

06.03-12/15/96-01724

**100%
COST ESTIMATE**

**REMEDICATION OF
PESTICIDE-CONTAMINATED SOIL
OPERABLE UNIT NO. 11 (SITE 80)
PARADISE POINT GOLF COURSE
MAINTENANCE AREA**

**MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA**

CONTRACT TASK ORDER 0274

DECEMBER 15, 1995

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***

COST ESTIMATE

Introduction

In order to compare and contrast different costing options, two cost estimates have been developed for the remediation of pesticide-contaminated soil at Operable Unit No. 11 (Site 80). Cost Estimate A reflects the cost of remediating soil in only the west/northwest area of concern (i.e., the area of concern located east of the golf course road and north of the machine shop road). Cost Estimate B reflects the cost of remediating all areas of concern at Site 80 (including the west/northwest area). The Basis of Design report (Baker, 1995) and the Statement of Work and Technical Specifications report (Baker, 1995) developed for Contract Task Order 0274 describe in more detail the remediation of pesticide-contaminated soil at Site 80.

COST ESTIMATE A

PROJECT LOCATION: MARINE CORPS BASE, CAMP LEJEUNE		DESIGN STATUS: 100%
PROJECT NAME: REMEDIATION OF PESTICIDE-CONTAMINATED SOIL, OU NO. 11 (SITE 80)		DATE: 15-Dec-95
CONTRACT NUMBER: CTO-0274		PREPARED BY: Baker Environmental, Inc.
LABOR		
1	Direct Labor	\$27,822
2	Indirect Costs	\$26,388
3	TOTAL LABOR (1 + 2)	\$54,210
SUBCONTRACTOR COSTS		
4	TOTAL SUBCONTRACTOR COSTS	\$362,017
TRAVEL COSTS		
5	TRAVEL COSTS (Air Fares + Per Diem [Meals, Lodging])	\$3,662
OTHER DIRECT COSTS		
6	Equipment	\$6,209
7	Site Operations Costs	\$1,252
8	Operating & Maintenance Costs (FOG)	463
9	TOTAL OTHER DIRECT COSTS (6 + 7 + 8)	\$7,924
TOTAL COSTS LESS AWARD FEES & FCCOM		
10	SUBTOTAL (3 + 4 + 5 + 9)	\$427,813
11	G & A COSTS	\$24,164
12	SUBTOTAL COST LESS AWARD FEES & FCCOM (10 + 11)	\$451,977
MAXIMUM AWARD FEES		
13	Contractor Award Fee	\$8,630
14	Contractor Award Fee on Subs	\$18,101
15	TOTAL MAXIMUM AWARD FEES (13 + 14)	\$26,731
FCCOM		
16	FCCOM Labor	\$297
17	FCCOM Equipment	
18	FCCOM G & A	\$501
19	FCCOM Project Supplies	\$20
20	TOTAL FCCOM (16 + 17 + 18 + 19)	\$818
21	TOTAL ESTIMATED COST INCLUDING AWARD FEES (12 + 15 + 20)	\$479,526

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CONTRACT NUMBER: CTO-0274						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 EQUIPT COST (\$)		TOTAL SUBCON. COST(\$)	TOTAL TRAVEL COST(\$)	TOTAL CONTRACT COST(\$)
33.01	MOBILIZATION AND PREPARATORY WORK	1	LS	15,399	2,756	9,578	308	33	1,225	1,500	15,399
33.02	MONITORING, SAMPLING, TESTING, ANALYSIS	1	LS	11,143	396	924			9,823		11,143
33.03	SITE WORK	1	LS								
33.08	SOLIDS COLLECTION AND CONTAINMENT	1	LS	1,200		630	383	188			1,200
33.19	DISPOSAL (COMMERCIAL)	1	LS	347,448					347,448		347,448
33.20	SITE RESTORATION	1	LS	2,644	146	803	1,695				2,644
33.21	DEMOBILIZATION	1	LS	7,070		4,605	35	5	1,425	1,000	7,070
33.99	DISTRIBUTIVE COSTS	1	LS	15,269	491	11,282		238	2,096	1,162	15,269
TOTAL (overhead, markups, award fees and FCCOM not included)					3,788	27,822	2,420	463	362,017	3,662	400,173

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CONTRACT NUMBER: CTO-0274						PREPARED BY: Baker Environmental, Inc.								
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (OHM Contract/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT FOG	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST(\$)
33.01.04.-- SETUP/CONSTRUCT TEMPORARY FACILITIES														
33.01.04.01	Office Trailer	1	EA	40	32' x 8' Office Trailer	Assume 2-RTs 2-hr each to level & block up trailer Labor = 2 x 2 hr x \$10/hr = \$40	N		40					40
33.01.04.05	Decontamination Facilities for Construction Equipment/Vehicles	1	LS	1641	Decon Station	Assume steel sections furnished by Contractor Decon Area 20' x 50' = 112 SY	N	810	253	61	17	500		1,641
					Steel Decon Pans: 8' x 24' steel sections connected by clamps in field Shipping for Steel Sections = \$500 (Sub)	Liner for decon area Material: Geomembrane, 40 mil polyethylene OHM Contract \$3.43/SY x 112 SY = \$384 Labor: 2-RTs 2 hours each @ \$10/hr. (OHM contract) 2 x 2 hr x \$10/hr = \$40 1-Equip.Operator 1-hr @ \$11/hr. (OHM contract) 1 x 1 hr x \$11/hr = \$11 Equip: 1-utility tractor 1-hr. OHM contract - Case 580 @ \$102/day Cost = \$102/8 hr = \$13/hr x 1 hr = \$13 FOG = \$50/8 hr = \$6/hr x 1 hr = \$6	Site Pans Wood	660 150	82 140	26 35	12 5	500		
					Labor: 2-RTs 1 hr each @ \$10/hr. 2 x 1 hr x \$10/hr = \$20 1-Equip.Operator 1-hr @ \$11/hr. 1 x 1 hr x \$11/hr = \$11 Equip: 1- 15 ton cherry picker 1 hr. Means 016-460-3000 rent \$1395/40 hr = \$35/hr 1 hr x \$35/hr = \$35 FOG: assume \$5/hr x 1 hr = \$5	Stone/gravel for decon area Material: 112 SY x 6" depth = 19 CY OHM Contract #57 gravel @ \$14.50/CY \$14.50/CY x 19 CY = \$276 Labor: 2-RTs 1 hours each @ \$10/hr. (OHM contract) 2 x 1 hr x \$10/hr = \$20 1-Equip.Operator 1-hr @ \$11/hr. (OHM contract) 1 x 1 hr x \$11/hr = \$11 Equip: 1-utility tractor 1-hr. OHM contract - Case 580 @ \$102/day Cost = \$102/8 hr = \$13/hr x 1 hr = \$13 FOG = \$50/8 hr = \$6/hr x 1 hr = \$6								
					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' 2x6s @ \$6 ea. Wood Installation - 2-RTs, 7-hr each Matl: 40 x \$3 ea + 5 x \$6 ea = \$150 Labor: 2 x 7-hr x \$10/hr = \$140	Sitework Costs: Matl: 384 + 276 = \$660 Labor: 40 + 11 + 20 + 11 = \$82 Equip: 13 + 13 = \$26 FOG: 6 + 6 = \$12								
33.01.04.24	Security Fencing (Temporary Safety Fencing)	420	LF	2	Safety Fencing (Temporary Fencing)	Assume orange plastic fencing Assume Means 028-320-4800, 4' high snow fence approximates costs Matl: \$1.15/LF Labor: \$1.22/LF	N	1.15	1.22					895

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PROJECT NAME: REMEDIATION OF PESTICIDE-CONTAMINATED SOIL, OU NO. 11 (SITE 80)						DATE: 15-Dec-95								
CONTRACT NUMBER: CTO-Q274						PREPARED BY: Baker Environmental, Inc.								
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (OHM Contract/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT FOG	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST(\$)
33.01.04.25	Equipment Laydown Area	111	SY	6.96	Laydown Area	Stabilization Fabric for laydown area Assume 20' x 50' area so 1000 SF = 111 SY Mat'l: (LANTDIV) \$0.60/SY Labor: 2-RTs 3 hours each @ \$10/hr. 2 x 3 x 10 = \$60 \$60/111 SY = \$0.54/SY 1-Equip.Operator 3-hr 1 x 3 hr x \$11/hr = \$33 \$33/111 SY = \$0.30/SY Equip: 1-utility tractor 3-hr. OHM contract - Case 580 @ \$102/day Cost = \$102/10 hr x 3 hr = \$30.60 = \$30.60/111 SY = \$0.28/sy FOG = \$50/10 hr x 3hr = \$15 = \$15/111 SY = \$0.14/SY 6" Stone/gravel for access roads & laydown area. 111 SY x .17 YD (6" depth) = 19 CY Means 015-552-0050 temp. roads, gravel fill 4" Increase Material 50% for 6" depth Increase Labor & Equipment 50% for 6" depth & small area Mat'l: 1.45 x 1.5 = \$2.18/SY Labor: 1.87 x 1.5 = \$2.50/SY Equip: 0.28 x 1.5 = \$0.42/SY Total Unit Costs: Mat'l: 0.60 + 2.18 = \$2.78/SY Labor: 0.54 + 0.30 + 2.50 = \$3.34/SY Equip: 0.28 + 0.42 = \$0.70/SY FOG: \$0.14/SY	N	2.78	3.34	0.70	0.14			773

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PROJECT NAME: REMEDIATION OF PESTICIDE-CONTAMINATED SOIL, OU NO. 11 (SITE 80)						DATE: 15-Dec-95								
CONTRACT NUMBER: CTO-0274						PREPARED BY: Baker Environmental, Inc.								
HTRW ACCOUNT NUMBER	DESCRIPTION OF ITEM	QUANT.	UNIT OF MEASURE	COST/UNIT (\$)	DESCRIPTION	COST BASIS (OHM Contract/Other)	SUB (Y/N)	UNIT MAT'L COST	UNIT LABOR COST	UNIT EQUIPT COST	UNIT FOG	UNIT SUB COST	UNIT TRAVEL COST	TOTAL CONTRACT COST(\$)
33.99.15.--	HEALTH AND SAFETY													
33.99.15.01	Certified Industrial Hygienist	1	EA	102	OHM DL rate	Certified Industrial Hygienist: Assume 1 hr/week x 3 weeks x \$34 /hr	N		102					102
33.99.15.10	Site Safety & Health Officer	1	EA	2,850	OHM DL rate	Site Safety & Health Officer: Assume 50 hr/week x 3 weeks x \$19 /hr	N		2,850					2,850
33.99.15.17	Personnel Protective Equipment (HNu, LEL, tyveks, etc.)	1	LS	491	OHM Contract	Personnel Protective Equipment (Hnu, LEL, tyveks, gloves): Assume HNu = \$270 /month LEL = \$120 /month Tyveks, gloves = 4 persons x 0.75 months x (\$2 /tyvek + \$1 /gloves) = \$198 LS Total = \$198 + 0.75 months x \$390 /month = \$491 LS	N	491						491
33.99.15.--	SUBTOTAL	1	LS	3,443										3,443
33.99.16.--	MISCELLANEOUS COSTS													
33.99.16.06	Project Travel - Home Office Personnel	1	EA	566	Home Office to Site	Project Manager - Assume 1 trip OHM DL rate Labor: 4 hr/trip x \$34 /hr = \$136 OHM Contract Car Rental: 2 days x \$55 /day = \$110 Assume plane fare Travel: plane fare = \$300 /trip	N		136		20		410	566
		1	EA	506		Site Safety & Health Officer - Assume 1 trip OHM DL rate Labor: 4 hr/trip x \$19 /hr = \$76 OHM Contract Car Rental: 2 days x \$55 /day = \$110 Assume plane fare Travel: plane fare = \$300 /trip	N		76		20		410	506
33.99.16.90	Per Diem - Home Office Personnel	2	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	342
33.99.16.--	SUB-TOTAL	1	LS	1,414										1,414
33.99.--	TOTAL	1	LS	15,269										15,269
TOTAL (overhead, markups, award fees and FCCOM not included)														400,173

COST ESTIMATE B

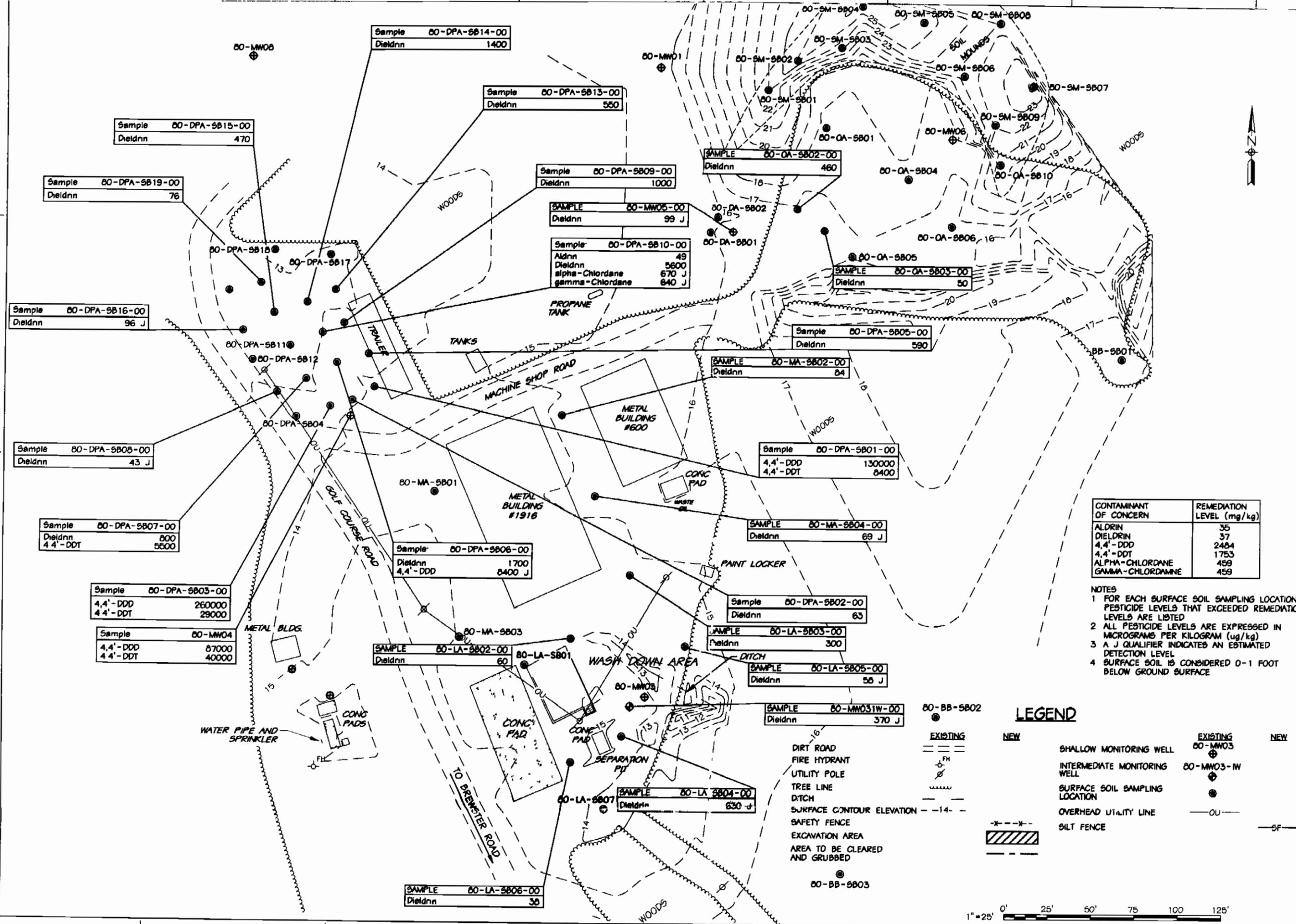
PROJECT LOCATION: MARINE CORPS BASE, CAMP LEJEUNE		DESIGN STATUS: 100%
PROJECT NAME: REMEDIATION OF PESTICIDE-CONTAMINATED SOIL, OU NO. 11 (SITE 80)		DATE: 15-Dec-95
CONTRACT NUMBER: CTO-0274		PREPARED BY: Baker Environmental, Inc.
LABOR		
1	Direct Labor	\$40,201
2	Indirect Costs	\$38,129
3	TOTAL LABOR (1 + 2)	\$78,330
SUBCONTRACTOR COSTS		
4	TOTAL SUBCONTRACTOR COSTS	\$673,402
TRAVEL COSTS		
5	TRAVEL COSTS (Air Fares + Per Diem [Meals, Lodging])	\$3,662
OTHER DIRECT COSTS		
6	Equipment	\$9,631
7	Site Operations Costs	\$1,809
8	Operating & Maintenance Costs (FOG)	911
9	TOTAL OTHER DIRECT COSTS (6 + 7 + 8)	\$12,351
TOTAL COSTS LESS AWARD FEES & FCCOM		
10	SUBTOTAL (3 + 4 + 5 + 9)	\$767,745
11	G & A COSTS	\$42,394
12	SUBTOTAL COST LESS AWARD FEES & FCCOM (10 + 11)	\$810,139
MAXIMUM AWARD FEES		
13	Contractor Award Fee	\$13,308
14	Contractor Award Fee on Subs	\$33,670
15	TOTAL MAXIMUM AWARD FEES (13 + 14)	\$46,978
FCCOM		
16	FCCOM Labor	\$429
17	FCCOM Equipment	
18	FCCOM G & A	\$924
19	FCCOM Project Supplies	\$29
20	TOTAL FCCOM (16 + 17 + 18 + 19)	\$1,382
21	TOTAL ESTIMATED COST INCLUDING AWARD FEES (12 + 15 + 20)	\$858,499

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33.01	MOBILIZATION AND PREPARATORY WORK	1	LS	16,051	3,113	9,872	308	33	1,225	1,500	16,051
33.02	MONITORING, SAMPLING, TESTING, ANALYSIS	1	LS	24,370	936	2,184			21,250		24,370
33.03	SITE WORK	1	LS	100		100					100
33.08	SOLIDS COLLECTION AND CONTAINMENT	1	LS	2,800		1,470	893	438			2,800
33.19	DISPOSAL (COMMERCIAL)	1	LS	645,534					645,534		645,534
33.20	SITE RESTORATION	1	LS	4,846	223	1,480	3,143				4,846
33.21	DEMobilIZATION	1	LS	7,848		5,383	35	5	1,425	1,000	7,848
33.99	DISTRIBUTIVE COSTS	1	LS	26,259	981	19,712		436	3,968	1,162	26,259
TOTAL (overhead, markups, award fees and FCCOM not included)					5,253	40,201	4,378	911	673,402	3,662	727,807

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33.01.04.--	SETUP/CONSTRUCT TEMPORARY FACILITIES													
33.01.04.01	Office Trailer	1	EA	40	32' x 8' Office Trailer	Assume 2-RTs 2-hr each to level & block up trailer Labor = 2 x 2 hr x \$10/hr = \$40	N		40					40
33.01.04.05	Decontamination Facilities for Construction Equipment/Vehicles	1	LS	1641	Decon Station	Assume steel sections furnished by Contractor Decon Area 20' x 50' = 112 SY	N	810	253	61	17	500		1,641
					Steel Decon Pans: 8' x 24' steel sections connected by clamps in field Shipping for Steel Sections = \$500 (Sub)	Liner for decon area Material: Geomembrane, 40 mil polyethylene OHM Contract \$3.43/SY x 112 SY = \$384 Labor: 2-RTs 2 hours each @ \$10/hr. (OHM contract) 2 x 2 hr x \$10/hr = \$40 1-Equip.Operator 1-hr @ \$11/hr. (OHM contract) 1 x 1 hr x \$11/hr = \$11 Equip: 1-utility tractor 1-hr. OHM contract - Case 580 @ \$102/day Cost = \$102/8 hr = \$13/hr x 1 hr = \$13 FOG = \$50/8 hr = \$6/hr x 1 hr = \$6	Site Pans Wood	880 150	82 140	26 35	12 5	500		
					Labor: 2-RTs 1 hr each @ \$10/hr. 2 x 1 hr x \$10/hr = \$20 1-Equip.Operator 1-hr @ \$11/hr. 1 x 1 hr x \$11/hr = \$11 Equip: 1- 15 ton cherry picker 1 hr. Means 016-480-3000 rent \$1395/40 hr = \$35/hr 1 hr x \$35/hr = \$35 FOG: assume \$5/hr x 1 hr = \$5	Stone/gravel for decon area Material: 112 SY x 6" depth = 19 CY OHM Contract #57 gravel @ \$14.50/CY \$14.50/CY x 19 CY = \$276 Labor: 2-RTs 1 hours each @ \$10/hr. (OHM contract) 2 x 1 hr x \$10/hr = \$20 1-Equip.Operator 1-hr @ \$11/hr. (OHM contract) 1 x 1 hr x \$11/hr = \$11 Equip: 1-utility tractor 1-hr. OHM contract - Case 580 @ \$102/day Cost = \$102/8 hr = \$13/hr x 1 hr = \$13 FOG = \$50/8 hr = \$6/hr x 1 hr = \$6								
					Wood "Rooring" & side rails: Assume: 2 x 4 wood grating & side rails 40 - 10' 2x4s @ \$3 ea. 2 x 6 wood bottom bracing 5 - 10' 2x6s @ \$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 \$10/hr = \$140	Sitework Costs: Mat'l: 384 + 276 = \$660 Labor: 40 + 11 + 20 + 11 = \$82 Equip: 13 + 13 = \$26 FOG: 6 + 6 = \$12								
33.01.04.24	Security Fencing (Temporary Safety Fencing)	800	LF	2.37	Safety Fencing (Temporary Fencing)	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	1.15	1.22					1,422
33.01.04.90	Silt Fencing	150	LF	1.50	Temporary Silt Fencing	Assume Mat'l: \$1/LF, Labor: \$0.50/LF	N	1	0.50					225

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33.01.04.25	Equipment Laydown Area	111	SY	6.96	Laydown Area	Stabilization Fabric for laydown area Assume 20' x 50' area so 1000 SF = 111 SY Mat'l: (LANTDIV) \$0.60/SY Labor: 2-RTs 3 hours each @ \$10/hr. 2 x 3 x 10 = \$60 \$60/111 SY = \$0.54/SY 1-Equip. Operator 3-hr 1 x 3 hr x \$11/hr = \$33 \$33/111 SY = \$0.30/SY Equip: 1-utility tractor 3-hr. OHM contract - Case 580 @ \$102/day Cost = \$102/10 hr x 3 hr = \$30.60 = \$30.60/111 SY = \$0.28/sy FOG = \$50/10 hr x 3hr = \$15 = \$15/111 SY = \$0.14/SY 6" Stone/gravel for access roads & laydown area. 111 SY x .17 YD (6" depth) = 19 CY Means 015-552-0050 temp. roads, gravel fill 4" Increase Material 50% for 6" depth Increase Labor & Equipment 50% for 6" depth & small area Mat'l: 1.45 x 1.5 = \$2.18/SY Labor: 1.67 x 1.5 = \$2.50/SY Equip: 0.28 x 1.5 = \$0.42/SY Total Unit Costs: Mat'l: 0.60 + 2.18 = \$2.78/SY Labor: 0.54 + 0.30 + 2.50 = \$3.34/SY Equip: 0.28 + 0.42 = \$0.70/SY FOG: \$0.14/SY	N	2.78	3.34	0.70	0.14			773

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CONTRACT NUMBER: CTO-0274										PREPARED BY: Baker Environmental, Inc.				
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33.99.15.--	HEALTH AND SAFETY													
33.99.15.01	Certified Industrial Hygienist	1	EA	204		Certified Industrial Hygienist: OHM DL rate Assume 1 hr/week x 6 weeks x \$34 /hr	N		204					204
33.99.15.10	Site Safety & Health Officer	1	EA	5,700		Site Safety & Health Officer: OHM DL rate Assume 50 hr/week x 6 weeks x \$19 /hr	N		5,700					5,700
33.99.15.17	Personnel Protective Equipment (HNU, LEL, tyveks, etc.)	1	LS	981		Personnel Protective Equipment (Hnu, LEL, tyveks, gloves): OHM Contract Assume HNU = \$270 /month LEL = \$120 /month Tyveks, gloves = 4 persons x 1.5 months x (\$2 /tyvek + \$1 /gloves) = \$396 LS Total = \$396 + 1.5 months x \$390 /month = \$981 LS	N	981						981
33.99.15.--	SUBTOTAL	1	LS	6,885										6,885
33.99.16.--	MISCELLANEOUS COSTS													
33.99.16.06	Project Travel - Home Office Personnel	1	EA	566	Home Office to Site	Project Manager - Assume 1 trip OHM DL rate Labor: 4 hr/trip x \$34 /hr = \$136 OHM Contract Car Rental: 2 days x \$55 /day = \$110 Assume plane fare Travel: plane fare = \$300 /trip	N		136		20		410	566
		1	EA	506		Site Safety & Health Officer - Assume 1 trip OHM DL rate Labor: 4 hr/trip x \$19 /hr = \$76 OHM Contract Car Rental: 2 days x \$55 /day = \$110 Assume plane fare Travel: plane fare = \$300 /trip	N		76		20		410	506
33.99.16.90	Per Diem - Home Office Personnel	2	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	342
33.99.16.--	SUB-TOTAL	1	LS	1,414										1,414
33.99.--	TOTAL	1	LS	26,259										26,259
TOTAL (overhead, markups, award fees and FCCOM not included)														727,807

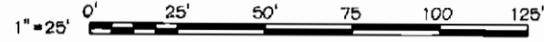


CONTAMINANT OF CONCERN	REMEDIATION LEVEL (mg/kg)
ALDRIN	35
DIELDRIN	37
4,4'-DDD	2484
4,4'-DDT	1753
ALPHA-CHLORDANE	459
GAMMA-CHLORDANE	459

- NOTES**
- 1 FOR EACH SURFACE SOIL SAMPLING LOCATION, PESTICIDE LEVELS THAT EXCEEDED REMEDIATION LEVELS ARE LISTED
 - 2 ALL PESTICIDE LEVELS ARE EXPRESSED IN MICROGRAMS PER KILOGRAM (ug/kg)
 - 3 A J QUALIFIER INDICATES AN ESTIMATED DETECTION LEVEL
 - 4 SURFACE SOIL IS CONSIDERED 0-1 FOOT BELOW GROUND SURFACE

LEGEND

- | | | | |
|--------------------------------|----------|--------------------------------|----------|
| DIRT ROAD | EXISTING | SHALLOW MONITORING WELL | EXISTING |
| FIRE HYDRANT | NEW | INTERMEDIATE MONITORING WELL | NEW |
| UTILITY POLE | EXISTING | SURFACE SOIL SAMPLING LOCATION | EXISTING |
| TREE LINE | NEW | OVERHEAD UTILITY LINE | NEW |
| DITCH | EXISTING | SILT FENCE | NEW |
| SURFACE CONTOUR ELEVATION | NEW | | |
| SAFETY FENCE | NEW | | |
| EXCAVATION AREA | NEW | | |
| AREA TO BE CLEARED AND GRUBBED | NEW | | |



REVISIONS

NO.	DATE	DESCRIPTION	BY	CHKD.

Baker Environmental, Inc.
CORPUS CHRISTI, TEXAS
DATE: 08/14/95
PROJECT NO.: ME2170-89-D-4814
ACTIVITY: SATISFACTORY TO DATE

NORTH CAROLINA
STATE SEAL
DIVISION OF ENVIRONMENTAL AND NATURAL RESOURCES
12/15/95

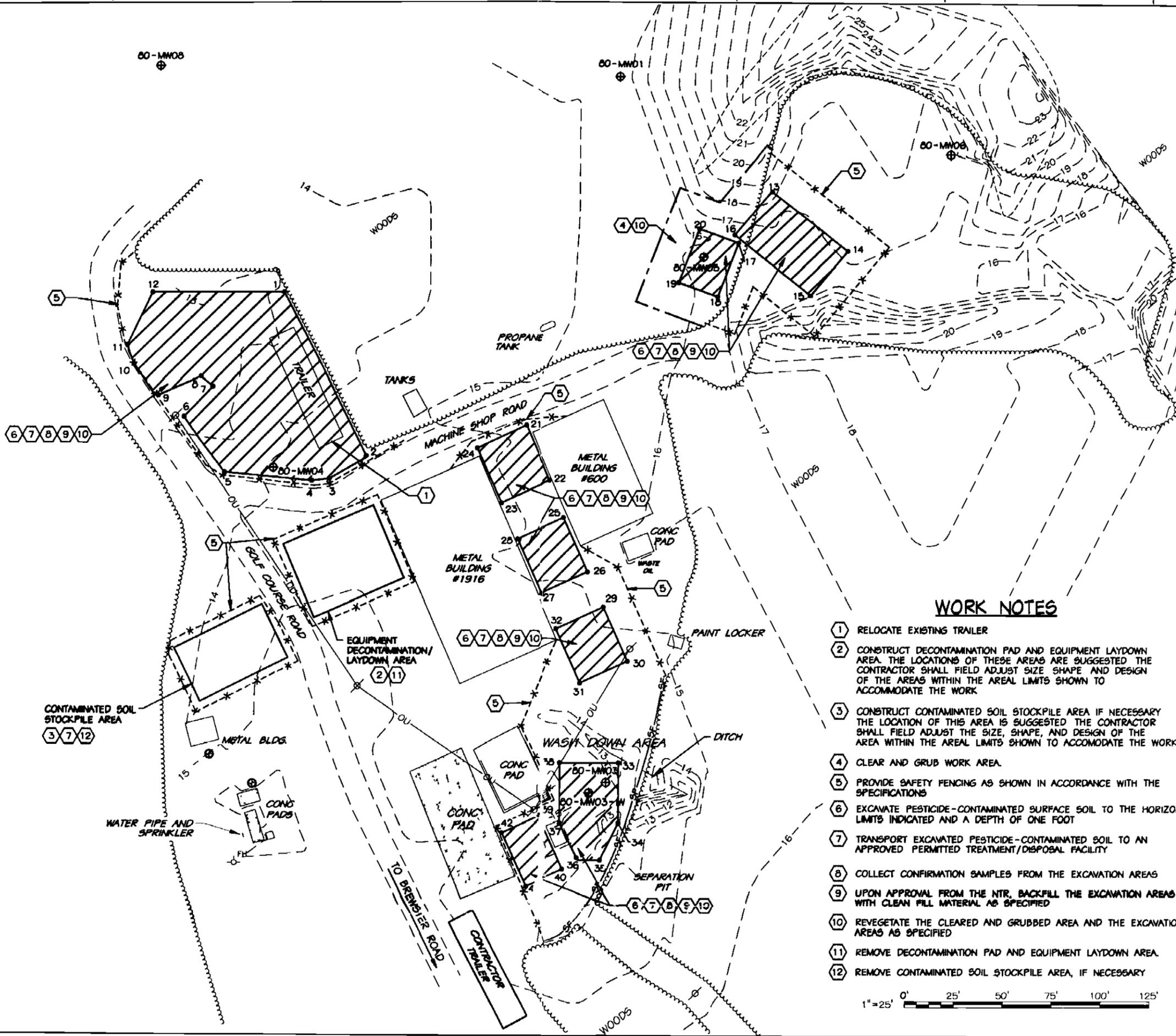
ATLANTIC DIVISION
MARINE CORPS BASE CAMP LEJUNE
OU #11 (SITE 80) - REMEDIATION OF PESTICIDE-CONTAMINATED SOIL
SITE PLAN AND SURFACE SOIL CONTAMINANT LEVELS

CODE ID NO. 80091	SIZE D
SCALE 1" = 25'	
DTG NO.	
STL PROJ. NO.	
SPEC. NO.	
CONTRACT NO.	
NAVFAC DRAWING NO.	
SHEET 2	3

C-1

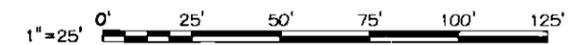
12/15/95

COORDINATES FOR EXCAVATION LIMITS		
PT. #	NORTHING	EASTING
1	356,261 3521	2,485,040 5262
2	356,178 6847	2,485,082 7485
3	356,167 2843	2,485,063 8163
4	356 166 2941	2,485 054 9013
5	356 170 5517	2,485,010 2057
6	356,198 1292	2,484,989 4819
7	356 212 9135	2,485,004 2174
8	356,217 7839	2,484 998 1040
9	356 208 6672	2,484 976 3117
10	356,224 0151	2,484,963 9298
11	356,233 9169	2,484,960 4629
12	356 261 3521	2,484 973 2228
13	356,314 4832	2,485,290 1415
14	356,283 1808	2,485,325 7236
15	356,259 8910	2,485,309 8260
16	356,291 3068	2,485,270 9929
17	356,287 1958	2,485,272 9067
18	356,259 8884	2,485,262 4198
19	356,286 5125	2,485,242 5218
20	356 294 6199	2,485,253 0086
21	356,193 9025	2,485,164 8324
22	356,166 5826	2,485,176 9261
23	356 155 1958	2,485,151 8281
24	356 182 5158	2,485,159 4336
25	356 147 7852	2,485 184 2024
26	356 120 4353	2,485,196 8969
27	356,109 5248	2,485 172 5480
28	356 136 8448	2,485 160 1535
29	356,102 9983	2,485 204 7055
30	356,075 6784	2,485,217 0999
31	356,064 6936	2,485,192 8869
32	356 092 0134	2,485,180 4925
33	356 025 0633	2,485 212 9148
34	356,995 0633	2,485,212 9341
35	356 976 1479	2,485,203 6001
36	356,976 1284	2,485,192 2682
37	356 995 0438	2,485 182 9341
38	356 025 0438	2,485 182 9147
39	356 998 8183	2,485,171 9745
40	356 971 4984	2,485 184 3689
41	356,962 7380	2,485,165 0591
42	356 990 0579	2,485,152 6647



WORK NOTES

- ① RELOCATE EXISTING TRAILER
- ② CONSTRUCT DECONTAMINATION PAD AND EQUIPMENT LAYDOWN AREA. THE LOCATIONS OF THESE AREAS ARE SUGGESTED THE CONTRACTOR SHALL FIELD ADJUST SIZE SHAPE AND DESIGN OF THE AREAS WITHIN THE AREAL LIMITS SHOWN TO ACCOMMODATE THE WORK.
- ③ CONSTRUCT CONTAMINATED SOIL STOCKPILE AREA IF NECESSARY THE LOCATION OF THIS AREA IS SUGGESTED THE CONTRACTOR SHALL FIELD ADJUST THE SIZE, SHAPE, AND DESIGN OF THE AREA WITHIN THE AREAL LIMITS SHOWN TO ACCOMMODATE THE WORK.
- ④ CLEAR AND GRUB WORK AREA.
- ⑤ PROVIDE SAFETY FENCING AS SHOWN IN ACCORDANCE WITH THE SPECIFICATIONS
- ⑥ EXCAVATE PESTICIDE-CONTAMINATED SURFACE SOIL TO THE HORIZONTAL LIMITS INDICATED AND A DEPTH OF ONE FOOT
- ⑦ TRANSPORT EXCAVATED PESTICIDE-CONTAMINATED SOIL TO AN APPROVED PERMITTED TREATMENT/DISPOSAL FACILITY
- ⑧ COLLECT CONFIRMATION SAMPLES FROM THE EXCAVATION AREAS
- ⑨ UPON APPROVAL FROM THE NTR, BACKFILL THE EXCAVATION AREAS WITH CLEAN FILL MATERIAL AS SPECIFIED
- ⑩ REVEGETATE THE CLEARED AND GRUBBED AREA AND THE EXCAVATION AREAS AS SPECIFIED
- ⑪ REMOVE DECONTAMINATION PAD AND EQUIPMENT LAYDOWN AREA.
- ⑫ REMOVE CONTAMINATED SOIL STOCKPILE AREA, IF NECESSARY



BAKER ENVIRONMENTAL, INC. CORCORAN, PENNSYLVANIA PROJECT NO. NG2470-83-D-4814 DATE		REVISIONS NO. DATE BY DESCRIPTION	
APPROVED: [Signature] PROJECT MANAGER		APPROVED: [Signature] QUALITY CONTROL	
APPROVED: [Signature] SUPERVISOR		APPROVED: [Signature] CHECKER	
APPROVED: [Signature] PROJECT DIRECTOR		APPROVED: [Signature] ENGINEER	
NORTH CAROLINA PROFESSIONAL SEAL STATE OF NORTH CAROLINA PROFESSIONAL ENGINEER NO. 10000 NAME: [Name] EXPIRES: [Date]			
ATLANTIC DIVISION MARINE CORPS BASE CAMP LEJUNE NORTH CAROLINA OU #11 (SITE 80) - REMEDIATION OF PESTICIDE-CONTAMINATED SOIL EXCAVATION PLAN			
CODE NO. 80001 SHEET 3 OF 3 DATE: 12/15/95		SHEET 3 OF 3 DATE: 12/15/95	

C-2

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Environmental Management



James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
A. Preston Howard, Jr., P.E., Director

Groundwater Section
July 14, 1995

Donald P. Joiner
Barker Environmental, Inc.
Airport Office Pk., Bldg 3
420 Rouser Road
Coraopolis, PA 15108

NAVY CLEAN

Date Received: 7/24/95
Project Manager: _____
CTO Number: 174 & 177
cc: PRGM Files: M. Bartman, M. Petroccia,
D. Joiner
Subfile No.: _____

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Incident #: 5902, 9299, 9300, 14175 and 14206
Site Name: USMC-Camp Lejeune
County: Onslow Regional Office: Wilmington

RE: Completion of Checklist for Corrective Action Plan under 15A NCAC sL .0106 (k), (l) or (m)

Dear Mr. Joiner:

The Groundwater Section Central Office has received your documentation requesting the approval of a Corrective Action Plan under 15A NCAC 2L .0106 (k), (l) or (m) and found the following omissions/errors:

- The Checklist (GW-100 form) has not been submitted. The current version of the GW-100 form is enclosed for your use. This form is to be completed in full with no changes or modifications and returned to this office.
- Each item on the Checklist (GW-100 form) must be included in the documentation and initialed on the form before the submittal can be considered complete. Please note that an original or photocopy of an original GW-100 form must be used with the GW form number on the lower left corner.
- The CAP is not properly signed and sealed. Please submit a signed and sealed replacement title page or signature page.

Please submit the requested documents to my attention in the Pollution Control Branch, 441 North Harrington Street, Raleigh, North Carolina 27603-1323. Once these items have been received, the entire CAP will be forwarded to the appropriate Regional Office for technical review.

Sincerely,

Lenette Shewood FOR

Fay Sweat
Groundwater Section
Pollution Control Branch

DIVISION OF ENVIRONMENTAL MANAGEMENT
CERTIFICATION FOR THE SUBMITTAL OF A CORRECTIVE ACTION PLAN
UNDER 15A NCAC 2L.0106(1)

Responsible Party: Department of the Navy, LANTDIV
Address: Naval Facilities Engineering Command
City: Norfolk, State: VA, Zip Code: 23511

Site Name: Marine Corps Base, Camp Lejeune
Address: Operable Unit No. 5
City: Camp Lejeune, Co.: Onslow, Zip Code: 28542

Groundwater Section Incident Number: _____

I, Don P. Joiner, a Professional Engineer/Licensed Geologist (circle one) for Baker Environmental, Inc. do hereby certify that the information indicated below is enclosed as part of the required Corrective Action Plan (CAP) and that to the best of my knowledge the data, site assessments, engineering plans and other associated materials are correct and accurate.

(Each item must be initialed by hand by the certifying licensed professional)

1. N/A A listing of the names and addresses of those individuals required to be notified to meet the notification requirements of 15A NCAC 2L .0114(b) are enclosed. Copies of letters and certified mail receipts are also enclosed.
2. DPS A Professional Engineer or Licensed Geologist has prepared, reviewed, and certified all applicable parts of the CAP in accordance with 15A NCAC 2L .0103(e).
3. DPS A site assessment is attached or on file with the appropriate Regional Office which provides the information required by 15A NCAC 2L .0106(g).
4. DPS A description of the proposed corrective action and supporting justification is enclosed.
5. DPS A schedule for the implementation of the CAP is enclosed.
6. DPS A monitoring plan is enclosed which has the capacity to evaluate the effectiveness of the remedial activity and the movement of the contaminant plume, and which meets the requirements of 15A NCAC 2L .0110 and .0106(1).
7. DPS The activity which resulted in the contamination incident is not permitted by the State as defined in 15A NCAC 2L.0106(e).

(OVER)

Attachments from Fay Sweatt
Hr

DIVISION OF ENVIRONMENTAL MANAGEMENT
CERTIFICATION FOR THE SUBMITTAL OF A CORRECTIVE ACTION PLAN
UNDER 15A NCAC 2L.0106(1)

Responsible Party: Department of the Navy, LANTDIV
Address: Naval Facilities Engineering Command
City: Norfolk, State: PA, Zip Code: 23511

Site Name: Marine Corps Base, Camp Lejeune
Address: Operable Unit No. 1, AOCs 2, 4, & 8
City: Camp Lejeune, Co.: Onslow, Zip Code: 23542

Groundwater Section Incident Number: _____

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7. DPJ The activity which resulted in the contamination incident is not permitted by the State as defined in 15A NCAC 2L.0106(e).

Attachments from FS letter

>
.0114 Notification Requirements

Any person subject to the requirements of Rule .0106(c) of this Section shall submit to the local Health Director, and the chief administrative officer of the political jurisdictions in which the groundwater contamination has occurred, a report that describes:

- (1) The area extent of the contaminant plume;
- (2) The chemical constituents in the groundwater which exceed the standards described in Rule .0202 of this Subchapter;
- (3) Actions taken and intended to mitigate threats to human health;
- (4) The locations of any wells installed for the purpose of monitoring the contaminant plume and the frequency of sampling.

The report described in this Rule shall be submitted no later than five working days after submittal of the completed report assessing the cause, significance and extent of the violation as required by Rule .0106(c).

(b) Any person who submits a request under Rule .0106(k), (l), or (m) of this Section shall notify the local Health Director and the chief administrative officer of the political jurisdictions in which the contaminant plume occurs, and all property owners and occupants within or contiguous to the area underlain by the contaminant plume, and under the areas where it is expected to migrate, of the nature of the request and reasons supporting it. Notification shall be made by certified mail concurrent with the submittal of the request to the Director. A final decision by the Director shall be postponed for a period of 30 days following receipt of the request so that the Director may consider comments submitted by individuals interested in the request.

(c) Any person whose request under Rule .0106(k), (l), or (m) of this Section is granted by the Director shall notify parties specified in Paragraph (b) of this Rule of the Director's decision. Notification shall be made by certified mail within 30 days of receipt of the Director's decision.

DIVISION OF ENVIRONMENTAL MANAGEMENT
CERTIFICATION FOR THE SUBMITTAL OF A CORRECTIVE ACTION PLAN
UNDER 15A NCAC 2L.0106(1)

Responsible Party: Department of the Navy, LANTDIV
Address: Naval Facilities Engineering Command
City: Norfolk, State: VA, Zip Code: 23511

Site Name: Marine Corps Base, Camp Lejeune
Address: Operable Unit No. 1, AOCs 6 & 7
City: Camp Lejeune, Co.: Onslow, Zip Code: 28542

Groundwater Section Incident Number: _____

I, Don P. Joiner, a Professional Engineer/~~licensed Geologist~~ (circle one) for Baker Environmental, Inc. do hereby certify that the information indicated below is enclosed as part of the required Corrective Action Plan (CAP) and that to the best of my knowledge the data, site assessments, engineering plans and other associated materials are correct and accurate.

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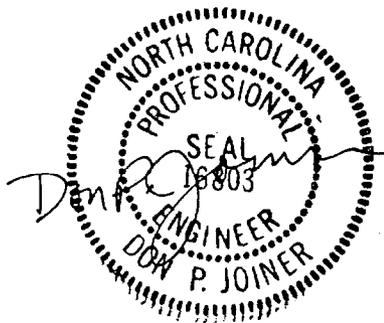
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7. DPJ The activity which resulted in the contamination incident is not permitted by the State as defined in 15A NCAC 2L.0106(e).

(OVER)

In addition, the undersigned also certifies that to the best of my knowledge and professional judgement and in accordance with the requirements of 15A NCAC 2L.0106(1), the following determinations have been made and are documented in the CAP:

8. DPJ all free product has been removed to the extent practicable in accordance with 15A NCAC 2L .0106(f). (See guidance document).
9. DPJ all sources of contamination have been removed or controlled in accordance with 15A NCAC .0106(f) and (1). (See guidance document).
10. DPJ the contaminant has the capacity to degrade and attenuate under the site-specific conditions.
11. DPJ the time and direction of contaminant travel can be predicted with reasonable certainty.
12. DPJ the migration of the contaminant will not result in any violation of the standards specified in 15A NCAC 2L .0202 at any existing or foreseeable receptor.
13. DPJ the contaminants have not and will not migrate onto adjacent properties, or adjacent properties are served by public water supplies which cannot be influenced by contaminants migrating off-site, or adjacent landowners have consented in writing to a request allowing the contaminant upon their property.
14. DPJ all necessary access agreements needed to monitor groundwater quality have been or can be obtained.

(Please Affix Seal and Signature)



8/15/95

Note: Any modifications made to this form may result in the return of your submittal.

DIVISION OF ENVIRONMENTAL MANAGEMENT
CERTIFICATION FOR THE SUBMITTAL OF A CORRECTIVE ACTION PLAN
UNDER 15A NCAC 2L.0106(1)

Responsible Party: Department of the Navy, LANTDIV
Address: Naval Facilities Engineering Command
City: Norfolk, State: PA, Zip Code: 23511

Site Name: Marine Corps Base, Camp Lejeune
Address: Operable Unit No. 1, AOCs 2, 4, & 8
City: Camp Lejeune, Co.: Onslow, Zip Code: 23542

Groundwater Section Incident Number: _____

I, Don P. Joiner, a Professional Engineer/~~Licensed Geologist~~ (circle one) for Baker Environmental, Inc. do hereby certify that the information indicated below is enclosed as part of the required Corrective Action Plan (CAP) and that to the best of my knowledge the data, site assessments, engineering plans and other associated materials are correct and accurate.

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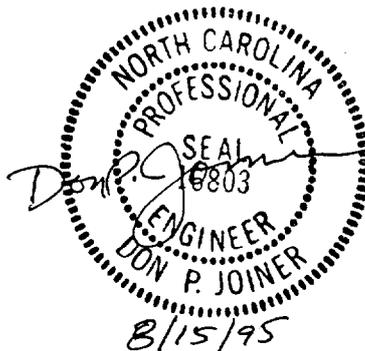
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DIVISION OF ENVIRONMENTAL MANAGEMENT
CERTIFICATION FOR THE SUBMITTAL OF A CORRECTIVE ACTION PLAN
UNDER 15A NCAC 2L.0106(1)

Responsible Party: Department of the Navy, LANTDIV
Address: Naval Facilities Engineering Command
City: Norfolk, State: VA, Zip Code: 23511

Site Name: Marine Corps Base, Camp Lejeune
Address: Operable Unit No. 5
City: Camp Lejeune, Co.: Onslow, Zip Code: 28542

Groundwater Section Incident Number: _____

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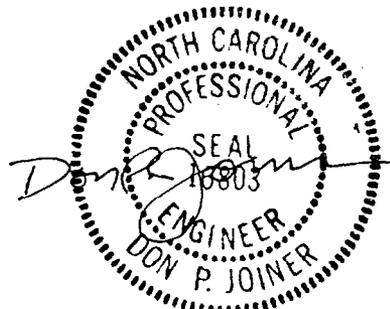
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(Please Affix Seal and Signature)



8/15/95

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**CORRECTIVE ACTION PLAN
OPERABLE UNIT NO. 5, SITE 2**

**MARINE CORPS BASE,
CAMP LEJEUNE, NORTH CAROLINA**

CONTRACT TASK ORDER 0174

MARCH 17, 1995

Prepared For:

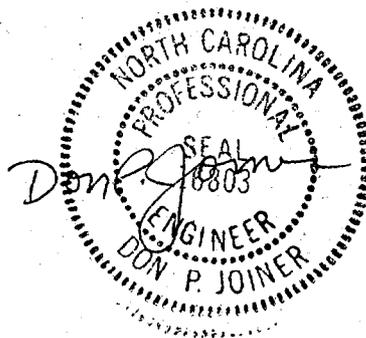
**DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES
ENGINEERING COMMAND
Norfolk, Virginia**

Under the:

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

Prepared By:

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



8/15/95

**CORRECTIVE ACTION PLAN
FOR OPERABLE UNIT NO. 1
(SITES 21, 24 and 78)**

**MARINE CORPS BASE,
CAMP LEJEUNE, NORTH CAROLINA**

CONTRACT TASK ORDER 0177

MARCH 24, 1995

Prepared For:

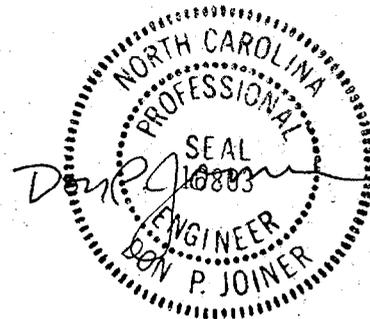
**DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES
ENGINEERING COMMAND
Norfolk, Virginia**

Under the:

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

Prepared By:

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



8/15/95



Baker Environmental, Inc.
Airport Office Park, Building 3
420 Rouser Road
Coraopolis, Pennsylvania 15108

(412) 269-6000
FAX (412) 269-2002

March 24, 1995

Commander
Atlantic Division
Naval Facilities Engineering Command
1510 Gilbert Street (Building N-26)
Norfolk, Virginia 23511-2699

Attn: Ms. Linda Saksvig, P.E.
Code 1823

Re: Navy CLEAN, District III
Contract Task Order (CTO) 0177
Corrective Action Plan for Operable Unit No. 1 (Sites 21, 24 and 78)
MCB, Camp Lejeune, North Carolina

Dear Ms. Saksvig:

Baker Environmental, Inc. (Baker) is pleased to submit three copies of the Corrective Action Plan (CAP) for Operable Unit No. 1, Sites 21, 24 and 78. Three copies of the CAP have been forwarded to Mr. Neal Paul at MCB, Camp Lejeune. Two copies of this report have also been submitted to the USEPA and two copies of the CAP and letter have been submitted to NC DEHNR.

The enclosed report summarizes data collected during the RI/FS performed at these sites. The enclosed CAP also excerpts information from the Proposed Remedial Action Plan and Record of Decision, which have been accepted by USEPA and NC DEHNR, Superfund Section. The enclosed CAP is being submitted at the request of NC DEHNR, because contaminants will remain in the shallow groundwater at MCB, Camp Lejeune above NC DEHNR groundwater standards under the selected alternative.

In addition to soil remediation and the cleanup of two plumes containing VOCs, the approved remedy for this site includes long term groundwater monitoring of other areas of concern, which contain low levels of tetrachloroethene (AOCs 2, 4, and 8) and heptachlor epoxide (AOCs 6 and 7) above groundwater standards. Because of these exceedances specific criteria applicable to 15A NCAC 2L.0106 are addressed in Sections 1 and 5 of the CAP, and the results of a groundwater model are presented in Appendix A of the CAP. The results of the model indicate that the nearest receptor, which is Cogdel's Creek, will not be measurably impacted by potential migration of the groundwater contamination.

Two certifications are attached to this cover letter. The selected remedy provides for a higher standard for heptachlor epoxide (15 NCAC 2L.0106[k]) and natural attenuation for tetrachloroethene (15 NCAC 2L.0106 [l]).

bcc: APajak/CF; JMentz/RWattras/PRGM F;MPetroccia; M.Bartmen;T. Halapin/PRJ F; Daily File
S.O. #62470-177
Subfile 5
Initials RW



A Total Quality Corporation

Baker

Ms. Linda Saksvig, P.E.

March 24, 1995

Page 2

If you have questions regarding this submittal, please call Malcolm Petroccia at (412) 269-4695 or me at (412) 269-2016.

Sincerely,

BAKER ENVIRONMENTAL, INC.



Raymond P. Watras
Deputy Program Manager

MWP/RPW/lq

cc: Ms. Beth Collier, Code 02115 (letter only)
Ms. Lee Anne Rapp, Code 183 (letter only)
Mr. Neal Paul, MCB Camp Lejeune (3 copies)
Mr. Patrick Watters, NC DEHNR (2 copies)

DIVISION OF ENVIRONMENTAL MANAGEMENT
CERTIFICATION FOR THE SUBMITTAL OF A CORRECTIVE ACTION PLAN
UNDER 15A NCAC 2L.0106(1)

Responsible Party: Department of the Navy, LANTDIV
Address: Naval Facilities Engineering Command
City: Norfolk, State: PA, Zip Code: 23511

Site Name: Marine Corps Base, Camp Lejeune
Address: Operable Unit No. 1, AOCs 2, 4, & 8
City: Camp Lejeune, Co.: Onslow, Zip Code: 23542

Groundwater Section Incident Number: _____

I, Donald P. Joiner, a Professional Engineer/Licensed Geologist (circle one) for Baker Environmental, Inc. do hereby certify that the information indicated below is enclosed as part of the required Corrective Action Plan (CAP) and that to the best of my knowledge the data, site assessments, engineering plans and other associated materials are correct and accurate.

(Each item must be initialed by hand by the certifying licensed professional)

1. N/A A listing of the names and addresses of those individuals required to be notified to meet the notification requirements of 15A NCAC 2L .0114(b) are enclosed. Copies of letters and certified mail receipts are also enclosed.
2. DPJ A Professional Engineer or Licensed Geologist has prepared, reviewed, and certified all applicable parts of the CAP in accordance with 15A NCAC 2L .0103(e).
3. DPJ A site assessment is attached or on file with the appropriate Regional Office which provides the information required by 15A NCAC 2L .0106(g).
4. DPJ A description of the proposed corrective action and supporting justification is enclosed.
5. DPJ A schedule for the implementation of the CAP is enclosed.
6. DPJ A monitoring plan is enclosed which has the capacity to evaluate the effectiveness of the remedial activity and the movement of the contaminant plume, and which meets the requirements of 15A NCAC 2L .0110 and .0106(1).
7. DPJ The activity which resulted in the contamination incident is not permitted by the State as defined in 15A NCAC 2L.0106(e).

DIVISION OF ENVIRONMENTAL MANAGEMENT
CERTIFICATION FOR THE SUBMITTAL OF A CORRECTIVE ACTION PLAN
UNDER 15A NCAC 2L.0106(k)

Responsible Party: Department of the Navy, LANTDIV
Address: Naval Facilities Engineering Command
City: Norfolk, State: VA, Zip Code: 23511

Site Name: Marine Corps Base, Camp Lejeune
Address: Operable Unit No. 1, AOCs 6 & 7
City: Camp Lejeune, Co.: Onslow, Zip Code: 23542

Groundwater Section Incident Number: _____

I, Donald P. Joiner, a Professional Engineer/Licensed Geologist (circle one) for Baker Environmental, Inc. do hereby certify that the information indicated below is enclosed as part of the required Corrective Action Plan (CAP) and that to the best of my knowledge the data, site assessments, engineering plans and other associated materials are correct and accurate.

(Each item must be initialed by hand by the certifying licensed professional)

1. N/A A listing of the names and addresses of those individuals required to be notified to meet the notification requirements of 15A NCAC 2L .0114(b) are enclosed. Copies of letters and certified mail receipts are also enclosed.
2. DPJ A Professional Engineer or Licensed Geologist has prepared, reviewed, and certified all applicable parts of the CAP in accordance with 15A NCAC 2L .0103(e).
3. DPJ A site assessment is attached or on file at the appropriate Regional Office which provides the information required by 15A NCAC 2L .0106(g).
4. DPJ A description of the proposed corrective action and supporting justification is enclosed.
5. DPJ Specific plans and engineering details for the restoration of groundwater quality are enclosed. A listing of contaminants detected in groundwater in excess of standards prescribed in 15A NCAC 2L .0202 and the proposed cleanup goal for each contaminant is also enclosed.
6. DPJ A schedule for the implementation of the CAP is enclosed.

Baker

Baker Environmental, Inc.
 420 Rouser Road
 Airport Office Park Bldg. 3
 Coraopolis, PA 15108
 Telephone: (412) 269-6000
 Fax: (412) 269-2002

Letter of Transmittal

To: USEPA, Region IV - Waste Management Division S.O. No. 62470-177-SRN
 345 Courtland Street Project: OU No. 1 (Sites 21, 24 & 78)
 Atlanta, GA 30365 Date: March 24, 1995

Attn: Ms. Gena Townsend

We are forwarding the following: Attached Under Separate Cover

DWG. NO.	NO. COPIES	TITLE OR DESCRIPTION	COMMENTS
	2	Corrective Action Plan for OU No. 1, MCB, Camp Lejeune, NC	

THESE ARE TRANSMITTED as checked below:

- | | | |
|--|---|---|
| <input type="checkbox"/> As requested | <input type="checkbox"/> No exceptions taken | <input type="checkbox"/> Revise and resubmit |
| <input type="checkbox"/> For review and comment | <input type="checkbox"/> Rejected - See remarks | <input type="checkbox"/> Submit specified items |
| <input checked="" type="checkbox"/> For your information | <input type="checkbox"/> Proceed subject to corrections noted | <input type="checkbox"/> _____ |

GENERAL COMMENTS:

BAKER ENVIRONMENTAL, INC.

By: Tammi Halapin

Title: Project Manager

Page 1 of 1

cc: Ms. Linda Saksvig, P.E., Code 1823

Baker

bcc: APajak/CF; JMentz/RWattras/PRGM F; ^{stet}MPetroccia, D. Shields/PRJ F; Daily File
S.O. #62470-174
Subfile 5
Initials gwm

Baker Environmental, Inc.
Airport Office Park, Building 3
420 Rouser Road
Coraopolis, Pennsylvania 15108

(412) 269-6000
FAX (412) 269-2002

March 17, 1995

Commander
Atlantic Division
Naval Facilities Engineering Command
1510 Gilbert Street (Building N-26)
Norfolk, Virginia 23511-2699

Attn: Ms. Linda Saksvig, P.E.
Code 1823

Re: Navy CLEAN, District III
Contract Task Order (CTO) 0174
Corrective Action Plan for Operable Unit No. 5 (Site 2)
MCB, Camp Lejeune, North Carolina

Dear Ms. Saksvig:

Baker Environmental, Inc. (Baker) is pleased to submit three copies of the Corrective Action Plan (CAP) for Operable Unit No. 5, Site 2. Three copies of the CAP have been forwarded to Mr. Neal Paul at MCB, Camp Lejeune. Two copies of this report have also been submitted to the USEPA and two copies of the CAP and letter have been submitted to NC DEHNR.

The enclosed report summarizes data collected during the RI/FS performed at Site 2. The enclosed CAP also excerpts information from the Proposed Remedial Action Plan and Record of Decision, which have been accepted by USEPA and NC DEHNER, Superfund Section. The enclosed CAP is being submitted at the request of NC DEHNER, because contaminants will remain in the shallow groundwater at MCB, Camp Lejeune above NC DEHNER groundwater standards under the selected alternative.

The approved remedy for this site is long term monitoring because the source of contamination has been removed and the groundwater contamination is limited to only a few compounds. Specific criteria applicable to 15A NCAC 2L.01061 are addressed in Sections 1 and 5 of the CAP, and the results of a simplistic groundwater model are presented in Appendix A of the CAP. The results of the model indicate that the nearest receptor, which is Overs Run, will not be measurably impacted by potential migration of the groundwater contamination.



A Total Quality Corporation

Baker

Ms. Linda Saksvig, P.E.

March 17, 1995

Page 2

If you have questions regarding this submittal, please call Malcolm Petroccia at (412) 269-4695 or me at (412) 269-2016.

Sincerely,

BAKER ENVIRONMENTAL, INC.



Raymond P. Wattras
Deputy Program Manager

jsl

cc: Ms. Beth Collier, Code 02115 (letter only)
Ms. Lee Anne Rapp, Code 183 (letter only)
Mr. Neal Paul, MCB Camp Lejeune (3 copies)
Mr. Patrick Watters, NC DEHNR (2 copies)

Baker

Baker Environmental, Inc.
Airport Office Park, Building 3
420 Rouser Road
Coraopolis, Pennsylvania 15108
(412) 269-6000
FAX (412) 269-6097

Letter of Transmittal

To: USEPA, Region IV - Waste Management Division
345 Courtland Street
Atlanta, GA 30365

S.O. No.: 62470-174-SRN
Project: OU No. 5 (Site 2)
Date: March 17, 1995

Attn.: Ms. Gena Townsend

We are forwarding the following: Attached Under Separate Cover

DWG. NO.	NO. COPIES	TITLE OR DESCRIPTION	COMMENTS
	2	Corrective Action Plan for OU No. 5, MCB, Camp Lejeune, NC	

THESE ARE TRANSMITTED as checked below:

- | | | |
|--|---|---|
| <input type="checkbox"/> As requested | <input type="checkbox"/> No exception taken | <input type="checkbox"/> Revise and resubmit |
| <input type="checkbox"/> For review and comment | <input type="checkbox"/> Rejected - See remarks | <input type="checkbox"/> Submit specified items |
| <input checked="" type="checkbox"/> For your information | <input type="checkbox"/> Proceed subject to corrections noted | <input type="checkbox"/> |

GENERAL COMMENTS:

cc: Ms. Linda Saksvig, P.E., Code 1823

BAKER ENVIRONMENTAL, INC.

By: Donald Shields

Title: Project Manager

Page: 1 of 1

DIVISION OF ENVIRONMENTAL MANAGEMENT
CERTIFICATION FOR THE SUBMITTAL OF A CORRECTIVE ACTION PLAN
UNDER 15A NCAC 2L.0106(1)

Responsible Party: Department of the Navy, LANTDIV
Address: Naval Facilities Engineering Command
City: Norfolk, State: VA, Zip Code: 23511

Site Name: Marine Corps Base, Camp Lejeune
Address: Operable Unit No. 5
City: Camp Lejeune, Co.: Onslow, Zip Code: 28542

Groundwater Section Incident Number: _____

I, Don P. Joiner, a Professional Engineer/Licensed Geologist (circle one) for Baker Environmental, Inc. do hereby certify that the information indicated below is enclosed as part of the required Corrective Action Plan (CAP) and that to the best of my knowledge the data, site assessments, engineering plans and other associated materials are correct and accurate.

(Each item must be initialed by hand by the certifying licensed professional)

1. N/A A listing of the names and addresses of those individuals required to be notified to meet the notification requirements of 15A NCAC 2L .0114(b) are enclosed. Copies of letters and certified mail receipts are also enclosed.
2. DPI A Professional Engineer or Licensed Geologist has prepared, reviewed, and certified all applicable parts of the CAP in accordance with 15A NCAC 2L .0103(e).
3. DPI A site assessment is attached or on file with the appropriate Regional Office which provides the information required by 15A NCAC 2L .0106(g).
4. DPI A description of the proposed corrective action and supporting justification is enclosed.
5. DPI A schedule for the implementation of the CAP is enclosed.
6. DPI A monitoring plan is enclosed which has the capacity to evaluate the effectiveness of the remedial activity and the movement of the contaminant plume, and which meets the requirements of 15A NCAC 2L .0110 and .0106(1).
7. DPI The activity which resulted in the contamination incident is not permitted by the State as defined in 15A NCAC 2L.0106(e).

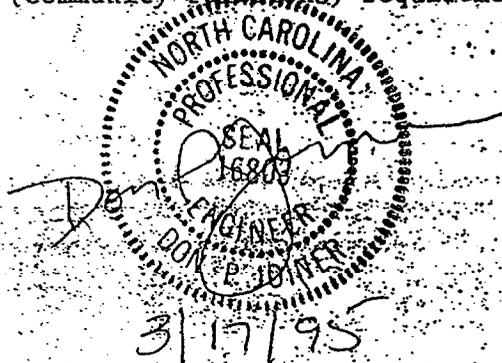
(OVER)

In addition, the undersigned also certifies that to the best of my knowledge and professional judgement and in accordance with the requirements of 15A NCAC 2L.0106(1), the following determinations have been made and are documented in the CAP:

8. DPS all free product has been removed to the extent practicable in accordance with 15A NCAC 2L .0106(f). (See guidance document).
9. DPS all sources of contamination have been removed or controlled in accordance with 15A NCAC .0106(f) and (1). (See guidance document).
10. DPS the contaminant has the capacity to degrade and attenuate under the site-specific conditions.
11. DPS the time and direction of contaminant travel can be predicted with reasonable certainty.
12. DPS the migration of the contaminant will not result in any violation of the standards specified in 15A NCAC 2L .0202 at any existing or foreseeable receptor.
13. DPS the contaminants have not and will not migrate onto adjacent properties, or adjacent properties are served by public water supplies which cannot be influenced by contaminants migrating off-site, or adjacent landowners have consented in writing to a request allowing the contaminant upon their property.
14. DPS all necessary access agreements needed to monitor groundwater quality have been or can be obtained.

(Please Affix Seal and Signature)

N/A - Not applicable because this site is progressing under the Superfund process, with its own notification (community relations) requirements.



Note: Any modifications made to this form may result in the return of your submittal.

Baker

bcc: APajak/CF; WTrim bath/JMentz/PRGM F; THalapin/PRJF; RWattras (ck); Daily File
S.O.# 19177-SRN
Subfile #5
Initials: RLW

Baker Environmental, Inc.
Airport Office Park, Building 3
420 Rouser Road
Coraopolis, Pennsylvania 15108

September 8, 1994

(412) 269-6000
FAX (412) 269-2002

Commander
Atlantic Division
Naval Facilities Engineering Command
1510 Gilbert Street (Building N-26)
Norfolk, Virginia 23511-2699

Attn: Ms. Linda Berry, P.E. Code 1823

Re: Contract N672470-89-D-4814
Navy CLEAN, District III
Contract Task Order (CTO) 0177
Final ROD for Operable Unit No. 1 (Sites 21, 24, and 78)
MCB, Camp Lejeune, North Carolina

Dear Ms. Berry:

Baker Environmental, Inc. (Baker) is pleased to submit one copy (unsigned) of the Final Record of Decision (ROD) for Operable Unit (OU) No. 1 - Sites 21, 24, and 78. The remaining copies of the ROD have been sent to Mr. Neal Paul at MCB, Camp Lejeune to be signed by the Commanding General and then distributed. The signed RODs should be distributed as per the attached list.

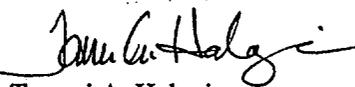
The Final ROD reflects the comments received from the NC DEHNR on August 19, 1994; the LANTDIV memorandum to Linda Berry from Mr. P. R. Smith, Assistant Counsel dated July 7, 1994; and the comments received during the public meeting held on July 27, 1994.

Submittal of this report meets the target deliverable date of September 9, 1994 (two weeks following the end of the public comment period).

If you have any questions regarding this submittal, please contact me at (412) 269-2023 or Mr. Raymond Wattras (Activity Coordinator) at (412) 269-2016.

Sincerely,

BAKER ENVIRONMENTAL, INC.



Tammi A. Halapin
Project Manager

TAH/ldq

cc: Ms. Beth Hacic, Code 02145 (letter only)
Ms. Lee Anne Rapp, Code 183 (letter only)
Mr. Neal Paul, MCB Camp Lejeune (18 copies)



A Total Quality Corporation

ROD DISTRIBUTION LIST

NAME	AGENCY/AFFILIATION	NUMBER OF COPIES
Mr. Neal Paul	MCB, Camp Lejeune	3
Ms. Linda Berry	LANTDIV	3
Ms. Gena Townsend	USEPA, Region IV	3
Mr. Patrick Watters	NC DEHNR	1
Mr. Rick Shiver	NC DEHNR	1
Mr. Arthur Mouberry	NC DEHNR	1
Mr. Stephen Tedder	NC DEHNR	1
Mr. Jerry Bittner	TRC	1
Mr. Cameron Lanier	TRC	1
Colonel (Retired) Jack Mader	TRC	1
Mr. Ray Humphries	TRC	1
Mr. Waynon Johnson	TRC	1
Mr. Tom Augspurger	TRC	0 (transmittal letter only)
Mr. James H. Lee	TRC	0 (transmittal letter only)

Baker

bcc: APajak/CF; WTrim bath/JMentz/PRGM F; ^{DS Shields/} ~~THalpin~~/PRJF; RWatras (ck); Daily File
S.O.# 19~~89~~-SRN 174
Subfile #5
Initials: RPW

Baker Environmental, Inc.
Airport Office Park, Building 3
420 Rouser Road
Coraopolis, Pennsylvania 15108

(412) 269-6000
FAX (412) 269-2002

September 8, 1994

Commander
Atlantic Division
Naval Facilities Engineering Command
1510 Gilbert Street (Building N-26)
Norfolk, Virginia 23511-2699

Attn: Ms. Linda Berry, P.E. Code 1823

Re: Contract N672470-89-D-4814
Navy CLEAN, District III
Contract Task Order (CTO) 0174
Final ROD for Operable Unit No. 5 (Site 2)
MCB, Camp Lejeune, North Carolina

Dear Ms. Berry:

Baker Environmental, Inc. (Baker) is pleased to submit one copy (unsigned) of the Final Record of Decision (ROD) for Operable Unit (OU) No. 5 - Site 2. The remaining copies of the ROD have been sent to Mr. Neal Paul at MCB, Camp Lejeune to be signed by the Commanding General and then distributed. The signed RODs should be distributed as per the attached list.

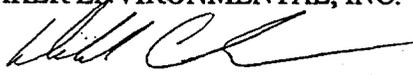
The Final ROD reflects the comments received from the NC DEHNR on August 18, 1994, and the comments received during the public meeting held on July 27, 1994.

Submittal of this report meets the target deliverable date of September 9, 1994 (two weeks following the end of the public comment period).

If you have any questions regarding this submittal, please contact me at (412) 269-2038 or Mr. Raymond Watras (Activity Coordinator) at (412) 269-2016.

Sincerely,

BAKER ENVIRONMENTAL, INC.


Donald C. Shields
Project Manager

DCS/ldq

cc: Ms. Beth Hacic, Code 02145 (letter only)
Ms. Lee Anne Rapp, Code 183 (letter only)
Mr. Neal Paul, MCB Camp Lejeune (18 copies)



A Total Quality Corporation

ROD DISTRIBUTION LIST

NAME	AGENCY/AFFILIATION	NUMBER OF COPIES
Mr. Neal Paul	MCB, Camp Lejeune	3
Ms. Linda Berry	LANTDIV	3
Ms. Gena Townsend	USEPA, Region IV	3
Mr. Patrick Watters	NC DEHNR	1
Mr. Rick Shiver	NC DEHNR	1
Mr. Arthur Mouberry	NC DEHNR	1
Mr. Stephen Tedder	NC DEHNR	1
Mr. Jerry Bittner	TRC	1
Mr. Cameron Lanier	TRC	1
Colonel (Retired) Jack Mader	TRC	1
Mr. Ray Humphries	TRC	1
Mr. Waynon Johnson	TRC	1
Mr. Tom Augspurger	TRC	0 (transmittal letter only)
Mr. James H. Lee	TRC	0 (transmittal letter only)



Baker Environmental, Inc.
Airport Office Park, Building 3
420 Rouser Road
Coraopolis, Pennsylvania 15108

(412) 269-6000
FAX (412) 269-2002

July 22, 1994

Commander
Atlantic Division
Naval Facilities Engineering Command
1510 Gilbert Street (Building N-26)
Norfolk, Virginia 23511-2699

Attn: Ms. Linda Berry, P.E.
Navy CLEAN, District III
Contract Task Order (CTO) 0177
Final FS Report and PRAP for Operable Unit No. 1 (Sites 21, 24, and 78)
MCB, Camp Lejeune, North Carolina

Dear Ms. Berry:

Baker Environmental, Inc. (Baker) is pleased to submit for your files two copies of the Final Feasibility Study (FS) Report and the Final Proposed Remedial Action Plan (PRAP) for Operable Unit (OU) No. 1 - Sites 21, 24, and 78. Copies of these reports have been forwarded to Mr. Neal Paul (MCB, Camp Lejeune), Ms. Gena Townsend (USEPA, Region IV), Mr. Patrick Watters (NC DEHNR), and to members of the Technical Review Committee (TRC) as indicated on the transmittal letters (included as Attachment A).

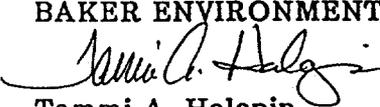
The FS Report has been revised based on comments received from USEPA (letter dated June 1, 1994) and from LANTDIV (memorandum from Paul Smith to Linda Berry dated July 7, 1994). The PRAP has been revised based on changes to the FS Report and on Mr. Paul Smith's legal review of the Record of Decision for OU No. 1. No additional comments were received. Responses to the USEPA comments are included as Attachment B of this letter. Also enclosed is a disc with the responses included under the file name of "FS-RESP".

Since the comments received did not result in significant revisions to the FS Report, the Final FS is being submitted as replacement pages only. Instructions for inserting the replacement pages are included as Attachment C. The Final PRAP has been submitted as a complete document.

If you have any questions regarding this submittal, please contact me at (412) 269-2023 or Mr. Raymond Wattras (Activity Coordinator) at (412) 269-2016.

Sincerely,

BAKER ENVIRONMENTAL, INC.



Tammi A. Halapin
Project Manager

cc: Ms. Beth Hacie, Code 02115 (w/o attachments)
Ms. Lee Anne Rapp, Code 183 (w/o attachments)
Mr. Neal Paul, MCB Camp Lejeune (2 copies)



A Total Quality Corporation

ATTACHMENT A
TRANSMITTAL LETTERS

Baker

Baker Environmental, Inc.

Baker Environmental, Inc.

Consulting Engineers

Airport Office Park - Bldg. 3

420 Rouser Road

Coraopolis, PA 15108

(412) 269-6000

LETTER OF TRANSMITTAL

To: NC Div. of Env. Mgmt.
Water Quality Section
Archdale Bldg., 512 N. Salisbury St.
Raleigh, NC 27604-1148

S.O. No. 62470-177
Project: OU No. 1, MCB Camp Lejeune
Date: July 22, 1994

Attn. Mr. Stephen Tedder, Section Chief

We are forwarding the following: Attached Under Separate Cover

DWG. NO.	NO. COPIES	TITLE OR DESCRIPTION	COMMENTS
	1	Final FS for Operable Unit No. 1 (Sites 21, 24, and 78) MCB, Camp Lejeune	Instructions for inserting replacement pages for the FS report are attached.
	1	Final PRAP for Operable Unit No. 1 (Sites 21, 24, and 78) MCB, Camp Lejeune	

THESE ARE TRANSMITTED as checked below:

- | | | |
|--|---|---|
| <input type="checkbox"/> As requested | <input type="checkbox"/> No exception taken | <input type="checkbox"/> Revise and resubmit |
| <input type="checkbox"/> For review and comment | <input type="checkbox"/> Rejected - See remarks | <input type="checkbox"/> Submit specified items |
| <input checked="" type="checkbox"/> For your information | <input type="checkbox"/> Proceed subject to corrections noted | <input type="checkbox"/> _____ |

GENERAL COMMENTS:

c: Ms. Linda Berry, P.E. (LANTDIV), Code 1823
Mr. Patrick Watters, NC DEHNR

BAKER ENVIRONMENTAL, INC.

By: Tammi HalapinTitle: Project ManagerPage 1 of 1

Baker

Baker Environmental, Inc.

Baker Environmental, Inc.

Consulting Engineers
 Airport Office Park - Bldg. 3
 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: NC Div. of Environmental Mgmt. S.O. No. 62470-177
127 Cardinal Drive Ext. Project: OU No. 1, MCB Camp Lejeune
Wilmington, NC 28405-3845 Date: July 22, 1994

Attn. Mr. Rick Shiver, Regional Supv.

We are forwarding the following: Attached Under Separate Cover

DWG. NO.	NO. COPIES	TITLE OR DESCRIPTION	COMMENTS
	1	Final FS for Operable Unit No. 1 (Sites 21, 24, and 78) MCB, Camp Lejeune	Instructions for inserting replacement pages for the FS report are attached.
	1	Final PRAP for Operable Unit No. 1 (Sites 21, 24, and 78) MCB, Camp Lejeune	

THESE ARE TRANSMITTED as checked below:

- | | | |
|--|---|---|
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| <input checked="" type="checkbox"/> For your information | <input type="checkbox"/> Proceed subject to corrections noted | <input type="checkbox"/> _____ |

GENERAL COMMENTS:

cc: Ms. Linda Berry, P.E. (LANTDIV), Code 1823
 Mr. Patrick Watters, NC DEHNR

BAKER ENVIRONMENTAL, INC.

By: Tammi Halapin
 Title: Project Manager
 Page 1 of 1

Baker

Baker Environmental, Inc.

Baker Environmental, Inc.

Consulting Engineers
 Airport Office Park - Bldg. 3
 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: NC Div. of Env. Mgmt. S.O. No. 62470-177
Groundwater Section Project: OU No. 1, MCB Camp Lejeune
Archdale Bldg., 512 N. Salisbury St. Date: July 22, 1994
Raleigh, NC 27604-1148
 Attn. Mr. Arthur Mouberry, Section Chief

We are forwarding the following: Attached Under Separate Cover

DWG. NO.	NO. COPIES	TITLE OR DESCRIPTION	COMMENTS
	1	Final FS for Operable Unit No. 1 (Sites 21, 24, and 78) MCB, Camp Lejeune	Instructions for inserting replacement pages for the FS report are attached.
	1	Final PRAP for Operable Unit No. 1 (Sites 21, 24, and 78) MCB, Camp Lejeune	

THESE ARE TRANSMITTED as checked below:

- As requested No exception taken Revise and resubmit
 For review and comment Rejected - See remarks Submit specified items
 For your information Proceed subject to corrections noted _____

GENERAL COMMENTS:

cc: Ms. Linda Berry, P.E. (LANTDIV), Code 1823
 Mr. Patrick Watters, NC DEHNR

BAKER ENVIRONMENTAL, INC.

By: Tammi Halapin
 Title: Project Manager
 Page 1 of 1

Baker

Baker Environmental, Inc.

Baker Environmental, Inc.

Consulting Engineers
 Airport Office Park - Bldg. 3
 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: US EPA, Region IV S.O. No. 62470-177
Waste Management Div. Project: OU No. 1, MCB Camp Lejeune
345 Courtland Street Date: July 22, 1994
Atlanta, GA 30365
 Attn. Ms. Gena Townsend

We are forwarding the following: Attached Under Separate Cover

DWG. NO.	NO. COPIES	TITLE OR DESCRIPTION	COMMENTS
	5	Final FS for Operable Unit No. 1 (Sites 21, 24, and 78) MCB, Camp Lejeune	Instructions for inserting replacement pages for the FS report are attached.
	5	Final PRAP for Operable Unit No. 1 (Sites 21, 24, and 78) MCB, Camp Lejeune	

THESE ARE TRANSMITTED as checked below:

- | | | |
|--|---|---|
| <input type="checkbox"/> As requested | <input type="checkbox"/> No exception taken | <input type="checkbox"/> Revise and resubmit |
| <input type="checkbox"/> For review and comment | <input type="checkbox"/> Rejected - See remarks | <input type="checkbox"/> Submit specified items |
| <input checked="" type="checkbox"/> For your information | <input type="checkbox"/> Proceed subject to corrections noted | <input type="checkbox"/> _____ |

GENERAL COMMENTS:

cc: Ms. Linda Berry, P.E. (LANTDIV), Code 1823

BAKER ENVIRONMENTAL, INC.

By: Tammi Halapin
 Title: Project Manager
 Page 1 of 1

Baker

Baker Environmental, Inc.

Baker Environmental, Inc.

Consulting Engineers
 Airport Office Park - Bldg. 3
 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: Dept. of Environmental Health and Natural Resources S.O. No. 62470-177
PO Box 27687, 401 Oberlin Road Project: OU No. 1, MCB Camp Lejeune
Raleigh, NC 27611 Date: July 22, 1994

Attn. Mr. Patrick Watters, Superfund Section

We are forwarding the following: Attached Under Separate Cover

DWG. NO.	NO. COPIES	TITLE OR DESCRIPTION	COMMENTS
	1	Final FS for Operable Unit No. 1 (Sites 21, 24, and 78) MCB, Camp Lejeune	Instructions for inserting replacement pages for the FS report are attached.
	1	Final PRAP for Operable Unit No. 1 (Sites 21, 24, and 78) MCB, Camp Lejeune	

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GENERAL COMMENTS:

cc: Ms. Linda Berry, P.E. (LANTDIV), Code 1823

BAKER ENVIRONMENTAL, INC.

By: Tammi Halapin
 Title: Project Manager
 Page 1 of 1

Baker

Baker Environmental, Inc.

Baker Environmental, Inc.

Consulting Engineers
 Airport Office Park - Bldg. 3
 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: Mr. Cameron Lanier S.O. No. 62470-177
612 College Street Project: OU No. 1, MCB Camp Lejeune
Jacksonville, NC 28540 Date: July 22, 1994

Attn. Mr. Cameron Lanier

We are forwarding the following: Attached Under Separate Cover

DWG. NO.	NO. COPIES	TITLE OR DESCRIPTION	COMMENTS
	1	Final FS for Operable Unit No. 1 (Sites 21, 24, and 78) MCB, Camp Lejeune	Instructions for inserting replacement pages for the FS report are attached.
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BAKER ENVIRONMENTAL, INC.

By: Tammi Halapin
 Title: Project Manager
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 Airport Office Park - Bldg. 3
 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: National Oceanic & Atmospheric Adm. S.O. No. 62470-177
c/o EPA Region IV, 345 Courtland St. NE Project: OU No. 1, MCB Camp Lejeune
Atlanta, GA 30365 Date: July 22, 1994

Attn. Mr. Waynon Johnson

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By: Tammi Halapin
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 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: Jacksonville City Manager S.O. No. 62470-177
PO Box 128 Project: OU No. 1, MCB Camp Lejeune
Jacksonville, NC 28541 Date: July 22, 1994

Attn. Mr. Jerry BittnerWe are forwarding the following: Attached Under Separate Cover

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Consulting Engineers
 Airport Office Park - Bldg. 3
 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: Colonel (Retired) Jack Mader S.O. No. 62470-177
1216 Country Club Road Project: OU No. 1, MCB Camp Lejeune
Jacksonville, NC 28540 Date: July 22, 1994

Attn. Colonel (Retired) Jack Mader

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 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: Mr. Ray Humphries S.O. No. 62470-177
514 Brynn Marr Road Project: OU No. 1, MCB Camp Lejeune
Jacksonville, NC 28540 Date: July 22, 1994

Attn. Mr. Ray Humphries

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 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: Naval Environmental Health Center S.O. No. 62470-177
2510 Walmer Avenue Project: OU No. 1, MCB Camp Lejeune
Norfolk, VA 23513-2617 Date: July 22, 1994

Attn. Commander Gary Williams

We are forwarding the following: Attached Under Separate Cover

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BAKER ENVIRONMENTAL, INC.

By: Tammi Halapin
 Title: Project Manager
 Page 1 of 1

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Consulting Engineers
 Airport Office Park - Bldg. 3
 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: US Dept. of the Interior S.O. No. 62470-177
Regional Environmental Office Project: OU No. 1, MCB Camp Lejeune
75 Spring Street SW Date: July 22, 1994
Atlanta, GA 30303
 Attn. Mr. James H. Lee

We are forwarding the following: Attached Under Separate Cover

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 Proceed subject to corrections noted
 Revise and resubmit
 Submit specified items

GENERAL COMMENTS:

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BAKER ENVIRONMENTAL, INC.

By: Tammi Halapin
 Title: Project Manager
 Page 1 of 1

Baker

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 Airport Office Park - Bldg. 3
 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: US Fish and Wildlife Service S.O. No. 62470-177
PO Box 33726 Project: OJ No. 1, MCB Camp Lejeune
Raleigh, NC 27636-3726 Date: July 22, 1994

Attn. Mr. Tom Augspurger

We are forwarding the following: Attached Under Separate Cover

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BAKER ENVIRONMENTAL, INC.

By: Tammi Halapin
 Title: Project Manager
 Page 1 of 1

ATTACHMENT B

**Response to Comments Submitted by the USEPA, Region IV on the
Draft Final FS for Sites 21, 24, and 78
(Operable Unit No. 1),
MCB, Camp Lejeune, North Carolina**

Comment Letter by Ms. Gena D. Townsend dated June 1, 1994

1. Section 1.2.5.1, Page 1-30, paragraph 2

The paragraph has been clarified per the comment.

2. Table 2-2, Page 2-8, Groundwater Criteria

Table 2-2 will be corrected to indicate that the child Federal Health Advisory value for vinyl chloride is 10 ug/L, and the child and adult Federal Health Advisory for heptachlor epoxide is 0.1 ug/L.

3. Table 2-3, Page 2-10, Surface Water Quality Criteria

The Federal AWQCS listed on Table 2-3 are for the protection of aquatic life. The table has been revised to indicate this fact.

4. Section 2.3.2.1, Page 2-19, Table 2-19, Page 2-40

The Navy agrees that the contribution to the site-specific potential risk is greater from incidental ingestion of surface soil than from dermal exposure to surface soil. The Risk Assessment conducted for Operable Unit No. 1 concluded that soil did not pose an appreciable risk with respect to the dermal contact and ingestion of soil. Therefore, for the FS, the most plausible (not most conservative) exposure pathway (i.e., dermal contact) was considered for the development of remediation goals.

ATTACHMENT C

**INSERT/REPLACEMENT INSTRUCTIONS FOR THE FINAL FS REPORT
FOR OU NO. 1, MCB, CAMP LEJEUNE, NORTH CAROLINA**

REPLACEMENT PAGES FOR THE FINAL RI FOR OU NO. 1

Please replace the following pages in the Draft Final RI Report :

Title page and spine

Inside Title Page

Page ES-17, -20,-21, -22, -23

Page 1-30, -31

Page 2-8, -10, -19,-35, -36

Page 4-5, -9,

Page 5-5, -28, -29, -30, -31, -35

Baker

Baker Environmental, Inc.
Airport Office Park, Building 3
420 Rouser Road
Coraopolis, Pennsylvania 15108

June 23, 1994

(412) 269-6000
FAX (412) 269-2002

Commander
Atlantic Division
Naval Facilities Engineering Command
1510 Gilbert Street (Building N-26)
Norfolk, Virginia 23511-2699

Attn: Ms. Linda Berry, P.E.
Navy Technical Representative
Code 1823

Re: Contract N62470-89-D-4814
Navy CLEAN, District III
Contract Task Order (CTO) 0174
Final FS and PRAP
Operable Unit No. 5 (Site 2)
MCB, Camp Lejeune, North Carolina

Dear Ms. Berry:

Baker Environmental, Inc. (Baker) is pleased to submit for your review two (2) copies of the Final Feasibility Study (FS) and Proposed Remedial Action Plan (PRAP) for Operable Unit (OU) No. 5 - Site 2. Two copies of this document have been forwarded to Mr. Neal Paul at MCB, Camp Lejeune. Copies of this document have also been submitted to the United States Environmental Protection Agency (USEPA), the North Carolina Department of Environmental Health and Natural Resources (NC DEHNR), and the Technical Review Committee (TRC) members as indicated on the attached transmittal letters.

If you have any questions regarding these submittals, please contact me at (412) 269-2038 or Mr. Raymond Wattras (Activity Coordinator) at (412) 269-2016.

Sincerely,

BAKER ENVIRONMENTAL, INC.


Donald C. Shields
Project Manager

DCS/jc
Enclosure

cc: Ms. Beth Hacic, Code 02115 (w/o attachments)
Ms. Lee Anne Rapp, Code 183 (w/o attachments)
Mr. Neal Paul (two copies)

bcc: APPajak/CF; WDTrim bath/JWmentz/PROG F; DShields/PJT E; RWattras(ck) (letter only); RBonelli (letter only); MBartman (letter only); Daily File

Daily File
S.O.#62470-174
Subfile: 5
Initials: DLB



A Total Quality Corporation

Baker

Baker Environmental, Inc.

Baker Environmental, Inc.

Consulting Engineers
 Airport Office Park - Bldg. 3
 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: US EPA, Region IV S.O. No. 62470-174
Waste Management Div. Project: OU No. 5, MCB Camp Lejeune
345 Courtland Street Date: June 23, 1994
Atlanta, GA 30365
 Attn. Ms. Gena Townsend

We are forwarding the following: Attached Under Separate Cover

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GENERAL COMMENTS:

cc: Ms. Linda Berry, P.E. (LANTDIV), Code 1823

BAKER ENVIRONMENTAL, INC.

By: Donald C. Shields
 Title: Project Manager
 Page 1 of 1

Baker

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Consulting Engineers
 Airport Office Park - Bldg. 3
 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: Dept. of Environmental Health S.O. No. 62470-174
and Natural Resources Project: OU No. 5, MCB Camp Lejeune
PO Box 27687, 401 Oberlin Road Date: June 23, 1994
Raleigh, NC 27611

Attn. Mr. Patrick Watters, Superfund Section

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BAKER ENVIRONMENTAL, INC.

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 Coraopolis, PA 15108
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LETTER OF TRANSMITTAL

To: Naval Environmental Health Center S.O. No. 62470-174
2510 Walmer Avenue Project: OU No. 5, MCB Camp Lejeune
Norfolk, VA 23513-2617 Date: June 23, 1994

Attn. Commander Gary Williams

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LETTER OF TRANSMITTAL

To: NC Div. of Env. Mgmt. S.O. No. 62470-174
Groundwater Section Project: OU No. 5, MCB Camp Lejeune
Archdale Bldg., 512 N. Salisbury St. Date: June 23, 1994
Raleigh, NC 27604-1148
 Attn. Mr. Arthur Mouberry, Section Chief

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 Mr. Patrick Watters (NC DEHNR)

BAKER ENVIRONMENTAL, INC.

By: Donald C. Shields
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 (412) 269-6000

LETTER OF TRANSMITTAL

To: NC Div. of Environmental Mgmt. S.O. No. 62470-174
127 Cardinal Drive Ext. Project: OU No. 5, MCB Camp Lejeune
Wilmington, NC 28405-3845 Date: June 23, 1994

Attn. Mr. Rick Shiver, Regional Supv.

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LETTER OF TRANSMITTAL

To: NC Div. of Env. Mgmt. S.O. No. 62470-174
Water Quality Section Project: OU No. 5, MCB Camp Lejeune
Archdale Bldg., 512 N. Salisbury St. Date: June 23, 1994
Raleigh, NC 27604-1148
 Attn. Mr. Stephen Tedder, Section Chief

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BAKER ENVIRONMENTAL, INC.

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LETTER OF TRANSMITTAL

To: Colonel (Retired) Jack Mader S.O. No. 62470-174
1216 Country Club Road Project: OU No. 5, MCB Camp Lejeune
Jacksonville, NC 28540 Date: June 23, 1994

Attn. Colonel (Retired) Jack Mader

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(412) 269-6000

LETTER OF TRANSMITTAL

To: Jacksonville City Manager S.O. No. 62470-174
PO Box 128 Project: OU No. 5, MCB Camp Lejeune
Jacksonville, NC 28541 Date: June 23, 1994

Attn. Mr. Jerry Bittner

We are forwarding the following: Attached Under Separate Cover

DWG. NO.	NO. COPIES	TITLE OR DESCRIPTION	COMMENTS
	1	Final FS and PRAP for Operable Unit No. 5 (Site 2) MCB, Camp Lejeune, NC	

THESE ARE TRANSMITTED as checked below:

- As requested
- For review and comment
- For your information
- No exception taken
- Rejected - See remarks
- Proceed subject to corrections noted
- Revise and resubmit
- Submit specified items
- _____

GENERAL COMMENTS:

cc: Ms. Linda Berry, P.E. (LANTDIV), Code 1823

BAKER ENVIRONMENTAL, INC.

By: Donald C. Shields
Title: Project Manager
Page 1 of 1

Baker

Baker Environmental, Inc

Baker Environmental, Inc.
Consulting Engineers
 Airport Office Park - Bldg. 3
 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: National Oceanic & Atmospheric Adm. S.O. No. 62470-174
c/o EPA Region IV, 345 Courtland St. NE Project: OU No. 5, MCB Camp Lejeune
Atlanta, GA 30365 Date: June 23, 1994

Attn. Mr. Waynon JohnsonWe are forwarding the following: Attached Under Separate Cover

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- | | | |
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| <input type="checkbox"/> As requested | <input type="checkbox"/> No exception taken | <input type="checkbox"/> Revise and resubmit |
| <input checked="" type="checkbox"/> For review and comment | <input type="checkbox"/> Rejected - See remarks | <input type="checkbox"/> Submit specified items |
| <input type="checkbox"/> For your information | <input type="checkbox"/> Proceed subject to corrections noted | <input type="checkbox"/> _____ |

GENERAL COMMENTS:

cc: Ms. Linda Berry, P.E. (LANTDIV), Code 1823

BAKER ENVIRONMENTAL, INC.

By: Donald C. Shields
 Title: Project Manager
 Page 1 of 1

Baker

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 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000
LETTER OF TRANSMITTAL

To: Mr. Cameron Lanier S.O. No. 62470-174
612 College Street Project: OU No. 5, MCB Camp Lejeune
Jacksonville, NC 28540 Date: June 23, 1994

Attn. Mr. Cameron Lanier
 We are forwarding the following: Attached Under Separate Cover

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GENERAL COMMENTS:

cc: Ms. Linda Berry, P.E. (LANTDIV), Code 1823

BAKER ENVIRONMENTAL, INC.

 By: Donald C. Shields
 Title: Project Manager
 Page 1 of 1

Baker

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Consulting Engineers
 Airport Office Park - Bldg. 3
 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: US Dept. of the Interior S.O. No. 62470-174
Regional Environmental Office Project: OU No. 5, MCB Camp Lejeune
75 Spring Street SW Date: June 23, 1994
Atlanta, GA 30303

Attn. Mr. James H. Lee

We are forwarding the following: Attached Under Separate Cover

DWG. NO.	NO. COPIES	TITLE OR DESCRIPTION	COMMENTS
	0	Final FS and PRAP for Operable Unit No. 5 (Site 2) MCB, Camp Lejeune, NC	

THESE ARE TRANSMITTED as checked below:

- | | | |
|--|---|---|
| <input type="checkbox"/> As requested | <input type="checkbox"/> No exception taken | <input type="checkbox"/> Revise and resubmit |
| <input checked="" type="checkbox"/> For review and comment | <input type="checkbox"/> Rejected - See remarks | <input type="checkbox"/> Submit specified items |
| <input type="checkbox"/> For your information | <input type="checkbox"/> Proceed subject to corrections noted | <input type="checkbox"/> _____ |

GENERAL COMMENTS:

cc: Ms. Linda Berry, P.E. (LANTDIV), Code 1823

BAKER ENVIRONMENTAL, INC.

By: Donald C. Shields
 Title: Project Manager
 Page 1 of 1



Baker Environmental, Inc.
 Consulting Engineers
 Airport Office Park - Bldg. 3
 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: US Fish and Wildlife Service S.O. No. 62470-174
PO Box 33726 Project: OU No. 5, MCB Camp Lejeune
Raleigh, NC 27636-3726 Date: June 23, 1994

Attn. Mr. Tom Augspurger

We are forwarding the following: Attached Under Separate Cover

DWG. NO.	NO. COPIES	TITLE OR DESCRIPTION	COMMENTS
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GENERAL COMMENTS:

cc: Ms. Linda Berry, P.E. (LANTDIV), Code 1823

BAKER ENVIRONMENTAL, INC.

By: Donald C. Shields
 Title: Project Manager
 Page 1 of 1



Baker Environmental, Inc.
 Consulting Engineers
 Airport Office Park - Bldg. 3
 420 Rouser Road
 Coraopolis, PA 15108
 (412) 269-6000

LETTER OF TRANSMITTAL

To: MCB, CAMP LEJEUNE S.O. No. CTD'S 160, 174, 177
NORTH CAROLINA Project: CAMP LEJEUNE OUS No. 1, 5, 10
 Date: 7-12-94

Attn. MR. TOM MORRIS

We are forwarding the following: Attached Under Separate Cover

DWG. NO.	NO. COPIES	TITLE OR DESCRIPTION	COMMENTS
	1	NOTICE OF AVAILABILITY FOR THE FRAP FOR OU NOS. 1 + 5	REVISED BASED ON YOUR VERBAL COMMENTS TODAY.
	1	NOTICE OF AVAILABILITY FOR THE FRAP FOR OU NO. 10	

THESE ARE TRANSMITTED as checked below:

- As requested
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- For your information
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- Revise and resubmit
- Submit specified items

GENERAL COMMENTS:

BAKER ENVIRONMENTAL, INC.
 By: TAMMI HALAPIN
 Title: PROJECT MANAGER
 Page 1 of 1

bcc: WTrimboth/JWmentz/PRGM File ; RPWATTRAS ; DBonk (CTD-160) ;
 DonSchiids (CTD-174) ; THALAPIN, (CTD-177) ; DAILY
 Sub 62470-160 + 174 + 177

**MARINE CORPS BASE
(MCB), CAMP LEJEUNE
INVITES COMMENT
AND PUBLIC MEETING
PARTICIPATION ON
THE PROPOSED PLANS
FOR OPERABLE UNITS
(OU) NO. 1 AND NO. 5
AT MCB, CAMP
LEJEUNE, NORTH
CAROLINA**

The U.S. Navy/Marine Corps announces the availability of the Proposed Plans for OU No. 1 and OU No. 5 at MCB, Camp Lejeune, North Carolina for public review and comment. The sites do not pose any immediate harm to public health and the proposed plans outline methods for soil and groundwater cleanup and monitoring.

OU No. 1 includes Site 78 (Hadnot Point Industrial Area), Site 21 (Transformer Storage Lot 140), and Site 24 (Industrial Area Fly Ash Dump). A total of five cleanup options for groundwater and four cleanup options for soil were developed. The proposed alternative for groundwater is extraction, treatment, and discharge of the shallow groundwater and monitoring of the deeper groundwater. The proposed soil alternative is excavation and disposal at an off-site, permitted facility.

OU No. 5 includes Site 2 (Former Nursery/Day Care Center). Cleanup of pesticide contaminated soil at this site is already underway. The contaminated soil is being dug up and sent to an approved landfill. Clean soil will be put in its place. In addition to the soil cleanup, a total of six cleanup options were developed for the shallow groundwater at the site. The proposed alternative for shallow groundwater is institutional controls with long term monitoring.

The Proposed Plans and other information/reports pertaining to these recommended alternatives are available at the following information repositories:

Onslow County Library
58 Doris Avenue East
Jacksonville, NC 28540
910/455-7350

Hours:

M-Th: 9:00 A.M. - 9:00 P.M.

F-Sa: 9:00 A.M. - 6:00 P.M.

Closed Sunday

MCB Camp Lejeune
Environmental
Management Department
Building 67, Room 237
Marine Corps Base
Camp Lejeune, NC 28542
910/451-5068

Hours:

M-F: 7:00 A.M. - 3:00 P.M.

Closed Saturday and
Sunday

MCB, Camp Lejeune will hold a public information meeting on July 27, 1994 at 7:00 P.M. at the Tarawa Terrace #1 Elementary School

Gymnasium located on Tarawa Boulevard, near the intersection of Corbin Street and Lejeune Boulevard (Hwy. 24). This public information meeting will be held to describe the Proposed Plans for OU No. 1 and OU No. 5.

The Navy/Marine Corps will hold a 30-day public comment period from July 27, 1994 to August 27, 1994. The public comment period will allow for public participation in the selection process. Comments post-marked after the period will not be considered. Comments received during the public comment period will become part of the Administrative Record for the Installation Restoration Program at MCB, Camp Lejeune. Comments and responses will be addressed in a Responsiveness Summary and published with the Final Records of Decision for OU No. 1 and OU No. 5. Names of those who comment will not be included in the Responsiveness Summaries but are subject to Freedom of Information Act requests. Written comments should be directed to:

Ms. Linda Berry, PE.,
Code 1823
RPM, MCB, Camp
Lejeune
Commander, Atlantic
Division
Naval Facilities
Engineering Command
1510 Gilbert Street
(Building N-26)
Norfolk, VA 23511-2699
804/322-4793

The MCB, Camp Lejeune contact for additional information is:

Mc Neal Paul
Commanding General
AC/S EMD (IRD)
Marine Corps Base
PSC Box 20004
Camp Lejeune, NC 28542-0004
910/451-5068
July 21, 22, 23, 24, 25,
26, 27 1994