01	SEDIMENT BARRIERS SR Fence	960	LF	4.75	SR Fence Area A = 390 LF Area B = 210 LF Area C = 360 LF Total = 960 LF	Navy CES database (9/ 2/91) - Item BMLD Temp Sediment Fence LANTDIV detail SF Mat'l: \$2.00/LF Labor: \$2.75/LF	N	2.00	2.75				4,680

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA							DESIGN STATUS: Final						
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 95							DATE: 21-Dec-04						
CONTRACT NUMBER: CTO-0275							PREPARED BY: Baker Environmental, Inc.						
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST(\$)
33.08.--	SOLIDS COLLECTION AND CONTAINMENT												
33.08.01.-- 33.08.01.90	EXCAVATION Excavation by backhoe (track)	9,100	CY	4.97	Excavate Contaminated Sediment	Assume Means 022-238-0200 backhoe, track, 1 CY Assume 30 % increase for preliminary clear/contaminated segregation at excavation site Labor: \$0.79 x 1.3 = \$1.03/CY Equip: \$1.12 x 1.3 = \$1.46/CY Assume Means 022-268-0310 haul 1/4 mile round trip 30 % increase due to preliminary segregation at loading Labor: \$0.54 x 1.3 = \$0.70/CY Equip: \$1.37 x 1.3 = \$1.78/CY Totals - Labor: \$1.03 + \$0.70 = \$1.73/CY Equip: \$1.46 + \$1.78 = \$3.24/CY	N		1.73	3.24			45,227
33.08.01.91	Segregation of Clear/Contaminated Soils at Stockpile Area, Includes Loading of Trucks for Disposal or for Backfill	9,100	CY	1.04	Segregate & Load	Assume Means 022-218-4060 front end loader, wheel, 1.5 CY Assume 50 % increase for clear/contaminated segregation at stockpile area Labor: \$0.32 x 1.5 = \$0.48/CY Equip: \$0.37 x 1.5 = \$0.56/CY	N		0.48	0.56			9,464

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA										DESIGN STATUS: Final			
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35										DATE: 21-DEC-04			
CONTRACT NUMBER: CTO-0275										PREPARED BY: Baker Environmental, Inc.			
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST (\$)
33.19.--	DISPOSAL (COMMERCIAL)												
33.19.02--	TRANSPORT TO STORAGE/DISPOSAL FACILITY												
						Contaminated Soil: Assume 1.35 T/CY - 3,600 CY = 4,860 tons Road & Parking Lot Demolition: Assume 1.35 T/CY - 110 CY = 150 tons Geotextile Cover: Assume 2#/SY - 2,350 SY = 2 ton							
						Geotextile Liner: Assume 5#/SY - 4,700 SY = 12 tons Decon area: Assume 1.35 T/CY - 19 CY = 26 tons Straw Bales: Assume 50 #/bale x 250 bales = 0 tons							
33.19.02.01	Hauling/Unloading of Solids (Contaminated Soil)	4,860	TON	10		Vender quote \$10/Ton	Y					10	48,600
33.19.02.90	Hauling - Site Restoration Wastes Liner = 12 T Cover = 2 T Straw Bales = 6 T Road/Parking Demo = 150 T Decon Area = 26 T	196	TON	10		Vender quote \$10/Ton	Y					10	1,960
33.19.03-- 33.19.03.01	DISPOSAL FEES & TAXES Landfill - Site Restoration Wastes	196	TON	20		Vender quote \$20/Ton	Y					20	3,920
33.19.03.90	Disposal of Contaminated Soil - Soil Recycling	4,860	TON	25		Vender quote \$25/Ton	Y					25	121,500

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA										DESIGN STATUS: Final			
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 36										DATE: 21-DEC-94			
CONTRACT NUMBER: CTO-0275										PREPARED BY: Baker Environmental, Inc.			
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST (\$)
33.20.~--	SITE RESTORATION												
33.20.01.--	EARTHWORK												
33.20.01.03	Backfill	9,100	CY	11.58	Sum/Backfill		N		1.91	2.98		22.53	105,365
		5,500	CY	3.54	Clean soil reused for backfill	Assume Means 022-289-0320 haul 1/2 mile round trip Labor: \$0.63/CY	N		1.27	2.27			(contr. - clean soil, reused)
		3,600	CY	23.86	On-base material to replace contaminated soil	Equip: \$1.58/CY	Y		0.64	0.69		22.53	(sub - on-base material)
					Assume no material cost for on-base borrow material	Means 022-208-2020 spreading backfill material Labor: \$0.37/CY Equip: \$0.37/CY							
					Clean soil, reused: Haul from stockpile area to excavation sites (1,500 +/- feet)	Means 022-226-5040 compact backfill Labor: \$0.27/CY Equip: \$0.32/CY							
					Clean soil, on-base borrow: Excavate & haul 20+ miles RT to excavation sites	Totals - Labor: 0.63 + 0.37 + 0.27 = \$1.27/CY Equip: 1.58 + 0.37 + 0.32 = \$2.27/CY							
						On-base Material (Sub - excavate & haul only): Means 022-216-4050 borrow, bank measure, loaded into 12 CY hauler, haul not included, 3/4 CY FE loader (wheel) Labor: \$0.56/CY Equip: \$0.47/CY							
						Assume Means 022-289-0500 haul 20 mile round trip (sub) Labor: \$ 8.10/CY Equip: \$15.40/CY							
						Means 022-208-2020 spreading backfill material (contr.) Labor: \$0.37/CY Equip: \$0.37/CY							
						Means 022-226-5040 compact backfill (contr.) Labor: \$0.27/CY Equip: \$0.32/CY							
						Totals - Sub - Excavate & Load: + 0.56 + 0.47 = \$1.03/CY Sub - Haul: 6.10 + 15.40 = \$21.50/CY Contr-Labor: 0.37 + 0.27 = \$ 0.64/CY Contr-Equip: 0.37 + 0.32 = \$ 0.69/CY							

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA										DESIGN STATUS: Final			
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35										DATE: 21-DEC-94			
CONTRACT NUMBER: CTO-0275										PREPARED BY: Baker Environmental, Inc.			
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/ UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST (\$)
33.20.03- 33.20.03.90	RE-ESTABLISH ROADS / STRUCTURES / UTILITIES Reconstruct F Street	584	SY	12	Sum/Repave F Street	Per specs: 2.5' wearing course, 4" binder course, no stone sub-base	N						6,903
		584	SY	5	2.5' wearing course	Means 025-105-0420 wearing course, 2.5' Mat'l: \$4.12/SY Labor: \$0.42/SY Equip: \$0.98/SY	N	4.12	0.42	0.98			
		584	SY	7	4" binder course	Means 025-105-0200 binder course, 4" Mat'l: \$5.98/SY Labor: \$0.50/SY Equip: \$0.44/SY	N	5.98	0.50	0.44			
33.20.04- 33.20.04.01	REVEGETATION Seeding/Mulch/Fertilizer	49	MSF	22	Seeding Site - Area A = 1,950 SY Area B = 1,390 SY Area C = 2,070 SY Total = 5,400 SY = 48,600 SF	Means 029-308-5300 utility seed mix, tractor spreader Mat'l: \$12.94/MSF Labor: \$ 4.44/MSF Equip: \$ 4.12/MSF	Y	12.94	4.44	4.12			1,054
33.20.90- 33.20.90.90	REMOVAL OF STOCKPILE LINER & COVER Removal of Stockpile Liner	4,700	SY	0.19	Removal of Stockpile Liner & loadout for disposal	Assume costs = 25% of installation labor & equipment From 33.01.04.90: Labor: \$0.53 x 0.25 = \$0.13 Equip: \$0.25 x 0.25 = \$0.06	N		0.13	0.06			893
33.20.90.91	Removal of Stockpile Cover	2,350	SY	0.09	Removal of Stockpile Cover & Straw Bales & loadout for disposal	Assume costs = 25% of installation labor & equipment From 33.01.04.90: Labor: \$0.23 x 0.25 = \$0.06 Equip: \$0.10 x 0.25 = \$0.03	N		0.06	0.03			212

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA										DESIGN STATUS: Final			
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35										DATE: 21-DEC-04			
CONTRACT NUMBER: CTO-0275										PREPARED BY: Baker Environmental, Inc.			
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST (\$)
33.21.--	DEMOLITION												
33.21.01.-	REMOVAL OF TEMPORARY FACILITIES												
33.21.01.01	Office Trailer	2	Is	147	Sum/Demob Office Trailer								220
		1	EA	60	Demob Office Trailer		N		60				
		1	EA	60	Assume 2-RTs 2-hr. each to demob trailer 2 x 2 hr x \$15/hr = \$60		N		60				
		1	EA	100	Assume 2-RTs 2-hr. each to clean trailer 2 x 2 hr x \$15/hr = \$60 Assume trailer return cost same as in Mobilization (33.01.01.01)		Y				100		
33.21.01.05	Decontamination Facilities for Construction Equipment	1	LS	667	Remove Decon Facilities for Const. Equipment	Remove metal decon pad Assume: Wood demolition 2-RTs 3-hr each (<50% installation) Metal sections 2-RTs 1-hr each (same as installation) 1-EO 1 hr 1-utility tractor 1 hr Shipping: \$500 Labor: (2x3x\$15/hr) + (2x1x\$15/hr) + (1x1x\$25/hr) = \$145 Equip: 1 hr x \$22/hr = \$22	N		145	22	500		667
33.21.01.24	Security Fencing (Temporary Safety Fencing)	1,650	LF	0.61	Remove Temporary Safety Fencing	Assume 50% of installation labor to remove Labor: \$0.61/LF	N		0.61				945
33.21.01.90	Silt Fencing	960	LF	0.25	Remove Silt Fencing	Assume 50% of installation labor to remove Labor: \$0.50/LF	N		0.25				240
33.21.02.-	REMOVAL OF TEMPORARY UTILITIES												
33.21.02.02	Power Connection/Distribution	1	LS	432	Sum/Remove Power								432
		1	LS	47	Connection/Distribution	Remove Power Connection/Distribution (see 33.01.05.02) Office Trailer Service Feed: Assume 1/2 installation labor	Y					47	
		1	LS	228		Poles - assume 1/2 (installation labor + equipment)	Y					228	
		1	LS	157		Conductors - assume 1/2 installation labor	Y					157	
33.21.02.03	Telephone/Communications Hookup	1	LS	150	Sum/Remove Telephone								150
		1	EA	100	Remove Temporary Phone Hookup	Assume 1/2 installation labor	Y		100				
		1	EA	50	Remove Phone Line from poles	Assume 1/2 installation labor & equipment costs	Y		50				
33.21.02.04	Water Connection/Distribution	1	LS	30	Sum/Remove Water								30
		1	EA	30	Connection/Distribution	Remove Water Connection Assume same labor costs as installation (see 33.01.05.04) Water Connection Removal	N		30				

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA
 PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 38
 CONTRACT NUMBER: CTO-0275

DESIGN STATUS: Final
 DATE: 21-DEC-84
 PREPARED BY: Baker Environmental, Inc.

HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (Mears/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST (\$)
33.21.04-	DEMOBILIZATION OF CONSTRUCTION EQUIP.												
33.21.04.07	Construction Equipment	1	LS	2,880	Sum/Demob Construction Equipment								2,880
		8	EA	60		Demob Construction Equipment Decon of major equipment Assume 2-RTs 2-hr each for each piece of major equipment 2 x 2 hr x \$16/hr = \$80	N		60				
		1	LS	2,400		Assume demobilization costs same as mobilization costs (see 33.01.01.90)	Y						
33.21.05-	DEMOBILIZATION OF PERSONNEL												
33.21.05.01	Relocation of Supervisory Personnel	1	LS	263	Demob Supervisory Personnel	Assume same costs as mobilization (33.01.02.01)	Y						263
33.21.05.02	Relocation of Labor Crew	1	LS	445	Demob Labor Crew	Assume same costs as mobilization (33.01.02.91)	Y						445
33.21.06-	POST-CONSTRUCTION SUBMITTALS												
33.21.06.01	Punch List	1	LS	180	Punch List	Assume Site Supervisor 6-hr: 6 hr x 30/hr = \$180	N		180				180
33.21.06.03	Post-Construction Documentation (Disposal Certifications)	1	LS	180	Post-Construction Documentation	Assume Site Supervisor 6-hr: 6 hr x 30/hr = \$180	N		180				180
33.21.06.06	Construction Documentation Report (Final Engineering Report)	1	LS	1,810	Sum/Construction								1,810
		2	hrs		Documentation Report	Assume Close-Out Report Consisting of: Introduction - Tech. Summary of Action - Tech. Final Health & Safety Report - Tech. Summary of Record Documents - Tech. Field Changes/Contract MODs - Tech. Final Documents - Tech. Summary of Testing - Tech. Off-Site Disposal of Materials - Tech. QC Summary Report - Tech. Technical Supervision Clerical Reproduction	N		20				
		8	hrs				N		20				
		8	hrs				N		20				
		8	hrs				N		20				
		8	hrs				N		20				
		4	hrs				N		20				
		4	hrs				N		20				
		4	hrs				N		20				
		4	hrs				N		20				
		16	hrs				N		30				
		20	hrs				N		10				
		6	hrs				N		10				
33.21.06.07	As Built Drawings	1	LS	206	Sum/As-Built Drawings								206
		6	hrs			Assume Site Supervisor 4-hr: 4 x \$30/hr = \$120	N		30				
		2	hrs			Assume Drafting Tech (CAD) 2-hr: 2 x \$13/hr = \$26	N		13				

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA
 PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 36
 CONTRACT NUMBER: CTO-0275

DESIGN STATUS: Final
 DATE: 21-DEC-04
 PREPARED BY: Baker Environmental, Inc.

HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST (\$)
33.99.--	DISTRIBUTIVE COSTS					Assume project duration = 75 days = 11 weeks = 2.5 months							
33.99.01.--	SUPERVISION/MANAGEMENT					Project Manager: Assume 5 hr/week x 18 weeks x \$35/hr = \$ 3,150	N		3,150				3,150
33.99.01.01	Project Manager	1	EA	3,150									
33.99.01.02	General Superintendent (Site Supervisor)	1	EA	13,200		General Superintendent (Site Supervisor): Assume 40 hr/week x 11 weeks x \$30/hr = \$13,200	N		13,200				13,200
	Field Engineer (Project Control Tech)	1	EA	8,800		Project Control Tech - Excavation & Sampling: Assume 40 hr/week x 11 weeks x \$20/hr = \$ 8,800	N		8,800				8,800
33.99.03.--	OFFICE MANAGEMENT												
33.99.03.03	Accountant	1	EA	660		Accountant: Assume 3 hr/week x 11 weeks x \$20/hr = \$ 660	N		660				660
33.99.03.09	Typist/Secretary	1	EA	440		Typist/Secretary: Assume 4 hr/week x 11 weeks x \$10/hr = \$ 440	N		440				440
33.99.04.--	ENGINEERING												
33.99.04.02	Civil Engineer	1	EA	440		Civil Engineer: Assume 2 hr/week x 11 weeks x \$20/hr = \$ 440	N		440				440
33.99.04.17	Quality Control Engineer	1	EA	550		QA/QC Oversight (QA Engineer): Assume 2 hr/week x 11 weeks x \$25/hr = \$ 550	N		550				550
33.99.06.--	PURCHASING												
33.99.06.02	Purchasing Agent	1	EA	275		Purchasing Agent: Assume 1 hr/week x 11 weeks x \$25/hr = \$ 275	N		275				275
33.99.07.--	EQUIPMENT MAINTENANCE AND MOTOR POOL												
33.99.07.02	Mechanic	1	EA	165		Mechanic: Assume 1 hr/week x 11 weeks x \$15/hr = \$ 165	N		165				165
33.99.08.--	TEMPORARY CONSTRUCTION FACILITIES												
33.99.08.01	Office Trailer	3	MO	171	1 @ 3 mo each = 3 mo	Assume full month's costs for partial month's use. Office Trailer: 1 @ 3 mo each = 3 mo Means 015-904-0350 office trailer 32' x 8', rental	Y					171	513
33.99.08.09	Toilets (Portable)	3	MO	78	1 @ 3 mo each = 3 mo	Toilets (Portable): 1 @ 3 mo each = 3 mo Means 018-420-8410 rental	Y					78	234
33.99.08.17	Office Equipment/Furnishings	3	MO	154	1 @ 3 mo each = 3 mo	Office Equipment/Furnishings: 1 @ 3 mo each = 3 mo Means 010-034-0100 rental	Y					154	462

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA										DESIGN STATUS: Final			
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35										DATE: 21-DEC-94			
CONTRACT NUMBER: CTO-0276										PREPARED BY: Baker Environmental, Inc.			
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST(\$)
33.99.09--	TEMPORARY UTILITIES												0
33.99.09.01	Power	2.5	MO	200		Assume \$200/month	Y				200		500
33.99.09.02	Water	2.5	MO	56		Means 015-104-0700	Y				56		140
33.99.09.04	Telephone	2.5	MO	259		Means 010-034-0140	Y				259		648
33.99.13--	VEHICLES FOR PERSONNEL												0
33.99.13.01	Pickup Trucks (1)	2.75	MO	555		Means 016-420-7200	Y				555		1,525
						Assume 2.75 months approximates costs for 2 months + 2 weeks							
33.99.15--	HEALTH AND SAFETY												
33.99.15.01	Certified Industrial Hygienist	1	EA	220		Certified Industrial Hygienist:	N		220				220
						Assume 1 hr/week x 11 weeks x \$20/hr = \$ 220							
33.99.15.10	Site Safety & Health Officer	1	EA	220		Site Safety & Health Officer:	N		220				220
						Assume 1 hr/week x 11 weeks x \$20/hr = \$ 220							
33.99.15.17	Personnel Protective Equipment (HNU, LEL, vent fans)	1	LS	5115		Personnel Protective Equipment: (HNU, LEL)					5,115		5,115
						Assume HNU = \$ 500/month							
						LEL = \$1,000/month							
						Tyveks = 6 persons x 65 working days x (\$2/tyvek + \$1/gloves) = \$990							
						Total = 2.75 x \$ 1,500/month + \$990 LS = \$ 5,115 LS							
33.99.16--	MISCELLANEOUS COSTS												0
33.99.16.06	Project Travel - Home Office Personnel	3	EA	780	Sum/Project Travel -	Project Travel - Home Office to Site							2,340
		2	EA	810	Home Office to Site	Project Manager - Assume 2-trips	N		210			600	
						Labor: 6 hr/trip x \$35/hr = \$210							
						Travel: plane fare \$800/trip							
		1	EA	720		Site Safety & Health Officer - Assume 1 trip	N		120			600	
						Labor: 6 hr/trip x \$20/hr = \$120							
						Travel: plane fare \$800/trip							

PROJECT LOCATION: MCB CAMP LEJEUNE, JACKSONVILLE, NORTH CAROLINA						DESIGN STATUS: Final							
PROJECT NAME: REMEDIATION OF SOIL, OU # 10, SITE 35						DATE: 21-DEC-04							
CONTRACT NUMBER: CTO-0276						PREPARED BY: Baker Environmental, Inc.							
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (Means/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST(\$)
33.99.16.90	Per Diem - Home Office Personnel	3	EA	171	Per Diem - Home Office Personnel	Per Diem - Home Office Personnel: Assume 2-days on-site per trip with 2-nights lodging & 3.5 days meals Per Diem - Meals \$26/day Lodging \$40/day Meals: \$26/day x 3.5 days = \$ 91/trip Lodging: \$40/day x 2 days = \$ 80/trip Total = \$171/trip	N					171	513
33.99.16.92	Site Personnel Per Diem (Meals)	450	DAY	26	Sum/Site Personnel	Project Travel - Site Personnel Per Diem (Meals)							11,700
		75	DAY	26	Per Diem (Meals)	Per Diem - Meals \$26/day General Superintendent (Site Supervisor) Assume 2.5 months = 75 days @ \$26/day	N					26	
		75	DAY	26		Project Control Tech Assume 2.5 months = 75 days @ \$26/day	N					26	
		150	DAY	26		2-Recovery Techs Assume 2 x 2.5 months = 150 days @ \$26/day	N					26	
		150	DAY	26		2-Equipment Operators Assume 2 x 2.5 months = 150 days @ \$26/day	N					26	
33.99.16.93	Site Personnel Per Diem (Lodging)	450	DAY	40	Sum/Site Personnel	Project Travel - Site Personnel Per Diem (Lodging)							18,000
		75	DAY	40	Per Diem (Lodging)	Lodging \$40/day General Superintendent (Site Supervisor) Assume 2.5 months = 75 days @ \$40/day	N					40	
		75	DAY	40		Project Control Tech Assume 2.5 months = 75 days @ \$40/day	N					40	
		150	DAY	40		2-Recovery Techs Assume 2 x 2.5 months = 150 days @ \$40/day	N					40	
		150	DAY	40		2-Equipment Operators Assume 2 x 2.5 months = 150 days @ \$40/day	N					40	
TOTAL													562,877

APPENDIX C
CONSTRUCTION SCHEDULE
