

Final

**Reference:
Contract
N62470-89-D-4814**

**Remedial Investigation Report
Operable Unit No. 11 (Site 7)**

CTO-0274

February 1996

**Marine Corps Base,
Camp Lejeune, North Carolina**

**Appendices
Volume I of II**



Prepared For:

**Department of the Navy
Atlantic Division
Naval Facilities
Engineering Command
Norfolk, Virginia**

Under the

LANTDIV CLEAN Program

**Comprehensive Long-Term
Environmental Action Navy**

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APPENDIX A
FIELD INVESTIGATION DOCUMENTATION

APPENDIX A.1
TEST BORING LOGS

BAKER

TEST BORING LOG


BOREHOLE NUMBER:

7-EA-SB02

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
 PROJECT NAME: SITE 7 - TARAHA TERRACE DUMP
 LOCATION: HCB CAMP LEJEUNE, NC
 DRILLING COMPANY: HARDIN-HUBER, INC.
 RIG TYPE & NUMBER: TRUCK RIG
 DRILLING METHOD: HOLLOW STEM AUGERS
 WEATHER: SUNNY
 GEOLOGIST: R. M. LEWIS
 ENV. SCIENTIST: A. M. BERNHARDT
 DATE BEGUN: 10/24/94 DATE COMPLETED: 10/24/94

GROUND SURFACE ELEVATION: 9.93' msl
 TOTAL DEPTH: 7.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM)		LITHOLOGY	DESCRIPTION	DEPTH
							BG	PS			
9:00	0.0		S-1	HA	-	-	-	-	SILTY SAND: fine grained, topsoil on surface, occasional trace clay, brown/light brown, moist to wet	0.0	
8:00	1.0		S-2	HA	-	-	-	1.0			
7:00	2.0		S-3	HA	-	-	-	2.0			
6:00	3.0		S-4	HA	-	-	-	3.0			
5:00	4.0									4.0	
4:00	5.0									5.0	
3:00	6.0									6.0	
2:00	7.0									7.0	
1:00	8.0									8.0	
0:00	9.0									9.0	
	10.0									10.0	
	11.0									11.0	
	12.0									12.0	
	13.0									13.0	
	14.0									14.0	
	15.0									15.0	
	16.0									16.0	
	17.0									17.0	
	18.0									18.0	
	19.0									19.0	
	20.0									20.0	
	21.0									21.0	
	22.0									22.0	
	23.0									23.0	
	24.0									24.0	
	25.0									25.0	
	26.0									26.0	
	27.0									27.0	
	28.0									28.0	

BOTTOM OF BOREHOLE = 7.0'
 NOTES:
 1) Groundwater encountered at 7.0' during drilling.

BAKER

TEST BORING LOG

BOREHOLE NUMBER:

7-EA-SB03

SHEET: 1 OF: 1

PROJECT NUMBER: 62-170-274
 PROJECT NAME: SITE 7 - TARAWA TERRACE DUMP
 LOCATION: MCB CAMP LEJEUNE, NC
 DRILLING COMPANY: HARDIN-HUBER, INC.
 RIG TYPE & NUMBER: TRUCK RIG
 DRILLING METHOD: HOLLOW STEM AUGERS
 WEATHER: SUNNY
 GEOLOGIST: J.E. ZIMMERMAN
 ENV. SCIENTIST: L.H. JOHNSON
 DATE BEGUN: 10/23/94 DATE COMPLETED: 10/23/94

GROUND SURFACE ELEVATION: 21.94' msl
 TOTAL DEPTH: 21.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOIS/6"	RECOVERY	PID (PPM)		LITHOLOGY	DESCRIPTION	DEPTH
							BG	PS			
0.0	0.0		S-1	HA	-	-	0.0	BG			0.0
21.00	1.0		S-2	SS	8	16	0.0	BG	SAND: Fine/Fine to medium grained, little to trace silt, trace to little clay down to 11', brown to light brown, damp to wet, very loose/loose/medium dense	1.0	
20.00	2.0				10					2.0	
19.00	3.0		S-3	SS	3	16	0.0	BG		3.0	
18.00	4.0				7					4.0	
17.00	5.0		S-4	SS	3	15	0.0	BG		5.0	
16.00	6.0				4					6.0	
15.00	7.0		S-5	SS	2	10	0.0	BG		7.0	
14.00	8.0				2					8.0	
13.00	9.0		S-6	SS	1	10	0.0	BG		9.0	
12.00	10.0				2					10.0	
11.00	11.0		S-7	SS	2	17	0.0	BG		11.0	
10.00	12.0				1				12.0		
9.00	13.0		S-8	SS	2	15	0.0	BG	13.0		
8.00	14.0				4				14.0		
7.00	15.0		S-9	SS	4	20	0.0	BG	15.0		
6.00	16.0				4				16.0		
5.00	17.0		S-10	SS	5	15	0.0	BG	17.0		
4.00	18.0				7				18.0		
3.00	19.0		S-11	SS	2	18	0.0	BG	19.0		
2.00	20.0				3				20.0		
1.00	21.0				5				21.0		
0.00	22.0				7				22.0		
1.00	23.0								23.0		
2.00	24.0								24.0		
3.00	25.0								25.0		
4.00	26.0								26.0		
5.00	27.0								27.0		
6.00	28.0								28.0		

BOTTOM OF BOREHOLE @ 21.0'

NOTES:

1) Groundwater encountered at 20' during drilling.

BAKER

TEST BORING LOG


BOREHOLE NUMBER:

7-EA-SB04

SHEET: 1 OF 1

PROJECT NUMBER: 62470-274
 PROJECT NAME: SITE 7 - TARAWA TERRACE DUMP
 LOCATION: MCB CAMP LEJEUNE, NC
 DRILLING COMPANY: -
 RIG TYPE & NUMBER: -
 DRILLING METHOD: HAND AUGER
 WEATHER: SUNNY
 GEOLOGIST: R. M. LEWIS
 ENV. SCIENTIST: A. M. BERNHARDT
 DATE BEGUN: 10/25/94 DATE COMPLETED: 10/25/94

GROUND SURFACE ELEVATION: 33.80' msl
 TOTAL DEPTH: 5.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM)		LITHOLOGY	DESCRIPTION	DEPTH
							BG	PS			
33.00	0.0		S-1	HA	-	-	-	-	SILTY SAND: fine grained, dark brown/light brown/tan, moist to wet	0.0	
32.00	1.0		S-2	HA	-	-	-	-		1.0	
31.00	2.0		S-3	HA	-	-	-	-		-	2.0
30.00	3.0									3.0	
29.00	4.0									4.0	
28.00	5.0									5.0	
27.00	6.0									6.0	
26.00	7.0									7.0	
25.00	8.0									8.0	
24.00	9.0									9.0	
23.00	10.0									10.0	
22.00	11.0									11.0	
21.00	12.0									12.0	
20.00	13.0									13.0	
19.00	14.0									14.0	
18.00	15.0									15.0	
17.00	16.0									16.0	
16.00	17.0									17.0	
15.00	18.0									18.0	
14.00	19.0									19.0	
13.00	20.0									20.0	
12.00	21.0									21.0	
11.00	22.0									22.0	
10.00	23.0									23.0	
9.00	24.0									24.0	
8.00	25.0									25.0	
7.00	26.0									26.0	
6.00	27.0									27.0	
	28.0									28.0	

BOTTOM OF BOREHOLE = 5.0'
 NOTES:
 1) Groundwater encountered at 2.5' during drilling.

BAKER

TEST BORING LOG

BOREHOLE NUMBER:

7-NA-SB01

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
 PROJECT NAME: SITE 7 - TARAWA TERRACE DUMP
 LOCATION: MCB CAMP LEJEUNE, NC
 DRILLING COMPANY: HARDIN HUBER, INC.
 RIG TYPE & NUMBER: ATV
 DRILLING METHOD: HOLLOW STEM AUGERS
 WEATHER: SUNNY
 GEOLOGIST: R.M. LEWIS
 ENV. SCIENTIST: A.M. BERNHARDT
 DATE BEGUN: 10/24/94 DATE COMPLETED: 10/24/94

GROUND SURFACE ELEVATION: 20.80' msl
 TOTAL DEPTH: 13.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM)		LITHOLOGY	DESCRIPTION	DEPTH
							BG	PS			
28:00	0.0		S-1	SS	-	-	-	-	CLAY: trace sand, brown, moist	0.0	
19:00	1.0		S-2	SS	8	9	2.0	0.0		0.0	1.0
18:00	2.0		S-3	SS	5	8	2.0	0.0	0.0	SAND: Fine grained, trace silt, light brown, moist, medium dense	2.0
17:00	3.0		S-4	SS	14	17	2.0	0.0	0.0		3.0
16:00	4.0		S-5	SS	17	20	2.0	0.0	0.0	SAND: Fine grained, trace silt, tan, moist, medium dense	4.0
15:00	5.0		S-6	SS	6	7	2.0	0.0	0.0		5.0
14:00	6.0		S-7	SS	5	6	2.0	0.0	0.0	SAND: Fine to medium grained, trace silt, tan, moist, dense to medium dense	6.0
13:00	7.0								7.0		
12:00	8.0									8.0	
11:00	9.0									9.0	
10:00	10.0									10.0	
9:00	11.0									11.0	
8:00	12.0									12.0	
7:00	13.0									13.0	
6:00	14.0	BOTTOM OF BOREHOLE = 13.0' NOTES: 1) Groundwater encountered at 12.0' during drilling.									14.0
5:00	15.0										15.0
4:00	16.0										16.0
3:00	17.0										17.0
2:00	18.0										18.0
1:00	19.0										19.0
0:00	20.0										20.0
1:00	21.0										21.0
2:00	22.0										22.0
3:00	23.0										23.0
4:00	24.0										24.0
5:00	25.0										25.0
6:00	26.0										26.0
7:00	27.0										27.0
	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER:

7-NA-SBQ2

SHEET: 1 OF 1

PROJECT NUMBER: 62470-274
 PROJECT NAME: SITE 16 - FORMER BURN DUMP
 LOCATION: MCB CAMP LEJEUNE, NC
 DRILLING COMPANY: HARDIN-HUBER, INC.
 RIG TYPE & NUMBER: ATV
 DRILLING METHOD: HOLLOW STEM AUGERS
 WEATHER: SUNNY
 GEOLOGIST: R. M. LEWIS
 ENV. SCIENTIST: A. M. BERNHARDT
 DATE BEGUN: 10/23/94 DATE COMPLETED: 10/23/94

GROUND SURFACE ELEVATION: 33.80' msl
 TOTAL DEPTH: 19.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM)		LITHOLOGY	DESCRIPTION	DEPTH
							BG	PS			
33.00	0.0		S-1	SS	-	-	-	-		SAND: fine grained, trace clay, trace silt, light brown, moist	0.0
32.00	1.0		S-2	SS	5	2.0	0.0	0.0		SAND and CLAY: fine grained, trace silt, brown, moist, stiff	1.0
31.00	2.0				5						
30.00	3.0		S-3	SS	6	2.0	0.0	0.0			3.0
29.00	4.0				6						
28.00	5.0		S-4	SS	8	2.0	0.0	0.0		CLAY and SAND: fine grained, trace silt, brown, dry, very stiff	5.0
27.00	6.0				8						
26.00	7.0		S-5	SS	9	2.0	0.0	0.0			7.0
25.00	8.0				9						
24.00	9.0		S-6	SS	11	2.0	0.0	0.0		SAND: fine grained, trace silt, tan, dry, medium dense	9.0
23.00	10.0				11						
22.00	11.0		S-7	SS	12	1.75	0.0	0.0			11.0
21.00	12.0				12						
20.00	13.0		S-8	SS	17	2.0	0.0	0.0		SAND: fine grained, trace silt, trace clay, tan to light brown, moist, dense	13.0
19.00	14.0				17						
18.00	15.0		S-9	SS	17	2.0	0.0	0.0		SAND: fine grained, trace silt, tan to gray, dry to wet, dense to medium dense	15.0
17.00	16.0				17						
16.00	17.0		S-10	SS	8	2.0	0.0	0.0			17.0
15.00	18.0				8						
14.00	19.0				5	2.0	0.0	0.0			18.0
13.00	20.0				5						
12.00	21.0				8						
11.00	22.0				8						
10.00	23.0				11						
9.00	24.0				10						
8.00	25.0				9						
7.00	26.0										
6.00	27.0										
	28.0										

BOTTOM OF BOREHOLE @ 19.0'
 NOTES:
 1) Groundwater encountered at 17.5' during drilling.

BAKER

TEST BORING LOG

BOREHOLE NUMBER:

7-NA-SB04

SHEET: 1 OF 1

PROJECT NUMBER: 62470-279
 PROJECT NAME: SITE 7 - TARAWA TERRACE DUMP
 LOCATION: MCB CAMP LEJEUNE, NC
 DRILLING COMPANY: HARDIN-HUBER, INC.
 RIG TYPE & NUMBER: ATV
 DRILLING METHOD: HOLLOW STEM AUGERS
 WEATHER: SUNNY
 GEOLOGIST: R.M. LEWIS
 ENV. SCIENTIST: A.M. BERNHARDT
 DATE BEGUN: 10/24/94 DATE COMPLETED: 10/24/94

GROUND SURFACE ELEVATION: 12.76' msl
 TOTAL DEPTH: 9.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM)		LITHOLOGY	DESCRIPTION	DEPTH
							BG	PS			
12:00	0.0		S-1	SS	-	-	-	-		SAND: medium grained, orange, moist, loose (fill)	0.0
11:00	1.0		S-2	SS	12	1.5	0.0	0.0		SAND and SILT: fine grained, dark brown, moist, medium dense (possible fill)	1.0
10:00	2.0				17						
9:00	3.0		S-3	SS	7	1.0	0.0	0.0		SAND: fine grained, trace silt, gray to black, moist, medium dense, wood fragments	3.0
8:00	4.0				8						
7:00	5.0	S-4	SS	5	1.5	0.0	0.0		GRAVEL: medium to fine, trace sand, trace silt, very moist, loose	5.0	
6:00	6.0			5							
5:00	7.0	S-5	SS	5	1.5	0.0	0.0		SAND: fine grained, trace silt, tan, very moist to wet, medium dense	7.0	
4:00	8.0			5							
3:00	9.0			7							
2:00	10.0			10							
1:00	11.0										
0:00	12.0										
15:00	28.0										

BOTTOM OF BOREHOLE = 9.0'

NOTES:

1) Groundwater encountered at 8.0' during drilling.

BAKER

TEST BORING LOG

BOREHOLE NUMBER:

7-NA-SB05

SHEET: 1 OF

PROJECT NUMBER: 62470-274
 PROJECT NAME: SITE 7 - TARAHA TERRACE DUMP
 LOCATION: MCB CAMP LEJEUNE, NC
 DRILLING COMPANY: HARDIN-HUBER, INC.
 RIG TYPE & NUMBER: ATV
 DRILLING METHOD: HOLLOW STEM AUGERS
 WEATHER: SUNNY
 GEOLOGIST: R. M. LEWIS
 ENV. SCIENTIST: A. M. BERNHARDT
 DATE BEGUN: 10/23/94 DATE COMPLETED: 10/23/94

GROUND SURFACE ELEVATION: 21.73' msl
 TOTAL DEPTH: 17.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLONS/6"	RECOVERY	PID (PPM)		LITHOLOGY	DESCRIPTION	DEPTH	
							BG	PS				
21.00	0.0		S-1	SS	-	-	-	-		SAND: fine grained, trace silt, trace clay, brown, moist	0.0	
20.00	1.0		S-2	SS	4	6	2.0	0.0	0.0		CLAY: trace sand, trace silt, brown, moist, stiff	1.0
19.00	2.0		S-3	SS	3	5	2.0	0.0	0.0			2.0
18.00	3.0		S-3	SS	3	5	2.0	0.0	0.0			3.0
17.00	4.0		S-3	SS	3	5	2.0	0.0	0.0			4.0
16.00	5.0		S-4	SS	6	9	2.0	0.0	0.0		SAND: fine grained, trace silt, trace clay, light brown, moist, medium dense	5.0
15.00	6.0		S-4	SS	6	9	2.0	0.0	0.0			6.0
14.00	7.0		S-5	SS	5	6	2.0	0.0	0.0		SAND: fine grained, trace silt, light brown, moist, medium dense	7.0
13.00	8.0		S-5	SS	5	6	2.0	0.0	0.0			8.0
12.00	9.0		S-6	SS	6	8	2.0	0.0	0.0			9.0
11.00	10.0		S-6	SS	6	8	2.0	0.0	0.0			10.0
10.00	11.0		S-7	SS	7	8	2.0	0.0	0.0			11.0
9.00	12.0		S-7	SS	7	10	2.0	0.0	0.0			12.0
8.00	13.0		S-8	SS	7	12	2.0	0.0	0.0			13.0
7.00	14.0		S-8	SS	7	14	2.0	0.0	0.0			14.0
6.00	15.0		S-9	SS	8	9	2.0	0.0	0.0			15.0
5.00	16.0		S-9	SS	8	9	2.0	0.0	0.0			16.0
4.00	17.0	S-9	SS	8	10	2.0	0.0	0.0			17.0	
3.00	18.0	BOTTOM OF BOREHOLE @ 17.0'										18.0
2.00	19.0	NOTES: 1) Groundwater encountered at 15.0' during drilling.										19.0
1.00	20.0											20.0
0.00	21.0											21.0
0.00	22.0											22.0
1.00	23.0											23.0
2.00	24.0											24.0
3.00	25.0											25.0
4.00	26.0											26.0
5.00	27.0											27.0
6.00	28.0											28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER:

7-NA-SB07

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
 PROJECT NAME: SITE 7 - TARAWA TERRACE DUMP
 LOCATION: MCB CAMP LEJEUNE, NC
 DRILLING COMPANY: HARDIN-HUBER, INC.
 RIG TYPE & NUMBER: ATV
 DRILLING METHOD: HOLLOW STEM AUGERS
 WEATHER: SUNNY
 GEOLOGIST: R. M. LEWIS
 ENV. SCIENTIST: A. M. BERNHARDT
 DATE BEGUN: 10/24/94 DATE COMPLETED: 10/24/94

GROUND SURFACE ELEVATION: 10.46' msl
 TOTAL DEPTH: 17.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOKS/6"	RECOVERY	PID (PPH)		LITHOLOGY	DESCRIPTION	DEPTH
							BG	PS			
10.00	0.0		S-1	SS	-	-	-	-		CLAY: trace sand, brown, moist, very stiff	0.0
9.00	1.0		S-2	SS	3	5	7	8			1.0
8.00	2.0		S-3	SS	5	6	10	9			2.0
7.00	3.0		S-4	SS	5	6	8	8			3.0
6.00	4.0		S-5	SS	5	3	3	3		SAND and CLAY: fine grained, trace silt, dark brown to black, moist, loose	4.0
5.00	5.0		S-6	SS	3	3	4	3		SAND: fine grained, trace clay, trace silt, light brown to gray, loose to medium stiff	5.0
4.00	6.0		S-7	SS	2	3	5	6		SAND and CLAY: fine grained, trace silt, brown to light brown, moist, medium stiff	6.0
3.00	7.0		S-8	SS	3	4	4	6		SILT and SAND: fine grained, light brown, moist, loose to medium dense	7.0
2.00	8.0		S-9	SS	5	5	7	8			8.0
1.00	9.0										9.0
0.00	10.0										10.0
1.00	11.0										11.0
2.00	12.0										12.0
3.00	13.0										13.0
4.00	14.0										14.0
5.00	15.0										15.0
6.00	16.0										16.0
7.00	17.0										17.0
8.00	18.0										18.0
9.00	19.0										19.0
10.00	20.0										20.0
11.00	21.0										21.0
12.00	22.0										22.0
13.00	23.0										23.0
14.00	24.0										24.0
15.00	25.0										25.0
16.00	26.0										26.0
17.00	27.0										27.0
18.00	28.0										28.0

BOTTOM OF BOREHOLE = 17.0'

NOTES:

1) Groundwater encountered at 16.0' during drilling.

BAKER

TEST BORING LOG

BOREHOLE NUMBER:

7-NA-SB08

SHEET: 1 OF 1

PROJECT NUMBER: 62470-274
 PROJECT NAME: SITE 7 - TARAWA TERRACE DUMP
 LOCATION: MCB CAMP LEJEUNE, NC
 DRILLING COMPANY: HARDIN-HUBER, INC.
 RIG TYPE & NUMBER: ATV
 DRILLING METHOD: HOLLOW STEM AUGERS
 WEATHER: SUNNY
 GEOLOGIST: R.M. LEWIS
 ENV SCIENTIST: A.M. BERNHARDT
 DATE BEGUN: 10/23/94 DATE COMPLETED: 10/23/94

GROUND SURFACE ELEVATION: 25.37' msl
 TOTAL DEPTH: 21.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOS/%	RECOVERY	PID (PPM)		LITHOLOGY	DESCRIPTION	DEPTH		
							BG	PS					
25.00	0.0		S-1	SS	-	-	-	-	Hatched pattern	SAND and SILT and CLAY: fine grained, brown, moist	0.0		
24.00	1.0		S-2	SS	4	5	2.0	0.0		0.0	CLAY and fine grained SAND: trace silt, brown to gray, moist, stiff	1.0	
23.00	2.0					5						2.0	
22.00	3.0					5						3.0	
21.00	4.0			S-3	SS	5	6	2.0	0.0	0.0		4.0	
20.00	5.0					5						5.0	
19.00	6.0			S-4	SS	17	20	2.0	0.0	0.0	Dotted pattern	SAND: fine grained, trace silt, tan/gray, moist to dry, dense to medium dense	6.0
18.00	7.0					9	17						7.0
17.00	8.0			S-5	SS	17	31	2.0	0.0	0.0			8.0
16.00	9.0					7	31						9.0
15.00	10.0			S-6	SS	7	10	2.0	0.0	0.0			10.0
14.00	11.0				10	9						11.0	
13.00	12.0		S-7	SS	4	7	2.0	0.0	0.0	Hatched pattern	SAND and CLAY: fine grained, trace silt, light brown, moist, medium dense	12.0	
12.00	13.0				7	8							13.0
11.00	14.0		S-8	SS	7	8	2.0	0.0	0.0	Dotted pattern	SAND: fine grained, trace silt, tan, moist, medium dense	14.0	
10.00	15.0				8	10							15.0
9.00	16.0		S-9	SS	8	9	2.0	0.0	0.0				16.0
8.00	17.0				9	10							17.0
7.00	18.0		S-10	SS	9	10	2.0	0.0	0.0				18.0
6.00	19.0				10	10						19.0	
5.00	20.0		S-11	SS	11	12	2.0	0.0	0.0			20.0	
4.00	21.0				12	14						21.0	
3.00	22.0				14	16						22.0	
2.00	23.0											23.0	
1.00	24.0											24.0	
0.00	25.0											25.0	
1.00	26.0											26.0	
2.00	27.0											27.0	
3.00	28.0											28.0	

BOTTOM OF BOREHOLE @ 21.0'

NOTES:

1) Groundwater encountered at 19.5' during drilling.

BAKER

TEST BORING LOG

BOREHOLE NUMBER:

7-NA-SB1.1

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
 PROJECT NAME: SITE 7 - TARAMA TERRACE DUMP
 LOCATION: MCB CAMP LEJEUNE, NC
 DRILLING COMPANY: HARDIN-HUBER, INC
 RIG TYPE & NUMBER: ATV
 DRILLING METHOD: HOLLOW STEM AUGERS
 WEATHER: SUNNY
 GEOLOGIST: R.M. LEWIS
 ENV. SCIENTIST: A.M. BERNHARDT
 DATE BEGUN: 10/24/94 DATE COMPLETED: 10/24/94

GROUND SURFACE ELEVATION: 12.57' msl
 TOTAL DEPTH: 9.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM)		LITHOLOGY	DESCRIPTION	DEPTH
							BG	PS			
12:00	0.0		S-1	SS	-	-	-	-	SAND: fine grained, trace silt, light brown, moist, loose to medium dense	0.0	
11:00	1.0		S-2	SS	3	4	2.0	0.0		0.0	1.0
10:00	2.0		S-3	SS	5	6	2.0	0.0		0.0	2.0
9:00	3.0		S-4	SS	4	4	2.0	0.0		0.0	3.0
8:00	4.0		S-5	SS	5	5	2.0	0.0		0.0	4.0
7:00	5.0				8					5.0	
6:00	6.0				7					6.0	
5:00	7.0				9					7.0	
4:00	8.0									8.0	
3:00	9.0									9.0	
2:00	10.0									10.0	
1:00	11.0									11.0	
0:00	12.0									12.0	
1:00	13.0									13.0	
2:00	14.0									14.0	
3:00	15.0									15.0	
4:00	16.0									16.0	
5:00	17.0									17.0	
6:00	18.0									18.0	
7:00	19.0									19.0	
8:00	20.0									20.0	
9:00	21.0									21.0	
10:00	22.0									22.0	
11:00	23.0									23.0	
12:00	24.0									24.0	
13:00	25.0									25.0	
14:00	26.0									26.0	
15:00	27.0									27.0	
	28.0									28.0	

BOTTOM OF BOREHOLE = 9.0'
 NOTES:
 1) Groundwater encountered at 8.0' during drilling.

BAKER

TEST BORING LOG

BOREHOLE NUMBER:

7-SWA-SB02

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
 PROJECT NAME: SITE 7 - TARAWA TERRACE DUMP
 LOCATION: MCB CAMP LEJEUNE, NC
 DRILLING COMPANY: HARDIN-HUBER, INC.
 RIG TYPE & NUMBER: TRUCK RIG
 DRILLING METHOD: HOLLOW STEM AUGERS
 HEATHER: SUNNY
 GEOLOGIST: J.E. ZIMMERMAN
 ENV. SCIENTIST: M.K. DEJOHN
 DATE BEGUN: 10/22/94 DATE COMPLETED: 10/22/94

GROUND SURFACE ELEVATION: 13.22' msl
 TOTAL DEPTH: 10.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPH)		LITHOLOGY	DESCRIPTION	DEPTH
							BG	PS			
13:00	0.0		S-1	HA	-	-	0.7	0.7		SILTY SAND: Fine grained, root material, gray/dark brown/brown, damp to moist, very loose (fill)	0.0
12:00	1.0		S-2	HA	-	-	0.7	0.7		1.0	
11:00	2.0		S-3	HA	-	-	0.7	0.7		2.0	
10:00	3.0		S-4	HA	-	-	0.7	0.7		3.0	
9:00	4.0		S-5	HA	-	-	0.7	0.7		4.0	
8:00	5.0		S-6	HA	-	-	0.7	0.7		5.0	
7:00	6.0								SAND: medium to fine grained, trace silt, light brown, damp to wet, very loose	6.0	
6:00	7.0									7.0	
5:00	8.0									8.0	
4:00	9.0									9.0	
3:00	10.0									10.0	
2:00	11.0									11.0	
1:00	12.0									12.0	
0:00	13.0									13.0	
1:00	14.0									14.0	
2:00	15.0									15.0	
3:00	16.0									16.0	
4:00	17.0									17.0	
5:00	18.0									18.0	
6:00	19.0									19.0	
7:00	20.0									20.0	
8:00	21.0									21.0	
9:00	22.0									22.0	
10:00	23.0									23.0	
11:00	24.0									24.0	
12:00	25.0									25.0	
13:00	26.0									26.0	
14:00	27.0									27.0	
15:00	28.0									28.0	

BOTTOM OF BOREHOLE = 11.0'
 NOTES:
 1) Groundwater encountered at 9.5' during drilling.

BAKER

TEST BORING LOG

BOREHOLE NUMBER:

7-SWA-SB04

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
 PROJECT NAME: SITE 7 - TARAWA TERRACE DUMP
 LOCATION: MCB CAMP LEJEUNE, NC
 DRILLING COMPANY: HARDIN-HUBER, INC.
 RIG TYPE & NUMBER: TRUCK RIG
 DRILLING METHOD: HOLLOW STEM AUGERS
 WEATHER: SUNNY
 GEOLOGIST: J. E. ZIMMERMAN
 ENV. SCIENTIST: L. H. JOHNSON
 DATE BEGUN: 10/22/94 DATE COMPLETED: 10/22/94

GROUND SURFACE ELEVATION: 8.45' msl
 TOTAL DEPTH: 2.5' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM)		LITHOLOGY	DESCRIPTION	DEPTH
							BG	PS			
8-00	0.0		S-1	SS	-	-	0	BG		SILTY SAND: fine grained, trace clay and root material, dark brown/brown, damp, very loose (FILL)	0.0
7-00	1.0		S-2	SS	-	-	0	BG			SAND: fine grained, little silt, trace clay, trace roofing shingles, brown to black, damp to moist, very loose (FILL)
6-00	2.0										2.0
5-00	3.0										3.0
4-00	4.0										4.0
3-00	5.0										5.0
2-00	6.0										6.0
1-00	7.0										7.0
0-00	8.0										8.0
1-00	9.0										9.0
2-00	10.0										10.0
3-00	11.0										11.0
4-00	12.0										12.0
5-00	13.0										13.0
6-00	14.0										14.0
7-00	15.0										15.0
8-00	16.0										16.0
9-00	17.0										17.0
10-00	18.0										18.0
11-00	19.0										19.0
12-00	20.0										20.0
13-00	21.0										21.0
14-00	22.0										22.0
15-00	23.0										23.0
16-00	24.0										24.0
17-00	25.0										25.0
18-00	26.0										26.0
19-00	27.0										27.0
20-00	28.0										28.0

BOTTOM OF BOREHOLE = 2.5'
 NOTES:
 1) Groundwater encountered at 2.5' during hand augering.

BAKER

TEST BORING LOG

BOREHOLE NUMBER:

7-SJA-SB05

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
 PROJECT NAME: SITE 7 - TARAMA TERRACE DUMP
 LOCATION: MCB CAMP LEJEUNE, NC
 DRILLING COMPANY: -
 RIG TYPE & NUMBER: -
 DRILLING METHOD: HAND AUGERS
 WEATHER: SUNNY
 GEOLOGIST: R.M. LEWIS
 ENV. SCIENTIST: A.M. BERNHARDT
 DATE BEGUN: 10/21/94 DATE COMPLETED: 10/21/94

GROUND SURFACE ELEVATION: 8.33' msl
 TOTAL DEPTH: 6.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM)		LITHOLOGY	DESCRIPTION	DEPTH
							BG	PS			
8:00	0.0		S-1	HA	-	-	-	-		SANDY CLAY: fine grained, trace silt, roofing shingles between 3 - 6', dark brown, moist to wet, soft	0.0
7:00	1.0		S-2	HA	-	-	-	-			1.0
6:00	2.0		S-3	HA	-	-	-	-			2.0
5:00	3.0		S-4	HA	-	-	-	-			3.0
4:00	4.0		S-5	HA	-	-	-	-			4.0
3:00	5.0		S-6	HA	-	-	-	-			5.0
2:00	6.0									6.0	
1:00	7.0									7.0	
0:00	8.0									8.0	
1:00	9.0									9.0	
2:00	10.0									10.0	
3:00	11.0									11.0	
4:00	12.0									12.0	
5:00	13.0									13.0	
6:00	14.0									14.0	
7:00	15.0									15.0	
8:00	16.0									16.0	
9:00	17.0									17.0	
10:00	18.0									18.0	
11:00	19.0									19.0	
12:00	20.0									20.0	
13:00	21.0									21.0	
14:00	22.0									22.0	
15:00	23.0									23.0	
16:00	24.0									24.0	
17:00	25.0									25.0	
18:00	26.0									26.0	
19:00	27.0									27.0	
20:00	28.0									28.0	

BOTTOM OF BOREHOLE = 6.0'
 NOTES:
 1) Groundwater encountered at 5.0' during drilling
 2) Three attempts made to get below 6', continually encountered roofing shingles.

APPENDIX A.2
WELL CONSTRUCTION LOGS

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER:

7-MW04

SHEET: 2 OF 2

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLDMS/O 5'	RECOVERY (FT)	PID (PPH)		LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
							BG	PS				
3:00	20.0								<p>SAND: Fine/Fine to medium grained, trace silt, light brown, damp to wet, very dense/medium dense/dense</p>	20.0		
2:00	21.0		S-12	SS	2	1.8	0.0	BG				21.0
1:00	22.0				1							22.0
0:00	23.0				3							23.0
1:00	24.0		S-13	SS	9	1.2	0.0	BG				24.0
2:00	25.0				16							25.0
3:00	26.0		S-14	SS	9	1.0	0.0	BG				26.0
4:00	27.0				11							27.0
5:00	28.0		S-15	SS	9	1.2	0.0	BG				28.0
6:00	29.0				20							29.0
7:00	30.0		S-16	SS	30	1.4	0.0	BG				30.0
8:00	31.0				50							31.0
9:00	32.0				50							32.0
10:00	33.0				3							33.0
11:00	34.0											34.0
12:00	35.0											35.0
13:00	36.0								36.0			
14:00	37.0								37.0			
15:00	38.0								38.0			
16:00	39.0								39.0			
17:00	40.0								40.0			
18:00	41.0								41.0			
19:00	42.0								42.0			
20:00	43.0								43.0			
21:00	44.0								44.0			
22:00	45.0								45.0			
23:00	46.0								46.0			
24:00	47.0								47.0			
25:00	48.0								48.0			
26:00	49.0								49.0			
27:00	50.0								50.0			
28:00	51.0								51.0			
29:00	52.0								52.0			

BOTTOM OF BOREHOLE = 31.5'
 NOTES:
 1) Groundwater encountered = 18.0' during drilling

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER:

7-MW05

SHEET: 1 OF 1

PROJECT NUMBER: 62470-274
 PROJECT NAME: SITE 7 - TARALA TERRACE DUMP
 LOCATION: MCB CAMP LEJEUNE, NC
 DRILLING COMPANY: HARDIN-HUBER, INC.
 RIG TYPE & NUMBER: TRUCK RIG
 DRILLING METHOD: AUGERS
 WEATHER: SUNNY, HOT, HUMID
 GEOLOGIST: M.K. DeJOHN
 ENV. SCIENTIST: M.D. SMITH
 DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 3.75' msl
 TOP OF PVC CASING ELEVATION: 6.29' ms1

WELL DETAILS (FT)

STICKUP: 3.0
 LENGTH OF RISER (2" I.D.): 3.0
 LENGTH OF SCREEN (2" I.D.): 15.0
 THICKNESS OF GROUT: 1.0
 THICKNESS OF SEAL: 3.0
 THICKNESS OF SAND PACK: 17.0

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLONS/O. 5'	RECOVERY (FT)	PID (PPM)		LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
							BG	PS				
4.0												
7-00	3.0											
6-00	2.0											
5-00	1.0											
4-00	0.0											
3-00	1.0		S-1	SS	12	0.8	0.0	BG		SILT: trace fine grained sand and clay, dark brown, damp		
2-00	2.0		S-2	SS	W O H	0.3	0.0	BG		CLAYEY SILT: little coarse to fine sand, black, wet		
1-00	3.0											
0-00	4.0		S-3	SS	W O H	0.2	0.0	BG		SAND: fine to medium grained, trace to little silt, dark brown/gray/black, moist to wet		
1-00	5.0											
2-00	6.0		S-4	SS	1 1 3 5	1.5	0.0	2.0				
3-00	7.0											
4-00	8.0		S-5	SS	6 8 10	1.1	0.0	BG				
5-00	9.0											
6-00	10.0		S-6	SS	5 10 12	1.5	0.0	BG				
7-00	11.0											
8-00	12.0		S-7	SS	5 5 7	1.3	0.0	10.0				
9-00	13.0											
10-00	14.0		S-8	SS	5 6 6 8	1.8	0.0	4.0				
11-00	15.0											
12-00	16.0		S-9	SS	7 15 28	2.0	0.0	BG				
13-00	17.0											
14-00	18.0		S-10	SS	7 12 23 40	1.1	0.0	BG				
15-00	19.0											
16-00	20.0		S-11	SS	18 33 44 59	1.6	0.0	BG				
17-00	21.0											
18-00	22.0											
19-00	23.0											
20-00	24.0											

BOTTOM OF BOREHOLE = 21.0'

NOTE

1) Groundwater encountered @ 2.0' during drilling

APPENDIX A.3
BACKGROUND TEST BORING LOGS

BAKER

TEST BORING LOG

BOREHOLE NUMBER:

7-BB-SB01

SHEET: 1 OF 1

PROJECT NUMBER: 62470-274
 PROJECT NAME: SITE 7 - TARAWA TERRACE DUMP
 LOCATION: MCB CAMP LEJEUNE, NC
 DRILLING COMPANY: HARDIN-HUBER, INC.
 RIG TYPE & NUMBER: TRUCK RIG
 DRILLING METHOD: HOLLOW STEM AUGERS
 WEATHER: SUNNY
 GEOLOGIST: J.E. ZIMMERMAN
 ENV. SCIENTIST: L.H. JOHNSON
 DATE BEGUN: 10/24/94 DATE COMPLETED: 10/24/94

GROUND SURFACE ELEVATION: 19.25' msl
 TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM)		LITHOLOGY	DESCRIPTION	DEPTH
							BG	PS			
19:00	0.0		S-1	HA	-	-	0.0	BG		SILTY CLAY: trace fine grained sand, trace root material at surface, dark brown to brown, damp, very loose	0.0
18:00	1.0		S-2	SS	2	1.7	0.0	BG			SAND: fine grained, little to trace silt, trace clay at 2', light brown/brown, damp to wet, loose/medium dense
17:00	2.0				3				2.0		
16:00	3.0				2				3.0		
15:00	4.0		S-3	SS	1	1.2	0.0	BG	4.0		
14:00	5.0				2				5.0		
13:00	6.0		S-4	SS	4	1.3	0.0	BG	6.0		
12:00	7.0				9				7.0		
11:00	8.0	S-5	SS	4	1.5	0.0	BG	8.0			
10:00	9.0			9				9.0			
9:00	10.0	S-6	SS	4	1.2	0.0	BG	10.0			
8:00	11.0			8				11.0			
7:00	12.0	S-7	SS	2	1.4	0.0	BG	12.0			
6:00	13.0			3				13.0			
5:00	14.0	S-8	SS	4	2.0	0.0	BG	14.0			
4:00	15.0			5				15.0			
3:00	16.0	BOTTOM OF BOREHOLE = 15.0' NOTES: 1) Groundwater encountered at 14' during drilling.									16.0
2:00	17.0										17.0
1:00	18.0										18.0
0:00	19.0										19.0
1:00	20.0										20.0
2:00	21.0										21.0
3:00	22.0										22.0
4:00	23.0										23.0
5:00	24.0										24.0
6:00	25.0										25.0
7:00	26.0										26.0
8:00	27.0										27.0
9:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER:

7-BB-SB02

SHEET: 1 OF: 1

PROJECT NUMBER: 62-470-274
 PROJECT NAME: SITE 7 - TARAHA TERRACE DUMP
 LOCATION: HCB CAMP LEJEUNE, NC
 DRILLING COMPANY: HARDIN-HUBER, INC.
 RIG TYPE & NUMBER: TRUCK RIG
 DRILLING METHOD: HOLLOW STEM AUGERS
 WEATHER: SUNNY
 GEOLOGIST: J.E. ZIMMERMAN
 ENV. SCIENTIST: L.H. JOHNSON
 DATE BEGUN: 10/23/94 DATE COMPLETED: 10/23/94

GROUND SURFACE ELEVATION: 18.95' msl
 TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/G	RECOVERY	PID (PPM)		LITHOLOGY	DESCRIPTION	DEPTH
							BG	PS			
18.00	0.0		S-1	HA	-	-	0.0	BG			0.0
17.00	1.0		S-2	SS	4	1.6	0.0	BG	SAND: fine grained, little to trace silt, trace of root material at surface, trace to little clay down to 5.5', gray/brown/light brown, damp to wet, very loose/medium dense		1.0
16.00	2.0				6					2.0	
15.00	3.0		S-3	SS	4	1.7	0.0	BG		3.0	
14.00	4.0				6					4.0	
13.00	5.0		S-4	SS	7	1.8	0.0	BG		5.0	
12.00	6.0				11					6.0	
11.00	7.0		S-5	SS	4	1.6	0.0	BG		7.0	
10.00	8.0				7					8.0	
9.00	9.0		S-6	SS	4	1.3	0.0	BG	9.0		
8.00	10.0				8				10.0		
7.00	11.0		S-7	SS	4	2.0	0.0	BG	11.0		
6.00	12.0				8				12.0		
5.00	13.0		S-8	SS	4	1.8	0.0	BG	13.0		
4.00	14.0				7				14.0		
3.00	15.0				5				15.0		
2.00	16.0				10				16.0		
1.00	17.0								17.0		
0.00	18.0								18.0		
-1.00	19.0								19.0		
-2.00	20.0								20.0		
-3.00	21.0								21.0		
-4.00	22.0								22.0		
-5.00	23.0								23.0		
-6.00	24.0								24.0		
-7.00	25.0								25.0		
-8.00	26.0								26.0		
-9.00	27.0								27.0		
	28.0								28.0		

BOTTOM OF BOREHOLE = 15.0'

NOTES:

1) Groundwater encountered at 14' during drilling.

BAKER

TEST BORING LOG

BOREHOLE NUMBER:

7-BB-SB03

SHEET: 1 OF 1

PROJECT NUMBER: 62470-274
 PROJECT NAME: SITE 7 - TARANA TERRACE DUMP
 LOCATION: MCB CAMP LEJEUNE, NC
 DRILLING COMPANY: HARDIN-HUBER, INC.
 RIG TYPE & NUMBER: TRUCK RIG
 DRILLING METHOD: HOLLOW STEM AUGERS
 WEATHER: SUNNY
 GEOLOGIST: J.E. ZIMMERMAN
 ENV. SCIENTIST: L.H. JOHNSON
 DATE BEGUN: 10/23/94 DATE COMPLETED: 10/23/94

GROUND SURFACE ELEVATION: 23.64' msl
 TOTAL DEPTH: 21.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM)		LITHOLOGY	DESCRIPTION	DEPTH
							BG	PS			
23.00	0.0		S-1	HA	-	-	0.0	86		SILTY SAND: Fine grained, little to trace silt, brown, damp, very loose	0.0
22.00	1.0		S-2	SS	4	1.3	0.0	86		SILTY CLAY: trace fine grained sand, brown to light brown, damp, medium stiff	1.0
21.00	2.0				4						
20.00	3.0		S-3	SS	5	1.3	0.0	86		SILTY SAND: fine grained, trace to little clay, brown, damp, medium dense	3.0
19.00	4.0				8						
18.00	5.0		S-4	SS	1	1.3	0.0	86		SILTY CLAY: trace fine grained sand, light gray to brown, damp, medium stiff	5.0
17.00	6.0				2						
16.00	7.0		S-5	SS	3	0.9	0.0	86		SAND: fine/fine to medium grained, little to trace silt, occasional trace clay, brown/light brown, damp to wet, loose to medium dense	7.0
15.00	8.0				3						
14.00	9.0		S-6	SS	3	1.2	0.0	86			
13.00	10.0				6						
12.00	11.0		S-7	SS	4	1.7	0.0	86			
11.00	12.0				7						
10.00	13.0		S-8	SS	4	1.3	0.0	86			
9.00	14.0				7						
8.00	15.0		S-9	SS	1	1.6	0.0	86			
7.00	16.0				5						
6.00	17.0		S-10	SS	5	1.5	0.0	86			
5.00	18.0				11						
4.00	19.0		S-11	SS	3	1.6	0.0	86			
3.00	20.0				11						
2.00	21.0				15						
1.00	22.0				20						
0.00	23.0										
	24.0										
	25.0										
	26.0										
	27.0										
	28.0										

BOTTOM OF BOREHOLE = 21.0'

NOTES

1) Groundwater encountered at 20' during drilling.

APPENDIX A.4
TEST PIT RECORDS



TEST PIT RECORD

PROJECT: CTO-0274
 S.O. NO.: 62430-274 TEST PIT NO.: 7-SWA-TPO1
 COORDINATES: EAST _____ NORTH: _____
 SURFACE ELEVATION: _____ WATER LEVEL: _____
 WEATHER: _____ DATE: 12/2/94

REMARKS: TEST PIT DIMENSIONS: LENGTH 23', WIDTH 3.5', DEPTH 9'

DEFINITIONS

HNU = Photo Ionization Detector Reading
 OVA = Organic Vapor Analyzer Reading

Lab Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)
 Lab Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (Ft.)	Sample Type and No.	HNU or (OVA) ppm		Lab. Class.	Lab. Moist. %	Visual Description <small>(Principal Constituents, Gradation, Color, Moisture Content, Organic Content, Plasticity, and Other Observations)</small>	Elevation
		Field	Head Space				
1	CONFIRMATION OF ALL SOIL TYPES PRESENT AT 7-SWA-TPO1 SAMPLE # 7-SWA-TPO1 TCL/TAL @ 1150	BG. = 2.7				TOPSOIL - ORGANIC MATTER, AND DARK BR. SAND/TRACE SILT.	OLD TREE STUMP.
2		PS = 3.0				LT. GRAY SAND/TRACE SILT INTERMIXED WITH LT. TAN SAND/TRACE SILT	
3							
4							
5						LT. GRAY SAND/TRACE SILT	
6							
7							
8							
9						LT. GRAY TOWHITE SAND/TRACE SILT	
10					▽ GROUNDWATER ENCOUNTERED		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

CONTRACTOR: HHI
 EQUIPMENT: JOHN DEERE 310D

BAKER REP.: PETE MONDAY / MICHAEL SMITH
 TEST PIT NO.: 7-SWA-TPO1 SHEET OF

TEST PIT RECORD

PROJECT: CTO-0274

S.O. NO.: 62470-274

COORDINATES: EAST _____

SURFACE ELEVATION: _____

WEATHER: _____

TEST PIT NO.: 7-SWA-TPO2

NORTH: _____

WATER LEVEL: _____

DATE: 12/2/94

REMARKS: TEST PIT DIMENSIONS: LENGTH 24', WIDTH 3.5', DEPTH 5.5" - 6.5"

DEFINITIONS

HNU = Photo Ionization Detector Reading
OVA = Organic Vapor Analyzer Reading

Lab Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)
Lab Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (Ft.)	Sample Type and No.	HNU or (OVA) ppm		Lab. Class.	Lab. Moist %	Visual Description (Principal Constituents, Gradation, Color, Moisture Content, Organic Content, Plasticity, and Other Observations)	Elevation
		Field	Head Space				
1	COMPOSITE BG = 1.7 OF ALL PS = 1.7 SOIL TYPES PRESENT AT 7-SWA-TPO2 SAMPLE # 7-SWA-TPO2 TCL/TAL @ 1020					BROWN AND GRAY SILTY SAND INTERMIXED TREATMENT PLANT SPIRATOR MATERIAL	6.0 TO 6.1 BR TOP
2						LT. GRAY INTERMIXED WITH BROWN SILTY CLAY WITH TRACE SAND	FILL MAT.
3						LT. GRAY SILTY CLAY	
4						LT. GRAY SILTY CLAY	
5						5.5 GROUND WATER TABLE ROOFING SHINGLES	
6					LT. GRAY SILTY CLAY ROOFING SHINGLES	6.3	
7					LARGE STUMP OF WOOD		
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

CONTRACTOR: HAI

EQUIPMENT: JOHN DEERE 310D

BAKER REP.: PETE MONDAY / MICHAEL SMITH

TEST PIT NO.: 7-SWA-TPO2

SHEET OF _____



TEST PIT RECORD

PROJECT: CTO-0274
 S.O. NO.: 62470-274 TEST PIT NO.: 7-SWA-TPO3
 COORDINATES: EAST _____ NORTH: _____
 SURFACE ELEVATION: _____ WATER LEVEL: _____
 WEATHER: _____ DATE: 12/2/94

REMARKS: TEST PIT DIMENSIONS = LENGTH 20', WIDTH 3.5', DEPTH 7'

DEFINITIONS							
HNU = Photo Ionization Detector Reading OVA = Organic Vapor Analyzer Reading			Lab Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282) Lab Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis				
Depth (Ft.)	Sample Type and No.	HNU or (OVA) ppm		Lab. Class.	Lab. Moist %	Visual Description <small>(Principal Constituents, Gradation, Color, Moisture Content, Organic Content, Plasticity, and Other Observations)</small>	Elevation
		Field	Head Space				
1	Composite of All Soil Types Present AT 7-SWA-TPO3	PPG = 1.7				TOP SOIL - DARK GRAY ORGANIC MATERIAL / TRACE SAND	
2		PS = 1.7				TAN INTERMIXED WITH MEDIUM BR. SAND / TRACE SILT	
3	SAMPLE # 7-SWA-TPO3 TLL/TAL @ 1550						
4						VERY LT. TAN INTERMIXED WITH MEDIUM BR. SAND / TRACE SILT.	
5							
6							
7						GROUNDWATER ENCOUNTERED BELOW 7' ▽	
8							
9							
10							
11						NOTE: TEST PIT 7-SWA-TPO3 EXPERIENCED MASSIVE SIDEWALL CAVE-IN.	
12							
13							
14							
15							
16							
17							
18							
19							
20							

CONTRACTOR: HMI
 EQUIPMENT: JOHN DEERE 310D

BAKER REP.: PETE MONDAY / MICHAEL SMITH
 TEST PIT NO.: 7-SWA-TPO3 SHEET OF

TEST PIT RECORD

PROJECT: C10-0274

S.O. NO.: 62470-274

COORDINATES: EAST _____

SURFACE ELEVATION: _____

WEATHER: _____

TEST PIT NO.: 7-SWA-TPO4

NORTH: _____

WATER LEVEL: _____

DATE: 12/2/94

REMARKS: TEST PIT DIMENSIONS: LENGTH 24', WIDTH 3.5', DEPTH 9'

DEFINITIONS

HNU = Photo Ionization Detector Reading
OVA = Organic Vapor Analyzer Reading

Lab Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)

Lab Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (Ft.)	Sample Type and No.	HNU or (OVA) ppm		Lab. Class.	Lab. Moist %	Visual Description (Principal Constituents, Gradation, Color, Moisture Content, Organic Content, Plasticity, and Other Observations)	Elevation
		Field	Head Space				
1	COMPOSITE BG = 2.3 OF ALL PS = 2.6 SOIL TYPES PRESENT AT 7-SWA-TPO4 SAMPLE # 7-SWA-TPO4 TEL/TAL @ 1650					TOP SOIL DARK GRAY SAND WITH ORGANIC MATERIAL	
2						MED. TAN SANDY SILT	
3						MED. BR./BROWN ORANGE SANDY SILT	
4							
5							LT. TAN SANDY SILT
6						LT. TAN INTERMIXED WITH MED. TAN SANDY SILT	
7						VERY LT. TAN TO ALMOST WHITISH SANDY SILT	
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

CONTRACTOR: HHI

EQUIPMENT: JOHN Deere 310D

BAKER REP.: PETE MOWDAY / MICHAEL SMITH

TEST PIT NO.: 7-SWA-TPO4

SHEET OF

TEST PIT RECORD

PROJECT: CTO-0274
 S.O. NO.: 62470-274
 COORDINATES: EAST _____
 SURFACE ELEVATION: _____
 WEATHER: _____

TEST PIT NO.: 7-SWA-TPO5
 NORTH: _____
 WATER LEVEL: _____
 DATE: 12/2/94

REMARKS: Test Pit Dimensions: length 24', width 3.5', depth 8'

DEFINITIONS							
HNU = Photo Ionization Detector Reading			Lab Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)				
OVA = Organic Vapor Analyzer Reading			Lab Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis				
Depth (Ft.)	Sample Type and No.	HNU or (OVA) ppm		Lab. Class.	Lab. Moist %	Visual Description <small>(Principal Constituents, Gradation, Color, Moisture Content, Organic Content, Plasticity, and Other Observations)</small>	Elevation
		Field	Head Space				
1	COMPOSITE OF ALL SOIL TYPES PRESENT AT 7-SWA-TPO5	BG = 1.6	1.6			TREATMENT PLANT SPIRATOR MATERIAL / TOP SOIL DARK GRAY ORGANIC MATERIAL.	
2		PS = 2.0	2.0			INTERMIXING OF LT. GRAY, LT. BROWN, AND LT. TAN SAND / TRACE SILT.	
3	SAMPLE # 7-SWA-TPO5 TCL/TAL @ 1440.					MOSTLY LT. GRAY WITH SOME LT. TAN SAND / TRACE SILT.	
4							
5							
6							
7						INTERMIXING OF WHITISH GRAY WITH SOME LT. TAN, LT. BROWN SAND / TRACE SILT.	
8							
9							
10							GROUNDWATER ENCOUNTERED.
11							
12							NOTE! TEST PIT 7-SWA-TPO5 EXPERIENCED MASSIVE SIDE WALL CAVE-IN.
13							
14							
15							
16							
17							
18							
19							
20							

CONTRACTOR: HAI
 EQUIPMENT: JOHN Deere 310 D

BAKER REP.: PETER MONDAY / MICHAEL SMITH
 TEST PIT NO.: 7-SWA-TPO5 SHEET OF 1

APPENDIX B
SAMPLE DOCUMENTATION

APPENDIX B.1
CHAIN-OF-CUSTODY RECORDS



**INTERNATIONAL
TECHNOLOGY
CORPORATION**

**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

CO.# 7001

Reference Document No. 497151

Page 1 of 1

Project Name/No. ¹ CTO-0274
 Sample Team Members ²
 Profit Center No. ³
 Project Manager ⁴ MATT BARTMAN
 Purchase Order No. ⁶
 Required Report Date ¹¹ 28 DAYTURN

Samples Shipment Date ⁷ 10/21/94
 Lab Destination ⁸
 Lab Contact ⁹ S. SCHNIDER
 Project Contact/Phone ¹²
 Carrier/Waybill No. ¹³

Bill to: ⁵ BAKER ENVIRONMENTAL
 Report to: ¹⁰ MATT BARTMAN

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-SWA-SB03-00	SOIL	10/21/94 1100	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-TB-01	LIQUID TRIP BLANK	10/21/94 1310	G		HCL	TCL-ORGANICS		
7-SWA-SB05-00	SOIL	10/21/94 1317	G			TCL-ORGANICS TAL-INORGANICS		
7-SWA-SB05-02	SOIL	10/21/94 1317	G			TCL-ORGANICS TAL-INORGANICS		
7-SWA-SB01-00	SOIL	10/21/94 1517	G			TCL-ORGANICS TAL-INORGANICS		FOR LAB USE ONLY
7-SWA-SB01-02	SOIL	10/21/94 1616	G			TCL-ORGANICS TAL-INORGANICS		
7-SWA-SB01-04	SOIL	10/21/94 1616	G			TCL-ORGANICS TAL-INORGANICS		
7-SWA-SB01-04	MIXED SOIL	10/21/94 1616	G			TCL-ORGANICS TAL-INORGANICS		

COPY

Special Instructions: ²³

Possible Hazard Identification: ²⁴
 Non-hazard Flammable Skin Irritant Poison B Unknown
 Sample Disposal: ²⁵
 Return to Client Disposal by Lab Archive (mos.)

Turnaround Time Required: ²⁶
 Normal Rush 28 DAY
 QC Level: ²⁷
 I. II. III. Project Specific (specify):

1. Relinquished by ²⁸ (Signature/Affiliation) <i>E. J. Klein</i>	Date: 10/21/94 Time: 1730	1. Received by ²⁸ (Signature/Affiliation)	Date: _____ Time: _____
2. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	2. Received by (Signature/Affiliation)	Date: _____ Time: _____
3. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	3. Received by (Signature/Affiliation)	Date: _____ Time: _____

Comments: ²⁹
 Fed Ex AIRBILL # 1396601813

Write: To accompany samples
Yellow: Field copy
* See back of form for special instructions



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

COC # 7002
Reference Document No. 497150
Page 1 of ___

Project Name/No. ¹ CTO - φ 274 Samples Shipment Date ⁷ 10/22/94
 Sample Team Members ² _____ Lab Destination ⁸ _____
 Profit Center No. ³ _____ Lab Contact ⁹ S. SCHNEIDER
 Project Manager ⁴ MATT BARTMAN Project Contact/Phone ¹² _____
 Purchase Order No. ⁶ _____ Carrier/Waybill No. ¹³ _____
 Required Report Date ¹¹ 28 DAY TURN

Bill to: ⁵ BAKER ENVIRONMENTAL
 Report to: ¹⁰ MATT BARTMAN
BAKER ENVIRONMENTAL

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-SWA-SBφ2-φφ	SOIL	10/22/94 0925	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-SWA-SAφ2-φφ	SOIL	10/22/94 1000	G			TCL-ORGANICS TAL-INORGANICS		
7-SWA-SBφ4-φφ	SOIL	10/22/94 0830	G			TCL-ORGANICS TAL-INORGANICS		
7-SWA-SBφ4-φφ	SOIL	10/22/94 0830	G			TCL-ORGANICS TAL-INORGANICS		
7-RS-φ1	RINSATE - SB BOWL LIQUID	10/22/94 1155	G/P		HNO ₃ HCL	TCL-ORGANICS TAL-INORGANICS		FOR LAB USE ONLY
7-TB-φ2	LIQUID RIP	10/22/94 1230	G		HCL	TCL-ORGANICS		

Special Instructions: ²³ _____

Possible Hazard Identification: ²⁴
 Non-hazard Flammable Skin Irritant Poison B Unknown Sample Disposal: ²⁵
 Return to Client Disposal by Lab Archive _____ (mos.)

Turnaround Time Required: ²⁶ Normal Rush 28 DAY QC Level: ²⁷
 I II III Project Specific (specify): _____

1. Relinquished by ²⁸ (Signature/Affiliation) <u>E. J. Reinhard</u>	Date: <u>10/22/94</u> Time: <u>1400-1300</u>	1. Received by ²⁸ (Signature/Affiliation)	Date: _____ Time: _____
2. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	2. Received by (Signature/Affiliation)	Date: _____ Time: _____
3. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	3. Received by (Signature/Affiliation)	Date: _____ Time: _____

Comments: ²⁹ * HOLD 7-RS-φ1 DO NOT ANALYZE FED EX AIRBILL # 1396601802

Write: To accompany samples
Yellow: Field copy
* See back of form for special instructions.



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

COC # 7003

Reference Document No. 497148

Page 1 of 2

Project Name/No. 1 CTO - 0274 Samples Shipment Date 7 10/24/94
 Sample Team Members 2 Lab Destination 8
 Profit Center No. 3 Lab Contact 9 S. SCHNEIDER
 Project Manager 4 MATT BARTMAN Project Contact/Phone 12
 Purchase Order No. 6 Carrier/Waybill No. 13

Bill to: 5 BAKER ENVIRONMENTAL

Report to: 10 MATT BARTMAN
BAKER ENVIRONMENTAL

Required Report Date 11 28 DAY TURN

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-EA-SB07-00	SOIL	10/22/94 1425	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-EA-SB08-00	SOIL	10/22/94 1510	G			TCL-ORGANICS TAL-INORGANICS		
7-NA-SB07-00	SOIL	10/22/94 1648	G			TCL-ORGANICS TAL-INORGANICS		
7-NA-SB07-02	SOIL	10/22/94 1720	G			TCL-ORGANICS TAL-INORGANICS		
7-NA-SB10-00	SOIL	10/22/94 1611	G			TCL-ORGANICS TAL-INORGANICS		
7-NA-SB12-00	SOIL	10/22/94 1548	G			TCL-ORGANICS TAL-INORGANICS		
7-NA-SB12-02	SOIL	10/22/94 1554	G			TCL-ORGANICS TAL-INORGANICS		
7-EA-SB09-00	SOIL	10/22/94 1810	G			TCL-ORGANICS TAL-INORGANICS		

COPY

FOR LAB USE ONLY

FOR LAB USE ONLY

Special Instructions: ²³

Possible Hazard Identification: ²⁴

Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵

Return to Client Disposal by Lab Archive (mos.)

Turnaround Time Required: ²⁶

Normal Rush 28 DAY

QC Level: ²⁷

I. II. III. Project Specific (specify):

1. Relinquished by ²⁸
(Signature/Affiliation)

E.J. Klein

Date: 10/24/94
Time: 1730

1. Received by ²⁸
(Signature/Affiliation)

Date:
Time:

2. Relinquished by
(Signature/Affiliation)

Date:
Time:

2. Received by
(Signature/Affiliation)

Date:
Time:

3. Relinquished by
(Signature/Affiliation)

Date:
Time:

3. Received by
(Signature/Affiliation)

Date:
Time:

Comments: ²⁹

FED EX AIRBILL # 1396601791

Write: To accompany samples

Yellow: Field copy

* See back of form for special instructions.



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

COC # 7003
Reference Document No. ³⁰ 497148
Page 2 of 2

Project Name MCB CAMP LEJEUNE

Project No. CTO-0274

Samples Shipment Date _____

ONE CONTAINER PER LINE

Sample 14 Number	Sample 15 Description/Type	Date/Time Collected 16	Container Type 17	Sample 18 Volume	Pre-19 servative	Requested Testing Program 20	Condition on 21 Receipt	Disposal 22 Record No.
7-EA-SB11-φφ	SOIL	10/22/94 1600	G			TCL-ORGANICS TAL-TINORGANICS	FOR LAB USE ONLY	
7-EA-SB11-φφ	SOIL	10/22/94 1638	G			TCL-ORGANICS TAL-TINORGANICS		
7-EA-SB11-φ2	SOIL	10/22/94 1709	G			TCL-ORGANICS TAL-TINORGANICS		
7-BB-SBφ3-φφ	SOIL	10/23/94 0915	G			TCL-ORGANICS TAL-TINORGANICS	FOR LAB USE ONLY	
7-BB-SBφ3-φφ	SOIL	10/23/94 0959	G			TCL-ORGANICS TAL-TINORGANICS		
7-EA-SBφ3-φφ	SOIL	10/23/94 1057	G			TCL-ORGANICS TAL-TINORGANICS	FOR LAB USE ONLY	
7-NA-SBφ2-φφ	SOIL	10/23/94 1052	G			TCL-ORGANICS TAL-TINORGANICS		
7-NA-SBφ2-φ8	SOIL	10/23/94 1140	G			TCL-ORGANICS TAL-TINORGANICS		
7-NA-SBφ5-φφ	SOIL	10/23/94 0922	G			TCL-ORGANICS TAL-TINORGANICS	FOR LAB USE ONLY	
7-NA-SBφ5-φ8	SOIL	10/23/94 1016	G			TCL-ORGANICS TAL-TINORGANICS		
* 7-RS-φ2	LIQUID ANSATE SIS. OIL	10/23/94 1345	G/P		HCL-VOA HARD ₂ -NET	TCL-ORGANICS TAL-METALS	FOR LAB USE ONLY	
7-EA-SBφ1-φφ	SOIL	10/23/94 1337	G			TCL-ORGANICS TAL-TINORGANICS		
7-EA-SBφ3-φ8	SOIL	10/23/94 1140	G			TCL-ORGANICS TAL-TINORGANICS	FOR LAB USE ONLY	
7-EA-SBφ1-φ7	SOIL	10/23/94 1418	G			TCL-ORGANICS TAL-TINORGANICS		
7-TB-φ3	LIQUID TRIP BLANK	10/23/94 1535	G		HCL	TCL-ORGANICS * VOAs	FOR LAB USE ONLY	
7-NA ^{5B} -φ8-φφ	SOIL	10/23/94 1338	G			TCL-ORGANICS TAL-TINORGANICS		
7-NA ^{5B} -φ8-φ9	SOIL	10/23/94 1424	G			TCL-ORGANICS TAL-TINORGANICS	FOR LAB USE ONLY	
7-NA-SBφ8-φ9D	SOIL	10/23/94 1424	G			TCL-ORGANICS TAL-TINORGANICS		
7-NA-SBφ8-φ9	(MS/ MSD) SOIL	10/23/94 1424	G			TCL-ORGANICS TAL-TINORGANICS	FOR LAB USE ONLY	
7-NA-φ6-φφ	SOIL	10/23/94 1525	G			TCL-ORGANICS TAL-TINORGANICS		

C O P Y

White: To accompany samples
Yellow: Field copy
* See back of form for special instructions.



**INTERNATIONAL
TECHNOLOGY
CORPORATION**

**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

COOC# 7004
Reference Document No. 497147
Page 1 of 2

Project Name/No. ¹ CTO-φ274 Samples Shipment Date ⁷ 10/24/94
Sample Team Members ² Lab Destination ⁸ _____
Profit Center No. ³ Lab Contact ⁹ S. SCHNEIDER
Project Manager ⁴ MATT BARTMAN Project Contact/Phone ¹² _____
Purchase Order No. ⁶ Carrier/Waybill No. ¹³ _____
Required Report Date ¹¹ 28 DAY TURN.

Bill to: ⁵ BAKER ENVIRONMENTAL
Report to: ¹⁰ MATT BARTMAN
BAKER ENVIRONMENTAL

Write: To accompany samples
Yellow: Field copy
* See back of form for special instructions.

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-NA-SBφ3-φφ	SOIL	10/23/94 1525	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-NA-SBφ3-φ4	SOIL	10/23/94 1544	G			TCL-ORGANICS TAL-INORGANICS		
7-BB-SBφ2-φφ	SOIL	10/23/94 1707	G			TCL-ORGANICS TAL-INORGANICS		
7-BB-SBφ3-φ5	SOIL	10/23/94 1722	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-NA-SBφ3-φ2	SOIL	10/23/94 1515	G			TCL-ORGANICS *VOA ONLY		
7-NA-SBφ6-φ7	SOIL	10/23/94 1605	G			TCL-ORGANICS TAL-INORGANICS		
7-NA-SB11-φφ	SOIL	10/23/94 0755	G			TCL-ORGANICS TAL-INORGANICS		
7-NA-SB11-φ3	SOIL	10/24/94 0807	G			TCL-ORGANICS TAL-INORGANICS		

Special Instructions: ²³

Possible Hazard Identification: ²⁴

Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵

Return to Client Disposal by Lab Archive _____ (mos.)

Turnaround Time Required: ²⁶

Normal Rush 28 DAY

QC Level: ²⁷

I. II. III. Project Specific (specify): _____

1. Relinquished by ²⁸
(Signature/Affiliation)

E.J. Klein

Date: 10/24/94
Time: 1730

1. Received by ²⁸
(Signature/Affiliation)

Date: _____
Time: _____

2. Relinquished by
(Signature/Affiliation)

Date: _____
Time: _____

2. Received by
(Signature/Affiliation)

Date: _____
Time: _____

3. Relinquished by
(Signature/Affiliation)

Date: _____
Time: _____

3. Received by
(Signature/Affiliation)

Date: _____
Time: _____

Comments: ²⁹ FED EX AIRBILL # 13966017
91



INTERNATIONAL
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CORPORATION

**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD (cont.)***

COC# 7004
Reference Document No. 30 497147
Page 2 of 2

Project Name MCB CAMP LEJEUNE

Project No. CTO-0274

Samples Shipment Date 10/24/94

ONE CONTAINER PER LINE

Sample 14 Number	Sample 15 Description/Type	Date/Time 16 Collected	Container 17 Type	Sample 18 Volume	Pre-19 servative	Requested Testing 20 Program	Condition on 21 Receipt	Disposal 22 Record No.
7-EA-SB05-00	SOIL	10/24/94 0905	G			TCL-ORGANICS TAL-INORGANICS		
7-EA-SB05-07	SOIL	10/24/94 0955	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-FB-01	POTABLE WATER	10/24/94 1145	G/P			TCL-ORGANICS TAL-INORGANICS		
* 7-RS-03	RINSEATE LIQUID SPLIT SPOON	10/24/94 1200	G/P			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-TB-04	TRIP LIQUID BLANK	10/24/94 1230	G			TCL-ORGANICS XVOA ONLY		
7-BB-SB01-00	SOIL	10/24/94 1020	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-BB-SB01-05	SOIL	10/24/94 1042	G			TCL-ORGANICS TAL-INORGANICS		
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

COPY

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Yellow: Field copy
* See back of form for special instructions.



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

COC # 7005
Reference Document No. 497146
Page 1 of 2

Project Name/No. 1 CTO - 0274 Samples Shipment Date 7 10/25/94
Sample Team Members 2 Lab Destination 8
Profit Center No. 3 Lab Contact 9 S. SCHNEIDER
Project Manager 4 MATT BARTMAN Project Contact/Phone 12
Purchase Order No. 6 Carrier/Waybill No. 13
Required Report Date 11 28 DAY TURN.

Bill to: 5 BAKER ENVIRONMENTAL
Report to: 10 MATT BARTMAN
BAKER ENVIRONMENTAL

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-MW04-00	SOIL	10/24/94 1237	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-MW04-0B	SOIL	10/24/94 1317	G			TCL-ORGANICS TAL-INORGANICS		
7-NA-SB04-00	SOIL	10/24/94 1427	G			TCL-ORGANICS TAL-INORGANICS		
7-NA-SB04-02	SOIL	10/24/94 1422	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-NA-SB01-00	SOIL	10/24/94 1237	G			TCL-ORGANICS TAL-INORGANICS		
7-NA-SB01-05	SOIL	10/24/94 1248	G			TCL-ORGANICS TAL-INORGANICS		
7-NA-SB09-00	SOIL	10/24/94 1323	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-NA-SB09-02	SOIL	10/24/94 1329	G			TCL-ORGANICS TAL-INORGANICS		

Special Instructions: ²³

Possible Hazard Identification: ²⁴

Non-hazard Flammable Skin-Irritant Poison B Unknown

Sample Disposal: ²⁵

Return to Client Disposal by Lab Archive _____ (mos.)

Turnaround Time Required: ²⁶

Normal Rush 28 DAY

QC Level: ²⁷

I. II. III. Project Specific (specify): _____

1. Relinquished by ²⁸
(Signature/Affiliation)

E.J. Klein

Date: 10/25/94
Time: 1730

1. Received by ²⁸
(Signature/Affiliation)

Date: _____
Time: _____

2. Relinquished by
(Signature/Affiliation)

Date: _____
Time: _____

2. Received by
(Signature/Affiliation)

Date: _____
Time: _____

3. Relinquished by
(Signature/Affiliation)

Date: _____
Time: _____

3. Received by
(Signature/Affiliation)

Date: _____
Time: _____

Comments: ²⁹

FED Ex AIRBILL # 1396601780

White: To accompany samples

Yellow: Field copy

* See back of form for special instructions.



INTERNATIONAL
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CORPORATION

**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD (cont.)***

COC# 17005
Reference Document No. 30 497146
Page 2 of 2

Project Name MCB CAMP LGTEUNE

Project No. CTD - 0274

Samples Shipment Date 10/25/94

ONE CONTAINER PER LINE

Sample 14 Number	Sample 15 Description/Type	Date/Time 16 Collected	Container 17 Type	Sample 18 Volume	Pre-19 servative	Requested Testing 20 Program	Condition on 21 Receipt	Disposal 22 Record No.
7-CC-SB01-00	SOIL	10/24/94 1652	G			TCL-ORGANICS TAL-INORGANICS		
7-CC-SB02-00	SOIL	10/24/94 1640	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-CC-SB02-00D	SOIL	10/24/94 1640	G			TCL-ORGANICS TAL-INORGANICS		
7-EA-SB02-00	SOIL	10/25/94 0812	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-EA-SB02-00D	SOIL	10/25/94 0812	G			TCL-ORGANICS TAL-INORGANICS		
* 7-EA-SB02-00	SOIL	10/25/94 0812	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-EA-SB02-02	SOIL	10/25/94 0900	G			TCL-ORGANICS TAL-INORGANICS		
7-EA-SB02-02D	SOIL	10/25/94 0900	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
* 7-EA-SB02-02	SOIL	10/25/94 0900	G			TCL-ORGANICS TAL-INORGANICS		
7-TB-05	LIQUID TRIP BLANK	10/25/94 1025	G			TCL-ORGANICS * VOA _s	FOR LAB USE ONLY	
7-EA-SB06-00	SOIL	10/25/94 1005	G			TCL-ORGANICS TAL-INORGANICS		
7-EA-SB06-01	SOIL	10/25/94 1020	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-EA-SB04-00	SOIL	10/25/94 1116	G			TCL-ORGANICS TAL-ORGANICS		
7-EA-SB04-01	SOIL	10/25/94 1108	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

COPY

Write: To accompany samples
Yellow: Field copy
* See back of form for special instructions.



INTERNATIONAL
TECHNOLOGY
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ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

CO.C # 7006
Reference Document # 325356
Page 1 of 1

Project Name/No. 1 CTO-274 Samples Shipment Date 7
 Sample Team Members 2 Lab Destination 8
 Profit Center No. 3 Lab Contact 9
 Project Manager 4 MATT BARTMAN Project Contact/Phone 12
 Purchase Order No. 6 Carrier/Waybill No. 13 1396601732
 Required Report Date 11 28-DAY TURN.

Bill to: 5 BAKER ENVIRONMENTAL INC
 Report to: 10 MATT BARTMAN

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-MW05-00	SOIL	11/2/94 1015	6			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-MW05-00	SOIL	11/2/94 1139	6			TCL-ORG TAL-INORG.		
7-TB-06	Liquid	11/3/94 1546	6			TCL-ORG.		
							FOR LAB USE ONLY	

COPY

Special Instructions: 23

Possible Hazard Identification: 24
 Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: 25
 Return to Client Disposal by Lab Archive _____ (mos.)

Turnaround Time Required: 26
 Normal Rush 28 DAY TURN.

QC Level: 27
 I. II. III. Project Specific (specify): _____

1. Relinquished by <u>28</u> (Signature/Affiliation) <u>[Signature]</u>	Date: <u>11/3/94</u> Time: <u>1200</u>	1. Received by <u>28</u> (Signature/Affiliation)	Date: _____ Time: _____
2. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	2. Received by (Signature/Affiliation)	Date: _____ Time: _____
3. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	3. Received by (Signature/Affiliation)	Date: _____ Time: _____

Comments: 29 FED Ex BILL # 1396601732

Write: To accompany samples
Yellow: Field copy
* See back of form for special instructions.



**INTERNATIONAL
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**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

C.O.C. # 7007
Reference Document No. 325464
Page 1 of 2

Project Name/No. ¹ CTO-274
Sample Team Members ²
Profit Center No. ³
Project Manager ⁴ MATT BARTMAN
Purchase Order No. ⁶
Required Report Date ¹¹ 28-DAY TURN

Samples Shipment Date ⁷ 11/7/94
Lab Destination ⁸
Lab Contact ⁹
Project Contact/Phone ¹²
Carrier/Waybill No. ¹³ 1396601695

Bill to: ⁵ BAKER ENVIRONMENTAL INC.
Report to: ¹⁰ MATT BARTMAN

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-RS-04	RINSATE & Teflon LIQUID BAKER	11/7/94 0800	6/P		HCL/HNO3	TCL-ORGANICS TAL-INORGANICS Dissolved METALS	FOR LAB USE ONLY	
7-RSD-04	LIQUID	11/7/94 0800	P		HNO3			
7-TB-07	LIQUID	11/7/94 1106	6		HCL	TCL-ORGANICS		
7-TW01D-01	LIQUID	11-7-94 1106	P		HNO3	TAL-Dissolved Metals		
7-TW02D-01	LIQUID	11-7-94 0844	P		HNO3	TAL-Dissolved Metals	FOR LAB USE ONLY	
7-TW01-01	LIQUID	11-7-94 1106	G/P		HCL; HNO3	TCL-VOA, SVOA, PEST/PCB TAL-ORGANICS		
7-TW02-01	LIQUID	11-7-94 0844	G/P		HCL; HNO3	TCL-ORGANICS TAL-INORGANICS		
7-TW03-01	LIQUID	11/7/94 1346	6/P		HCL/HNO3	TCL-ORGANICS TAL-INORGANICS		

COPY

FOR LAB USE ONLY

FOR LAB USE ONLY

Special Instructions: ²³

Possible Hazard Identification: ²⁴

Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵

Return to Client Disposal by Lab Archive _____ (mos.)

Turnaround Time Required: ²⁶

Normal Rush 28-DAY TURN

QC Level: ²⁷

I. II. III. Project Specific (specify): _____

1. Relinquished by: ²⁸ (Signature/Affiliation) <i>Peter A. Manday</i>	Date: 11/7/94 Time: 17:00	1. Received by ²⁸ (Signature/Affiliation)	Date: _____ Time: _____
2. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	2. Received by (Signature/Affiliation)	Date: _____ Time: _____
3. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	3. Received by (Signature/Affiliation)	Date: _____ Time: _____

Comments: ²⁹

Write: To accompany samples

Yellow: Field copy

* See back of form for special instructions.



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

C.O.C# 7007

Reference Document No. 325464

Page 2 of 2

Project Name C70-274

Project No. C70-274

Samples Shipment Date _____

ONE CONTAINER PER LINE

Sample 14 Number	Sample 15 Description/Type	Date/Time 16 Collected	Container 17 Type	Sample 18 Volume	Pre-19 servative	Requested Testing 20 Program	Condition on 21 Receipt	Disposal 22 Record No.
F-TWQ3D-01	Liquid	11/2/94 1346	P		H ₂ O ₂	Dissolved metals		
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

COPY

White: To accompany samples
Yellow: Field copy
* See back of form for special instructions.



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

COL # 7008

Reference Document No. 325469

Page 1 of 1

Project Name/No. ¹ LTO-274 Samples Shipment Date ⁷ 11/15/94
 Sample Team Members ² _____ Lab Destination ⁸ _____
 Profit Center No. ³ _____ Lab Contact ⁹ _____
 Project Manager ⁴ Matt Bartman Project Contact/Phone ¹² _____
 Purchase Order No. ⁶ _____ Carrier/Waybill No. ¹³ 1396601706
 Required Report Date ¹¹ 28-day turn

Bill to: ⁵ Baker Environmental, Inc

Report to: ¹⁰ Matt Bartman

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-EW-02	Worm	11-14-94/1730	P		—	TLL-pest/PCB TAL-metals	FOR LAB USE ONLY	
7-EW-03	Worm	11-14-94/1715	P		—	TLL-pest/PCB TAL-metals		
7-EW-04	Worm	11-14-94/1640	P		—	TLL-pest/PCB TAL-metals		
7-EW-05	Worm	11-14-94/1645	P		—	TLL-pest/PCB TAL-metals		
7-EW-06	Worm	11-14-94/1630	P		—	TLL-pest/PCB TAL-metals		
7-EW-07	Worm	11-14-94/1700	P		—	TLL-pest/PCB TAL-metals		
7-EW-08	Worm	11-14-94/1705	P		—	TLL-pest/PCB TAL-metals		

COPY

Special Instructions: ²³

Possible Hazard Identification: ²⁴

Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵

Return to Client Disposal by Lab Archive _____ (mos.)

Turnaround Time Required: ²⁶

Normal Rush 28-day turn

QC Level: ²⁷

I. II. III. Project Specific (specify): _____

1. Relinquished by: ²⁸ [Signature]
(Signature/Affiliation)

Date: 11/15/94
Time: 1500

1. Received by: ²⁸ _____
(Signature/Affiliation)

Date: _____
Time: _____

2. Relinquished by: _____
(Signature/Affiliation)

Date: _____
Time: _____

2. Received by: _____
(Signature/Affiliation)

Date: _____
Time: _____

3. Relinquished by: _____
(Signature/Affiliation)

Date: _____
Time: _____

3. Received by: _____
(Signature/Affiliation)

Date: _____
Time: _____

Comments: ²⁹

White: To accompany samples

Yellow: Field copy

* See back of form for special instructions.



**INTERNATIONAL
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**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

LOL # 7009

Reference Document No. 325470

Page 1 of 1

Project Name/No. ¹ Q70-244
 Sample Team Members ² _____
 Profit Center No. ³ _____
 Project Manager ⁴ Matt Bartman
 Purchase Order No. ⁶ _____
 Required Report Date ¹¹ 2-B-Day Turn

Samples Shipment Date ⁷ 11/15/94
 Lab Destination ⁸ _____
 Lab Contact ⁹ _____
 Project Contact/Phone ¹² _____
 Carrier/Waybill No. ¹³ 1396601673

Bill to: ⁵ Baker Environmental, Inc
 Report to: ¹⁰ Matt Bartman

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-WM-SB01	Soil	11-14-94/1450	P, G	-	-	TLL-Pest/P&B, TAL metals, grain size pH, TOC, Percent moisture, Cation Exchange Capacity		
7-WM-SB02	Soil	11-14-94/1415	P, G	-	-	same	FOR LAB USE ONLY	
7-WM-SB03	Soil	11-14-94/1515	P, G	-	-			
							FOR LAB USE ONLY	

COPY

Special Instructions: ²³

Possible Hazard Identification: ²⁴
 Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵
 Return to Client Disposal by Lab Archive _____ (mos.)

Turnaround Time Required: ²⁶
 Normal Rush 2-B-day turn

QC Level: ²⁷
 I. II. III. Project Specific (specify): _____

1. Relinquished by ²⁸ (Signature/Affiliation)	Date: <u>11-15-94</u> Time: <u>1500</u>	1. Received by ²⁸ (Signature/Affiliation)	Date: _____ Time: _____
2. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	2. Received by (Signature/Affiliation)	Date: _____ Time: _____
3. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	3. Received by (Signature/Affiliation)	Date: _____ Time: _____

Comments: ²⁹

Write: To accompany samples
 Yellow: Field copy
 * See back of form for special instructions.



**INTERNATIONAL
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**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

C.O.C. # 7010 der#1
Reference Document No. 325323
Page 1 of ___

Project Name/No. ¹ CJO-274
Sample Team Members ² _____
Profit Center No. ³ _____
Project Manager ⁴ MATT BARTMAN
Purchase Order No. ⁶ _____
Required Report Date ¹¹ 28-DAY TURN

Samples Shipment Date ⁷ 12/1/94
Lab Destination ⁸ _____
Lab Contact ⁹ _____
Project Contact/Phone ¹² _____
Carrier/Waybill No. ¹³ 1396601846

Bill to: ⁵ BAKER ENVIRONMENTAL
Report to: ¹⁰ MATT BARTMAN

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-MW05-01	Liquid	12/1/94/1020	6/P		HCL/HNO3	TCL-ORGANICS TAL-TOTAL-METALS	* note m.s./m.s.d provided	
7-MW050-01			P		HNO3	Dissolved metals	" FOR LAB USE ONLY "	
7-MW05-01D			6/P		HCL/HNO3	TCL-ORGANICS TAL-TOTAL-METALS		
7-MW050-01D			P		HNO3	Dissolved metals		
7-TB-08	TRIP BLANK	12/1/94 540	6		HCL	TCL-VOA	FOR LAB USE ONLY	

COPY

Special Instructions: ²³

Possible Hazard Identification: ²⁴
 Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵
 Return to Client Disposal by Lab Archive _____ (mos.)

Turnaround Time Required: ²⁶
 Normal Rush 28-DAY TURN

QC Level: ²⁷
 I. II. III. Project Specific (specify): _____

1. Relinquished by ²⁸ [Signature] Date: 12/1/94
 (Signature/Affiliation) Time: 1700
 2. Relinquished by (Signature/Affiliation) Date: _____ Time: _____
 3. Relinquished by (Signature/Affiliation) Date: _____ Time: _____

1. Received by ²⁸ _____ Date: _____
 (Signature/Affiliation) Time: _____
 2. Received by (Signature/Affiliation) Date: _____ Time: _____
 3. Received by (Signature/Affiliation) Date: _____ Time: _____

Comments: ²⁹

Write: To accompany samples
Yellow: Field copy
* See back of form for special instructions.



**INTERNATIONAL
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**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

COC # 7011 Cool #1
Reference Document No. 325328
Page 1 of 1

Project Name/No. 1 62470-274 Samples Shipment Date 7 2 Dec. 1994
Sample Team Members 2 _____ Lab Destination 8 _____
Profit Center No. 3 _____ Lab Contact 9 B. WADDELL
Project Manager 4 MATT BARTMAN Project Contact/Phone 12 _____
Purchase Order No. 6 _____ Carrier/Waybill No. 13 FED EX 1396601614
Required Report Date 11 28 DAY TURN.

Bill to: 5 BAKER ENVIRONMENTAL
Report to: 10 MATT BARTMAN
BAKER ENVIRONMENTAL

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Pre-servative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
7-MWφ3-φ1	LIQUID	12/1/94 1720	GLASS PLAST.		HCL HNO ₃	TCL-ORGANICS TAL-METALS	FOR LAB USE ONLY	
7-MWφ4-φ1	LIQUID	12/1/94 1515	GLASS PLAST.		HCL HNO ₃	TCL-ORGANICS TAL-METALS		
7-RSφ5	LIQUID	12/1/94 1730	GLASS/ PLAST.		HCL HNO ₃	TCL-ORGANICS TAL-METALS		
7-MWφ2-φ1	LIQUID	12/1/94 1030	GLASS/ PLAST.		HCL HNO ₃	TCL-ORGANICS TAL-METALS		
7-MWφ1-φ1	LIQUID	12/2/94 141	G P		HCL HNO ₃	TCL-ORGANICS TAL-METALS		
7-TB-φ9	LIQUID	12/2/94 1630	G		HCL	TCL-VOAs		FOR LAB USE ONLY

Special Instructions: 23

Possible Hazard Identification: 24

Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: 25

Return to Client Disposal by Lab Archive _____ (mos.)

Turnaround Time Required: 26

Normal Rush 28 DAY

QC Level: 27

I. II. III. Project Specific (specify):

1. Relinquished by 28
(Signature/Affiliation)

E. J. Kleinberg

Date: 2 Dec. 1994
Time: 1800

1. Received by 28
(Signature/Affiliation)

Date: _____
Time: _____

2. Relinquished by
(Signature/Affiliation)

Date: _____
Time: _____

2. Received by
(Signature/Affiliation)

Date: _____
Time: _____

3. Relinquished by
(Signature/Affiliation)

Date: _____
Time: _____

3. Received by
(Signature/Affiliation)

Date: _____
Time: _____

Comments: 29

White: To accompany samples

Yellow: Field copy

* See back of form for special instructions.



INTERNATIONAL
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**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

C.O.C. # 701 = cooler # 1
Reference Document No. 325330
Page 1 of _____

Project Name/No. 1 CTO-274 Samples Shipment Date: 7 12/3/94
Sample Team Members 2 _____ Lab Destination 8 _____
Profit Center No. 3 _____ Lab Contact 9 _____
Project Manager 4 MATT BARTMAN Project Contact/Phone 12 _____
Purchase Order No. 6 _____ Carrier/Waybill No. 13 1396601625
Required Report Date 11 28 DAY TURN

Bill to: 5 BAKER ENVIRONMENTAL INC
Report to: 10 MATT BARTMAN

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Pre-servative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
274-FBD-01	FIELD LIQUID BLANK	12/3/94/0830	5/P		H2O2	DISSOLVED METALS		
274-FB-01	R.I. WATER	12/3/94/0820	6/P		HCl/HNO3	TCL-ORGANICS TAL-TOTAL METALS	FOR LAB USE ONLY	
7-RS-06	DI. WATER THROUGH POND	12/3/94/0820	6/P		HCl/HNO3	TCL-ORGANICS TAL-TOTAL METALS		
7-RSD-06		12/3/94/0830	P		HNO3	Dissolved metals		
7-SWA-TP02	SOIL	12/2/94/1020	G			TCL-ORGANICS TAL-TOTAL METALS	FOR LAB USE ONLY	
7-SWA-TP01	SOIL	12/2/94/1150	G			TCL-ORG. TAL-TOTAL METALS		
7-SWA-TP05	SOIL	12/2/94/1440	G			TCL-ORG. TAL-TOTAL METALS		
7-SWA-TP03	SOIL	12/2/94/1530	G			TCL-ORG. TAL-TOTAL METALS		

Special Instructions: 23 NOTE 7-TB-10 IS THE TRIP BLANK FOR COOLER # 1.

Possible Hazard Identification: 24
 Non-hazard Flammable Skin Irritant Poison B Unknown
 Sample Disposal: 25
 Return to Client Disposal by Lab Archive _____ (mos.)

Turnaround Time Required: 26
 Normal Rush 28-DAY TURN
 QC Level: 27
 I II III Project Specific (specify): _____

1. Relinquished by 28 (Signature/Affiliation) <u>[Signature]</u>	Date: <u>12/3/94</u> Time: <u>1300</u>	1. Received by 28 (Signature/Affiliation)	Date: _____ Time: _____
2. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	2. Received by (Signature/Affiliation)	Date: _____ Time: _____
3. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	3. Received by (Signature/Affiliation)	Date: _____ Time: _____

Comments: 29

White: To accompany samples
Yellow: Field copy
* See back of form for special instructions.



INTERNATIONAL
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**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD (cont.)***

COC# 7012 COOL# 1

Reference Document No. 32 5330
Page of

Project Name CTO-274

Project No.

Samples Shipment Date 12/3/04

ONE CONTAINER PER LINE

Sample 14 Number	Sample 15 Description/Type	Date/Time 16 Collected	Container 17 Type	Sample 18 Volume	Pre-19 servative	Requested Testing 20 Program	Condition on 21 Receipt	Disposal 22 Record No.
7-SWA-TP24	SOIL	12/2/04/1750	G			TCL-ORG, TCL-INORG.		
7-TB-10	TRIP BLANK	12/3/04/1245	G		HCL	TCL-VOR	FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

COPY

Write: To accompany samples
Yellow: Field copy
* See back of form for special instructions.



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD *

C.O.G. 7013 Co R #2.
Reference Document No. 325332
Page 1 of 1

Project Name/No. ¹ CTO-274 Samples Shipment Date ⁷ 12/3/94
 Sample Team Members ² _____ Lab Destination ⁸ _____
 Profit Center No. ³ _____ Lab Contact ⁹ _____
 Project Manager ⁴ _____ Project Contact/Phone ¹² _____
 Purchase Order No. ⁶ _____ Carrier/Waybill No. ¹³ 139660625
 Required Report Date ¹¹ 7 DAY TURN

Bill to: ⁵ BAKER ENVIRONMENTAL
 Report to: ¹⁰ MAT BARTMAN

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
16-TK-φ1	Liquid	12/3/94/0910	6/P		Act/Hand	TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
7-TK-φ1	Liquid	12/3/94/0950	6/P		Act/Hand	TCL-ORGANICS TAL-INORGANICS		
3-RB-φ1	Liquid	12/3/94/1230	6			TCL-PCB'S TCLP-ORGANICS/INORGANICS RCRA-HAZ. CHARACTERISTICS		
COPY								
FOR LAB USE ONLY								

Special Instructions: ²³ NOTE! 7-DAY TURN AROUND TIME

Possible Hazard Identification: ²⁴
 Non-hazard Flammable Skin Irritant Poison B Unknown Sample Disposal: ²⁵
 Return to Client Disposal by Lab Archive _____ (mos.)

Turnaround Time Required: ²⁶ Normal Rush 7-DAY TURN QC Level: ²⁷ I. II. III. Project Specific (specify): _____

1. Relinquished by ²⁸ <u>[Signature]</u> (Signature/Affiliation)	Date: <u>12/19/94</u> Time: <u>1300</u>	1. Received by ²⁸ _____ (Signature/Affiliation)	Date: _____ Time: _____
2. Relinquished by _____ (Signature/Affiliation)	Date: _____ Time: _____	2. Received by _____ (Signature/Affiliation)	Date: _____ Time: _____
3. Relinquished by _____ (Signature/Affiliation)	Date: _____ Time: _____	3. Received by _____ (Signature/Affiliation)	Date: _____ Time: _____

Comments: ²⁹ _____

Write: To accompany samples
Yellow: Field copy
* See back of form for special instructions.



INTERNATIONAL
TECHNOLOGY
CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

COC # 70001

Reference Document No. 388468

Page 1 of 1

Project Name/No. ¹ CTO-0274
 Sample Team Members ² _____
 Profit Center No. ³ _____
 Project Manager ⁴ M. Bartman
 Purchase Order No. ⁶ _____
 Required Report Date ¹¹ 28 day turn

Samples Shipment Date ⁷ 6/22/94
 Lab Destination ⁸ Knoxville
 Lab Contact ⁹ Sherree Schneider
 Project Contact/Phone ¹² 615-588-6401
 Carrier/Waybill No. ¹³ Fed Ex # 1396784745

Bill to: ⁵ Baker Environmental
 Report to: ¹⁰ _____

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-DD-SW01	Aqueous	6/22/94/1242	P, G		HNO ₃	TCL organics TAL metals	FOR LAB USE ONLY	
7-DD-SW02	Aqueous	6/22/94/1402	P, G		HNO ₃	TCL organics TAL metals		
7-DD-SW02	Solid	6/22/94/1422	P			Grain Size		
							FOR LAB USE ONLY	

COPY

Special Instructions: ²³ _____

Possible Hazard Identification: ²⁴

Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵

Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: ²⁶

Normal Rush

QC Level: ²⁷

I. II. III. Project Specific (specify): _____

1. Relinquished by ²⁸
(Signature/Affiliation) [Signature]

Date: 6-22-94
Time: 1700

1. Received by ²⁸
(Signature/Affiliation)

Date: _____
Time: _____

2. Relinquished by
(Signature/Affiliation)

Date: _____
Time: _____

2. Received by
(Signature/Affiliation)

Date: _____
Time: _____

3. Relinquished by
(Signature/Affiliation)

Date: _____
Time: _____

3. Received by
(Signature/Affiliation)

Date: _____
Time: _____

Comments: ²⁹ _____

White: To accompany samples
Yellow: Field copy
* See back of form for special instructions.



INTERNATIONAL
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**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

LOC # 70002

Reference Document No. 388469
Page 1 of _____

Project Name/No. 1 CTO-0274
Sample Team Members 2
Profit Center No. 3
Project Manager 4 M. Bartman
Purchase Order No. 6
Required Report Date 11 28 day turn

Samples Shipment Date 7 6-22-94
Lab Destination 8 Knoxville
Lab Contact 9 Sherree Schneider
Project Contact/Phone 12 615-588-6401
Carrier/Waybill No. 13 Fed Ex #1396784745

Bill to: 5 Baker Environmental
Report to: 10

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-DD-SD02-06	Solid	6-22-94/1420	G			TCL Organics TAL metals, TOC	FOR LAB USE ONLY	
7-DD-SD01-06	Solid	6/22/94/1255	G			TAL metals, Gross Size TAL Organics, TOC		
7-DD-SD01-06D	Solid	6/22/94/1255	G			TAL metals, TCL Organics		
7-DD-SW01	Aqueous	6/22/94/1242	G		HCL	TCL-VOA	FOR LAB USE ONLY	
7-DD-SW02	Aqueous	6/22/94/1402	G		HCL	TCL-VOA		
7-TB01	Aqueous	6/22/94	G		HCL	TCL-VOA		

COPY

Special Instructions: ²³
Possible Hazard Identification: ²⁴ Non-hazard Flammable Skin Irritant Poison B Unknown
Sample Disposal: ²⁵ Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: ²⁶ Normal Rush
QC Level: ²⁷ I. II. III. Project Specific (specify): _____

1. Relinquished by ²⁸ (Signature/Affiliation) <u>[Signature]</u>	Date: <u>June 22, 94</u> Time: <u>1500</u>	1. Received by ²⁸ (Signature/Affiliation)	Date: _____ Time: _____
2. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	2. Received by (Signature/Affiliation)	Date: _____ Time: _____
3. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	3. Received by (Signature/Affiliation)	Date: _____ Time: _____

Comments: ²⁹

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Doc # 70003

Reference Document No. 388479
Page 1 of 2

Project Name/No. ¹ CTU-0274 Samples Shipment Date ⁷ 6-23-94 Bill to: ⁵ Baker Environmental

Sample Team Members ² _____ Lab Destination ⁸ Knoxville

Profit Center No. ³ _____ Lab Contact ⁹ Sheree Schneider

Project Manager ⁴ M. Bartman Project Contact/Phone ¹² 615-588-6401 Report to: ¹⁰ _____

Purchase Order No. ⁶ _____ Carrier/Waybill No. ¹³ Fed Ex #1396784756

Required Report Date ¹¹ 28 day turn

ONE CONTAINER PER LINE

Sample ¹⁴ Number	Sample ¹⁵ Description/Type	Date/Time ¹⁶ Collected	Container ¹⁷ Type	Sample ¹⁸ Volume	Pre- ¹⁹ servative	Requested Testing ²⁰ Program	Condition on ²¹ Receipt	Disposal ²² Record No.
7-MA-SD03-06	Solid	6-23-94/1410	G		-	TLL Organics TAL metals		
7-MA-SD03-612	Solid	6-23-94/1412	G		-	TLL-organics TAL- metals	FOR LAB USE ONLY	
7-ET-SD01-06	Solid	6-23-94/1320	G, P		-	TLL-Organics, TOC TAL metals, Grain Size		
7-MA-SD01-06	Solid	6-23-94/0922	G, P		-	TLL-Organics, TOC TAL- metals, Grain Size		
7-MA-SD01-612	Solid	6-23-94/0920	G		-	TLL-Organics TAL- metals	FOR LAB USE ONLY	
7-MA-SD04-06	Solid	6-23-94/1228	G		-	TLL-Organics TAL- metals		
7-MA-SD04-612	Solid	6-23-94/1230	G		-	TLL-Organics TAL- metals		
7-MA-SD02-06	Solid	6-23-94/1038	G		-	TLL-Organics TAL metals		

COPY

Special Instructions: ²³ _____

Possible Hazard Identification: ²⁴
 Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵
 Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: ²⁶
 Normal Rush

QC Level: ²⁷
 I. II. III. Project Specific (specify): _____

1. Relinquished by ²⁸ (Signature/Affiliation) <u>[Signature]</u>	Date: <u>June 23, 94</u> Time: <u>1700</u>	1. Received by ²⁸ (Signature/Affiliation) _____	Date: _____ Time: _____
2. Relinquished by (Signature/Affiliation) _____	Date: _____ Time: _____	2. Received by (Signature/Affiliation) _____	Date: _____ Time: _____
3. Relinquished by (Signature/Affiliation) _____	Date: _____ Time: _____	3. Received by (Signature/Affiliation) _____	Date: _____ Time: _____

Comments: ²⁹ _____

White: To accompany samples
Yellow: Field copy
* See back of form for special instructions.

COC # 70004



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ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

Reference Document No.³⁰ 388479

Page 2 of 2

Project Name _____

Project No. CTO-0274

Samples Shipment Date June 23, 94

ONE CONTAINER PER LINE

Sample 14 Number	Sample 15 Description/Type	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample 18 Volume	Pre-19 servative	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-MA-SDOZ-060	Solid	6-23-94/1038	G		—	TLL-organics TLL-metals		
7-MA-SDOZ-012	Solid	6-23-94/1040	G		—	TLL organics TLL metals	FOR LAB USE ONLY	
7-ET-SW01	Aqueous	6-23-94/1303	G		HLL	TLL-VOVA	FOR LAB USE ONLY	
7-ERO1	Aqueous	6-23-94/1545	G		HLL	TLL-VOVA	FOR LAB USE ONLY	
7-TBOZ	Aqueous	6-23-94	G		HLL	TLL-VOVA	FOR LAB USE ONLY	
COPY								
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
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							FOR LAB USE ONLY	

White: To accompany samples

Yellow: Field copy

* See back of form for special instructions.



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**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

COC # 70005

Reference Document No. 388480

Page 1 of 1

Project Name/No. 1 CTU-0294
 Sample Team Members 2
 Profit Center No. 3
 Project Manager 4 M. Bartman
 Purchase Order No. 6
 Required Report Date 11 20 day turn

Samples Shipment Date 7 6- -94
 Lab Destination 8 Knoxville
 Lab Contact 9 Sherree Schneider
 Project Contact/Phone 12 615-588-6401
 Carrier/Waybill No. 13 Fed Ex # 1396784756

Bill to: 5 Baker Environmental
 Report to: 10

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-ET-SW01	Aqueous	6-23-94/1303	P, G		HNO ₃	TLL Post/PCB TLL SVOA TAL Metals		
7-ERO1	Aqueous	6-23-94/1545	P, G		HNO ₃	TLL Post/PCB TLL SVOA TAL Metals	FOR LAB USE ONLY	
COPY								
							FOR LAB USE ONLY	

Special Instructions: ²³

Possible Hazard Identification: ²⁴

Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵

Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: ²⁶

Normal Rush

QC Level: ²⁷

I. II. III.

Project Specific (specify):

1. Relinquished by ²⁸
(Signature/Affiliation)

Date: _____
Time: _____

1. Received by ²⁸
(Signature/Affiliation)

Date: _____
Time: _____

2. Relinquished by
(Signature/Affiliation)

Date: _____
Time: _____

2. Received by
(Signature/Affiliation)

Date: _____
Time: _____

3. Relinquished by
(Signature/Affiliation)

Date: _____
Time: _____

3. Received by
(Signature/Affiliation)

Date: _____
Time: _____

Comments: ²⁹

White: To accompany samples
Yellow: Field copy
* See back of form for special instructions.



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

COL # 70006

Reference Document No. 388477

Page 1 of 1

Project Name/No. ¹ CTU-0274
 Sample Team Members ² _____
 Profit Center No. ³ _____
 Project Manager ⁴ M. Bartman
 Purchase Order No. ⁶ _____
 Required Report Date ¹¹ 28 day turn

Samples Shipment Date ⁷ 6-24-94
 Lab Destination ⁸ Knoxville
 Lab Contact ⁹ Sherree Schneider
 Project Contact/Phone ¹² 615-588-6401
 Carrier/Waybill No. ¹³ Fed Ex # 1396784760

Bill to: ⁵ Baker Environmental

Report to: ¹⁰ _____

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-WT-SW01	Aqueous	6-23-94/1930	P.G.		HNO ₃	TLL-Post/PCB TEL-SUA TEL-Metals	FOR LAB USE ONLY	
7-WT-SW03	Aqueous	6-24-94/1105	P.G.		HNO ₃	TLL-Post/PCB TEL-SUA TEL-Metals		
7-NC-SW01-06	Solid	6-24-94/1222	P			Grain Size	FOR LAB USE ONLY	

COPY

Special Instructions: ²³ _____

Possible Hazard Identification: ²⁴

Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵

Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: ²⁶

Normal Rush

QC Level: ²⁷

I. II. III. Project Specific (specify): _____

1. Relinquished by ²⁸ [Signature]
 (Signature/Affiliation)

Date: 6-24-94
 Time: 1700

1. Received by ²⁸
 (Signature/Affiliation)

Date: _____
 Time: _____

2. Relinquished by
 (Signature/Affiliation)

Date: _____
 Time: _____

2. Received by
 (Signature/Affiliation)

Date: _____
 Time: _____

3. Relinquished by
 (Signature/Affiliation)

Date: _____
 Time: _____

3. Received by
 (Signature/Affiliation)

Date: _____
 Time: _____

Comments: ²⁹ _____

Write: To accompany samples

Yellow: Field copy

*See back of form for special instructions.



**INTERNATIONAL
TECHNOLOGY
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COC # 70007

**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

Reference Document No. 388470
Page 1 of 1

Project Name/No. ¹ CTU-0274
Sample Team Members ² _____
Profit Center No. ³ _____
Project Manager ⁴ M. Burtman
Purchase Order No. ⁶ _____
Required Report Date ¹¹ 20 days turn

Samples Shipment Date ⁷ 6-24-94
Lab Destination ⁸ Knoxville
Lab Contact ⁹ Sherree Schneider
Project Contact/Phone ¹² 615-588-6401
Carrier/Waybill No. ¹³ Fed Ex # 1396784760

Bill to: ⁵ Bake Environmental
Report to: ¹⁰ _____

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-WT-SW020	Aqueous	6-23-94/1030			H ₂ O ₂	TLL-SUA, TAL-metals TLL-Post/PCB		
7-NC-SW01	Aqueous	6-24-94/1212			H ₂ O ₂	TLL-SUA, TAL-metals TLL-Post/PCB		
7-NC-S005-06	Solid	6-24-94/1222			-	Grain Size		
7-NC-S006-06	Solid	6-24-94/1405			-	Grain Size		

COPY

**FOR LAB
USE ONLY**

**FOR LAB
USE ONLY**

Special Instructions: ²³ _____

Possible Hazard Identification: ²⁴
 Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵
 Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: ²⁶
 Normal Rush

QC Level: ²⁷
 I. II. III. Project Specific (specify): _____

1. Relinquished by ²⁸ (Signature/Affiliation) <u>[Signature]</u>	Date: <u>6-24-94</u> Time: <u>1700</u>	1. Received by ²⁸ (Signature/Affiliation)	Date: _____ Time: _____
2. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	2. Received by (Signature/Affiliation)	Date: _____ Time: _____
3. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	3. Received by (Signature/Affiliation)	Date: _____ Time: _____

Comments: ²⁹ _____

White: To accompany samples

Yellow: Field copy

*See back of form for special instructions.



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**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

COCH 70008

Reference Document No. 388475
Page 1 of 1

Project Name/No. ¹ CTU-0244
Sample Team Members ² _____
Profit Center No. ³ _____
Project Manager ⁴ M. Bartman
Purchase Order No. ⁶ _____
Required Report Date ¹¹ 28 day turn

Samples Shipment Date ⁷ 6-24-94
Lab Destination ⁸ Knoxville
Lab Contact ⁹ Sheree Schneider
Project Contact/Phone ¹² 615-588-6401
Carrier/Waybill No. ¹³ Fed Ex # 1396784760

Bill to: ⁵ Baker Environmental
Report to: ¹⁰ _____

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-ET-SW020	Aqueous	6-24-94/1000			H ₂ O ₂	TLL-SUAH, TAL-metals TLL-Post, PLB	FOR LAB USE ONLY	
7-UC-SW06	Aqueous	6-24-94/1350			H ₂ O ₂	TLL-SUAH, TAL-metals TLL-Post/PLB		
7-ET-SD02-06	Solid	6-24-94/1000			-	Grain Size		
7-WT-SD03-06	Solid	6-24-94/1120			-	Grain Size		
							FOR LAB USE ONLY	

COPY

Special Instructions: ²³

Possible Hazard Identification: ²⁴
 Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵
 Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: ²⁶
 Normal Rush

QC Level: ²⁷
 I. II. III. Project Specific (specify): _____

1. Relinquished by ²⁸ [Signature] Date: 6-24-94
 (Signature/Affiliation) Time: 1:00

2. Relinquished by _____ Date: _____
 (Signature/Affiliation) Time: _____

3. Relinquished by _____ Date: _____
 (Signature/Affiliation) Time: _____

1. Received by ²⁸ _____ Date: _____
 (Signature/Affiliation) Time: _____

2. Received by _____ Date: _____
 (Signature/Affiliation) Time: _____

3. Received by _____ Date: _____
 (Signature/Affiliation) Time: _____

Comments: ²⁹

Write: To accompany samples
Yellow: Field copy
* See back of form for special instructions.



INTERNATIONAL
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**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

CC# 70009
Reference Document No. 388471
Page 1 of 1

Project Name/No. 1 C70-424
Sample Team Members 2
Profit Center No. 3
Project Manager 4 M. Bartman
Purchase Order No. 6
Required Report Date 11 28 day turn

Samples Shipment Date 7 6-24-94
Lab Destination 8 Knoxville
Lab Contact 9 Sherree Schneider
Project Contact/Phone 12 615-588-6401
Carrier/Waybill No. 13 Fed Ex # 1396704760

Bill to: 5 Baker Environmental
Report to: 10

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-NC-SW05	Aqueous	6-24-94/1302		P.G		TCL-SUBA, TML-metals TCL-Post/PCB	TCL-SUBA TCL-Post, PCB	
7-FA02	Aqueous	6-24-94/1420		P.G		TCL-SUBA, TML-metals TCL-Post/PCB	FOR LAB USE ONLY	
COPY								
							FOR LAB USE ONLY	

Special Instructions: ²³

Possible Hazard Identification: ²⁴

Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵

Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: ²⁶

Normal Rush

QC Level: ²⁷

I. II. III. Project Specific (specify):

1. Relinquished by ²⁸ hr Maul Date: 6-24-94
(Signature/Affiliation) Time: 1700

2. Relinquished by Date: _____
(Signature/Affiliation) Time: _____

3. Relinquished by Date: _____
(Signature/Affiliation) Time: _____

1. Received by ²⁸ Date: _____
(Signature/Affiliation) Time: _____

2. Received by Date: _____
(Signature/Affiliation) Time: _____

3. Received by Date: _____
(Signature/Affiliation) Time: _____

Comments: ²⁹

White: To accompany samples

Yellow: Field copy

* See back of form for special instructions.



INTERNATIONAL
TECHNOLOGY
CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

COC # 70010

Reference Document No. 388476

Page 1 of 2

Project Name/No. ¹ CTO-0274
 Sample Team Members ² _____
 Profit Center No. ³ _____
 Project Manager ⁴ M. Bartman
 Purchase Order No. ⁶ _____
 Required Report Date ¹¹ 28 day turn

Samples Shipment Date ⁷ 6-24-94
 Lab Destination ⁸ Knoxville
 Lab Contact ⁹ Sherree Schneider
 Project Contact/Phone ¹² 615-588-6401
 Carrier/Waybill No. ¹³ Fed Ex # 1346784760

Bill to: ⁵ Baker Environmental
 Report to: ¹⁰ _____

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-TB04	Aqueous	6-24-94	G		HCL	TLL-VUA		
7-NC-SD06-06	Solid	6-24-94/1405	G		-	TLL-SUA, TLL-VUA TLL-Post/PCB TLL-metals, PCB	FOR LAB USE ONLY	
7-NC-SD06-612	Solid	6-24-94/1402	G		-	TLL-SUA, TLL-VUA TLL-Post/PCB TLL-metals		
7-NC-SD01-06	Solid	6-24-94/1232	G		-	TLL-SUA, TLL-VUA TLL-Post/PCB TLL-metals, PCB		
7-NC-SD01-612	Solid	6-24-94/1230	G		-	TLL-SUA, TLL-VUA TLL-Post/PCB TLL-metals	FOR LAB USE ONLY	
7-WT-SD01-06	Solid	6-23-94/1445	G		-	TLL-SUA, VUA, PCB TLL-Post/PCB TLL-metals		
7-WT-SD03-06	Solid	6-24-94/1120	G		-	TLL-SUA, VUA, PCB TLL-Post/PCB TLL-metals		
7-NC-SD05-06	Solid	6-24-94/1325	G			TLL-Organics TLL-metals		

Special Instructions: ²³

Possible Hazard Identification: ²⁴

Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵

Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: ²⁶

Normal Rush

QC Level: ²⁷

I. II. III. Project Specific (specify): _____

1. Relinquished by ²⁸ [Signature] Date: 6-24-94
 (Signature/Affiliation) Time: 1700

1. Received by ²⁸ _____ Date: _____
 (Signature/Affiliation) Time: _____

2. Relinquished by _____ Date: _____
 (Signature/Affiliation) Time: _____

2. Received by _____ Date: _____
 (Signature/Affiliation) Time: _____

3. Relinquished by _____ Date: _____
 (Signature/Affiliation) Time: _____

3. Received by _____ Date: _____
 (Signature/Affiliation) Time: _____

Comments: ²⁹

White: To accompany samples

Yellow: Field copy

* See back of form for special instructions.



INTERNATIONAL
TECHNOLOGY
CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

COL # 70010

Reference Document No. ³⁰ 388476

Page 2 of 2

Project Name _____

Project No. CTU-6274

Samples Shipment Date 6-24-94

ONE CONTAINER PER LINE

Sample 14 Number	Sample 15 Description/Type	Date/Time 16 Collected	Container 17 Type	Sample 18 Volume	Pre-19 servative	Requested Testing 20 Program	Condition on 21 Receipt	Disposal 22 Record No.
7-NC-SD05-012	Solid	6-24-94/1323			—	TLL - solid organics PAL - metals		
7-ET-SD02-06	Solid	6-24-94/1020			—	TLL - organics, TOL PAL - metals	FOR LAB USE ONLY	
7-ET-SD02- 060 ⁰⁶⁰	Solid	6-24-94/1020			—	TLL - organics PAL - metals		
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

COPY

White: To accompany samples

Yellow: Field copy

* See back of form for special instructions.



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

DOC # 70011

Reference Document No. 388472
Page 1 of 2

Project Name/No. 1 CTU-6274
Sample Team Members 2
Profit Center No. 3
Project Manager 4 M. Burtman
Purchase Order No. 6
Required Report Date 11 20-day turn

Samples Shipment Date 7 6-24-94
Lab Destination 8 Knoxville
Lab Contact 9 Sherree Schneider
Project Contact/Phone 12 615-588-6401
Carrier/Waybill No. 13 Fed Ex #1396784760

Bill to: 5 Baker Environmental
Report to: 10

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-WT-SW02	Aqueous	6-23-94/1830	G		HCL	TCL-UOA		
7-WT-SW02D	Aqueous	6-23-94/1830	G		HCL	TCL-UOA		
7-WT-S002-06	Solid	6-23-94/1855	G		HCL	TCL-UOA		
7-WT-S002D(U)	Solid	6-23-94/1855	G		HCL	TCL-UOA		
7-UC-SW05	Aqueous	6-24-94/1302	G		HCL	TCL-UOA		
7-EA02	Aqueous	6-24-94/1420	G		HCL	TCL-UOA		
7-UC-SW01	Aqueous	6-24-94/1212	G		HCL	TCL-UOA		
7-UC-SW06	Aqueous	6-24-94/1350	G		HCL	TCL-UOA		

COPY

FOR LAB USE ONLY

FOR LAB USE ONLY

Special Instructions: 23 MS/MSD on 7-WT-S002

Possible Hazard Identification: 24
Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: 25
Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: 26
Normal Rush

QC Level: 27
I. II. III. Project Specific (specify):

1. Relinquished by 28 *[Signature]*
(Signature/Affiliation)
Date: 6-24-94
Time: 1700

2. Relinquished by
(Signature/Affiliation)
Date:
Time:

3. Relinquished by
(Signature/Affiliation)
Date:
Time:

1. Received by 28
(Signature/Affiliation)
Date:
Time:

2. Received by
(Signature/Affiliation)
Date:
Time:

3. Received by
(Signature/Affiliation)
Date:
Time:

Comments: 29

White: To accompany samples

Yellow: Field copy

* See back of form for special instructions.



INTERNATIONAL
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CORPORATION

**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

COC # 70012

Reference Document No. 388478
Page 1 of 1

Project Name/No. ¹ CTO-0274
Sample Team Members ² _____
Profit Center No. ³ _____
Project Manager ⁴ M. Bartman
Purchase Order No. ⁶ _____
Required Report Date ¹¹ 20 day turn

Samples Shipment Date ⁷ 6-24-94
Lab Destination ⁸ Knoxville
Lab Contact ⁹ Sherree Schneider
Project Contact/Phone ¹² 615-588-6401
Carrier/Waybill No. ¹³ FedEx # 1396784760

Bill to: ⁵ Baker Environmental
Report to: ¹⁰ _____

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-ET-SW02	Aqueous	6-24-94/1000	P.G.		H ₂ O ₂	TEL-SW02 TEL-Post/DXB IAH-Metals		
7-WT-S001-06	Solid	6-24-94/1945	P		-	Grain Size	FOR LAB USE ONLY	
7-WT-S002-06	Solid	6-24-94/1875	P		-	Grain Size		
							FOR LAB USE ONLY	

COPY

Special Instructions: ²³ MS/MSD on 7-ET-SW02

Possible Hazard Identification: ²⁴
 Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵
 Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: ²⁶
 Normal Rush

QC Level: ²⁷
 I. II. III. Project Specific (specify): _____

1. Relinquished by ²⁸ [Signature]
 (Signature/Affiliation)

Date: June 24, 94
 Time: 1700

1. Received by ²⁸
 (Signature/Affiliation)

Date: _____
 Time: _____

2. Relinquished by
 (Signature/Affiliation)

Date: _____
 Time: _____

2. Received by
 (Signature/Affiliation)

Date: _____
 Time: _____

3. Relinquished by
 (Signature/Affiliation)

Date: _____
 Time: _____

3. Received by
 (Signature/Affiliation)

Date: _____
 Time: _____

Comments: ²⁹

White: To accompany samples

Yellow: Field copy

* See back of form for special instructions.



**INTERNATIONAL
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CORPORATION**

**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

COC # 70013

Reference Document No. 388481
Page 1 of 1

Project Name/No. 1 CTO-0274
Sample Team Members 2
Profit Center No. 3
Project Manager 4 M. Bantroy
Purchase Order No. 6
Required Report Date 11 20 day turn

Samples Shipment Date 7 6-24-94
Lab Destination 8 Knoxville
Lab Contact 9 Sherree Schneider
Project Contact/Phone 12 615-588-6401
Carrier/Waybill No. 13 Fed Ex # 1396784760

Bill to: 5 Baker Environmental
Report to: 10

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-WT-SW02	Aqueous	6-23-94/1030	G, P		H ₂ O ₂	TLL-SUM, TML-metals TLL-Post, PCB		
7-WT-SD02-06	Solid	6-23-94/1055	G		-	TLL-SUM, TOL TLL-Post, PCB, TML-metals	FOR LAB USE ONLY	
7-WT-SD02-060	Solid	6-23-94/1055	G		-			
COPY								
							FOR LAB USE ONLY	

Special Instructions: ²³ ms/msd on 7-WT-SW02 and 7-WT-SD02-06 (only TLL SUM, TLL Post, PCB, TML metals)

Possible Hazard Identification: ²⁴
 Non-hazard Flammable Skin Irritant Poison B Unknown
 Sample Disposal: ²⁵
 Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: ²⁶
 Normal Rush
 QC Level: ²⁷
 I. II. III. Project Specific (specify): _____

1. Relinquished by ²⁸ (Signature/Affiliation) <u>be [Signature]</u>	Date: <u>6-24-94</u> Time: <u>1706</u>	1. Received by ²⁸ (Signature/Affiliation)	Date: _____ Time: _____
2. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	2. Received by (Signature/Affiliation)	Date: _____ Time: _____
3. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	3. Received by (Signature/Affiliation)	Date: _____ Time: _____

Comments: ²⁹

Write: To accompany samples
Yellow: Field copy
* See back of form for special instructions.



INTERNATIONAL
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**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

COC # 70014
Reference Document No. 388473
Page 1 of 1

Project Name/No. 1 CTO-0274
Sample Team Members 2
Profit Center No. 3
Project Manager 4 M. Burtman
Purchase Order No. 6
Required Report Date 11 28 days turn

Samples Shipment Date 7 6-27-94
Lab Destination 8 Knoxville
Lab Contact 9 Sherri Schneider
Project Contact/Phone 12 615-588-6401
Carrier/Waybill No. 13 FedEx #1396784782

Bill to: 5 Baker Environmental
Report to: 10

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
16-ERO1	Aqueous	6-26-94/1730	P, G		H ₂ O ₂	TLL-SUOA, TAL metals TLL-Post/PCB		
16-NC-SW01	Aqueous	6-27-94/0842	P, G, P		H ₂ O ₂	TLL-SUOA, TAL metals TLL-Post/PCB, TAL metals	FOR LAB USE ONLY	
16-NC-SW02	Aqueous	6-27-94/0842	P, G		H ₂ O ₂	TLL-SUOA, TAL metals TLL-Post/PCB, TAL metals		
							FOR LAB USE ONLY	

COPY

Special Instructions: ²³

Possible Hazard Identification: ²⁴
 Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵
 Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: ²⁶
 Normal Rush

QC Level: ²⁷
 I. II. III. Project Specific (specify):

1. Relinquished by ²⁸
 (Signature/Affiliation) *[Signature]*

Date: 6-27-94
 Time: 1700

1. Received by ²⁸
 (Signature/Affiliation)

Date: _____
 Time: _____

2. Relinquished by
 (Signature/Affiliation)

Date: _____
 Time: _____

2. Received by
 (Signature/Affiliation)

Date: _____
 Time: _____

3. Relinquished by
 (Signature/Affiliation)

Date: _____
 Time: _____

3. Received by
 (Signature/Affiliation)

Date: _____
 Time: _____

Comments: ²⁹

White: To accompany samples
 Yellow: Field copy
 * See back of form for special instructions.



INTERNATIONAL
TECHNOLOGY
CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

COE # 70015
Reference Document No. 388474
Page 1 of 1

Project Name/No. 1 CTO-0274
Sample Team Members 2
Profit Center No. 3
Project Manager 4 M. Bartman
Purchase Order No. 6
Required Report Date 11 28 day turn

Samples Shipment Date 7 6-27-94
Lab Destination 8 Knoxville
Lab Contact 9 Sherree Schneider
Project Contact/Phone 12 615-588-6401
Carrier/Waybill No. 13 Fed Ex #1396784782

Bill to: 5 Baker Environmental
Report to: 10

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
16-NC-5W01	Aqueous	6-27-94/0842	P		HNO ₃	TAL-metals	FOR LAB USE ONLY	
16-NC-5W03	Aqueous	6-26-94/1555	P, G		HNO ₃	TAL-SUA, TAL-metals TAL-Post/PCB		
16-NC-5W05	Aqueous	6-26-94/1415	P, G		HNO ₃	TAL-SUA, TAL-metals TAL-Post/PCB		
7-NC-5D04-06	Solid	6-26-94/1040	P		-	Grain Size	FOR LAB USE ONLY	

COPY

Special Instructions: ²³

Possible Hazard Identification: ²⁴

Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵

Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: ²⁶

Normal Rush

QC Level: ²⁷

I. II. III. Project Specific (specify):

1. Relinquished by ²⁸
(Signature/Affiliation)

[Signature]

Date: 6-27-94
Time: 1700

1. Received by ²⁸
(Signature/Affiliation)

Date: _____
Time: _____

2. Relinquished by
(Signature/Affiliation)

Date: _____
Time: _____

2. Received by
(Signature/Affiliation)

Date: _____
Time: _____

3. Relinquished by
(Signature/Affiliation)

Date: _____
Time: _____

3. Received by
(Signature/Affiliation)

Date: _____
Time: _____

Comments: ²⁹

White: To accompany samples
Yellow: Field copy
*See back of form for special instructions.



INTERNATIONAL
TECHNOLOGY
CORPORATION

**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

COC# 70016

Reference Document No. 388461
Page 1 of 1

Project Name/No. 1 CTO-0274
Sample Team Members 2
Profit Center No. 3
Project Manager 4 M. Bartman
Purchase Order No. 6
Required Report Date 11: 20 day turn

Samples Shipment Date 7 6-27-94
Lab Destination 8 Knoxville
Lab Contact 9 Sheree Schneider
Project Contact/Phone 12 615-588-6401
Carrier/Waybill No. 13 FedEx # 1396784782

Bill to: 5 Baker Environmental
Report to: 10

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-NC-SW03	Aqueous	6-26-94/1130	P, G		H ₂ O ₂	TCL-SU04, TAL-metals TCL-Post/PCB	FOR LAB USE ONLY	
7-NC-SW02	Aqueous	6-26-94/1210	P, G		H ₂ O ₂	TCL-SU04, TAL-metals TCL-Post/PCB		
16-NC-5103-06	Solid	6-26-94/1100	P		-	Grain Size		
16-NC-5005-08	Solid	6-26-94/1430	P		-	Grain Size		
							FOR LAB USE ONLY	

COPY

Special Instructions: ²³

Possible Hazard Identification: ²⁴
 Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵
 Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: ²⁶
 Normal Rush

QC Level: ²⁷
 I. II. III. Project Specific (specify):

1. Relinquished by ²⁸ (Signature/Affiliation) <u>[Signature]</u>	Date: <u>6-27-94</u> Time: <u>1700</u>	1. Received by ²⁸ (Signature/Affiliation)	Date: _____ Time: _____
2. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	2. Received by (Signature/Affiliation)	Date: _____ Time: _____
3. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	3. Received by (Signature/Affiliation)	Date: _____ Time: _____

Comments: ²⁹

Write: To accompany samples
Yellow: Field copy
*See back of form for special instructions.



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

COE* 70017

Reference Document No. 388462

Page 1 of 1

Project Name/No. 1 CTO-0274
 Sample Team Members 2
 Profit Center No. 3
 Project Manager 4 M. Bartman
 Purchase Order No. 6
 Required Report Date 11 28 day turn

Samples Shipment Date 7 6-27-94
 Lab Destination 8 Knoxville
 Lab Contact 9 Sherie Schneider
 Project Contact/Phone 12 615-588-6401
 Carrier/Waybill No. 13 FedEx # 1396784782

Bill to: 5 Baker Environmental
 Report to: 10

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
16-NC-SW04	Aqueous	6-26-94/1502	P, G		H2O3	TLL-SW04, TAL-metals TLL-Post/PCB		
16-NC-S004-06	Solid	6-26-94/1527	P		-	Grain Size	FOR LAB USE ONLY	
16-NC-S004-06	Solid	6-26-94/1527	G		-	TLL-SW04, TCE		
16-NC-S004-060	Solid	6-26-94/1527	G		-	TLL-Post/PCB, TAL-metals TLL-SW04	FOR LAB USE ONLY	
16-NC-S004-612	Solid	6-26-94/1527	G		-	TLL-Post/PCB, TAL-metals TLL-SW04		

COPY

Special Instructions: ²³ MS/MSD on 16-NC-SW04 (TLL-SW04, TLL-Post/PCB, TAL-metals) 1 MS/MSD on 16-NC-S004-060 (TLL-SW04, TLL-Post/PCB, TAL-metals)

Possible Hazard Identification: ²⁴ Non-hazard Flammable Skin Irritant Poison B Unknown Sample Disposal: ²⁵ Return to Client Disposal by Lab Archive (mos.) 0

Turnaround Time Required: ²⁶ Normal Rush QC Level: ²⁷ I. II. III. Project Specific (specify):

1. Relinquished by ²⁸ (Signature/Affiliation) <u>[Signature]</u>	Date: <u>6-27-94</u> Time: <u>1700</u>	1. Received by ²⁸ (Signature/Affiliation)	Date: _____ Time: _____
2. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	2. Received by (Signature/Affiliation)	Date: _____ Time: _____
3. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	3. Received by (Signature/Affiliation)	Date: _____ Time: _____

Comments: ²⁹

White: To accompany samples
 Yellow: Field copy
 * See back of form for special instructions.



**INTERNATIONAL
TECHNOLOGY
CORPORATION**

**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

COC # 70018

Reference Document No. 388463

Page 1 of 1

Project Name/No. PTO-0274
 Sample Team Members 2
 Profit Center No. 3
 Project Manager 4 M. Bartman
 Purchase Order No. 6
 Required Report Date 11 20 day turn

Samples Shipment Date 7 6-27-94
 Lab Destination 8 Knoxville
 Lab Contact 9 Sherree Schneider
 Project Contact/Phone 12 615-588-6401
 Carrier/Waybill No. 13 Fed ex # 1396784792

Bill to: 5 Baker Environmental
 Report to: 10

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
16-NC-SW04D	Aqueous	6-26-94/1502	P.G		H ₂ O ₂	TCL-SUOM, TAL-metals TLL-Post/PLB	FOR LAB USE ONLY	
7-NC-SW04D	Aqueous	6-26-94/1005	P.G		H ₂ O ₂	TCL-SUOM, TAL-metals TLL-Post/PLB		
16-NC-SD01-06	Solid	6-27-94/0802	P		-	Grain Size	FOR LAB USE ONLY	
16-NC-SD02-06	Solid	6-27-94/0807	P		-	Grain Size		

COPY

Special Instructions: ²³

Possible Hazard Identification: ²⁴
 Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: ²⁵
 Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: ²⁶
 Normal Rush

QC Level: ²⁷
 I. II. III. Project Specific (specify):

1. Relinquished by ²⁸ (Signature/Affiliation) <u>[Signature]</u>	Date: <u>6-27-94</u> Time: <u>1700</u>	1. Received by ²⁸ (Signature/Affiliation)	Date: _____ Time: _____
2. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	2. Received by (Signature/Affiliation)	Date: _____ Time: _____
3. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	3. Received by (Signature/Affiliation)	Date: _____ Time: _____

Comments: ²⁹

White: To accompany samples

Yellow: Field copy

* See back of form for special instructions.



**INTERNATIONAL
TECHNOLOGY
CORPORATION**

**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD***

COC# 700189
Reference Document No. 388464
Page 1 of 1

Project Name/No. 1 CTO-0274
Sample Team Members 2
Profit Center No. 3
Project Manager 4 M. Bartman
Purchase Order No. 6
Required Report Date 11 28 days turn

Samples Shipment Date 7 6-27-94
Lab Destination 8 Knoxville
Lab Contact 9 Cherec Schneider
Project Contact/Phone 12 615-588-6401
Carrier/Waybill No. 13 Fed ex # 1396784782

Bill to: 5 Baker Environmental
Report to: 10

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
7-NC-SW04	Aqueous	6-26-94/1005	P.G.		HU03	TCL-SWA, TCL-Post/PCB TAL-Metals	FOR LAB USE ONLY	
16-EA02	Aqueous	6-27-94/1515	P.G.		HU03	TCL-SWA, TAL-Metals TCL-Post/PCB		
COPY								
FOR LAB USE ONLY								

Special Instructions: ²³ M/S/MSD on 7-NC-SW04 (TCL SWA, TCL-Post/PCB, TAL-Metals)

Possible Hazard Identification: ²⁴
 Non-hazard Flammable Skin Irritant Poison B Unknown
 Sample Disposal: ²⁵
 Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: ²⁶
 Normal Rush
 QC Level: ²⁷
 I. II. III. Project Specific (specify):

1. Relinquished by ²⁸ (Signature/Affiliation) <u>for shell</u>	Date: <u>6-27-94</u> Time: <u>1700</u>	1. Received by ²⁸ (Signature/Affiliation)	Date: _____ Time: _____
2. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	2. Received by (Signature/Affiliation)	Date: _____ Time: _____
3. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	3. Received by (Signature/Affiliation)	Date: _____ Time: _____

Comments: ²⁹

White: To accompany samples
Yellow: Field copy
* See back of form for special instructions.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

P. 3

Project Name/No. 1 CJO-0274
 Sample Team Members 2
 Profit Center No. 3
 Project Manager 4 M. Bartman
 Purchase Order No. 6
 Required Report Date 11 28 day turn

Samples Shipment Date 7 6-27-94
 Lab Destination 8 Knoxville
 Lab Contact 9 Sheron Schneider
 Project Contact/Phone 12 615-588-6401
 Carrier/Waybill No. 13 FWEI # 1396784782

Bill to: 5 Baker Environmental
 Report to: 10

White: To accompany samples

ONE CONTAINER PER LINE

Sample Number ¹⁴	Sample Description/Type ¹⁵	Date/Time Collected ¹⁶	Container Type ¹⁷	Sample Volume ¹⁸	Pre-servative ¹⁹	Requested Testing Program ²⁰	Condition on Receipt ²¹	Disposal Record No. ²²
16-EA01-	Aqueous	6-26-94/1730	G		HCL	TCL-V01A	FOR LAB USE ONLY	
16-NC-SW03	Aqueous	6-26-94/1555	G		HCL	TCL-V01A		
16-NC-SW02	Aqueous	6-27-94/1800	G		HCL	TCL-V01A		
7-NC-SW03	Aqueous	6-26-94/1130	G		HCL	TCL-V01A		
16-EA02	Aqueous	6-27-94/1515	G		HCL	TCL-V01A	FOR LAB USE ONLY	
16-NC-SW05	Aqueous	6-26-94/1415	G		HCL	TCL-V01A		
16-NC-SW01	Aqueous	6-27-94/0842	G		HCL	TCL-V01A		
7-NC-SW02	Aqueous	6-26-94/1210	G		HCL	TCL-V01A		

Yellow: Field copy

* See back of form for additional instructions

Special Instructions: 23

Possible Hazard Identification: 24
 Non-hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal: 25
 Return to Client Disposal by Lab Archive 6 (mos.)

Turnaround Time Required: 26
 Normal Rush

QC Level: 27
 I. II. III. Project Specific (specify): _____

1. Relinquished by <u>28</u> (Signature/Affiliation) <u>[Signature]</u>	Date: <u>6-27-94</u> Time: <u>1700</u>	1. Received by <u>28</u> (Signature/Affiliation)	Date: _____ Time: _____
2. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	2. Received by (Signature/Affiliation)	Date: _____ Time: _____
3. Relinquished by (Signature/Affiliation)	Date: _____ Time: _____	3. Received by (Signature/Affiliation)	Date: _____ Time: _____

Comments: 29 Sampler aware of air bubbles in some vials

FAX NO. 9104511725

MAIL ROOM/RECEIVING



INTERNATIONAL
TECHNOLOGY
CORPORATION

**ANALYSIS REQUEST AND
CHAIN OF CUSTODY RECORD (cont.)***

Reference Document No. 30

Page 2 of 2

1170020

Project Name

Project No. CTO-0274

Samples Shipment Date 6-27-94

ONE CONTAINER PER LINE

Sample 14 Number	Sample 15 Description/Type	Date/Time 16 Collected	Container 17 Type	Sample 18 Volume	Pre-19 servative	Requested Testing 20 Program	Condition on 21 Receipt	Disposal 22 Record No.
7-NC-SW04	Aqueous	6-26-94/1005	G		HCL	TLL-V019 ✓		
7-NC-SW04D	Aqueous	6-26-94/1005	G		HCL	TLL-V019 ✓	FOR LAB USE ONLY	
7-TB05	Aqueous	6-27-94	G		HCL	TCL-V019 ✓		
16-NC-SW04	Aqueous	6-26-94/1502	G		HCL	TLL-V019 ✓	FOR LAB USE ONLY	
16-NC-SW04	Aqueous	6-26-94/1502	G		HCL	TLL-V019 ✓		
7-NC-SD02-06	Aqueous	6-26-94/1227	P		-	Grain Size ✓		
7-NC-SD03-06	Aqueous	6-26-94/1145	P		-	Grain Size ✓	FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

COPY

Write: To accompany samples
Yellow: Field copy
*See back of form for special instructions.

1170020

MSD on 7-NC-SW04/111-1111



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

Reference Document No. 30
Page 2 of 2

Project Name _____

Project No. CTO-6774

Samples Shipment Date 6-27-94

ONE CONTAINER PER LINE

Sample 14 Number	Sample 15 Description/Type	Date/Time 16 Collected	Container 17 Type	Sample 18 Volume	Pre-19 servative	Requested Testing 20 Program	Condition on 21 Receipt	Disposal 22 Record No.
7-NC-SD04-612	Solid	6-26-94/1030	G	-	+	TLL-Organics TAL-metals		
16-NC-SD04-06	Solid	6-26-94/1527	G		-	TLL-VCM	FOR LAB USE ONLY	
16-NC-SD04-06D	Solid	6-26-94/1527	G		-	TLL-VCM		
16-NC-SD04-612	Solid	6-26-94/1525	G		-	TLL-VCM	FOR LAB USE ONLY	
16-NC-SD02-06	Solid	6-27-94/0807	G		-	TLL-Organics, PCB TAL-metals		
16-NC-SD02-612	Solid	6-27-94/0805	G		-	TLL-Organics TAL-metals	FOR LAB USE ONLY	
16-NC-SD01-06	Solid	6-27-94/0858	G		-	TLL-Organics, PCB TAL-metals		
16-NC-SD01-612	Solid	6-27-94/0859	G		-	TLL-Organics TAL-metals	FOR LAB USE ONLY	
7-NC-SD02-06	Solid	6-26-94/1027	G		-	TLL-Organics, PCB TAL-metals		
7-NC-SD02-612	Solid	6-26-94/1027	G		-	TLL-Organics TAL-metals	FOR LAB USE ONLY	
4-TB06	Aqueous	6-27-94	G		-	TLL-VCM		
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

COPY

16-NC-SD04-06 (TLL-VCM)

White: To accompany samples
Yellow: Field copy
* See back of form for special instructions.

APPENDIX B.2
INTERNAL TRACKING FORMS

CL 274
SITE 7, SOIL BORINGS

DATE SHIPPED	SAMPLE ID	Analysis Requested								Analysis Received								DATE EXPECTED	DATE RECD	TURNAROUND TIME	SDG NO.	COMMENTS
		organics				eng. P.				organics				eng. P.								
		TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	ATTERBURG LIMITS	GRAIN SIZE	TOC	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	ATTERBURG LIMITS	GRAIN SIZE	TOC					
10/21/94	7-SWA-SB03-00	x	x	x	x					x	x	x	x				11/26/94	12/21/94	60	1742		
10/21/94	7-TB-01	x								x							11/26/94	12/21/94	60	1742		
10/21/94	7-SWA-SB05-00	x	x	x	x					x	x	x	x				11/26/94	12/21/94	60	1742		
10/21/94	7-SWA-SB05-02	x	x	x	x					x	x	x	x				11/26/94	12/21/94	60	1742		
10/21/94	7-SWA-SB01-00	x	x	x	x					x	x	x	x				11/26/94	12/21/94	60	1742		
10/21/94	7-SWA-SB01-04	x	x	x	x					x	x	x	x				11/26/94	12/21/94	60	1742	MS/MSD	
10/21/94	7-SWA-SB01-04D	x	x	x	x					x	x	x	x				11/26/94	12/21/94	60	1742		
10/22/94	7-SWA-SB02-00	x	x	x	x					x	x	x	x				11/27/94	12/14/94	52	1745		
10/22/94	7-SWA-SB02-04	x	x	x	x					x							11/27/94	12/14/94	52	1745		
10/22/94	7-SWA-SB04-00	x	x	x	x					x	x	x	x				11/27/94	12/14/94	52	1745		
10/22/94	7-SWA-SB04-01	x	x	x	x					x	x	x	x				11/27/94	12/14/94	52	1745		
10/22/94	7-RS-01	x	x	x	x												11/27/94		####		Hold do not analyze	
10/22/94	7-TB-02	x								x							11/27/94	12/14/94	52	1745		
10/24/94	7-EA-SB07-00	x	x	x	x					x	x	x	x				11/29/94	12/23/94	59	1764		
10/24/94	7-EA-SB08-00	x	x	x	x					x	x	x	x				11/29/94	12/23/94	59	1764		
10/24/94	7-NA-SB07-00	x	x	x	x					x	x	x	x				11/29/94	12/23/94	59	1764		
10/24/94	7-NA-SB07-02	x	x	x	x					x	x	x	x				11/29/94	12/23/94	59	1764		
10/24/94	7-NA-SB10-00	x	x	x	x					x	x	x	x				11/29/94	12/23/94	59	1764		
10/24/94	7-NA-SB12-00	x	x	x	x					x	x	x	x				11/29/94	12/23/94	59	1764		
10/24/94	7-NA-SB12-02	x	x	x	x					x	x	x	x				11/29/94	12/23/94	59	1764		
10/24/94	7-EA-SB09-00	x	x	x	x					x	x	x	x				11/29/94	12/23/94	59	1764		
10/24/94	7-EA-SB10-00	x	x	x	x					x	x	x	x				11/29/94	12/23/94	59	1764		
10/24/94	7-EA-SB11-00	x	x	x	x					x	x	x	x				11/29/94	12/23/94	59	1764		
10/24/94	7-EA-SB11-02	x	x	x	x					x	x	x	x				11/29/94	12/23/94	59	1764		
10/24/94	7-BB-SB03-00	x	x	x	x					x	x	x	x				11/29/94	12/23/94	59	1764		
10/24/94	7-BB-SB03-09	x	x	x	x					x	x	x	x				11/29/94	12/23/94	59	1764		
10/24/94	7-EA-SB03-00	x	x	x	x					x	x	x	x				11/29/94	12/23/94	59	1764		
10/24/94	7-NA-SB02-00	x	x	x	x					x	x	x	x				11/29/94	12/23/94	59	1764		

CTO-0274
SITE 7, SOIL BORINGS

DATE SHIPPED	SAMPLE ID	Analysis Requested								Analysis Received								DATE EXPECTED	DATE RECD	TURNAROUND TIME	SDG NO.	COMMENTS
		organics				eng. P				organics				eng. P.								
		TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	ATTERBURG LIMITS	GRAIN SIZE	TOC	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	ATTERBURG LIMITS	GRAIN SIZE	TOC					
10/24/94	7-NA-SB02-08	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-NA-SB05-00	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-NA-SB05-08	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-RS-02	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	MS/MSD
10/24/94	7-EA-SB01-00	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-EA-SB03-08	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-EA-SB01-07	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-TB-03	x								x								11/29/94	12/23/94	59	1764	
10/24/94	7-NA-SB08-00	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-NA-SB08-09	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	MS/MSD
10/24/94	7-NA-SB08-09D	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-NA-SB06-00	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-EA-SB05-00	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-EA-SB05-07	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-FB-01	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-RS-03	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	MS,MSD
10/24/94	7-TB-04	x								x								11/29/94	12/23/94	59	1764	
10/24/94	7-BB-SB01-00	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-BB-SB01-05	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-NA-SB03-00	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-NA-SB03-04	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-BB-SB02-00	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-BB-SB02-05	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-NA-SB03-02	x								x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-NA-SB06-07	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-NA-SB11-00	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-NA-SB11-03	x	x	x	x					x	x	x	x					11/29/94	12/23/94	59	1764	
10/24/94	7-MW04-00	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	

CTG-0274
SITE 7, SOIL BORINGS

DATE SHIPPED	SAMPLE ID	Analysis Requested								Analysis Received								DATE EXPECTED	DATE RECD	TURNAROUND TIME	SDG NO.	COMMENTS
		organics				eng. P.				organics				eng. P.								
		TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	ATTERBURG LIMITS	GRAIN SIZE	TOC	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	ATTERBURG LIMITS	GRAIN SIZE	TOC					
10/24/94	7-MW04-08	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	
10/24/94	7-NA-SB04-00	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	
10/24/94	7-NA-SB04-02	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	
10/24/94	7-NA-SB01-00	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	
10/24/94	7-NA-SB01-05	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	
10/24/94	7-NA-SB09-00	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	
10/24/94	7-NA-SB09-02	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	
10/24/94	7-CC-SB01-00	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	
10/24/94	7-CC-SB02-00	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	
10/24/94	7-CC-SB02-00D	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	
10/24/94	7-EA-SB02-00	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	MS/MSD
10/24/94	7-EA-SB02-00D	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	
10/24/94	7-EA-SB02-02	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	MS/MSD
10/24/94	7-EA-SB02-02D	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	
10/24/94	7-TB-05	x								x								11/29/94	12/22/94	58	1773	
10/24/94	7-EA-SB06-00	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	
10/24/94	7-EA-SB06-01	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	
10/24/94	7-EA-SB04-00	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	
10/24/94	7-EA-SB04-01	x	x	x	x					x	x	x	x					11/29/94	12/22/94	58	1773	
11/3/94	7-MW05-00	x	x	x	x					x	x	x	x					12/9/94	12/19/94	46	1896	
11/3/94	7-MW05-06	x	x	x	x					x	x	x	x					12/9/94	12/19/94	46	1896	
11/3/94	7-TB-06	x								x								12/9/94	12/19/94	46	1896	
12/3/94	7-SWA-TP04	x	x	x	x					x	x	x	x					1/8/95	1/11/95	38	2221	
12/3/94	7-TB-10	x								x								1/8/95	1/11/95	38	2221	
12/3/94	274-FBD-01					x								x				1/8/95	1/11/95	38	2221	
12/3/94	274-FB-01	x	x	x	x					x	x	x	x					1/8/95	1/11/95	38	2221	
12/3/94	7-RS-06	x	x	x	x					x	x	x	x					1/8/95	1/11/95	38	2221	
12/3/94	7-RSD-06					x								x				1/8/95	1/11/95	38	2221	

CTO-0274
SITE 7, SOIL BORINGS

DATE SHIPPED	SAMPLE ID	Analysis Requested									Analysis Received									DATE EXPECTED	DATE REC'D	TURNAROUND TIME	SDG NO.	COMMENTS
		organics			eng. P			organics			eng. P.													
		TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	ATTERBURG LIMITS	GRAIN SIZE	TOC		TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	ATTERBURG LIMITS	GRAIN SIZE	TOC						
12/3/94	7-SWA-TP02	x	x	x	x						x	x	x	x						1/8/95	1/11/95	38	2221	
12/3/94	7-SWA-TP01	x	x	x	x						x	x	x	x						1/8/95	1/11/95	38	2221	
12/3/94	7-SWA-TP05	x	x	x	x						x	x	x	x						1/8/95	1/11/95	38	2221	
12/3/94	7-SWA-TP03	x	x	x	x						x	x	x	x						1/8/95	1/11/95	38	2221	
COUNT		86	78	78	78	2	0	0	0	0	85	77	77	77	2	0	0	0	0					

C-0274
SITE 7, MONITORING WELLS

DATE SHIPPED	SAMPLE ID	Analysis Requested					Analysis Received					DATE EXPECTED	DATE RECD	TURNAROUND TIME	SDG NO.	COMMENTS	
		organics					organics										
		TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)						
12/1/94	7-MW05-01	x	x	x	x		x	x	x	x		1/6/95	1/11/95	40	2192	MS/MSD	
12/1/94	7-MW05D-01					x				x		1/6/95	1/11/95	40	2192	MS/MSD	
12/1/94	7-MW05-01D	x	x	x	x		x	x	x	x		1/6/95	1/11/95	40	2192		
12/1/94	7-MW05D-01D					x				x		1/6/95	1/11/95	40	2192		
12/1/94	7-TB-08	x					x					1/6/95	1/11/95	40	2192		
12/2/94	7-MW03-01	x	x	x	x		x	x	x	x		1/7/95	1/11/95	39	2216		
12/2/94	7-MW03D-01					x						1/7/95		###			
12/2/94	7-MW04-01	x	x	x	x		x	x	x	x		1/7/95	1/11/95	39	2216		
12/2/94	7-MW04D-01					x						1/7/95		###			
12/2/94	7-RS-05	x	x	x	x		x	x	x	x		1/7/95	1/11/95	39	2216		
12/2/94	7-RSD-05					x						1/7/95		###			
12/2/94	7-MW02-01	x	x	x	x		x	x	x	x		1/7/95	1/11/95	39	2216		
12/2/94	7-MW02D-01					x						1/7/95		###			
12/2/94	7-MW01-01	x	x	x	x		x	x	x	x		1/7/95	1/11/95	39	2216		
12/2/94	7-MW01D-01					x						1/7/95		###			
12/2/94	7-TB-09	x					x					1/7/95	1/11/95	39	2216		
COUNT		9	7	7	7	7	0	0	9	7	7	7	2	0	0		

DATE SHIPPED	SAMPLE ID	Analysis Requested								Analysis Received								DATE EXPECTED	DATE REC'D	TURNAROUND TIME	SDG NO.	COMMENTS			
		organics				eng. P				organics				eng. P.											
		TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	ATTERBURG LIMITS	GRAIN SIZE	TOC		TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	ATTERBURG LIMITS	GRAIN SIZE	TOC							
6/22/94	7-DD-SD02							x												7/28/94		###			
6/22/94	7-DD-SD02-06	x	x	x	x			x			x	x	x	x						7/28/94	7/29/94	37	7DDSD		
6/22/94	7-DD-SD01-06	x	x	x	x			x	x		x	x	x	x			x	x		7/28/94	7/29/94	37	7DDSD		
6/22/94	7-DD-SD01-06D	x	x	x	x						x	x	x	x						7/28/94	7/29/94	37	7DDSD		
6/23/94	7-MA-SD03-06	x	x	x	x						x	x	x	x						7/29/94	7/29/94	36	7ER01		
6/23/94	7-MA-SD03-612	x	x	x	x						x	x	x	x						7/29/94	7/29/94	36	7ER01		
6/23/94	7-ET-SD01-06	x	x	x	x			x	x		x	x	x	x			x	x		7/29/94	7/29/94	36	7ER01		
6/23/94	7-MA-SD01-06	x	x	x	x			x	x		x	x	x	x			x	x		7/29/94	7/29/94	36	7ER01		
6/23/94	7-MA-SD01-612	x	x	x	x						x	x	x	x						7/29/94	7/29/94	36	7ER01		
6/23/94	7-MA-SD04-06	x	x	x	x						x	x	x	x						7/29/94	7/29/94	36	7ER01		
6/23/94	7-MA-SD04-612	x	x	x	x						x	x	x	x						7/29/94	7/29/94	36	7ER01		
6/23/94	7-MA-SD02-06	x	x	x	x						x	x	x	x						7/29/94	7/29/94	36	7ER01		
6/23/94	7-MA-SD02-06D	x	x	x	x						x	x	x	x						7/29/94	7/29/94	36	7ER01		
6/23/94	7-MA-SD02-612	x	x	x	x						x	x	x	x						7/29/94	7/29/94	36	7ER01		
6/24/94	7-ET-SD03-06							x												7/30/94		###			
6/24/94	7-NC-SD06-06	x	x	x	x			x	x		x	x	x	x			x	x		7/30/94	8/2/94	38	7ER02		
6/24/94	7-NC-SD06-612	x	x	x	x						x	x	x	x						7/30/94	8/2/94	38	7ER02		
6/24/94	7-NC-SD01-06	x	x	x	x			x	x		x	x	x	x			x	x		7/30/94	8/2/94	38	7ER02		
6/24/94	7-NC-SD01-612	x	x	x	x						x	x	x	x						7/30/94	8/2/94	38	7ER02		
6/24/94	7-WT-SD01-06	x	x	x	x			x	x		x	x	x	x			x	x		7/30/94	8/2/94	38	7ER02		
6/24/94	7-WT-SD03-06	x	x	x	x				x		x	x	x	x				x		7/30/94	8/2/94	38	7ER02		
6/24/94	7-NC-SD05-06	x	x	x	x			x	x		x	x	x	x			x	x		7/30/94	8/2/94	38	7ER02		
6/24/94	7-NC-SD05-612	x	x	x	x						x	x	x	x						7/30/94	8/2/94	38	7ER02		
6/24/94	7-ET-SD02-06	x	x	x	x			x	x		x	x	x	x			x	x		7/30/94	8/2/94	38	7ER02	MS/MSD on metals & TCL org.	
6/24/94	7-ET-SD02-06D	x	x	x	x						x	x	x	x						7/30/94	8/2/94	38	7ER02		
6/24/94	7-WT-SD02-06	x	x	x	x			x	x		x	x	x	x			x	x		7/30/94	8/2/94	38	7ER02	MS/MSD	
6/24/94	7-WT-SD02-06D	x	x	x	x				x		x	x	x	x				x		7/30/94	8/2/94	38	7ER02		
6/27/94	7-NC-SD04-06	x	x	x	x			x	x		x	x	x	x			x	x		8/2/94	8/3/94	36	7NCSD	MS/MSD	
6/27/94	7-NC-SD04-06D	x	x	x	x						x	x	x	x						8/2/94	8/3/94	36	7NCSD		
6/27/94	7-NC-SD02-06	x	x	x	x			x	x		x	x	x	x			x	x		8/2/94	8/3/94	36	7NCSD		
6/27/94	7-NC-SD03-06	x	x	x	x			x	x		x	x	x	x			x	x		8/2/94	8/3/94	36	7NCSD		
6/27/94	7-NC-SD04-612	x	x	x	x						x	x	x	x						8/2/94	8/3/94	36	7NCSD		
6/27/94	7-NC-SD02-612	x	x	x	x						x	x	x	x						8/2/94	8/3/94	36	7NCSD		
6/27/94	7-NC-SD03-612	x	x	x	x						x	x	x	x						8/2/94	8/3/94	36	7NCSD		
																						0			
COUNT		32	32	32	32	0	0	14	15	0	32	32	32	32	0	0	12	15	0						

CTO-0274
 SITE 7, EARTH WORMS

DATE SHIPPED	SAMPLE ID	Analysis Requested											Analysis Received											DATE EXPECTED	DATE RECD	TURNAROUND TIME	SDG NO.	COMMENTS		
		organics			eng. P					organics			eng. P.																	
		TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	ATTERBURG LIMITS	GRAIN SIZE	TOC	pH	PERCENT MOISTURE	CEC	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	ATTERBURG LIMITS	GRAIN SIZE	TOC	pH	PERCENT MOISTURE	CEC							
11/15/94	7-EW-02			x	x										x	x									12/21/94	1/3/95	48	2042		
11/15/94	7-EW-03			x	x										x	x									12/21/94	1/3/95	48	2042		
11/15/94	7-EW-04			x	x										x	x									12/21/94	1/3/95	48	2042		
11/15/94	7-EW-05			x	x										x	x									12/21/94	1/3/95	48	2042		
11/15/94	7-EW-06			x	x										x	x									12/21/94	1/3/95	48	2042		
11/15/94	7-EW-07			x	x										x	x									12/21/94	1/3/95	48	2042		
11/15/94	7-EW-08			x	x										x	x									12/21/94	1/3/95	48	2042		
11/15/94	7-WM-SB01			x	x		x	x	x	x	x				x	x		x	x	x	x	x			12/21/94	1/9/95	54	2043		
11/15/94	7-WM-SB02			x	x		x	x	x	x	x				x	x		x	x	x	x	x			12/21/94	1/9/95	54	2043		
11/15/94	7-WM-SB03			x	x		x	x	x	x	x				x	x		x	x	x	x	x			12/21/94	1/9/95	54	2043		
COUNT		0	0	10	10	0	0	3	3	3	3	3	0	0	0	10	10	0	0	3	3	3	3	3	0					

CTO-0274
IDW

DATE SHIPPED	SAMPLE ID	Analysis Requested								Analysis Received								DATE EXPECTED	DATE REC'D	TURNAROUND TIME	SDG NO.	COMMENTS
		organics								organics												
		TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	TCLP ORG/INORG	RCRA-HAZ CHARC.		TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TAL METALS (D)	TCLP ORG/INORG	RCRA-HAZ CHARC.						
12/3/94	16-TK-01	x	x	x	x					x	x	x	x				1/8/95	1/16/95	43	2220		
12/3/94	7-TK-01	x	x	x	x					x	x	x	x				1/8/95	1/16/95	43	2220		
12/3/94	3-RB-01			x				x	x							x	x	1/8/95	1/16/95	43	2220	
12/5/94	80-TK-01	x	x	x	x					x	x	x	x				1/10/95	1/11/95	36	2227		
12/5/94	3-TK-01	x	x	x	x					x	x	x	x				1/10/95	1/11/95	36	2227		
12/5/94	274-DRM-01	x	x	x	x					x	x	x	x				1/10/95	1/11/95	36	2227		
																					0	
COUNT		5	5	6	5	0	1	1	0	5	5	5	5	0	1	1	0					

APPENDIX C
WELL DEVELOPMENT RECORDS

Baker

Baker Environmental, Inc

FIELD WELL DEVELOPMENT RECORDPROJECT: SITE 7 MCB CAMP LEJEUNECTO NO.: 274 WELL NO.: 7-MWOIDATE: 6 NOVEMBER 1994GEOLOGIST/ENGINEER: MK DEJOHN / MD SMITH

TIME START 1449	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
TIME FINISH 1530							
INITIAL WATER LEVEL (FT) 3.94	1458	35	6.11	20.1	309	20.1	BROWN MODERATELY TURBID
TOTAL WELL DEPTH (TD) 17.25	1502	53	6.18	19.5	360	19.6	BROWN SLIGHTLY TURBID
WELL DIAMETER (INCHES) 2" ØD	1506	70	6.21	19.9	350	19.9	BROWN SLIGHTLY TURBID
CALCULATED WELL VOLUME -	1510	88	6.22	20.0	335	20.0	NEARLY CLEAR, WITH BROWN TINT
	1514	105	6.15	19.3	341	19.3	NEARLY CLEAR, WITH BROWN TINT
BOREHOLE DIAMETER (INCHES) 8"	1518	123	6.16	19.3	370	19.3	NEARLY CLEAR
	1521	140	6.29	20.4	380	20.4	NEARLY CLEAR
BOREHOLE VOLUME 34.8 GAL	1525	158	6.15	19.5	370	19.5	NEARLY CLEAR
	1528	175	6.24	20.0	385	20.0	NEARLY CLEAR
AMOUNT OF WATER ADDED DURING DRILLING -							
DEVELOPMENT METHOD PUMPING							
PUMP TYPE CENTRIFUGAL							
TOTAL TIME (A) 41 MIN							
AVERAGE FLOW (GPM)(B) 4.3							
TOTAL ESTIMATED WITHDRAWAL AXB= 175 GAL	OBSERVATIONS/NOTES NO CAP ON PVC RISER. DID NOT CHECK HNU READING						
ANTIOXA READING -							

Baker

Baker Environmental, Inc

FIELD WELL DEVELOPMENT RECORD

PROJECT: SITE 7 MCB CAMP LEJEUNE, NC

CTO NO.: 274 WELL NO.: 7-MW02

DATE: 6 NOVEMBER 1994

GEOLOGIST/ENGINEER: MK DEJOHN / MD SMITH

TIME START	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1351							
TIME FINISH							
1410							
INITIAL WATER LEVEL (FT)	1355	30	5.21	21.2	74	21.2	LIGHT BROWN SLIGHTLY TURBID
7.12							
TOTAL WELL DEPTH (TD)	1359	60	5.19	19.4	71	19.4	NEARLY CLEAR
18.50	1403	90	5.21	20.1	69	20.1	NEARLY CLEAR
WELL DIAMETER (INCHES)	1407	120	5.24	19.6	65	19.6	CLEAR
2"OD	1409	150	5.15	19.3	70	19.3	CLEAR
CALCULATED WELL VOLUME							
-							
BOREHOLE DIAMETER (INCHES)							
8"							
BOREHOLE VOLUME							
29.7 GAL							
AMOUNT OF WATER ADDED DURING DRILLING							
-							
DEVELOPMENT METHOD							
PUMPING							
PUMP TYPE							
CENTRIFUGAL							
TOTAL TIME (A)							
19							
AVERAGE FLOW (GPM)(B)							
7.9							
TOTAL ESTIMATED WITHDRAWAL AxB=							
150 GAL							
ANUOVA READING							
0.4/0.4							
	OBSERVATIONS/NOTES						

Baker

Baker Environmental, Inc

FIELD WELL DEVELOPMENT RECORD

PROJECT: SITE 7 MCB CAMP LEJEUNE, NC

CTO NO.: 274 WELL NO.: 7-MW03

DATE: 7 NOVEMBER 1994

GEOLOGIST/ENGINEER: MK DEJOHN / MD SMITH

TIME START	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
0954							
TIME FINISH							
1110							
INITIAL WATER LEVEL (FT)	1052	8	5.85	18.1	45	18.1	-
3.78							
TOTAL WELL DEPTH (TD)							
9.40							
WELL DIAMETER (INCHES)							
2" OD							
CALCULATED WELL VOLUME							
-							
BOREHOLE DIAMETER (INCHES)							
8"							
BOREHOLE VOLUME							
14.7 GAL							
AMOUNT OF WATER ADDED DURING DRILLING							
-							
DEVELOPMENT METHOD							
HAND BAILING							
PUMP TYPE							
-							
TOTAL TIME (A)							
76 MIN							
AVERAGE FLOW (GPM)(B)							
0.1							
TOTAL ESTIMATED WITHDRAWAL AXB=	OBSERVATIONS/NOTES WELL BAILED DRY AFTER 8 GALLONS. VERY SLOW RECHARGE - ABANDONED DEVELOPMENT.						
8 GAL							
HNU/OVA READING							
-							

Baker

Baker Environmental, Inc

FIELD WELL DEVELOPMENT RECORD

PROJECT: SITE 7 MCB CAMP LEJEUNE, NC

CTO NO.: 274 WELL NO.: 7-MW04

DATE: 26 OCTOBER 1994

GEOLOGIST/ENGINEER: JE ZIMMERMAN / MK DEJOHN

TIME START	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
0851							
TIME FINISH							
0950							
INITIAL WATER LEVEL (FT)	0903	19	5.69	19.1	321	19.1	BROWN, VERY TURBID
19.42	0908	38	5.44	19.1	245	19.1	GRAY MODERATELY TURBID
TOTAL WELL DEPTH (TD)	0913	56	5.06	18.3	209	18.3	NEARLY CLEAR
33.77	0919	76	4.94	18.8	201	18.8	GRAY SLIGHTLY TURBID
WELL DIAMETER (INCHES)	0923	95	4.94	18.5	190	18.5	GRAY SLIGHTLY TURBID
2"OD	0930	114	4.90	18.9	182	18.9	CLEAR
CALCULATED WELL VOLUME	0935	133	4.96	19.1	170	19.1	CLEAR
-	0940	152	4.90	19.1	165	19.1	CLEAR
BOREHOLE DIAMETER (INCHES)	0944	171	4.90	18.9	171	18.9	CLEAR
8"	0949	190	4.84	18.5	169	18.5	CLEAR
BOREHOLE VOLUME							
37.5 GAL							
AMOUNT OF WATER ADDED DURING DRILLING							
-							
DEVELOPMENT METHOD							
PUMPING							
PUMP TYPE							
CENTRIFUGAL							
TOTAL TIME (A)							
59 MIN							
AVERAGE FLOW (GPM)(B)							
3.2							
TOTAL ESTIMATED WITHDRAWAL AxB=	OBSERVATIONS/NOTES						
190							
ANU/OVA READING							
1.0/1.0							

Baker

Baker Environmental, Inc

FIELD WELL DEVELOPMENT RECORD

PROJECT: SITE 7 MCB CAMP LEJEUNE, NC

CTO NO.: 274 WELL NO.: 7-MW05

DATE: 6 NOVEMBER 1994

GEOLOGIST/ENGINEER: MK DEJOHN / MD SMITH

TIME START	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1117							
TIME FINISH 1136							
INITIAL WATER LEVEL (FT) 4.02	1120	25	6.19	19.4	180	19.4	DARK BROWN, VERY TURBID
TOTAL WELL DEPTH (TD) 23.10	1122	50	6.08	18.3	145	18.3	BROWN, SLIGHTLY TURBID
	1125	75	6.01	18.3	129	18.3	GRAY, SLIGHTLY TURBID
WELL DIAMETER (INCHES) 2"00	1127	100	5.95	18.5	125	18.5	NEARLY CLEAR
	1129	125	5.90	18.5	120	18.5	NEARLY CLEAR
CALCULATED WELL VOLUME -	1131	150	5.94	18.3	119	18.3	NEARLY CLEAR
	1133	175	5.92	18.7	118	18.7	NEARLY CLEAR
BOREHOLE DIAMETER (INCHES) 8"	1135	200	5.89	18.4	119	18.4	NEARLY CLEAR
BOREHOLE VOLUME 49.8 GAL							
AMOUNT OF WATER ADDED DURING DRILLING -							
DEVELOPMENT METHOD PUMPING							
PUMP TYPE CENTRIFUGAL							
TOTAL TIME (A) 19 MIN							
AVERAGE FLOW (GPM)(B) 10.5							
TOTAL ESTIMATED WITHDRAWAL AxB = 200 GAL	OBSERVATIONS/NOTES						
ANUVOVA READING 0.5/0.5							

APPENDIX D
IDW SUMMARY

APPENDIX D.1
IDW LETTER REPORT

Baker

January 19, 1995

Commander
Atlantic Division
Naval Facilities Engineering Command
1510 Gilbert Street (Building N-26)
Norfolk, Virginia 23511-6299

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

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

Attn: Ms. Katherine Landman
Navy Technical Representative
Code 1823

Re: Contract N62470-89-D-4814
Navy CLEAN, District III
Contract Task Order (CTO) 0274
IDW Sampling and Analysis
Operable Units No. 8, 11, and 12
MCB Camp Lejeune, North Carolina

Dear Ms. Landman:

This letter report describes the sample collection activities, analysis, results, and recommendations for the disposition of investigation-derived waste (IDW) present at Sites 16, 7, 80, and 3, Marine Corps Base, Camp Lejeune, North Carolina. The IDW contained in 1,000 gallon tankers, 55 gallon drums, and lab packs, were generated during the period from September 15 to December 4, 1994, during the Baker Environmental, Inc. (Baker) remedial field investigation. An inventory of the IDW along with individual site quantities are provided in Table 1. Analytical results are provided in Attachment A.

Sample Collection and Analysis

Site 16

Two liquid samples were collected from Site 16. The first sample was collected from the well development and purge water holding tank and was given the sample identification 16-TK-01. Sample 16-TK-01 was analyzed for full Target Compound List (TCL)-Organics and Target Analytic List (TAL)-Inorganics.

The second sample was collected from a (55 - gallon) drum containing decontamination fluids. This sample was given the identification 16-DRM-01. Sample 16-DRM-01 was placed on ice and then was composited with decontamination fluids from other sites and given the sample identification 274-DRM-01. Sample 274-DRM-01 was analyzed for full TCL-Organics and TAL-Inorganics. The types and quantities of IDW for Site 16 are provided on Table 1. Analytical results for Site 16 are provided in Attachment A. Note, additional drums of decontamination fluids were also generated at lot 203 (field trailer). These drums were sampled along with all the site decontamination fluids and composited for sample 274-DRM-01. The decontamination fluids generated at Lot 203 are presented on Table 1.

Site 7

Two liquid samples were collected from Site 7. The first sample was collected from the well development and purge water holding tank and was given the sample identification 7-TK-01. Sample 7-TK-01 was analyzed for full TCL-Organics and TAL-Inorganics.

The second sample was collected by compositing two (55 - gallon) drums containing decontamination fluids. This sample was given the identification 7-DRM-01. Sample 7-DRM-01 was placed on ice and then was composited with decontamination fluids from other sites and given the sample identification 274-DRM-01.



A Total Quality Corporation

Baker

Ms. Katherine Landman

January 19, 1995

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Sample 274-DRM-01 was analyzed for full TCL-Organics and TAL-Inorganics. The types and quantities of IDW for Site 7 are provided on Table 1. Analytical results for Site 7 are provided in Attachment A.

Site 80

Two liquid samples were collected from Site 80. The first sample was collected from the well development and purge water holding tanks and was given the sample identification 80-TK-01. Sample 80-TK-01 was collected by compositing the water from both holding tanks, and was analyzed for full TCL-Organics and TAL-Inorganics.

The second sample was collected from a (55 - gallon) drum containing decontamination fluids. This sample was given the identification 80-DRM-01. Sample 80-DRM-01 was placed on ice and then was composited with decontamination fluids from other sites and given the sample identification 274-DRM-01. Sample 274-DRM-01 was analyzed for full TCL-Organics and TAL-Inorganics. The types and quantities of IDW for Site 80 are provided on Table 1. Analytical results for Site 80 are provided in Attachment A.

Site 3

One solid composite sample (3-RB-01) was collected from Site 3. This composite sample was comprised of drilling mud cuttings. One representative sample was collected from each of the six (55 - gallon) drums. These samples were in turn placed into a stainless steel bowl and homogenized prior to sample packaging. Sample 3-RB-01 was analyzed for RCRA hazardous waste characteristics including TCLP, ignitability, corrosivity, reactivity, and TCL PCBs.

Two liquid samples were collected from Site 3. The first sample was collected from the well development and purge water holding tank and was given the sample identification 3-TK-01. Sample 3-TK-01 was analyzed for full TCL-Organics and TAL-Inorganics.

The second sample was a composite sample from two (55 - gallon) drums of decontamination fluids. This sample was given the identification 3-DRM-01. Sample 3-DRM-01 was placed on ice and then was composited with decontamination fluids from other sites and given the sample identification 74-DRM-01. Sample 274-DRM-01 was analyzed for full TCL-Organics and TAL-Inorganics. The types and quantities of IDW for Site 3 are provided on Table 1. Analytical results for Site 3 are provided in Attachment A.

In addition to the solid and liquid IDW generated from Site 3, the ENSYS field screening investigation conducted at Site 3 generated approximately ten (10) liters of waste methanol. The waste methanol is stored in 10 - one liter glass bottles. These glass containers have been lab packed into two 5 - gallon plastic buckets with 5 containers in each bucket. A sample of the waste methanol was not collected due to waste methanol being a F - listed waste (F003), and proper disposal to a licensed Treatment Storage Disposal Facility (TSDF) is necessary.

Results

Site 16

Sample 16-TK-01 had only two positive volatile detections, one positive detection for semivolatiles, and no positive detections for pesticides/PCBs. Inorganic analysis did not indicate concentrations above what previous background groundwater analysis has indicated for inorganics. Concentrations of all contaminants did not exceed regulatory standards for classification as hazardous by characteristic (40CFR 261.24).

Sample 274-DRM-01 which is a composite sample of the decontamination fluids from all sites including Site 16, indicated positive detections for three volatile contaminants, five positive detections for semivolatiles, and one positive detection for pesticides. Inorganic analysis did not indicate concentrations above background for inorganics. Concentrations of all contaminants did not exceed regulatory standards for classification as hazardous by characteristic (40CFR 261.24).

Baker

Ms. Katherine Landman
January 19, 1995
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Site 7

Sample 7-TK-01 had three positive volatile detections, and no positive detections for either semivolatile, or pesticide/PCB analysis. Inorganic analysis did not indicate concentrations above what previous background groundwater analysis has indicated for inorganics. Concentrations of all contaminants did not exceed 40CFR 261.24 standards.

Results of sample 274-DRM-01 which is a composite sample of the decontamination fluids from all sites, including Site 7, are provided in the results for Site 16.

Site 80

Sample 80-TK-01 had four positive volatile detections, and no positive detections for either semivolatile, or pesticide/PCB analysis. Inorganic analysis did not indicate concentrations above what previous background groundwater analysis has indicated for inorganics. Concentrations of all contaminants did not exceed 40CFR 261.24 standards.

Results of sample 274-DRM-01 which is a composite sample of the decontamination fluids from all sites, including Site 80, are provided in the results for Site 16.

Site 3

Sample 3-TK-01 had seven positive volatile detections, eleven positive semivolatile detections, and one positive detection for pesticides. Inorganic analysis did not indicate concentrations above previous background groundwater analysis has indicated for inorganics. Concentrations of all contaminants did not exceed 40CFR 261.24 standards.

Results of sample 274-DRM-01 which is a composite sample of the decontamination fluids from all sites, including Site 3, are provided in the results for Site 16.

Sample 3-RB-01 which was analyzed for RCRA hazardous waste characteristics, TCLP, and TCL-PCBs, had three positive volatile detections, and no positive detections for either semivolatiles and pesticides/herbicides. Also, PCB analysis indicated no positive detections, and inorganic analysis had one positive detection. Concentrations of all contaminants did not exceed 40CFR 261.24. Sample 3-RB-01 was not found to be reactive to sulfide and cyanide, be ignitable at less than 140 ° F, or be corrosive at less than 2 or greater than 12.

The waste methanol generated during the ENSYS soil investigation at Site 3 was not sampled. The methanol is a F - listed waste (F003), and proper disposal to a licensed TSDF is necessary.

Conclusions and Recommendations

Site 16

Analytical results indicate that samples 16-TK-01, and 274-DRM-01 have low level organic contaminant concentrations. These concentrations do not exceed regulatory values which would classify these samples as hazardous by characteristic. Therefore, the well development/purge water and the decontamination fluid will be disposed of onsite.

Baker

Ms. Katherine Landman
January 19, 1995
Page 4

Site 7

Analytical results indicate that samples 7-TK-01, and 274-DRM-01 have low level organic contaminant concentrations. These concentrations do not exceed regulatory values which would classify these samples as hazardous by characteristics. Therefore, the well development/purge water and the decontamination fluid will be disposed of onsite.

Site 80

Analytical results indicate that samples 80-TK-01, and 274-DRM-01 have low level organic contaminant concentrations. These concentrations do not exceed regulatory values which would classify these samples as hazardous by characteristics. Therefore, the well development/purge water and the decontamination fluid will be disposed of onsite.

Site 3

Analytical results indicate that samples 3-TK-01, and 274-DRM-01 have low level organic contaminant concentrations. These concentrations do not exceed regulatory values which would classify these samples as hazardous by characteristics. Therefore, the well development/purge water and the decontamination fluid will be disposed of onsite.

Analytical results for sample (3-RB-01, drilling mud cuttings) indicate low level volatile contaminant concentrations. The RCRA hazardous waste characteristics show this sample to be non-hazardous. The TCLP and RCRA results do not exceed regulatory values which would classify this sample as hazardous by characteristics. Therefore, these drilling mud cuttings will be disposed of onsite.

The 10 liters of waste methanol will be packaged and removed from the base by a licensed waste hauler, and shipped to a licensed treatment, storage disposal facility (TSDF) for disposal in a certified fuels or incineration program.

Upon LANTDIV's approval of these disposal recommendations, the IDW will be managed as identified within this letter.

If you have any questions, please do not hesitate to contact me at (412) 269-2053.

Sincerely,

Baker Environmental, Inc.



Matthew D. Bartman
Project Manager

Attachment

MCD/lq

cc: Mr. Neal Paul
Mr. John Riggs

TABLE 1
SUMMARY OF INVESTIGATIVE DERIVED WASTE
REMEDIAL INVESTIGATION, CTO-0274
MCB CAMP LEJUENE, NORTH CAROLINA

SITE	MATERIAL	CONTAINERS		VOLUME OF WASTE	UNIT	LABORATORY ANALYSIS
		NUMBER	TYPE			
Site 16	Development/ Purge Water	1	1000 Gallon Tank	750	Gallons	TCL - Organics TAL - Inorganics
Site 16	Decon Water	1	55 Gallon Drum	55	Gallons	TCL - Organics TAL - Inorganics
Site 7	Development/ Purge Water	1	1000 Gallon Tanks	900	Gallons	TCL - Organics TAL - Inorganics
Site 7	Decon Water	2	55 Gallon Drums	70	Gallons	TCL - Organics TAL - Inorganics
Site 80	Development/ Purge Water	2	1000 Gallon Tanks	1,400	Gallons	TCL - Organics TAL - Inorganics
Site 80	Decon Water	1	55 Gallon Drums	55	Gallons	TCL - Organics TAL - Inorganics
Site 3	Development/ Purge Water	1	1000 Gallon Tanks	800	Gallons	TCL - Organics TAL - Inorganics
Site 3	Decon Water	2	55 Gallon Drums	110	Gallons	TCL - Organics TAL - Inorganics
Site 3	Drilling Mud Cuttings	6	55 Gallon Drums	40	Cubic Feet	TCLP - Organics TCLP - Inorganics RCRA - Haz. Characteristics TCL - PCBs
Site 3	Waste Methanol	10	1 Liter Bottles	10	Liters	No Analysis Performed
Lot 203	Decon Water	2	55 Gallon Drums	110	Gallons	TCL - Organics TAL - Inorganics

ATTACHMENT A (Laboratory Analysis)

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

00011
EPA SAMPLE NO.

16TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2220 SAS No.: _____ SDG No.: 3RB01

Matrix: (soil/water) WATER Lab Sample ID: AD2051

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AD2051

Level: (low/med) LOW Date Received: 12/05/94

% Moisture: not dec. _____ Date Analyzed: 12/10/94

GC Column: RTX624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
74-87-3	-----Chloromethane	10	U
74-83-9	-----Bromomethane	10	U
75-01-4	-----Vinyl Chloride	10	U
75-00-3	-----Chloroethane	10	U
75-09-2	-----Methylene Chloride	1	BJ
67-64-1	-----Acetone	150	
75-15-0	-----Carbon Disulfide	10	U
75-35-4	-----1,1-Dichloroethene	10	U
75-34-3	-----1,1-Dichloroethane	10	U
540-59-0	-----1,2-Dichloroethene (total)	10	U
67-66-3	-----Chloroform	10	U
107-06-2	-----1,2-Dichloroethane	10	U
78-93-3	-----2-Butanone	10	
71-55-6	-----1,1,1-Trichloroethane	10	U
56-23-5	-----Carbon Tetrachloride	10	U
75-27-4	-----Bromodichloromethane	10	U
78-87-5	-----1,2-Dichloropropane	10	U
10061-01-5	-----cis-1,3-Dichloropropene	10	U
79-01-6	-----Trichloroethene	10	U
124-48-1	-----Dibromochloromethane	10	U
79-00-5	-----1,1,2-Trichloroethane	10	U
71-43-2	-----Benzene	10	U
10061-02-6	-----trans-1,3-Dichloropropene	10	U
75-25-2	-----Bromoform	10	U
108-10-1	-----4-Methyl-2-Pentanone	10	U
591-78-6	-----2-Hexanone	10	U
127-18-4	-----Tetrachloroethene	10	U
79-34-5	-----1,1,2,2-Tetrachloroethane	10	U
108-88-3	-----Toluene	10	U
108-90-7	-----Chlorobenzene	10	U
100-41-4	-----Ethylbenzene	10	U
100-42-5	-----Styrene	10	U
1330-20-7	-----Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

16TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER
Lab Code: ITSTU Case No.: 2220 SAS No.: _____ SDG No.: 3RB01
Matrix: (soil/water) WATER Lab Sample ID: AD2051
Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AD2051
Level: (low/med) LOW Date Received: 12/05/94
% Moisture: not dec. _____ Date Analyzed: 12/10/94
GC Column: RTX624 ID: 0.530 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.77	70	J

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

16TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2220 SAS No.: _____ SDG No.: 3RB01

Matrix: (soil/water) WATER Lab Sample ID: AD2052

Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2052

Level: (low/med) LOW Date Received: 12/05/94

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/09/94

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl) Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-Oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy) Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

00048
EPA SAMPLE NO.

16TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2220 SAS No.: _____ SDG No.: 3RB01

Matrix: (soil/water) WATER Lab Sample ID: AD2052

Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2052

Level: (low/med) LOW Date Received: 12/05/94

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/09/94

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl) Phthalate	11	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b) Fluoranthene	10	U
207-08-9	Benzo(k) Fluoranthene	10	U
50-32-8	Benzo(a) Pyrene	10	U
193-39-5	Indeno(1,2,3-cd) Pyrene	10	U
53-70-3	Dibenz(a,h) Anthracene	10	U
191-24-2	Benzo(g,h,i) Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

16TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER
 Lab Code: ITSTU Case No.: 2220 SAS No.: _____ SDG No.: 3RB01
 Matrix: (soil/water) WATER Lab Sample ID: AD2052
 Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2052
 Level: (low/med) LOW Date Received: 12/05/94
 % Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/09/94
 Injection Volume: 2.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 2 CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	17.27	14	J
2.	UNKNOWN	18.58	3	J

00092

EPA SAMPLE NO.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

16TK01

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: WO2220 SAS No.: _____ SDG No.: 7TK01

Matrix: (soil/water) WATER Lab Sample ID: AD2052

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: 12/05/94

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 12/07/94

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/19/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

00009
EPA SAMPLE NO.

7TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2220 SAS No.: _____ SDG No.: 3RB01

Matrix: (soil/water) WATER Lab Sample ID: AD2056

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AD2056

Level: (low/med) LOW Date Received: 12/05/94

% Moisture: not dec. _____ Date Analyzed: 12/10/94

GC Column: RTX624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	1	BJ
67-64-1	Acetone	140	
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	9	J
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

00010
EPA SAMPLE NO.

7TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER
 Lab Code: ITSTU Case No.: 2220 SAS No.: _____ SDG No.: 3RB01
 Matrix: (soil/water) WATER Lab Sample ID: AD2056
 Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AD2056
 Level: (low/med) LOW Date Received: 12/05/94
 % Moisture: not dec. _____ Date Analyzed: 12/10/94
 GC Column: RTX624 ID: 0.530 (mm) Dilution Factor: _____ 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.77	15	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

7TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER
 Lab Code: ITSTU Case No.: 2220 SAS No.: _____ SDG No.: 3RB01
 Matrix: (soil/water) WATER Lab Sample ID: AD2057
 Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2057
 Level: (low/med) LOW Date Received: 12/05/94
 % Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/09/94
 Injection Volume: 2.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl) Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-Oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

7TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER
 Lab Code: ITSTU Case No.: 2220 SAS No.: _____ SDG No.: 3RB01
 Matrix: (soil/water) WATER Lab Sample ID: AD2057
 Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2057
 Level: (low/med) LOW Date Received: 12/05/94
 % Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/09/94
 Injection Volume: 2.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

7TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER
Lab Code: ITSTU Case No.: 2220 SAS No.: _____ SDG No.: 3RB01
Matrix: (soil/water) WATER Lab Sample ID: AD2057
Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2057
Level: (low/med) LOW Date Received: 12/05/94
% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/09/94
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	18.58	3	J
2.	UNKNOWN	21.28	2	J

00091

EPA SAMPLE NO.

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

7TK01

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: WO2220 SAS No.: _____ SDG No.: 7TK01

Matrix: (soil/water) WATER Lab Sample ID: AD2057

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: 12/05/94

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 12/07/94

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/19/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

80TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2151

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AD2151R

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: not dec. _____ Date Analyzed: 12/12/94

GC Column: RTX624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
74-87-3	-----Chloromethane	10	U
74-83-9	-----Bromomethane	10	U
75-01-4	-----Vinyl Chloride	10	U
75-00-3	-----Chloroethane	10	U
75-09-2	-----Methylene Chloride	3	BJ
67-64-1	-----Acetone	590	BE
75-15-0	-----Carbon Disulfide	10	U
75-35-4	-----1,1-Dichloroethene	10	U
75-34-3	-----1,1-Dichloroethane	10	U
540-59-0	-----1,2-Dichloroethene (total)	10	U
67-66-3	-----Chloroform	10	U
107-06-2	-----1,2-Dichloroethane	10	U
78-93-3	-----2-Butanone	7	BJ
71-55-6	-----1,1,1-Trichloroethane	10	U
56-23-5	-----Carbon Tetrachloride	10	U
75-27-4	-----Bromodichloromethane	10	U
78-87-5	-----1,2-Dichloropropane	10	U
10061-01-5	-----cis-1,3-Dichloropropene	10	U
79-01-6	-----Trichloroethene	10	U
124-48-1	-----Dibromochloromethane	10	U
79-00-5	-----1,1,2-Trichloroethane	10	U
71-43-2	-----Benzene	10	U
10061-02-6	-----trans-1,3-Dichloropropene	10	U
75-25-2	-----Bromoform	10	U
108-10-1	-----4-Methyl-2-Pentanone	10	U
591-78-6	-----2-Hexanone	2	J
127-18-4	-----Tetrachloroethene	10	U
79-34-5	-----1,1,2,2-Tetrachloroethane	10	U
108-88-3	-----Toluene	10	U
108-90-7	-----Chlorobenzene	10	U
100-41-4	-----Ethylbenzene	10	U
100-42-5	-----Styrene	10	U
1330-20-7	-----Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

80TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2151

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AD2151R

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: not dec. _____ Date Analyzed: 12/12/94

GC Column: RTX624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.70	46	J
2.	UNKNOWN ALKENE	14.27	10	J
3.	UNKNOWN	15.73	9	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

80TK01DL

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2151

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AD2151D2

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: not dec. _____ Date Analyzed: 12/12/94

GC Column: RTX624 ID: 0.530 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
74-87-3	-----Chloromethane	50	U
74-83-9	-----Bromomethane	50	U
75-01-4	-----Vinyl Chloride	50	U
75-00-3	-----Chloroethane	50	U
75-09-2	-----Methylene Chloride	14	BDJ
67-64-1	-----Acetone	780	BD
75-15-0	-----Carbon Disulfide	50	U
75-35-4	-----1,1-Dichloroethene	50	U
75-34-3	-----1,1-Dichloroethane	50	U
540-59-0	-----1,2-Dichloroethene (total)	50	U
67-66-3	-----Chloroform	50	U
107-06-2	-----1,2-Dichloroethane	50	U
78-93-3	-----2-Butanone	39	BDJ
71-55-6	-----1,1,1-Trichloroethane	50	U
56-23-5	-----Carbon Tetrachloride	50	U
75-27-4	-----Bromodichloromethane	50	U
78-87-5	-----1,2-Dichloropropane	50	U
10061-01-5	-----cis-1,3-Dichloropropene	50	U
79-01-6	-----Trichloroethene	50	U
124-48-1	-----Dibromochloromethane	50	U
79-00-5	-----1,1,2-Trichloroethane	50	U
71-43-2	-----Benzene	50	U
10061-02-6	-----trans-1,3-Dichloropropene	50	U
75-25-2	-----Bromoform	50	U
108-10-1	-----4-Methyl-2-Pentanone	50	U
591-78-6	-----2-Hexanone	5	DJ
127-18-4	-----Tetrachloroethene	5	DJ
79-34-5	-----1,1,2,2-Tetrachloroethane	50	U
108-88-3	-----Toluene	50	U
108-90-7	-----Chlorobenzene	50	U
100-41-4	-----Ethylbenzene	50	U
100-42-5	-----Styrene	50	U
1330-20-7	-----Xylene (total)	50	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

80TK01DL

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2151

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AD2151D2

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: not dec. _____ Date Analyzed: 12/12/94

GC Column: RTX624 ID: 0.530 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.70	49	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

80TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2152

Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2152

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/09/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

108-95-2-----Phenol	10	U
111-44-4-----bis(2-Chloroethyl) Ether	10	U
95-57-8-----2-Chlorophenol	10	U
541-73-1-----1,3-Dichlorobenzene	10	U
106-46-7-----1,4-Dichlorobenzene	10	U
95-50-1-----1,2-Dichlorobenzene	10	U
95-48-7-----2-Methylphenol	10	U
108-60-1-----2,2'-Oxybis(1-Chloropropane)	10	U
106-44-5-----4-Methylphenol	10	U
621-64-7-----N-Nitroso-Di-n-Propylamine	10	U
67-72-1-----Hexachloroethane	10	U
98-95-3-----Nitrobenzene	10	U
78-59-1-----Isophorone	10	U
88-75-5-----2-Nitrophenol	10	U
105-67-9-----2,4-Dimethylphenol	10	U
111-91-1-----bis(2-Chloroethoxy)Methane	10	U
120-83-2-----2,4-Dichlorophenol	10	U
120-82-1-----1,2,4-Trichlorobenzene	10	U
91-20-3-----Naphthalene	10	U
106-47-8-----4-Chloroaniline	10	U
87-68-3-----Hexachlorobutadiene	10	U
59-50-7-----4-Chloro-3-Methylphenol	10	U
91-57-6-----2-Methylnaphthalene	10	U
77-47-4-----Hexachlorocyclopentadiene	10	U
88-06-2-----2,4,6-Trichlorophenol	10	U
95-95-4-----2,4,5-Trichlorophenol	25	U
91-58-7-----2-Chloronaphthalene	10	U
88-74-4-----2-Nitroaniline	25	U
131-11-3-----Dimethylphthalate	10	U
208-96-8-----Acenaphthylene	10	U
606-20-2-----2,6-Dinitrotoluene	10	U
99-09-2-----3-Nitroaniline	25	U
83-32-9-----Acenaphthene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

80TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2152

Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2152

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/09/94

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

80TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2152

Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2152

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/09/94

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 872-50-4	2-PYRROLIDINONE, 1-METHYL-	6.10	19	JN
2.	UNKNOWN	13.25	3	J
3.	UNKNOWN	13.43	3	J
4.	UNKNOWN	17.68	8	J
5.	UNKNOWN	19.20	2	J
6.	UNKNOWN	19.50	2	J

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

80TK01

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: WO2227 SAS No.: _____ SDG No.: 3TK01

Matrix: (soil/water) WATER Lab Sample ID: AD2152

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: 12/05/94

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 12/07/94

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/19/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

80TK01RE

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W02227 SAS No.: _____ SDG No.: 3TK01

Matrix: (soil/water) WATER Lab Sample ID: AD2152RE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: 12/05/94

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 12/20/94

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/21/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

3TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2145

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AD2145R

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: not dec. _____ Date Analyzed: 12/12/94

GC Column: RTX624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	<u>UG/L</u>	
74-87-3	-----Chloromethane		3	J
74-83-9	-----Bromomethane		10	U
75-01-4	-----Vinyl Chloride		10	U
75-00-3	-----Chloroethane		10	U
75-09-2	-----Methylene Chloride		2	BJ
67-64-1	-----Acetone		270	BE
75-15-0	-----Carbon Disulfide		10	U
75-35-4	-----1,1-Dichloroethene		10	U
75-34-3	-----1,1-Dichloroethane		10	U
540-59-0	-----1,2-Dichloroethene (total)		10	U
67-66-3	-----Chloroform		10	U
107-06-2	-----1,2-Dichloroethane		10	U
78-93-3	-----2-Butanone		10	B
71-55-6	-----1,1,1-Trichloroethane		10	U
56-23-5	-----Carbon Tetrachloride		10	U
75-27-4	-----Bromodichloromethane		10	U
78-87-5	-----1,2-Dichloropropane		10	U
10061-01-5	-----cis-1,3-Dichloropropene		10	U
79-01-6	-----Trichloroethene		10	U
124-48-1	-----Dibromochloromethane		10	U
79-00-5	-----1,1,2-Trichloroethane		10	U
71-43-2	-----Benzene		2	J
10061-02-6	-----trans-1,3-Dichloropropene		10	U
75-25-2	-----Bromoform		10	U
108-10-1	-----4-Methyl-2-Pentanone		10	U
591-78-6	-----2-Hexanone		10	U
127-18-4	-----Tetrachloroethene		10	U
79-34-5	-----1,1,2,2-Tetrachloroethane		10	U
108-88-3	-----Toluene		1	J
108-90-7	-----Chlorobenzene		10	U
100-41-4	-----Ethylbenzene		10	U
100-42-5	-----Styrene		10	U
1330-20-7	-----Xylene (total)		10	U J

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

3TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2145

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AD2145R

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: not dec. _____ Date Analyzed: 12/12/94

GC Column: RTX624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.70	17	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

3TK01DL

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2145

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AD2145D

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: not dec. _____ Date Analyzed: 12/12/94

GC Column: RTX624 ID: 0.530 (mm) Dilution Factor: 2.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
74-87-3	Chloromethane	9	DJ
74-83-9	Bromomethane	20	U
75-01-4	Vinyl Chloride	20	U
75-00-3	Chloroethane	20	U
75-09-2	Methylene Chloride	4	BDJ
67-64-1	Acetone	400	BD
75-15-0	Carbon Disulfide	20	U
75-35-4	1,1-Dichloroethene	20	U
75-34-3	1,1-Dichloroethane	20	U
540-59-0	1,2-Dichloroethene (total)	20	U
67-66-3	Chloroform	20	U
107-06-2	1,2-Dichloroethane	20	U
78-93-3	2-Butanone	11	BDJ
71-55-6	1,1,1-Trichloroethane	20	U
56-23-5	Carbon Tetrachloride	20	U
75-27-4	Bromodichloromethane	20	U
78-87-5	1,2-Dichloropropane	20	U
10061-01-5	cis-1,3-Dichloropropene	20	U
79-01-6	Trichloroethene	20	U
124-48-1	Dibromochloromethane	20	U
79-00-5	1,1,2-Trichloroethane	20	U
71-43-2	Benzene	20	U
10061-02-6	trans-1,3-Dichloropropene	20	U
75-25-2	Bromoform	20	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	20	U
79-34-5	1,1,2,2-Tetrachloroethane	20	U
108-88-3	Toluene	20	U
108-90-7	Chlorobenzene	20	U
100-41-4	Ethylbenzene	20	U
100-42-5	Styrene	20	U
1330-20-7	Xylene (total)	20	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

3TK01DL

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2145

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AD2145D

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: not dec. _____ Date Analyzed: 12/12/94

GC Column: RTX624 ID: 0.530 (mm) Dilution Factor: 2.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.33	12	J
2.	UNKNOWN	4.73	41	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

3TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2146

Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2146

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/09/94

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl) Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-Oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	100	E

P. 12/14/94

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

3TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER
 Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM
 Matrix: (soil/water) WATER Lab Sample ID: AD2146
 Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2146
 Level: (low/med) LOW Date Received: 12/06/94
 % Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/09/94
 Injection Volume: 2.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) N pH: _____ CONCENTRATION UNITS: _____

CAS NO.	COMPOUND	(ug/L or ug/Kg) <u>UG/L</u>	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	45	
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	62	
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	150	F
120-12-7	Anthracene	10	
86-74-8	Carbazole	6	J
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	35	
129-00-0	Pyrene	26	
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	2	J
218-01-9	Chrysene	2	J
117-81-7	bis(2-Ethylhexyl)Phthalate	1	J
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

3TK01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2146

Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2146

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/09/94

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 23

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.57	2	J
2.	UNKNOWN	8.73	12	J
3.	UNKNOWN	9.33	4	J
4.	NAPHTHALENE, -DIMETHYL-	9.68	6	JY
5.	NAPHTHALENE, -DIMETHYL-	9.85	8	JY
6.	NAPHTHALENE, -DIMETHYL-	10.08	2	JY
7.	UNKNOWN	10.22	2	J
8.	UNKNOWN	10.73	6	J
9.	UNKNOWN PAH	11.93	6	J
10.	UNKNOWN	12.02	3	J
11.	UNKNOWN	12.12	5	J
12.	UNKNOWN	12.20	18	J
13.	UNKNOWN	12.62	2	J
14.	UNKNOWN PAH	12.75	2	J
15.	9H-FLUORENE, -METHYL-	13.00	3	JY
16.	UNKNOWN	13.58	2	J
17. 132-65-0	DIBENZOTHIOPHENE	13.67	5	JN
18.	UNKNOWN	14.08	6	J
19.	UNKNOWN PAH	14.52	3	J
20.	UNKNOWN PAH	15.17	3	J
21.	UNKNOWN PAH	15.23	3	J
22.	UNKNOWN PAH	15.47	12	J
23.	UNKNOWN PAH	17.27	12	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

3TK01DL

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2146

Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2146D

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/13/94

Injection Volume: 2.0 (uL) Dilution Factor: 3.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO. COMPOUND Q

108-95-2	Phenol	30	U
111-44-4	bis(2-Chloroethyl) Ether	30	U
95-57-8	2-Chlorophenol	30	U
541-73-1	1,3-Dichlorobenzene	30	U
106-46-7	1,4-Dichlorobenzene	30	U
95-50-1	1,2-Dichlorobenzene	30	U
95-48-7	2-Methylphenol	30	U
108-60-1	2,2'-Oxybis(1-Chloropropane)	30	U
106-44-5	4-Methylphenol	30	U
621-64-7	N-Nitroso-Di-n-Propylamine	30	U
67-72-1	Hexachloroethane	30	U
98-95-3	Nitrobenzene	30	U
78-59-1	Isophorone	30	U
88-75-5	2-Nitrophenol	30	U
105-67-9	2,4-Dimethylphenol	30	U
111-91-1	bis(2-Chloroethoxy)Methane	30	U
120-83-2	2,4-Dichlorophenol	30	U
120-82-1	1,2,4-Trichlorobenzene	30	U
91-20-3	Naphthalene	30	U
106-47-8	4-Chloroaniline	30	U
87-68-3	Hexachlorobutadiene	30	U
59-50-7	4-Chloro-3-Methylphenol	30	U
91-57-6	2-Methylnaphthalene	30	U
77-47-4	Hexachlorocyclopentadiene	30	U
88-06-2	2,4,6-Trichlorophenol	30	U
95-95-4	2,4,5-Trichlorophenol	75	U
91-58-7	2-Chloronaphthalene	30	U
88-74-4	2-Nitroaniline	75	U
131-11-3	Dimethylphthalate	30	U
208-96-8	Acenaphthylene	30	U
606-20-2	2,6-Dinitrotoluene	30	U
99-09-2	3-Nitroaniline	75	U
83-32-9	Acenaphthene	77	D

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

3TK01DL

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2146

Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2146D

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/13/94

Injection Volume: 2.0 (uL) Dilution Factor: 3.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
51-28-5-----	2,4-Dinitrophenol	75	U
100-02-7-----	4-Nitrophenol	75	U
132-64-9-----	Dibenzofuran	37	D
121-14-2-----	2,4-Dinitrotoluene	30	U
84-66-2-----	Diethylphthalate	30	U
7005-72-3-----	4-Chlorophenyl-phenylether	30	U
86-73-7-----	Fluorene	54	D
100-01-6-----	4-Nitroaniline	75	U
534-52-1-----	4,6-Dinitro-2-methylphenol	75	U
86-30-6-----	N-Nitrosodiphenylamine (1)	30	U
101-55-3-----	4-Bromophenyl-phenylether	30	U
118-74-1-----	Hexachlorobenzene	30	U
87-86-5-----	Pentachlorophenol	75	U
85-01-8-----	Phenanthrene	120	D
120-12-7-----	Anthracene	8	DJ
86-74-8-----	Carbazole	5	DJ
84-74-2-----	Di-n-Butylphthalate	30	U
206-44-0-----	Fluoranthene	31	D
129-00-0-----	Pyrene	22	DJ
85-68-7-----	Butylbenzylphthalate	30	U
91-94-1-----	3,3'-Dichlorobenzidine	30	U
56-55-3-----	Benzo(a)Anthracene	30	U
218-01-9-----	Chrysene	30	U
117-81-7-----	bis(2-Ethylhexyl)Phthalate	30	U
117-84-0-----	Di-n-Octyl Phthalate	30	U
205-99-2-----	Benzo(b)Fluoranthene	30	U
207-08-9-----	Benzo(k)Fluoranthene	30	U
50-32-8-----	Benzo(a)Pyrene	30	U
193-39-5-----	Indeno(1,2,3-cd)Pyrene	30	U
53-70-3-----	Dibenz(a,h)Anthracene	30	U
191-24-2-----	Benzo(g,h,i)Perylene	30	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

3TK01DL

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2146

Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2146D

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/13/94

Injection Volume: 2.0 (uL) Dilution Factor: 3.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ETHANOL, UNKNOWN ETHER SUBST	8.13	6	J
2.	UNKNOWN PAH	9.75	9	J
3. 569-41-5	NAPHTHALENE, -DIMETHYL-	10.97	8	JY
4.	UNKNOWN	11.90	8	J
5.	UNKNOWN	13.43	17	J
6.	UNKNOWN	13.88	8	J
7. 132-65-0	DIBENZOTHIOPHENE	15.00	8	JN
8.	UNKNOWN	15.42	10	J
9. 203-64-5	UNKNOWN PAH	16.85	11	J
10.	UNKNOWN	18.37	13	J

Pass relative

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

3TK01

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W02227 SAS No.: _____ SDG No.: 3TK01

Matrix: (soil/water) WATER Lab Sample ID: AD2146

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: 12/05/94

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 12/07/94

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/19/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.11	P
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

3TK01 RE

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: WO2227 SAS No.: _____ SDG No.: 3TK01

Matrix: (soil/water) WATER Lab Sample ID: AD2146RE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: 12/05/94

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 12/20/94

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/21/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.10	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.13	P
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.50	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.22	
7421-93-4	Endrin aldehyde	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	5.0	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	2.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

TCLP VOLATILES ANALYSIS

Laboratory Name:	Quanterra-Knoxville	Job Number:	2220
Contract Name:	Quanterra-Export	TCLP Date:	N/A
Client Sample ID:	3-RB-01	Analysis Date:	12/10/94
Lab Sample ID:	AD2064	Sample Matrix:	Soil
Concentration Units:	mg/liter (ppm) in the leachate		

Compound	Concentration	Qualifier	Detection Limit
benzene	0.025	U	0.025
carbon tetrachloride	0.025	U	0.025
chlorobenzene	0.005	J	0.025
chloroform	0.025	U	0.025
1,2-dichloroethane	0.025	U	0.025
1,1-dichloroethene	0.025	U	0.025
methyl ethyl ketone	0.075	+	0.050
tetrachloroethene	0.006	J	0.025
trichloroethene	0.025	U	0.025
vinyl chloride	0.050	U	0.050

+ - Positive result.
 J - Indicates an estimated value less than the detection limit.
 U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

TCLP SEMIVOLATILES ANALYSIS

Laboratory Name:	Quanterra-Knoxville	Job Number:	2220
Contract Name:	Quanterra-Export	TCLP Date:	N/A
Client Sample ID:	3-RB-01	Extraction Date:	12/07/94
Lab Sample ID:	AD2065	Analysis Date:	12/14/94
Concentration Units:	mg/liter (ppm) in the leachate	Sample Matrix:	Soil

Compound	Concentration	Qualifier	Detection Limit
total cresols	0.04	U	0.04
1,4-dichlorobenzene	0.04	U	0.04
2,4-dinitrotoluene	0.04	U	0.04
hexachlorobenzene	0.04	U	0.04
hexachloro-1,3-butadiene	0.04	U	0.04
hexachloroethane	0.04	U	0.04
nitrobenzene	0.04	U	0.04
pentachlorophenol	0.20	U	0.20
pyridine	0.40	U	0.40
2,4,5-trichlorophenol	0.20	U	0.20
2,4,6-trichlorophenol	0.04	U	0.04

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

TCLP PESTICIDES ANALYSIS

Laboratory Name:	Quanterra-Knoxville	Job Number:	2220
Contract Name:	Quanterra-Export	TCLP Date:	N/A
Client Sample ID:	3-RB-01	Extraction Date:	12/07/94
Lab Sample ID:	AD2065	Analysis Date:	12/08/94
Concentration Units:	mg/liter (ppm) in the leachate	Sample Matrix:	Leachate

Compound	Concentration	Qualifier	Detection Limit
lindane	0.008	U	0.008
heptachlor	0.001	U	0.001
heptachlor epoxide	0.001	U	0.001
endrin	0.004	U	0.004
methoxychlor	0.08	U	0.08
chlordan	0.006	U	0.006
toxaphene	0.1	U	0.1

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

TCLP HERBICIDES ANALYSIS

00145

Laboratory Name:	Quanterra-Knoxville	Job Number:	2220
Contract Name:	Quanterra-Export	TCLP Date:	N/A
Client Sample ID:	3-RB-01	Extraction Date:	12/07/94
Lab Sample ID:	AD2065	Analysis Date:	12/08/94
Concentration Units:	mg/liter (ppm) in the leachate	Sample Matrix:	Soil

Compound	Concentration	Qualifier	Detection Limit
2,4-D	0.1	U	0.1
2,4,5-TP (silvex)	0.02	U	0.02

Surrogate Recovery	2,4-DCPA
Lab Sample ID: AD2065	89

U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

PCBs ANALYSIS

Laboratory Name:	Quanterra-Knoxville	Job Number:	2220
Contract Name:	Quanterra-Export	Extraction Date:	12/06/94
Client Sample ID:	3-RB-01	Analysis Date:	12/08/94
Lab Sample ID:	AD2061	Confirmation Date:	N/A
Sample Matrix:	Soil	Concentration Units:	µg/kg

Compound	Concentration	Qualifier
Aroclor-1016	20	U
Aroclor-1232	20	U
Aroclor-1242 †	20	U
Aroclor 1248	20	U
Aroclor 1254	40	U
Aroclor 1260	40	U

† - Sample Aroclor pattern identified and/or calculated as Aroclor 1242.
 U - Compound was analyzed for but not detected. The number is the detection limit for the sample.

General Chemistry Analysis

000 A

Client Sample ID: AD2063
Sample Date: 12/03/94
Lab Sample ID: Q41211001

Analysis Date	Parameter	Concentration mg/Kg
12/14/94	Sulfide, Reactive*	ND500
12/15/94	Cyanide, Reactive*	ND250

Lab Sample ID: Method Blank

Analysis Date	Parameter	Concentration mg/Kg
12/14/94	Sulfide, Reactive*	ND500
12/15/94	Cyanide, Reactive*	ND250

- * Results were determined by methodologies specified in SW-846, 3rd edition, 1986. These methods are prone to failure in both accuracy and reproducibility, therefore, we cannot assume any liability for these results. The reported detection limits are the EPA action levels for this analysis.

pH ANALYSIS

00223

Laboratory Name:	Quanterra-Knoxville	Job Number:	2220
Contract Name:	Quanterra-Export	Extraction Date:	N/A
Sample Matrix:	Soil	Analysis Date:	12/14/94
Concentration Units:	standard units (s.u.)		

Client Sample ID	Lab Sample ID	Result
3-RB-01	AD2061	11.21

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

274DRM01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2148

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AD2148R

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: not dec. _____ Date Analyzed: 12/12/94

GC Column: RTX624 ID: 0.530 (mm) Dilution Factor: 20.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
74-87-3	-----Chloromethane	200	U
74-83-9	-----Bromomethane	200	U
75-01-4	-----Vinyl Chloride	200	U
75-00-3	-----Chloroethane	200	U
75-09-2	-----Methylene Chloride	38	BJ
67-64-1	-----Acetone	34000	BE
75-15-0	-----Carbon Disulfide	200	U
75-35-4	-----1,1-Dichloroethene	200	U
75-34-3	-----1,1-Dichloroethane	200	U
540-59-0	-----1,2-Dichloroethene (total)	200	U
67-66-3	-----Chloroform	200	U
107-06-2	-----1,2-Dichloroethane	200	U
78-93-3	-----2-Butanone	100	BJ
71-55-6	-----1,1,1-Trichloroethane	200	U
56-23-5	-----Carbon Tetrachloride	200	U
75-27-4	-----Bromodichloromethane	200	U
78-87-5	-----1,2-Dichloropropane	200	U
10061-01-5	-----cis-1,3-Dichloropropene	200	U
79-01-6	-----Trichloroethene	200	U
124-48-1	-----Dibromochloromethane	200	U
79-00-5	-----1,1,2-Trichloroethane	200	U
71-43-2	-----Benzene	200	U
10061-02-6	-----trans-1,3-Dichloropropene	200	U
75-25-2	-----Bromoform	200	U
108-10-1	-----4-Methyl-2-Pentanone	200	U
591-78-6	-----2-Hexanone	200	U
127-18-4	-----Tetrachloroethene	200	U
79-34-5	-----1,1,2,2-Tetrachloroethane	200	U
108-88-3	-----Toluene	200	U
108-90-7	-----Chlorobenzene	200	U
100-41-4	-----Ethylbenzene	200	U
100-42-5	-----Styrene	200	U
1330-20-7	-----Xylene (total)	200	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

274DRM01

Lab Name: ITAS-KNOXVILLE Contract: BAKER
 Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM
 Matrix: (soil/water) WATER Lab Sample ID: AD2148
 Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AD2148R
 Level: (low/med) LOW Date Received: 12/06/94
 % Moisture: not dec. _____ Date Analyzed: 12/12/94
 GC Column: RTX624 ID: 0.530 (mm) Dilution Factor: 20.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 1 CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.70	6900	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

274DRM01DL

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2148

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AD2148D

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: not dec. _____ Date Analyzed: 12/15/94

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 250.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	UG/L	Q
74-87-3	-----Chloromethane	2500	U
74-83-9	-----Bromomethane	2500	U
75-01-4	-----Vinyl Chloride	2500	U
75-00-3	-----Chloroethane	2500	U
75-09-2	-----Methylene Chloride	730	BDJ
67-64-1	-----Acetone	16000	D
75-15-0	-----Carbon Disulfide	2500	U
75-35-4	-----1,1-Dichloroethene	2500	U
75-34-3	-----1,1-Dichloroethane	2500	U
540-59-0	-----1,2-Dichloroethene (total)	2500	U
67-66-3	-----Chloroform	2500	U
107-06-2	-----1,2-Dichloroethane	2500	U
78-93-3	-----2-Butanone	2500	U
71-55-6	-----1,1,1-Trichloroethane	2500	U
56-23-5	-----Carbon Tetrachloride	2500	U
75-27-4	-----Bromodichloromethane	2500	U
78-87-5	-----1,2-Dichloropropane	2500	U
10061-01-5	-----cis-1,3-Dichloropropene	2500	U
79-01-6	-----Trichloroethene	2500	U
124-48-1	-----Dibromochloroethane	2500	U
79-00-5	-----1,1,2-Trichloroethane	480	DJ
71-43-2	-----Benzene	2500	U
10061-02-6	-----trans-1,3-Dichloropropene	2500	U
75-25-2	-----Bromoform	2500	U
108-10-1	-----4-Methyl-2-Pentanone	2500	U
591-78-6	-----2-Hexanone	2500	U
127-18-4	-----Tetrachloroethene	2500	U
79-34-5	-----1,1,2,2-Tetrachloroethane	2500	U
108-88-3	-----Toluene	2500	U
108-90-7	-----Chlorobenzene	2500	U
100-41-4	-----Ethylbenzene	2500	U
100-42-5	-----Styrene	2500	U
1330-20-7	-----Xylene (total)	2500	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

274DRM01DL

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2148

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AD2148D

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: not dec. _____ Date Analyzed: 12/15/94

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 250.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.70	8400	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

274DRM01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2149

Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2149

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/09/94

Injection Volume: 2.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	<u>Q</u>
108-95-2	Phenol	20	U
111-44-4	bis(2-Chloroethyl) Ether	20	U
95-57-8	2-Chlorophenol	20	U
541-73-1	1,3-Dichlorobenzene	20	U
106-46-7	1,4-Dichlorobenzene	20	U
95-50-1	1,2-Dichlorobenzene	20	U
95-48-7	2-Methylphenol	20	U
108-60-1	2,2'-Oxybis(1-Chloropropane)	20	U
106-44-5	4-Methylphenol	20	U
621-64-7	N-Nitroso-Di-n-Propylamine	20	U
67-72-1	Hexachloroethane	20	U
98-95-3	Nitrobenzene	20	U
78-59-1	Isophorone	20	U
88-75-5	2-Nitrophenol	20	U
105-67-9	2,4-Dimethylphenol	22	
111-91-1	bis(2-Chloroethoxy)Methane	20	U
120-83-2	2,4-Dichlorophenol	20	U
120-82-1	1,2,4-Trichlorobenzene	20	U
91-20-3	Naphthalene	20	U
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	20	U
59-50-7	4-Chloro-3-Methylphenol	20	U
91-57-6	2-Methylnaphthalene	20	U
77-47-4	Hexachlorocyclopentadiene	20	U
88-06-2	2,4,6-Trichlorophenol	20	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	20	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	20	U
208-96-8	Acenaphthylene	20	U
606-20-2	2,6-Dinitrotoluene	20	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	2	J

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

274DRM01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2149

Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2149

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/09/94

Injection Volume: 2.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
51-28-5-----	2,4-Dinitrophenol	50	U
100-02-7-----	4-Nitrophenol	50	U
132-64-9-----	Dibenzofuran	20	U
121-14-2-----	2,4-Dinitrotoluene	20	U
84-66-2-----	Diethylphthalate	4	J
7005-72-3-----	4-Chlorophenyl-phenylether	20	U
86-73-7-----	Fluorene	20	U
100-01-6-----	4-Nitroaniline	50	U
534-52-1-----	4,6-Dinitro-2-methylphenol	50	U
86-30-6-----	N-Nitrosodiphenylamine (1)	20	U
101-55-3-----	4-Bromophenyl-phenylether	20	U
118-74-1-----	Hexachlorobenzene	20	U
87-86-5-----	Pentachlorophenol	50	U
85-01-8-----	Phenanthrene	6	J
120-12-7-----	Anthracene	20	U
86-74-8-----	Carbazole	20	U
84-74-2-----	Di-n-Butylphthalate	20	U
206-44-0-----	Fluoranthene	20	U
129-00-0-----	Pyrene	20	U
85-68-7-----	Butylbenzylphthalate	20	U
91-94-1-----	3,3'-Dichlorobenzidine	20	U
56-55-3-----	Benzo(a)Anthracene	20	U
218-01-9-----	Chrysene	20	U
117-81-7-----	bis(2-Ethylhexyl)Phthalate	7	J
117-84-0-----	Di-n-Octyl Phthalate	20	U
205-99-2-----	Benzo(b)Fluoranthene	20	U
207-08-9-----	Benzo(k)Fluoranthene	20	U
50-32-8-----	Benzo(a)Pyrene	20	U
193-39-5-----	Indeno(1,2,3-cd)Pyrene	20	U
53-70-3-----	Dibenz(a,h)Anthracene	20	U
191-24-2-----	Benzo(g,h,i)Perylene	20	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

274DRM01

Lab Name: ITAS-KNOXVILLE Contract: BAKER

Lab Code: ITSTU Case No.: 2227 SAS No.: _____ SDG No.: 274DRM

Matrix: (soil/water) WATER Lab Sample ID: AD2149

Sample wt/vol: 1000 (g/mL) ML Lab File ID: AD2149

Level: (low/med) LOW Date Received: 12/06/94

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 12/07/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/09/94

Injection Volume: 2.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 24

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.27	42	J
2.	UNKNOWN	9.05	47	J
3.	UNKNOWN	11.23	150	J
4.	134-62-3 BENZAMIDE, N,N-DIETHYL-3-MET	11.48	37	JN
5.	UNKNOWN	11.73	94	J
6.	4536-87-2 BENZENE, (1-ETHYLNONYL)-	12.30	22	JN
7.	4536-88-3 BENZENE, (1-METHYLDECYL)-	12.70	22	JN
8.	UNKNOWN	13.30	43	J
9.	UNKNOWN	13.43	72	J
10.	UNKNOWN	13.88	36	J
11.	UNKNOWN	15.40	24	J
12.	UNKNOWN	15.63	82	J
13.	UNKNOWN	15.93	33	J
14.	UNKNOWN	17.43	67	J
15.	UNKNOWN	17.68	300	J
16.	UNKNOWN	18.35	22	J
17.	UNKNOWN	19.02	57	J
18.	UNKNOWN	19.18	63	J
19.	UNKNOWN	19.62	76	J
20.	UNKNOWN	20.18	92	J
21.	UNKNOWN	20.40	21	J
22.	UNKNOWN	20.72	79	J
23.	UNKNOWN	21.27	59	J
24.	UNKNOWN	21.83	41	J

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

274DRM01

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: W02227 SAS No.: _____ SDG No.: 3TK01

Matrix: (soil/water) WATER Lab Sample ID: AD2149

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: 12/05/94

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 12/07/94

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/19/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.11	
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

274DRM01RE

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: WO2227 SAS No.: _____ SDG No.: 3TK01

Matrix: (soil/water) WATER Lab Sample ID: AD2149RE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: 12/05/94

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 12/20/94

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/21/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

APPENDIX D.2
SUMMARY OF IDW DISPOSITION REPORT

Baker

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

February 20, 1995

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

Commander
Atlantic Division
Naval Facilities Engineering Command
1510 Gilbert Street (Building N-26)
Norfolk, Virginia 23511-6299

Attn: Ms. Katherine Landman
Code 1823

Re: Contract N62470-89-D-4814
Navy CLEAN, District III
Contract Task Order (CTO) 0274
Operable Units No. 8, 11, and 12
Sites 3, 7, 16, and 80 IDW Removal
MCB Camp Lejeune, North Carolina

Dear Ms. Landman:

This letter report presents a summary of investigation-derived waste (IDW) disposal activities at Sites 3, 7, 16, and 80, Marine Corps Base, Camp Lejeune, North Carolina. The IDW generated during the remedial investigation conducted from October 10, 1994 through December 4, 1994, was contained in roll-off boxes, 1000 gallon tanks, and 55-gallon drums.

In a letter dated January 19, 1995, Baker Environmental provided the sample collection, analytical findings, conclusions and recommendations with respect to the IDW handling and disposal. The recommendations were subsequently approved by the Navy/Marine Corps. The remainder of this letter report provides a summary of the disposal activities conducted under this CTO.

DISPOSAL

Based on LANTDIV/MCB Camp Lejeune approval, Baker arranged for the disposal of the following:

- 3,850 gallons of nonhazardous well development and purge water
- 400 gallons of nonhazardous decontamination fluids
- 40 cubic feet of drilling mud

Based on the nonhazardous determination, all IDW was deposited back onto the site in which it was generated.

In addition, Baker arranged for Four Seasons Inc., (IDW subcontractor) to remove nine (9) liters of waste methanol from Lot 203. This waste was generated during the EnSys investigation performed at Site 3. The subcontractor was also required to transport the waste methanol to Ecoflo Inc., a licensed Treatment Storage Disposal Facility (TSDF) located in Greensboro, North Carolina. The signed hazardous waste manifest, along with the material characterization form, land disposal restrictions notification and certification form, lab pack certification, and drum inventories are provided in Attachment A.



A Total Quality Corporation

Baker

Ms. Katherine Landman
February 20, 1995
Page 2

If you have any questions, please do not hesitate to call me at (412) 269-2053 or Raymond P. Wattras (Activity Coordinator) at (412) 269-2016.

Sincerely,

BAKER ENVIRONMENTAL, INC.

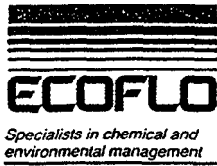
Matthew D. Bartman

Matthew D. Bartman
Project Manager

MDB/lq

cc: Mr. Neal Paul
Mr. John Riggs
Ms. Lee Ann Rapp, Code 183 (w/o attachments)
Ms. Beth Collier, Code 02115(w/o attachments)

**ATTACHMENT A
HAZARDOUS WASTE MANIFEST AND
CORRESPONDING DOCUMENTATION**



Greensboro, NC (910) 855-7925
Savage, MD (301) 498-4550

Four Seasons Industrial Services, Inc.
P. O. Box 16590
Greensboro, NC 27416-0590

Attn: Kenn Webb

TO BE COMPLETED BY ECOFLO

E-Code No. _____
Sales Rep. _____
Sample Yes No

MATERIAL CHARACTERIZATION FORM

SECTION A: GENERATOR INFORMATION

1) Name: Commanding General AC/EMD/IR 4) Technical Contact: Kenn Webb
2) Mailing Address: Marine Corp Base - Camp Lejeune PSC 2004 Camp Lejeune, NC 28542-0004 5) Title: Four Seasons Project Mgr
6) Phone: (704) 332-7636 Ext. _____
3) Facility Address: Lot 203 - MCB Camp Lejeune Camp Lejeune, NC 28542 7) FAX Num.: (704) 332-7436
8) EPA I.D.#: NC 617 0022 SBO

SECTION B: WASTE IDENTIFICATION

1) Waste Name: Lab Pack - Methanol and Water
2) Process Generating Waste: Decontamination Activities
3) Waste Code(s): EPA F003, D001 STATE _____
4) Source Code (See Reverse Page): A19 5) Form Code (See Reverse Page): B003 6) SIC Code: 9711

SECTION C: WASTE CHARACTERISTICS

1) PHYSICAL STATE at 70°F: Solid Liquid Gas Describe: _____
2) LAYERS: Multilayered Bilayered None 3) VISCOSITY at 70°F: Low Medium High
4) % TOTAL SOLIDS: varies % Describe: _____
5) BTU/lb. varies 6) pH varies 7) COLOR varies
8) FLASH POINT (°C): < 73°F 73° - 100°F 101° - 140°F 141° - 200°F > 200°F Exact: _____ °F
9) BOILING POINT: ≤ 95°F > 95°F 10) REACTIVE: Yes No Describe: _____
11) % TOTAL ORGANIC HALOGENS Cl F Br I 12) CYANIDES: 0 ppm 13) PCB: 0 ppm
14) METALS (TCLP TOTAL Below Regulatory Levels):
As _____ ppm Ba _____ ppm Cd _____ ppm Cr _____ ppm Pb _____ ppm Hg _____ ppm
Se _____ ppm Ag _____ ppm Sb _____ ppm Tl _____ ppm Ni _____ ppm Be _____ ppm

SECTION D: CHEMICAL CONSTITUENTS (must equal 100% and represent all constituents)

<u>Lab Pack</u>	<u>100</u>	%
<u>See Drum Inventory Attached</u>		%
		%
		%
		%
		%
		%
		%
		%
		%

IF UNUSED/VIRGIN MATERIAL PLEASE SUBMIT MSDS

SECTION E: SAFETY DATA

1) HAZARD ALERT SYMBOL: HEALTH FLAMMABILITY REACTIVITY
2) RATED TOXICITY: Ingestion Inhalation Skin Absorption
3) INCOMPATIBILITIES: Oxidizers
heat flame

SECTION F: RECERTIFICATION

I certify that this waste stream has not changed.
Signature: NA
Date: _____ Title: _____

SECTION G: WASTE VOLUME

1) ANTICIPATED VOLUME/CONTAINER COUNT: 2 Gal / Lbs / Drums Cu.Yds. (Circle One)
per One Time Week Month Quarter Year Other _____
2) SIZE OF CONTAINER: 5 10 / 20 / 30 / 40 / 55 / 85 gal. (Circle One), Other _____
3) CONTAINER SPEC.: Open Head Drum Closed Head Drum Lever Lock Roll-Off
 Pallet Tanker Tote Tank Super Sac
4) TYPE OF CONTAINER: Metal Drum Polylined Metal Drum Fiber Drum Polylined Fiber Drum
 Poly Drum Wooden Box Fiber Box Cylinder

SECTION H: SHIPPING INFORMATION SECTION (To Be Completed by W.A. Dept.)

PSN: _____
CLASS/DIV.: _____ UN/NA#: _____ PG: _____ Unspecified Labels: _____
RC: _____ PIH (Yes/No) HAZARD ZONE: _____

SECTION I: CERTIFICATION

I HEREBY CERTIFY THAT THE ABOVE DESCRIBED MATERIAL IS NONRADIOACTIVE AND NONETOLOGICAL/NONINFECTIOUS. I FURTHER CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS COMPLETE AND ACCURATE AND THAT ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.
IN ADDITION, I AUTHORIZE ECOFLO, INC. TO MAKE CORRECTIONS TO THIS MATERIAL CHARACTERIZATION FORM, SUCH CORRECTIONS CONSISTENT WITH THE RESULTS OF SAMPLE CHARACTERIZATION, AND/OR REGULATORY REQUIREMENTS. I UNDERSTAND THAT A COPY WILL BE SENT TO ME.

[Signature] AUTHORIZED SIGNATURE Biological Science Tech TITLE 2/3/95 DATE

ECOFLO

LAND DISPOSAL RESTRICTIONS NOTIFICATION AND CERTIFICATION FORM

Generator Name: MCB - Camp Lejeune

Manifest Doc. No. NA I1008

Generator USEPA ID No. NC 617 0022580

State Manifest No.: _____

INSTRUCTIONS: In Column 1, identify all USEPA hazardous waste codes that apply to this waste shipment. In Column 2, indicate the appropriate Treatability Group: Non-WasteWater (NWW) or WasteWater (WW) for each waste code. Place a check in Column 3 if the waste is California Listed. Also, check the appropriate California List constituent in Table - 2. In Column 4, enter the appropriate Subcategory Key # from Table - 4, if applicable, and also enter "Debris" in Column 4 if the waste is debris that will be treated using one of the alternative treatment technologies provided by 268.45. In Column 5, reference the appropriate Waste Management paragraph(s) from Table - 3 of this form. In Column 6, enter the Reference Number or Numbers from Table - 1 for all regulated constituents associated with F001-F005, F039, D001, D002 and D012-D043. Also, if the waste is a debris, enter in Column 6 the Reference Number or Numbers from Table - 1 of the contaminants subject to treatment.

Check this box if using a continuation sheet.

REF #	1. WASTE CODE	2. TREAT GROUP	3. CALIF LISTED	4. SUBCATEGORY	5. WASTE MANAGEMENT	6. REGULATED CONSTITUENTS
1	F003	NWW	NA	19	A	131
2	D001	NWW	NA	High 1	A	131
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

I hereby certify that all information submitted in this and all associated documents is complete and accurate to the best of my knowledge and information

Signature Eugene A Jones

Title Biological Scientist

Print Name Eugene A Jones

Date 2/3/95

ECOFLO LAB PACK CERTIFICATION

Generator Name: Marine Corp Base - Camp Lejeune

Manifest Doc. No.: F 1009

EPA ID Number: NC617 002 2580

State Manifest Doc. No.: _____

If your waste is packaged in lab packs and does NOT include waste codes listed on Appendix IV (see below), the following certification must be completed and the respective container numbers listed. Use additional sheets if necessary. If any lab pack containers INCLUDE waste codes listed in Appendix IV, the LDR Notification and Certification Form must be completed for those containers and the corresponding waste codes.

Check this box if using a continuation sheet.

Container number(s):

MCB-01	MCB-02						

APPENDIX IV

D009	K004	K062	K106	P012	U134
F019	K005	K071	P010	P076	U151
K003	K006	K100	P011	P078	

I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack does contain any wastes identified at 268.42(c)(2). I am aware that there are significant penalties for submitting a false certifica including the possibility of fine or imprisonment.

Signature: *Eugene A. Jones*

Print Name: Eugene A. Jones

Date: 2/3/95

Table 1 - Regulated Constituents

CONSTITUENT	CONSTITUENT	CONSTITUENT
115 Heptachlor	150 2-Nitropropane	185 Toluene
116 Heptachlor epoxide	151 N-Nitrosodiethylamine	186 Toxaphene
117 Hexachlorobenzene	152 N-Nitrosodimethylamine	187 Tribromomethane (Bromoform)
118 Hexachlorobutadiene	153 N-Nitroso-di-n-butylamine	188 1,2,4-Trichlorobenzene
119 Hexachlorodibenzo-furans	154 N-Nitrosomethylthylamine	189 1,1,1-Trichloroethane
120 Hexachlorodibenzo-p-dioxins	155 N-Nitrosomorpholine	190 1,1,2-Trichloroethane
121 Hexachlorocyclopentadiene	156 N-Nitroepiperidine	191 Trichloroethylene
122 Hexachloroethane	157 N-Nitrosopyrrolidine	192 Trichloromonofluoromethane
123 Hexachloropropylene	158 Parathion	193 2,4,5-Trichlorophenol
124 Indene (1,2,3-c, d)pyrene	159 Pentachlorobenzene	194 2,4,6-Trichlorophenol
125 Iodomethane	160 Pentachlorodibenzo-furans	195 1,2,3-Trichloropropane
126 Isobutyl alcohol	161 Pentachlorodibenzo-p-dioxins	196 1,1,2-Trichloro-1,2,2-difluoroethane
127 Isodrin	162 Pentachloroethane	197 Vinyl chloride
128 Isosafrole	163 Pentachloronitrobenzene	198 Xylenes (Total)
129 Kepone	164 Pentachlorophenol	199 Total PCB's
130 Methacrylonitrile	165 Phenacetin	200 Antimony
131 Methanol	166 Phenanthrene	201 Arsenic
132 Methapyrene	167 Phenol	202 Barium
133 Methoxychlor	168 Phorate	203 Beryllium
134 3-Methylchloranthrene	169 Phthalic acid	204 Cadmium
135 4,4-Methylene-bis-(2-chloroaniline)	170 Phthalic anhydride	205 Chromium (Total)
136 Methylene chloride	171 Pronamide	206 Cyanide (Total)
137 Methyl ethyl ketone	172 Propenenitrile (Ethyl cyanide)	207 Cyanide (Amenable)
138 Methyl isobutyl ketone	173 Pyrene	208 Fluoride
139 Methyl methacrylate	174 Pyridine	209 Lead
140 Methyl methanesulfonate	175 Safrole	210 Mercury - RW from Retort
141 Methyl parathion	176 Silver (2,4,5-TP)	211 Mercury - All Others
142 Naphthalene	177 2,4,5-T	212 Nickel
143 2-Naphthylamine	178 1,2,4,5-Tetrachlorobenzene	213 Selenium
144 p-Nitroaniline	179 Tetrachlorodibenzo-furans	214 Silver
145 o-Nitroaniline	180 Tetrachlorodibenzo-p-dioxins	215 Sulfide
146 Nitrobenzene	181 1,1,1,2-Tetrachloroethane	216 Thallium
147 5-Nitro-o-toluidine	182 1,1,2,2-Tetrachloroethane	217 Vanadium
148 o-Nitrophenol	183 Tetrachloroethylene	218 Zinc
149 p-Nitrophenol	184 2,3,4,6-Tetrachlorophenol	

Table 2 - California Listed Waste

1) Liquid PCB's ≥ 50 ppm	2) Halogenated organic carbon (HOC's) ≥ 1000 mg/l	3) Free Cyanides (Liquids) ≥ 1000 mg/l
4) Nickel (Ni) ≥ 134 mg/l	5) Thallium (Tl) ≥ 130 mg/l	

Table 1 - Regulated Constituents

#	CONSTITUENT	#	CONSTITUENT	#	CONSTITUENT
1	Acenaphthylene	39	p-Chloroaniline	77	trans-1,2-Dichloroethylene
2	Acenaphthene	40	Chlorobenzene	78	2,4-Dichlorophenol
3	Acetone	41	Chlorobenzate	79	2,6-Dichlorophenol
4	Acetonitrile	42	2-Chloro-1,3-butadiene	80	1,2-Dichloropropane
5	Acetophenone	43	Chlorodibromomethane	81	cis-1,3-Dichloropropylene
6	2-Acetylamino fluorene	44	Chloroethane	82	trans-1,3-Dichloropropylene
7	Acrolein	45	Chloroform	83	Dieldrin
8	Acrylamide	46	p-Chloro-m-cresol	84	Diethyl phthalate
9	Acrylonitrile	47	2-Chloroethyl vinyl ether	85	2,4-Dimethyl phenol
10	Aldrin	48	Chloromethane (methyl chloride)	86	Dimethyl phthalate
11	4-Aminobiphenyl	49	2-Chloronaphthalene	87	Di-n-butyl phthalate
12	Aniline	50	2-Chlorophenol	88	1,4-Dinitrobenzene
13	Anthracene	51	3-Chloropropylene	89	4,6-Dinitro-o-cresol
14	Aramid	52	Chrysene	90	2,4-Dinitrophenol
15	alpha-BHC	53	p-Cresol	91	2,4-Dinitrotoluene
16	beta-BHC	54	m-Cresol	92	2,6-Dinitrotoluene
17	delta-BHC	55	o-Cresol	93	Di-n-octyl phthalate
18	gamma-BHC	56	Cyclohexanone	94	Di-n-propylnitrosamine
19	Benz(a)anthracene	57	2,4-Dichlorophenoxyacetic acid (2,4-D)	95	Diphenylamine
20	Benzyl chloride	58	o,p'-DDD	96	1,2-Diphenylhydrazine
21	Benzene	59	p,p'-DDD	97	Diphenylnitrosamine
22	Benzo(a)pyrene	60	o,p'-DDE	98	1,4-Dioxane
23	Benzo(b)fluoranthene	61	p,p'-DDE	99	p-Dimethylaminoazobenzene
24	Benzo(g,h,i)perylene	62	o,p'-DDT	100	Disulfoton
25	Benzo(k)fluoranthene	63	p,p'-DDT	101	Endosulfan I
26	bis-(2-Chloroethoxy)methane	64	Dibenzo(a,e)pyrene	102	Endosulfan II
27	bis-(2-Chloroethyl) ether	65	Dibenzo(a,h)anthracene	103	Endosulfan sulfate
28	bis-(2-Chloroisopropyl) ether	65	tris-(2,3-Dibromopropyl) phosphate	104	Endrin
29	bis-(2-Ethylhexyl) phthalate	67	1,2-Dibromo-3-chloropropane	105	Endrin aldehyde
30	Bromodichloromethane	68	1,2-Dibromoethane (ethylene dibromide)	106	2-Ethoxyethanol
31	Bromomethane (methyl bromide)	69	Dibromomethane	107	Ethyl acetate
32	4-Bromophenyl phenyl ether	70	m-Dichlorobenzene	108	Ethyl benzene
33	n-Butyl alcohol	71	o-Dichlorobenzene	109	Ethyl ether
34	Butyl benzyl phthalate	72	p-Dichlorobenzene	110	Ethyl methacrylate
35	2-sec-Butyl-4,6-dinitrophenol(Dinosab)	73	Dichlorodifluoromethane	111	Ethylene oxide
36	Carbon disulfide	74	1,1-Dichloroethane	112	Famphur
37	Carbon tetrachloride	75	1,2-Dichloroethane	113	Fluoranthene
38	Chlordane (alpha & gamma isomers)	76	1,1-Dichloroethylene	114	Fluorene

Table 3 - Waste Management**A THIS RESTRICTED WASTE REQUIRES TREATMENT TO THE APPLICABLE STANDARD**

This waste must be treated to the applicable treatment standard set forth in 40 CFR Part 268 Subpart D, 268.32, or RCRA Section 3004(d) prior to land disposal.

B THIS RESTRICTED WASTE HAS BEEN TREATED TO THE PERFORMANCE STANDARDS

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268 Subpart D, and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d) without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

C THIS RESTRICTED WASTE, FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY, HAS BEEN TREATED BY THE SPECIFIED TECHNOLOGY

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.42. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

D. THIS RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification including the possibility of a fine and imprisonment.

E. THIS RESTRICTED DEBRIS HAS BEEN TREATED IN ACCORDANCE WITH 40 CFR 268.45

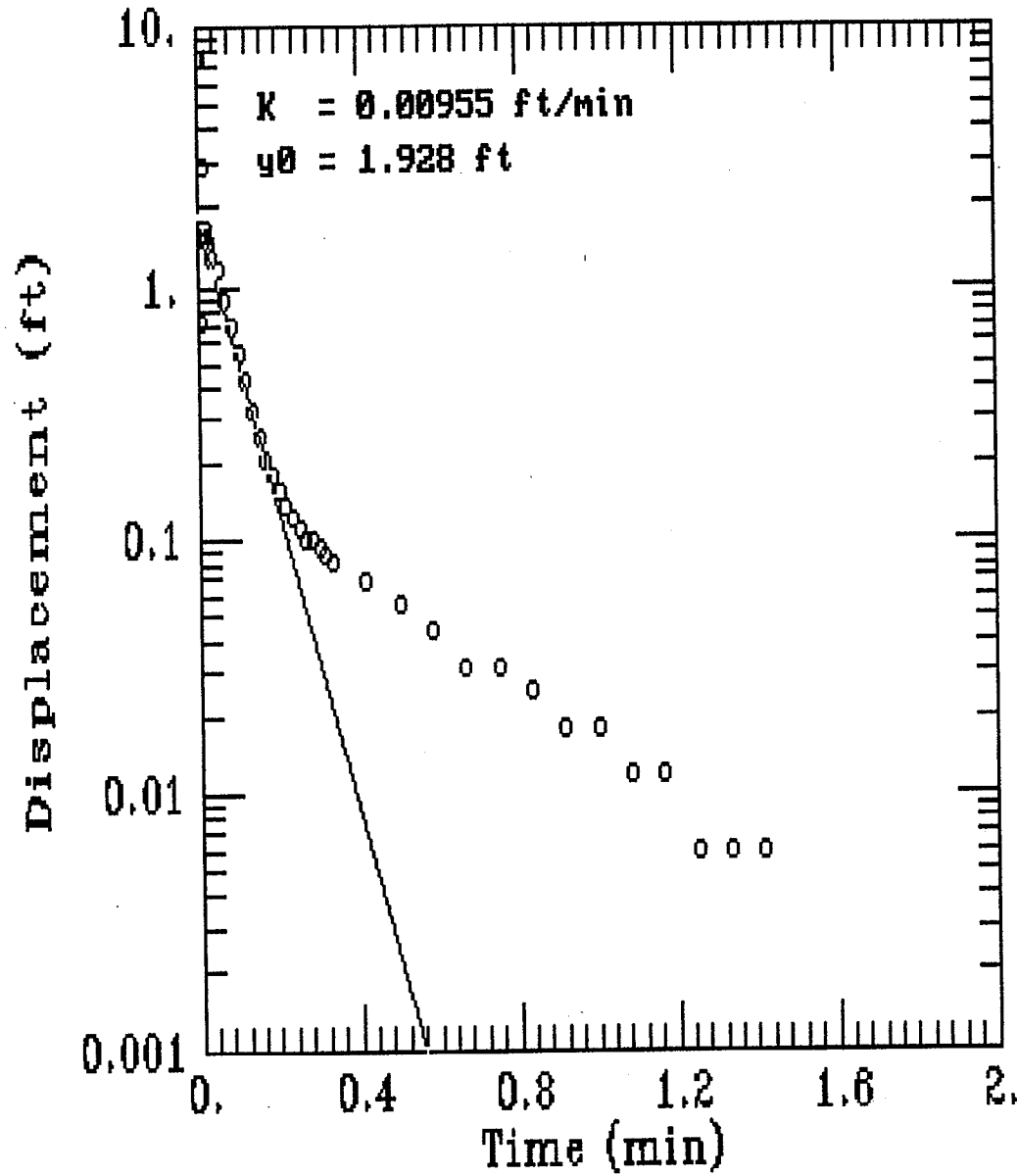
I certify under penalty of law that the debris has been treated in accordance with the requirements of 40 CFR 268.45. I am aware that there are significant penalties for making a false certification, including the possibility of fine and imprisonment.

Table 4 - Subcategories


WASTE CODES	KEY #	SUBCATEGORY
D001	1	High TOC ignitable liquids (High TOC NWW).
	2	Low TOC ignitable liquids managed in CWA, CWA-equivalent, or Class 1 SDWA systems.
	3	Low TOC ignitable liquids not managed in CWA, CWA-equivalent, or Class 1 SDWA systems.
D002	4	Corrosive waste managed in CWA, CWA-equivalent, or Class 1 SDWA systems.
	5	Corrosive waste not managed in CWA, CWA-equivalent, or Class 1 SDWA systems.
D003	6	Reactive sulfides
	7	Explosives.
	8	Other reactives.
	9	Waste reactives
D006	10	Reactive cyanides.
	11	Cadmium.
D008	12	Cadmium containing batteries.
	13	Lead.
D009	14	Lead acid batteries.
	15	High mercury NWW's \geq 260 ppm with organics (and are not incinerator residues).
	16	High mercury NWW's \geq 260 ppm with inorganics (including incinerator residues and residues from RMERC).
	17	Low mercury NWW's \leq 260 ppm.
F003 F005	18	All D009 WW's
	19	Wastes that contain any combination of one or more of the following solvents as the only listed F001-5 solvents: carbon disulfide, cyclohexanone, and/or methanol.
F005	20	Containing 2-Nitropropane as the only F001-5 solvent.
	21	Containing 2-Ethoxyethanol as the only F001-5 solvent.
F025	22	Light Ends.
	23	Spent filters/aids and desiccants.
K006	24	Anhydrous.
	25	Hydrated.
K069	26	--- Calcium Sulfate (Low Lead).
	27	Non-Calcium Sulfate (High Lead).
K071	28	Residues from RMERC.
	29	Other nonwastewaters.
	30	All K071 wastewaters.
K106	31	NWW's containing \geq 260 ppm total mercury.
	32	Residues from RMERC $<$ 260 ppm total mercury.
	33	Other nonwastewaters $<$ 260 ppm total mercury.
	34	All K106 wastewaters.
P047	35	4,6-Dinitro-o-cresol
	36	4,6-Dinitro-o-cresol salts
P065	37	Nonwastewaters, not incinerator or RMERC residues.
	38	Nonwastewaters from incinerator or RMERC residues containing \geq 260 ppm mercury.
	39	Nonwastewaters from RMERC residues containing $<$ 260 ppm mercury.
	40	Nonwastewaters from incinerator residues containing $<$ 260 ppm mercury.
	41	All P065 wastewaters.
P092	42	Nonwastewaters, not incinerator or RMERC residues.
	43	Nonwastewaters from incineration or RMERC containing \geq 260 ppm total mercury.
	44	Nonwastewaters from RMERC residues containing \leq 260 ppm total mercury.
	45	Nonwastewaters from incinerator residues containing \leq 260 ppm total mercury.
	46	All P092 wastewaters.
U151	47	Nonwastewaters containing \geq 260 ppm total mercury.
	48	Nonwastewaters from RMERC residues only, containing $<$ 260 ppm total mercury.
	49	Nonwastewaters not from RMERC residues containing $<$ 260 ppm total mercury.
	50	All U151 wastewaters.
U240	51	2,4-D (2,4-Dichlorophenoxyacetic acid).
	52	2,4-D salts and esters.

APPENDIX E
AQUIFER CHARACTERIZATION DATA

7MW04 RISING HEAD TEST



AQTESOLV



GERAGHTY
& MILLER, INC.
Modeling Group

A Q T E S O L V R E S U L T S
Version 1.10

03/06/95

12:38:14

=====

TEST DESCRIPTION

Data set..... B:7MW04R.DAT
Data set title..... 7MW04 RISING HEAD TEST

Knowns and Constants:

No. of data points..... 40
 Radius of well casing..... 0.083
 Radius of well..... 0.25
 Aquifer saturated thickness..... 13.94
 Well screen length..... 15
 Static height of water in well..... 13.94
 Log(Re/Rw)..... 3.092
 A, B, C..... 0.000, 0.000, 2.989

=====

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

=====

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	7.6085E-002 +/-	1.5227E-002
y0 =	1.1496E+001 +/-	2.6220E+000

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
 weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals..... 40
 Number of estimated parameters.... 2
 Degrees of freedom..... 38
 Residual mean..... 0.2036
 Residual standard deviation..... 0.7394
 Residual variance..... 0.5467

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0066	7.572	5.6679	1.9041	1
0.01	0.723	3.9374	-3.2144	1
0.0133	2.854	2.7647	0.089275	1
0.0166	1.528	1.9413	-0.4133	1
0.02	1.66	1.3486	0.31141	1

SE1000C
Environmental Logger
12/07 17:12

Unit# 01607 Test 3

Setups: INPUT 1

Type Level (F)
Mode Surface
I.D. 07004

Reference 0.000
Linearity 0.110
Scale factor 19.880
Offset -0.060
Delay mSEC 50.000

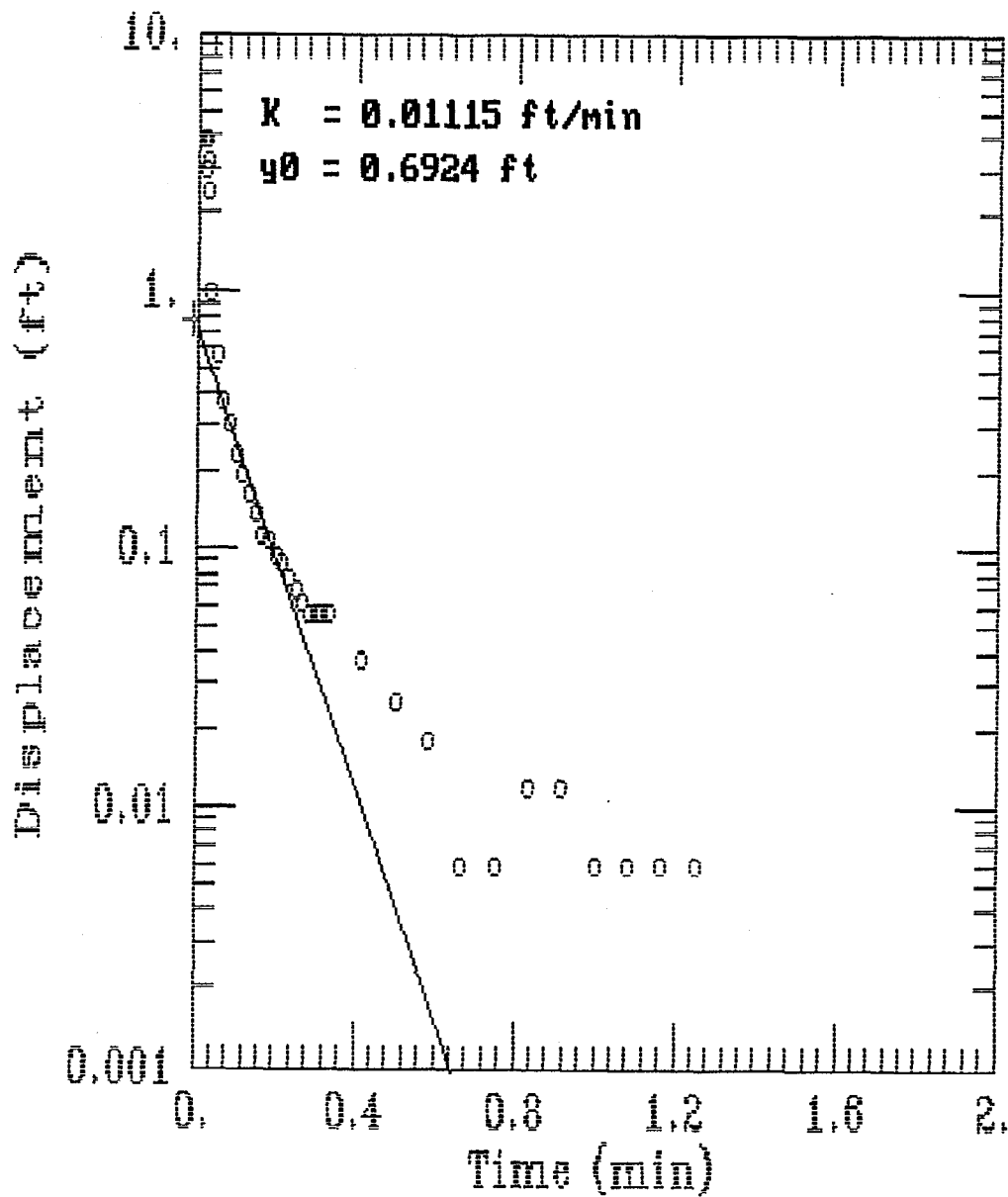
Step 1 12/07 13:12:41

Elapsed Time INPUT 1

0.0000 -0.327
0.0033 -5.952
0.0066 -7.572
0.0100 0.723
0.0133 -2.854
0.0166 -1.528
0.0200 -1.660
0.0233 -1.547
0.0266 -1.509
0.0300 -1.509
0.0333 -1.308
0.0500 -1.182
0.0666 -0.893
0.0833 -0.704
0.1000 -0.547
0.1166 -0.427
0.1333 -0.327
0.1500 -0.257
0.1666 -0.207
0.1833 -0.182
0.2000 -0.157
0.2166 -0.138
0.2333 -0.125
0.2500 -0.113
0.2666 -0.100
0.2833 -0.100
0.3000 -0.094
0.3166 -0.088
0.3333 -0.081
0.4166 -0.069
0.5000 -0.056
0.5833 -0.044
0.6666 -0.031
0.7500 -0.031
0.8333 -0.025
0.9166 -0.018
1.0000 -0.018
1.0833 -0.012
1.1666 -0.012
1.2500 -0.006
1.3333 -0.006
1.4166 -0.006
1.5000 0.000

1.5833	-0.006
1.6666	0.000
1.7500	0.000
1.8333	-0.006
1.9166	0.000
2.0000	0.000
2.5000	0.000
3.0000	0.000
3.5000	0.006
4.0000	0.006
4.5000	0.000
5.0000	0.012
5.5000	0.006
6.0000	0.006
6.5000	0.000
7.0000	0.000
7.5000	0.006
8.0000	0.006
8.5000	0.000
9.0000	0.000
9.5000	0.000
10.0000	0.006
12.0000	-0.006
14.0000	-0.006
16.0000	-0.012
18.0000	-0.012
20.0000	-0.006
22.0000	-0.006
24.0000	-0.006
26.0000	0.006

7MW05 RISING HEAD TEST



AQTESOLV

 GERAGHTY
& MILLER, INC.

 Modeling Group

A Q T E S O L V R E S U L T S
Version 1.10

03/07/95

06:02:22

=====

TEST DESCRIPTION

Data set..... B:7MW05R.DAT
Data set title..... 7MW05 RISING HEAD TEST

Knowns and Constants:

No. of data points..... 35
 Radius of well casing..... 0.083
 Radius of well..... 0.25
 Aquifer saturated thickness..... 19.17
 Well screen length..... 10
 Static height of water in well..... 19.17
 Log (Re/Rw)..... 3.217
 A, B, C..... 0.000, 0.000, 2.297

=====

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

=====

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	5.6705E-002 +/-	5.3169E-003
y0 =	9.9914E+000 +/-	1.1031E+000

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
 weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals..... 35
 Number of estimated parameters.... 2
 Degrees of freedom..... 33
 Residual mean..... 0.04476
 Residual standard deviation..... 0.2238
 Residual variance..... 0.05009

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0166	3.925	4.2721	-0.34713	1
0.02	3.881	3.5898	0.2912	1
0.0233	2.976	3.0319	-0.055924	1
0.0266	3.196	2.5607	0.63525	1
0.03	2.441	2.1518	0.28925	1

SE1000C
Environmental Logger
12/08 16:54

Unit# 01607 Test 0

Setups: INPUT 1

Type Level (F)
Mode Surface
I.D. 07005

Reference 0.000
Linearity 0.110
Scale factor 19.880
Offset -0.060
Delay mSEC 50.000

Step 1 12/08 09:47:53

Elapsed Time INPUT 1

0.0000 -0.213
0.0033 -1.655
0.0066 -2.416
0.0100 -3.491
0.0133 -3.743
0.0166 -3.925
0.0200 -3.881
0.0233 -2.976
0.0266 -3.196
0.0300 -2.441
0.0333 -0.969
0.0500 -0.572
0.0666 -0.377
0.0833 -0.302
0.1000 -0.232
0.1166 -0.195
0.1333 -0.163
0.1500 -0.138
0.1666 -0.113
0.1833 -0.107
0.2000 -0.094
0.2166 -0.088
0.2333 -0.075
0.2500 -0.069
0.2666 -0.062
0.2833 -0.056
0.3000 -0.056
0.3166 -0.056
0.3333 -0.056
0.4166 -0.037
0.5000 -0.025
0.5833 -0.018
0.6666 -0.006
0.7500 -0.006
0.8333 -0.012
0.9166 -0.012
1.0000 -0.006
1.0833 -0.006
1.1666 -0.006
1.2500 -0.006
1.3333 0.000
1.4166 -0.006
1.5000 -0.006

1.5833	0.000
1.6666	-0.012
1.7500	-0.006
1.8333	-0.006
1.9166	0.000
2.0000	0.000
2.5000	-0.006
3.0000	0.000
3.5000	0.000
4.0000	0.000
4.5000	0.000
5.0000	0.000
5.5000	0.000
6.0000	0.006
6.5000	-0.006
7.0000	0.006
7.5000	0.000
8.0000	0.000
8.5000	0.000
9.0000	0.000
9.5000	-0.006
10.0000	0.000

APPENDIX F
BASE BACKGROUND SOIL REPORT

Appendices F.1 and F.2 provide background concentration values for inorganic elements in surface and subsurface soil respectively at MCB, Camp Lejeune. These background borings were collected in areas known to be unimpacted by site operations, and have also been collected during Baker Remedial Investigations since 1993. Both appendices have all background borings identified with a unique sample identification, and the inorganic analytical results pertaining to the sample identification. Provided in the back of each appendix, are the following statistics for the base background samples:

- minimum concentration per inorganic analyte
- maximum concentration per inorganic analyte
- average concentration per inorganic analyte
- twice the average concentration per inorganic analyte.

The minimum and maximum concentrations are used for a comparison bases only. Whereas twice the average concentration is used in comparing the inorganic analytical results from the on-site soil samples to what is considered by USEPA Region IV to be naturally occurring.

APPENDIX F.1
BASE BACKGROUND SURFACE SOIL REPORT

**BASE BACKGROUND
SURFACE SOILS
TAL INORGANICS
MCB CAMP LEJEUNE, NORTH CAROLINA**

	6-201N-SB11-00	6-201N-SB12-00	6-201C-SB38-00	6-201C-SB39-00	78-BB-SB-00	41-BB-SB01-00	41-BB-SB02-00
Aluminum	1120	45.25	748	245	1490	528	1430
Antimony	4.7	4.8	1.4	1.3	0.33	2.07	0.865
Arsenic	0.28	0.29	0.91	0.28	0.22	0.356	0.317
Barium	2	2.05	16.5	3.5	8.6	1.525	4.06
Beryllium	0.095	0.1	0.03	0.03	0.11	0.1	0.09
Cadmium	0.285	0.295	0.58	0.175	0.55	0.392	0.349
Calcium	178	108	10700	402	941	18.3	54.6
Chromium	0.475	0.49	1.6	0.33	2.2	1.02	0.91
Cobalt	0.85	0.9	0.195	0.185	1.8	1.965	1.75
Copper	0.55	0.6	3.1	0.75	2	2	87.2
Iron	525	160	684	238	1020	83	970
Lead	2	3	62.9	25.1	20.4	2.59	10.9
Magnesium	11.65	10.1	200	26	118	8.85	39.1
Manganese	3.1	1	16	4.5	11.1	0.87	10.2
Mercury	0.01	0.01	0.05	0.06	0.05	0.0305	0.078
Nickel	1.6	1.65	0.8	0.75	2.2	3.55	3.15
Potassium	36.55	37.5	54.5	30.6	102	91.5	81.5
Selenium	0.47	0.485	0.5	0.465	0.31	0.311	0.277
Silver	0.95	1	0.195	0.185	0.33	0.1965	0.175
Sodium	19.65	15.85	14	4.7	67.5	44.1	39.3
Thallium	0.19	0.195	0.205	0.185	0.11	0.565	0.505
Vanadium	1.05	0.8	2.8	1.6	5.3	2.505	2.23
Zinc	0.55	0.8	23.1	4.6	28.3	2.66	6.11
Cyanide					0.265	1.23	1.09

Concentrations are in milligrams per kilogram (mg/kg).

Qualifiers have been removed per Baker's standards.

Qualifiers R, U, and UJ have been given one-half the detection value.

Qualifiers J, NJ, and B have been removed with no detection value change.

**BASE BACKGROUND
SURFACE SOILS
TAL INORGANICS
MCB CAMP LEJEUNE, NORTH CAROLINA**

	41-BB-SB03-00	41-BB-SB04-00	69-BB-SB01-00	69-BB-SB02-00	69-BB-SB03-00	69-BB-SB04-00	74-BB-SB01-00
Aluminum	2100	5370	1310	4150	9570	5360	3110
Antimony	0.87	0.94	0.85	0.95	0.95	0.95	0.905
Arsenic	0.3205	0.345	0.31	0.345	0.79	0.35	0.3325
Barium	4.53	13.4	5.6	15.4	19.6	20.8	11.1
Beryllium	0.09	0.095	0.14	0.155	0.155	0.155	0.148
Cadmium	0.3525	0.38	0.26	0.285	0.29	0.29	0.2695
Calcium	79.2	46.3	28.2	43.6	282	53	181
Chromium	2.64	3.24	0.75	4	12.5	5.8	0.84
Cobalt	1.77	1.905	2.1	2.3	2.35	2.35	2.225
Copper	1.8	1.94	1.75	1.9	1.95	1.95	4.56
Iron	1120	2160	425	1430	9640	3890	1740
Lead	9.98	6.61	2.8	6	5.3	5.6	5.19
Magnesium	74	144	37.3	91.8	610	247	70
Manganese	11.6	11.8	15.1	12.7	12.3	8.3	9.44
Mercury	0.057	0.08	0.015	0.06	0.045	0.025	0.04
Nickel	3.2	3.45	2.9	1.6	1.65	1.65	1.56
Potassium	190	177	32.25	35.5	361	106	87.5
Selenium	0.2795	0.301	0.27	0.295	0.3	0.3	0.29
Silver	0.177	0.1905	0.045	0.045	4.3	0.39	0.046
Sodium	39.65	42.75	20	22	22.4	22.3	70.4
Thallium	0.51	0.55	0.495	0.55	0.55	0.55	0.53
Vanadium	2.255	2.43	1.8	1.95	13.5	5.6	5.21
Zinc	5.97	7.15	3.1	5.2	10.8	7.9	1.27
Cyanide	1.1	1.19	2.2	2.4	2.4	2.4	1.15

Concentrations are in milligrams per kilogram (mg/kg).

Qualifiers have been removed per Baker's standards.

Qualifiers R, U, and UJ have been given one-half the detection value.

Qualifiers J, NJ, and B have been removed with no detection value change.

BASE BACKGROUND
SURFACE SOILS
TAL INORGANICS
MCB CAMP LEJEUNE, NORTH CAROLINA

	74-BB-SB02-00	74-BB-SB03-00	74-BB-SB04-00	1-BB-SB38-00	1-BB-SB39-00	1-GW13-00	28-BB-SB37-00	28-BB-SB38-00
Aluminum	1730	1000	2100	3920	4930	1600	2840	379
Antimony	0.925	0.855	0.96	3.6	3.15	8.0	3.55	2.9
Arsenic	0.339	0.314	0.352	0.315	0.28	0.29	0.31	0.255
Barium	1.6	3.12	16	9.6	9.3	2.8	5.1	1.8
Beryllium	0.151	0.14	0.1565	0.105	0.10	0.095	0.105	0.085
Cadmium	0.275	0.2545	0.285	0.315	0.28	0.285	0.31	0.255
Calcium	46.9	43.9	377	538	353	248	114	13.10
Chromium	2.7	0.795	1.98	3.5	4.7	4.1	2.0	0.60
Cobalt	2.27	2.1	2.355	0.42	0.375	0.38	0.415	0.34
Copper	3.92	1.755	1.965	1.6	0.6	1.9	0.6	0.50
Iron	401	787	1640	2270	1470	1000	1210	444
Lead	3.79	1.14	142	5.9	4.5	4.2	2.8	1.7
Magnesium	37.5	16.1	52.5	152	183	47.2	68.8	12.9
Manganese	3.13	7.37	4.61	10.6	4.2	5.9	2.7	3.3
Mercury	0.048	0.0305	0.05	0.03	0.025	0.03	0.025	0.025
Nickel	1.59	1.475	1.65	0.8	0.65	0.65	0.750	0.6
Potassium	89	82.5	92.5	149	153	20.650	29.75	8.35
Selenium	0.296	0.274	0.307	0.42	0.375	0.38	0.415	0.34
Silver	0.047	0.0435	0.0485	0.5	0.465	0.475	0.5	0.425
Sodium	71.8	87.6	122	11.0	17.2	7.25	28.5	18.2
Thallium	0.54	0.4985	0.56	0.42	0.38	0.38	0.415	0.34
Vanadium	1.94	1.8	4.69	7.9	6.1	3.5	3.6	2.1
Zinc	1.15	1.97	2.87	7.2	4.0	1.4	0.9	0.71
Cyanide	1.17	1.08	1.21					

Concentrations are in milligrams per kilogram (mg/kg).

Qualifiers have been removed per Baker's standards.

Qualifiers R, U, and UJ have been given one-half the detection value.

Qualifiers J, NJ, and B have been removed with no detection value change.

**BASE BACKGROUND
SURFACE SOILS
TAL INORGANICS
MCB CAMP LEJEUNE, NORTH CAROLINA**

	28-GW09DW-00	30-BB-SB12-00	30-BB-SB13-00	30-BB-SB14-00	30-BB-SB15-00	30-BB-SB16-00	30-GW03-00	35-SS01-00
Aluminum	5460	54.6	24.9	49.2	37.5	196	17.7	2220.0
Antimony	3.35	3.2	3.2	3.3	3.5	3.650	3.9	2.45
Arsenic	1.8	0.28	0.29	0.29	0.31	0.325	0.34	0.065
Barium	11.6	1.8	0.7	0.7	0.7	3.100	0.8	15.6
Beryllium	0.10	0.095	0.10	0.10	0.10	0.110	0.12	0.11
Cadmium	0.295	0.28	0.29	0.29	0.31	0.325	0.34	0.04
Calcium	368	11.45	4.3	9.9	9.0	172	5.2	605.0
Chromium	6.0	1.6	0.7	1.9	0.7	0.75	0.8	1.9
Cobalt	0.91	0.375	0.38	0.38	0.41	0.43	0.45	0.60
Copper	2.9	0.55	0.6	0.6	0.6	0.65	0.7	3.9
Iron	2250	276	102	218	69.7	167	80.4	1250.0
Lead	11.6	3.3	0.47	2.4	0.73	4.4	0.86	3.60
Magnesium	157	6.5	2.6	2.6	2.8	37.1	3.1	71.6
Manganese	4.1	11.9	4.4	9.5	1.3	2.5	2.3	5.5
Mercury	0.025	0.06	0.02	0.03	0.05	0.03	0.03	0.065
Nickel	1.9	0.65	0.7	0.7	1.7	0.9	0.8	1.3
Potassium	158	8.25	11.1	3.8	1.0	29.6	1.2	129.5
Selenium	0.94	0.375	0.38	0.38	0.41	0.43	0.45	0.075
Silver	0.49	0.47	0.47	0.48	0.5	0.6	0.6	0.16
Sodium	15.0	14.8	26.0	4.9	5.2	18.2	5.8	126.00
Thallium	0.395	0.375	0.38	0.38	0.41	0.43	0.45	0.06
Vanadium	8.3	1.7	0.75	1.7	0.31	0.76	0.34	3.60
Zinc	6.6	0.35	0.30	0.48	1.7	2.0	1.2	7.4
Cyanide								

Concentrations are in milligrams per kilogram (mg/kg).

Qualifiers have been removed per Baker's standards.

Qualifiers R, U, and UJ have been given one-half the detection value.

Qualifiers J, NJ, and B have been removed with no detection value change.

**BASE BACKGROUND
SURFACE SOILS
TAL INORGANICS
MCB CAMP LEJEUNE, NORTH CAROLINA**

	BB-SB02-00	BB-SB03-00	16-BB-SB01-00	16-BB-SB02-00	16-BB-SB03-00	80-BB-SB01-00	80-BB-SB02-00	80-BB-SB03-00
Aluminum	3630.0	1950.0	1710.0	3630	1950	2240.0	7770.0	2850.0
Antimony	5.00	5.55	5.05	5	5.55	1.35	1.40	1.40
Arsenic	1.000	1.100	1.000	1	1.1	0.250	3.200	0.265
Barium	7.4	7.0	4.1	7.4	7	9.9	13.0	11.6
Beryllium	0.10	0.11	0.23	0.1	0.11	0.020	0.10	0.06
Cadmium	0.50	0.55	1.00	0.5	0.55	0.165	0.175	0.175
Calcium	113.0	227.0	96.8	113	227	505	997.0	239.0
Chromium	3.3	2.5	1.0	3.3	2.5	1.200	10.0	2.0
Cobalt	1.00	1.10	1.00	1	1.1	0.205	1.30	0.45
Copper	1.0	1.1	1.0	1	1.1	1.3	2.2	0.92
Iron	2150.0	1610.0	1260.0	2150	1610	604.0	5550.0	1450.0
Lead	5.20	10.20	7.40	5.2	10.2	7.5	8.90	8.30
Magnesium	99.1	69.4	42.9	99.1	69.4	94.8	289.0	94.2
Manganese	7.4	5.5	6.9	7.4	5.5	66.0	30.7	12.8
Mercury	0.055	0.055	0.055	0.055	0.055	0.050	0.050	0.060
Nickel	2.0	2.25	2.00	2	2.25	1.4	2.70	1.40
Potassium	1.0	111.5	101.0	100	111.5	163.0	416.0	90.9
Selenium	0.500	0.550	0.500	0.5	0.55	0.285	0.300	0.300
Silver	0.50	0.55	0.50	0.5	0.55	0.220	0.23	0.23
Sodium	25.20	26.20	35.90	25.2	26.2	24.1	77.10	72.70
Thallium	1.00	1.10	1.00	1	1.1	0.435	0.46	0.465
Vanadium	5.40	3.10	4.50	5.4	3.1	2.3	14.70	4.30
Zinc	8.7	22.1	9.2	4.35	22.1	6.1	12.9	3.5
Cyanide								

Concentrations are in milligrams per kilogram (mg/kg).

Qualifiers have been removed per Baker's standards.

Qualifiers R, U, and UJ have been given one-half the detection value.

Qualifiers J, NJ, and B have been removed with no detection value change.

**BASE BACKGROUND
SURFACE SOILS
TAL INORGANICS
MCB CAMP LEJEUNE, NORTH CAROLINA**

	7-BB-SB01-00	7-BB-SB02-00	7-BB-SB03-00	MIN	MAX	AVG	2Xaverage
Aluminum	7180.0	3770.0	5800.0	17.7	9570	2575.979	5151.959
Antimony	6.05	5.50	5.60	0.33	8	2.918	5.835
Arsenic	1.200	1.100	3.900	0.065	3.9	0.651	1.302
Barium	12.0	10.2	9.7	0.65	20.8	7.614	15.229
Beryllium	0.26	0.11	0.11	0.02	0.26	0.111	0.222
Cadmium	0.600	0.550	0.550	0.04	1	0.353	0.706
Calcium	397.0	69.5	615.0	4.25	10700	478.856	957.712
Chromium	8.4	3.8	10.6	0.33	12.5	2.929	5.857
Cobalt	1.20	1.10	1.10	0.185	2.355	1.117	2.233
Copper	1.20	1.10	2.30	0.5	87.2	3.645	7.291
Iron	3050.0	2170.0	7510.0	69.7	9640	1630.100	3260.200
Lead	7.10	6.40	8.70	0.47	142	10.899	21.798
Magnesium	104.0	50.5	79.5	2.55	610	88.606	177.212
Manganese	3.25	3.1	1.8	0.87	66	8.821	17.642
Mercury	0.060	0.060	0.060	0.01	0.08	0.043	0.087
Nickel	2.40	2.20	2.25	0.6	3.55	1.688	3.377
Potassium	121.0	110.0	111.5	1	416	93.362	186.724
Selenium	0.600	0.550	1.300	0.075	1.3	0.415	0.831
Silver	0.60	0.55	0.55	0.0435	4.3	0.473	0.945
Sodium	15.80	15.25	17.30	4.7	126	33.778	67.556
Thallium	1.200	1.100	1.100	0.06	1.2	0.538	1.076
Vanadium	9.70	5.40	18.20	0.305	18.2	4.249	8.498
Zinc	5.3	2.9	3.8	0.3	28.3	6.062	12.124
Cyanide				0.265	2.4	1.453	2.905

Concentrations are in milligrams per kilogram (mg/kg).

Qualifiers have been removed per Baker's standards.

Qualifiers R, U, and UJ have been given one-half the detection value.

Qualifiers J, NJ, and B have been removed with no detection value change.

APPENDIX F.2
BASE BACKGROUND SUBSURFACE SOIL REPORT

**BASE BACKGROUND
SUBSURFACE SOIL
TAL INORGANICS
MCB CAMP LEJEUNE, NORTH CAROLINA**

	6-201N-SB11-07	6-201N-SB12-02	6-201C-SB38-01	6-201C-SB39-04	78-BB-SB-01	2-GW09-01	1-BB-SB38-05	1-BB-SB39-04	1-BB-SB39-06	1-GW13-04
Aluminum	672	857	3620	2970	10200	8520	4580.000	6180.000	5980.000	4160.000
Antimony	4.7	4.85	1.4	1.25	0.355	1.6	4.200	3.250	2.950	6.900
Arsenic	0.31	0.315	0.033	0.305	0.24	0.47	1.100	0.290	0.260	0.285
Barium	2	2.05	7.6	6.5	10.9	6.6	7.500	11.800	8.600	7.500
Beryllium	0.095	0.1	0.03	0.025	0.12	0.23	0.125	0.095	0.085	0.095
Cadmium	0.285	0.295	0.57	0.17	0.6	1.2	0.370	0.290	0.260	0.285
Calcium	5.35	5.4	4410	12.1	81.3	10.6	35.600	12.250	19.700	52.400
Chromium	1.6	1.85	6	2.2	5.7	8.7	10.500	5.500	5.300	7.100
Cobalt	0.65	0.9	0.235	0.175	0.95	1.9	0.495	0.385	0.350	0.380
Copper	0.475	0.6	1.7	0.65	0.95	0.47	6.600	0.600	0.500	2.100
Iron	257	126	456	833	822	2840	4940.000	1510.000	1210.000	567.000
Lead	1.2	1.6	11.5	2.7	6.1	4.3	5.100	3.800	3.100	3.300
Magnesium	13.1	12.7	133	86.8	188	260	222.000	189.000	217.000	131.000
Manganese	0.475	0.395	7.5	2.6	2.4	5.2	4.100	4.900	5.400	2.000
Mercury	0.01	0.01	0.04	0.015	0.045	0.11	0.025	0.025	0.020	0.050
Nickel	1.6	1.7	0.8	0.7	2.4	4.7	0.850	2.300	0.600	0.650
Potassium	48.9	40.8	84.7	187	123	184	409.000	191.000	268.000	98.100
Selenium	0.5	0.5	0.55	0.5	0.29	0.115	0.495	0.385	0.350	0.380
Silver	0.95	1	0.195	0.175	0.355	0.7	0.600	0.480	0.435	0.475
Sodium	12.7	12.15	13.25	7.25	44.9	31.5	12.850	21.600	9.200	9.600
Thallium	0.205	0.21	0.22	0.2	0.12	0.23	0.495	0.385	0.350	0.380
Vanadium	0.75	1	3	4.7	7.4	13.4	12.200	6.500	6.100	3.500
Zinc	0.475	0.395	11.6	0.9	2.1	1.4	4.700	2.900	2.400	1.000

Concentrations are in milligrams per kilograms (mg/kg).

Qualifiers have been removed per Baker's standards.

Qualifiers R, U, and UJ have been given one-half the detection value.

Qualifiers J, NJ, and B have been removed with no detection value change.

**BASE BACKGROUND
SUBSURFACE SOIL
TAL INORGANICS
MCB CAMP LEJEUNE, NORTH CAROLINA**

	1-GW13-08	28-BB-SB37-03	28-BB-SB38-04	28-GW09DW-01	30-BB-SB12-03	30-BB-SB13-01	30-BB-SB14-01	30-BB-SB15-01	30-BB-SB16-02	30-GW03-01
Aluminum	6600.000	5170.000	2830.000	5730.000	2970	17.1	25.7	42.6	777	16.9
Antimony	3.200	3.550	3.550	3.750	3.9	3.1	3.6	3.6	3.4	3.9
Arsenic	0.280	0.315	0.315	1.500	0.34	0.28	0.32	0.32	0.30	0.34
Barium	8.400	9.700	5.000	11.700	0.8	0.7	0.8	0.8	3.5	0.8
Beryllium	0.095	0.105	0.105	0.110	0.12	0.09	0.11	0.11	0.10	0.12
Cadmium	0.280	0.315	0.315	0.330	0.34	0.28	0.32	0.32	0.30	0.34
Calcium	92.600	23.450	6.850	441.000	7.0	6.9	4.8	6.3	116	6.6
Chromium	8.300	7.300	3.400	4.700	3.9	0.7	0.8	0.8	0.7	0.8
Cobalt	0.375	0.420	0.420	0.930	0.45	0.37	0.42	0.43	0.40	0.46
Copper	1.600	0.650	0.650	0.650	0.7	0.6	0.7	0.7	0.6	0.7
Iron	959.000	2090.000	749.000	2780.000	908	95.9	155	63.3	514	74.5
Lead	4.000	4.100	2.300	7.400	0.7	0.47	1.9	0.91	3.2	0.59
Magnesium	262.000	153.000	66.000	157.000	24.7	7.5	2.9	2.9	30.2	3.1
Manganese	4.500	3.200	1.500	5.300	1.7	4.3	6.7	1.1	3.7	1.7
Mercury	0.025	0.025	0.025	0.025	0.03	0.03	0.08	0.25	0.03	0.68
Nickel	0.650	0.750	0.750	1.000	0.8	0.7	0.8	2.2	1.7	0.8
Potassium	308.000	122.000	91.300	136.000	13.2	6.3	1.1	21.3	21.9	1.2
Selenium	0.375	0.420	0.420	0.440	0.45	0.37	0.42	0.43	0.40	0.46
Silver	0.470	0.500	0.550	0.550	0.6	0.46	0.6	0.6	0.50	0.6
Sodium	10.900	33.800	28.600	20.300	12.5	11.1	19.3	5.4	14.4	5.8
Thallium	0.375	0.420	0.420	0.440	0.45	0.37	0.42	0.43	0.40	0.46
Vanadium	10.100	6.400	2.800	8.500	6.2	0.73	1.0	0.84	1.6	0.34
Zinc	2.700	1.900	0.970	4.200	0.55	0.32	0.39	1.2	1.7	1.3

Concentrations are in milligrams per kilograms (mg/kg).
 Qualifiers have been removed per Baker's standards.
 Qualifiers R, U, and UJ have been given one-half the detection value.
 Qualifiers J, NJ, and B have been removed with no detection value change.

**BASE BACKGROUND
SUBSURFACE SOIL
TAL INORGANICS
MCB CAMP LEJEUNE, NORTH CAROLINA**

	35-GWDS01-03	BB-SB02-07	BB-SB03-05	80-BB-SB01-06	80-SS-SB01-03	80-BB-SB2-03	80-BB-SB02-06	80-BB-SB03-03	80-BB-SB03-06	7-BB-SB01-05
Aluminum	2910.0	888.0	2330.0	11000.0	2520.0	5950.0	9600.0	9500.0	1060.0	1400.0
Antimony	2.750	5.000	5.600	6.200	1.300	1.350	1.650	3.500	1.300	5.150
Arsenic	0.12	1.00	1.10	15.40	0.245	1.60	4.70	1.80	0.24	1.05
Barium	5.5	1.6	3.8	22.3	4.5	9.9	13.5	10.9	4.3	16.1
Beryllium	0.06	0.10	0.11	0.31	0.01	0.04	0.20	0.09	0.01	0.105
Cadmium	0.30	0.50	0.55	0.205	0.16	0.165	0.205	0.16	0.155	0.50
Calcium	456.0	74.2	290.0	257.0	105.0	323.0	210.0	142.0	34.2	38.95
Chromium	2.2	2.4	4.2	66.4	2.1	10.0	22.0	12.0	2.9	5.0
Cobalt	0.65	1.00	1.10	7.00	0.42	0.71	1.40	0.75	0.20	1.05
Copper	0.550	1.000	1.100	9.500	0.670	1.600	4.400	2.200	0.630	1.05
Iron	442.0	1220.0	1870.0	90500.0	795.0	2920.0	12800.0	3350.0	557.0	571.0
Lead	8.10	2.40	3.80	21.40	2.90	5.00	11.70	7.80	5.40	3.00
Magnesium	63.5	35.7	115.0	852.0	76.0	282.0	455.0	357.0	50.7	30.6
Manganese	5.6	2.7	2.4	14.9	1.8	19.9	7.4	6.2	5.4	1.95
Mercury	0.03	0.055	0.06	0.07	0.045	0.055	0.07	0.045	0.045	0.055
Nickel	1.050	2.000	2.250	0.600	0.455	1.400	0.600	2.200	0.450	2.050
Potassium	145.0	100.5	228.0	1250.0	161.0	297.0	1020.0	458.0	130.0	103.0
Selenium	0.085	0.500	0.550	2.400	0.275	0.285	0.355	0.275	0.275	0.50
Silver	0.39	0.50	0.55	0.275	0.21	0.22	0.275	0.21	0.21	0.50
Sodium	141.0	20.6	28.2	124.0	63.4	25.5	47.1	73.2	18.3	16.85
Thallium	0.06	1.00	1.10	2.70	0.425	0.44	0.55	0.42	0.42	1.05
Vanadium	3.00	3.90	4.90	69.40	2.30	10.80	18.40	13.50	2.40	2.30
Zinc	2.6	8.7	4.9	26.6	2.0	3.5	8.1	4.8	1.7	3.1

Concentrations are in milligrams per kilograms (mg/kg).

Qualifiers have been removed per Baker's standards.

Qualifiers R, U, and UJ have been given one-half the detection value.

Qualifiers J, NJ, and B have been removed with no detection value change.

**BASE BACKGROUND
SUBSURFACE SOIL
TAL INORGANICS
MCB CAMP LEJEUNE, NORTH CAROLINA**

	7-BB-SB02-05	7-BB-SB03-09	16-BB-SB01-07	16-BB-SB02-07	16-BB-SB03-05	MIN	MAX	AVG	2Xaverage
Aluminum	1700.0	581.0	1940	888	2330	16.900	11000.000	3614.723	7229.446
Antimony	5.150	5.750	5.8	5	5.6	0.355	6.900	3.657	7.315
Arsenic	1.05	1.15	1.15	1	1.1	0.033	15.400	1.160	2.320
Barium	22.6	10.8	3.7	0.8	3.8	0.650	22.600	7.063	14.126
Beryllium	0.105	0.115	0.115	0.1	0.11	0.010	0.310	0.104	0.207
Cadmium	0.50	0.550	0.6	0.5	0.55	0.155	1.200	0.373	0.745
Calcium	41.55	32.15	135	74.2	290	4.750	4410.000	224.550	449.100
Chromium	6.2	3.9	4.7	2.4	4.2	0.650	66.400	6.751	13.503
Cobalt	1.05	1.15	1.15	1	1.1	0.175	7.000	0.880	1.761
Copper	1.05	1.15	1.15	1	1.1	0.470	9.500	1.434	2.868
Iron	709.0	1620.0	1150	1220	1870	63.300	90500.000	4101.249	8202.497
Lead	1.80	1.10	2.9	2.4	3.8	0.465	21.400	4.336	8.672
Magnesium	44.1	12.25	104	35.7	115	2.850	852.000	136.866	273.731
Manganese	2.65	2.1	5	2.7	2.4	0.395	19.900	4.336	8.673
Mercury	0.050	0.060	0.06	0.055	0.06	0.010	0.680	0.067	0.135
Nickel	2.050	2.300	2.3	2	2.25	0.450	4.700	1.437	2.875
Potassium	102.5	114.5	116	100.5	228	1.050	1250.000	197.447	394.894
Selenium	0.50	0.55	0.6	0.5	0.55	0.085	2.400	0.470	0.939
Silver	0.50	0.55	0.6	0.5	0.55	0.175	1.000	0.475	0.950
Sodium	13.6	15.65	29.8	10.3	28.2	5.400	141.000	28.366	56.731
Thallium	1.05	1.15	1.15	1	1.1	0.060	2.700	0.588	1.176
Vanadium	3.10	2.50	4	3.9	4.9	0.340	69.400	7.039	14.078
Zinc	2.1	3.15	15	4.35	2.45	0.320	26.600	3.881	7.763

Concentrations are in milligrams per kilograms (mg/kg).

Qualifiers have been removed per Baker's standards.

Qualifiers R, U, and UJ have been given one-half the detection value.

Qualifiers J, NJ, and B have been removed with no detection value change.

APPENDIX G
BAKER'S EVALUATION OF METALS IN GROUNDWATER

DRAFT

**EVALUATION OF METALS IN
GROUNDWATER**

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

CONTRACT TASK ORDER 0177

JUNE 3, 1994

Prepared for:

**DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
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*Norfolk, Virginia***

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TABLES

1	Summary of Total Metals in Shallow Wells
2	Comparison of Repeat Sampling in Shallow Wells
3	Summary of Dissolved Metals in Shallow Wells
4	Summary of Total Metals in Upgradient Wells
5	Comparison of Inorganic Subsurface Soil Concentrations in "Clean" and "Contaminated" Wells
6	Total Metals in Deep Monitoring Wells
7	Summary of Field Parameters in Shallow, Deep, and Supply Wells

1.0 INTRODUCTION

Numerous groundwater investigations have been conducted at Marine Corps Base (MCB), Camp Lejeune under the Department of the Navy (DON) Installation Restoration Program (IRP). These studies have identified elevated levels of total metals in shallow groundwater at almost every site. The degree of contamination, based on dissolved metals analysis of groundwater samples, is limited. It is believed that the presence of elevated metals are not always related to past disposal activities for several reasons, which is the basis of this study.

Currently, Records of Decision (ROD) are being prepared for Operable Units No. 1 (Sites 21, 24, and 78) and No. 5 (Site 2). Both RODs are proposing to not remediate shallow groundwater which contains elevated levels of total metals above State groundwater standards (i.e., North Carolina Water Quality Standards) and/or Federal drinking water standards (i.e., Maximum Contaminant Levels). Specifically, remediation of shallow groundwater due to elevated total metals is not cost effective, or practical, due to the following: (1) the shallow aquifer is not used for potable supply; (2) the source of metals in groundwater cannot be correlated with soil data or previous disposal practices; (3) the extent of shallow groundwater contamination (based on total metals analysis) is widespread and in many cases undefinable, since there are no apparent contaminant plumes or patterns associated with the metals; and (4) deep groundwater, which is the source of potable water, is not significantly contaminated with metals above the standards.

2.0 STUDY OBJECTIVES

The DON/Marine Corps initiated a study on inorganics in groundwater throughout MCB Camp Lejeune to assess whether total metals in groundwater are related to disposal practices or to other factors. The overall goal of this study is to provide information that would be used in consideration of not remediating shallow groundwater at Operable Units No. 1 and No. 5, and possibly other operable units where total metals are elevated without cause. The following study objectives were identified:

- (1) Determine whether the elevated total metals detected in the shallow aquifer are related to past disposal practices, well construction factors, sampling techniques, or suspended particulates in the samples;
- (2) Determine whether total metals in shallow groundwater are elevated throughout the region or MCB Camp Lejeune;
- (3) Determine whether there is a correlation between elevated total metals in groundwater and metals in soil; and

- (4) Determine whether the concentrations of total metals (i.e., low versus high) is related to shallow and deep aquifer characteristics.

3.0 SCOPE OF WORK

Groundwater and soil data from a total of 21 sites were compiled as part of the overall study. Three of the 21 sites are located outside the boundary of the base. These sites include the ABC Cleaners Superfund Site, located along Route 24 in Jacksonville, and two sites located along Highway 17 (Off-site Properties No. 1 and No. 2). The two sites along Route 17 were investigated by the DON/Marine Corps as part of a real estate survey. The other 18 sites are located throughout various portions of MCB Camp Lejeune (see Figure 1).

Information from studies conducted by Baker and other consultants were obtained to evaluate metal concentrations in groundwater. The study focused on 14 metals of potential concern to human health and the environment. Some of the information was collected under the IR Program whereas other information was obtained during other investigations (e.g., ABC Cleaners RI/FS). The following data tables were then prepared to determine why total metals are generally elevated in shallow groundwater.

Table 1 - Total Metal Concentrations in Shallow Groundwater by Site

Table 2 - Summary of Repeat Sampling of Shallow Wells (Sites 2 and 78)

Table 3 - Dissolved Metal Concentrations in Shallow Groundwater by Site

Table 4 - Summary of Total Metal Concentrations in Upgradient Wells

Table 5 - Comparison of Subsurface Metal Concentrations in Uncontaminated and Contaminated Wells

Table 6 - Total Metal Concentrations in Deep Groundwater by Site

Table 7 - Summary of Field Parameters in Shallow Monitoring Wells, Deep Monitoring Wells, and Supply Wells

The tables are presented at the end of this report.

4.0 DATA ANALYSIS

The following discussion represents an analysis of the information contained in each of the previously mentioned tables.

Table 1 (Total Metal Concentrations in Shallow Groundwater)

All of the sites had at least one (and in most cases several) metal which exceeded either State water quality standards or Federal drinking water standards. The most frequently detected metals included chromium, lead, and manganese, which were detected at almost every site above drinking water standards. Other frequently detected metals which exceeded drinking water standards included arsenic, beryllium, cadmium, and nickel.

An analysis of the data from Table 1 indicates that elevated total metals are present in shallow groundwater at every site, including the three sites which are located off base. The two sites which did not exhibit significant contamination include the ABC Cleaners site (only chromium exceeded the standards) and Site 48 (only manganese exceeded the standards).

Total metals detected in shallow groundwater at Site 2 exceeded State and/or Federal standards in seven of the 11 shallow monitoring wells. Manganese was the most frequently detected metal (7/11). Lead (3/11), chromium (2/11), and cadmium (1/11) were also detected above the standards,, but less frequently (see Figure 2).

With the exception of Wells 78GW03 and 78GW19, total metals were detected at Site 78 (Hadnot Point Industrial Area) above Federal MCLs or NCWQS in every shallow well (see Figure 3). The extent of elevated total metals in groundwater is widespread, encompassing approximately one square mile (or approximately 660 acres) in total area. The distribution and concentration of total metals in shallow groundwater makes it virtually impossible to identify or illustrate contaminant plumes (see Figure 3).

An analysis of the total metals results indicates the following pattern. Samples exhibiting elevated levels of lead, chromium, or other contaminants of concern, also exhibited elevated levels of other metals such as aluminum, antimony, iron, and zinc. Samples which did not exhibit elevated levels of lead, chromium, or manganese also did not exhibit elevated levels of other metals. This pattern indicates that the elevated total metals are not limited to one or

two contaminants, which would be the case if a lead or chromium plume in the groundwater truly existed. In other words, if a site is impacted by a particular metal due to disposal activities (say chromium for example), then other metals such as aluminum, lead, or zinc should not be consistently elevated as in the case of samples collected from the shallow aquifer at MCB Camp Lejeune. This point is depicted in the data summary tables provided in Appendix A for Sites 2 and 78. These tables were taken from the Remedial Investigation Reports for Operable Units No. 1 and No. 5. As an example, note that sample numbers 78-MW08, 78-MW10, 78-MW11, and 78-MW12 all had elevated levels of total metals when compared to samples 78-MW09-2 and 78-MW09-3. It is clear that most of the metal concentrations in a particular sample follow a consistent pattern throughout.

Table 2 (Comparison of Repeat Sampling of Shallow Wells)

Five wells from Sites 2 and 78 were randomly chosen to evaluate total metals concentrations between sampling rounds. The comparison was limited to only chromium, lead, and manganese since these contaminants were frequently detected throughout MCB Camp Lejeune. In several cases, metal concentrations were significantly different between the sampling rounds. If the shallow aquifer was impacted due to former disposal activities, a contaminant plume would be present and concentrations would not significantly deviate. The deviation in metal concentrations may indicate that sampling results are biased due to suspended particulates in the samples.

Table 3 (Dissolved Metal Concentration in Shallow Groundwater by Site)

The data base for Table 3 was limited to 12 sites since many of the previous investigations (i.e., prior to Navy CLEAN) did not analyze for dissolved metals. Nevertheless, an analysis of the 12 sites revealed that elevated levels of dissolved metals in groundwater is limited. Manganese was the most frequently detected metal above drinking water standards (10 of 12 sites exhibited elevated levels). Lead was detected at only one site (Site 21) above drinking water standards. Chromium was also detected at only one site (Site 78) above drinking water standards. No other metal was detected above the standards.

Literature searches have indicated that manganese is a naturally occurring metal in North Carolina. Therefore, the presence of manganese may not be attributable to site-related activities (Greenhorne & O'Mara, 1992).

An analysis of the data from Table 3 clearly shows a significant reduction in metal concentrations when compared to Table 1 (total metals in shallow groundwater). One possible reason for this reduction is that suspended solids or particles are not being introduced into the analysis of the sample due to filtering. A second possibility is that the metals are not significantly present in a dissolved state in shallow groundwater due to the species of metals under site conditions. It should be noted that calcium and sodium did not exhibit such a pattern since the salts of these metals are more soluble in water. For example, the concentrations of total calcium and total sodium versus dissolved calcium and dissolved sodium are similar and are not affected by the removal of the particulates during filtering. The fact that these salts do not exhibit the pattern that the other metals show supports the possibility that total metal concentrations are influenced by particulates in the sample.

Table 4 (Total Metals in Upgradient Shallow Wells)

The data base for Table 4 consists of groundwater results from 14 upgradient shallow monitoring wells (i.e., one well per site). These wells were installed to determine baseline groundwater quality to which on-site groundwater conditions could be compared. In some cases, the upgradient wells were located in areas where other base activities may have influenced groundwater quality.

The analysis of this data shows that manganese was the most frequently detected metal above Federal or State standards in upgradient shallow wells. Manganese was detected in 7 of the 14 upgradient wells above drinking water standards. Chromium and lead were also frequently detected above drinking water standards in upgradient (background) wells. These contaminants were detected in 6 of the 14 upgradient wells. At Site 2, samples collected from an upgradient well (2GW9) exhibited elevated levels of chromium (83 μ /l), lead (27.2 μ /l) and manganese (747 μ /l). At Site 78, samples collected from upgradient wells 96W4 and 78GW26 did not exhibit elevated levels of total metals. The concentration range for metals detected above NC WQS and/of Federal MCLs in upgradient wells is provided below:

- beryllium (ND-46.5 μ /l)
- cadmium (ND-10 μ /l)
- chromium (ND-198 μ /l)
- lead (ND-78.8 μ /l)
- manganese (ND-747 μ /l)
- mercury (ND-1.6J μ /l)

Based on the above range representing upgradient wells, none of the on-site wells at Site 2 exhibited total metals above the maximum background concentrations. However, at Site 78, lead and chromium were detected above the maximum background in several on-site wells.

An analysis of the data from Table 4 indicates that shallow groundwater upgradient of some sites contains total metals above drinking water standards. A comparison of Table 4 data against Table 1 data indicates that shallow groundwater samples from upgradient wells are less contaminated than samples collected from on-site monitoring wells. However, it should be noted that the data base for Table 4 consists of only 14 wells whereas the data base for Table 1 consists of over 130 wells. Therefore, to assume that upgradient groundwater quality is better than on-site groundwater quality may not be justified due to the different data bases.

Table 5 (Comparison of Subsurface Metal Concentrations in Uncontaminated and Contaminated Wells)

The purpose of this table is to determine whether metal concentrations in soils correlate with the elevated levels of metals in shallow groundwater.

To evaluate this, metals in subsurface soils, representing an area of groundwater contamination, were compared to metals in subsurface soil in areas which did not exhibit groundwater contamination. If the elevated total metals in shallow groundwater are present due to former disposal activities, subsurface metals in soil representing an area of groundwater contamination would be expected to be elevated or higher than metals in subsurface soil representing a non-contaminated area. This evaluation assumes that the well exhibiting elevated total metals is within a source area and that the soil sample is representative of soil impacted by metal contamination.

As shown on Table 5, there is no clear pattern or correlation which indicates that elevated total metals are due to soil contamination. Note that in many cases, the concentration of metals which represent "non-contaminated" areas are greater than the metals which represent "contaminated" areas. Also note that the metals in subsurface soil are within or close to background subsurface metal concentrations. Therefore, this supports the possibility that in many cases at MCB Camp Lejeune, the elevated total metals in shallow groundwater cannot be attributable to a source or to past disposal practices.

Table 6 (Total Metals in Deep Monitoring Wells)

Table 6 presents total metal concentrations in deep groundwater for each site. The data base is limited to only 8 sites. Metal concentrations in supply wells were also included for comparison purposes.

As shown on Table 6, total metals in deep groundwater are below drinking water standards with a few exceptions. Arsenic and cadmium were detected above the standards in one deep monitoring well at Site 78 (see Figure 4). Manganese was detected in deep groundwater at three sites and a few of the supply wells. Lead was detected in one supply well at 16 μ /l, which is slightly above the drinking water standard of 15 μ /l.

Elevated total metals are not widespread in deep groundwater for two possible reasons. First, most metals are not very mobile in the environment. Second, deep groundwater samples may not have significant amounts of suspended particulates due to different geologic conditions. Soils in the deeper aquifer are more compacted and consist primarily of calcareous sands, clays, and limestone fragments. Soils in the shallow aquifer are loosely compacted and consist primarily of fine-grained sands, silts, and clays. This classification may support the possibility that suspended solids are collected during sampling, thereby influencing the analysis for total metals.

Table 7 (Summary of Field Parameters in Shallow, Deep, and Supply Wells)

Table 7 provides a range of pH and specific conductivity values representative of shallow and deep groundwater. In general, lower pH values were noted more often in shallow wells than in deep wells (including the supply wells). This condition may influence the leachability and speciation of metals in groundwater.

Deep groundwater usually exhibited higher specific conductivity values. High specific conductivity values are representative of high dissolved conditions. The fact that deep groundwater generally exhibited higher specific conductivity values indicates that most of the metals, if present, are in a dissolved state. The high specific conductivity values could also indicate less suspended particulates due to the geologic conditions of the deep aquifer. The lower specific conductivity values observed in shallow wells indicates that the metals in the shallow aquifer are not in a dissolved state. This also supports the possibility that suspended particulates in the shallow aquifer are influencing the analysis of total metals.

5.0 ANALYSIS OF THE STUDY OBJECTIVES

Each of the objectives identified for this study are analyzed below based on the information collected.

Objective No. 1 (Determine whether the elevated total metals in the shallow aquifer are related to past disposal practices, well construction factors, sampling techniques, or suspended particulates in the samples)

Based on the analysis of information provided in Tables 1 through 7 and Appendix A, it appears that suspended particulates in groundwater samples could influence the concentration of total metals in groundwater. Well construction factors and sampling techniques are probably not a significant factor since the data base is representative of data obtained by Baker, ESE (Site 28 and 30), Roy F. Weston (ABC Cleaners), and Halliburton NUS (Site 7). No particular pattern was noted between sites which Baker obtained the samples versus sites in which other consultants obtained the data. Sampling methods were also considered. For Sites 63 and 65 for example, samples were collected with a bailer. At Sites 2 and 78, samples were collected with a low flow pump. All four sites exhibited elevated levels of total metals in groundwater samples. In addition, due to the fact that deep groundwater quality is not significantly impacted with metals indicates that well construction or sampling techniques are probably not factors related to elevated total metals in groundwater.

With respect to past disposal practices, Table 5 clearly shows that soil concentrations do not correlate with elevated total metals in groundwater. Based on this analysis, and on many of the sites previously investigated, the source of total metals in groundwater cannot be attributable to soil contamination or disposal practices in many cases. This is based on both the history of the site as well as the analytical soil results. In some cases, total metals were detected at elevated levels even when the site history did not correlate with the contaminants found. For example, Sites 2 and 21 have a history of pesticide storage and handling, and there are no known disposal areas (i.e., buried debris) within the site boundary. Nevertheless, both of these sites exhibited several metals above drinking water standards that would not be expected to be present at high concentrations based on the historical use of the site. These metals included lead, chromium, beryllium, cadmium, and manganese.

Objective No. 2 (Determine whether total metals in shallow groundwater are elevated throughout the region or MCB Camp Lejeune)

Based on groundwater data obtained from both upgradient wells and off base wells, total metals were detected above drinking water standards in shallow groundwater in areas that would not be influenced by former disposal activities at the sites. Given that some of the upgradient wells are contaminated, it is apparent that total metals in shallow groundwater are elevated in certain areas of the base outside of the influence of site-related disposal activities. However, it is unknown whether the shallow aquifer upgradient of the sites is contaminated due to other base-related activities or whether the levels in groundwater samples are also elevated due to the influence of suspended fines in the samples.

Objective No. 3 (Determine whether there is a correlation between elevated total metals in groundwater and metals in soil)

An evaluation of the data presented in Table 5 shows that metals in soil samples collected in areas of groundwater contamination are not elevated when compared to metals in soil samples collected in areas that did not exhibit groundwater contamination. This supports the possibility that in many cases, elevated levels of total metals in shallow groundwater are not related to the disposal history at the site. As previously mentioned, sites which did not exhibit soil contamination (when compared to background soil levels) or did not have a history of disposal indicative of metals contamination still exhibited elevated levels of total metals in groundwater. Since there is no apparent correlation between metals in soil and total metals in groundwater, then the possibility exists that the elevated total metals in groundwater are biased high due to suspended particulates.

Objective No. 4 (Determine whether the concentrations of total metals in groundwater is related to shallow and deep aquifer characteristics)

There is some evidence that the geologic conditions of the shallow and deep aquifers influence the amount of total metals detected in groundwater samples. The fact that the deep aquifer generally exhibited higher specific conductivity values indicates that there is more dissolved constituents in the deep aquifer when compared to the shallow aquifer. This was evident when comparing Table 1 (total metals in shallow groundwater) to Table 6 (total metals in deep groundwater). Table 6 did not indicate significant levels of total metals in deep groundwater throughout MCB Camp Lejeune.

The geologic conditions of the shallow aquifer would tend to result in samples that may contain suspended particulates. The suspended particulates could influence the total metals concentrations in the samples.

6.0 CONCLUSIONS

- 1. Elevated levels of total metals in the shallow aquifer are probably influenced to some degree by the geologic conditions of the site.**
- 2. There is no correlation between metal levels in soil and total metals in groundwater. Therefore, elevated total metals in groundwater cannot be attributable to soil contamination of past disposal practices.**
- 3. Elevated levels of total metals in the shallow aquifer may be biased high due to suspended particulates in the samples.**
- 4. Dissolved metals in groundwater were generally below Federal MCLs and NC WQS and therefore, do not present a significant problem at MCB Camp Lejeune.**
- 5. Total and dissolved metal concentrations in the Castle Hayne aquifer were generally below drinking water standards and therefore, do not present a significant problem at MCB Camp Lejeune.**
- 6. The presence of manganese in shallow and deep groundwater may be due to naturally occurring geologic conditions.**

7.0 RECOMMENDATIONS

- 1. Remediation of total metals in the shallow aquifer at Operable Units 1 and 5 is not recommended based on the following:**
 - **Elevated metals in groundwater at both operable units does not appear to be related to soil contamination or past disposal practices;**
 - **The distribution of total metals in groundwater is not characteristic of a plume that would be present due to a source of contamination;**
 - **Remediation of total metals would not be practical from an engineering or cost standpoint; and**
 - **Currently, there is no human or environmental exposure to shallow groundwater.**

- 2. Additional background wells should be installed at all sites in order to provide a baseline for comparing on-site groundwater quality.**

Tables

**TABLE 1
TOTAL METALS BY SITE
SHALLOW MONITORING WELLS
MCB, CAMP LEJEUNE, NORTH CAROLINA**

Site Number Units	NCWQS ug/L	FEDERAL MCL ug/L	Site 1 ug/L	Site 2 ug/L	Site 6 ug/L	Site 7 ug/L	Site 9 ug/L	Site 21 ug/L	Site 24 ug/L	Site 28 ug/L	Site 30 ug/L	Site 41 ug/L	Site 43 ug/L	Site 44 ug/L
Arsenic	50	50	7.2 - 57.4	2.2 - 23.6	ND - 23.3	ND - 43.4J	ND	ND - 101	ND - 116J	5.4 - 13J	6.4 - 12J	2.4 - 36.3	ND - 23.4	ND - 570
Barium	2000	2000	335 - 833	46 - 1420	ND - 1020	427 - 641	ND - 1060	ND - 647	ND - 1120	78.8 - 576	60.1 - 396	55.2 - 999	220 - 745	315 - 3180
Beryllium	NE	4	2.7 J - 43.4	1 - 3	ND - 7.5	ND - 10.3J	ND	ND - 8	ND - 19	ND - 1.2J	ND - 2.4	0.80 - 42.8	1.5 - 4.2	1.4 - 36.6
Cadmium	5	5	ND - 12.9	7	ND	ND	ND	ND	ND - 12	3.3J - 17.3J	ND - 10.7J	3.2 - 110	ND - 6.9	ND - 32
Calcium	NA	NA	8850 - 726000	5710 - 450000	5430 - 64900	5050 - 51300	16100 - 90700	6130J - 63000J	ND - 151000	20200 - 160000	1730 - 11900	8750 - 828000	10300 - 91900	2430 - 191000
Chromium	50	100	172 - 627	11 - 117	ND - 201	47.8 - 220	ND - 214	ND - 348J	19 - 316	9.0J - 140	42.8 - 106J	10.5 - 244	161 - 249	126 - 895
Copper	1000	1300	44.6 - 117	3 - 23	ND - 175	17.7 - 36.4	ND - 39.7	ND - 84	ND - 52	18.8J - 75.4	15.8 - 42.5	16.3 - 1030	64.2 - 104	28.6 - 313
Lead	15	15	40.8J - 176J	2.7 - 44.8	ND - 200	23 - 37.3	ND - 127	ND - 2000J	5.1 - 89	20.3J - 234J	7.7J - 115J	4.8 - 9340	16.5 - 28.8	15.8 - 508
Manganese	50	50 (1)	125 - 1720	21 - 190	ND - 362	56.9 - 220	ND - 91.3	59 - 276J	29 - 518	82.2 - 304	78.5 - 578	56.6 - 2110	72.6 - 297	88 - 1730
Mercury	1.1	2	ND - 1.2J	ND	ND - .46	0.2 - 0.36	ND - 1.4	ND - 2.4J	ND - 3.2	ND - 1.4J	0.88J - 0.9J	0.13 - 0.92	ND - 0.24	ND - 1.1
Nickel	100	100	28.5 - 426	ND	ND - 41.9	ND	ND	ND - 123	ND - 140	ND - 59.8	17.1J - 52.6J	28.8 - 137	20.5 - 143	21.9 - 486
Sodium	NA	NA	9090 - 19000	ND - 103000	1110 - 68700	7040 - 156000	1390 - 4170	7950 - 15700	5230 - 19200	9480 - 74700	5320 - 8100	2080 - 40200	9160 - 22100	4060 - 12600
Vanadium	NE	NE	214 - 640	9 - 184	ND - 330	37.8 - 423	ND - 175	ND - 419	ND - 408	6.1 - 164	57 - 101	20.4 - 244	122 - 233	184 - 759
Zinc	2100	5000 (1)	ND - 1110	6 - 146	ND - 1620	83.6 - 133	ND - 118	27J - 487J	20 - 650	ND	79.2 - 104	25.7 - 5180	19 J - 661J	87.3 - 2800J

Site Number Units	Site 48 ug/L	Site 63 ug/L	Site 65 ug/L	Site 69 ug/L	Site 78 ug/L	Site 82 ug/L	ABC Cleaners ug/L	Offsite Property #1 ug/L	Offsite Property #2 ug/L
Arsenic	ND	ND - 23.4	ND - 308	2.9 - 29.0	ND - 405J	ND - 67.8	ND - 12	10.3 - 160	ND
Barium	18 - 51.3	56.1 - 5410	105 - 638	46.5 - 850	ND - 1250	ND - 540	35 - 220	ND - 468	ND
Beryllium	ND	ND - 3.1	ND	1.3 - 10.6	ND - 19	ND	NA	ND - 8.5	ND
Cadmium	2.2 - 3.3	ND	ND	2.4 - 11.4	ND - 21	ND	NA	ND	ND
Calcium	30600 - 115000	2830 - 24300	33300 - 181000	2010 - 38700	ND - 642000	6580 - 60800	790 - 16000	ND - 22800	ND - 5200
Chromium	5.8 - 17.5	4.4 - 134	50.1 - 364	15.1 - 159	ND - 858J	ND - 174	ND - 37	52.8 - 636	ND - 94
Copper	3.1 - 13.5	10.7 - 126	28.2 - 127	16.2 - 70.8	ND - 699	ND - 29.3	ND - 89	ND - 140	ND
Lead	ND	4.3 J - 369	19.1 - 132	7.8 - 188	ND - 360J	ND - 89	ND - 10	12.3 - 345	6.3 - 62.3
Manganese	38.1 - 585	50.3 - 1020	56.2 - 474	13.0 - 912	26 - 714	26.9 - 283	4 - 44	56 - 973	ND - 60.1
Mercury	0.04 - 0.09	ND - 0.20	ND - 0.29	0.10 - 0.94	ND - 1.5	ND - 0.66	NA	ND	ND
Nickel	ND	19.8 - 54.2	19.4 - 84.3	13.6 - 99.8	ND - 234	ND - 34.6	ND - 77	40.2 - 380	ND
Sodium	5750 - 8760	3150 - 7100	3850 - 11700	4790 - 41300	ND - 42300	5670 - 36500	5800 - 33000	ND - 9390	ND - 7630
Vanadium	3.4 - 12.8	7.9 - 163	59.8 - 433	17.3 - 210	ND - 1700	ND - 256	ND - 45	70 - 739	ND - 64.7
Zinc	ND - 30.3	58.5J - 1110J	148J - 406J	36.2 - 12100	6J - 967J	ND - 204	14 - 220	ND - 736	ND - 40.8

NOTES:
 J - Value is estimated.
 JB - Value is estimated below the CRDL, but greater than the IDL.
 NE - Not established.
 NA - Not analyzed.
 ND - Not detected.
 NCWQS - North Carolina Water Quality Standard
 MCL - Maximum Contaminant Level
 (1) - Secondary MCL

TABLE 2
COMPARISON OF REPEAT SAMPLING OF SHALLOW WELLS
MCB, CAMP LEJEUNE, NORTH CAROLINA

Well Date	2GW01		2GW03		2GW06		2GW08		2GW09	
	5/1993	3/1994	5/1993	3/1994	5/1993	3/1994	5/1993	3/1994	5/1993	3/1994
Chromium	18	ND	11	ND	15	ND	ND	ND	25	83
Lead	15.5 J	ND	3.5 J	ND	6.7 J	ND	ND	3.4	27.2 J	23.6
Manganese	55	47	21	ND	79	140	53	415	290	747

Well Date	78GW05		78GW08		78GW15		78GW16		78GW19	
	1/1991	4/1994	1/1991	4/1994	1/1991	4/1994	1/1991	4/1994	1/1991	4/1994
Chromium	ND	17 J	91.8	491 J	21.4	215 J	209	353 J	13.8	ND
Lead	13.6	13.1 J	54.1	131 J	16.6	53	100	224	31.7	8.3
Manganese	162	161 J	46.5	213 J	18.3	115	98.3	150	79	26

NOTES:

J - Value is estimated..

ND - Not detected.

**TABLE 3
DISSOLVED METALS BY SITE
SHALLOW MONITORING WELLS
MCB, CAMP LEJEUNE, NORTH CAROLINA**

Site Number Units	NCWQS ug/L	FEDERAL MCL ug/L	Site 1 ug/L	Site 2 ug/L	Site 6 ug/L	Site 7 ug/L	Site 9 ug/L	Site 21 ug/L	Site 24 ug/L	Site 28 ug/L	Site 30 ug/L	Site 41 ug/L	Site 43 ug/L	Site 44 ug/L
Arsenic	50	50	NA	2.2 - 7.1	ND	NA	ND	ND - 10.6	ND - 16.3	NA	NA	2.2 - 4.7	NA	NA
Barium	2000	2000	NA	25 - 149	ND	NA	ND	ND	ND	NA	NA	12.4 - 451	NA	NA
Beryllium	NE	4	NA	1	ND	NA	ND	ND	ND	NA	NA	0.80 - 3.2	NA	NA
Cadmium	5	5	NA	ND	ND	NA	ND	ND - 5	ND	NA	NA	3.2 - 4.2	NA	NA
Calcium	NA	NA	NA	5800 - 441000	6230 - 57400	NA	15800 - 82400	35900	ND - 113000	NA	NA	4710 - 138000	NA	NA
Chromium	50	100	NA	10	ND	NA	ND	ND	ND	NA	NA	8.3 - 9.6	NA	NA
Copper	1000	1300	NA	2 - 9	ND	NA	ND	ND	ND	NA	NA	16.3 - 23.9	NA	NA
Lead	15	15	NA	2.1	ND	NA	ND	ND - 94	ND	NA	NA	1.0	NA	NA
Manganese	50	50 (1)	NA	17 - 129	ND - 92.7	NA	ND	40 - 134	ND - 320	NA	NA	7.1 - 521	NA	NA
Mercury	1.1	2	NA	ND	ND	NA	ND	ND	ND - 0.5	NA	NA	0.13 - 0.20	NA	NA
Nickel	100	100	NA	ND	ND	NA	ND	ND	ND - 57	NA	NA	28.8 - 31.2	NA	NA
Sodium	NA	NA	NA	ND - 103000	1420 - 70500	NA	1280 - 3860	16200	ND - 183000	NA	NA	2500 - 34200	NA	NA
Vanadium	NE	NE	NA	43	ND	NA	ND	ND	ND	NA	NA	20.4	NA	NA
Zinc	2100	5000 (1)	NA	8 - 35	ND - 350	NA	ND	6B - 50	ND - 437	NA	NA	10.6 - 125	NA	NA

Site Number Units	Site 48 ug/L	Site 63 ug/L	Site 65 ug/L	Site 69 ug/L	Site 78 ug/L	Site 82 ug/L	ABC Cleaners ug/L	Offsite Property #1 ug/L	Offsite Property #2 ug/L
Arsenic	ND	NA	NA	2.9	ND - 21.6	ND	NA	ND - 18.8	ND
Barium	16.8 - 27.6	NA	NA	13.7 - 35.8	ND	ND	NA	ND	ND
Beryllium	ND	NA	NA	1.3	ND	ND	NA	ND	ND
Cadmium	ND - 3.1	NA	NA	2.4	ND	ND	NA	ND	ND
Calcium	72600 - 80700	NA	NA	764 - 10600	ND - 296000	15200 - 58500	NA	ND - 7710	ND
Chromium	ND	NA	NA	7.2	ND - 59	ND	NA	ND - 30.0	ND
Copper	2.6 - 7.6	NA	NA	16.2	ND - 121	ND	NA	ND - 10.7	ND
Lead	ND	NA	NA	1	ND - 17.2	ND	NA	ND - 15.8	ND
Manganese	39.7 - 539	NA	NA	8.5 - 139	ND - 152	21 - 127	NA	ND - 63.8	ND - 21.3
Mercury	0.05 - 0.09	NA	NA	0.1	ND - 0.6	ND	NA	ND	ND
Nickel	ND	NA	NA	13.6	ND	ND	NA	ND	ND
Sodium	6430 - 8920	NA	NA	5170 - 41100	ND - 42200	5980 - 36000	NA	ND - 9540	ND - 6750
Vanadium	ND	NA	NA	16.6	ND	ND	NA	ND	ND
Zinc	ND	NA	NA	7.0 - 7670	ND - 58	ND - 119	NA	ND - 468	ND - 222

NOTES:

J - Value is estimated.
 JB - Value is estimated below the CRDL, but greater than the IDL.
 NE - Not established.
 NA - Not analyzed.
 ND - Not detected.
 NCWQS - North Carolina Water Quality Standard
 MCL - Maximum Contaminant Level
 (1) - Secondary MCL

**TABLE 4
SUMMARY OF TOTAL METALS IN UPGRADIENT WELLS
SHALLOW MONITORING WELLS
MCB, CAMP LEJEUNE, NORTH CAROLINA**

Well Number	NCWQS	FEDERAL MCL	Upgradient	Upgradient	Upgradient	Upgradient	Upgradient	Upgradient	Upgradient	Upgradient	Upgradient	Upgradient	Upgradient
			of Site 1	of Site 2	of Site 6	of Site 7	of Site 9	of Sites 21 and 78	of Site 24	of Site 28	of Site 30	of Site 41	of Site 43
Units	ug/L	ug/L	1GW06	2GW09	6BP6S	7GW03	9GW4S	78GW26	24GW07	28GW04		41GW05	
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		ug/L	
Arsenic	50	50	17.8 J	12.9	ND	ND	ND	ND	3.7 J	7.4 J		13.1	
Barium	2000	2000	548	328	257	428	71.3	ND	ND	576		55.7	
Beryllium	NE	4	3.2 J	3	ND	ND	ND	ND	ND	9.3 J		1.6	
Cadmium	5	5	ND	ND	ND	ND	ND	not reported	ND	3.3 J		10	
Chromium	50	100	193	75	198	124	ND	13	37	122		54.4	
Copper	1000	1300	64.8	25	35.6	36.4	ND	ND	ND	20.7 J		27	
Lead	15	15	78.8 J	27.2	64.4	30.3 J	ND	9	11.4	22.4 J		23.7	
Manganese	50	50 (1)	202	747	84.5	56.9 J	ND	ND	39	206		203	
Mercury	1.1	2	1.6 J	ND	ND	0.36	ND	ND	ND	ND		0.16	
Nickel	100	100	51.6	ND	ND	ND	ND	ND	ND	59.8		38	
Vanadium	NE	NE	214	86	209	152	ND	149	64	85.3		38.1	
Zinc	2100	5000 (1)	ND	103	56.6	86.4 J	ND	68.1	41	ND		173	

No Upgradient Well Sites

No Upgradient Well Sites

No Upgradient Well Sites

Well Number	Upgradient	Upgradient	Upgradient	Upgradient	Upgradient	Upgradient	Upgradient	Upgradient	Upgradient
	of Site 48	of Site 63	of Site 65	of Site 69	of Site 78	of Site 82	of ABC Cleaners	of Offsite Property #1	of Offsite Property #2
Units	48GW1			69GW07	9GW04	6MW3S	MW-801		
	ug/L			ug/L	ug/L	ug/L	ug/L		
Arsenic	ND			2.9	ND	ND	ND		
Barium	29.4 J			46.5	ND	ND	35		
Beryllium	ND			1.3	ND	ND	NA		
Cadmium	2.5 J			2.4	ND	ND	NA		
Chromium	ND			15.8	ND	ND	ND		
Copper	ND			16.2	ND	ND	ND		
Lead	ND			7.8	ND	ND	3		
Manganese	70.6			13	ND	ND	10		
Mercury	ND			0.1	ND	ND	NA		
Nickel	ND			13.6	ND	ND	ND		
Vanadium	3.4 J			17.3	ND	ND	9		
Zinc	ND			36.2	ND	ND	23		

No Upgradient Well Sites

No Upgradient Well Sites

No Upgradient Well Sites

No Upgradient Well Sites

NOTES:
 J - Value is estimated.
 JB - Value is estimated below the CRDL, but greater than the IDL.
 NE - Not established.
 NA - Not analyzed.
 ND - Not detected.
 NCWQS - North Carolina Water Quality Standard
 MCL - Maximum Contaminant Level
 (1) - Secondary MCL

TABLE 5
COMPARISON OF INORGANIC SUBSURFACE SOIL CONCENTRATIONS IN "CLEAN" AND "CONTAMINATED" WELLS
MCB, CAMP LEJEUNE, NORTH CAROLINA

Units Well Number Soil Sample Number	Camp Lejeune Background Subsurface Soil Data mg/kg	Site 1		Site 2		Site 6		Site 7		Site 9		Site 21	
		"Clean"	"Contaminated"	"Clean"	"Contaminated"	"Clean"	"Contaminated"	"Clean"	"Contaminated"	"Clean"	"Contaminated"	"Clean"	"Contaminated"
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		--	--	2GW07	2GW09	6GW18	6GW15	7GW03	7GW02	9GW5	9GW1	21GW03	21GW02
		--	--	2-GW07-01	2-GW09-02	6-GW18-0303	6-GW15-03	GW03-002	GW02-7595	9-GW5-03	9-SB35-03	21-GW03	21-GW02
Arsenic	0.03 - 0.47	NA	NA	1.7 J	ND	ND	ND	1.5	ND	ND	ND	ND	0.55 J
Barium	2 - 11	NA	NA	12.5 J	ND	ND	ND	6.6	71	ND	ND	ND	4.4 J
Beryllium	0.03 - 0.23	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	0.17 - 1.2	NA	NA	ND	ND	ND	ND	1.3	4.5	ND	ND	ND	ND
Chromium	2 - 9	NA	NA	10.9 J	4.6	ND	1.0	5.2	6	ND	2.0 J	15.2	3.2 J
Copper	0.47 - 2	NA	NA	0.97 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	1 - 12	NA	NA	8 J	4.3	3.3 J	3.2	2.5	34.4	1.6	5.3	7.1	6.9 J
Manganese	0.40 - 8	NA	NA	4.3 J	4.1	ND	1.8 B	3	11.3	ND	3.7 J	2.3	3.4 J
Mercury	0.01 - 0.11	NA	NA	0.3 J	ND	ND	ND	10.13	0.48	ND	ND	ND	ND
Nickel	0.70 - 5.0	NA	NA	ND	ND	ND	ND	3.4	11.8	ND	ND	ND	ND
Vanadium	0.75 - 13	NA	NA	13.8 J	ND	ND	2.9 B	5.5	4.5	ND	ND	15.5	4.4 J
Zinc	0.40 - 12	NA	NA	ND	ND	ND	ND	1.3	ND	ND	6.1 J	5.7	3 J

NOTES:

Shaded area indicates inorganic which exceeded a MCL and/or NCWQS in groundwater sample.

J - Value is estimated.

JB - Value is estimated below the CRDL, but greater than the IDL.

NA - No available wells to compare OR compound was not analyzed.

ND - Not detected.

NCWQS - North Carolina Water Quality Standard

MCL - Maximum Contaminant Level

(1) - Secondary MCL

TABLE 5
COMPARISON OF INORGANIC SUBSURFACE SOIL CONCENTRATIONS IN "CLEAN" AND "CONTAMINATED" WELLS
MCB, CAMP LEJEUNE, NORTH CAROLINA

Units Well Number Soil Sample Number	Site 24		Site 28		Site 30		Site 41		Site 43		Site 44	
	"Clean" mg/kg	"Contaminated" mg/kg	"Clean" mg/kg	"Contaminated" mg/kg	"Clean" mg/kg	"Contaminated" mg/kg	"Clean" mg/kg	"Contaminated" mg/kg	"Clean" mg/kg	"Contaminated" mg/kg	"Clean" mg/kg	"Contaminated" mg/kg
	24GW10	24GW02	--	--	--	--	41GW04	41-GW11	43GW01	43GW02	44GW02	44GW01
	24-GW10	24-BDA-SB09	--	--	--	--	41-GW04-DW	41-GW11-01	43-GW01-00	43-GW02-00	44-GW02-035	--
Arsenic	ND	ND	NA	NA	NA	NA	0.51	1.6	ND	ND	ND	1.7
Barium	ND	ND	NA	NA	NA	NA	9.4	22.6	ND	ND	ND	17.9
Beryllium	ND	ND	NA	NA	NA	NA	0.18	0.18	ND	ND	ND	ND
Cadmium	ND	ND	NA	NA	NA	NA	0.73	0.73	8.3	ND	ND	ND
Chromium	11.2	9.1	NA	NA	NA	NA	3.6	11.2	1.3	6.7	5.6	10.1
Copper	ND	ND	NA	NA	NA	NA	3.7	22.5	3.4	ND	6.2	25.4
Lead	4.6	6.2	NA	NA	NA	NA	4.8	110	9.8	6.1	5.5	10.7
Manganese	4.7	8.4	NA	NA	NA	NA	1.7	75.9	11.2	8.2	3.5	20.4
Mercury	ND	ND	NA	NA	NA	NA	0.06	0.31	ND	ND	ND	ND
Nickel	ND	ND	NA	NA	NA	NA	6.6	6.6	7.6	7.3	3.1	5.4
Vanadium	18.4	10	NA	NA	NA	NA	6.8	9.3	7.2	5.8	5	14.7
Zinc	ND	7.8	NA	NA	NA	NA	7.7	130	20.1	3	3.2	34.9

NOTES:
 Shaded area indicates inorganic which exceeded a MCL and/or NCWQS in groundwater sample.
 J - Value is estimated.
 JB - Value is estimated below the CRDL, but greater than the IDL.
 NA - No available wells to compare OR compound was not analyzed.
 ND - Not detected.
 NCWQS - North Carolina Water Quality Standard
 MCL - Maximum Contaminant Level
 (1) - Secondary MCL

**TABLE 5
COMPARISON OF INORGANIC SUBSURFACE SOIL CONCENTRATIONS IN "CLEAN" AND "CONTAMINATED" WELLS
MCB, CAMP LEJEUNE, NORTH CAROLINA**

Units Well Number Soil Sample Number	Site 48		Site 63		Site 65		Site 69		Site 78		Site 82	
	"Clean" mg/kg	"Contaminated" mg/kg	"Clean" mg/kg	"Contaminated" mg/kg	"Clean" mg/kg	"Contaminated" mg/kg	"Clean" mg/kg	"Contaminated" mg/kg	"Clean" mg/kg	"Contaminated" mg/kg	"Clean" mg/kg	"Contaminated" mg/kg
	48-GW01	48-GW03	63MW03	63MW02	65MW03	65MW02	69-GW11	69-GW03	78GW34	78GW24-1	6-GW28	82MW3
	48-GW1A-01	48-C3-03	63-MW03-04	63-MW02-06	65-MW03-11	65-MW02-06	69-GW11-04	69-CSA-SB23-00	78-GW34	78-B903-SB03	6-GW28-09	6-GW27D-06
Arsenic	1.3	0.77 J	ND	ND	ND	1.3	0.68	0.63	ND	ND	0.31	15.9
Barium	21.1	15	ND	ND	3.4	6.8	5.6	3	ND	ND	ND	ND
Beryllium	0.2	0.19	ND	ND	ND	ND	0.3	0.28	ND	ND	ND	ND
Cadmium	1.4	1.8 J	ND	ND	NA	NA	0.56	0.52	ND	ND	ND	ND
Chromium	18.2	18.6	7.7	ND	3.2	2.7	6.8	1.7	18.5	9.7	2.6	1
Copper	3.5	3.8	ND	ND	1.5	3.1	3.8	3.5	3.4 B	ND	ND	ND
Lead	32.3	14.3	4.2	2.6	1.7	1.7	4.3	1.1	4.5 J	2.6 J	2.7	4.3
Manganese	4.1	7	4.9	13.8	3.5	6.9	4	1.2	9.2	ND	ND	ND
Mercury	ND	ND	ND	ND	NA	NA	0.06	0.05	ND	ND	ND	ND
Nickel	2.2	1.9 J	ND	ND	ND	ND	3.2	3	ND	ND	ND	ND
Vanadium	28.3	20.8 J	ND	ND	4.4	3	4.4	3.6	18.7	19.2	ND	ND
Zinc	ND	ND	ND	ND	2.7	5	3.2	1.5	7.9	ND	ND	ND

NOTES:

Shaded area indicates inorganic which exceeded a MCL and/or NCWQS in groundwater sample.

J - Value is estimated.

JB - Value is estimated below the CRDL, but greater than the IDL.

NA - No available wells to compare OR compound was not analyzed.

ND - Not detected.

NCWQS - North Carolina Water Quality Standard

MCL - Maximum Contaminant Level

(1) - Secondary MCL

TABLE 5
COMPARISON OF INORGANIC SUBSURFACE SOIL CONCENTRATIONS IN "CLEAN" AND "CONTAMINATED" WELLS
MCB, CAMP LEJEUNE, NORTH CAROLINA

	ABC Cleaners		Offsite Property #1		Offsite Property #2	
	"Clean"	"Contaminated"	"Clean"	"Contaminated"	"Clean"	"Contaminated"
	Units mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Well Number	--	--	--	--	--	--
Soil Sample Number	--	--	--	--	--	--
Arsenic	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA
Beryllium	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA

NOTES:

Shaded area indicates inorganic which exceeded a MCL and/or NCWQS in groundwater sample.

J - Value is estimated.

JB - Value is estimated below the CRDL, but greater than the IDL.

NA - No available wells to compare OR compound was not analyzed.

ND - Not detected.

NCWQS - North Carolina Water Quality Standard

MCL - Maximum Contaminant Level

(1) - Secondary MCL

**TABLE 6
TOTAL METALS BY SITE
DEEP MONITORING WELLS
MCB, CAMP LEJEUNE, NORTH CAROLINA**

	Site 1	Site 2	Site 6	Site 7	Site 9	Site 21	Site 24	Site 28	Site 30	Site 41	Site 43	Site 44	Site 48	Site 63	Site 65	Site 69	Site 78	Site 82	ABC Cleaners	Base Supply Wells (1)
Arsenic		ND	ND		ND					2.2 - 9.6						2.2 - 3.5	2 - 118 J	ND	ND - 14	ND
Barium		1420	ND		ND					22.6 - 186						42.3 - 58.0	ND - 547	ND	4 - 36	ND
Beryllium		ND	ND		ND					3.2						0.80 - 0.89	ND	ND	NA	NA
Cadmium	No Deep Wells	ND	ND	No Deep Wells	ND	No Deep Wells	No Deep Wells	No Deep Wells	No Deep Wells	4.2 - 4.7	No Deep Wells	No Deep Wells	No Deep Wells	No Deep Wells	No Deep Wells	3.2	ND - 21	ND	NA	ND
Chromium		16	ND		ND					9.6 - 40.5						8.3 - 20.7	ND - 10	ND	ND - 32	ND
Copper		ND	ND		ND					23.9						16.3	ND	ND	ND - 41	ND - 130
Lead		ND	ND		ND					1.0 - 11.1						3.1 - 6.8	ND	ND	ND - 10	ND - 16
Manganese		ND	ND - 33.5		ND					16.9 - 101						53.7 - 114	ND - 591	ND - 21.6	ND - 45	10 - 120
Mercury		ND	ND		ND					0.15 - 0.17						0.16 - 0.17	ND - 0.3	ND	NA	ND
Nickel		ND	ND		ND					31.2						28.8	ND	ND	ND - 14	NA
Vanadium		ND	ND		ND					20.4 - 49.8						20.4	ND - 24 J	ND	ND - 15	NA
Zinc		ND	ND		ND					17.8 - 83.8						31.1 - 48.7	ND - 181 J	ND	58 - 390	ND - 120

NOTES:

J - Value is estimated.

NA - Not analyzed.

ND - Not detected.

(1) - Range is based on 67 supply wells located throughout MCB, Camp Lejeune, NC.

TABLE 7
SUMMARY OF FIELD PARAMETERS IN
SHALLOW, DEEP, AND SUPPLY WELLS
MCB, CAMP LEJEUNE, NORTH CAROLINA

	Shallow Wells		Deep Wells		Supply Wells	
	Range (1)	Average Maximum	Range (2)	Average Maximum	Range (3)	Average Maximum
pH (standard units)	4.5 - 7.28	6.08	7.52 - 11.34	8.88	6.91 - 7.45	7.32
Specific Conductivity (micromhos/cm)	40 - 580	267	149 - 525	350	212 - 511	353

- (1) - Based on data from 11 sites.
- (2) - Based on data from 6 sites.
- (3) - Based on data from 9 supply wells.

Figures

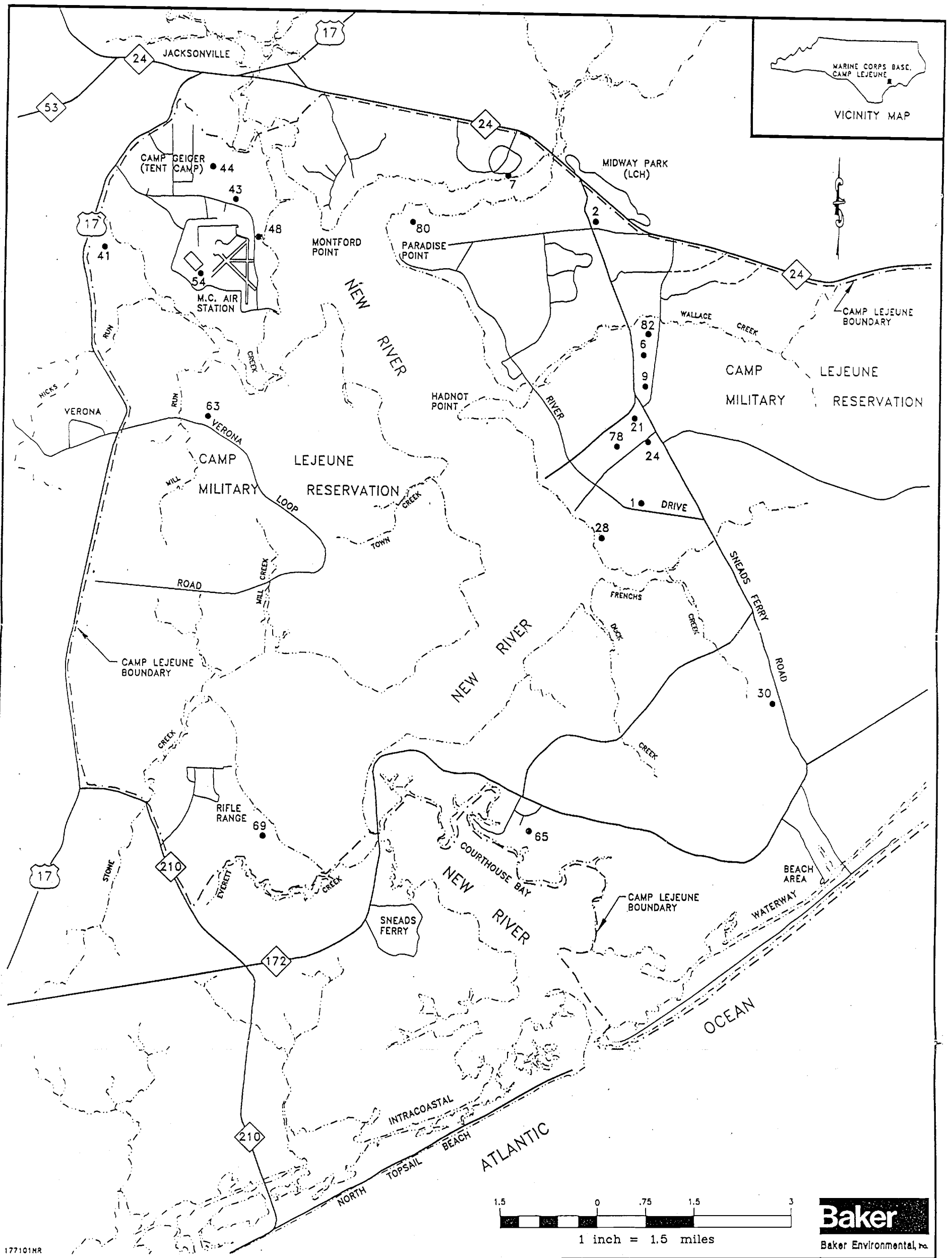
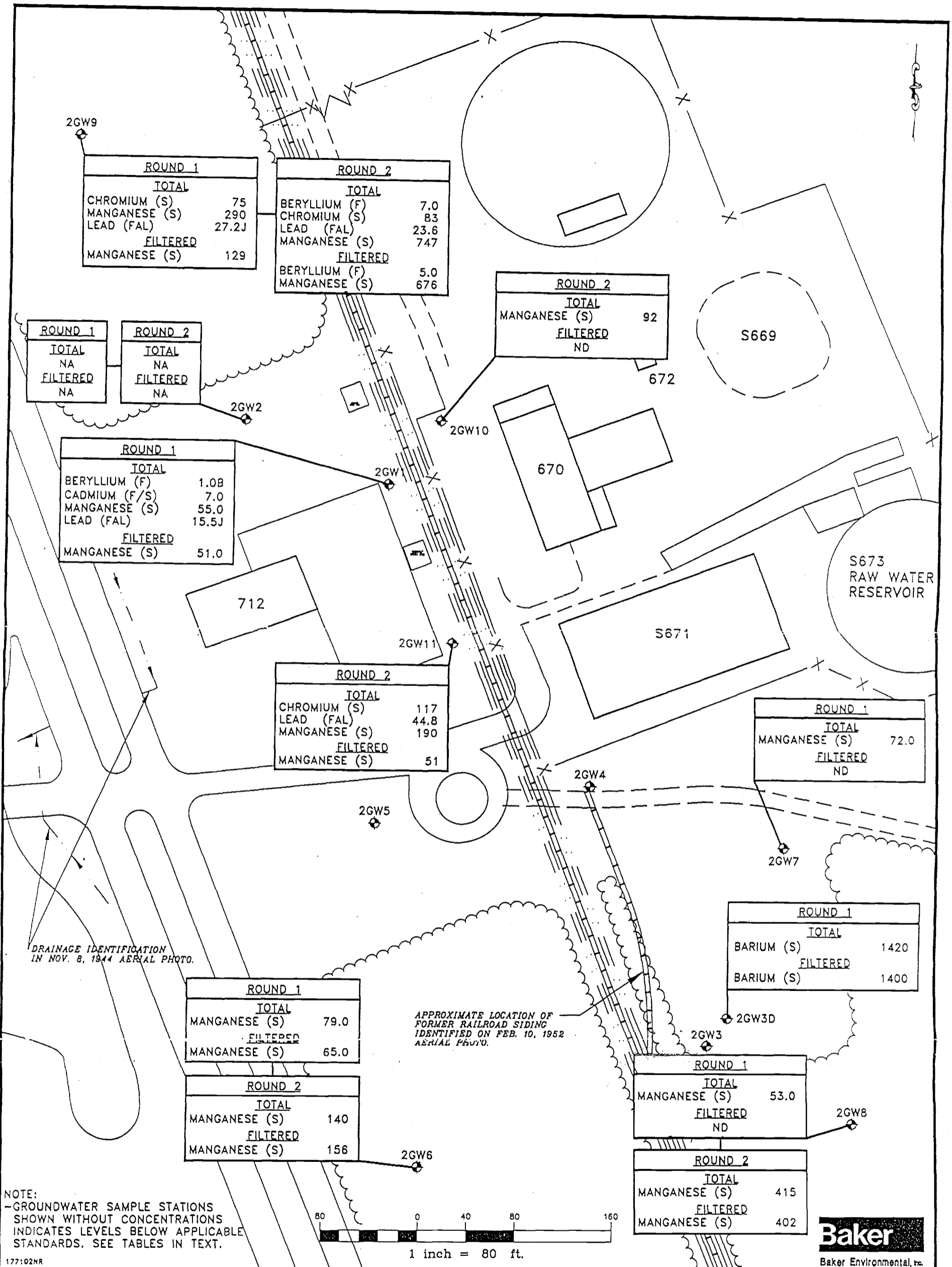


FIGURE 1
 SITE LOCATION MAP
 INORGANIC GROUNDWATER STUDY

MARINE CORPS BASE, CAMP LEJEUNE
 NORTH CAROLINA

01702XBIZ



NOTE:
 -GROUNDWATER SAMPLE STATIONS SHOWN WITHOUT CONCENTRATIONS INDICATES LEVELS BELOW APPLICABLE STANDARDS. SEE TABLES IN TEXT.

177102HR

LEGEND

- 2GW1 GROUNDWATER WELL
- (F) EXCEEDS FEDERAL STANDARD
- (S) EXCEEDS STATE STANDARD
- (FAL) FEDERAL ACTION LEVEL
- ND NOT DETECTED ABOVE APPLICABLE STANDARDS
- NA NOT ANALYZED
- J ESTIMATED CONCENTRATIONS
- CONCENTRATIONS EXPRESSED IN ug/l(ppb)
- SOURCE: LANTDIV, FEB. 1992

FIGURE 2
 POSITIVE DETECTIONS ABOVE APPLICABLE FEDERAL AND STATE STANDARDS FOR TOTAL AND FILTERED INORGANIC ANALYTES IN GROUNDWATER
 SITE 2
 REMEDIAL INVESTIGATION CTO-0174
 MARINE CORPS BASE, CAMP LEJEUNE
 NORTH CAROLINA

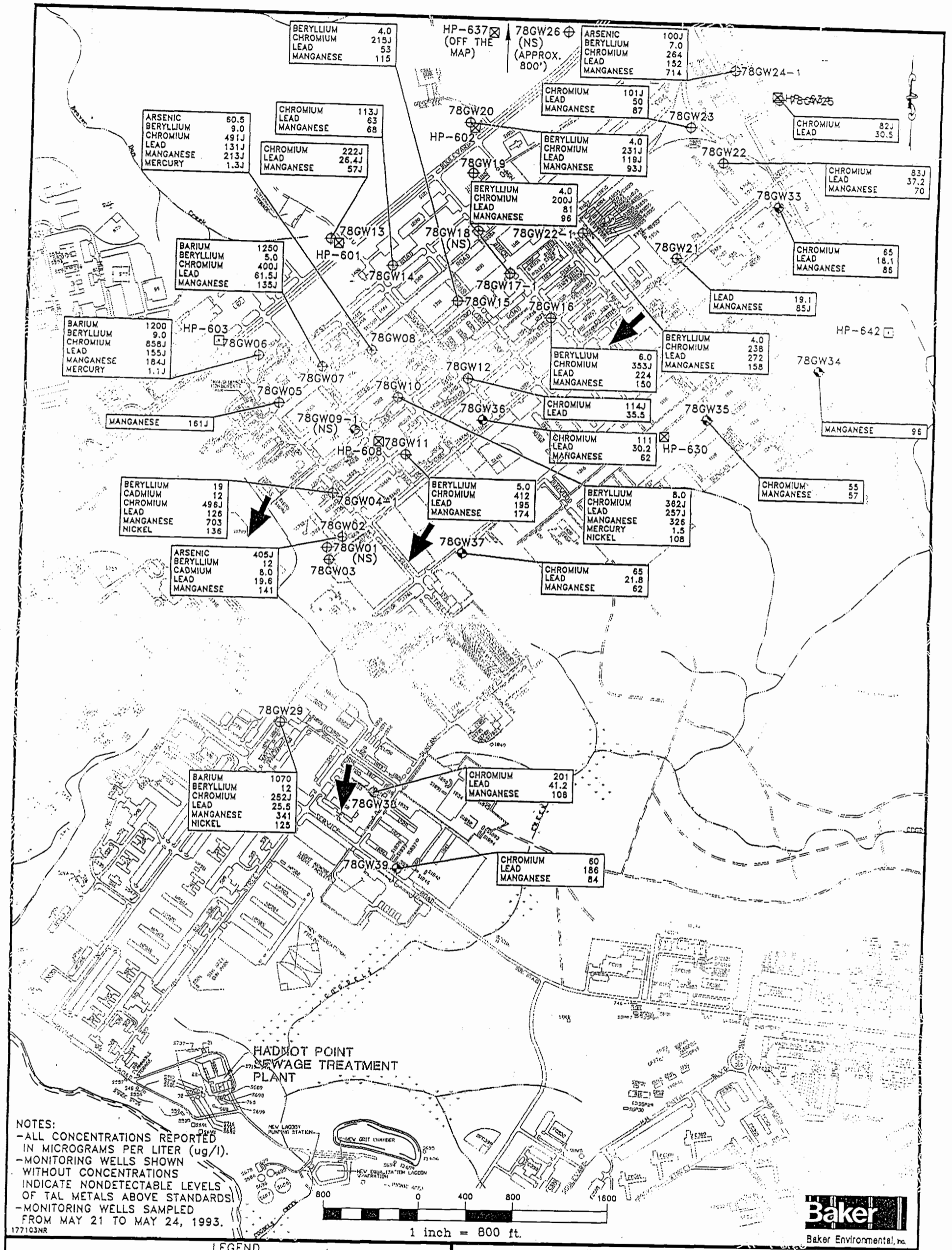
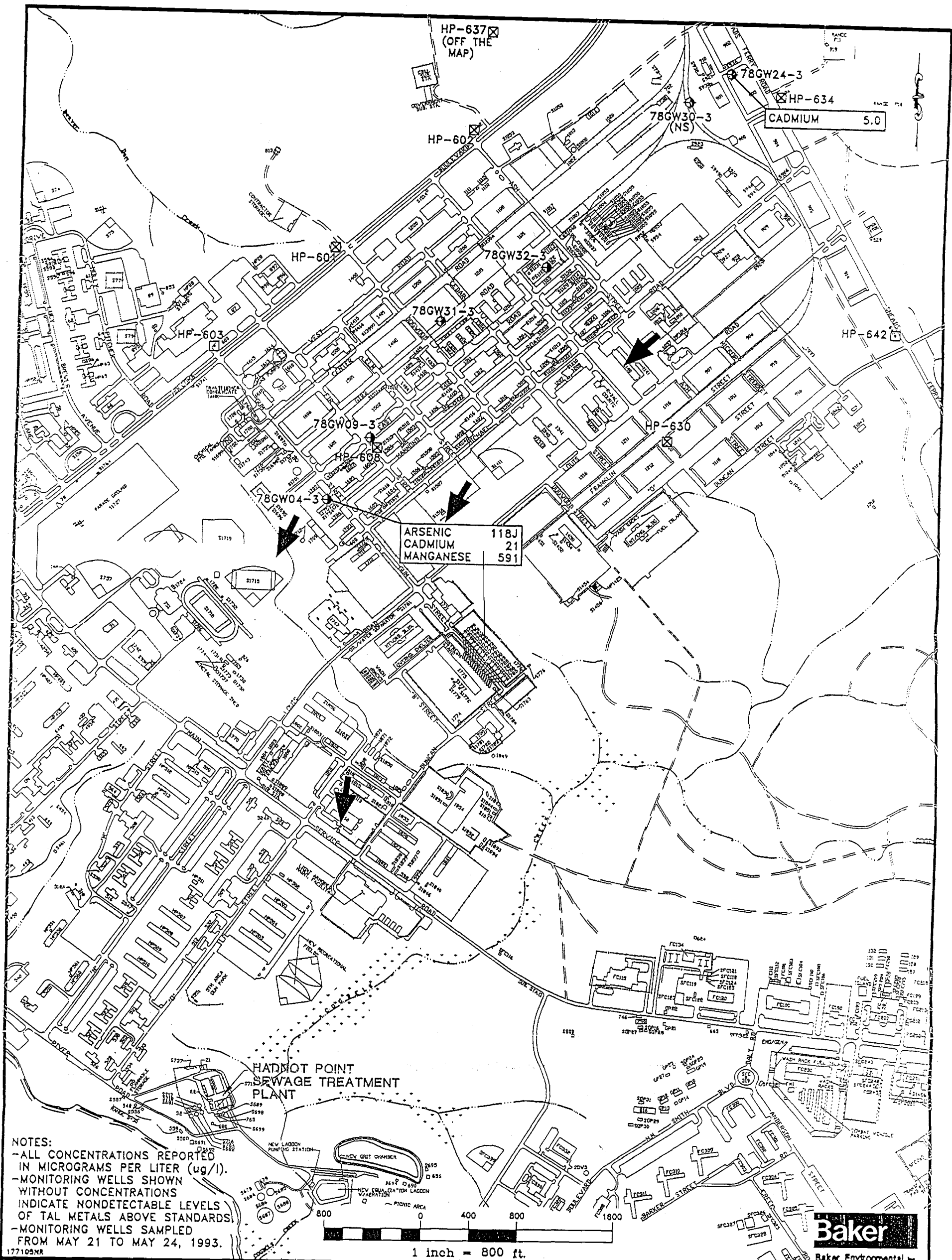


FIGURE 3
 POSITIVE DETECTIONS OF TAL METALS ABOVE FEDERAL MCLs AND/OR NCWQS IN SHALLOW WELLS
 SITE 78
 REMEDIAL INVESTIGATION CTO-0177
 MARINE CORPS BASE, CAMP LEJEUNE
 NORTH CAROLINA



NOTES:
 -ALL CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER (ug/l).
 -MONITORING WELLS SHOWN WITHOUT CONCENTRATIONS INDICATE NONDETECTABLE LEVELS OF TAL METALS ABOVE STANDARDS.
 -MONITORING WELLS SAMPLED FROM MAY 21 TO MAY 24, 1993.

177102NR

LEGEND

78GW04-3	EXISTING DEEP MONITORING WELL INSTALLED BY ESE, 1991
→	APPROXIMATE DIRECTION OF GROUNDWATER FLOW
(NS)	NOT SAMPLED FOR TAL METALS
HP-603	WATER SUPPLY WELL (ACTIVE)-NOT SAMPLED
HP-601	WATER SUPPLY WELL (INACTIVE)-NOT SAMPLED

SOURCE: LANTDIV, FEBRUARY 1992

FIGURE 4
 POSITIVE DETECTIONS OF TAL METALS ABOVE FEDERAL MCLs AND/OR NCWQS IN DEEP WELLS
 SITE 78
 REMEDIAL INVESTIGATION CTO-0177
 MARINE CORPS BASE, CAMP LEJEUNE
 NORTH CAROLINA



Appendix A
Data Summary Tables
for Sites 2 and 78

OPERABLE UNIT NO. 1 - SITES 21, 24, 78
 SHALLOW, INTERMEDIATE AND DEEP MONITORING WELLS
 GROUNDWATER DATA AND FREQUENCY SUMMARY
 REMEDIAL INVESTIGATION CTO - 19177
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL METALS AND CYANIDE

	MINIMUM NONDETECTED UG/L	MAXIMUM NONDETECTED UG/L	MINIMUM DETECTED UG/L	MAXIMUM DETECTED UG/L	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
ALUMINUM	NA	NA	68 J	542000 J	78-GW06-01	59 / 59
ANTIMONY	3 U	20 U	3.3 B	169 J	78-GW02-01	7 / 33
ARSENIC	2 U	10 U	2.3 J	405 J	78-GW02-01	44 / 48
BARIUM	NA	NA	17 B	1250	78-GW07-01	59 / 59
BERYLLIUM	1 U	4 U	1 B	19	24-GW02-01	52 / 59
CADMIUM	5 U	25 U	5	21	78-GW04-3-01	9 / 59
CALCIUM	NA	NA	2420 B	642000	78-GW04-1-01	59 / 59
CHROMIUM	10 U	50 U	10	858 J	78-GW06-01	46 / 59
COBALT	8 U	8 U	8 B	170	78-GW22-2-01	25 / 59
COPPER	2 U	2 U	3 B	699	78-GW39-01	58 / 59
IRON	NA	NA	32 B	523000	78-GW04-3-01	59 / 59
LEAD	1.8 U	4.9 U	2.9 B	2000 J	21-GW0B-01	50 / 59
MAGNESIUM	NA	NA	88 B	37100	24-GW03-01	59 / 59
MANGANESE	2 U	2 U	2 B	714	78-GW24-1-01	57 / 59
MERCURY	0.2 U	0.2 U	0.23 J	3.2	24-GW06-01	24 / 52
NICKEL	20 U	20 U	20 B	234	78-GW22-2-01	31 / 59
POTASSIUM	NA	NA	982 B	67300	78-GW32-3-01	59 / 59
SELENIUM	1 U	5 U	1.1 J	99.5 J	78-GW32-2-01	41 / 54
SILVER	3 U	15 U	5 J	5 J	78-GW09-3-01	1 / 59
SODIUM	NA	NA	2450 B	42500	78-GW32-3-01	59 / 59
THALLIUM	1 U	1 U	1 B	7.3 J	78-GW32-2-01	16 / 59
VANADIUM	4 U	4 U	4 J	1700	78-GW08-01	55 / 59
ZINC	6 U	6 U	6 J	967 J	78-GW22-2-01	57 / 59
CYANIDE	10 U	10 U	ND	ND	ND	0 / 54

OPERABLE UNIT NO. 1 - SITES 21, 24, 78
 SHALLOW, INTERMEDIATE AND DEEP MONITORING WELLS
 GROUNDWATER DATA AND FREQUENCY SUMMARY
 REMEDIAL INVESTIGATION CTO - 19177
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL METALS AND CYANIDE

SAMPLE NO.	21-GW01-01	21-GW02-01	21-GW03-01	21-GW04-01	21-GW0A-01	21-GW0B-01
	UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
ALUMINUM	4910 J	319000 J	4820 J	20100 J	16900 J	118000 J
ANTIMONY	7 UJ	7 U	7 U	7 U	7 R	7 U
ARSENIC	15	10	2 U	11.8	45.2 J	30.4
BARIUM	32 B	647	51 B	119 B	100 B	386
BERYLLIUM	1 B	5	1 B	1 B	1 B	6
CADMIUM	5 U	10 U	5 U	5 U	5 U	10 U
CALCIUM	63000 J	24100 J	6130 J	21700 J	23800	6250 J
CHROMIUM	10 UJ	348 J	10 UJ	33 J	21 J	192 J
COBALT	8 U	18 B	8 U	10 B	8 U	36 B
COPPER	4 B	79	7 B	28	24 B	38
IRON	9920 J	122000 J	13400 J	24900 J	38900 J	72900 J
LEAD	1.8 UJ	214 J	4.9 UJ	33 J	29	2000 J
MAGNESIUM	5070	15400	4550 B	5490	4850 B	11600
MANGANESE	64 J	179 J	134 J	193 J	59	276 J
MERCURY	0.2 R	2.4 J	0.2 R	0.2 R	0.2 U	0.2 R
NICKEL	20 U	86	20 U	20 U	20 U	60
POTASSIUM	2390 B	10500	2240 B	3800 B	2360 B	9520
SELENIUM	1 U	11 J	1 U	1 U	1 UJ	3.7 J
SILVER	3 U	3 U	3 U	3 U	3 UJ	3 U
SODIUM	15700	12600	7950	14400	12600	14400
THALLIUM	1 U	1 UJ	1 U	1 UJ	1 UJ	1 U
VANADIUM	30 B	281	11 B	42 B	48 B	243
ZINC	65 J	136 J	27 J	57 J	41 J	175 J
CYANIDE	10 U	10 U	10 U	10 U	10 U	10 U

OPERABLE UNIT NO. 1 - SITES 21, 24, 78
 SHALLOW, INTERMEDIATE AND DEEP MONITORING WELLS
 GROUNDWATER DATA AND FREQUENCY SUMMARY
 REMEDIAL INVESTIGATION CTO - 19177
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL METALS AND CYANIDE

SAMPLE NO.	21-GW0C-01	24-GW01-01	24-GW02-01	24-GW03-01	24-GW04-01	24-GW06-01
	UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
ALUMINUM	209000 J	262000	93700	50200	58900	19800
ANTIMONY	7 U	3 U	3 UJ	3 U	4.6 B	3.5 B
ARSENIC	101	10 UJ	2.3 J	4.7 J	116 J	10.1 J
BARIUM	467	380	1120	480	290	159 B
BERYLLIUM	8	3 B	19	5	2 B	9
CADMIUM	10 U	5 U	12	5 U	5 U	5
CALCIUM	35200 J	4120 B	2420 B	124000	65600	151000
CHROMIUM	291 J	296	316	110	153	78
COBALT	60	8 U	41 B	66	8 U	35 B
COPPER	84	49	52	22 B	31	15 B
IRON	106000 J	58600	395000	16300	70500	69500
LEAD	92.5 J	89	17.9	21.6	23.6	7.4
MAGNESIUM	16300	12200	7240	37100	7690	4320 B
MANGANESE	273 J	117	518	393	66	431
MERCURY	0.23 J	0.23	2.6	0.2 U	0.2 U	3.2
NICKEL	123	38 B	140	85	20 U	93
POTASSIUM	11800	12000	7550	15400	6130	3370 B
SELENIUM	4.3 B	1.3 J	1.1 J	16.2 J	4.3 J	1 UJ
SILVER	3 U	3 UJ	15 UJ	3 UJ	3 UJ	3 UJ
SODIUM	15200	6030	11600	19200	5230	7280
THALLIUM	1 U	1 U	1 U	2.4 B	1 U	1 B
VANADIUM	419	304	408	92	202	83
ZINC	487 J	118	461	650	80	489
CYANIDE	10 U					

OPERABLE UNIT NO. 1 - SITES 21, 24, 78
 SHALLOW, INTERMEDIATE AND DEEP MONITORING WELLS
 GROUNDWATER DATA AND FREQUENCY SUMMARY
 REMEDIAL INVESTIGATION CTO - 19177
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL METALS AND CYANIDE

SAMPLE NO.	24-GW07-01	24-GW08-01	24-GW09-01	24-GW10-01	78-GW02-01	78-GW03-01
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
ALUMINUM	36000	61100	12800	23300	29200 J	23900 J
ANTIMONY	3 U	3 U	3.3 B	5.7 B	169 J	38.5 J
ARSENIC	3.7 J	8 J	4.3 J	2.5 J	405 J	5.7 J
BARIUM	85 B	112 B	164 B	59 B	109 B	36 B
BERYLLIUM	1 B	2 B	1 B	1 U	12	2 B
CADMIUM	5 U	5 U	5 U	5 U	8	5 U
CALCIUM	4960 B	27000	9530	3820 B	37000	32900
CHROMIUM	37	85	19	21	18 J	10 UJ
COBALT	8 U	8 U	11 B	8 U	8 U	8 U
COPPER	19 B	24 B	11 B	13 B	20 B	8 B
IRON	13700	27500	13100	7010	427000 J	5020 J
LEAD	11.4	23.8	5.1	7.3	19.6	3.4
MAGNESIUM	2670 B	5050	7630	1760 B	3650 B	2210 B
MANGANESE	39	47	180	29	141	27
MERCURY	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
NICKEL	20 U	20 U	20 U	20 U	20 U	20 U
POTASSIUM	3870 B	5580	4280 B	2620 B	2770 B	1320 B
SELENIUM	2.1 J	1.9 J	2.6 J	1 UJ	19.8 J	2.4 J
SILVER	3 UJ	3 UJ	3 UJ	3 UJ	15 UJ	3 UJ
SODIUM	6520	6550	6010	6650	5120	4270 B
THALLIUM	1 U	1 U	1 U	1 U	1 UJ	1 UJ
VANADIUM	64	129	26 B	34 B	1660	50
ZINC	41	47	50	20	58 J	12 J
CYANIDE	10 U	10 U	10 U	10 U	10 U	10 U

OPERABLE UNIT NO. 1 - SITES 21, 24, 78
 SHALLOW, INTERMEDIATE AND DEEP MONITORING WELLS
 GROUNDWATER DATA AND FREQUENCY SUMMARY
 REMEDIAL INVESTIGATION CTO - 19177
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL METALS AND CYANIDE

SAMPLE NO.	78-GW04-1-01	78-GW04-2-01	78-GW04-3-01	78-GW05-01	78-GW06-01	78-GW07-01
	UNITS	UGL	UGL	UGL	UGL	UGL
ALUMINUM	297000 J	286	115 B	23000 J	542000 J	207000 J
ANTIMONY	7 R	7 R	7 R	7 U	7 U	7 U
ARSENIC	18.6 J	2 R	118 J	5.2 J	26 B	16.2
BARIUM	728	519	547	54 B	1200	1250
BERYLLIUM	19	1 B	1 B	2 B	9	5
CADMIUM	12	5 U	21	5 U	5 U	5 U
CALCIUM	642000	170000	105000	90200 J	7180 J	18700 J
CHROMIUM	496 J	10 U	50 U	17 J	858 J	400 J
COBALT	28 B	8 U	8 U	8 U	11 B	20 B
COPPER	87	4 B	7 B	8 B	127	53
IRON	267000 J	32 B	523000	14900 J	142000 J	96700 J
LEAD	126	2 U	2 U	13.1 J	155 J	61.5 J
MAGNESIUM	25500	88 B	3210 B	12700	24000	20000
MANGANESE	703	51	591	161 J	184 J	135 J
MERCURY	0.75	0.2 U	0.3	0.2 R	1.1 J	0.44 J
NICKEL	136	20 B	20 U	20 U	86	54
POTASSIUM	18800	21800	11300	4770 B	25600	13200
SELENIUM	9 J	1 R	1 R	6.4	5.5 B	9.1
SILVER	6 UJ	3 U	15 U	3 U	3 U	3 U
SODIUM	8870	11500	9290	23900	5090	9260
THALLIUM	1.2 J	1 U	1 U	1 UJ	1.1 B	1 UJ
VANADIUM	591	4 UJ	24 J	28 B	811	406
ZINC	373 J	7 J	79 J	32 J	223 J	158 J
CYANIDE	10 U	10 U	10 U	10 U	10 U	10 U

OPERABLE UNIT NO. 1 - SITES 21, 24, 78
 SHALLOW, INTERMEDIATE AND DEEP MONITORING WELLS
 GROUNDWATER DATA AND FREQUENCY SUMMARY
 REMEDIAL INVESTIGATION CTO - 19177
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL METALS AND CYANIDE

SAMPLE NO.	78-GW08-01	78-GW09-2-01	78-GW09-3-01	78-GW10-01	78-GW11-01	78-GW12-01
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
ALUMINUM	483000 J	68 J	2710 J	404000 J	332000	108000 J
ANTIMONY	7 U	7 R	7 R	7 R	7 R	7 R
ARSENIC	60.5	2 R	2 R	43 J	10 R	9.6 J
BARIUM	740	27 B	41 B	582	631	155 B
BERYLLIUM	9	1 U	1 B	8	5	2 B
CADMIUM	25 U	5 U	5 U	10 U	25 U	10 U
CALCIUM	28200 J	114000	99100	54400	9130	31200
CHROMIUM	491 J	10 UJ	10 UJ	362 J	412	114 J
COBALT	29 B	8 U	8 U	31 B	8 U	8 U
COPPER	86	4 B	4 B	91	84	30
IRON	138000 J	955 J	99 J	157000 J	120000	26400 J
LEAD	131 J	2 U	2 U	257	195	35.5
MAGNESIUM	18500	2550 B	249 B	17400	15400	7220
MANGANESE	213 J	19	2 U	326	174	47
MERCURY	1.3 J	0.2 U	0.2 U	1.5	0.75	0.2 U
NICKEL	89	20 U	20 U	108	79	20 U
POTASSIUM	14700	1220 B	7820	15800	13000	6090
SELENIUM	25.3	1 UJ	1 UJ	18 J	12 J	3.6 J
SILVER	3 U	3 UJ	5 J	3 UJ	3 U	3 UJ
SODIUM	4710 B	5820	7280	3340 B	3490 B	5420
THALLIUM	1.3 J	1 UJ	1 UJ	1 UJ	1 U	1 UJ
VANADIUM	1700	4 U	9 B	499	526	145
ZINC	200 J	11 J	181 J	217 J	120 J	64 J
CYANIDE	10 U	10 U	10 U	10 U	10 U	10 U

OPERABLE UNIT NO. 1 - SITES 21, 24, 78
 SHALLOW, INTERMEDIATE AND DEEP MONITORING WELLS
 GROUNDWATER DATA AND FREQUENCY SUMMARY
 REMEDIAL INVESTIGATION CTO - 19177
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL METALS AND CYANIDE

SAMPLE NO.	78-GW13-01	78-GW14-01	78-GW15-01	78-GW16-01	78-GW17-1-01	78-GW17-2-01
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
ALUMINUM	61800 J	103000 J	205000 J	341000 J	168000 J	541 J
ANTIMONY	7 U	7 R	7 R	7 R	7 R	7 R
ARSENIC	38.3	18.4 J	4 R	19 J	11.6 J	2 R
BARIUM	236	321	469	511	261	57 B
BERYLLIUM	3 B	1 B	4 B	6	4 B	1 B
CADMIUM	5 U	10 U	5 U	5 U	10 U	5 U
CALCIUM	4040 J	5300	29100	62700	86900	144000
CHROMIUM	222 J	113 J	215 J	353 J	200 J	10 UJ
COBALT	20 B	8 U	9 B	13 B	9 B	8 U
COPPER	18 B	33	49	80	40	5 B
IRON	61800 J	49600 J	43300 J	80900 J	48700 J	2120 J
LEAD	26.4 J	63	53	224	81	5.9
MAGNESIUM	11800	10600	13400	10800	9940	2570 B
MANGANESE	57 J	68	115	150	96	33
MERCURY	0.3 J	0.38	0.2 U	0.38	0.2 U	0.2 U
NICKEL	40	34 B	29 B	61	30 B	20 U
POTASSIUM	8210	6460	12000	14000	11600	1630 B
SELENIUM	4.7 B	12.4 J	2.1 J	14.5 J	5 UJ	1 UJ
SILVER	3 U	3 UJ	3 UJ	3 UJ	3 UJ	3 UJ
SODIUM	15000	15400	6410	4120 B	3180 B	9480
THALLIUM	1 U	1 UJ	1 J	1.4 J	1 J	1 UJ
VANADIUM	158	122	248	371	289	4 U
ZINC	96 J	51 J	116 J	157 J	98 J	6 UJ
CYANIDE	10 U	10 U	10 U	10 U	10 U	10 U

OPERABLE UNIT NO. 1 - SITES 21, 24, 78
 SHALLOW, INTERMEDIATE AND DEEP MONITORING WELLS
 GROUNDWATER DATA AND FREQUENCY SUMMARY
 REMEDIAL INVESTIGATION CTO - 19177
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL METALS AND CYANIDE

SAMPLE NO.	78-GW19-01	78-GW20-01	78-GW21-01	78-GW22-01	78-GW22-1-01	78-GW22-2-01
	UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
ALUMINUM	4110 J	149000 J	23800 J	78900 J	257000	190000 J
ANTIMONY	7 R	7 U	7 U	14 J	7 R	7 UJ
ARSENIC	3.1 J	30.3	6.3 J	10 J	59.5 J	75.6
BARIUM	101 B	430	382	107 B	411	471
BERYLLIUM	1 B	4 B	2 B	1 B	4 B	12
CADMIUM	5 U	5 U	5 U	10 U	25 U	6
CALCIUM	3700 B	5450 J	32900 J	90100	44500	118000 J
CHROMIUM	10 UJ	231 J	22 J	83 J	238	389 J
COBALT	8 U	35 B	10 B	8 U	8 U	170
COPPER	3 B	61	11 B	34	54	92
IRON	8500 J	101000 J	26400 J	27600 J	62300	140000 J
LEAD	8.3	119 J	19.1 J	37.2	272	360 J
MAGNESIUM	5740	13100	9110	5500	12000	13000
MANGANESE	26	93 J	85 J	70	158	348 J
MERCURY	0.2 U	0.37 J	0.2 R	0.3	0.45	0.2 R
NICKEL	20 U	75	20 U	21 B	99	234
POTASSIUM	2130 B	9100	4100 B	6180	12000	10200
SELENIUM	1 UJ	4.2 B	1.1 B	4.2 J	7.5 J	45
SILVER	3 UJ	3 U	3 U	3 UJ	3 U	3 U
SODIUM	24000	11900	9480	12100	9910	8230
THALLIUM	1 UJ	1.8 B	1 U	1.7 J	1 U	3 B
VANADIUM	9 B	236	86	114	269	547
ZINC	6 J	250 J	108 J	50 J	150 J	967 J
CYANIDE	10 U	10 U	10 U	10 U	10 U	10 U

OPERABLE UNIT NO. 1 - SITES 21, 24, 78
 SHALLOW, INTERMEDIATE AND DEEP MONITORING WELLS
 GROUNDWATER DATA AND FREQUENCY SUMMARY
 REMEDIAL INVESTIGATION CTO - 19177
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL METALS AND CYANIDE

SAMPLE NO.	78-GW23-01	78-GW24-1-01	78-GW24-2-01	78-GW24-3-01	78-GW25-01	78-GW29-01
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
ALUMINUM	111000 J	160000	1340	304	101000 J	78800 J
ANTIMONY	7 R	7 R	7 R	7 R	7 R	7 R
ARSENIC	7.6 J	100 J	2 R	2 R	11.4 J	19 J
BARIUM	230	396	34 B	17 B	119 B	1070
BERYLLIUM	2 B	7	1 B	1 U	2 B	12
CADMIUM	5 U	5 U	5	5	5 U	5 U
CALCIUM	10800	34400	107000	73400	37800	41600
CHROMIUM	101 J	264	10	10 U	82 J	252 J
COBALT	8 B	39 B	8 U	8 U	8 U	17 B
COPPER	25	71	6 B	5 B	26	34
IRON	30800 J	159000	2320	2370	26300 J	125000 J
LEAD	50	152	3.3	2.9 B	30.5	25.5
MAGNESIUM	7110	11600	1740 B	1500 B	4500 B	21900
MANGANESE	87	714	21	41	33	341
MERCURY	0.3	0.75	0.2 U	0.2 U	0.2 U	0.2 U
NICKEL	42	91	20 U	20 U	20 U	125
POTASSIUM	5450	9090	1050 B	982 B	4950 B	11600
SELENIUM	4.4 J	17.6 J	1 R	1 R	1.6 J	2.5 J
SILVER	3 UJ	3 U	3 U	3 U	3 UJ	3 UJ
SODIUM	7450	10800	8350	7050	16400	21200
THALLIUM	1.7 J	1.5 B	1 U	1 U	1.3 J	1 UJ
VANADIUM	108	436	4 J	4 UJ	144	183
ZINC	67 J	291 J	11 J	16 J	34 J	330 J
CYANIDE	10 U	10 U	10 U	10 U	10 U	10 U

OPERABLE UNIT NO. 1 - SITES 21, 24, 78
 SHALLOW, INTERMEDIATE AND DEEP MONITORING WELLS
 GROUNDWATER DATA AND FREQUENCY SUMMARY
 REMEDIAL INVESTIGATION CTO - 19177
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL METALS AND CYANIDE

SAMPLE NO.	78-GW31-2-01	78-GW31-3-01	78-GW32-2-01	78-GW32-3-01	78-GW33-01	78-GW34-01
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
ALUMINUM	110 B	1200	112000 J	539 J	78200	6870
ANTIMONY	7 R	7 R	7 R	7 R	3 U	3 U
ARSENIC	2 R	2 R	21.6 J	2 R	5.6 J	4.4 J
BARIUM	17 B	415	476	42 B	162 B	173 B
BERYLLIUM	1 B	1 B	10	1 B	1 B	1 U
CADMIUM	5 U	5 U	10	5 U	5 U	5 U
CALCIUM	77600	308000	94600	5440	64800	10400
CHROMIUM	10 U	21	215 J	10 UJ	65	10 U
COBALT	8 U	8 U	84	8 U	8 U	8 U
COPPER	3 B	5 B	87	2 U	20 B	11 B
IRON	280	72 B	98500 J	112 J	14900	7250
LEAD	2 U	2 U	146	2 U	18.1	5.5
MAGNESIUM	2200 B	151 B	13700	319 B	7290	2880 B
MANGANESE	8 B	2 B	328	2 U	86	96
MERCURY	0.3	0.2 U	0.3	0.2 U	0.2 U	0.2 U
NICKEL	20 U	20 U	166	20 U	20 B	20 U
POTASSIUM	1640 B	61600	8460	67300	6900	2620 B
SELENIUM	1 R	1.7 J	99.5 J	1 UJ	12.8 J	1 UJ
SILVER	3 U	3 U	3 UJ	3 UJ	3 UJ	3 UJ
SODIUM	10400	26100	7510	42500	7030	4070 B
THALLIUM	1 U	1 UJ	7.3 J	1.3 J	1 U	1 U
VANADIUM	4 J	10 J	462	5 B	74	15 B
ZINC	23 J	10 J	826 J	6 UJ	37	59
CYANIDE	10 U	10 U	10 U	10 U	10 U	10 U

OPERABLE UNIT NO. 1 - SITES 21, 24, 78
 SHALLOW, INTERMEDIATE AND DEEP MONITORING WELLS
 GROUNDWATER DATA AND FREQUENCY SUMMARY
 REMEDIAL INVESTIGATION CTO - 19177
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL METALS AND CYANIDE

SAMPLE NO.	78-GW35-01	78-GW36-01	78-GW37-01	78-GW38-01	78-GW39-01
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
ALUMINUM	47100	120000	73500	102000	60000
ANTIMONY	3 U	20 U	3 U	20 U	20 U
ARSENIC	2 UJ	3.1 J	4 J	33.6 J	4 UJ
BARIUM	261	152 B	123 B	420	256
BERYLLIUM	1 B	2 U	2 B	4 U	1 U
CADMIUM	5 U	5 U	5 U	25 U	5 U
CALCIUM	7480	35400	10100	62200	16800
CHROMIUM	55	111	65	201	60
COBALT	8 U	8 U	8 U	8 U	10 B
COPPER	15 B	29	22 B	110	699
IRON	11800	21200	18800	67500	28800
LEAD	13.2	30.2	21.8	41.2	186
MAGNESIUM	5680	5740	4600 B	17500	14300
MANGANESE	57	62	62	106	84
MERCURY	0.2 U	0.3	0.2 U	0.2 U	0.52
NICKEL	20 U	24 B	20 U	32 B	32 B
POTASSIUM	6150	5820	5990	8180	3840 B
SELENIUM	3.5 J	1.7 J	1.1 J	1.3 J	4.3 J
SILVER	3 UJ	3 UJ	3 UJ	3 UJ	3 UJ
SODIUM	10300	2450 B	7270	10300	19500
THALLIUM	1 U	1 U	1 U	1 U	1 U
VANADIUM	59	98	106	235	67
ZINC	30	57	58	134	138
CYANIDE	10 U	10 U	10 U	10 U	10 U

OPERABLE UNIT NO. 5 - SITE 2
 SHALLOW AND DEEP MONITORING WELLS
 GROUNDWATER STATISTICAL SUMMARY
 REMEDIAL INVESTIGATION CTO - 19174
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL METALS AND CYANIDE

SAMPLE NO.	2-GW01-01	2-GW02-01	2-GW03-01	2-GW03DW-01	2-GW04-01	2-GW05-01
UNITS	UG/L		UG/L	UG/L	UG/L	UG/L
ALUMINUM	36000		5200	269	16800	4050
ANTIMONY	10 U		10 U	3.5 U	10 U	10 U
ARSENIC	21.2		2.5 B	1 UJ	23.6	2.2 B
BARIUM	52 B		46 B	1420	95 B	100 B
BERYLLIUM	1 B		0.5 U	0.5 U	2 B	0.5 U
CADMIUM	7		2.5 U	2.5 U	2.5 U	2.5 U
CALCIUM	23700		8460	450000	11100	21000
CHROMIUM	18		11	16	5 U	5 U
COBALT	10 B		4 U	4 U	4 U	4 U
COPPER	10 B		4 B	8 B	5 B	3 B
IRON	10300		7190	127	28100	12700
LEAD	15.5 L		3.5 J	1.1 UJ	2.7 J	0.5 UJ
MAGNESIUM	5660		1600 B	75 B	1920 B	4800 B
MANGANESE	55		21	2 U	21	46
MERCURY	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U
NICKEL	10 U		10 U	10 U	10 U	10 U
POTASSIUM	2560 B		1030 B	187000	1210 B	2130 B
SELENIUM	4.2 B		0.5 U	0.5 U	0.5 U	0.5 U
SILVER	1.5 U		1.5 U	1.5 U	1.5 U	1.5 U
SODIUM	4040 B		5490	103000	5560	10100
THALLIUM	0.5 U		0.5 U	0.5 UJ	0.5 U	0.5 U
VANADIUM	72		10 B	2 U	89	9 B
ZINC	146		13 B	9 B	16 B	6 B
CYANIDE	5 U		5 U	5 U	5 U	5 U

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OPERABLE UNIT NO. 5 - SITE 2
 SHALLOW AND DEEP MONITORING WELLS
 GROUNDWATER STATISTICAL SUMMARY
 REMEDIAL INVESTIGATION CTO - 19174
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL METALS AND CYANIDE

SAMPLE NO.	2-GW06-01	2-GW07-01	2-GW08-01	2-GW09-01
	UNITS	UG/L	UG/L	UG/L
ALUMINUM	13600	8550	6380	56300
ANTIMONY	10 U	10 U	3.5 UJ	10 U
ARSENIC	5.4 B	5.7 B	9.2 B	12.9
BARIUM	173 B	98 B	98 B	328
BERYLLIUM	0.5 U	0.5 U	0.5 U	3 B
CADMIUM	2.5 U	2.5 U	2.5 U	2.5 U
CALCIUM	7940	9350	5710	22100
CHROMIUM	15	15	5 U	75
COBALT	12 B	4 U	4 U	10 B
COPPER	5 B	7 B	6 B	25
IRON	11700	12500	9150	42000
LEAD	6.7 J	8.3 J	1.8 UJ	27.2 J
MAGNESIUM	4120 B	3620 B	2020 B	9980
MANGANESE	79	72	53	290
MERCURY	0.1 U	0.1 U	0.1 U	0.1 U
NICKEL	10 U	10 U	10 U	25 B
POTASSIUM	2570 B	1940 B	1550 B	6610
SELENIUM	0.5 U	0.5 U	0.5 U	0.5 U
SILVER	1.5 U	1.5 U	1.5 U	1.5 U
SODIUM	21900	8180	11800	18300
THALLIUM	0.5 U	0.5 U	0.5 U	0.5 U
VANADIUM	15 B	18 B	12 B	86
ZINC	26	22	27	103
CYANIDE	5 U	5 U	5 U	5 U

OPERABLE UNIT NO. 5 - SITE 2
 SHALLOW AND DEEP MONITORING WELLS
 GROUNDWATER STATISTICAL SUMMARY
 REMEDIAL INVESTIGATION CTO - 19174
 MCB CAMP LEJEUNE, NORTH CAROLINA
 DISSOLVED METALS

SAMPLE NO.	2-GW01D-01	2-GW02D-01	2-GW03D-01	2-GW03DWD-01	2-GW04D-01	2-GW05D-01
UNITS	UG/L		UG/L	UG/L	UG/L	UG/L
ALUMINUM	1930		66 B	89 B	60 B	1990
ANTIMONY	10 U		10 U	3.5 UJ	10 U	10 U
ARSENIC	2.2 B		1 U	1 UJ	6.1 B	1 U
BARIUM	42 B		25 B	1400	64 B	98 B
BERYLLIUM	1 B		0.5 U	0.5 U	0.5 U	1 B
CADMIUM	2.5 U		2.5 U	2.5 U	2.5 U	2.5 U
CALCIUM	24400		7100	441000	11300	21800
CHROMIUM	5 U		5 U	11	5 U	5 U
COBALT	4 U		4 U	4 U	4 U	4 U
COPPER	4 B		2 B	6 B	9 B	4 B
IRON	2560		2170	10 U	2720	7400
LEAD	2.1 J		0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
MAGNESIUM	5220		1030 B	26 B	1840 B	4900 B
MANGANESE	51		4.5 U	1 U	17	46
MERCURY	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U
NICKEL	10 U		10 U	10 U	10 U	10 U
POTASSIUM	2140 B		589 B	188000	1130 B	2170 B
SELENIUM	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U
SILVER	1.5 U		1.5 U	1.5 U	1.5 U	1.5 U
SODIUM	3590 B		5400	103000	5710	9970
THALLIUM	0.5 U		0.5 U	0.5 U	0.5 U	0.5 U
VANADIUM	2 U		2 U	2 U	2 U	2 U
ZINC	28		3 U	3 U	8 B	9 B
CYANIDE						

OPERABLE UNIT NO. 5 - SITE 2
 SHALLOW AND DEEP MONITORING WELLS
 GROUNDWATER STATISTICAL SUMMARY
 REMEDIAL INVESTIGATION CTO - 19174
 MCB CAMP LEJEUNE, NORTH CAROLINA
 DISSOLVED METALS

SAMPLE NO.	2-GW06D-01	2-GW07D-01	2-GW08D-01	2-GW09D-01
UNITS	UG/L	UG/L	UG/L	UG/L
ALUMINUM	149 B	43 B	95 B	1230
ANTIMONY	10 U	10 U	3.5 U	10 U
ARSENIC	2.9 B	1 U	7.1 B	1 U
BARIUM	126 B	49 B	62 B	149 B
BERYLLIUM	0.5 U	0.5 U	0.5 U	1 B
CADMIUM	2.5 U	2.5 U	2.5 U	2.5 U
CALCIUM	8080	9590	5800	20800
CHROMIUM	5 U	5 U	5 U	10
COBALT	10 B	8 B	4 U	14 B
COPPER	2 B	5 B	4 B	5 B
IRON	7070	4660	6180	7040
LEAD	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
MAGNESIUM	3610 B	3060 B	1730 B	6890
MANGANESE	65	48	40	129
MERCURY	0.1 U	0.1 U	0.1 U	0.1 U
NICKEL	10 U	10 U	10 U	10 U
POTASSIUM	1970 B	1490 B	1150 B	2790
SELENIUM	0.5 U	0.5 U	0.5 U	0.5 U
SILVER	1.5 U	1.5 U	1.5 U	1.5 U
SODIUM	22600	8720	12100	17200
THALLIUM	0.5 U	0.5 U	0.5 U	0.5 U
VANADIUM	2 U	2 U	2 U	2 U
ZINC	12 B	13 B	19 B	35
CYANIDE				

APPENDIX H
WHITE OAK RIVER BASIN STUDY

WHITE OAK RIVER BASIN REFERENCE STATIONS

Water Body Description

Hadnot Creek, Holland Mill Creek (including Cartwheel Branch) and the section of the White Oak River that encompasses Hadnot Creek, Holland Mill Creek, and Webb Creek are classified as SA from their source to the White Oak River. The SA classifies the water body as a tidal saltwater with shellfishing for market purposes and the following uses: primary recreation, aquatic life propagation and survival, fishing, wildlife, and secondary recreation. Webb Creek is classified as C from its source to the White Oak River. The C classifies the water body as a fresh water with the following uses: aquatic life propagation and survival, fishing, wildlife, and secondary recreation. The section of the White Oak River that encompasses these three creeks is designated by the North Carolina Fisheries Rule as Class C - coastal fishing waters (NCMFC, 1993).

Biological Sampling

Biological samples collected at the background stations consisted of fish and benthic macroinvertebrate. The biological samples were collected to obtain population statistics for fish and benthic macroinvertebrates and to obtain fish tissue samples for chemical analysis (Hadnot Creek only). Prior to initiating the sampling event at each station, the following information describing the site was recorded in the field log book:

Average width, depth and velocity of the water body

Description of substrate

Description of "abiotic" characteristics of the reach such as pools, riffles, runs, channel shape, degree of bank erosion, and shade/sun exposure

Description of "biotic" characteristics of the reach including aquatic and riparian vegetation and wetlands

Water quality measurements were collected during the benthic macroinvertebrate sampling, at a minimum, and during collection of some of the fish samples. On-site water quality measurements at these stations consisted of temperature, pH, specific conductance, salinity and dissolved oxygen. These measurements were conducted prior to sample collection. The station locations and sampling procedures for the collection of the fish and benthic macroinvertebrates is discussed later in this appendix.

Fish and Shellfish

This section discusses collection of the fish and shellfish samples in the reference stations at Webb Creek, Hadnot Creek, and Holland Mill Creek.

A literature review was conducted to determine the fish species that may potentially be exposed to contaminants in the surface water/sediment exposure pathway. This review included compiling information from State and Federal natural resources agencies. In addition, Bakers experience in sampling similar areas formed a basis for a database of expected species for the area.

Sampling variability can prevent the same species of fish from being sampled at each station because either the preferred species was not captured, or adequate numbers of uniform-size individuals were not captured. Therefore, if the preferred species was not successfully collected to satisfy the above requirements, a substitute species was collected that, if possible, exhibiting a similar trophic position in the estuarine ecosystem.

The collected fish species were identified, measured, and counted. The small fish (less than 20 mm) were weighed in groups of 10 or 20 because of their low individual weight; the larger fish were weighed individually. The

proportion of individuals as hybrids and the proportion of individuals with disease, tumors, fin damage, and skeletal anomalies was recorded at each station.

Fish that exhibited signs of being dead for an extended period of time (i.e., brown gills, bloating) were not retained for tissue analysis because of the potential for decomposition and leaching of contaminants from the organs into the edible portions of the fish.

Webb Creek

This section discusses collection of the fish samples in Webb Creek including the station locations and sampling procedures.

Station Location

The fish station WC02 was located on Webb Creek approximately 300 feet upstream from the Camp Lejeune railroad crossing. Station WC03 was located in the White Oak River approximately 25 feet downstream from its confluence with Webb Creek. See fish and benthic macroinvertebrate sampling station figure found later in this appendix for approximate sample locations.

Sampling Procedures

Fish were collected in Webb Creek using gill nets and hoop nets. All fish that were collected were processed for population statistics; no fish at these stations were collected for tissue analysis.

The gill nets were six feet deep by 50 to 100 feet long with a stretch mesh size ranging from two to four inches, and an approximate twine break strength of 29 pounds. The nets were deployed approximately at the locations shown on the figure found later in this appendix. Weights were attached to the nets to secure them on the bottom of the stream and yellow buoys marked with "Baker Environmental" were attached to the tops of the nets. The nets were deployed in the morning or evening, and they were checked for fish within twelve hours after deployment.

The hoop nets were three to four feet in diameter and fourteen to sixteen feet in length. Twenty-five foot wings were attached to the nets to help direct fish into the net. The nets were deployed in the middle of the channel with the wings stretched across the creek in a forty-five degree angle. The end of the net and the wings were secured using 6.5 foot wooden posts. The nets were checked at least once daily, as the fish usually survive when captured in these nets.

Hadnot Creek

This section discusses collection of the fish samples in Hadnot Creek including the station locations and sampling procedures.

Station Location

Fish were collected from four stations in Hadnot Creek (HC01, HC02, HC03 and HC04). HC01 was located approximately 100 feet upstream of Rt. 1104. Station HC02 was located approximately 2,500 feet upstream of Rt. 58. Station HC03 was located in the White Oak River approximately 100 feet upstream from its confluence with Hadnot Creek. Finally, station HC04 was located in Hadnot Creek by the road off of the Rt. 1105 crossing. In October, 1993, fish were collected by Baker in Hadnot Creek as part of another investigation (Baker, 1993). Fillet samples of these fish were chemically analyzed and the results are included in this ERA.

Sampling Procedures

Fish were collected at these stations for population statistics; fish were not collected at these stations for tissue analysis. Fish were collected in Hadnot Creek using hoop nets, gill nets, a haul seine, pole fishing, and the

backpack electroshocker. The same sample collection and sample processing procedures used in Webb Creek were conducted at the Hadnot Creek stations for the gill nets and hoop nets. Pole fishing only was conducted during the October 1993 sampling.

Fish were collected in the furthest upstream stations using electrofishing, conducted with a Smith-Root, Inc., backpack electrofisher powered by a 300-watt portable generator. A DC current was applied utilizing a "rattail" as the cathode and a hand-held electrode as the anode. Blocking seines were placed downstream and upstream of the shocking areas to aid in the collection of the fish. The length of the shocking time per subsection was recorded as seconds of applied current. Stunned fish were collected with one-inch mesh or smaller dip nets handled by members of the field sampling team.

Holland Mill Creek

This section discusses collection of the fish samples in Holland Mill Creek including the station locations and sampling procedures.

Station Location

Fish were collected from three stations in Holland Mill Creek (HM01, HM02, and HM03). HM01 was located on Cartwheel Branch just upstream of Rt. 1444. Station HM02 was located at the confluence of Holland Mill Creek and Cartwheel Branch. Station HM03 was located in the White Oak River approximately 50 feet downstream from Holland Mill Creek.

Sampling Procedures

Fish were collected at these stations for population statistics. Fish were not collected at these stations for tissue analysis. Fish were collected in Holland Mill Creek using hoop nets, gill nets, a haul seine, and the backpack electroshocker. The same sample collection and sample processing procedures used in the Webb Creek and Hadnot Creek stations were conducted at the Holland Mill Creek stations.

Benthic Macroinvertebrates

This section discusses collection of benthic macroinvertebrate samples in the reference stations at Webb Creek, Hadnot Creek, and Holland Mill Creek.

Webb Creek

Benthic macroinvertebrates were collected in Webb Creek using the ponar grab deployed from the boat.

Benthic macroinvertebrates were collected from a boat using a standard ponar grab. The dimensions of the ponar are 23 x 23 cm (9 x 9 in.) for a sampling area of 529 cm² or 0.0523 m² (81 in²).

The ponar was deployed from the boat, which was positioned in slightly different locations for each replicate to prevent re-sampling the same area. After retrieving the ponar with a sediment sample, it was opened into a clean tub and the sediments were removed with a teflon spatula. The sediments were transferred to a 0.5 mm sieve that was agitated (by hand) in water to remove the small particles. The remaining contents in the sieve were transferred into 16-ounce plastic sample jars. The jars were filled up to one-half full with sediments, and buffered formalin solution (10 percent by weight) was added to the remainder of the jar to preserve the benthic macroinvertebrates contained in the sediments. A 100 percent cotton paper label, marked in pencil with the sample number, was placed inside the jar. The outside of the jar was labeled with the sample number using a black permanent marker to identify the sample containers.

After all the benthic macroinvertebrate sampling at the New River was completed, the sample jars were transported to RMC Environmental Services, Inc. for sample sorting and taxonomic identification of the benthic

macroinvertebrates.

Hadnot Creek

Benthic macroinvertebrates were collected in Hadnot Creek using the ponar grab deployed from the boat. The boat was not used at HC01 or HC04 because the water was too shallow. Benthic macroinvertebrates were collected using the same procedures used for collecting benthic macroinvertebrates in Webb Creek.

Holland Mill Creek

Benthic macroinvertebrates were collected in Holland Mill Creek using the ponar grab deployed from the boat. The boat was not used at HM01 because the water was too shallow. The same sample collection and sample processing procedures used in Webb Creek were conducted at the Holland Mill Creek stations.

Biological Tissue Sample Results

The analytical parameters included TCL VOCs, TCL SVOCs, TAL metals, and TCL pesticides/PCBs. Background fish fillet tissue were collected from Hadnot Creek and analyzed these results are discussed below.

Hadnot Creek

Several metals were detected in the Hadnot Creek fillet tissue samples. These metals included aluminum, arsenic, calcium, chromium, copper, magnesium, manganese, mercury, nickel, potassium, sodium and zinc in the fillet samples. The range of detected levels for these chemicals in the fish fillet tissue samples from Hadnot Creek are as follows:

	<u>Minimum (mg/kg)</u>	<u>Maximum (mg/kg)</u>
Aluminum	36.5	36.5
Arsenic	0.34	3.9
Calcium	154	1,170
Chromium	0.21	0.68
Copper	0.18	0.46
Magnesium	254	319
Manganese	0.008	0.38
Mercury	0.05	0.24
Nickel	0.45	0.45
Potassium	3,270	4,040
Sodium	505	1,060
Zinc	3.9	6.5

The maximum detect of manganese was in the southern flounder. The maximum detect of sodium was found in the red drum. Aluminum, calcium, chromium, magnesium, mercury, and potassium were detected at their highest concentrations in the largemouth bass. The maximum detects of arsenic, copper, nickel, and zinc were found in the longnose gar.

Two pesticides were detected in the fillet tissue samples, 4,4'-DDE and alpha-chlordane. 4,4'-DDE was detected twice, both in the longnose gar. Alpha-chlordane was detected once in the largemouth bass. The range of detected concentrations for these constituents were as follows:

	<u>Minimum (ug/kg)</u>	<u>Maximum (ug/kg)</u>
4,4'-DDE	9.7	12.0
alpha-Chlordane	0.17	0.17

Two VOCs and three SVOCs were detected in the fillet tissue samples. Common laboratory contaminants were the primary detections, which included methylene chloride, acetone, di-n-octyl phthalate and bis(2-ethylhexyl)phthalate. Phenol was also detected in the fillet tissue samples. The concentration ranges for these chemicals were the following:

	<u>Minimum (ug/kg)</u>	<u>Maximum (ug/kg)</u>
Methylene chloride	3.0	41.0
Acetone	16	130
di-n-octyl phthalate	61	500
bis(2-ethylhexyl) phthalate	820	17,000
Phenol	460	2,100

Field Chemistry Results

Samples from these surface water bodies were collected from the water surface and bottom.

Webb Creek

At Webb Creek, the salinity at station WC02 ranged from 0 to 7 ppt. Conductivity ranged from 850 to 10,500 micromhos/cm. Dissolved oxygen levels ranged from 4.4 to 9 mg/L. The pH at station WC02 in Webb Creek ranged from 6.85 to 7.48 S.U. in the surface water. The temperature of the water at WC02 ranged from 17.5 to 21 °C.

At WC03, the salinity ranged from 10 to 12.8 ppt. The conductivity ranged from 16,500 to 18,000 micromhos/cm. Dissolved oxygen levels ranged from 8.5 to 10 mg/L. The pH at WC03 in Webb Creek ranged from 7.33 to 7.56 S.U. in the surface water. The temperature of the water at WC03 ranged from 19 to 23 °C.

Hadnot Creek

In Hadnot Creek, the salinity at station HC01 was 0 ppt. The conductivity was 13.5 micromhos/cm. The dissolved oxygen level was 7.7 mg/L. The pH at HC01 was 6.89 S.U. in the surface water, and the temperature of the Hadnot Creek water was 17 °C.

At station HC02, the salinity ranged from 0 to 16.5 ppt. The conductivity ranged from 720 to 22,800 micromhos/cm. The dissolved oxygen levels ranged from 1 to 7.3 mg/L. The pH at HC02 ranged from 6.7 to 7.2 S.U. in the surface water. The temperature of the water at HC02 ranged from 15.5 to 22 °C.

At station HC03, the salinity ranged from 17 to 17.9 ppt. The conductivity ranged from 25,500 to 26,500 micromhos/cm. The dissolved oxygen level was 12 mg/L. The pH at HC03 ranged from 7.69 to 7.79 S.U. in the surface water. The temperature of the water at HC03 ranged from 17.5 to 17.8 °C.

At station HC04, the salinity was 0 ppt. The conductivity was 65 micromhos/cm, and the dissolved oxygen level was 5.3 mg/L. The pH at HC04 was 6.16 S.U. in the surface water, and the temperature of the water was 17.3 °C.

Holland Mill Creek

In Holland Mill Creek, the salinity was 0 ppt at station HM01. The conductivity was 140 micromhos/cm, and the dissolved oxygen level was 8.0 mg/L. The pH at station HM01 was 6.9 S.U. in the surface water, and the temperature of the water was 17.5 °C.

At station HM02, the salinity ranged from 1 to 25 ppt. The conductivity ranged from 2,490 to 38,000 micromhos/cm. The dissolved oxygen levels ranged from 5.0 to 11.8 mg/L. The pH at station HM02 ranged from 6.72 to 7.9 S.U. in the surface water. The temperature of the water at HM02 ranged from 15.2 to 20 °C.

At station HM03, the salinity ranged from 13.5 to 22 ppt. The conductivity ranged from 19,000 to 32,000 micromhos. The dissolved oxygen levels ranged from 3.4 to 10.8 mg/L. The pH at station HM03 ranged from 6.81 to 7.90 S.U. in the surface water. The temperature of the water at HM03 ranged from 17.5 to 17.8 °C.

**Statistical Summary of
Analytical Results
(Surface Water)**

KEY TO STATISTICAL AND ANALYTICAL SUMMARY TABLES

U - Indicated analyte was analyzed for but not detected

J - Indicates an estimated value

UJ - Not detected, quantitation limit may be inaccurate or imprecise

R - Result is rejected and unusable

B - Not detected substantially above the level reported in laboratory or field blanks (organics)

P - There is greater than 25% difference for detected pesticide/PCB concentrations between the two GC columns, the lower of the two values is reported

L - Result is biased low

K - Result is biased high

ND - Analyte not detected

NZ - Analyte not analyzed

mg/L - Milligrams per liter

ug/L - Micrograms per liter

mg/kg - Milligrams per kilogram

ug/kg - Micrograms per kilogram

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - HADNOT CREEK
 SURFACE WATER - METALS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Aluminum	692.00	692.00	+ HC-SW04	253.10	488.87	1019.72	1	5	20%
Arsenic	20.00	20.00	+ HC-SW03	5.30	13.35	3190.11	1	5	20%
Barium	9.00	26.00	+ HC-SW03	19.60	25.87	35.22	5	5	100%
Calcium	11600.00	107000.00	+ HC-SW03D	53760.00	92784.90	456379.04	5	5	100%
Chromium	125.00	130.00	+ HC-SW03	54.70	118.12	40374.07	2	5	40%
Iron	291.00	746.00	+ HC-SW01	492.00	666.33	793.41	5	5	100%
Magnesium	954.00	633000.00	+ HC-SW03	258640.80	576299.05	1.50E+16	5	5	100%
Potassium	14500.00	203000.00	+ HC-SW03	84234.00	187308.88	5.24E+12	3	5	60%
Selenium	6.00	6.00	+ HC-SW03	2.00	4.29	38.67	1	5	20%
Sodium	6090.00	2560000.00	+ HC-SW03D	1.01E+06	2.17E+06	4.80E+14	5	5	100%

* = THE RME IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE

+ = THE LOG NORMAL 95% UCL IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE

*+ = BOTH THE RME AND LOG NORMAL 95% UCL ARE GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE

RME = REASONABLE MAXIMUM EXPOSURE

NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - HADNOT CREEK
 SURFACE WATER - PESTICIDES/PCBs

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO PESTICIDES/PCBs WERE DETECTED									

* = THE RME IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE

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RME = REASONABLE MAXIMUM EXPOSURE

NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - HADNOT CREEK
 SURFACE WATER - SEMIVOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO SEMIVOLATILE ORGANIC COMPOUNDS WERE DETECTED									

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RME = REASONABLE MAXIMUM EXPOSURE

NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - HADNOT CREEK
 SURFACE WATER - VOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED									

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- *+ = BOTH THE RME AND LOG NORMAL 95% UCL ARE GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
- RME = REASONABLE MAXIMUM EXPOSURE
- NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - HOLLAND MILL CREEK
 SURFACE WATER - METALS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Aluminum	535.00	535.00	*+ HM-SW02	269.50	657.32	48037.76	1	3	33%
Barium	20.00	49.00	*+ HM-SW01	35.67	60.35	204.30	3	3	100%
Calcium	14100.00	302000.00	*+ HM-SW03	118766.67	387190.45	4.42E+14	3	3	100%
Chromium	36.00	158.00	*+ HM-SW03	66.33	202.69	3.67E+12	2	3	67%
Iron	320.00	559.00	*+ HM-SW02	434.67	636.62	843.56	3	3	100%
Lead	58.10	58.10	*+ HM-SW03	19.95	75.65	1.70E+27	1	3	33%
Magnesium	2830.00	754000.00	*+ HM-SW03	288610.00	973947.76	1.02E+35	3	3	100%
Potassium	41100.00	288000.00	*+ HM-SW03	109978.33	372096.67	1.33E+36	2	3	67%
Selenium	1.50	41.00	*+ HM-SW03	15.00	52.97	8.42E+13	2	3	67%
Silver	37.00	37.00	*+ HM-SW03	16.83	46.42	284713.62	1	3	33%
Sodium	16500.00	6750000.00	*+ HM-SW03	2501833.33	8733985.25	1.96E+44	3	3	100%

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RME = REASONABLE MAXIMUM EXPOSURE

NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - HOLLAND MILL CREEK
 SURFACE WATER - PESTICIDES/PCBs

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO PESTICIDES/PCBs WERE DETECTED									

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NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - HOLLAND MILL CREEK
 SURFACE WATER - SEMIVOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO SEMIVOLATILE ORGANIC COMPOUNDS WERE DETECTED									

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RME = REASONABLE MAXIMUM EXPOSURE

NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - HOLLAND MILL CREEK
 SURFACE WATER - VOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED									

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RME = REASONABLE MAXIMUM EXPOSURE

NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - WEBB CREEK
 SURFACE WATER - METALS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Barium	27.00	29.00	*+ WC-SW02	28.00	34.31	32.19	2	2	100%
Calcium	40500.00	46900.00	*+ WC-SW02	43700.00	63904.80	58284.51	2	2	100%
Chromium	97.00	97.00	*+ WC-SW03	52.25	334.80	1.32E+20	1	2	50%
Iron	321.00	660.00	*+ WC-SW02	490.50	1560.72	14358.69	2	2	100%
Magnesium	29000.00	44800.00	*+ WC-SW03	36900.00	86780.60	133710.58	2	2	100%
Potassium	10900.00	136000.00	*+ WC-SW03	73450.00	468390.70	1.01E+23	2	2	100%
Sodium	202000.00	895000.00	*+ WC-SW03	548500.00	2736301.00	6.83E+11	2	2	100%

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RME = REASONABLE MAXIMUM EXPOSURE

NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - WEBB CREEK
 SURFACE WATER - PESTICIDES/PCBs

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Aldrin	0.04	0.04	*+ WC-SW02	0.03	0.06	0.07	1	2	50%

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RME = REASONABLE MAXIMUM EXPOSURE

NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - WEBB CREEK
 SURFACE WATER - SEMIVOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO SEMIVOLATILE ORGANIC COMPOUNDS WERE DETECTED									

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- RME = REASONABLE MAXIMUM EXPOSURE
- NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - WEBB CREEK
 SURFACE WATER - VOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED									

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**Statistical Summary of
Analytical Results
(Sediment)**

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - HADNOT CREEK
 SEDIMENT - METALS

PARAMETER	MINIMUM DETECTED VALUE (mg/kg)	MAXIMUM DETECTED VALUE (mg/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (mg/kg)	RME (mg/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (mg/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Aluminum	780.00	14000.00	+ HC-SD03-612	5467.78	8305.91	20353.32	9	9	100%
Arsenic	0.26	1.90	*+ HC-SD02-612	1.71	2.67	8.56	6	9	67%
Barium	4.10	17.20	+ HC-SD03-612	9.75	13.11	21.84	8	9	89%
Beryllium	0.14	0.32	+ HC-SD02-612	0.16	0.24	4.60	3	6	50%
Cadmium	0.03	0.66	HC-SD03-06	0.11	0.24	0.42	7	9	78%
Calcium	1030.00	3620.00	+ HC-SD01-06	2645.56	3233.82	3840.09	9	9	100%
Chromium	1.30	41.60	+ HC-SD03-612	10.81	18.97	53.55	9	9	100%
Cobalt	4.50	5.00	HC-SD03-612	1.87	2.91	4.01	2	9	22%
Copper	0.66	1.50	*+ HC-SD02-06	1.35	1.75	2.01	6	9	67%
Iron	382.00	11100.00	+ HC-SD03-06D	3396.56	5709.65	28323.00	9	9	100%
Lead	3.70	5.30	*+ HC-SD03-06	4.50	9.55	305.02	2	2	100%
Magnesium	77.10	6540.00	+ HC-SD03-612	1977.79	3486.31	1292043.17	7	9	78%
Manganese	3.50	64.70	HC-SD03-612	16.54	29.38	62.63	9	9	100%
Mercury	0.25	0.42	*+ HC-SD03-612	0.34	0.48	11.17	3	3	100%
Nickel	1.80	12.10	+ HC-SD03-612	3.77	6.49	17.25	4	9	44%
Potassium	623.00	1840.00	+ HC-SD03-612	671.39	1079.26	2769.97	4	9	44%
Selenium	0.21	0.60	HC-SD02-06	0.30	0.39	0.48	5	9	56%
Sodium	1630.00	2750.00	+ HC-SD02-06	845.25	1750.35	183541390882.91	2	6	33%
Thallium	0.14	0.44	+ HC-SD03-612	0.23	0.31	0.46	6	9	67%
Vanadium	1.50	36.90	+ HC-SD03-612	11.11	18.54	56.26	9	9	100%
Zinc	20.80	40.00	+ HC-SD03-612	12.71	22.07	63.76	3	9	33%

* = THE RME IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE

+ = THE LOG NORMAL 95% UCL IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE

*+ = BOTH THE RME AND LOG NORMAL 95% UCL ARE GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE

RME = REASONABLE MAXIMUM EXPOSURE

NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - HADNOT CREEK
 SEDIMENT - PESTICIDES/PCBs

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
beta-BHC	1.70	1.70	*+ HC-SD04-612	1.93	2.39	2.58	1	9	11%
delta-BHC	0.64	0.64	*+ HC-SD01-06	1.82	2.35	2.91	1	9	11%
Heptachlor	0.48	2.00	*+ HC-SD04-612	1.89	2.42	3.26	2	9	22%
4,4'-DDD	1.50	4.00	HC-SD03-612	2.16	3.11	3.50	3	9	33%
4,4'-DDT	1.20	1.20	*+ HC-SD03-06D	3.23	4.23	5.08	1	9	11%
Methoxychlor	0.94	0.94	*+ HC-SD04-06	17.66	23.58	92.52	1	9	11%
Endrin aldehyde	0.59	7.10	+ HC-SD02-06	3.56	5.02	10.80	3	9	33%

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RME = REASONABLE MAXIMUM EXPOSURE

NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - HADNOT CREEK
 SEDIMENT - SEMIVOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO SEMIVOLATILE ORGANIC COMPOUNDS WERE DETECTED									

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RME = REASONABLE MAXIMUM EXPOSURE

NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - HADNOT CREEK
 SEDIMENT - VOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Acetone	70.00	70.00	HC-SD01-06	18.06	30.44	36.73	1	9	11%
Carbon Disulfide	14.00	19.00	HC-SD02-612	12.44	15.67	18.14	2	9	22%
2-Butanone	7.00	7.00	*+ HC-SD01-06	11.06	13.94	15.49	1	9	11%

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NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - HOLLAND MILL CREEK
 SEDIMENT - METALS

PARAMETER	MINIMUM DETECTED VALUE (mg/kg)	MAXIMUM DETECTED VALUE (mg/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (mg/kg)	RME (mg/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (mg/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Aluminum	337.00	13600.00	+ HM-SD02-06	6181.29	10282.21	655067.62	7	7	100%
Barium	11.00	18.70	+ HM-SD02-06	8.71	13.92	68.49	4	7	57%
Cadmium	0.03	0.11	HM-SD01-06D	0.06	0.08	0.10	7	7	100%
Calcium	282.00	7860.00	+ HM-SD02-612	2952.86	4844.12	22431.34	7	7	100%
Chromium	1.10	38.40	+ HM-SD02-06	19.63	32.39	2021.73	7	7	100%
Cobalt	4.00	4.40	+ HM-SD02-06	2.02	3.18	6.18	2	7	29%
Iron	225.00	32400.00	+ HM-SD02-612	12262.43	21399.01	27918943.98	7	7	100%
Lead	0.62	9.20	+ HM-SD03-06	4.35	6.94	32.96	7	7	100%
Magnesium	26.70	5700.00	+ HM-SD03-06	2576.66	4422.69	136198282.35	7	7	100%
Manganese	1.30	67.20	+ HM-SD02-06	34.14	56.82	8851.72	7	7	100%
Mercury	0.09	0.35	+ HM-SD03-06	0.23	0.30	0.38	7	7	100%
Nickel	9.60	14.20	+ HM-SD03-06	6.76	11.07	359.48	4	7	57%
Potassium	1510.00	1760.00	+ HM-SD03-612	1007.00	1596.65	13233.89	4	7	57%
Selenium	0.25	0.40	HM-SD02-06	0.21	0.29	0.39	2	7	29%
Silver	0.49	0.49	*+ HM-SD01-06	0.39	0.49	0.60	1	7	14%
Thallium	0.13	0.37	+ HM-SD02-06	0.20	0.29	0.52	4	7	57%
Vanadium	0.66	30.00	+ HM-SD02-612	16.69	27.76	18094.26	6	7	86%
Zinc	6.70	43.10	+ HM-SD02-06	23.57	34.53	65.13	7	7	100%

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RME = REASONABLE MAXIMUM EXPOSURE

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MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - HOLLAND MILL CREEK
 SEDIMENT - PESTICIDES/PCBs

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
beta-BHC	3.80	7.30	HM-SD01-06D	3.24	4.69	5.98	2	7	29%
Aldrin	0.56	0.72	*+ HM-SD01-612	1.84	2.60	4.20	2	7	29%
Dieldrin	0.58	1.50	*+ HM-SD01-612	3.55	5.13	12.37	2	7	29%
4,4'-DDE	1.00	4.30	*+ HM-SD01-612	4.01	5.37	8.82	2	7	29%
4,4'-DDD	0.87	3.10	*+ HM-SD01-612	2.85	4.16	6.44	4	7	57%
4,4'-DDT	1.70	1.70	*+ HM-SD01-612	3.79	5.13	6.75	1	7	14%
alpha-Chlordane	1.30	1.30	*+ HM-SD01-612	1.99	2.61	3.14	1	7	14%
gamma-Chlordane	3.00	3.00	+ HM-SD01-612	2.24	2.86	3.56	1	7	14%

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MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - HOLLAND MILL CREEK
 SEDIMENT - SEMIVOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Di-n-butylphthalate	534.00	619.00	+ HM-SD02-612	423.29	573.31	766.73	3	7	43%
bis(2-Ethylhexyl)phthalate	454.00	454.00	*+ HM-SD03-612	378.64	500.04	607.73	1	7	14%

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MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - HOLLAND MILL CREEK
 SEDIMENT - VOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED									

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MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - WEBB CREEK
 SEDIMENT - METALS

PARAMETER	MINIMUM DETECTED VALUE (mg/kg)	MAXIMUM DETECTED VALUE (mg/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (mg/kg)	RME (mg/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (mg/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Aluminum	8200.00	14800.00	*+ WC-SD02-06	12275.00	15932.10	19239.95	4	4	100%
Barium	13.30	28.20	+ WC-SD02-06	18.83	26.76	35.92	4	4	100%
Cadmium	0.06	0.26	+ WC-SD02-06	0.13	0.24	1.11	4	4	100%
Calcium	2190.00	4060.00	*+ WC-SD02-06	3222.50	4132.21	4914.08	4	4	100%
Chromium	8.70	42.60	+ WC-SD03-612	24.93	42.26	246.57	4	4	100%
Cobalt	3.50	3.90	*+ WC-SD03-612	2.44	4.16	21.71	2	4	50%
Iron	8120.00	20700.00	+ WC-SD03-612	13980.00	20133.62	29586.84	4	4	100%
Lead	5.10	16.90	+ WC-SD02-06	9.85	16.48	51.03	4	4	100%
Magnesium	618.00	6060.00	*+ WC-SD03-612	3197.00	6127.63	817766.37	4	4	100%
Manganese	26.00	47.80	*+ WC-SD03-612	39.35	50.44	60.95	4	4	100%
Mercury	0.23	0.40	*+ WC-SD02-06	0.31	0.41	0.48	4	4	100%
Nickel	3.80	11.40	+ WC-SD03-612	7.25	11.11	21.80	4	4	100%
Potassium	1410.00	1590.00	*+ WC-SD03-612	905.88	1719.51	81148.45	2	4	50%
Thallium	0.24	0.24	+ WC-SD03-06	0.16	0.23	0.31	1	4	25%
Vanadium	11.90	31.00	+ WC-SD03-612	21.33	30.50	45.84	4	4	100%
Zinc	27.20	52.00	+ WC-SD02-06	33.83	48.09	61.59	4	4	100%

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RME = REASONABLE MAXIMUM EXPOSURE

NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - WEBB CREEK
 SEDIMENT - PESTICIDES/PCBs

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
delta-BHC	0.79	0.79	*+ WC-SD02-612	1.99	3.02	9.99	1	4	25%
Aldrin	1.20	1.20	*+ WC-SD02-06	1.93	2.65	3.66	1	4	25%
Dieldrin	3.70	3.70	*+ WC-SD02-06	4.00	4.79	4.98	1	4	25%
4,4'-DDE	16.00	16.00	+ WC-SD02-06	7.08	14.12	97.81	1	4	25%
4,4'-DDD	12.00	12.00	+ WC-SD02-06	6.08	10.78	28.91	1	4	25%
4,4'-DDT	0.76	2.60	*+ WC-SD02-06	2.37	4.64	91.00	3	4	75%

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RME = REASONABLE MAXIMUM EXPOSURE

NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - WEBB CREEK
 SEDIMENT - SEMIVOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Benzo(a)pyrene	544.00	544.00	*+ WC-SD03-612	436.25	554.01	635.17	1	4	25%

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RME = REASONABLE MAXIMUM EXPOSURE

NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
 STATISTICAL SUMMARY OF ANALYTICAL RESULTS
 BACKGROUND - WEBB CREEK
 SEDIMENT - VOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED									

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 RME = REASONABLE MAXIMUM EXPOSURE
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**Analytical Summary of Results
(Surface Water)**

MARINE CORPS BASE CAMP LEJEUNE
 ANALYTICAL SUMMARY OF RESULTS
 BACKGROUND - HADNOT CREEK
 SURFACE WATER - METALS

BAKER I.D.	HC-SW01	HC-SW02	HC-SW03	HC-SW03D	HC-SW04
LABORATORY I.D.	5167-16	5162	5166	5163	5152
DATE COLLECTED	08-MAY-1994	06-MAY-1994	06-MAY-1994	06-MAY-1994	08-MAY-1994
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
Aluminum	356 U	303 U	301 U	187 U	692
Arsenic	1 U	1 UJ	20	10 UJ	1 U
Barium	19 J	20 J	26 J	24 J	9 J
Calcium	27000	36600	86600	107000	11600
Chromium	9 U	19 U	130 J	125 J	9 U
Iron	746	528	339	291	556
Magnesium	1450	44800	633000	613000	954
Potassium	1670 U	14500	203000	202000	1670 U
Selenium	1 U	5 U	6 J	1 UJ	1 UJ
Sodium	6900	383000	2090000	2560000	6090

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HADNOT CREEK
SURFACE WATER PESTICIDES AND PCBs

BAKER I.D.	HC-SW01	HC-SW02	HC-SW03	HC-SW03D	HC-SW04
LABORATORY I.D.	5167-16	5162	5166	5163	5152
DATE COLLECTED	08-MAY-1994	06-MAY-1994	06-MAY-1994	06-MAY-1994	08-MAY-1994
UNITS	ug/l	ug/l	ug/l	ug/l	ug/l

NO PESTICIDES OR PCBs WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HADNOT CREEK
SURFACE WATER - SEMIVOLATILE ORGANIC COMPOUNDS

BAKER I.D.	HC-SW01	HC-SW02	HC-SW03	HC-SW03D	HC-SW04
LABORATORY I.D.	5167-16	5162	5166	5163	5152
DATE COLLECTED	08-MAY-1994	06-MAY-1994	06-MAY-1994	06-MAY-1994	08-MAY-1994
UNITS	ug/l	ug/l	ug/l	ug/l	ug/l

NO SEMIVOLATILE ORGANIC COMPOUNDS WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HADNOT CREEK
SURFACE WATER - VOLATILE ORGANIC COMPOUNDS

BAKER I.D.	HC-SW01	HC-SW02	HC-SW03	HC-SW03D	HC-SW04
LABORATORY I.D.	5167-16	5162	5166	5163	5152
DATE COLLECTED	08-MAY-1994	06-MAY-1994	06-MAY-1994	06-MAY-1994	08-MAY-1994
UNITS	ug/l	ug/l	ug/l	ug/l	ug/l

NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
 ANALYTICAL SUMMARY OF RESULTS
 BACKGROUND - HOLLAND MILL CREEK
 SURFACE WATER - METALS

BAKER I.D.	HM-SW01	HM-SW02	HM-SW03
LABORATORY I.D.	5167-18	5161	5160
DATE COLLECTED	08-MAY-1994	06-MAY-1994	06-MAY-1994
UNITS	UG/L	UG/L	UG/L
Aluminum	259 U	535 J	288 U
Barium	49 J	38 J	20 J
Calcium	14100	40200	302000
Chromium	10 U	36 J	158 J
Iron	425	559	320
Lead	1 U	2.5 U	58.1
Magnesium	2830	109000	754000
Potassium	1670 U	41100	288000
Selenium	1.5 J	5 U	41 J
Silver	10 U	17 U	37 J
Sodium	16500	739000	6750000

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HOLLAND MILL CREEK
SURFACE WATER - PESTICIDES AND PCBs

BAKER I.D.	HM-SW01	HM-SW02	HM-SW03
LABORATORY I.D.	5167-18	5161	5160
DATE COLLECTED	08-MAY-1994	06-MAY-1994	06-MAY-1994
UNITS	ug/l	ug/l	ug/l

NO PESTICIDES OR PCBs WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HOLLAND MILL CREEK
SURFACE WATER - SEMIVOLATILE ORGANIC COMPOUNDS

BAKER I.D.	HM-SW01	HM-SW02	HM-SW03
LABORATORY I.D.	5167-18	5161	5160
DATE COLLECTED	08-MAY-1994	06-MAY-1994	06-MAY-1994
UNITS	ug/l	ug/l	ug/l

NO SEMIVOLATILE ORGANIC COMPOUNDS WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HOLLAND MILL CREEK
SURFACE WATER - VOLATILE ORGANIC COMPOUNDS

BAKER I.D.	HM-SW01	HM-SW02	HM-SW03
LABORATORY I.D.	5167-18	5161	5160
DATE COLLECTED	08-MAY-1994	06-MAY-1994	06-MAY-1994
UNITS	ug/l	ug/l	ug/l

NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - WEBB CREEK
SURFACE WATER - METALS

BAKER I.D.	WC-SW02	WC-SW03
LABORATORY I.D.	5167-8	5158
DATE COLLECTED	06-MAY-1994	06-MAY-1994
UNITS	UG/L	UG/L
Barium	29 J	27 J
Calcium	46900	40500
Chromium	15 U	97 J
Iron	660	321
Magnesium	29000	44800
Potassium	10900	136000
Sodium	202000	895000

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - WEBB CREEK
SURFACE WATER - PESTICIDES AND PCBs

BAKER I.D.	WC-SW02	WC-SW03
LABORATORY I.D.	5167-8	5158
DATE COLLECTED	06-MAY-1994	06-MAY-1994
UNITS	ug/l	ug/l
Aldrin	0.035 J	0.05 U

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - WEBB CREEK
SURFACE WATER - SEMIVOLATILE ORGANIC COMPOUNDS

BAKER I.D.	WC-SW02	WC-SW03
LABORATORY I.D.	5167-8	5158
DATE COLLECTED	06-MAY-1994	06-MAY-1994
UNITS	ug/l	ug/l

NO SEMIVOLATILE ORGANIC COMPOUNDS WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - WEBB CREEK
SURFACE WATER - VOLATILE ORGANIC COMPOUNDS

BAKER I.D.	WC-SW02	WC-SW03
LABORATORY I.D.	5167-8	5158
DATE COLLECTED	06-MAY-1994	06-MAY-1994
UNITS	ug/l	ug/l

NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED

**Analytical Summary of Results
(Sediment)**

MARINE CORPS BASE CAMP LEJEUNE¹
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HADNOT CREEK
SEDIMENT - METALS

BAKER I.D.	HC-SD01-06	HC-SD01-612	HC-SD02-06	HC-SD02-612	HC-SD03-06	HC-SD03-06D	HC-SD03-612	HC-SD04-06	HC-SD04-612
LABORATORY I.D	5050	5044	5057-2	5054	5238	5237	5236	5052	5051
DATE COLLECTED	8-MAY-1994	8-MAY-1994	6-MAY-1994	6-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994	8-MAY-1994	8-MAY-1994
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	2940 J	1880 J	7820 J	10100 J	3120 J	7310 J	14000 J	780 J	1260 J
Arsenic	0.46 J	0.28 J	1.1 J	1.9 J	7.5 U	6.5 U	7.9 U	0.45 J	0.26 J
Barium	16.3 J	14.6 J	9.2 J	8.7 J	3.9 U	10.2	17.2	4.1 J	5.5 J
Beryllium	0.14 J	0.16 U	0.25 J	0.32 J	0.95 R	0.92 R	1.3 R	0.13 U	0.15 U
Cadmium	0.03 J	0.03 J	0.1 J	0.04 J	0.66	0.08	0.04 U	0.03 J	0.03 UJ
Calcium	3620 J	3330 J	2030 J	1610 J	3380 J	3350 J	3310 J	1030 J	2150 J
Chromium	2.3	3.2	6	6	16.1	18.8	41.6	2	1.3
Cobalt	1.6 U	1.8 U	2.7 U	1.8 U	3.7 U	4.5	5	1.5 U	1.6 U
Copper	1	1.1	1.5	0.81	4.9 U	4.3 U	3.5 U	0.66	0.73
Iron	648	586	3660	4630	7280 J	11100 J	1700 J	382	583
Lead	0.77 R	0.88 R	1.1 R	7.1 R	5.3	3.7	8.6 R	1 R	1.1 R
Magnesium	87.7	77.1	1450	1040	4420	4130	6540	48.2 U	62.5 U
Manganese	6.9	6.5	6.5	4.9	17.1	35.1	64.7	3.7	3.5
Mercury	0.19 R	0.13 R	0.42 R	0.24 R	0.34	0.25	0.42	0.11 R	0.08 R
Nickel	1.6 U	1.8 U	2.7 U	1.8	9.9	5.5	12.1	1.5 U	1.6 U
Potassium	349 U	396 U	623	395 U	1420	1250	1840	324 U	355 U
Selenium	0.27 J	0.34 J	0.6 J	0.47 J	0.48 UJ	0.41 UJ	0.51 UJ	0.21 J	0.2 UJ
Sodium	339 U	385 U	2750	1630	14100 R	9860 R	6620 R	315 U	344 U
Thallium	0.14	0.16	0.42	0.28	0.34 U	0.29	0.44	0.13 U	0.15 U
Vanadium	2.6	2.8	8.4	7	20.5	18.4	36.9	1.5	1.9
Zinc	4.9 U	4.5 U	9.7 U	6.6 U	20.8	34.3	40	4.5 U	8.3 U

MARINE COPRS BASE CAMP LEJEUNE
 ANALYTICAL SUMMARY OF RESULTS
 BACKGROUND - HADNOT CREEK
 SEDIMENT - PESTICIDES AND PCBs

BAKER I.D.	HC-SD01-06	HC-SD01-612	HC-SD02-06	HC-SD02-612	HC-SD03-06	HC-SD03-06D	HC-SD03-612	HC-SD04-06	HC-SD04-612
LABORATORY I.D.	5057-7	5044	5055	5054	5238	5237	5236	5052	5051
DATE COLLECTED	8-MAY-1994	8-MAY-1994	6-MAY-1994	6-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994	8-MAY-1994	8-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
beta-BHC	2.4 U	2.8 U	4.2 U	2.8 U	5.8 U	4.9 U	6.2 U	2.3 U	1.7 J
delta-BHC	0.64 J	2.8 U	4.2 U	2.8 U	5.8 U	4.9 U	6.2 U	2.3 U	2.5 U
Heptachlor	0.48 J	2.8 U	4.2 U	2.8 U	5.8 U	4.9 U	6.2 U	2.3 U	2 J
4,4'-DDD	2.4 U	2.8 U	1.5 J	2.8 U	11 U	2 J	4 J	2.3 U	2.5 U
4,4'-DDT	4.7 U	5.4 U	8.2 U	5.3 U	11 U	1.2 J	12 U	4.4 U	4.8 U
Methoxychlor	24 U	28 U	42 U	28 U	58 U	49 U	62 U	0.94 J	25 U
Endrin aldehyde	0.59 J	5.4 U	7.1 J	0.77 J	11 U	9.6 U	12 U	4.4 U	4.8 U

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HADNOT CREEK
SEDIMENT - SEMIVOLATILE ORGANIC COMPOUNDS

BAKER I.D.	HC-SD01-06	HC-SD01-612	HC-SD02-06	HC-SD02-612	HC-SD03-06	HC-SD03-06D	HC-SD03-612	HC-SD04-06	HC-SD04-612
LABORATORY I.D.	5057-7	5044	5055	5054	5238	5237	5236	5052	5051
DATE COLLECTED	8-MAY-1994	8-MAY-1994	6-MAY-1994	6-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994	8-MAY-1994	8-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

NO SEMIVOLATILE ORGANIC COMPOUNDS WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
 ANALYTICAL SUMMARY OF RESULTS
 BACKGROUND - HADNOT CREEK
 SEDIMENT - VOLATILE ORGANIC COMPOUNDS

BAKER I.D.	HC-SD01-06	HC-SD01-612	HC-SD02-06	HC-SD02-612	HC-SD03-06	HC-SD03-06D	HC-SD03-612	HC-SD04-06	HC-SD04-612
LABORATORY I.D.	5057-7	5044	5055	5054	5238	5237	5236	5052	5051
DATE COLLECTED	8-MAY-1994	8-MAY-1994	6-MAY-1994	6-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994	8-MAY-1994	8-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Acetone	70 J	16 UJ	25 UJ	16 UJ	34 UJ	29 UJ	37 UJ	13 UJ	15 UJ
Carbon Disulfide	14 U	16 U	14	19 J	34 U	29 U	37 U	13 U	15 U
2-Butanone	7 J	16 UJ	25 UJ	16 UJ	34 UJ	29 UJ	37 UJ	13 UJ	15 UJ

MARINE CORPS BASE CAMP LEJEUNE
 ANALYTICAL SUMMARY OF RESULTS
 BACKGROUND - HOLLAND MILL CREEK
 SEDIMENT - METALS

BAKER I.D.	HM-SD01-06	HM-SD01-06D	HM-SD01-612	HM-SD02-06	HM-SD02-612	HM-SD03-06	HM-SD03-612
LABORATORY I.D.	5243-18	5220	5219	5242	5241	5240	5239
DATE COLLECTED	08-MAY-1994	08-MAY-1994	08-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	457 J	337 J	505 J	13600 J	9850 J	8760 J	9760 J
Barium	3.4 U	2.1 U	3.9 U	18.7	13.7	11	12.9
Cadmium	0.03	0.11	0.03	0.08	0.06	0.05	0.03
Calcium	282 J	508 J	2850 J	4250 J	7860 J	2920 J	2000 J
Chromium	1.6	1.1	1.5	38.4	28.1	30.7	36
Cobalt	1.3 U	1.4 U	1.4 U	4.4	3.5 U	3.9 U	4
Iron	262 J	225 J	350 J	15800 J	32400 J	16900 J	19900 J
Lead	0.62 J	0.74 J	1	6	7.2	9.2	5.7
Magnesium	35.5	26.7	34.4	4940	3000	5700	4300
Manganese	1.9	1.3	1.6	67.2	55.5	50.2	61.3
Mercury	0.09	0.16	0.18	0.27	0.32	0.35	0.27
Nickel	1.3 U	1.4 U	1.4 U	11.2	9.6	14.2	10.3
Potassium	297 U	304 U	317 U	1510	1600	1720	1760
Selenium	0.17 U	0.17 U	0.25 J	0.4 J	0.45 UJ	0.5 UJ	0.37 UJ
Silver	0.49	0.37 U	0.39 U	0.85 U	0.95 U	1.1 U	0.79 U
Thallium	0.12 U	0.12 U	0.13	0.37	0.32	0.35 U	0.27
Vanadium	0.84	0.62 U	0.66	27.1	30	28.4	29.5
Zinc	9.7	6.7	8.3	43.1	33.2	34.1	29.9

MARINE CORPS BASE CAMP LEJEUNE
 ANALYTICAL SUMMARY OF RESULTS
 BACKGROUND - HOLLAND MILL CREEK
 SEDIMENT - PESTICIDES AND PCBs

BAKER I.D.	HM-SD01-06	HM-SD01-06D	HM-SD01-612	HM-SD02-06	HM-SD02-612	HM-SD03-06	HM-SD03-612
LABORATORY I.D.	5243-18	5220	5219	5242	5241	5240	5239
DATE COLLECTED	08-MAY-1994	08-MAY-1994	08-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
beta-BHC	2.1 UJ	7.3 J	3.8	5.1 U	5.5 U	6 U	4.5 U
Aldrin	2.1 U	0.56 J	0.72 J	5.1 U	5.5 U	6 U	4.5 U
Dieldrin	4 U	0.58 J	1.5 J	9.8 U	11 U	12 U	8.8 U
4,4'-DDE	4 U	1 J	4.3	9.8 U	11 U	12 U	8.8 U
4,4'-DDD	4 U	0.87 J	3.1	9.8 U	11 U	2.5 J	1.1 J
4,4'-DDT	4 U	4.1 U	1.7 J	9.8 U	11 U	12 U	8.8 U
alpha-Chlordane	2.1 U	2.1 U	1.3 J	5.1 U	5.5 U	6 U	4.5 U
gamma-Chlordane	2.1 U	2.1 U	3	5.1 U	5.5 U	6 U	4.5 U

MARINE CORPS BASE CAMP LEJEUNE
 ANALYTICAL SUMMARY OF RESULTS
 BACKGROUND - HOLLAND MILL CREEK
 SEDIMENT - SEMIVOLATILE ORGANIC COMPOUNDS

BAKER I.D.	HM-SD01-06	HM-SD01-06D	HM-SD01-612	HM-SD02-06	HM-SD02-612	HM-SD03-06	HM-SD03-612
LABORATORY I.D.	5243-18	5220	5219	5242	5241	5240	5239
DATE COLLECTED	08-MAY-1994	08-MAY-1994	08-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Di-n-butylphthalate	401 U	412 U	429 U	614 J	619 J	1150 U	534 J
bis(2-Ethylhexyl)phthalate	401 UJ	412 UJ	429 UJ	943 U	1058 U	1150 U	454 J

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HOLLAND MILL CREEK
SEDIMENT - VOLATILE ORGANIC COMPOUNDS

BAKER I.D.	HM-SD01-06	HM-SD01-06D	HM-SD01-612	HM-SD02-06	HM-SD02-612	HM-SD03-06	HM-SD03-612
LABORATORY I.D.	5243-18	5220	5219	5242	5241	5240	5239
DATE COLLECTED	08-MAY-1994	08-MAY-1994	08-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
 ANALYTICAL SUMMARY OF RESULTS
 BACKGROUND - WEBB CREEK
 SEDIMENT - METALS

BAKER I.D.	WC-SD02-06	WC-SD02-612	WC-SD03-06	WC-SD03-612
LABORATORY I.D.	5243-10	5232	5235	5234
DATE COLLECTED	06-MAY-1994	06-MAY-1994	07-MAY-1994	07-MAY-1994
UNITS	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	14800 J	8200	11500 J	14600 J
Barium	28.2	13.3	14.6	19.2
Cadmium	0.26	0.12	0.06	0.07
Calcium	4060 J	3260 J	2190 J	3380 J
Chromium	18.1	8.7	30.3	42.6
Cobalt	3.5	2.3 U	2.4 U	3.9
Iron	14600 J	8120	12500 J	20700 J
Lead	16.9	11.9	5.1	5.5
Magnesium	1690	618	4420	6060
Manganese	40.2	26	43.4	47.8
Mercury	0.4	0.36	0.23	0.26
Nickel	5.7	3.8	8.1	11.4
Potassium	739 U	508 U	1410	1590
Thallium	0.3 U	0.21 U	0.24	0.32 U
Vanadium	21	11.9	21.4	31
Zinc	52	27.8	28.3	27.2

MARINE CORPS BASE CAMP LEJEUNE
 ANALYTICAL SUMMARY OF RESULTS
 BACKGROUND - WEBB CREEK
 SEDIMENT - PESTICIDES AND PCBs

BAKER I.D.	WC-SD02-06	WC-SD02-612	WC-SD03-06	WC-SD03-612
LABORATORY I.D.	5243-10	5232	5235	5234
DATE COLLECTED	06-MAY-1994	06-MAY-1994	07-MAY-1994	07-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg
delta-BHC	5.2 U	0.79 J	3.7 U	5.4 U
Aldrin	1.2 J	3.9 U	3.7 U	5.4 U
Dieldrin	3.7 J	7.5 U	7.1 U	10 U
4,4'-DDE	16	7.5 U	7.1 U	10 U
4,4'-DDD	12	7.5 U	7.1 U	10 U
4,4'-DDT	2.6 J	1.1 J	0.76 J	10 U

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - WEBB CREEK
SEDIMENT - SEMIVOLATILE ORGANIC COMPOUNDS

BAKER I.D.	WG-SD02-06	WC-SD02-612	WC-SD03-06	WC-SD03-612
LABORATORY I.D.	5243-10	5232	5235	5234
DATE COLLECTED	06-MAY-1994	06-MAY-1994	07-MAY-1994	07-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg
Benzo(a)pyrene	1000 U	688 U	714 U	544 J

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - WEBB CREEK
SEDIMENT - VOLATILE ORGANIC COMPOUNDS

BAKER I.D.	WC-SD02-06	WC-SD02-612	WC-SD03-06	WC-SD03-612
LABORATORY I.D.	5243-10	5232	5235	5234
DATE COLLECTED	06-MAY-1994	06-MAY-1994	07-MAY-1994	07-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg

NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED

Field Chemistry Results

**FIELD CHEMISTRY FROM BIOLOGICAL SAMPLES
HADNOT CREEK, HOLLAND MILL CREEK, AND WEBB CREEK
MCB CAMP LEJEUNE, NORTH CAROLINA**

Sample Identification	Sample Location	Salinity (ppt)	Conductivity (micromhos/cm)	DO (mg/L)	pH (S.U.)	Temperature (deg. C)
HC01-SW/SD-FS/BN	surface	0	13.5	7.7	6.89	17
	bottom	NA	NA	NA	NA	NA
HC02-SW/SD	surface	0.8	1,810	5.9	6.71	16.1
	bottom	15.5	21,900	1.0	6.73	18.2
HC02-FS/BN	surface	0.3	1,200	NA	NA	20.5
	bottom	13.1	20,900	NA	NA	22
	surface	0	720	7.3	7.2	15.5
	bottom	10.5	17,200	1	6.7	20
	surface	0	1,050	NA	NA	20.5
	bottom	16.5	22,800	NA	NA	21
HC03-SW/SD	surface	17	25,500	12	7.79	17.5
	bottom	NA	NA	NA	NA	NA
HC03-FS/BN	surface	17.9	26,500	NA	7.69	17.8
	bottom	NA	NA	NA	NA	NA
HC04-SW/SD-FS/BN	surface	0	65	5.3	6.16	17.3
	bottom	NA	NA	NA	NA	NA
HM01-SW/SD-FS/BN	surface	0	140	8.0	6.9	17.5
	bottom	NA	NA	NA	NA	NA
HM02-SW/SD	surface	24	36,000	11.8	7.9	17.2
	bottom	25	38,000	11.6	7.6	17.6
HM02-FS/BN	surface	21	29,000	7.75	NA	21
	bottom	19	27,000	7.75	NA	20
	surface	2	3,810	NA	NA	19
	bottom	3.75	6,000	NA	NA	19.5
	surface	1	2,490	5.8	6.85	15.5
	bottom	1.1	2,700	5.0	6.72	15.2
HM03-SW/SD	surface	13.5	19,000	3.4	6.81	17.8
	bottom	NA	NA	NA	NA	NA
HM03-FS/BN	surface	22	32,000	10.8	7.90	17.5
	bottom	NA	NA	NA	NA	NA

Sample Identification	Sample Location	Salinity (ppt)	Conductivity (micromhos/cm)	DO (mg/L)	pH (S.U.)	Temperature (deg. C)
WC02-SW/SD	surface	4.5	9,000	9.0	7.48	21
	bottom	5.5	9,000	7.0	7.48	20.5
	surface	0	975	5.1	7.08	17.5
	bottom	0	1,250	4.4	7.15	17.5
WC02-FS/BN	surface	0	850	5.5	6.98	20.5
	bottom	7	10,500	6.1	6.85	21
WC03-SW/SD	surface	10	16,500	10	7.33	23
	bottom	10	16,500	8.5	7.36	22.4
WC03-FS/BN	surface	12	17,200	9.1	7.43	20
	bottom	12.8	18,000	9.6	7.56	19

ppt = parts per thousand

S.U. = Standard Units

NA = Not Analyzed

Sample Location = Water surface or water bottom

DO = Dissolved Oxygen level

FS = Fish sample

BN = Benthic Macroinvertebrate sample

SW/SD = Surface water/sediment sample

**Positive Detection Summary
Fish Fillet Tissue Analysis**

MARINE CORPS BASE CAMP LEJEUNE
 BACKGROUND - HADNOT CREEK
 POSITIVE DETECTIONS SUMMARY
 FISH FILLET TISSUE SAMPLES

Parameter	HC1A-RD (Red Drum) (mg/kg)	HC1A-SF (Southern Flounder) (mg/kg)	HC1A-LBA (Largemouth Bass) (mg/kg)	HC1A-LBB (Largemouth Bass) (mg/kg)	HC1A-LBC (Largemouth Bass) (mg/kg)	HC1A-BCA (Blue Crab) (mg/kg)	HC1A-BCA (Blue Crab) (mg/kg)	HC1A-GA (Longnose Gar) (mg/kg)	HC1A-GB (Longnose Gar) (mg/kg)
Volatiles									
Acetone	0.13 J	0.056 J	0.077 J	0.07 J	0.037 J	0.11 J	0.099 J	0.028 J	0.016 J
Methylene Chloride	0.041	0.013 B	0.017 B	0.016 B	0.003 B	0.011 B	0.022 B	0.004 B	0.015 B
Semivolatiles									
Phendl	ND	0.46	ND	2.1	1.6	ND	ND	ND	ND
Di-n-octyl phthalate	ND	ND	0.061 J	ND	0.085	ND	ND	0.29 J	0.5 J
Bis(2-ethylhexyl)phthalate	1.1 B	0.82 B	3.6 B	3.2 B	4.8 B	ND	ND	11 J	17 J
Pesticides/PCBs									
4,4'-DDD	ND	ND	ND	ND	ND	0.0066	0.0056	ND	ND
4,4'-DDE	ND	ND	ND	ND	ND	0.0087	0.0046	0.012	0.0097
alpha-Chlordane	ND	ND	ND	ND	0.00017 P	0.0018	0.0012	ND	ND
Aroclor-1260	ND	ND	ND	ND	ND	ND	ND	ND	ND
Inorganics									
Aluminum	ND	ND	ND	36.5	ND	ND	ND	ND	ND
Arsenic	0.7 L	0.82	0.34 L	0.37 L	0.36 K	0.68	0.39	2.5	3.9 L
Barium	ND	ND	ND	ND	ND	ND	10.1	ND	ND
Cadmium	ND	ND	ND	ND	ND	0.14	0.11 J	ND	ND
Calcium	154	271	528	684	1170	4480	32200	493	520
Chromium	0.38 L	ND	0.23 L	0.68 L	0.63 L	ND	0.52 L	0.32 L	0.21 L
Copper	0.3 J	0.18 J	0.2 J	0.24 J	0.28 J	7.9	5.8	0.46 J	0.18 J
Iron	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium	285	254	298	292	319	591	1800	286	300
Manganese	0.13	0.38	0.09 J	0.09 J	0.08 J	1.8	13.6	0.24 J	0.21 J
Mercury	0.07	0.05	0.22	0.24	0.17 K	0.08	0.02 J	0.22	0.14
Nickel	ND	ND	ND	ND	ND	ND	ND	0.45 L	ND
Potassium	3930	3700	3740	3610	4040	2170	1860	3410	3270
Sodium	1060	607	505	580	529	4060	4270	623	523
Zinc	5	5	3.9	4.4	4.6 L	25	17.9	6.5	4.6

Fish Distribution and Characterization

**FISH DISTRIBUTION AND CHARACTERIZATION
BACKGROUND STATIONS - WEBB, HADNOT, AND HOLLAND MILL CREEKS**

MCB CAMP LEJEUNE, NORTH CAROLINA

Common Name	Scientific Name	Length N.C. (cm)	Length Atlas (cm)	Water Type	Habitat	Spawning	Tolerance	Family	Sources
Atlantic Menhaden	<u>Brevoortia tyrannus</u>	20	46	Brackish or marine, enters freshwater	Rivers, streams	NA	Intermediate	Clupeidae	1,2,3,4
Spot	<u>Leiostomas xanthurus</u>	NA	NA	Brackish or marine, enters freshwater	NA	NA	NA	Sciaenidae	1
Stripped Mullet	<u>Mugil cephalus</u>	NA	23-35	Brackish or marine, enters freshwater	Rivers	NA	NA	Mugilidae	1,2
Pinfish	<u>Lagodon rhomboides</u>	NA	38	Marine, seldom enters freshwater	Shallow waters	NA	NA	Sparidae	1,2
Mud Catfish (Yellow Bullhead)	<u>Ictalurus natalis</u>	24	-38	Freshwater	Rivers Streams	April through May	Tolerant	Ictaluridae	1,2,3
Redbreast Sunfish	<u>Lepomis auritus</u>	18	6-15	Freshwater	Streams	April through June	NA	Centrarchidae	1,2,3
Atlantic Croaker	<u>Micropogonias undulatus</u>	NA	61	Estuaries, brackish- water or marine	NA	NA	NA	Sciaenidae	1,2
Pumpkinseed	<u>Lepomis gibbosus</u>	20	8-20	Freshwater	Streams Creeks	April through October	Moderately Tolerant	Centrarchidae	1,2,3,4
Longnose Gar	<u>Lepisosteus osseus</u>	80	-150	Freshwater; May enter brackish water	Rivers	April through May	Intermediate	Lepisosteidae	1,2,3
Summer Flounder	<u>Paralichthys dentatus</u>	NA	37	Brackish or marine, enters freshwater	Rivers	NA	NA	Bothidae	1
Flier	<u>Centrarchus macropterus</u>	12	7-19	Freshwater	Streams	April through May	NA	Centrarchidae	1,2,3
Chain Pickerel	<u>Esox niger</u>	44	38-45	Freshwater	Streams Creeks	February through March	Intermediate	Esocidae	1,2,3

**FISH DISTRIBUTION AND CHARACTERIZATION
BACKGROUND STATIONS - WEBB, HADNOT, AND HOLLAND MILL CREEKS
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA**

Common Name	Scientific Name	Length N.C. (cm)	Length Atlas (cm)	Water Type	Habitat	Spawning	Tolerance	Family	Sources
Redear Fish	<u>Lepomis microlophus</u>	18	14-25	Freshwater	Streams	May through August	Intermediate	Centrarchidae	1,2,3
Warmouth	<u>Lepomis gulosus</u>	16	8-26	Freshwater	Rivers Streams	May through August	Intermediate	Centrarchidae	1,2,3
White Perch	<u>Morone americana</u>	NA	to 48	Brackish water; Freshwater	Bays and estuaries; Rivers and lakes	NA	Intermediate	Percichthyidae	3,5
Bluefish	<u>Pomatomus saltatrix</u>	NA	NA	Coastal waters	Surface waters; Near shore and off shore	NA	NA	Pomatomidae	2
Bluegill	<u>Lepomis macrochirus</u>	25	18-20	Freshwater	Rivers Streams Creeks	May through October	Intermediate	Centrarchidae	1,2,3
White Catfish	<u>Ictalurus catus</u>	31	-46	Freshwater	Rivers	May through June	Intermediate	Ictaluridae	1,2,3
Largemouth Bass	<u>Micropterus salmoides</u>	48	12-70	Freshwater	Rivers Streams Creeks	May through June	Intermediate	Centrarchidae	1,2,3
Mummichog	<u>Fundulus heteroclitus</u>	7	8-10	Shallow coastal waters	Rivers Streams	April through August	NA	Cyprinodontid ae	1,2,3
Redfin Pickerel	<u>Esox americanus</u>	23	25-30	Freshwater	Streams Creeks	February through March	NA	Esocidae	1,2,3
Hog Choker	<u>Trinectes maculatus</u>	5	7-12	Shallow coastal waters; Occasionally enters freshwater	Rivers Streams	March through April	NA	Soleidae	1,2,3

**FISH DISTRIBUTION AND CHARACTERIZATION
 BACKGROUND STATIONS - WEBB, HADNOT, AND HOLLAND MILL CREEKS
 REMEDIAL INVESTIGATION, CTO-0232
 MCB CAMP LEJEUNE, NORTH CAROLINA**

Common Name	Scientific Name	Length N.C. (cm)	Length Atlas (cm)	Water Type	Habitat	Spawning	Tolerance	Family	Sources
Pirate Perch	<u>Aphredoderus sayanus</u>	9	7-14	Freshwater	Streams Creeks	January through March	Intermediate	Aphredoderida e	1,2,3
Eastern Mosquito (Mosquitofish) -	<u>Gambusia affinis</u>	NA	NA	Fresh or brackish water	Ponds, lakes, ditches, backwaters, sluggish streams	NA	Intermediate	Poeciliidae	2,5

- 1 Menhinick, 1992.
 - 2 Boschung, 1983.
 - 3 USEPA, 1989d.
 - 4 Raasch, 1991.
 - 5 Kennish, 1986.
- NA = Information not Available

**TOTAL NUMBER AND PERCENT OF AQUATIC SPECIES IDENTIFIED PER AREA
WEBB CREEK AND HADNOT CREEK**

MCB CAMP LEJEUNE, NORTH CAROLINA

SPECIES	WEBB CREEK		Total Detected	HADNOT CREEK				Total Detected
	WC02	WC03		HC01	HCO2	HC03	HC04	
FISH SPECIES								
Spot	4		4			12		12
Stripped Mullet	4		4			3		3
Pumpkinseed			0		3			3
Mudcat	3		3	3				3
Redbreast sunfish	1		1	2				2
Long-Nosed Gar	9	5	14					0
American flier			0	3				3
Chain pickerel			0	1				1
Redear fish			0	1				1
Atlantic croaker			0			5		5
Warmouth			0		1			1
Bluefish			0			3		3
Yellow Bullhead	3		3	2				2
Blue gill	4		4					0
White catfish	1		1					0
Largemouth bass	2		2					0
Summer flounder		1	1					0
Mummichog		3	3					0
Pinfish	25	24	49			5		5
Atlantic menhaden			0			2		2
Redfin pickerel			0				2	2
White perch			0			1		1
Hog choker			0			1		1
Pirate perch			0				8	8

**TOTAL NUMBER AND PERCENT OF AQUATIC SPECIES IDENTIFIED PER AREA
WEBB CREEK AND HADNOT CREEK**

MCB CAMP LEJEUNE, NORTH CAROLINA

SPECIES	WEBB CREEK		Total Detected	HADNOT CREEK				Total Detected
	WC02	WC03		HC01	HCO2	HC03	HC04	
NO. OF SPECIES	9	4	12	5	2	8	2	18
NO. OF INDIVIDUALS	53	33	86	10	4	32	10	56
OTHER-AQUATIC SPECIES								
Grass shrimp		3	3					0
Crayfish			0				3	3
NUMBER OF SPECIES	0	1	1	0	0	0	1	1
NO. OF INDIVIDUALS	0	3	3	0	0	0	3	3

**TOTAL NUMBER AND PERCENT OF AQUATIC SPECIES IDENTIFIED PER AREA
HOLLAND MILL CREEK**

MCB CAMP LEJEUNE, NORTH CAROLINA

SPECIES	HOLLAND MILL CREEK (CARTWHEEL BRANCH)			Total Detected
	HM01	HM02	HM03	
Spot			8	8
Stripped Mullet		11	3	14
Pumpkinseed	16	2		18
Chain pickerel	2			2
Swamp darter	6			6
Mud sunfish	1			1
Black drum		1		1
Ligar		3		3
Gizzard Shad		2		2
Spotted sunfish		2		2
Blue gill	2	1		3
Atlantic menhaden			199	199
Largemouth bass		1		1
Hog choker			2	2
Summer flounder		1	17	18
Mummichog		6		6
Pinfish		7	4	11
Goby, freshwater	1	1		2
NUMBER OF SPECIES	6	12	6	18
NO. OF INDIVIDUALS	28	38	233	299

**TOTAL NUMBER AND PERCENT OF AQUATIC SPECIES IDENTIFIED PER AREA
HOLLAND MILL CREEK**

MCB CAMP LEJEUNE, NORTH CAROLINA

SPECIES	HOLLAND MILL CREEK (CARTWHEEL BRANCH)			Total Detected
	HM01	HM02	HM03	
OTHER AQUATIC SPECIES				
Unknown	1			1
Grass shrimp		13		13
Crayfish	3			3
NUMBER OF SPECIES	2	1	0	3
NO. OF INDIVIDUALS	4	13	0	17

HADNOT CREEK - BACKGROUND STATIONS

SPECIES	COC SAMPLE NO.	HC01			HC02			HC03			HC04		
		Fish Length (cm)	Mass Weight	Average Weight (g)	Fish Length (cm)	Mass Weight	Average Weight (g)	Fish Length (cm)	Mass Weight	Average Weight (g)	Fish Length (cm)	Mass Weight	Average Weight (g)
Stripped Mullet	HC03							15.25	45	45			
								12.5	20	20			
								12.5	20	20			
		COUNT						3		3			
		AVERAGE						13.41666667		28.33333333			
Atlantic Menhaden	HC03							+1 collected, no length or weight					
								5	<5	2.5			
		COUNT						2		2			
		AVERAGE						5		2.5			
		MINIMUM						5		2.5			
Blue Fish	HC03						7	7	7				
							11	17	17				
							8	8	8				
		COUNT						3		3			
		AVERAGE						8.66666667		10.66666667			
Spot	HC03						12.5	22	22				
							5.5	<5.0	2.5				
							5.75	<5.0	2.5				
							5	<5.0	2.5				
							3.5	<5.0	2.5				
							5.5	<5.0	2.5				
							14	40	40				
							13.5	35	35				
							12	35	35				
							14	35	35				
							5.5	<5.0	2.5				
							11.5	20	20				
		COUNT							12		12		
AVERAGE							9.020833333		16.83333333				
MAXIMUM							14		40				
MINIMUM							3.5		2.5				

HOLLAND MILL CREEK - BACKGROUND STATIONS

SPECIES	COC SAMPLE NO.	HM01 Fish Length (cm)	Mass Weight	Average Weight (g)	HM02 Fish Length (cm)	Mass Weight	Average Weight (g)	HM03 Fish Length (cm)	Mass Weight	Average Weight (g)	
Stripper Mullet	HM02				38.5	640	640				
					39.5	600	600				
					34.5	400	400				
					34.5	400	400				
					33.5	360	360				
					34	340	340				
					37	460	460				
					35	520	520				
					33.5	410	410				
					32	320	320				
					31	370	370				
			HM03						14.5	40	40
									6.5	<5	2.5
									+1 collected, no length or weight		
		COUNT				11		11	3		3
AVERAGE				34.81818182		438.1818182	10.5		21.25		
MAXIMUM				39.5		640	14.5		40		
MINIMUM				31		320	6.5		2.5		
Atlantic Menhaden	HM03							6	24	4	
								6		4	
								5.7		4	
								5.4		4	
								5.5		4	
								5.6		4	
								5.7	22	2.2	
								5.5		2.2	
								5		2.2	
								5.5		2.2	
								5.5		2.2	
								5.2		2.2	
								5.5		2.2	
								5.5		2.2	
								5.6		2.2	
								6.2		2.2	
								6	25	2.5	
								5.5		2.5	
								5		2.5	
								5.5		2.5	
								5.5		2.5	
								5.5		2.5	
								6		2.5	
								5		2.5	
								5.5		2.5	
								5.5	20	2	
								5.7		2	
								5		2	
								5		2	
								6		2	
								5.5		2	
								5.5		2	
								6		2	
								6		2	
								5.5	27	1.8	
								5.5		1.8	
								5.8		1.8	
								5.5		1.8	
						5.7		1.8			
						6		1.8			
						6		1.8			
						6.5		1.8			
						5.5		1.8			
						6.5		1.8			
						5.5		1.8			
						5.5		1.8			
						5.5		1.8			
						6		1.8			
						5.5		1.8			
						5.5		1.8			
						5.5	20	2			
						4.5		2			
						5		2			
						5.5		2			
						5.5		2			
						5.5		2			
						6		2			
						5.5		2			
						6		2			
						6		2			
						6		2			
						138 collected no length or weight					
COUNT							199		61		
AVERAGE							5.6		2.2540984		
MAXIMUM							6.5		4		
MINIMUM							4.5		1.8		

HOLLAND MILL CREEK - BACKGROUND STATIONS

SPECIES	COC SAMPLE NO.	HM01			HM02			HM03			
		Fish Length (cm)	Mass Weight	Average Weight (g)	Fish Length (cm)	Mass Weight	Average Weight (g)	Fish Length (cm)	Mass Weight	Average Weight (g)	
Summer Flounder	HM02				29.5	250	250				
	HM03							33	400	400	
								43	850	850	
								20.5	90	90	
								24	120	120	
	+13 collected, no length or weight										
		COUNT				1		1	17		4
		AVERAGE				29.5		250	30.125		365
		MAXIMUM				29.5		250	43		850
		MINIMUM				29.5		250	20.5		90
Black Drum	HM02				28	350	350				
		COUNT			1		1				
		AVERAGE			28		350				
		MAXIMUM			28		350				
		MINIMUM			28		350				
Spotted Sunfish	HM02				15.5	65	65				
					17	110	110				
		COUNT			2		2				
		AVERAGE			16.25		67.5				
		MINIMUM			15.5		65				
Largemouth Bass	HM02				34	540	540				
		COUNT			1		1				
		AVERAGE			34		540				
		MAXIMUM			34		540				
		MINIMUM			34		540				
Hogchoker	HM03							+1 collected, no length or weight			
								6	10	10	
		COUNT						2		1	
		AVERAGE						6		10	
		MINIMUM						6		10	
Spot	HM03							5	<5	2.5	
								12	25	25	
								5.8	20	4	
								6		4	
								6.2		4	
								6.4		4	
								6.4		4	
	+1 collected, no length or weight										
		COUNT						8		7	
		AVERAGE						6.82857143		6.78571429	
	MAXIMUM						12		25		
	MINIMUM						5		2.5		
Blue Gill	HM02				17		105				
	HM01	10.5	10	10							
	+1 collected, no length or weight										
		COUNT	2	1	1	1		1			
		AVERAGE	10.5	10	17	105		105			

HOLLAND MILL CREEK - BACKGROUND STATIONS

SPECIES	COC SAMPLE NO.	HM01 Fish Length (cm)	Mass Weight	Average Weight (g)	HM02 Fish Length (cm)	Mass Weight	Average Weight (g)	HM03 Fish Length (cm)	Mass Weight	Average Weight (g)
Pumpkinseed	HM02				15	50	50			
					11.5	30	30			
	HM01	7.5	45	4.5						
		6.5		4.5						
		7.5		4.5						
		7.5		4.5						
		6		4.5						
		6		4.5						
		4.5		4.5						
		8.5		4.5						
		8		4.5						
		5.5		4.5						
		8	50	8.3						
		8.5		8.3						
		6.5		8.3						
		8.5		8.3						
	11		8.3							
	7.5		8.3							
	COUNT	16		16	2		2			
	AVERAGE	7.34375		5.925	13.25		40			
	MAXIMUM	11		8.3	15		50			
	MINIMUM	4.5		4.5	11.5		30			
Long-nose Gar	HM02				73	1250	1250			
					83	2000	2000			
					72.5	1640	1640			
		COUNT			3		3			
		AVERAGE			76.16666667		1630			
Pinfish	HM02				17.5	80	80			
	HM03							5	<5	2.5
					+6 collected, no length or weight			+3 collected, no length or weight		
		COUNT			7		1	4		1
		AVERAGE			17.5		80	5		2.5
	MAXIMUM			17.5		80	5		2.5	
	MINIMUM			17.5		80	5		2.5	
Gizzard Shad	HM02				33	480	480			
					34	460	460			
		COUNT			2		2			
		AVERAGE			33.5		470			
		MAXIMUM			34		480			
	MINIMUM			33		460				
Chain Pickerel	HM01	13	10	5						
		13.5		5						
		COUNT	2		2					
		AVERAGE	13.25		5					
		MAXIMUM	13.5		5					
	MINIMUM	13		5						
Unknown Fish	HM01	7.5	<5	2.5						
		COUNT	1		1					
		AVERAGE	7.5		2.5					
		MAXIMUM	7.5		2.5					
		MINIMUM	7.5		2.5					
Swamp Darter	HM01	6	16	3						
		6		3						
		6		3						
		6		3						
		6		3						
		6		3						
		6		3						
		COUNT	6		6					
		AVERAGE	6		3					
		MAXIMUM	6		3					
	MINIMUM	6		3						

HOLLAND MILL CREEK - BACKGROUND STATIONS

SPECIES	COC SAMPLE NO.	HM01			HM02			HM03			
		Fish Length (cm)	Mass Weight	Average Weight (g)	Fish Length (cm)	Mass Weight	Average Weight (g)	Fish Length (cm)	Mass Weight	Average Weight (g)	
Crayfish	HM01		8.5	15	5						
			4.5		5						
			5.5		5						
		COUNT		3		3					
		AVERAGE		6.1666667		5					
		MAXIMUM	8.5		5						
		MINIMUM	4.5		5						
Mud Sunfish	1 collected at HM01, no length or weight										
Mummichog	6 collected at HM02, no length or weight										
Goby, freshwater	1 collected at HM01 and 1 collected at HM02, no length or weight										
Gras shrimp	13 collected at HM02, no length or weight										

WEBB CREEK - BACKGROUND STATIONS

SPECIES	COC SAMPLE NO.	WC02		WC03			
		Fish Length (cm)	Mass Weight	Average Weight (g)	Fish Length (cm)	Mass Weight	Average Weight (g)
Stripper Mullet	WC02	39.5	500	500			
		35.5	380	380			
		41.5	700	700			
		37	600	600			
	COUNT	4		4			
AVERAGE	38.375		545				
MAXIMUM	41.5		700				
MINIMUM	35.5		380				
Summer Flounder	WC03				21	60	
					60	60	
					21	60	
					21	60	
	COUNT			1	1		
AVERAGE			21	60			
MAXIMUM			21	60			
MINIMUM			21	60			
Largemouth Bass	WC02	34	525	525			
		34	600	600			
	COUNT	2		2			
AVERAGE	34		562.5				
MAXIMUM	34		600				
MINIMUM	34		525				
Redbreast Sunfish	WC02	16	60	60			
	COUNT	1		1			
AVERAGE	16		60				
MAXIMUM	16		60				
MINIMUM	16		60				
White Catfish	WC02	37	750	750			
	COUNT	1		1			
AVERAGE	37		750				
MAXIMUM	37		750				
MINIMUM	37		750				
Spot	WC02	14.5	10	10			
		13	10	10			
		13	<10	5			
		+1 collected, no length or weight					
		COUNT	4		4		
	AVERAGE	13.5		8.33333333			
MAXIMUM	14.5		10				
MINIMUM	13		5				
Blue Gill	WC02	23	300	300			
		23.5	300	300			
		21.5	250	250			
		16.75	85	85			
	COUNT	4		4			
AVERAGE	21.1875		233.75				
MAXIMUM	23.5		300				
MINIMUM	16.75		85				

**Benthic Macroinvertebrate
Characterization and Statistics**

**SUMMARY STATISTICS OF BENTHIC MACROINVERTEBRATE SPECIES AT
HADNOT CREEK, HOLLAND MILL CREEK, AND WEBB CREEK
MCB CAMP LEJEUNE, NORTH CAROLINA**

Station	Number of Species	Number of Organisms	Species Density (#/m ²)	Species Diversity (Shannon-Weiner)	Species Diversity (Brillouin's)	Macroinvertebrate Biotic Index
WC02	7	79	504	0.570	0.518	9.4
WC03	7	74	472	0.323	0.279	9.6
HC01	20	286	1,823	0.802	0.755	7.8
HC02	4	79	504	0.196	0.072	7.6
HC03	8	244	1,555	0.683	0.675	NA
HC04	13	165	1,052	0.807	0.757	7.6
HM01	13	345	2,199	0.525	0.500	6.9
HM02	4	404	2,575	0.128	0.122	9.6
HM03	7	97	618	0.538	0.497	9.6

WC = Webb Creek Stations

HC = Hadnot Creek Stations

HM = Holland Mill Creek Stations

BN = Benthic Macroinvertebrate Sample

NA = Not Applicable

Species Density (#/m²) is based on a sample area of 0.0523 m².

**SYSTEMATIC LIST OF BENTHIC MACROINVERTEBRATE SPECIES
AT BACKGROUND STATIONS
(WEBB, HADNOT, AND HOLLAND MILL CREEKS)
MCB CAMP LEJEUNE, NORTH CAROLINA**

Species	USEPA ⁽¹⁾ Metals
NERMERTEA	Phylum
Anopla	Class
Heteronemertea	Order
Lineidae	Family
<i>Micrura leidyl</i>	Genus Species
ANNELIDA	Phylum
Oligochaeta	Class
Lumbriculida	Order
Lumbriculidae	Family
<i>Eclipidrilus sp.</i>	Genus Species
Tubificida	Order
Tubificidae	Family
<i>Isochaetides freyi</i>	Genus Species
<i>Limnodrilus hoffmeisteri</i>	Genus Species
<i>Spirosperma carolinensis</i>	Genus Species
Polychaeta	Class
Ariciida	Order
Orbiniidae	Family
<i>Scoloplos fragilis</i>	Genus Species
Capitellida	Order
Capitellidae	Family
<i>Heteromestus filiformis</i>	Genus Species
Phyllodocida	Order
Nereidae	Family
<i>Nereis succinea</i>	Genus Species
Phyllodocidae	Family
<i>Eteone heteropoda</i>	Genus Species
Spionida	Order
Spionidae	Family
<i>Scolecopides viridis</i>	Genus Species
<i>Streblospio benedicti</i>	Genus Species
Terebellida	Order

**SYSTEMATIC LIST OF BENTHIC MACROINVERTEBRATE SPECIES
AT BACKGROUND STATIONS
(WEBB, HADNOT, AND HOLLAND MILL CREEKS)
MCB CAMP LEJEUNE, NORTH CAROLINA**

Species	USEPA ⁽¹⁾ Metals
Ampharetidae	Family
<i>Hypaniola grayi</i>	Genus Species
ARTHROPODA	Phylum
Crustacea	Class
Amphipoda	Order
Corophiidae	Family
<i>Corophium lacuatre</i>	Genus Species
Gammaridae	Family
<i>Crangonyx pseudogracillus</i>	Genus Species
<i>Gammarus tigrinus</i>	Genus Species
Tanaidacea	Order
Tanaidae	Family
<i>Leptochelia rapox</i>	Genus Species
Decapoda	Order
Palaemonidae	Family
<i>Palaemonetes pugio</i>	Genus Species
Insecta	Class
Coleoptera	Order
Dytiscidae	Family
<i>Hydroporus sp.</i>	Genus Species
Elmidae	Family
<i>Dubiraphia sp.</i>	Genus Species
Diptera	Order
Ceratopogonidae	Family
<i>Palpomyia/sphaeromias sp.</i>	Genus Species
Chaoboridae	Family
<i>Chaoborus sp.</i>	Genus Species
Chironomidae	Family
<i>Ablabesmyia annulata</i>	Genus Species
<i>Ablabesmyia mallochi</i>	Genus Species
<i>Ablabesmyia ramphe gr.</i>	Genus Species
<i>Clinotanypus pinguis</i>	Genus Species
<i>Chironomus decorus gr.</i>	Genus Species

**SYSTEMATIC LIST OF BENTHIC MACROINVERTEBRATE SPECIES
AT BACKGROUND STATIONS
(WEBB, HADNOT, AND HOLLAND MILL CREEKS)
MCB CAMP LEJEUNE, NORTH CAROLINA**

Species	USEPA ⁽¹⁾ Metals
<i>Cryptochironomus fulvus gr</i>	Genus Species
<i>Dicrotendipes nervosus</i>	Genus Species
<i>Epoicladius sp.</i>	Genus Species
<i>Glyptotendipes sp.</i>	Genus Species
<i>Larsia sp.</i>	Genus Species
<i>Nilothauma sp.</i>	Genus Species
<i>Paraiauterborniella nigrohaite</i>	Genus Species
<i>Polypedilum illinoense</i>	Genus Species
<i>Polypedilum scalaenum</i>	Genus Species
<i>Procladius sp.</i>	Genus Species
<i>Tanytarsus sp.</i>	Genus Species
<i>Tribelos jucundum</i>	Genus Species
<i>Tribelos lucundum</i>	Genus Species
Tipulidae	Family
<i>Psuedolimnophila sp.</i>	Genus Species
Ephemeroptera	Order
Ephemeridae	Family
<i>Hexagenia billineata</i>	Genus Species
Megaloptera	Order
Sialidae	Family
<i>Sialis sp.</i>	Genus Species
Odonata	Order
Coenagrionidae	Family
<i>Argia sp.</i>	Genus Species
Libelluliidae	Family
<i>Pechydiplax longipennis</i>	Genus Species
Trichoptera	Order
Polycentropodidae	Family
<i>Phylacentropus sp.</i>	Genus Species
MOLLUSCA	Phylum
Bivalvia	Class
Mytiloidea	Order
Mytilidae	Family

SYSTEMATIC LIST OF BENTHIC MACROINVERTEBRATE SPECIES
AT BACKGROUND STATIONS
(WEBB, HADNOT, AND HOLLAND MILL CREEKS)
MCB CAMP LEJEUNE, NORTH CAROLINA

Species	USEPA ⁽¹⁾ Metals
<i>Geukensia demissa</i>	Genus Species
Veneroida	Order
Corbiculidae	Family
<i>Polymesoda caroliniana</i>	Genus Species
Mactridae	Family
<i>Mullinia lateralis</i>	Genus Species
Sphaeriidae	Family
<i>Pisidium casertanum</i>	Genus Species
Tellinidae	Family
<i>Macoma tenta</i>	Genus Species

**USEPA SENSITIVITY TO METALS AND TOLERANCE TO ORGANIC WASTE AND BIOTIC INDEX
FOR BENTHIC MACROINVERTEBRATE SPECIES AT BACKGROUND STATIONS
(WEBB, HADNOT, AND HOLLAND MILL CREEKS)
MCB CAMP LEJEUNE, NORTH CAROLINA**

Species	USEPA ⁽¹⁾ Metals	Organics	NCDEHNR ⁽²⁾ Biotic Index
NERMERTEA			
Anopla			
Heteronemertea			
Lineidae			
<i>Micrura leidyl</i>	NA	NA	NA
ANNELIDA			
Oligochaeta			
Lumbriculida			
Lumbriculiae			
<i>Eclipidrillus sp.</i>	NA	NA	NA
Tubificida			
Tubificidae			
<i>Isochaetides freyi</i>	NA	NA	8.6
<i>Limnodrilus hoffmeisteri</i>	NA	5	9.4
<i>Spirosperma carolinensis</i>	NA	3	NA
Polychaeta			
Ariciida			
Orbiniidae			
<i>Scoloplos fragilis</i>	NA	NA	NA
Capitellida			
Capitellidae			
<i>Heteromestus filiformis</i>	NA	NA	NA
Phyllodocida			
Nereidae			
<i>Nereis succinea</i>	NA	NA	NA
Phylliodocidae			
<i>Eteone heteropoda</i>	NA	NA	NA
Spionida			
Spionidae			
<i>Scolecoides virdis</i>	NA	NA	NA
<i>Streblospio benedicti</i>	NA	NA	NA
Terebellida			

**USEPA SENSITIVITY TO METALS AND TOLERANCE TO ORGANIC WASTE AND BIOTIC INDICES
FOR BENTHIC MACROINVERTEBRATE SPECIES AT BACKGROUND STATIONS
(WEBB, HADNOT, AND HOLLAND MILL CREEKS)
MCB CAMP LEJEUNE, NORTH CAROLINA**

Species	USEPA ⁽¹⁾ Metals	Organics	NCDEHNR ⁽²⁾ Biotic Index
Ampharetidae			
<i>Hypaniola grayi</i>	NA	NA	NA
ARTHROPODA			
Crustacea			
Amphipoda			
Corophiidae			
<i>Corophium lacustris</i>	NA	NA	NA
Gammaridae			
<i>Crangonyx pseudogracillus</i>	NA	NA	7.9
<i>Gammarus tigrinus</i>	NA	2	NA
Tanaidacea			
Tanaidae			
<i>Leptochelia rapax</i>	NA	NA	NA
Decapoda			
Palaemonidae			
<i>Palaemonetes pugio</i>	NA	NA	NA
Insecta			
Coleoptera			
Dytiscidae			
<i>Hydroporus sp.</i>	NA	NA	8.6
Elmidae			
<i>Dubiraphia sp.</i>	NA	NA	5.9
Diptera			
Ceratopogonidae			
<i>Palpomyia/sphaeromyia sp.</i>	NA	NA	7.0
Chaoboridae			
<i>Chaoborus sp.</i>	NA	NA	8.5
Chironomidae			
<i>Ablabesmyia annulata</i>	NA	1	3.5
<i>Ablabesmyia mallochii</i>	S	2	7.2
<i>Ablabesmyia ramphe gr.</i>	NA	2	NA
<i>Clinotanypus pinguis</i>	S	3	8.7

**USEPA SENSITIVITY TO METALS AND TOLERANCE TO ORGANIC WASTE AND BIOTIC INDES
FOR BENTHIC MACROINVERTEBRATE SPECIES AT BACKGROUND STATIONS
(WEBB, HADNOT, AND HOLLAND MILL CREEKS)
MCB CAMP LEJEUNE, NORTH CAROLINA**

Species	USEPA ⁽¹⁾ Metals	Organics	NCDEHNR ⁽²⁾ Biotic Index
<i>Chironomus decorus gr.</i>	NA	NA	9.6
<i>Cryptochironomus fulvus gr</i>	NA	3	6.4
<i>Dicrotendipes nervosus</i>	S	2	9.7
<i>Epoicladius sp.</i>	NA	NA	0.0
<i>Glyptotendipes sp.</i>	NA	NA	9.4
<i>Larsia sp.</i>	NA	2	9.3
<i>Nilothauma sp.</i>	NA	NA	5.0
<i>Paraiauterborniella nigrohaite</i>	NA	NA	NA
<i>Polypedilum illinoense</i>	NA	3	9.0
<i>Polypedilum scalaenum</i>	NA	2	8.4
<i>Procladius sp.</i>	NA	NA	9.1
<i>Tanytarsus sp.</i>	NA	NA	6.7
<i>Tribelos jucundum</i>	S	1	6.3
<i>Tribelos lucundum</i>	NA	NA	6.3
Tipulidae			
<i>Psuedolimnophila sp.</i>	NA	NA	7.2
Ephemeroptera			
Ephemeridae			
<i>Hexagenia billineata</i>	NA	2	NA
Megaloptera			
Sialidae			
<i>Sialis sp.</i>	T	4	7.2
Odonata			
Coenagrionidae			
<i>Argia sp.</i>	NA	NA	8.2
Libellulidae			
<i>Pechydiplax longipennis</i>	NA	NA	NA
Trichoptera			
Polycentropodidae			
<i>Phylacentropus sp.</i>	NA	NA	6.2
MOLLUSCA			
Bivalvia			

**USEPA SENSITIVITY TO METALS AND TOLERANCE TO ORGANIC WASTE AND BIOTIC INDES
FOR BENTHIC MACROINVERTEBRATE SPECIES AT BACKGROUND STATIONS
(WEBB, HADNOT, AND HOLLAND MILL CREEKS)
MCB CAMP LEJEUNE, NORTH CAROLINA**

Species	USEPA ⁽¹⁾ Metals	Organics	NCDEHNR ⁽²⁾ Biotic Index
Mytiloidea			
Mytilidae			
<i>Geukensia demissa</i>	NA	NA	NA
Veneroidea			
Corbiculidae			
<i>Polymesoda caroliniana</i>	NA	NA	NA
Mactridae			
<i>Mullinia lateralis</i>	NA	NA	NA
Sphaeriidae			
<i>Pisidium casertanum</i>	NA	4	6.5
Tellinidae			
<i>Macoma tenta</i>	NA	NA	NA

⁽¹⁾ Macroinvertebrate Field and Laboratory Methods for Evaluating the Biological Integrity of Surface Waters

⁽²⁾ Lenat, 1993

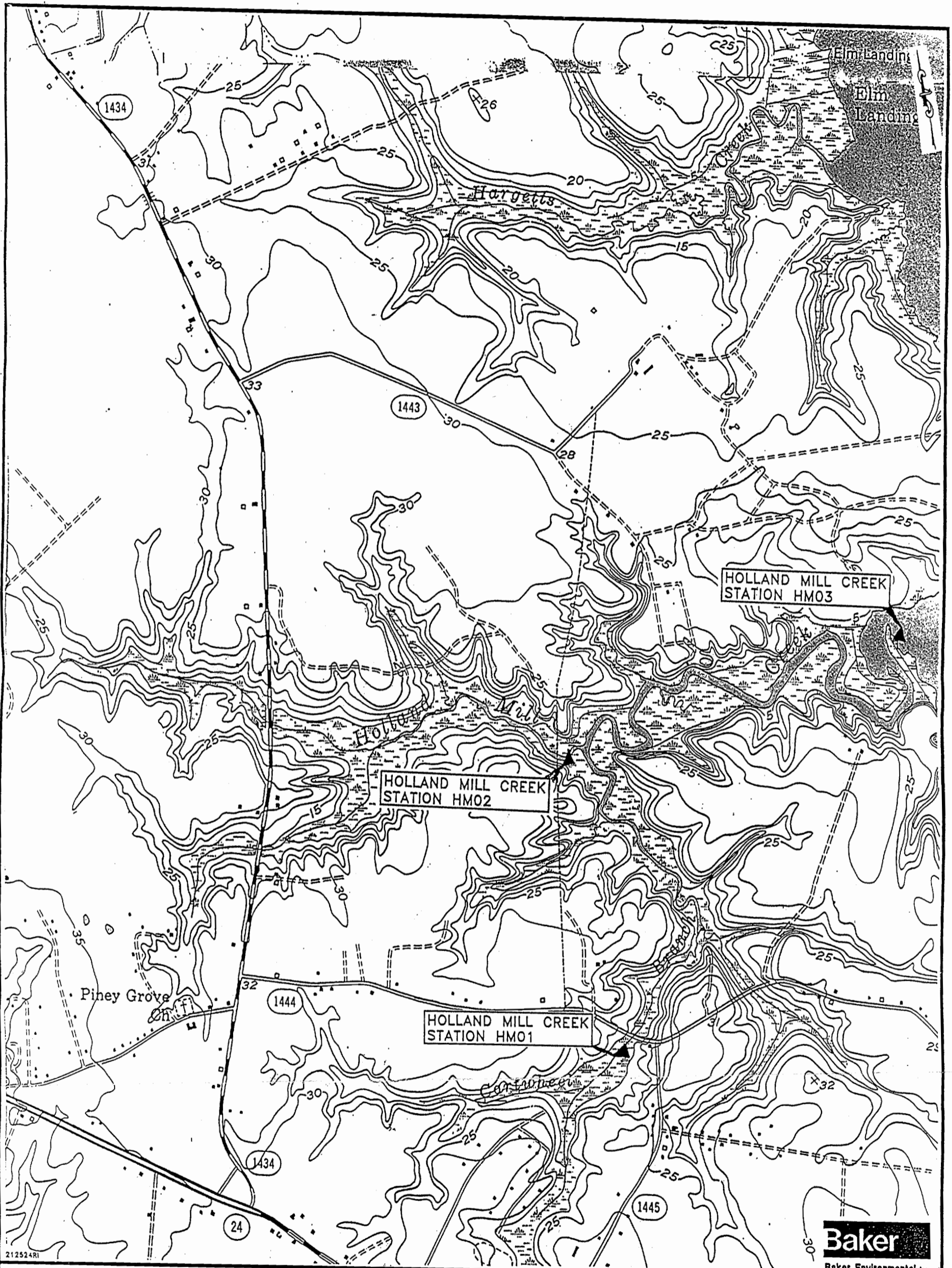
NA = Not Available

S = Sensitive to heavy metals

T = Tolerant to heavy metals

Organics Ranking = 0 to 5 with 0 being the least tolerant

**Sampling Station
Location Maps**

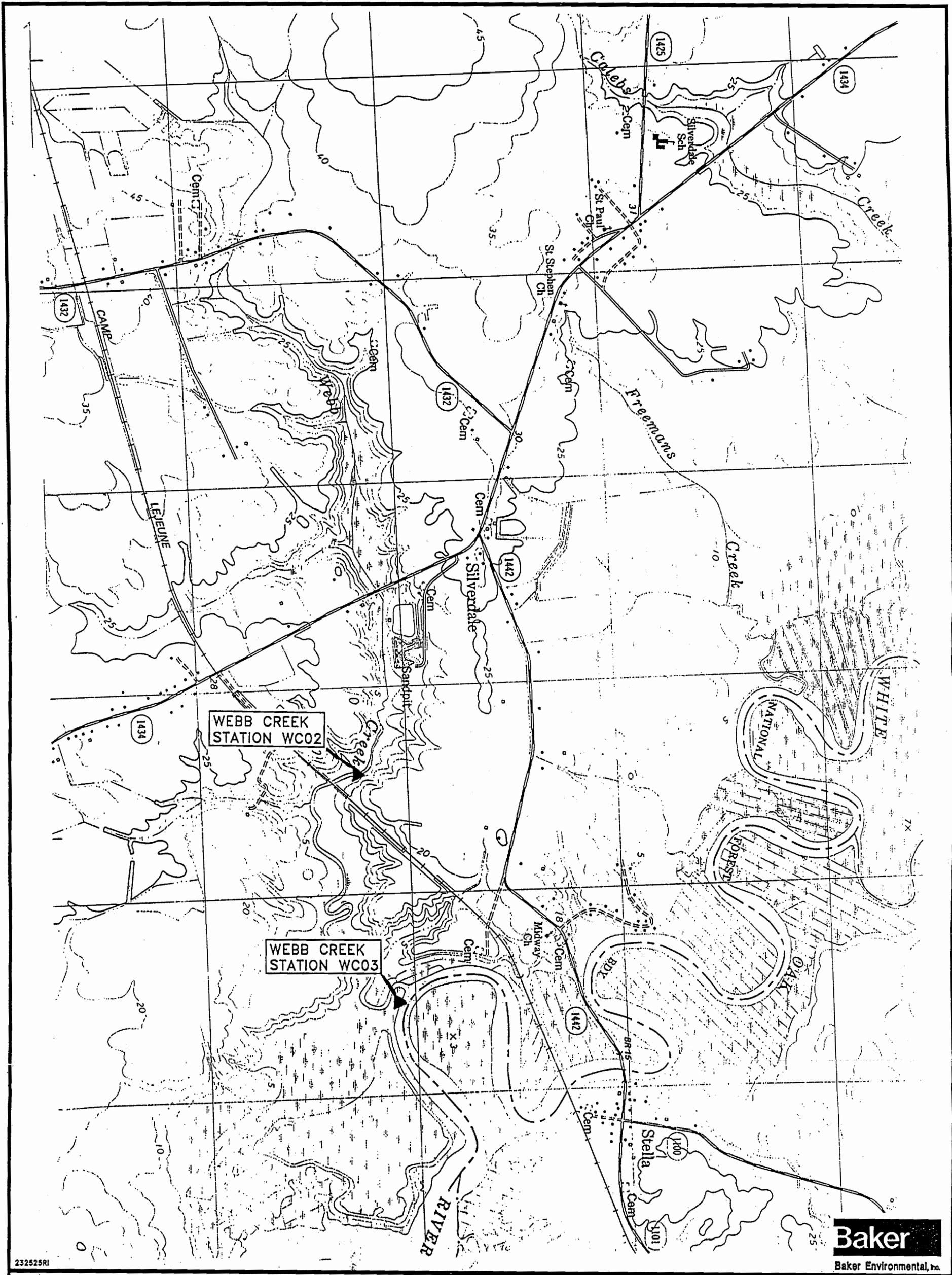


FISH AND BENTHIC MACROINVERTEBRATE
 SAMPLING LOCATION IN HOLLAND MILL CREEK

MARINE CORPS BASE, CAMP LEJEUNE
 NORTH CAROLINA

SOURCE: N.C. DIVISION OF MARINE
 FISHERIES, REPORT AFC-9, NOV. 1975.

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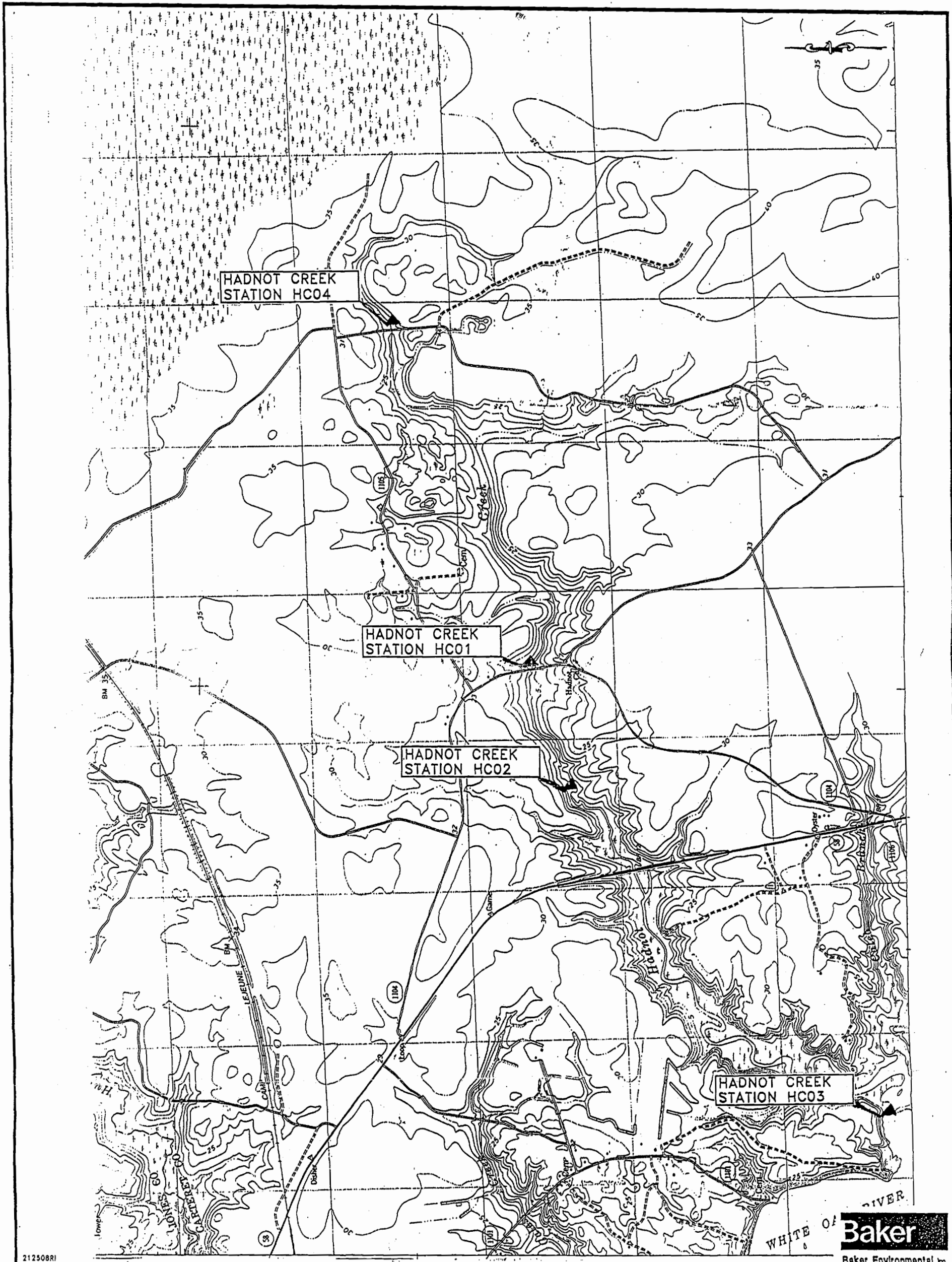
232525R1

Baker
Baker Environmental, Inc.

FISH AND BENTHIC MACROINVERTEBRATE
SAMPLING LOCATION IN WEBB CREEK

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

SOURCE: N.C. DIVISION OF MARINE
FISHERIES, REPORT AFC-9, NOV. 1975.



212508R1

FISH AND BENTHIC MACROINVERTEBRATE
SAMPLING LOCATION IN HADNOT CREEK

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

SOURCE: N.C. DIVISION OF MARINE
FIDHERIES, REPORT AFC-9, NOV. 1975.

REFERENCE

Baker, 1994. Baker Environmental Inc., 1994. "Supplemental Aquatic Survey for Wallace Creek and Bearhead Creek". Prepared for the Department of the Navy, Naval Facilities Engineering Command, Atlantic Division, Norfolk, Virginia.

MARINE CORPS BASE CAMP LEJEUNE
 BACKGROUND - HADNOT CREEK
 NATURAL MACROINVERTEBRATES

	HM01-BN			HM02-BN			HM03-BN		
	01	02	03	01	02	03	01	02	03
NEMERTEA									
Anopla									
Heteronemertea									
Lineidae									
• <i>Micrura leidyi</i>									
							3	4	2
ANNELIDA									
Oligochaeta									
Tubificida									
Tubificidae									
<i>Limnodrilus hoffmeisteri</i>									
	3	1	3						
Polychaeta									
Aricida									
Orbinidae									
• <i>Scoloplos fragilis</i>									
							3	20	8
Capitellida									
Capitellidae									
<i>Heteromastus filiformis</i>									
							1	1	1
Phyllodocida									
Nereidae									
<i>Nereis succinea</i>									
				7	9	6			
Spionida									
Spionidae									
• <i>Streblospio benedicti</i>									
							1		
Terebellida									
Ampharetidae									
<i>Hypaniola grayi</i> (ampharetid worm)									
				3		2			
ARTHROPODA									
Crustacea									
Decapoda									
Palaemonidae									
<i>Palaemonetes pugio</i>									
									1
Insecta									
Coleoptera									
Dytiscidae									
<i>Hydroporus</i> sp.									
	1								
Elmidae									
<i>Dubiraphis</i> sp.									
			8						
Diptera									
Chaoboridae									
<i>Chaoborus</i> sp.									
			1						
Chironomidae									
<i>Ablabesmyia mallochi</i>									
	1								
<i>Chironomus decorus</i> gr.									
	2	2	2	120	180	76	1		
<i>Dicrotendipes nervosus</i>									
	5		3						
<i>Larsia</i> sp.									
			1						
<i>Polypedilum illinoense</i>									
	12		7						
<i>Polypedilum scalaenum</i>									
	18		11						
<i>Tanytarsus</i> sp.									
	11		12						
<i>Tribelos lucundum</i>									
	50	159	31						
Megaloptera									
Sialidae									
<i>Sialis</i> sp.									
	1								
MOLLUSCA									
Bivalvia									
Veneroidea									
Mactridae									
• <i>Mulinia lateralis</i>									
							3		
Tellinidae									
<i>Macoma tenta</i>									
							17	23	9
Total Taxa									
	10	3	10	3	2	4	7	4	4
Total Specimens									
	104	162	79	130	189	85	29	48	20
Rate Specimens Average									
		115			134.667			32.3333	
Standard Deviation									
	15.0864	90.934	9.06091	66.4254	120.915	36.5639	5.75698	11.1056	4.08246
Boltouin's Diversity									
		0.5			0.122			0.497	
SPECIES DENSITY (#/M²)									
	663	1033	504	829	1205	542	185	306	127
SPECIES DIVERSITY (Shannon-Wiener)									
	0.695	0.045	0.793	0.138	0.083	0.186	0.593	0.436	0.460

MARINE CORP'S BASE CAMP LEJEUNE
 BACKGROUND - HADNOT CREEK
 BENTHIC MACROINVERTEBRATES

	HC01-BN			HC02-BN			HC03-BN			HC04-BN		
	01	02	03	01	02	03	01	02	03	01	02	03
NEMERTEA												
Anaplia												
Heteronemertes												
Linoidea												
* <i>Micurus lodyi</i>						6	5	3				
ANNELIDA												
Oligochaeta												
Lumbricidae												
<i>Lumbriculus</i>												
<i>Ecopeltus</i> sp.											1	
Tubificidae												
<i>Tubificoides</i>												
<i>leachianus</i> (syn)	77	42	36							21	21	6
<i>limnodius hoffmeisteri</i>											1	
<i>epineperma carolinensis</i>			3								1	3
Polychaeta												
Caprellidae												
Caprellidae												
<i>Heteromastus filiformis</i>							14	9				
Phyllodocta												
Nereidae												
<i>Nereis succinea</i>							6		18			
Phyllodoctidae												
* <i>Eteone heteropoda</i>											1	
Terebellidae												
Ampharetidae												
<i>Hypania grayi</i> (ampharetid worm)				18	6	46						
MITHROPODA												
Crustacea												
Amphipoda												
Corophiidae												
<i>Corophium lacustris</i>											62	
Gammaridae												
<i>Ceratonyx pseudogracilis</i>					1	1					15	20
<i>Gammarus tigrinus</i>												
Tanaidacea												
Tanaidae												
<i>Leptochelia rapax</i>											60	
Insecta												
Coleoptera												
Dytiscidae												
<i>Hydroporus</i> sp.											5	2
Elmidae												
<i>Dubiraphis</i> sp.			1									
Diptera												
Ceratopogonidae												
<i>Palpomyia/ophthalmica</i> sp. (biting midges)	5	7	4			1						
Chironomidae												
<i>Abaloemyia annulata</i>	2	7	1									
<i>Abaloemyia rumpke</i> gr.	4	7	9									
<i>Clinotanytus pinguis</i>											1	
<i>Cryptochironomus fulvus</i> gr.			2	3								
<i>Epitriptus</i> sp.				1								
<i>Glyptotendipes</i> sp.												1
<i>Nitochus</i> sp.		2	1									
<i>Paratetrabornella nigrohirsuta</i>	1	5	2									
<i>Polypedilum lineoense</i>	3	1										
<i>Procladius</i> sp. (midges)		1										
<i>Tanytarsus</i> sp.	2	9	2									
<i>Triboles lucidum</i>	4	8	8								9	6
Tipulidae												
<i>Pseudolimnophila</i> sp.											1	2
Ephemeroptera												
Ephemerellidae												
<i>Hexagenia bilineata</i>	3	3	1									
Megaloptera												
Sialidae												
<i>Sialis</i> sp.											1	
Odonata												
Coenagrionidae												
<i>Argia</i> sp.		1										
Libellulidae												
<i>Pachydiplax longipennis</i>											1	
Trichoptera												
Polycentropodidae												
<i>Polycentropus</i> sp.	1	5	7								17	13
44444444												
MOLLUSCA												
Bivalvia												
Mytilidae												
Mytilidae												
<i>Gouldenia demissa</i>											1	
Veneridae												
Sphaeriidae												
<i>Pisidium caesartanum</i>		2	1								4	
Tellinidae												
<i>Macoma tenuis</i>							5	19	1			
Total Taxa	10	17	15	1	2	4	4	3	6	4	11	6
Total Specimens	102	106	76	16	7	54	30	31	163	44	69	52
Average Specimens	35.33333			26.33333			61.33333			55		
Standard Deviation	23.50792	9.614633	6.961824	NA	3.233534	21.79449	4.250899	6.082904	29.67241	9.321905	7.126697	6.047432
Shannon's Diversity	0.755				0.072			0.675			0.757	
SPECIES DENSITY (#/M ²)	650	676	497	115	45	344	191	198	1166	280	440	331
SPECIES DIVERSITY (Shannon-Wiener)	0.463	0.956	0.821	0.000	0.178	0.230	0.554	0.394	0.449	0.458	0.833	0.763

MARINE CORPS BASE CAMP LEJEUNE
 BACKGROUND - WEBB CREEK
 Benthic Macroinvertebrates

	WC02-BN			WC03-BN		
	01	02	03	01	02	03
NEMERTEA						
Anopla						
Heteronemertea						
Lineidae						
• <i>Micrura leidyl</i>				1	2	2
ANNELIDA						
Polychaeta						
Capitellida						
Capitellidae						
<i>Heteromestus filiformis</i>	2					
Phyllodocida						
Nereidae						
<i>Nereis succinea</i>			1			
Spionida						
Spionidae						
• <i>Scolecopides viridis</i>						1
Terebellida						
Ampharetidae						
<i>Hypaniola grayi</i>		4	10			
ARTHROPODA						
Crustacea						
Amphipoda						
Gammaridae						
• <i>Gammarus tigrinus</i>	10			1	1	
Insecta						
Diptera						
Chironomidae						
<i>Chironomus decorus</i> gr.	8	24	13	38	17	6
• <i>Procladius</i> sp.	1	3		2		1
<i>Tanytarsus</i> sp.		2	1			
MOLLUSCA						
Bivalvia						
Veneroidea						
Corbiculidae						
• <i>Polymesoda caroliniana</i>					1	
Tellinidae						
<i>Macoma tenta</i>					1	
Total Taxa	4	4	4	4	5	4
Total Specimens	21	33	25	42	22	10
Replicate Specimens Average		26.33			24.67	
Standard Deviation	4.42531	10.5317	6.18466	18.3394	7.05691	2.38048
Brillouin's Diversity		0.518			0.279	
SPECIES DENSITY (#/M²)	134	210	159	268	140	64
SPECIES DIVERSITY (Shannon-Wiener)	0.473	0.380	0.419	0.180	0.304	0.473

APPENDIX I
DATA AND FREQUENCY SUMMARIES

APPENDIX I.1
SURFACE SOIL ORGANICS

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-CC-SB01-00	7-CC-SB02-00	7-EA-SB01-00	7-EA-SB02-00	7-EA-SB03-00	7-EA-SB04-00
Laboratory Sample ID:	AC5466	AC5468	AC5347	AC5472	AC5337	AC5488
Date Sampled:	10/24/94	10/24/94	10/23/94	10/25/94	10/23/94	10/25/94

	UNITS						
VOLATILES							
Chloromethane	UG/KG	12 U	12 U	12 U	11 U	12 UJ	12 U
Bromomethane	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
Vinyl chloride	UG/KG	12 U	12 U	12 U	11 U	12 UJ	12 U
Chloroethane	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
Methylene chloride	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
Acetone	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
Carbon Disulfide	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
1,1-Dichloroethene	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
1,1-Dichloroethane	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
1,2-Dichloroethene(total)	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
Chloroform	UG/KG	12 UJ	12 UJ	12 U	11 UJ	12 U	12 U
1,2-Dichloroethane	UG/KG	12 UJ	12 UJ	12 U	11 UJ	12 U	12 U
2-Butanone	UG/KG	12 U	12 U	12 U	11 U	12 U	13 U
1,1,1-Trichloroethane	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
Carbon tetrachloride	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
Bromodichloromethane	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
1,2-Dichloropropane	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
cis-1,3-Dichloropropene	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
Trichloroethene	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
Dibromochloromethane	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
1,1,2-Trichloroethane	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
Benzene	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
trans-1,3-Dichloropropene	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
Bromoform	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
4-Methyl-2-pentanone	UG/KG	12 U	12 U	23 U	11 U	12 U	12 U
2-Hexanone	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
Tetrachloroethene	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
1,1,2,2-Tetrachloroethane	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
Toluene	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
Chlorobenzene	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
Ethylbenzene	UG/KG	12 U	12 U	12 U	11 U	12 UJ	12 U
Styrene	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U
Xylenes (total)	UG/KG	12 U	12 U	12 U	11 U	12 U	12 U

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Date Sampled:	10/24/94	10/24/94	10/23/94	10/25/94	10/23/94	10/25/94

	UNITS					
SEMIVOLATILES						
Phenol	UG/KG	390 U	380 U	400 U	360 U	410 U
bis(2-Chloroethyl) ether	UG/KG	390 U	380 U	400 U	360 U	410 U
2-Chlorophenol	UG/KG	390 U	380 U	400 U	360 U	410 U
1,3-Dichlorobenzene	UG/KG	390 U	380 U	400 U	360 U	410 U
1,4-Dichlorobenzene	UG/KG	390 U	380 U	400 U	360 U	410 U
1,2-Dichlorobenzene	UG/KG	390 U	380 U	400 U	360 U	410 U
2-Methylphenol	UG/KG	390 U	380 U	400 U	360 U	410 U
2,2'-oxybis-(1-chloropropane)	UG/KG	390 U	380 U	400 U	360 U	410 U
4-Methylphenol	UG/KG	390 U	380 U	400 U	360 U	410 U
N-Nitroso-di-n-propylamine	UG/KG	390 U	380 U	400 UJ	360 U	410 UJ
Hexachloroethane	UG/KG	390 U	380 U	400 U	360 U	410 U
Nitrobenzene	UG/KG	390 U	380 U	400 U	360 U	410 U
Isophorone	UG/KG	390 U	380 U	400 U	360 U	410 U
2-Nitrophenol	UG/KG	390 U	380 U	400 U	360 U	410 U
2,4-Dimethylphenol	UG/KG	390 U	380 U	400 U	360 U	410 U
bis(2-Chloroethoxy) methane	UG/KG	390 U	380 U	400 U	360 U	410 U
2,4-Dichlorophenol	UG/KG	390 U	380 U	400 U	360 U	410 U
1,2,4-Trichlorobenzene	UG/KG	390 U	380 U	400 U	360 U	410 U
Naphthalene	UG/KG	390 U	380 U	400 U	360 U	410 U
4-Chloroaniline	UG/KG	390 U	380 U	400 U	360 U	410 U
Hexachlorobutadiene	UG/KG	390 U	380 U	400 U	360 U	410 U
4-Chloro-3-methylphenol	UG/KG	390 U	380 U	400 U	360 U	410 U
2-Methylnaphthalene	UG/KG	390 U	380 U	400 U	360 U	410 U
Hexachlorocyclopentadiene	UG/KG	390 U	380 U	400 U	360 U	410 U
2,4,6-Trichlorophenol	UG/KG	390 U	380 U	400 U	360 U	410 U
2,4,5-Trichlorophenol	UG/KG	930 U	920 U	970 U	880 U	980 U
2-Chloronaphthalene	UG/KG	390 U	380 U	400 U	360 U	410 U
2-Nitroaniline	UG/KG	930 U	920 U	970 U	880 U	980 U
Dimethyl phthalate	UG/KG	390 U	380 U	400 U	360 U	410 U
Acenaphthylene	UG/KG	390 U	380 U	400 U	360 U	410 U
2,6-Dinitrotoluene	UG/KG	390 U	380 U	400 U	360 U	410 U
3-Nitroaniline	UG/KG	930 U	920 U	970 U	880 U	980 U
Acenaphthene	UG/KG	390 U	380 U	400 U	360 U	410 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
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 TCL ORGANICS

Client Sample ID:	7-CC-SB01-00	7-CC-SB02-00	7-EA-SB01-00	7-EA-SB02-00	7-EA-SB03-00	7-EA-SB04-00
Laboratory Sample ID:	AC5466	AC5468	AC5347	AC5472	AC5337	AC5488
Date Sampled:	10/24/94	10/24/94	10/23/94	10/25/94	10/23/94	10/25/94

	UNITS						
<u>SEMIVOLATILES Cont.</u>							
2,4-Dinitrophenol	UG/KG	930 UJ	920 UJ	970 UJ	880 UJ	960 U	980 UJ
4-Nitrophenol	UG/KG	930 U	920 U	970 U	880 U	960 U	980 U
Dibenzofuran	UG/KG	390 U	380 U	400 U	360 U	400 U	410 U
2,4-Dinitrotoluene	UG/KG	390 U	380 U	400 U	360 U	400 U	410 U
Diethylphthalate	UG/KG	390 U	380 U	400 U	360 U	400 U	410 U
4-Chlorophenyl phenyl ether	UG/KG	390 U	380 U	400 U	360 U	400 U	410 U
Fluorene	UG/KG	390 U	380 U	400 U	360 U	400 U	410 U
4-Nitroaniline	UG/KG	930 U	920 U	970 U	880 U	960 U	980 U
4,6-Dinitro-2-methylphenol	UG/KG	930 U	920 U	970 U	880 U	960 U	980 U
N-nitrosodiphenylamine	UG/KG	390 U	380 U	400 U	360 U	400 U	410 U
4-Bromophenyl-phenylether	UG/KG	390 U	380 U	400 U	360 U	400 U	410 U
Hexachlorobenzene	UG/KG	390 U	380 U	400 U	360 U	400 U	410 U
Pentachlorophenol	UG/KG	930 U	920 U	970 U	880 U	960 U	980 U
Phenanthrene	UG/KG	390 U	380 U	400 U	360 U	63 J	410 U
Anthracene	UG/KG	390 U	380 U	400 U	360 U	400 U	410 U
Carbazole	UG/KG	390 U	380 U	400 U	360 U	400 U	410 U
di-n-Butylphthalate	UG/KG	390 U	380 U	400 U	360 U	400 U	410 U
Fluoranthene	UG/KG	390 U	380 U	200 J	360 U	110 J	410 U
Pyrene	UG/KG	390 U	380 U	140 J	360 U	85 J	410 U
Butyl benzyl phthalate	UG/KG	390 U	380 U	400 U	360 U	400 U	410 U
3,3'-Dichlorobenzidine	UG/KG	390 U	380 U	400 U	360 U	400 U	410 U
Benzo[a]anthracene	UG/KG	390 U	380 U	86 J	360 U	50 J	410 U
Chrysene	UG/KG	390 U	380 U	96 J	360 U	55 J	410 U
bis(2-Ethylhexyl)phthalate	UG/KG	390 U	380 U	400 U	360 U	400 U	73 J
di-n-Octylphthalate	UG/KG	390 U	380 U	400 U	360 U	400 U	410 U
Benzo[b]fluoranthene	UG/KG	390 U	380 U	91 J	360 U	45 J	410 U
Benzo[k]fluoranthene	UG/KG	390 U	380 U	77 J	360 U	60 J	410 U
Benzo[a]pyrene	UG/KG	390 U	380 U	61 J	360 U	400 U	410 U
Indeno[1,2,3-cd]pyrene	UG/KG	390 U	380 U	47 J	360 U	400 U	410 U
Dibenz[a,h]anthracene	UG/KG	390 U	380 U	400 U	360 U	400 U	410 U
Benzo[g,h,i]perylene	UG/KG	390 U	380 U	400 U	360 U	400 U	410 U

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Laboratory Sample ID:	AC5466	AC5468	AC5347	AC5472	AC5337	AC5488
Date Sampled:	10/24/94	10/24/94	10/23/94	10/25/94	10/23/94	10/25/94

	<u>UNITS</u>						
<u>PESTICIDES/PCBs</u>							
alpha-BHC	UG/KG	2 U	1.9 U	2.1 UJ	1.9 U	2.1 U	2.1 U
beta-BHC	UG/KG	2 U	1.9 U	2.1 UJ	1.9 U	2.1 U	2.1 U
delta-BHC	UG/KG	2 U	1.9 U	2.1 UJ	1.9 U	2.1 U	2.1 U
Lindane (gamma-BHC)	UG/KG	2 U	1.9 U	2.1 UJ	1.9 U	2.1 U	2.1 U
Heptachlor	UG/KG	2 U	1.9 U	2.1 UJ	1.9 U	2.1 U	2.1 U
Aldrin	UG/KG	2 U	1.9 U	2.1 UJ	1.9 U	2.1 U	2.1 U
Heptachlor epoxide	UG/KG	2 U	1.9 U	2.1 UJ	1.9 U	2.1 U	2.1 U
Endosulfan I	UG/KG	2 U	1.9 U	2.1 UJ	1.9 U	2.1 U	2.1 U
Dieldrin	UG/KG	3.8 U	16 J	4.7 J	3.6 U	4.1 U	4 U
4,4'-DDE	UG/KG	3.8 U	3.7 U	4.1 UJ	11	4.1 U	12
Endrin	UG/KG	3.8 U	3.7 U	4.1 UJ	3.6 U	4.1 U	4 U
Endosulfan II	UG/KG	3.8 U	3.7 U	4.1 UJ	3.6 U	4.1 U	4 U
4,4'-DDD	UG/KG	3.8 U	3.7 U	4.1 UJ	3.6 U	4.1 U	4 U
Endosulfan sulfate	UG/KG	3.8 U	3.7 U	4.1 UJ	3.6 U	4.1 U	4 U
4,4'-DDT	UG/KG	3.8 U	3.7 U	4.1 UJ	9.7 U	4.1 U	8.2 U
Methoxychlor	UG/KG	20 U	19 U	21 UJ	19 U	21 U	21 UJ
Endrin ketone	UG/KG	3.8 U	3.7 U	4.1 UJ	3.6 U	4.1 U	4 U
Endrin aldehyde	UG/KG	3.8 U	3.7 U	4.1 UJ	3.6 U	4.1 U	4 U
alpha-Chlordane	UG/KG	2 U	1.9 U	2.1 UJ	1.9 U	2.1 U	2.1 U
gamma-Chlordane	UG/KG	2 U	1.9 U	2.1 UJ	1.9 U	2.1 U	2.1 U
Toxaphene	UG/KG	200 U	190 U	210 UJ	190 U	210 U	210 U
Aroclor 1016	UG/KG	38 U	37 U	41 UJ	36 U	41 U	40 U
Aroclor 1221	UG/KG	78 U	75 U	83 UJ	74 U	82 U	82 U
Aroclor 1232	UG/KG	38 U	37 U	41 UJ	36 U	41 U	40 U
Aroclor 1242	UG/KG	38 U	37 U	41 UJ	36 U	41 U	40 U
Aroclor 1248	UG/KG	38 U	37 U	41 UJ	36 U	41 U	40 U
Aroclor 1254	UG/KG	38 U	37 U	41 UJ	36 U	41 U	40 U
Aroclor 1260	UG/KG	38 U	37 U	41 UJ	36 U	41 U	40 U

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 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
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 TCL ORGANICS

Client Sample ID:	7-EA-SB05-00	7-EA-SB06-00	7-EA-SB07-00	7-EA-SB08-00	7-EA-SB09-00	7-EA-SB10-00
Laboratory Sample ID:	AC5303	AC5484	AC5311	AC5313	AC5325	AC5327
Date Sampled:	10/24/94	10/25/94	10/22/94	10/22/94	10/22/94	10/22/94

	UNITS	7-EA-SB05-00	7-EA-SB06-00	7-EA-SB07-00	7-EA-SB08-00	7-EA-SB09-00	7-EA-SB10-00
<u>VOLATILES</u>							
Chloromethane	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UJ
Bromomethane	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UJ
Vinyl chloride	UG/KG	12 UJ	11 UJ	53 U	53 UR	45 U	19 UJ
Chloroethane	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UJ
Methylene chloride	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UJ
Acetone	UG/KG	12 U	11 U	150	53 UR	170	19 UJ
Carbon Disulfide	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UJ
1,1-Dichloroethene	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UJ
1,1-Dichloroethane	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UJ
1,2-Dichloroethene(total)	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UJ
Chloroform	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UJ
1,2-Dichloroethane	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UJ
2-Butanone	UG/KG	12 U	11 U	53 U	53 UR	52	19 UJ
1,1,1-Trichloroethane	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UR
Carbon tetrachloride	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UR
Bromodichloromethane	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UR
1,2-Dichloropropane	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UR
cis-1,3-Dichloropropene	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UR
Trichloroethene	UG/KG	12 U	1 J	53 U	53 UR	45 U	19 UR
Dibromochloromethane	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UR
1,1,2-Trichloroethane	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UR
Benzene	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UR
trans-1,3-Dichloropropene	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UR
Bromoform	UG/KG	12 U	11 U	53 U	53 UR	45 U	19 UR
4-Methyl-2-pentanone	UG/KG	12 U	11 U	53 UJ	53 UR	45 UJ	19 UR
2-Hexanone	UG/KG	12 U	11 U	53 UJ	53 UR	45 UJ	19 UR
Tetrachloroethene	UG/KG	12 U	11 U	53 UJ	53 UR	45 UJ	19 UR
1,1,2,2-Tetrachloroethane	UG/KG	12 U	11 U	53 UJ	53 UR	45 UJ	19 UR
Toluene	UG/KG	12 U	11 U	53 UJ	53 UR	46 J	19 UR
Chlorobenzene	UG/KG	12 U	11 U	53 UJ	53 UR	45 UJ	19 UR
Ethylbenzene	UG/KG	12 UJ	11 U	53 UJ	53 UR	45 UJ	19 UR
Styrene	UG/KG	12 U	11 U	53 UJ	53 UR	45 UJ	19 UR
Xylenes (total)	UG/KG	12 U	11 U	53 UJ	53 UR	45 UJ	19 UR

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Laboratory Sample ID:	AC5303	AC5484	AC5311	AC5313	AC5325	AC5327
Date Sampled:	10/24/94	10/25/94	10/22/94	10/22/94	10/22/94	10/22/94

	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	170 NJ
bis(2-Chloroethyl) ether	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
2-Chlorophenol	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
1,3-Dichlorobenzene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
1,4-Dichlorobenzene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
1,2-Dichlorobenzene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
2-Methylphenol	UG/KG	380 U	340 U	1700 UJ	1700 UJ	1500 UJ	620 UJ
2,2'-oxybis-(1-chloropropane)	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
4-Methylphenol	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
N-Nitroso-di-n-propylamine	UG/KG	380 U	340 UJ	1700 U	1700 U	1500 U	620 U
Hexachloroethane	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Nitrobenzene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Isophorone	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
2-Nitrophenol	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
2,4-Dimethylphenol	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
bis(2-Chloroethoxy) methane	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
2,4-Dichlorophenol	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
1,2,4-Trichlorobenzene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Naphthalene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
4-Chloroaniline	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Hexachlorobutadiene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
4-Chloro-3-methylphenol	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
2-Methylnaphthalene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Hexachlorocyclopentadiene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
2,4,6-Trichlorophenol	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
2,4,5-Trichlorophenol	UG/KG	930 U	820 U	4200 U	4100 U	3600 U	1500 U
2-Chloronaphthalene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
2-Nitroaniline	UG/KG	930 U	820 U	4200 U	4100 U	3600 U	1500 U
Dimethyl phthalate	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Acenaphthylene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
2,6-Dinitrotoluene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
3-Nitroaniline	UG/KG	930 U	820 U	4200 U	4100 U	3600 U	1500 U
Acenaphthene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U

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Client Sample ID:	7-EA-SB05-00	7-EA-SB06-00	7-EA-SB07-00	7-EA-SB08-00	7-EA-SB09-00	7-EA-SB10-00
Laboratory Sample ID:	AC5303	AC5484	AC5311	AC5313	AC5325	AC5327
Date Sampled:	10/24/94	10/25/94	10/22/94	10/22/94	10/22/94	10/22/94

	UNITS						
<u>SEMIVOLATILES Cont.</u>							
2,4-Dinitrophenol	UG/KG	930 UJ	820 UJ	4200 U	4100 U	3600 U	1500 U
4-Nitrophenol	UG/KG	930 U	820 U	4200 U	4100 U	3600 U	1500 U
Dibenzofuran	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
2,4-Dinitrotoluene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Diethylphthalate	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
4-Chlorophenyl phenyl ether	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Fluorene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
4-Nitroaniline	UG/KG	930 U	820 U	4200 U	4100 U	3600 U	1500 U
4,6-Dinitro-2-methylphenol	UG/KG	930 U	820 U	4200 U	4100 U	3600 U	1500 U
N-nitrosodiphenylamine	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
4-Bromophenyl-phenylether	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Hexachlorobenzene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Pentachlorophenol	UG/KG	930 U	820 U	4200 U	4100 U	3600 U	1500 U
Phenanthrene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Anthracene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Carbazole	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
di-n-Butylphthalate	UG/KG	380 U	340 U	1700 U	1700 U	2000 U	690 U
Fluoranthene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Pyrene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Butyl benzyl phthalate	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
3,3'-Dichlorobenzidine	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Benzo[a]anthracene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Chrysene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
bis(2-Ethylhexyl)phthalate	UG/KG	380 U	58 J	1700 U	1700 U	1500 U	620 U
di-n-Octylphthalate	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Benzo[b]fluoranthene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Benzo[k]fluoranthene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Benzo[a]pyrene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Indeno[1,2,3-cd]pyrene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Dibenz[a,h]anthracene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U
Benzo[g,h,i]perylene	UG/KG	380 U	340 U	1700 U	1700 U	1500 U	620 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-EA-SB05-00	7-EA-SB06-00	7-EA-SB07-00	7-EA-SB08-00	7-EA-SB09-00	7-EA-SB10-00
Laboratory Sample ID:	AC5303	AC5484	AC5311	AC5313	AC5325	AC5327
Date Sampled:	10/24/94	10/25/94	10/22/94	10/22/94	10/22/94	10/22/94

	UNITS						
<u>PESTICIDES/PCBs</u>							
alpha-BHC	UG/KG	2 U	1.8 U	8.7 UJ	8.9 UJ	7.6 U	3.2 UJ
beta-BHC	UG/KG	2 U	1.8 U	8.7 UJ	8.9 UJ	7.6 U	3.2 UJ
delta-BHC	UG/KG	2 U	1.8 U	8.7 UJ	8.9 UJ	7.6 U	3.2 UJ
Lindane (gamma-BHC)	UG/KG	2 U	1.8 U	8.7 UJ	8.9 UJ	7.6 U	3.2 UJ
Heptachlor	UG/KG	2 U	1.8 U	8.7 UJ	8.9 UJ	7.6 U	3.2 UJ
Aldrin	UG/KG	2 U	1.8 U	8.7 UJ	8.9 UJ	7.6 U	3.2 UJ
Heptachlor epoxide	UG/KG	2 U	1.8 U	8.7 UJ	8.9 UJ	7.6 U	3.2 UJ
Endosulfan I	UG/KG	2 U	1.8 U	8.7 UJ	8.9 UJ	7.6 U	3.2 UJ
Dieldrin	UG/KG	3.9 U	3.4 U	17 UJ	17 UJ	15 U	9.6 J
4,4'-DDE	UG/KG	3.9 U	3.4 U	17 UJ	17 UJ	15 U	17 J
Endrin	UG/KG	3.9 U	3.4 U	17 UJ	17 UJ	15 U	6.2 UJ
Endosulfan II	UG/KG	3.9 U	3.4 U	17 UJ	17 UJ	15 U	6.2 UJ
4,4'-DDD	UG/KG	3.9 U	3.4 U	17 UJ	17 UJ	15 U	6.2 UJ
Endosulfan sulfate	UG/KG	3.9 U	3.4 U	17 UJ	17 UJ	15 U	6.2 UJ
4,4'-DDT	UG/KG	3.9 U	3.4 U	17 UJ	17 UJ	15 U	14 J
Methoxychlor	UG/KG	20 U	18 UJ	87 UJ	89 UJ	76 U	32 UJ
Endrin ketone	UG/KG	3.9 U	3.4 U	17 UJ	17 UJ	15 U	6.2 UJ
Endrin aldehyde	UG/KG	3.9 U	3.4 U	17 UJ	17 UJ	15 U	6.2 UJ
alpha-Chlordane	UG/KG	2 U	1.8 U	8.7 UJ	8.9 UJ	7.6 U	3.2 UJ
gamma-Chlordane	UG/KG	2 U	1.8 U	8.7 UJ	8.9 UJ	7.6 U	3.2 UJ
Toxaphene	UG/KG	200 U	180 U	870 UJ	890 UJ	760 U	320 UJ
Aroclor 1016	UG/KG	39 U	34 U	170 UJ	170 UJ	150 U	62 UJ
Aroclor 1221	UG/KG	80 U	69 U	340 UJ	350 UJ	300 U	130 UJ
Aroclor 1232	UG/KG	39 U	34 U	170 UJ	170 UJ	150 U	62 UJ
Aroclor 1242	UG/KG	39 U	34 U	170 UJ	170 UJ	150 U	62 UJ
Aroclor 1248	UG/KG	39 U	34 U	170 UJ	170 UJ	150 U	62 UJ
Aroclor 1254	UG/KG	39 U	34 U	170 UJ	170 UJ	150 U	62 UJ
Aroclor 1260	UG/KG	39 U	34 U	170 UJ	170 UJ	150 U	62 UJ

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-EA-SB11-00	7-MW04-00	7-MW05-00	7-NA-SB01-00	7-NA-SB02-00	7-NA-SB03-00
Laboratory Sample ID:	AC5329	AC5450	Q41118003	AC5458	AC5339	AC5287
Date Sampled:	10/22/94	10/24/94	11/03/94	10/24/94	10/23/94	10/23/94

	UNITS					
VOLATILES						
Chloromethane	UG/KG	12 U	11 U	11 UJ	14 U	12 UJ 11 UJ
Bromomethane	UG/KG	12 U	11 U	11 UJ	14 U	12 U 11 U
Vinyl chloride	UG/KG	12 U	11 U	11 UJ	14 UJ	12 UJ 11 UJ
Chloroethane	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
Methylene chloride	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
Acetone	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
Carbon Disulfide	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
1,1-Dichloroethene	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
1,1-Dichloroethane	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
1,2-Dichloroethene(total)	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
Chloroform	UG/KG	12 U	11 UJ	11 U	14 U	12 U 11 U
1,2-Dichloroethane	UG/KG	12 U	11 UJ	11 U	14 U	12 U 11 U
2-Butanone	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
1,1,1-Trichloroethane	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
Carbon tetrachloride	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
Bromodichloromethane	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
1,2-Dichloropropane	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
cis-1,3-Dichloropropene	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
Trichloroethene	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
Dibromochloromethane	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
1,1,2-Trichloroethane	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
Benzene	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
trans-1,3-Dichloropropene	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
Bromoform	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
4-Methyl-2-pentanone	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
2-Hexanone	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
Tetrachloroethene	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
1,1,2,2-Tetrachloroethane	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
Toluene	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
Chlorobenzene	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
Ethylbenzene	UG/KG	12 U	11 U	11 U	14 U	12 UJ 11 UJ
Styrene	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U
Xylenes (total)	UG/KG	12 U	11 U	11 U	14 U	12 U 11 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-EA-SB11-00	7-MW04-00	7-MW05-00	7-NA-SB01-00	7-NA-SB02-00	7-NA-SB03-00
Laboratory Sample ID:	AC5329	AC5450	Q41118003	AC5458	AC5339	AC5287
Date Sampled:	10/22/94	10/24/94	11/03/94	10/24/94	10/23/94	10/23/94

	<u>UNITS</u>						
<u>SEMIVOLATILES</u>							
Phenol	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
bis(2-Chloroethyl) ether	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
2-Chlorophenol	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
1,3-Dichlorobenzene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
1,4-Dichlorobenzene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
1,2-Dichlorobenzene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
2-Methylphenol	UG/KG	390 UJ	360 U	3800 U	440 U	380 UJ	390 U
2,2'-oxybis-(1-chloropropane)	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
4-Methylphenol	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
N-Nitroso-di-n-propylamine	UG/KG	390 U	360 UJ	3800 U	440 UJ	380 U	390 U
Hexachloroethane	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Nitrobenzene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Isophorone	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
2-Nitrophenol	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
2,4-Dimethylphenol	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
bis(2-Chloroethoxy) methane	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
2,4-Dichlorophenol	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
1,2,4-Trichlorobenzene	UG/KG	390 U	360 U	3800 UJ	440 U	380 U	390 U
Naphthalene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
4-Chloroaniline	UG/KG	390 U	360 U	3800 UJ	440 U	380 U	390 U
Hexachlorobutadiene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
4-Chloro-3-methylphenol	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
2-Methylnaphthalene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Hexachlorocyclopentadiene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
2,4,6-Trichlorophenol	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
2,4,5-Trichlorophenol	UG/KG	950 U	880 U	9300 UJ	1100 U	920 U	940 U
2-Chloronaphthalene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
2-Nitroaniline	UG/KG	950 U	880 U	9300 U	1100 U	920 U	940 U
Dimethyl phthalate	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Acenaphthylene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
2,6-Dinitrotoluene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
3-Nitroaniline	UG/KG	950 U	880 U	9300 U	1100 U	920 U	940 U
Acenaphthene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-EA-SB11-00	7-MW04-00	7-MW05-00	7-NA-SB01-00	7-NA-SB02-00	7-NA-SB03-00
Laboratory Sample ID:	AC5329	AC5450	Q41118003	AC5458	AC5339	AC5287
Date Sampled:	10/22/94	10/24/94	11/03/94	10/24/94	10/23/94	10/23/94

	UNITS	7-EA-SB11-00	7-MW04-00	7-MW05-00	7-NA-SB01-00	7-NA-SB02-00	7-NA-SB03-00
<u>SEMIVOLATILES Cont.</u>							
2,4-Dinitrophenol	UG/KG	950 U	880 UJ	9300 U	1100 UJ	920 U	940 UJ
4-Nitrophenol	UG/KG	950 U	880 U	9300 U	1100 U	920 U	940 U
Dibenzofuran	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
2,4-Dinitrotoluene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Diethylphthalate	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
4-Chlorophenyl phenyl ether	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Fluorene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
4-Nitroaniline	UG/KG	950 U	880 U	9300 U	1100 U	920 U	940 U
4,6-Dinitro-2-methylphenol	UG/KG	950 U	880 U	9300 U	1100 U	920 U	940 U
N-nitrosodiphenylamine	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
4-Bromophenyl-phenylether	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Hexachlorobenzene	UG/KG	390 U	360 U	3800 UJ	440 U	380 U	390 U
Pentachlorophenol	UG/KG	950 U	880 U	9300 U	1100 U	920 U	940 U
Phenanthrene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Anthracene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Carbazole	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
di-n-Butylphthalate	UG/KG	390 U	360 U	3800 U	440 U	390 U	390 U
Fluoranthene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Pyrene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Butyl benzyl phthalate	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
3,3'-Dichlorobenzidine	UG/KG	390 U	360 U	3800 UJ	440 U	380 U	390 U
Benzo[a]anthracene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Chrysene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
bis(2-Ethylhexyl)phthalate	UG/KG	390 U	600	560 J	440 U	380 U	390 U
di-n-Octylphthalate	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Benzo[b]fluoranthene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Benzo[k]fluoranthene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Benzo[a]pyrene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Indeno[1,2,3-cd]pyrene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Dibenz[a,h]anthracene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U
Benzo[g,h,i]perylene	UG/KG	390 U	360 U	3800 U	440 U	380 U	390 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-EA-SB11-00	7-MW04-00	7-MW05-00	7-NA-SB01-00	7-NA-SB02-00	7-NA-SB03-00
Laboratory Sample ID:	AC5329	AC5450	Q41118003	AC5458	AC5339	AC5287
Date Sampled:	10/22/94	10/24/94	11/03/94	10/24/94	10/23/94	10/23/94

		<u>UNITS</u>					
<u>PESTICIDES/PCBs</u>							
alpha-BHC	UG/KG	2 U	1.8 U	18 UJ	2.2 U	2 UJ	2 UJ
beta-BHC	UG/KG	2 U	1.8 U	18 UJ	2.2 U	2 UJ	2 UJ
delta-BHC	UG/KG	2 U	1.8 U	18 UJ	2.2 U	2 UJ	2 UJ
Lindane (gamma-BHC)	UG/KG	2 U	1.8 U	18 UJ	2.2 U	2 UJ	2 UJ
Heptachlor	UG/KG	2 U	1.8 U	18 UJ	2.2 U	2 UJ	2 UJ
Aldrin	UG/KG	2 U	1.8 U	18 UJ	2.2 U	2 UJ	2 UJ
Heptachlor epoxide	UG/KG	2 U	1.8 U	18 UJ	2.2 U	2 UJ	2 UJ
Endosulfan I	UG/KG	2 U	1.8 U	18 UJ	2.2 U	2 UJ	2 UJ
Dieldrin	UG/KG	3.9 U	3.5 U	14 J	4.3 U	3.8 UJ	8.5 J
4,4'-DDE	UG/KG	3.9 U	3.5 U	65 J	4.3 U	3.8 UJ	50 J
Endrin	UG/KG	3.9 U	3.5 U	35 UJ	4.3 U	3.8 UJ	3.9 UJ
Endosulfan II	UG/KG	3.9 U	3.5 U	35 UJ	4.3 U	3.8 UJ	3.9 UJ
4,4'-DDD	UG/KG	3.9 U	3.5 U	94 J	4.3 U	3.8 UJ	9.8 J
Endosulfan sulfate	UG/KG	3.9 U	3.5 U	35 UJ	4.3 U	3.8 UJ	3.9 UJ
4,4'-DDT	UG/KG	3.9 U	3.5 U	280 J	4.3 U	3.8 UJ	28 J
Methoxychlor	UG/KG	20 U	18 UJ	180 UJ	22 UJ	20 UJ	20 UJ
Endrin ketone	UG/KG	3.9 U	3.5 U	35 UJ	4.3 U	3.8 UJ	3.9 UJ
Endrin aldehyde	UG/KG	3.9 U	3.5 U	35 UJ	4.3 U	3.8 UJ	3.9 UJ
alpha-Chlordane	UG/KG	2 U	1.8 U	18 UJ	2.2 U	2 UJ	12 J
gamma-Chlordane	UG/KG	2 U	1.8 U	18 UJ	2.2 U	2 UJ	6.9 J
Toxaphene	UG/KG	200 U	180 U	1800 UJ	220 U	200 UJ	200 UJ
Aroclor 1016	UG/KG	39 U	35 U	350 UJ	43 U	38 UJ	39 UJ
Aroclor 1221	UG/KG	78 U	71 U	700 UJ	88 U	77 UJ	79 UJ
Aroclor 1232	UG/KG	39 U	35 U	350 UJ	43 U	38 UJ	39 UJ
Aroclor 1242	UG/KG	39 U	35 U	350 UJ	43 U	38 UJ	39 UJ
Aroclor 1248	UG/KG	39 U	35 U	350 UJ	43 U	38 UJ	39 UJ
Aroclor 1254	UG/KG	39 U	35 U	350 UJ	43 U	38 UJ	39 UJ
Aroclor 1260	UG/KG	39 U	35 U	350 UJ	43 U	38 UJ	39 UJ

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NA-SB04-00	7-NA-SB05-00	7-NA-SB06-00	7-NA-SB07-00	7-NA-SB08-00	7-NA-SB09-00
Laboratory Sample ID:	AC5454	AC5343	AC5361	AC5315	AC5353	AC5462
Date Sampled:	10/24/94	10/23/94	10/23/94	10/22/94	10/23/94	10/24/94

	UNITS	7-NA-SB04-00	7-NA-SB05-00	7-NA-SB06-00	7-NA-SB07-00	7-NA-SB08-00	7-NA-SB09-00
VOLATILES							
Chloromethane	UG/KG	11 U	12 UJ	13 U	12 U	11 U	12 U
Bromomethane	UG/KG	11 U	12 U	13 U	12 U	11 U	12 U
Vinyl chloride	UG/KG	11 U	12 UJ	13 U	12 U	11 U	12 U
Chloroethane	UG/KG	11 U	12 U	13 U	12 U	11 U	12 U
Methylene chloride	UG/KG	11 U	12 U	13 U	12 U	11 U	12 U
Acetone	UG/KG	11 U	12 U	13 U	12 U	11 U	140 U
Carbon Disulfide	UG/KG	11 U	12 U	13 U	12 U	11 U	12 U
1,1-Dichloroethene	UG/KG	11 U	12 U	13 U	12 U	11 U	12 U
1,1-Dichloroethane	UG/KG	11 U	12 U	13 U	12 U	11 U	12 U
1,2-Dichloroethene(total)	UG/KG	11 U	12 U	13 U	12 U	11 U	12 U
Chloroform	UG/KG	11 UJ	12 U	13 UJ	12 U	11 U	12 UJ
1,2-Dichloroethane	UG/KG	11 UJ	12 U	13 UJ	12 U	11 U	12 UJ
2-Butanone	UG/KG	11 U	12 U	13 UJ	12 U	11 U	12 U
1,1,1-Trichloroethane	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
Carbon tetrachloride	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
Bromodichloromethane	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
1,2-Dichloropropane	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
cis-1,3-Dichloropropene	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
Trichloroethene	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
Dibromochloromethane	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
1,1,2-Trichloroethane	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
Benzene	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
trans-1,3-Dichloropropene	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
Bromoform	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
4-Methyl-2-pentanone	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
2-Hexanone	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
Tetrachloroethene	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
1,1,2,2-Tetrachloroethane	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
Toluene	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
Chlorobenzene	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
Ethylbenzene	UG/KG	11 U	12 UJ	13 UJ	12 UJ	11 U	12 U
Styrene	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U
Xylenes (total)	UG/KG	11 U	12 U	13 UJ	12 UJ	11 U	12 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NA-SB04-00	7-NA-SB05-00	7-NA-SB06-00	7-NA-SB07-00	7-NA-SB08-00	7-NA-SB09-00
Laboratory Sample ID:	AC5454	AC5343	AC5361	AC5315	AC5353	AC5462
Date Sampled:	10/24/94	10/23/94	10/23/94	10/22/94	10/23/94	10/24/94

	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
bis(2-Chloroethyl) ether	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
2-Chlorophenol	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
1,3-Dichlorobenzene	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
1,4-Dichlorobenzene	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
1,2-Dichlorobenzene	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
2-Methylphenol	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
2,2'-oxybis-(1-chloropropane)	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
4-Methylphenol	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
N-Nitroso-di-n-propylamine	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
Hexachloroethane	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
Nitrobenzene	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
Isophorone	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
2-Nitrophenol	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
2,4-Dimethylphenol	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
bis(2-Chloroethoxy) methane	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
2,4-Dichlorophenol	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
1,2,4-Trichlorobenzene	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
Naphthalene	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
4-Chloroaniline	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
Hexachlorobutadiene	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
4-Chloro-3-methylphenol	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
2-Methylnaphthalene	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
Hexachlorocyclopentadiene	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
2,4,6-Trichlorophenol	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
2,4,5-Trichlorophenol	UG/KG	890 U	1900 U	990 U	950 U	910 U	920 U
2-Chloronaphthalene	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
2-Nitroaniline	UG/KG	890 U	1900 U	990 U	950 U	910 U	920 U
Dimethyl phthalate	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
Acenaphthylene	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
2,6-Dinitrotoluene	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
3-Nitroaniline	UG/KG	890 U	1900 U	990 U	950 U	910 U	920 U
Acenaphthene	UG/KG	37 J	770 U	410 U	390 U	370 U	380 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NA-SB04-00	7-NA-SB05-00	7-NA-SB06-00	7-NA-SB07-00	7-NA-SB08-00	7-NA-SB09-00
Laboratory Sample ID:	AC5454	AC5343	AC5361	AC5315	AC5353	AC5462
Date Sampled:	10/24/94	10/23/94	10/23/94	10/22/94	10/23/94	10/24/94

UNITS

SEMIVOLATILES Cont.

2,4-Dinitrophenol	UG/KG	890 UJ	1900 UJ	990 UJ	950 U	910 U	920 U
4-Nitrophenol	UG/KG	890 U	1900 U	990 U	950 U	910 U	920 U
Dibenzofuran	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
2,4-Dinitrotoluene	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
Diethylphthalate	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
4-Chlorophenyl phenyl ether	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
Fluorene	UG/KG	38 J	770 U	410 U	390 U	370 U	380 U
4-Nitroaniline	UG/KG	890 U	1900 U	990 U	950 U	910 UJ	920 U
4,6-Dinitro-2-methylphenol	UG/KG	890 U	1900 U	990 U	950 U	910 U	920 U
N-nitrosodiphenylamine	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
4-Bromophenyl-phenylether	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
Hexachlorobenzene	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
Pentachlorophenol	UG/KG	890 U	1900 U	990 U	950 U	910 U	920 U
Phenanthrene	UG/KG	400	770 U	410 U	87 J	370 U	380 U
Anthracene	UG/KG	100 J	770 U	410 U	390 U	370 U	380 U
Carbazole	UG/KG	110 J	770 U	410 U	390 U	370 U	380 U
di-n-Butylphthalate	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
Fluoranthene	UG/KG	750	770 U	410 U	130 J	370 U	380 U
Pyrene	UG/KG	580	770 U	410 U	110 J	370 U	380 U
Butyl benzyl phthalate	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
3,3'-Dichlorobenzidine	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
Benzo[a]anthracene	UG/KG	420	770 U	410 U	60 J	370 U	380 U
Chrysene	UG/KG	420	770 U	410 U	75 J	370 U	380 U
bis(2-Ethylhexyl)phthalate	UG/KG	44 J	770 U	410 U	390 U	370 U	380 U
di-n-Octylphthalate	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
Benzo[b]fluoranthene	UG/KG	380	770 U	410 U	66 J	370 U	380 U
Benzo[k]fluoranthene	UG/KG	370	770 U	410 U	64 J	370 U	380 U
Benzo[a]pyrene	UG/KG	340 J	770 U	410 U	55 J	370 U	380 U
Indeno[1,2,3-cd]pyrene	UG/KG	250 J	770 U	410 U	41 J	370 U	380 U
Dibenz[a,h]anthracene	UG/KG	370 U	770 U	410 U	390 U	370 U	380 U
Benzo[g,h,i]perylene	UG/KG	220 J	770 U	410 U	44 J	370 U	380 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NA-SB04-00	7-NA-SB05-00	7-NA-SB06-00	7-NA-SB07-00	7-NA-SB08-00	7-NA-SB09-00
Laboratory Sample ID:	AC5454	AC5343	AC5361	AC5315	AC5353	AC5462
Date Sampled:	10/24/94	10/23/94	10/23/94	10/22/94	10/23/94	10/24/94

	<u>UNITS</u>						
<u>PESTICIDES/PCBs</u>							
alpha-BHC	UG/KG	1.9 U	2 UJ	2.1 U	2 UR	1.9 U	2 U
beta-BHC	UG/KG	1.9 U	2 UJ	2.1 U	2 UR	1.9 U	2 U
delta-BHC	UG/KG	1.9 U	2 UJ	2.1 U	2 UR	1.9 U	2 U
Lindane (gamma-BHC)	UG/KG	1.9 U	2 UJ	2.1 U	2 UR	1.9 U	2 U
Heptachlor	UG/KG	1.9 U	2 UJ	2.1 U	2 UR	1.9 U	2 U
Aldrin	UG/KG	3	2 UJ	2.1 U	2 UR	1.9 U	2 U
Heptachlor epoxide	UG/KG	1.9 U	2 UJ	2.1 U	2 UR	1.9 U	2 U
Endosulfan I	UG/KG	1.9 U	2 UJ	2.1 U	2 UR	1.9 U	2 U
Dieldrin	UG/KG	57	3.8 UJ	4.2 U	3.9 UR	3.7 U	3.9 U
4,4'-DDE	UG/KG	3.7 U	3.8 UJ	4.2 U	3.9 UR	3.7 U	3.9 U
Endrin	UG/KG	3.7 U	3.8 UJ	4.2 U	3.9 UR	3.7 U	3.9 U
Endosulfan II	UG/KG	3.7 U	3.8 UJ	4.2 U	3.9 UR	3.7 U	9.3 J
4,4'-DDD	UG/KG	3.7 U	3.8 UJ	4.2 U	3.9 UR	3.7 U	3.9 U
Endosulfan sulfate	UG/KG	3.7 U	3.8 UJ	4.2 U	3.9 UR	3.7 U	3.9 U
4,4'-DDT	UG/KG	3.7 U	3.8 UJ	4.2 U	3.9 UR	3.7 U	7.9 U
Methoxychlor	UG/KG	19 UJ	20 UJ	21 U	20 UR	19 U	20 UJ
Endrin ketone	UG/KG	3.7 U	3.8 UJ	4.2 U	3.9 UR	3.7 U	3.9 U
Endrin aldehyde	UG/KG	3.7 U	3.8 UJ	4.2 U	3.9 UR	3.7 U	3.9 U
alpha-Chlordane	UG/KG	26 J	2 UJ	2.1 U	2 UR	1.9 U	2 U
gamma-Chlordane	UG/KG	22 J	2 UJ	2.1 U	2 UR	1.9 U	2 U
Toxaphene	UG/KG	190 U	200 UJ	210 U	200 UR	190 U	200 U
Aroclor 1016	UG/KG	37 U	38 UJ	42 U	39 UR	37 U	39 U
Aroclor 1221	UG/KG	75 U	78 UJ	85 U	80 UR	76 U	79 U
Aroclor 1232	UG/KG	37 U	38 UJ	42 U	39 UR	37 U	39 U
Aroclor 1242	UG/KG	37 U	38 UJ	42 U	39 UR	37 U	39 U
Aroclor 1248	UG/KG	37 U	38 UJ	42 U	39 UR	37 U	39 U
Aroclor 1254	UG/KG	37 U	38 UJ	42 U	39 UR	37 U	39 U
Aroclor 1260	UG/KG	80 NJ	38 UJ	42 U	39 UR	37 U	39 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NA-SB10-00	7-NA-SB11-00	7-NA-SB12-00	7-SWA-SB01-00	7-SWA-SB02-00	7-SWA-SB03-00
Laboratory Sample ID:	AC5319	AC5299	AC5321	AC4834	AC4928	AC4828
Date Sampled:	10/22/94	10/24/94	10/22/94	10/21/94	10/22/94	10/21/94

	UNITS						
<u>VOLATILES</u>							
Chloromethane	UG/KG	13 U	11 U	13 U	11 U	11 U	12 UJ
Bromomethane	UG/KG	13 U	11 U	13 U	11 U	11 U	12 UJ
Vinyl chloride	UG/KG	13 U	11 UJ	13 U	11 U	11 U	12 UJ
Chloroethane	UG/KG	13 U	11 U	13 U	11 U	11 U	12 UJ
Methylene chloride	UG/KG	13 U	11 U	13 U	11 U	11 U	12 UJ
Acetone	UG/KG	13 U	11 U	13 U	11 U	11 U	12 UJ
Carbon Disulfide	UG/KG	13 U	11 U	13 U	11 U	11 U	12 UJ
1,1-Dichloroethene	UG/KG	13 U	11 U	13 U	11 U	11 U	12 UJ
1,1-Dichloroethane	UG/KG	13 U	11 U	13 U	11 U	11 U	12 UJ
1,2-Dichloroethene(total)	UG/KG	13 U	11 U	13 U	11 U	11 U	12 UJ
Chloroform	UG/KG	13 U	11 U	13 U	11 U	11 U	12 UJ
1,2-Dichloroethane	UG/KG	13 U	11 U	13 U	11 U	11 U	12 UJ
2-Butanone	UG/KG	13 U	11 U	13 U	11 U	11 U	12 UJ
1,1,1-Trichloroethane	UG/KG	13 UJ	11 U	13 U	11 U	11 U	12 UJ
Carbon tetrachloride	UG/KG	13 UJ	11 U	13 U	11 U	11 U	12 UJ
Bromodichloromethane	UG/KG	13 UJ	11 U	13 U	11 U	11 U	12 UJ
1,2-Dichloropropane	UG/KG	13 UJ	11 U	13 U	11 U	11 U	12 UJ
cis-1,3-Dichloropropene	UG/KG	13 UJ	11 U	13 U	11 U	11 U	12 UJ
Trichloroethene	UG/KG	13 UJ	11 U	13 U	11 U	11 U	12 UJ
Dibromochloromethane	UG/KG	13 UJ	11 U	13 U	11 U	11 U	12 UJ
1,1,2-Trichloroethane	UG/KG	13 UJ	11 U	13 U	11 U	11 U	12 UJ
Benzene	UG/KG	13 UJ	11 U	13 U	11 U	11 U	12 UJ
trans-1,3-Dichloropropene	UG/KG	13 UJ	11 U	13 U	11 U	11 U	12 UJ
Bromoform	UG/KG	13 UJ	11 U	13 U	11 U	11 U	12 UJ
4-Methyl-2-pentanone	UG/KG	13 UJ	11 U	13 UJ	11 UJ	11 U	12 UJ
2-Hexanone	UG/KG	13 UJ	11 U	13 UJ	11 UJ	11 U	12 UJ
Tetrachloroethene	UG/KG	13 UJ	11 U	13 UJ	11 UJ	11 U	12 UJ
1,1,2,2-Tetrachloroethane	UG/KG	13 UJ	11 U	13 UJ	11 UJ	11 U	12 UJ
Toluene	UG/KG	9 J	11 U	12 J	11 UJ	11 U	12 UJ
Chlorobenzene	UG/KG	13 UJ	11 U	13 UJ	11 UJ	11 U	12 UJ
Ethylbenzene	UG/KG	13 UJ	11 UJ	13 UJ	11 UJ	11 U	12 UJ
Styrene	UG/KG	13 UJ	11 U	13 UJ	11 UJ	11 U	12 UJ
Xylenes (total)	UG/KG	13 UJ	11 U	13 UJ	11 UJ	11 U	12 UJ

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NA-SB10-00	7-NA-SB11-00	7-NA-SB12-00	7-SWA-SB01-00	7-SWA-SB02-00	7-SWA-SB03-00
Laboratory Sample ID:	AC5319	AC5299	AC5321	AC4834	AC4928	AC4828
Date Sampled:	10/22/94	10/24/94	10/22/94	10/21/94	10/22/94	10/21/94

	<u>UNITS</u>						
<u>SEMIVOLATILES</u>							
Phenol	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
bis(2-Chloroethyl) ether	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
2-Chlorophenol	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
1,3-Dichlorobenzene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
1,4-Dichlorobenzene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
1,2-Dichlorobenzene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
2-Methylphenol	UG/KG	420 UJ	360 U	400 UJ	370 U	350 U	380 U
2,2'-oxybis-(1-chloropropane)	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
4-Methylphenol	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
N-Nitroso-di-n-propylamine	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Hexachloroethane	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Nitrobenzene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Isophorone	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
2-Nitrophenol	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
2,4-Dimethylphenol	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
bis(2-Chloroethoxy) methane	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
2,4-Dichlorophenol	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
1,2,4-Trichlorobenzene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Naphthalene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
4-Chloroaniline	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Hexachlorobutadiene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
4-Chloro-3-methylphenol	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
2-Methylnaphthalene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Hexachlorocyclopentadiene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
2,4,6-Trichlorophenol	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
2,4,5-Trichlorophenol	UG/KG	1000 U	880 U	980 U	890 U	850 U	930 U
2-Chloronaphthalene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
2-Nitroaniline	UG/KG	1000 U	880 U	980 U	900 U	850 U	930 U
Dimethyl phthalate	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Acenaphthylene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
2,6-Dinitrotoluene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
3-Nitroaniline	UG/KG	1000 U	880 U	980 U	890 U	850 U	930 U
Acenaphthene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NA-SB10-00	7-NA-SB11-00	7-NA-SB12-00	7-SWA-SB01-00	7-SWA-SB02-00	7-SWA-SB03-00
Laboratory Sample ID:	AC5319	AC5299	AC5321	AC4834	AC4928	AC4828
Date Sampled:	10/22/94	10/24/94	10/22/94	10/21/94	10/22/94	10/21/94

	UNITS						
<u>SEMIVOLATILES Cont.</u>							
2,4-Dinitrophenol	UG/KG	1000 U	880 UJ	980 U	890 UJ	850 UJ	930 U
4-Nitrophenol	UG/KG	1000 U	880 U	980 U	890 U	850 U	930 U
Dibenzofuran	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
2,4-Dinitrotoluene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Diethylphthalate	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
4-Chlorophenyl phenyl ether	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Fluorene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
4-Nitroaniline	UG/KG	1000 U	880 U	980 U	890 U	850 U	930 U
4,6-Dinitro-2-methylphenol	UG/KG	1000 U	880 U	980 U	890 U	850 U	930 U
N-nitrosodiphenylamine	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
4-Bromophenyl-phenylether	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Hexachlorobenzene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Pentachlorophenol	UG/KG	1000 U	880 U	980 U	890 U	850 U	930 U
Phenanthrene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Anthracene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Carbazole	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
di-n-Butylphthalate	UG/KG	420 U	360 U	400 U	370 U	170 J	380 U
Fluoranthene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Pyrene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Butyl benzyl phthalate	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
3,3'-Dichlorobenzidine	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Benzo[a]anthracene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Chrysene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
bis(2-Ethylhexyl)phthalate	UG/KG	420 U	360 U	400 U	370 U	38 J	380 U
di-n-Octylphthalate	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Benzo[b]fluoranthene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Benzo[k]fluoranthene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Benzo[a]pyrene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Indeno[1,2,3-cd]pyrene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Dibenz[a,h]anthracene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U
Benzo[g,h,i]perylene	UG/KG	420 U	360 U	400 U	370 U	350 U	380 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NA-SB10-00	7-NA-SB11-00	7-NA-SB12-00	7-SWA-SB01-00	7-SWA-SB02-00	7-SWA-SB03-00
Laboratory Sample ID:	AC5319	AC5299	AC5321	AC4834	AC4928	AC4828
Date Sampled:	10/22/94	10/24/94	10/22/94	10/21/94	10/22/94	10/21/94

	UNITS					
PESTICIDES/PCBs						
alpha-BHC	UG/KG	2.1 UR	1.9 UJ	2.1 U	1.9 U	2 U
beta-BHC	UG/KG	2.1 UR	1.9 UJ	2.1 U	1.9 U	2 U
delta-BHC	UG/KG	2.1 UR	1.9 UJ	2.1 U	1.9 U	3.3 NJ
Lindane (gamma-BHC)	UG/KG	2.1 UR	1.9 UJ	2.1 U	1.9 U	2 U
Heptachlor	UG/KG	2.1 UR	1.9 UJ	2.1 U	1.9 U	2 U
Aldrin	UG/KG	2.1 UR	1.9 UJ	2.1 U	1.9 U	2 U
Heptachlor epoxide	UG/KG	2.1 UR	1.9 UJ	2.1 U	1.9 U	2 U
Endosulfan I	UG/KG	2.1 UR	1.9 UJ	2.1 U	1.9 U	2 U
Dieldrin	UG/KG	4.1 UR	3.7 UJ	4.1 U	3.6 U	4 U
4,4'-DDE	UG/KG	4.1 UR	3.7 UJ	4.1 U	4.9	4 U
Endrin	UG/KG	4.1 UR	3.7 UJ	4.1 U	3.6 U	4 U
Endosulfan II	UG/KG	4.1 UR	3.7 UJ	4.1 U	3.6 U	37 NJ
4,4'-DDD	UG/KG	4.3 J	3.7 UJ	4.1 U	3.6 U	4 U
Endosulfan sulfate	UG/KG	4.1 UR	3.7 UJ	4.1 U	3.6 U	4 U
4,4'-DDT	UG/KG	4.1 UR	3.7 UJ	4.1 U	4.9 U	42 NJ
Methoxychlor	UG/KG	21 UR	19 UJ	21 U	19 U	20 U
Endrin ketone	UG/KG	4.1 UR	3.7 UJ	4.1 U	3.6 U	4 U
Endrin aldehyde	UG/KG	4.1 UR	3.7 UJ	4.1 U	3.6 U	39 NJ
alpha-Chlordane	UG/KG	2.1 UR	1.9 UJ	2.1 U	1.9 U	2 U
gamma-Chlordane	UG/KG	2.1 UR	1.9 UJ	2.1 U	1.9 U	2 U
Toxaphene	UG/KG	210 UR	190 UJ	210 U	190 U	200 U
Aroclor 1016	UG/KG	41 UR	37 UJ	41 U	36 U	40 U
Aroclor 1221	UG/KG	84 UR	75 UJ	84 U	74 U	81 U
Aroclor 1232	UG/KG	41 UR	37 UJ	41 U	36 U	40 U
Aroclor 1242	UG/KG	41 UR	37 UJ	41 U	36 U	40 U
Aroclor 1248	UG/KG	41 UR	37 UJ	41 U	36 U	40 U
Aroclor 1254	UG/KG	41 UR	37 UJ	41 U	36 U	40 U
Aroclor 1260	UG/KG	41 UR	37 UJ	41 U	36 U	40 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-SWA-SB04-00	7-SWA-SB05-00
Laboratory Sample ID:	AC4935	AC4830
Date Sampled:	10/22/94	10/21/94

	<u>UNITS</u>		
<u>VOLATILES</u>			
Chloromethane	UG/KG	11 U	11 U
Bromomethane	UG/KG	11 U	11 U
Vinyl chloride	UG/KG	11 U	11 U
Chloroethane	UG/KG	11 U	11 U
Methylene chloride	UG/KG	11 U	11 U
Acetone	UG/KG	11 U	11 U
Carbon Disulfide	UG/KG	11 U	11 U
1,1-Dichloroethene	UG/KG	11 U	11 U
1,1-Dichloroethane	UG/KG	11 U	11 U
1,2-Dichloroethene(total)	UG/KG	11 U	11 U
Chloroform	UG/KG	11 U	11 U
1,2-Dichloroethane	UG/KG	11 U	11 U
2-Butanone	UG/KG	11 U	11 U
1,1,1-Trichloroethane	UG/KG	11 U	11 U
Carbon tetrachloride	UG/KG	11 U	11 U
Bromodichloromethane	UG/KG	11 U	11 U
1,2-Dichloropropane	UG/KG	11 U	11 U
cis-1,3-Dichloropropene	UG/KG	11 U	11 U
Trichloroethene	UG/KG	11 U	11 U
Dibromochloromethane	UG/KG	11 U	11 U
1,1,2-Trichloroethane	UG/KG	11 U	11 U
Benzene	UG/KG	11 U	11 U
trans-1,3-Dichloropropene	UG/KG	11 U	11 U
Bromoform	UG/KG	11 U	11 U
4-Methyl-2-pentanone	UG/KG	11 U	11 U
2-Hexanone	UG/KG	11 U	11 U
Tetrachloroethene	UG/KG	11 U	11 U
1,1,2,2-Tetrachloroethane	UG/KG	11 U	11 U
Toluene	UG/KG	11 U	11 U
Chlorobenzene	UG/KG	11 U	11 U
Ethylbenzene	UG/KG	11 U	11 U
Styrene	UG/KG	11 U	11 U
Xylenes (total)	UG/KG	11 U	11 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-SWA-SB04-00	7-SWA-SB05-00
Laboratory Sample ID:	AC4935	AC4830
Date Sampled:	10/22/94	10/21/94

	<u>UNITS</u>		
<u>SEMIVOLATILES</u>			
Phenol	UG/KG	370 U	360 U
bis(2-Chloroethyl) ether	UG/KG	370 U	360 U
2-Chlorophenol	UG/KG	370 U	360 U
1,3-Dichlorobenzene	UG/KG	370 U	360 U
1,4-Dichlorobenzene	UG/KG	370 U	360 U
1,2-Dichlorobenzene	UG/KG	370 U	360 U
2-Methylphenol	UG/KG	370 U	360 U
2,2'-oxybis-(1-chloropropane)	UG/KG	370 U	360 U
4-Methylphenol	UG/KG	370 U	360 U
N-Nitroso-di-n-propylamine	UG/KG	370 U	360 U
Hexachloroethane	UG/KG	370 U	360 U
Nitrobenzene	UG/KG	370 U	360 U
Isophorone	UG/KG	370 U	360 U
2-Nitrophenol	UG/KG	370 U	360 U
2,4-Dimethylphenol	UG/KG	370 U	360 U
bis(2-Chloroethoxy) methane	UG/KG	370 U	360 U
2,4-Dichlorophenol	UG/KG	370 U	360 U
1,2,4-Trichlorobenzene	UG/KG	370 U	360 U
Naphthalene	UG/KG	370 U	360 U
4-Chloroaniline	UG/KG	370 U	360 U
Hexachlorobutadiene	UG/KG	370 U	360 U
4-Chloro-3-methylphenol	UG/KG	370 U	360 U
2-Methylnaphthalene	UG/KG	370 U	360 U
Hexachlorocyclopentadiene	UG/KG	370 U	360 U
2,4,6-Trichlorophenol	UG/KG	370 U	360 U
2,4,5-Trichlorophenol	UG/KG	900 U	860 U
2-Chloronaphthalene	UG/KG	370 U	360 U
2-Nitroaniline	UG/KG	900 U	860 U
Dimethyl phthalate	UG/KG	370 U	360 U
Acenaphthylene	UG/KG	370 U	360 U
2,6-Dinitrotoluene	UG/KG	370 U	360 U
3-Nitroaniline	UG/KG	900 U	860 U
Acenaphthene	UG/KG	370 U	360 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-SWA-SB04-00	7-SWA-SB05-00
Laboratory Sample ID:	AC4935	AC4830
Date Sampled:	10/22/94	10/21/94

	<u>UNITS</u>		
<u>SEMIVOLATILES Cont.</u>			
2,4-Dinitrophenol	UG/KG	900 UJ	860 U
4-Nitrophenol	UG/KG	900 U	860 U
Dibenzofuran	UG/KG	370 U	360 U
2,4-Dinitrotoluene	UG/KG	370 U	360 U
Diethylphthalate	UG/KG	370 U	360 U
4-Chlorophenyl phenyl ether	UG/KG	370 U	360 U
Fluorene	UG/KG	370 U	360 U
4-Nitroaniline	UG/KG	900 U	860 U
4,6-Dinitro-2-methylphenol	UG/KG	900 U	860 U
N-nitrosodiphenylamine	UG/KG	370 U	360 U
4-Bromophenyl-phenylether	UG/KG	370 U	360 U
Hexachlorobenzene	UG/KG	370 U	360 U
Pentachlorophenol	UG/KG	900 U	860 U
Phenanthrene	UG/KG	370 U	360 U
Anthracene	UG/KG	370 U	360 U
Carbazole	UG/KG	370 U	360 U
di-n-Butylphthalate	UG/KG	370 U	360 U
Fluoranthene	UG/KG	370 U	360 U
Pyrene	UG/KG	370 U	360 U
Butyl benzyl phthalate	UG/KG	370 U	360 U
3,3'-Dichlorobenzidine	UG/KG	370 U	360 U
Benzo[a]anthracene	UG/KG	370 U	360 U
Chrysene	UG/KG	370 U	360 U
bis(2-Ethylhexyl)phthalate	UG/KG	61 J	170 J
di-n-Octylphthalate	UG/KG	370 U	360 U
Benzo[b]fluoranthene	UG/KG	370 U	360 U
Benzo[k]fluoranthene	UG/KG	370 U	360 U
Benzo[a]pyrene	UG/KG	370 U	360 U
Indeno[1,2,3-cd]pyrene	UG/KG	370 U	360 U
Dibenz[a,h]anthracene	UG/KG	370 U	360 U
Benzo[g,h,i]perylene	UG/KG	370 U	360 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-SWA-SB04-00	7-SWA-SB05-00
Laboratory Sample ID:	AC4935	AC4830
Date Sampled:	10/22/94	10/21/94

	<u>UNITS</u>		
<u>PESTICIDES/PCBs</u>			
alpha-BHC	UG/KG	1.9 U	1.8 U
beta-BHC	UG/KG	1.9 U	1.8 U
delta-BHC	UG/KG	1.9 U	1.8 U
Lindane (gamma-BHC)	UG/KG	1.9 U	1.8 U
Heptachlor	UG/KG	1.9 U	1.8 U
Aldrin	UG/KG	1.9 U	1.8 U
Heptachlor epoxide	UG/KG	1.9 U	1.8 U
Endosulfan I	UG/KG	1.9 U	1.8 U
Dieldrin	UG/KG	6.3 J	3.6 U
4,4'-DDE	UG/KG	3.8	3.6 U
Endrin	UG/KG	3.7 U	3.6 U
Endosulfan II	UG/KG	7.9 J	3.6 U
4,4'-DDD	UG/KG	3.7 U	3.6 U
Endosulfan sulfate	UG/KG	3.7 U	3.6 U
4,4'-DDT	UG/KG	3.7 U	3.6 U
Methoxychlor	UG/KG	19 U	18 U
Endrin ketone	UG/KG	3.7 U	3.6 U
Endrin aldehyde	UG/KG	3.7 U	3.6 U
alpha-Chlordane	UG/KG	11 J	1.8 U
gamma-Chlordane	UG/KG	8.1 J	1.8 U
Toxaphene	UG/KG	190 U	180 U
Aroclor 1016	UG/KG	37 U	36 U
Aroclor 1221	UG/KG	75 U	72 U
Aroclor 1232	UG/KG	37 U	36 U
Aroclor 1242	UG/KG	37 U	36 U
Aroclor 1248	UG/KG	37 U	36 U
Aroclor 1254	UG/KG	43 J	36 U
Aroclor 1260	UG/KG	37 U	36 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:		MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>						
	<u>VOLATILES</u>						
	Chloromethane	UG/KG	11 U	53 U	ND	ND	0/31
	Bromomethane	UG/KG	11 U	53 U	ND	ND	0/31
	Vinyl chloride	UG/KG	11 U	53 U	ND	ND	0/31
	Chloroethane	UG/KG	11 U	53 U	ND	ND	0/31
	Methylene chloride	UG/KG	11 U	53 U	ND	ND	0/31
	Acetone	UG/KG	11 U	140 U	150	170	7-EA-SB09-00 2/31
	Carbon Disulfide	UG/KG	11 U	53 U	ND	ND	0/31
	1,1-Dichloroethene	UG/KG	11 U	53 U	ND	ND	0/31
	1,1-Dichloroethane	UG/KG	11 U	53 U	ND	ND	0/31
	1,2-Dichloroethene(total)	UG/KG	11 U	53 U	ND	ND	0/31
	Chloroform	UG/KG	11 UJ	53 U	ND	ND	0/31
	1,2-Dichloroethane	UG/KG	11 UJ	53 U	ND	ND	0/31
	2-Butanone	UG/KG	11 U	53 U	52	52	7-EA-SB09-00 1/31
	1,1,1-Trichloroethane	UG/KG	11 U	53 U	ND	ND	0/30
	Carbon tetrachloride	UG/KG	11 U	53 U	ND	ND	0/30
	Bromodichloromethane	UG/KG	11 U	53 U	ND	ND	0/30
	1,2-Dichloropropane	UG/KG	11 U	53 U	ND	ND	0/30
	cis-1,3-Dichloropropene	UG/KG	11 U	53 U	ND	ND	0/30
	Trichloroethene	UG/KG	11 U	53 U	1 J	1 J	7-EA-SB06-00 1/30
	Dibromochloromethane	UG/KG	11 U	53 U	ND	ND	0/30
	1,1,2-Trichloroethane	UG/KG	11 U	53 U	ND	ND	0/30
	Benzene	UG/KG	11 U	53 U	ND	ND	0/30
	trans-1,3-Dichloropropene	UG/KG	11 U	53 U	ND	ND	0/30
	Bromoform	UG/KG	11 U	53 U	ND	ND	0/30
	4-Methyl-2-pentanone	UG/KG	11 U	53 UJ	ND	ND	0/30
	2-Hexanone	UG/KG	11 U	53 UJ	ND	ND	0/30
	Tetrachloroethene	UG/KG	11 U	53 UJ	ND	ND	0/30
	1,1,2,2-Tetrachloroethane	UG/KG	11 U	53 UJ	ND	ND	0/30
	Toluene	UG/KG	11 U	53 UJ	9 J	46 J	7-EA-SB09-00 3/30
	Chlorobenzene	UG/KG	11 U	53 UJ	ND	ND	0/30
	Ethylbenzene	UG/KG	11 U	53 UJ	ND	ND	0/30
	Styrene	UG/KG	11 U	53 UJ	ND	ND	0/30
	Xylenes (total)	UG/KG	11 U	58 UJ	ND	ND	0/30

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>					
	<u>SEMIVOLATILES</u>					
Phenol	UG/KG	340 U	3800 U	170 NJ	170 NJ	7-EA-SB10-00 1/32
bis(2-Chloroethyl) ether	UG/KG	340 U	3800 U	ND	ND	0/32
2-Chlorophenol	UG/KG	340 U	3800 U	ND	ND	0/32
1,3-Dichlorobenzene	UG/KG	340 U	3800 U	ND	ND	0/32
1,4-Dichlorobenzene	UG/KG	340 U	3800 U	ND	ND	0/32
1,2-Dichlorobenzene	UG/KG	340 U	3800 U	ND	ND	0/32
2-Methylphenol	UG/KG	340 U	3800 U	ND	ND	0/32
2,2'-oxybis-(1-chloropropane)	UG/KG	340 U	3800 U	ND	ND	0/32
4-Methylphenol	UG/KG	340 U	3800 U	ND	ND	0/32
N-Nitroso-di-n-propylamine	UG/KG	340 UJ	3800 U	ND	ND	0/32
Hexachloroethane	UG/KG	340 U	3800 U	ND	ND	0/32
Nitrobenzene	UG/KG	340 U	3800 U	ND	ND	0/32
Isophorone	UG/KG	340 U	3800 U	ND	ND	0/32
2-Nitrophenol	UG/KG	340 U	3800 U	ND	ND	0/32
2,4-Dimethylphenol	UG/KG	340 U	3800 U	ND	ND	0/32
bis(2-Chloroethoxy) methane	UG/KG	340 U	3800 U	ND	ND	0/32
2,4-Dichlorophenol	UG/KG	340 U	3800 U	ND	ND	0/32
1,2,4-Trichlorobenzene	UG/KG	340 U	3800 UJ	ND	ND	0/32
Naphthalene	UG/KG	340 U	3800 U	ND	ND	0/32
4-Chloroaniline	UG/KG	340 U	3800 UJ	ND	ND	0/32
Hexachlorobutadiene	UG/KG	340 U	3800 U	ND	ND	0/32
4-Chloro-3-methylphenol	UG/KG	340 U	3800 U	ND	ND	0/32
2-Methylnaphthalene	UG/KG	340 U	3800 U	ND	ND	0/32
Hexachlorocyclopentadiene	UG/KG	340 U	3800 U	ND	ND	0/32
2,4,6-Trichlorophenol	UG/KG	340 U	3800 U	ND	ND	0/32
2,4,5-Trichlorophenol	UG/KG	820 U	9300 UJ	ND	ND	0/32
2-Chloronaphthalene	UG/KG	340 U	3800 U	ND	ND	0/32
2-Nitroaniline	UG/KG	820 U	9300 U	ND	ND	0/32
Dimethyl phthalate	UG/KG	340 U	3800 U	ND	ND	0/32
Acenaphthylene	UG/KG	340 U	3800 U	ND	ND	0/32
2,6-Dinitrotoluene	UG/KG	340 U	3800 U	ND	ND	0/32
3-Nitroaniline	UG/KG	820 U	9300 U	ND	ND	0/32
Acenaphthene	UG/KG	340 U	3800 U	37 J	37 J	7-NA-SB04-00 1/32

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:		MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>						
	<u>SEMIVOLATILES Cont.</u>						
	2,4-Dinitrophenol	UG/KG 820 UJ	9300 U	ND	ND		0/32
	4-Nitrophenol	UG/KG 820 U	9300 U	ND	ND		0/32
	Dibenzofuran	UG/KG 340 U	3800 U	ND	ND		0/32
	2,4-Dinitrotoluene	UG/KG 340 U	3800 U	ND	ND		0/32
	Diethylphthalate	UG/KG 340 U	3800 U	ND	ND		0/32
	4-Chlorophenyl phenyl ether	UG/KG 340 U	3800 U	ND	ND		0/32
	Fluorene	UG/KG 340 U	3800 U	38 J	38 J	7-NA-SB04-00	1/32
	4-Nitroaniline	UG/KG 820 U	9300 U	ND	ND		0/32
	4,6-Dinitro-2-methylphenol	UG/KG 820 U	9300 U	ND	ND		0/32
	N-nitrosodiphenylamine	UG/KG 340 U	3800 U	ND	ND		0/32
	4-Bromophenyl-phenylether	UG/KG 340 U	3800 U	ND	ND		0/32
	Hexachlorobenzene	UG/KG 340 U	3800 UJ	ND	ND		0/32
	Pentachlorophenol	UG/KG 820 U	9300 U	ND	ND		0/32
	Phenanthrene	UG/KG 340 U	3800 U	63 J	400	7-NA-SB04-00	3/32
	Anthracene	UG/KG 340 U	3800 U	100 J	100 J	7-NA-SB04-00	1/32
	Carbazole	UG/KG 340 U	3800 U	110 J	110 J	7-NA-SB04-00	1/32
	di-n-Butylphthalate	UG/KG 340 U	3800 U	170 J	170 J	7-SWA-SB02-00	1/32
	Fluoranthene	UG/KG 340 U	3800 U	110 J	750	7-NA-SB04-00	4/32
	Pyrene	UG/KG 340 U	3800 U	85 J	580	7-NA-SB04-00	4/32
	Butyl benzyl phthalate	UG/KG 340 U	3800 U	ND	ND		0/32
	3,3'-Dichlorobenzidine	UG/KG 340 U	3800 UJ	ND	ND		0/32
	Benzo[a]anthracene	UG/KG 340 U	3800 U	50 J	420	7-NA-SB04-00	4/32
	Chrysene	UG/KG 340 U	3800 U	55 J	420	7-NA-SB04-00	4/32
	bis(2-Ethylhexyl)phthalate	UG/KG 360 U	1700 U	38 J	600	7-MW04-00	8/32
	di-n-Octylphthalate	UG/KG 340 U	3800 U	ND	ND		0/32
	Benzo[b]fluoranthene	UG/KG 340 U	3800 U	45 J	380	7-NA-SB04-00	4/32
	Benzo[k]fluoranthene	UG/KG 340 U	3800 U	60 J	370	7-NA-SB04-00	4/32
	Benzo[a]pyrene	UG/KG 340 U	3800 U	55 J	340 J	7-NA-SB04-00	3/32
	Indeno[1,2,3-cd]pyrene	UG/KG 340 U	3800 U	41 J	250 J	7-NA-SB04-00	3/32
	Dibenz[a,h]anthracene	UG/KG 340 U	3800 U	ND	ND		0/32
	Benzo[g,h,i]perylene	UG/KG 340 U	3800 U	44 J	220 J	7-NA-SB04-00	2/32

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:		MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>						
	<u>PESTICIDES/PCBs</u>						
	alpha-BHC	UG/KG	1.8 U	18 UJ	ND		0/30
	beta-BHC	UG/KG	1.8 U	18 UJ	ND		0/30
	delta-BHC	UG/KG	1.8 U	18 UJ	3.3 NJ	7-SWA-SB03-00	1/30
	Lindane (gamma-BHC)	UG/KG	1.8 U	18 UJ	ND		0/30
	Heptachlor	UG/KG	1.8 U	18 UJ	ND		0/30
	Aldrin	UG/KG	1.8 U	18 UJ	3	7-NA-SB04-00	1/30
	Heptachlor epoxide	UG/KG	1.8 U	18 UJ	ND		0/30
	Endosulfan I	UG/KG	1.8 U	18 UJ	ND		0/30
	Dieldrin	UG/KG	3.4 U	17 UJ	4.7 J	7-NA-SB04-00	7/30
	4,4'-DDE	UG/KG	3.4 U	17 UJ	3.8	7-MW05-00	7/30
	Endrin	UG/KG	3.4 U	35 UJ	ND		0/30
	Endosulfan II	UG/KG	3.4 U	35 UJ	7.9 J	7-SWA-SB03-00	3/30
	4,4'-DDD	UG/KG	3.4 U	17 UJ	4.3 J	7-MW05-00	3/31
	Endosulfan sulfate	UG/KG	3.4 U	35 UJ	ND		0/30
	4,4'-DDT	UG/KG	3.4 U	17 UJ	14 J	7-MW05-00	4/30
	Methoxychlor	UG/KG	18 UJ	180 UJ	ND		0/30
	Endrin ketone	UG/KG	3.4 U	35 UJ	ND		0/30
	Endrin aldehyde	UG/KG	3.4 U	35 UJ	39 NJ	7-SWA-SB03-00	1/30
	alpha-Chlordane	UG/KG	1.8 U	18 UJ	11 J	7-NA-SB04-00	3/30
	gamma-Chlordane	UG/KG	1.8 U	18 UJ	6.9 J	7-NA-SB04-00	3/30
	Toxaphene	UG/KG	180 U	1800 UJ	ND		0/30
	Aroclor 1016	UG/KG	34 U	350 UJ	ND		0/30
	Aroclor 1221	UG/KG	69 U	700 UJ	ND		0/30
	Aroclor 1232	UG/KG	34 U	350 UJ	ND		0/30
	Aroclor 1242	UG/KG	34 U	350 UJ	ND		0/30
	Aroclor 1248	UG/KG	34 U	350 UJ	ND		0/30
	Aroclor 1254	UG/KG	34 U	350 UJ	43 J	7-SWA-SB04-00	1/30
	Aroclor 1260	UG/KG	34 U	350 UJ	80 NJ	7-NA-SB04-00	1/30

APPENDIX I.1.A
SURFACE SOIL CONFIRMATORY PCB DATA

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL PCBs

Client Sample ID:	7-EPCB-SB01-00	7-EPCB-SB02-00	7-EPCB-SB03-00	7-EPCB-SB05-00	7-EPCB-SB09-00	7-NPCB-SB01-00
Laboratory Sample ID:	AH0960	AH0962	AH0964	AH0966	AH0968	AH0956
Date Sampled:	10/06/95	10/06/95	10/06/95	10/06/95	10/06/95	10/07/95

		<u>UNITS</u>					
<u>PCBs</u>							
PCB-1016	UG/KG	22 U	21 U	22 U	23 U	100 U	22 U
PCB-1221	UG/KG	22 U	21 U	22 U	23 U	100 U	22 U
PCB-1232	UG/KG	22 U	21 U	22 U	23 U	100 U	22 U
PCB-1242	UG/KG	22 U	21 U	22 U	23 U	100 U	22 U
PCB-1248	UG/KG	22 U	21 U	22 U	23 U	100 U	22 U
PCB-1254	UG/KG	45 U	42 U	45 U	45 U	210 U	43 U
PCB-1260	UG/KG	45 U	42 U	45 U	45 U	320	43 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL PCBs

Client Sample ID:	7-NPCB-SB02-00	7-NPCB-SB04-00	7-NPCB-SB05-00	7-NPCB-SB08-00
Laboratory Sample ID:	AH0955	AH0953	AH0951	AH0958
Date Sampled:	10/07/95	10/07/95	10/07/95	10/07/95

		<u>UNITS</u>			
<u>PCBs</u>					
PCB-1016	UG/KG	23 U	23 U	27 U	25 U
PCB-1221	UG/KG	23 U	23 U	27 U	25 U
PCB-1232	UG/KG	23 U	23 U	27 U	25 U
PCB-1242	UG/KG	23 U	23 U	27 U	25 U
PCB-1248	UG/KG	23 U	23 U	27 U	25 U
PCB-1254	UG/KG	46 U	45 U	54 U	49 U
PCB-1260	UG/KG	46 U	45 U	54 U	49 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 7 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL PCBs

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>					
	<u>PCBs</u>					
PCB-1016	UG/KG	21 U	100 U	ND	ND	0/10
PCB-1221	UG/KG	21 U	100 U	ND	ND	0/10
PCB-1232	UG/KG	21 U	100 U	ND	ND	0/10
PCB-1242	UG/KG	21 U	100 U	ND	ND	0/10
PCB-1248	UG/KG	21 U	100 U	ND	ND	0/10
PCB-1254	UG/KG	42 U	210 U	ND	ND	0/10
PCB-1260	UG/KG	42 U	54 U	320	320	7-EPCB-SB09-00 1/10

APPENDIX I.2
SURFACE SOIL METALS

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-CC-SB01-00	7-CC-SB02-00	7-EA-SB01-00	7-EA-SB02-00	7-EA-SB03-00	7-EA-SB04-00
Laboratory Sample ID:	AC5466	AC5468	AC5347	AC5472	AC5337	AC5488
Date Sampled:	10/24/94	10/24/94	10/23/94	10/25/94	10/23/94	10/25/94

	UNITS	7-CC-SB01-00	7-CC-SB02-00	7-EA-SB01-00	7-EA-SB02-00	7-EA-SB03-00	7-EA-SB04-00
Aluminum	MG/KG	7040	12900 J	7670	3740	6990	2740
Antimony	MG/KG	11.5 UJ	11.6 UJ	12.2 U	10.7 UJ	11.9 U	12.2 UJ
Arsenic	MG/KG	2.3	5.1 J	2.4 U	2.1 U	2.4 U	2.4 U
Barium	MG/KG	13.4	18.8	18.1	12.1	16.5	19.2
Beryllium	MG/KG	0.23 U	0.23 U	0.24 U	0.21 U	0.24 U	0.24 U
Cadmium	MG/KG	1.2 U	1.2 U	1.2 U	1.1 U	1.2 U	1.2 U
Calcium	MG/KG	1290	3200 J	1280 U	329	765 U	777
Chromium	MG/KG	9.3	23.1 J	9.1	3.7	9.5	3.6 J
Cobalt	MG/KG	2.3 U	2.3 U	2.4 U	2.1 U	2.4 U	2.4 U
Copper	MG/KG	2.3 U	2.3 U	2.4 U	2.1 U	2.4 U	2.4 U
Iron	MG/KG	7560	17600 J	5870	2810	5040	2650
Lead	MG/KG	9.9	10.2	13.5	14.9	8.5	9.2
Magnesium	MG/KG	223	521 J	295 U	126	220 U	131
Manganese	MG/KG	8.4	9.2	17.4	7.1	5.6 U	4.7
Mercury	MG/KG	0.12 U	0.12 U	0.13 U	0.11 U	0.12 U	0.12 U
Nickel	MG/KG	4.6 U	4.7 U	4.9 U	4.3 U	4.7 U	4.9 U
Potassium	MG/KG	231 U	776 J	355 U	213 U	253 U	244 U
Selenium	MG/KG	1.3	1.2 U	1.2 U	1.1	1.2 U	1.2 U
Silver	MG/KG	1.2 U	1.2 U	1.2 U	1.1 U	1.2 U	1.2 U
Sodium	MG/KG	28.9	57.2	42.5 U	24.8 J	31.6 U	39.8
Thallium	MG/KG	2.3 U	2.3 U	2.4 U	2.1 U	2.4 U	2.4 U
Vanadium	MG/KG	13.9	41 J	15.3	6.6	13	6.8
Zinc	MG/KG	11.4	22.4 J	11.7 UJ	13.4	15.5 UJ	10.2
Moisture	%	15.77	14.11	20.37	10.67	18.88	19

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-EA-SB05-00	7-EA-SB06-00	7-EA-SB07-00	7-EA-SB08-00	7-EA-SB09-00	7-EA-SB10-00
Laboratory Sample ID:	AC5303	AC5484	AC5311	AC5313	AC5325	AC5327
Date Sampled:	10/24/94	10/25/94	10/22/94	10/22/94	10/22/94	10/22/94

	UNITS	7-EA-SB05-00	7-EA-SB06-00	7-EA-SB07-00	7-EA-SB08-00	7-EA-SB09-00	7-EA-SB10-00
Aluminum	MG/KG	11200	7470	6510	1530	8770	3900
Antimony	MG/KG	11.7 U	10.4 UJ	49.8 U	52.4 U	45.6 U	18.3 U
Arsenic	MG/KG	3.8	3.2	10 U	10.5 U	9.1 U	3.7 U
Barium	MG/KG	13.3	12.7	172	97.8	171	101 U
Beryllium	MG/KG	0.28	0.21 U	1.6	1 U	1.1	1.9
Cadmium	MG/KG	1.2 U	1 U	5 U	5.2 U	4.6 U	1.8 U
Calcium	MG/KG	910 U	1420	1010 U	1860 U	1970 U	2920
Chromium	MG/KG	17.2	11.1	10 U	10.5 U	10.3	6.4
Cobalt	MG/KG	2.3 U	2.1 U	10 U	10.5 U	9.1 U	4.4
Copper	MG/KG	3	2.1 U	10 U	10.5 U	9.1 U	5.5
Iron	MG/KG	8980	8500	3110	1430	6500	3510
Lead	MG/KG	11.5	7.6	34	50.6	38.5	44.3
Magnesium	MG/KG	498 U	244	691 U	982 U	532 U	543 U
Manganese	MG/KG	8.5 U	8.9	8.9 U	13.3 U	12 U	14.4 U
Mercury	MG/KG	0.12 U	0.11 U	0.52 U	0.53 U	0.46 U	0.23
Nickel	MG/KG	4.7 U	4.1 U	19.9 U	21 U	18.3 U	13.8
Potassium	MG/KG	500 U	303 J	996 U	1050 U	913 U	442 U
Selenium	MG/KG	1.2 U	1 U	5 U	5.2 U	4.6 U	2.1
Silver	MG/KG	1.2 U	1 U	5 U	5.2 U	4.6 U	1.8 U
Sodium	MG/KG	44.6 U	41.2	446 U	443 U	482 U	197 U
Thallium	MG/KG	2.3 U	2.1 U	10 U	10.5 U	9.1 U	3.7 U
Vanadium	MG/KG	22.2	17.8	12.2	10.5 U	18.3	10.3
Zinc	MG/KG	14.3 UJ	10.3	59.9 UJ	36.2 UJ	55.5 UJ	46.9 UJ
Moisture	%	17.27	6.4	80.68	81.31	78.32	47.52

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-EA-SB11-00	7-MW04-00	7-MW05-00	7-NA-SB01-00	7-NA-SB02-00	7-NA-SB03-00
Laboratory Sample ID:	AC5329	AC5450	Q41118003A	AC5458	AC5339	AC5287
Date Sampled:	10/22/94	10/24/94	11/02/94	10/24/94	10/23/94	10/23/94

	UNITS	7-EA-SB11-00	7-MW04-00	7-MW05-00	7-NA-SB01-00	7-NA-SB02-00	7-NA-SB03-00
Aluminum	MG/KG	10300	3650	9960 J	6710	2360	3670
Antimony	MG/KG	11.7 U	10.3 UJ	2.8 UJ	12.6 UJ	11.4 U	11.2 U
Arsenic	MG/KG	2.6	2.1 U	1.1	2.5 U	2.3 U	2.2 U
Barium	MG/KG	15.5 U	8.5	23.7	9.7	6.6	16.6
Beryllium	MG/KG	0.23 U	0.21 U	0.15	0.25 U	0.23 U	0.27
Cadmium	MG/KG	1.2 U	1 U	0.35 U	1.3 U	1.1 U	1.1 U
Calcium	MG/KG	512	72.7	4410	171	67.8 U	2180
Chromium	MG/KG	13.2	2.1 U	13.4 J	9.5	2.3 U	6.1
Cobalt	MG/KG	2.3 U	2.1 U	1.6	2.5 U	2.3 U	2.2 U
Copper	MG/KG	3	2.1 U	7.6	2.5 U	2.3 U	2.6
Iron	MG/KG	5860	1330	4850 J	3550	1670	14.4
Lead	MG/KG	10.8	5.4	17.2 J	11.8	17.3	2620
Magnesium	MG/KG	374 U	82	1110	170	36.1 U	160 U
Manganese	MG/KG	13.9	7.1	42.9	3.6	3.3 U	9.5 U
Mercury	MG/KG	0.12 U	0.11 U	0.12 U	0.14 U	0.12 U	0.12 U
Nickel	MG/KG	4.7 U	4.1 U	6.3	5 U	4.6 U	4.5 U
Potassium	MG/KG	493 U	206 U	409 J	302 J	229 U	225 U
Selenium	MG/KG	1.2 U	1 U	0.61 U	1.4	1.1 U	1.2
Silver	MG/KG	1.2 U	1 U	0.47 U	1.3 U	1.1 U	1.1 U
Sodium	MG/KG	43.9 U	32.4	153	50.9	28.2 U	39.9 U
Thallium	MG/KG	2.3 U	2.1 U	0.93 U	2.5 U	2.3 U	2.2 U
Vanadium	MG/KG	19	2.5	23.8	15.1	3.3	8.5
Zinc	MG/KG	9.7 UJ	8.3	58.9 J	15.2	15.6 UJ	19.3 UJ
Moisture	%	16.2	9.14	NR	26.26	14.18	15.28

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-NA-SB04-00	7-NA-SB05-00	7-NA-SB06-00	7-NA-SB07-00	7-NA-SB08-00	7-NA-SB09-00
Laboratory Sample ID:	AC5454	AC5343	AC5361	AC5315	AC5353	AC5462
Date Sampled:	10/24/94	10/23/94	10/23/94	10/22/94	10/23/94	10/24/94

	UNITS	7-NA-SB04-00	7-NA-SB05-00	7-NA-SB06-00	7-NA-SB07-00	7-NA-SB08-00	7-NA-SB09-00
Aluminum	MG/KG	2280	2250	3660	6480	5370	5960
Antimony	MG/KG	11.2 UJ	11.2 U	11.9 U	11.3 U	11.2 U	11 UJ
Arsenic	MG/KG	2.2 U	2.2 U	2.4 U	2.3 U	2.2 U	2.2 U
Barium	MG/KG	11.5	5.2	10.2	28.4	3.7 U	16
Beryllium	MG/KG	0.22 U	0.22 U	0.24 U	0.27	0.22 U	0.22 U
Cadmium	MG/KG	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U
Calcium	MG/KG	16500	65.7 U	185 U	2470	29.3 U	458
Chromium	MG/KG	8.4	2.2 U	2.8	8.7	3.9	7.3
Cobalt	MG/KG	2.2 U	2.2 U	2.4 U	2.3 U	2.2 U	2.2 U
Copper	MG/KG	2.2 U	2.2 U	2.4 U	4.1	2.2 U	2.2 U
Iron	MG/KG	2740	1870	1720	4170	1890	4530
Lead	MG/KG	0.67 U	4.2	8.2	29.9	4.2	8.9
Magnesium	MG/KG	906	67.9 U	56.6 U	329 U	51.5 U	157
Manganese	MG/KG	24.6	4.4 U	3.6 U	32.9	3.8 U	7.5
Mercury	MG/KG	0.11 U	0.12 U	0.13 U	0.12 U	0.11 U	0.12 U
Nickel	MG/KG	4.5 U	4.5 U	4.8 U	4.5 U	4.5 U	4.4 U
Potassium	MG/KG	224 U	223 U	239 U	267 U	224 U	219 U
Selenium	MG/KG	1.1 U	1.3	1.2 U	1.9	1.1 U	1.1 U
Silver	MG/KG	1.1 U	1.1 U	1.2 U	1.2	1.1 U	1.1 U
Sodium	MG/KG	71	36.7 U	50 U	58.7 U	27.3 U	31.1
Thallium	MG/KG	2.2 U	2.2 U	2.4 U	2.3 U	2.2 U	2.2 U
Vanadium	MG/KG	5.3	4.4	4.7	14	5.6	11.2
Zinc	MG/KG	24.3	7.9 UJ	16.8 UJ	37.8 UJ	11.3 UJ	12.5
Moisture	%	12.35	15.52	20.92	17.53	12.33	16.38

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-NA-SB10-00	7-NA-SB11-00	7-NA-SB12-00	7-SWA-SB01-00	7-SWA-SB02-00	7-SWA-SB03-00
Laboratory Sample ID:	AC5319	AC5299	AC5321	AC4834	AC4928	AC4828
Date Sampled:	10/22/94	10/24/94	10/22/94	10/21/94	10/22/94	10/21/94

	UNITS						
Aluminum	MG/KG	1430	1250	1940	4320 J	1680	690 J
Antimony	MG/KG	12.5 U	11 U	12.7 U	10.6 UJ	10.8 U	11.7 UJ
Arsenic	MG/KG	2.5 U	2.2 U	2.5 U	2.1 U	2.2 U	2.3 U
Barium	MG/KG	24.1	6.5	7.4	11.9	8.7	12.8
Beryllium	MG/KG	0.25 U	0.24	0.29	0.21 U	0.22 U	0.23 U
Cadmium	MG/KG	1.2 U	1.1 U	1.3 U	1.1 U	1.1 U	1.2 U
Calcium	MG/KG	348 U	151 U	189 U	219 J	168	364 J
Chromium	MG/KG	2.5 U	2.5	2.5 U	2.6 J	2.2 U	2.3 UJ
Cobalt	MG/KG	2.5 U	2.2 U	2.5 U	2.1 U	2.2 U	2.3 U
Copper	MG/KG	2.5 U	2.2 U	2.5 U	2.1 U	2.2 U	2.3 U
Iron	MG/KG	850	905	2210	1540 J	917	361 J
Lead	MG/KG	8.6	7.5	5.9	5.8 J	6.5	6.4 J
Magnesium	MG/KG	94.9 U	70.9 U	78.7 U	109	36.1	147
Manganese	MG/KG	4.6 U	5.2 U	4.6 U	15.6 J	16.5	1.7 J
Mercury	MG/KG	0.13 U	0.11 U	0.13 U	0.11 U	0.11 U	0.12 U
Nickel	MG/KG	5 U	4.4 U	5.1 U	4.3 U	4.3 U	4.7 U
Potassium	MG/KG	249 U	219 U	255 U	213 U	216 U	233 U
Selenium	MG/KG	1.2 U	1.1 U	1.3 U	1.1 U	1.1 U	1.2 U
Silver	MG/KG	1.2 U	1.1 U	1.3 U	1.1 U	1.1 U	1.2 U
Sodium	MG/KG	56.2 U	37.9 U	39.4 U	26.1	26.3	97.6
Thallium	MG/KG	2.5 U	2.2 U	2.5 U	2.1 U	2.2 U	2.3 U
Vanadium	MG/KG	2.5 U	3.5	3.3	4.6	2.2 U	2.3 U
Zinc	MG/KG	11.6 UJ	5.1 UJ	13 UJ	8.9 J	7.8	12.4 J
Moisture	%	21.26	12.17	21.49	11.36	8.22	16.75

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-SWA-SB04-00	7-SWA-SB05-00
Laboratory Sample ID:	AC4935	AC4830
Date Sampled:	10/22/94	10/21/94

	<u>UNITS</u>		
Aluminum	MG/KG	6400	2840 J
Antimony	MG/KG	10.6 U	10.5 UJ
Arsenic	MG/KG	2.1 U	2.1 U
Barium	MG/KG	19	11.6
Beryllium	MG/KG	0.26 J	0.21 U
Cadmium	MG/KG	1.1 U	1.1 U
Calcium	MG/KG	137000	206000 J
Chromium	MG/KG	12.4	8.2 J
Cobalt	MG/KG	2.1 U	2.1 U
Copper	MG/KG	3.9	2.1 U
Iron	MG/KG	3500	2050 J
Lead	MG/KG	0.64 U	0.63 UJ
Magnesium	MG/KG	519	594
Manganese	MG/KG	23.4	25.2 J
Mercury	MG/KG	0.23	0.11 U
Nickel	MG/KG	4.3 U	4.2 U
Potassium	MG/KG	246 J	211 U
Selenium	MG/KG	1.1 U	1.1 U
Silver	MG/KG	1.1 U	1.1 U
Sodium	MG/KG	71.9	84.4
Thallium	MG/KG	2.1 U	2.1 U
Vanadium	MG/KG	10.4	4
Zinc	MG/KG	41.5	11.7 J
Moisture	%	12.21	8.7

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:		MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	LOCATION OF	FREQUENCY
Laboratory Sample ID:		NONDETECTED	NONDETECTED	DETECTED	DETECTED	MAXIMUM	OF
Date Sampled:		NONDETECTED	NONDETECTED	DETECTED	DETECTED	DETECTED	DETECTION
	UNITS						
Aluminum	MG/KG	NA	NA	690 J	12900 J	7-CC-SB02-00	32/32
Antimony	MG/KG	2.8 UJ	52.4 U	ND	ND		0/32
Arsenic	MG/KG	2.1 U	10.5 U	1.1	5.1 J	7-CC-SB02-00	6/32
Barium	MG/KG	3.7 U	101 U	5.2	172	7-EA-SB07-00	29/32
Beryllium	MG/KG	0.21 U	1 U	0.15	1.9	7-EA-SB10-00	10/32
Cadmium	MG/KG	0.35 U	5.2 U	ND	ND		0/32
Calcium	MG/KG	29.3 U	1970 U	72.7	206000 J	7-SWA-SB05-00	19/32
Chromium	MG/KG	2.1 U	10.5 U	2.5	23.1 J	7-CC-SB02-00	23/32
Cobalt	MG/KG	2.1 U	10.5 U	1.6	4.4	7-EA-SB10-00	2/32
Copper	MG/KG	2.1 U	10.5 U	2.6	7.6	7-MW05-00	7/32
Iron	MG/KG	NA	NA	14.4	17600 J	7-CC-SB02-00	32/32
Lead	MG/KG	0.63 UJ	0.67 U	4.2	2620	7-NA-SB03-00	29/32
Magnesium	MG/KG	36.1 U	982 U	36.1	1110	7-MW05-00	15/32
Manganese	MG/KG	3.3 U	14.4 U	1.7 J	42.9	7-MW05-00	18/32
Mercury	MG/KG	0.11 U	0.53 U	0.23	0.23	7-SWA-SB04-00	2/32
Nickel	MG/KG	4.1 U	21 U	6.3	13.8	7-EA-SB10-00	2/32
Potassium	MG/KG	206 U	1050 U	246 J	776 J	7-CC-SB02-00	5/32
Selenium	MG/KG	0.61 U	5.2 U	1.1	2.1	7-EA-SB10-00	7/32
Silver	MG/KG	0.47 U	5.2 U	1.2	1.2	7-NA-SB07-00	1/32
Sodium	MG/KG	27.3 U	482 U	24.8 J	153	7-MW05-00	15/32
Thallium	MG/KG	0.93 U	10.5 U	ND	ND		0/32
Vanadium	MG/KG	2.2 U	10.5 U	2.5	41 J	7-CC-SB02-00	28/32
Zinc	MG/KG	5.1 UJ	59.9 UJ	7.8	58.9 J	7-MW05-00	15/32
Moisture	%						

APPENDIX I.3
SUBSURFACE SOIL ORGANICS

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-EA-SB01-07	7-EA-SB02-02	7-EA-SB03-08	7-EA-SB04-01	7-EA-SB05-07	7-EA-SB06-01
Laboratory Sample ID:	AC5351	AC5478	AC5349	AC5490	AC5305	AC5486
Date Sampled:	10/23/94	10/25/94	10/23/94	10/25/94	10/24/94	10/25/94

	UNITS					
<u>VOLATILES</u>						
Chloromethane	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
Bromomethane	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
Vinyl chloride	UG/KG	11 U	11 UJ	10 U	11 UJ	56 UJ 12 U
Chloroethane	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
Methylene chloride	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
Acetone	UG/KG	110	11 U	86	11 U	2300 12 U
Carbon Disulfide	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
1,1-Dichloroethene	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
1,1-Dichloroethane	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
1,2-Dichloroethene(total)	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
Chloroform	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
1,2-Dichloroethane	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
2-Butanone	UG/KG	11 U	11 U	10 U	13 U	56 U 15 U
1,1,1-Trichloroethane	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
Carbon tetrachloride	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
Bromodichloromethane	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
1,2-Dichloropropane	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
cis-1,3-Dichloropropene	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
Trichloroethene	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
Dibromochloromethane	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
1,1,2-Trichloroethane	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
Benzene	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
trans-1,3-Dichloropropene	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
Bromoform	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
4-Methyl-2-pentanone	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
2-Hexanone	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
Tetrachloroethene	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
1,1,2,2-Tetrachloroethane	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
Toluene	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
Chlorobenzene	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
Ethylbenzene	UG/KG	11 U	11 U	10 U	11 U	56 UJ 12 U
Styrene	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U
Xylenes (total)	UG/KG	11 U	11 U	10 U	11 U	56 U 12 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-EA-SB01-07	7-EA-SB02-02	7-EA-SB03-08	7-EA-SB04-01	7-EA-SB05-07	7-EA-SB06-01
Laboratory Sample ID:	AC5351	AC5478	AC5349	AC5490	AC5305	AC5486
Date Sampled:	10/23/94	10/25/94	10/23/94	10/25/94	10/24/94	10/25/94

	UNITS					
SEMIVOLATILES						
Phenol	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
bis(2-Chloroethyl) ether	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
2-Chlorophenol	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
1,3-Dichlorobenzene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
1,4-Dichlorobenzene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
1,2-Dichlorobenzene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
2-Methylphenol	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
2,2'-oxybis-(1-chloropropane)	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
4-Methylphenol	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
N-Nitroso-di-n-propylamine	UG/KG	360 U	360 UJ	340 UJ	370 UJ	370 UJ 400 UJ
Hexachloroethane	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
Nitrobenzene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
Isophorone	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
2-Nitrophenol	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
2,4-Dimethylphenol	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
bis(2-Chloroethoxy) methane	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
2,4-Dichlorophenol	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
1,2,4-Trichlorobenzene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
Naphthalene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
4-Chloroaniline	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
Hexachlorobutadiene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
4-Chloro-3-methylphenol	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
2-Methylnaphthalene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
Hexachlorocyclopentadiene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
2,4,6-Trichlorophenol	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
2,4,5-Trichlorophenol	UG/KG	870 U	860 U	820 UJ	890 U	370 UJ 970 U
2-Chloronaphthalene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
2-Nitroaniline	UG/KG	870 U	860 U	820 UJ	890 U	370 UJ 970 U
Dimethyl phthalate	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
Acenaphthylene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
2,6-Dinitrotoluene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U
3-Nitroaniline	UG/KG	870 U	860 U	820 UJ	890 U	370 UJ 970 U
Acenaphthene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ 400 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-EA-SB01-07	7-EA-SB02-02	7-EA-SB03-08	7-EA-SB04-01	7-EA-SB05-07	7-EA-SB06-01
Laboratory Sample ID:	AC5351	AC5478	AC5349	AC5490	AC5305	AC5486
Date Sampled:	10/23/94	10/25/94	10/23/94	10/25/94	10/24/94	10/25/94

UNITS

SEMIVOLATILES Cont.

2,4-Dinitrophenol	UG/KG	870 U	860 UJ	820 UJ	890 UJ	890 UJ	970 UJ
4-Nitrophenol	UG/KG	870 U	860 U	820 UJ	890 U	890 UJ	970 U
Dibenzofuran	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
2,4-Dinitrotoluene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Diethylphthalate	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
4-Chlorophenyl phenyl ether	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Fluorene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
4-Nitroaniline	UG/KG	870 UJ	860 U	820 UJ	890 U	890 UJ	970 U
4,6-Dinitro-2-methylphenol	UG/KG	870 U	860 U	820 UJ	890 U	890 UJ	970 U
N-nitrosodiphenylamine	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
4-Bromophenyl-phenylether	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Hexachlorobenzene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Pentachlorophenol	UG/KG	870 U	860 U	820 UJ	890 U	890 UJ	970 U
Phenanthrene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Anthracene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Carbazole	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
di-n-Butylphthalate	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Fluoranthene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Pyrene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Butyl benzyl phthalate	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
3,3'-Dichlorobenzidine	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Benzo[a]anthracene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Chrysene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
bis(2-Ethylhexyl)phthalate	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
di-n-Octylphthalate	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Benzo[b]fluoranthene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Benzo[k]fluoranthene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Benzo[a]pyrene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Indeno[1,2,3-cd]pyrene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Dibenz[a,h]anthracene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U
Benzo[g,h,i]perylene	UG/KG	360 U	360 U	340 UJ	370 U	370 UJ	400 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-EA-SB01-07	7-EA-SB02-02	7-EA-SB03-08	7-EA-SB04-01	7-EA-SB05-07	7-EA-SB06-01
Laboratory Sample ID:	AC5351	AC5478	AC5349	AC5490	AC5305	AC5486
Date Sampled:	10/23/94	10/25/94	10/23/94	10/25/94	10/24/94	10/25/94

	UNITS						
<u>PESTICIDES/PCBs</u>							
alpha-BHC	UG/KG	1.9 U	1.8 U	1.8 UJ	1.8 U	1.9 U	2.1 U
beta-BHC	UG/KG	1.9 U	1.8 U	1.8 UJ	1.8 U	1.9 U	2.1 U
delta-BHC	UG/KG	1.9 U	1.8 U	1.8 UJ	1.8 U	1.9 U	3 J
Lindane (gamma-BHC)	UG/KG	1.9 U	1.8 U	1.8 UJ	1.8 U	1.9 U	2.1 U
Heptachlor	UG/KG	1.9 U	1.8 U	1.8 UJ	1.8 U	1.9 U	2.1 U
Aldrin	UG/KG	1.9 U	1.8 U	1.8 UJ	1.8 U	1.9 U	2.1 U
Heptachlor epoxide	UG/KG	1.9 U	1.8 U	1.8 UJ	1.8 U	1.9 U	2.1 U
Endosulfan I	UG/KG	1.9 U	1.8 U	1.8 UJ	1.8 U	1.9 U	2.1 U
Dieldrin	UG/KG	3.6 U	3.5 U	3.5 UJ	3.6 U	3.6 U	4 U
4,4'-DDE	UG/KG	3.6 U	3.5 U	3.5 UJ	3.6 U	3.6 U	4 U
Endrin	UG/KG	3.6 U	3.5 U	3.5 UJ	3.6 U	3.6 U	4 U
Endosulfan II	UG/KG	3.6 U	3.5 U	3.5 UJ	3.6 U	3.6 U	17 J
4,4'-DDD	UG/KG	3.6 U	3.5 U	3.5 UJ	3.6 U	3.6 U	4 U
Endosulfan sulfate	UG/KG	3.6 U	3.5 U	3.5 UJ	3.6 U	3.6 U	4 U
4,4'-DDT	UG/KG	3.6 U	3.5 U	3.5 UJ	3.6 U	3.6 U	5 U
Methoxychlor	UG/KG	19 U	18 UJ	18 UJ	18 UJ	19 U	21 UJ
Endrin ketone	UG/KG	3.6 U	3.5 U	3.5 UJ	3.6 U	3.6 U	4 U
Endrin aldehyde	UG/KG	3.6 U	3.5 U	3.5 UJ	3.6 U	3.6 U	8.1 J
alpha-Chlordane	UG/KG	1.9 U	1.8 U	1.8 UJ	1.8 U	1.9 U	2.1 U
gamma-Chlordane	UG/KG	1.9 U	1.8 U	1.8 UJ	1.8 U	1.9 U	2.1 U
Toxaphene	UG/KG	190 U	180 U	180 UJ	180 U	190 U	210 U
Aroclor 1016	UG/KG	36 U	35 U	35 UJ	36 U	36 U	40 U
Aroclor 1221	UG/KG	73 U	71 U	72 UJ	73 U	74 U	81 U
Aroclor 1232	UG/KG	36 U	35 U	35 UJ	36 U	36 U	40 U
Aroclor 1242	UG/KG	36 U	35 U	35 UJ	36 U	36 U	40 U
Aroclor 1248	UG/KG	36 U	35 U	35 UJ	36 U	36 U	40 U
Aroclor 1254	UG/KG	36 U	35 U	35 UJ	36 U	36 U	40 U
Aroclor 1260	UG/KG	36 U	35 U	35 UJ	36 U	36 U	40 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-EA-SB11-02	7-MW04-08	7-MW05-06	7-NA-SB01-05	7-NA-SB02-08	7-NA-SB03-02
Laboratory Sample ID:	AC5331	AC5452	Q41118004	AC5460	AC5341	AC5294
Date Sampled:	10/22/94	10/24/94	11/03/94	10/24/94	10/23/94	10/23/94

	UNITS						
<u>VOLATILES</u>							
Chloromethane	UG/KG	12 U	12 U	13 UJ	11 U	11 U	83 U
Bromomethane	UG/KG	12 U	12 U	13 UJ	11 U	11 U	83 U
Vinyl chloride	UG/KG	12 U	12 U	13 UJ	11 U	11 U	83 U
Chloroethane	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
Methylene chloride	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
Acetone	UG/KG	12 U	27 U	15 U	25 U	63	2000 J
Carbon Disulfide	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
1,1-Dichloroethene	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
1,1-Dichloroethane	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
1,2-Dichloroethene(total)	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
Chloroform	UG/KG	12 U	12 UJ	13 U	11 UJ	11 U	83 U
1,2-Dichloroethane	UG/KG	12 U	12 UJ	13 U	11 UJ	11 U	83 U
2-Butanone	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
1,1,1-Trichloroethane	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
Carbon tetrachloride	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
Bromodichloromethane	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
1,2-Dichloropropane	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
cis-1,3-Dichloropropene	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
Trichloroethene	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
Dibromochloromethane	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
1,1,2-Trichloroethane	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
Benzene	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
trans-1,3-Dichloropropene	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
Bromoform	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
4-Methyl-2-pentanone	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
2-Hexanone	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
Tetrachloroethene	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
1,1,2,2-Tetrachloroethane	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
Toluene	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
Chlorobenzene	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
Ethylbenzene	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
Styrene	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U
Xylenes (total)	UG/KG	12 U	12 U	13 U	11 U	11 U	83 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-EA-SB11-02	7-MW04-08	7-MW05-06	7-NA-SB01-05	7-NA-SB02-08	7-NA-SB03-02
Laboratory Sample ID:	AC5331	AC5452	Q41118004	AC5460	AC5341	AC5294
Date Sampled:	10/22/94	10/24/94	11/03/94	10/24/94	10/23/94	10/23/94

	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
bis(2-Chloroethyl) ether	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
2-Chlorophenol	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
1,3-Dichlorobenzene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
1,4-Dichlorobenzene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
1,2-Dichlorobenzene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
2-Methylphenol	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
2,2'-oxybis-(1-chloropropane)	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
4-Methylphenol	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
N-Nitroso-di-n-propylamine	UG/KG	390 UJ	380 UJ	430 U	360 UJ	350 UJ	NA
Hexachloroethane	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Nitrobenzene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Isophorone	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
2-Nitrophenol	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
2,4-Dimethylphenol	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
bis(2-Chloroethoxy) methane	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
2,4-Dichlorophenol	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
1,2,4-Trichlorobenzene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Naphthalene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
4-Chloroaniline	UG/KG	390 UJ	380 U	430 UJ	360 U	350 U	NA
Hexachlorobutadiene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
4-Chloro-3-methylphenol	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
2-Methylnaphthalene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Hexachlorocyclopentadiene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
2,4,6-Trichlorophenol	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
2,4,5-Trichlorophenol	UG/KG	940 UJ	920 U	1100 U	880 U	850 U	NA
2-Chloronaphthalene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
2-Nitroaniline	UG/KG	940 UJ	920 U	1100 U	880 U	850 U	NA
Dimethyl phthalate	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Acenaphthylene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
2,6-Dinitrotoluene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
3-Nitroaniline	UG/KG	940 UJ	920 U	1100 U	880 U	850 U	NA
Acenaphthene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-EA-SB11-02	7-MW04-08	7-MW05-06	7-NA-SB01-05	7-NA-SB02-08	7-NA-SB03-02
Laboratory Sample ID:	AC5331	AC5452	Q41118004	AC5460	AC5341	AC5294
Date Sampled:	10/22/94	10/24/94	11/03/94	10/24/94	10/23/94	10/23/94

	UNITS						
<u>SEMIVOLATILES Cont.</u>							
2,4-Dinitrophenol	UG/KG	940 UJ	920 UJ	1100 UJ	880 UJ	850 UJ	NA
4-Nitrophenol	UG/KG	940 UJ	920 U	1100 U	880 U	850 U	NA
Dibenzofuran	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
2,4-Dinitrotoluene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Diethylphthalate	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
4-Chlorophenyl phenyl ether	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Fluorene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
4-Nitroaniline	UG/KG	940 UJ	920 U	1100 U	880 U	850 U	NA
4,6-Dinitro-2-methylphenol	UG/KG	940 UJ	920 U	1100 U	880 U	850 U	NA
N-nitrosodiphenylamine	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
4-Bromophenyl-phenylether	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Hexachlorobenzene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Pentachlorophenol	UG/KG	940 UJ	920 U	1100 UJ	880 U	850 U	NA
Phenanthrene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Anthracene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Carbazole	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
di-n-Butylphthalate	UG/KG	390 UJ	380 U	100 J	360 U	350 U	NA
Fluoranthene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Pyrene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Butyl benzyl phthalate	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
3,3'-Dichlorobenzidine	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Benzo[a]anthracene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Chrysene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
bis(2-Ethylhexyl)phthalate	UG/KG	390 UJ	47 J	430 U	360 U	350 U	NA
di-n-Octylphthalate	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Benzo[b]fluoranthene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Benzo[k]fluoranthene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Benzo[a]pyrene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Indeno[1,2,3-cd]pyrene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Dibenz[a,h]anthracene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA
Benzo[g,h,i]perylene	UG/KG	390 UJ	380 U	430 U	360 U	350 U	NA

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-EA-SB11-02	7-MW04-08	7-MW05-06	7-NA-SB01-05	7-NA-SB02-08	7-NA-SB03-02
Laboratory Sample ID:	AC5331	AC5452	Q41118004	AC5460	AC5341	AC5294
Date Sampled:	10/22/94	10/24/94	11/03/94	10/24/94	10/23/94	10/23/94

	UNITS						
<u>PESTICIDES/PCBs</u>							
alpha-BHC	UG/KG	2 U	1.9 U	2.2 U	1.8 U	1.8 UR	NA
beta-BHC	UG/KG	2 U	1.9 U	2.2 U	1.8 U	1.8 UR	NA
delta-BHC	UG/KG	2 U	1.9 U	2.2 U	1.8 U	1.8 UR	NA
Lindane (gamma-BHC)	UG/KG	2 U	1.9 U	2.2 U	1.8 U	1.8 UR	NA
Heptachlor	UG/KG	2 U	1.9 U	2.2 U	1.8 U	1.8 UR	NA
Aldrin	UG/KG	2 U	1.9 U	2.2 U	1.8 U	1.8 UR	NA
Heptachlor epoxide	UG/KG	2 U	1.9 U	2.2 U	1.8 U	1.8 UR	NA
Endosulfan I	UG/KG	2 U	1.9 U	2.2 U	1.8 U	1.8 UR	NA
Dieldrin	UG/KG	3.8 U	3.8 U	4.3 U	3.6 U	3.5 UR	NA
4,4'-DDE	UG/KG	3.8 U	3.8 U	0.82 J	3.6 U	3.5 UR	NA
Endrin	UG/KG	3.8 U	3.8 U	4.3 U	3.6 U	3.5 UR	NA
Endosulfan II	UG/KG	3.8 U	3.8 U	4.3 U	3.6 U	3.5 UR	NA
4,4'-DDD	UG/KG	3.8 U	3.8 U	1.9 J	3.6 U	3.5 UR	NA
Endosulfan sulfate	UG/KG	3.8 U	3.8 U	4.3 U	3.6 U	3.5 UR	NA
4,4'-DDT	UG/KG	3.8 U	3.8 U	1.7 J	3.6 U	3.5 UR	NA
Methoxychlor	UG/KG	20 U	19 UJ	22 U	18 UJ	18 UR	NA
Endrin ketone	UG/KG	3.8 U	3.8 U	4.3 U	3.6 U	3.5 UR	NA
Endrin aldehyde	UG/KG	3.8 U	3.8 U	4.3 U	3.6 U	3.5 UR	NA
alpha-Chlordane	UG/KG	2 U	1.9 U	2.2 U	1.8 U	1.8 UR	NA
gamma-Chlordane	UG/KG	2 U	1.9 U	2.2 U	1.8 U	1.8 UR	NA
Toxaphene	UG/KG	200 U	190 U	220 U	180 U	180 UR	NA
Aroclor 1016	UG/KG	38 U	38 U	43 U	36 U	35 UR	NA
Aroclor 1221	UG/KG	78 U	76 U	88 U	72 U	72 UR	NA
Aroclor 1232	UG/KG	38 U	38 U	43 U	36 U	35 UR	NA
Aroclor 1242	UG/KG	38 U	38 U	43 U	36 U	35 UR	NA
Aroclor 1248	UG/KG	38 U	38 U	43 U	36 U	35 UR	NA
Aroclor 1254	UG/KG	38 U	38 U	43 U	36 U	35 UR	NA
Aroclor 1260	UG/KG	38 U	38 U	43 U	36 U	35 UR	NA

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NA-SB03-04	7-NA-SB04-02	7-NA-SB05-08	7-NA-SB06-07	7-NA-SB07-02	7-NA-SB08-09
Laboratory Sample ID:	AC5289	AC5456	AC5345	AC5297	AC5317	AC5355
Date Sampled:	10/23/94	10/24/94	10/23/94	10/23/94	10/22/94	10/23/94

	UNITS					
VOLATILES						
Chloromethane	UG/KG	56 UJ	12 U	10 UJ	54 UJ	56 U 11 U
Bromomethane	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
Vinyl chloride	UG/KG	56 UJ	12 U	10 UJ	54 UJ	56 U 11 U
Chloroethane	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
Methylene chloride	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
Acetone	UG/KG	230	89 U	13	1100	880 26
Carbon Disulfide	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
1,1-Dichloroethene	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
1,1-Dichloroethane	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
1,2-Dichloroethene(total)	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
Chloroform	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
1,2-Dichloroethane	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
2-Butanone	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
1,1,1-Trichloroethane	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
Carbon tetrachloride	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
Bromodichloromethane	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
1,2-Dichloropropane	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
cis-1,3-Dichloropropene	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
Trichloroethene	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
Dibromochloromethane	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
1,1,2-Trichloroethane	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
Benzene	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
trans-1,3-Dichloropropene	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
Bromoform	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
4-Methyl-2-pentanone	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
2-Hexanone	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
Tetrachloroethene	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
1,1,2,2-Tetrachloroethane	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
Toluene	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
Chlorobenzene	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
Ethylbenzene	UG/KG	56 UJ	12 U	10 UJ	54 UJ	56 U 11 U
Styrene	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U
Xylenes (total)	UG/KG	56 U	12 U	10 U	54 U	56 U 11 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NA-SB03-04	7-NA-SB04-02	7-NA-SB05-08	7-NA-SB06-07	7-NA-SB07-02	7-NA-SB08-09
Laboratory Sample ID:	AC5289	AC5456	AC5345	AC5297	AC5317	AC5355
Date Sampled:	10/23/94	10/24/94	10/23/94	10/23/94	10/22/94	10/23/94

	<u>UNITS</u>					
SEMIVOLATILES						
Phenol	UG/KG	360 U	390 U	340 U	360 U	350 U
bis(2-Chloroethyl) ether	UG/KG	360 U	390 U	340 U	360 U	350 U
2-Chlorophenol	UG/KG	360 U	390 U	340 U	360 U	350 U
1,3-Dichlorobenzene	UG/KG	360 U	390 U	340 U	360 U	350 U
1,4-Dichlorobenzene	UG/KG	360 U	390 U	340 U	360 U	350 U
1,2-Dichlorobenzene	UG/KG	360 U	390 U	340 U	360 U	350 U
2-Methylphenol	UG/KG	360 U	390 U	340 UJ	360 U	350 U
2,2'-oxybis-(1-chloropropane)	UG/KG	360 U	390 U	340 U	360 U	350 U
4-Methylphenol	UG/KG	360 U	390 U	340 U	360 U	350 U
N-Nitroso-di-n-propylamine	UG/KG	360 U	390 U	340 U	360 U	350 U
Hexachloroethane	UG/KG	360 U	390 U	340 U	360 U	350 U
Nitrobenzene	UG/KG	360 U	390 U	340 U	360 U	350 U
Isophorone	UG/KG	360 U	390 U	340 U	360 U	350 U
2-Nitrophenol	UG/KG	360 U	390 U	340 U	360 U	350 U
2,4-Dimethylphenol	UG/KG	360 U	390 U	340 U	360 U	350 U
bis(2-Chloroethoxy) methane	UG/KG	360 U	390 U	340 U	360 U	350 U
2,4-Dichlorophenol	UG/KG	360 U	390 U	340 U	360 U	350 U
1,2,4-Trichlorobenzene	UG/KG	360 U	390 U	340 U	360 U	350 U
Naphthalene	UG/KG	360 U	390 U	340 U	360 U	120 J
4-Chloroaniline	UG/KG	360 U	390 U	340 U	360 U	350 U
Hexachlorobutadiene	UG/KG	360 U	390 U	340 U	360 U	350 U
4-Chloro-3-methylphenol	UG/KG	360 U	390 U	340 U	360 U	350 U
2-Methylnaphthalene	UG/KG	360 U	390 U	340 U	360 U	48 J
Hexachlorocyclopentadiene	UG/KG	360 U	390 U	340 U	360 U	350 U
2,4,6-Trichlorophenol	UG/KG	360 U	390 U	340 U	360 U	350 U
2,4,5-Trichlorophenol	UG/KG	860 U	950 U	820 U	860 U	840 U
2-Chloronaphthalene	UG/KG	360 U	390 U	340 U	360 U	350 U
2-Nitroaniline	UG/KG	860 U	950 U	820 U	860 U	840 U
Dimethyl phthalate	UG/KG	360 U	390 U	340 U	360 U	350 U
Acenaphthylene	UG/KG	360 U	390 U	340 U	360 U	350 U
2,6-Dinitrotoluene	UG/KG	360 U	390 U	340 U	360 U	350 U
3-Nitroaniline	UG/KG	860 U	950 U	820 U	860 U	840 U
Acenaphthene	UG/KG	360 U	390 U	340 U	360 U	190 J

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NA-SB03-04	7-NA-SB04-02	7-NA-SB05-08	7-NA-SB06-07	7-NA-SB07-02	7-NA-SB08-09
Laboratory Sample ID:	AC5289	AC5456	AC5345	AC5297	AC5317	AC5355
Date Sampled:	10/23/94	10/24/94	10/23/94	10/23/94	10/22/94	10/23/94

	<u>UNITS</u>						
<u>SEMIVOLATILES Cont.</u>							
2,4-Dinitrophenol	UG/KG	860 UJ	950 UJ	820 U	860 UJ	880 U	840 UJ
4-Nitrophenol	UG/KG	860 U	950 U	820 U	860 U	880 U	840 U
Dibenzofuran	UG/KG	360 U	390 U	340 U	360 U	120 J	350 U
2,4-Dinitrotoluene	UG/KG	360 U	390 U	340 U	360 U	360 U	350 U
Diethylphthalate	UG/KG	360 U	390 U	340 U	360 U	360 U	350 U
4-Chlorophenyl phenyl ether	UG/KG	360 U	390 U	340 U	360 U	360 U	350 U
Fluorene	UG/KG	360 U	390 U	340 U	360 U	260 J	350 U
4-Nitroaniline	UG/KG	860 U	950 U	820 U	860 U	880 U	840 U
4,6-Dinitro-2-methylphenol	UG/KG	860 U	950 U	820 U	860 U	880 U	840 U
N-nitrosodiphenylamine	UG/KG	360 U	390 U	340 U	360 U	360 U	350 U
4-Bromophenyl-phenylether	UG/KG	360 U	390 U	340 U	360 U	360 U	350 U
Hexachlorobenzene	UG/KG	360 U	390 U	340 U	360 U	360 U	350 U
Pentachlorophenol	UG/KG	860 U	950 U	820 U	860 U	360 U	840 U
Phenanthrene	UG/KG	360 U	390 U	340 U	360 U	1700	350 U
Anthracene	UG/KG	360 U	390 U	340 U	360 U	350 J	350 U
Carbazole	UG/KG	360 U	390 U	340 U	360 U	450	350 U
di-n-Butylphthalate	UG/KG	360 U	390 U	340 U	360 U	360 U	350 U
Fluoranthene	UG/KG	360 U	390 U	340 U	360 U	1800	350 U
Pyrene	UG/KG	360 U	390 U	340 U	360 U	1300	350 U
Butyl benzyl phthalate	UG/KG	360 U	390 U	340 U	360 U	360 U	350 U
3,3'-Dichlorobenzidine	UG/KG	360 U	390 U	340 U	360 U	360 U	350 U
Benzo[a]anthracene	UG/KG	360 U	390 U	340 U	360 U	740	350 U
Chrysene	UG/KG	360 U	390 U	340 U	360 U	770	350 U
bis(2-Ethylhexyl)phthalate	UG/KG	360 U	80 J	340 U	360 U	360 U	350 U
di-n-Octylphthalate	UG/KG	360 U	390 U	340 U	360 U	360 U	350 U
Benzo[b]fluoranthene	UG/KG	360 U	390 U	340 U	360 U	690	350 U
Benzo[k]fluoranthene	UG/KG	360 U	390 U	340 U	360 U	610	350 U
Benzo[a]pyrene	UG/KG	360 U	390 U	340 U	360 U	460	350 U
Indeno[1,2,3-cd]pyrene	UG/KG	360 U	390 U	340 U	360 U	390	350 U
Dibenz[a,h]anthracene	UG/KG	360 U	390 U	340 U	360 U	210 J	350 U
Benzo[g,h,i]perylene	UG/KG	360 U	390 U	340 U	360 U	330 J	350 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NA-SB03-04	7-NA-SB04-02	7-NA-SB05-08	7-NA-SB06-07	7-NA-SB07-02	7-NA-SB08-09
Laboratory Sample ID:	AC5289	AC5456	AC5345	AC5297	AC5317	AC5355
Date Sampled:	10/23/94	10/24/94	10/23/94	10/23/94	10/22/94	10/23/94

	UNITS	7-NA-SB03-04	7-NA-SB04-02	7-NA-SB05-08	7-NA-SB06-07	7-NA-SB07-02	7-NA-SB08-09
PESTICIDES/PCBs							
alpha-BHC	UG/KG	1.9 U	2 U	1.8 U	1.8 UJ	1.9 UJ	1.8 U
beta-BHC	UG/KG	1.9 U	2 U	1.8 U	1.8 UJ	1.9 UJ	1.8 U
delta-BHC	UG/KG	1.9 U	2 U	1.8 U	1.8 UJ	1.9 UJ	1.8 U
Lindane (gamma-BHC)	UG/KG	1.9 U	2 U	1.8 U	1.8 UJ	1.9 UJ	1.8 U
Heptachlor	UG/KG	1.9 U	2 U	1.8 U	1.8 UJ	1.9 UJ	1.8 U
Aldrin	UG/KG	1.9 U	2 U	1.8 U	1.8 UJ	1.9 UJ	1.8 U
Heptachlor epoxide	UG/KG	1.9 U	2 U	1.8 U	1.8 UJ	1.9 UJ	1.8 U
Endosulfan I	UG/KG	1.9 U	2 U	1.8 U	1.8 UJ	1.9 UJ	1.8 U
Dieldrin	UG/KG	3.6 U	3.9 U	3.4 U	3.5 UJ	3.7 UJ	3.5 U
4,4'-DDE	UG/KG	3.6 U	3.9 U	3.4 U	3.5 UJ	3.7 UJ	3.5 U
Endrin	UG/KG	3.6 U	3.9 U	3.4 U	3.5 UJ	3.7 UJ	3.5 U
Endosulfan II	UG/KG	3.6 U	3.9 U	3.4 U	3.5 UJ	3.7 UJ	3.5 U
4,4'-DDD	UG/KG	3.6 U	3.9 U	3.4 U	3.5 UJ	3.7 UJ	3.5 U
Endosulfan sulfate	UG/KG	3.6 U	3.9 U	3.4 U	3.5 UJ	3.7 UJ	3.5 U
4,4'-DDT	UG/KG	3.6 U	3.9 U	3.4 U	3.5 UJ	3.7 UJ	3.5 U
Methoxychlor	UG/KG	19 U	20 UJ	18 U	18 UJ	19 UJ	18 U
Endrin ketone	UG/KG	3.6 U	3.9 U	3.4 U	3.5 UJ	3.7 UJ	3.5 U
Endrin aldehyde	UG/KG	3.6 U	3.9 U	3.4 U	3.5 UJ	3.7 UJ	3.5 U
alpha-Chlordane	UG/KG	1.9 U	2 U	1.8 U	1.8 UJ	1.9 UJ	1.8 U
gamma-Chlordane	UG/KG	1.9 U	2 U	1.8 U	1.8 UJ	1.9 UJ	1.8 U
Toxaphene	UG/KG	190 U	200 U	180 U	180 UJ	190 UJ	180 U
Aroclor 1016	UG/KG	36 U	39 U	34 U	35 UJ	37 UJ	35 U
Aroclor 1221	UG/KG	74 U	79 U	70 U	72 UJ	74 UJ	71 U
Aroclor 1232	UG/KG	36 U	39 U	34 U	35 UJ	37 UJ	35 U
Aroclor 1242	UG/KG	36 U	39 U	34 U	35 UJ	37 UJ	35 U
Aroclor 1248	UG/KG	36 U	39 U	34 U	35 UJ	37 UJ	35 U
Aroclor 1254	UG/KG	36 U	39 U	34 U	35 UJ	37 UJ	35 U
Aroclor 1260	UG/KG	36 U	39 U	34 U	35 UJ	37 UJ	35 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NA-SB09-02	7-NA-SB11-03	7-NA-SB12-02	7-SWA-SB01-04	7-SWA-SB02-04	7-SWA-SB04-01
Laboratory Sample ID:	AC5464	AC5301	AC5323	AC4836	AC4932	AC4937
Date Sampled:	10/24/94	10/24/94	10/22/94	10/21/94	10/22/94	10/22/94

	<u>UNITS</u>					
<u>VOLATILES</u>						
Chloromethane	UG/KG	11 U	10 U	11 U	11 U	12 U
Bromomethane	UG/KG	11 U	10 U	11 U	11 U	12 U
Vinyl chloride	UG/KG	11 U	10 UJ	11 U	11 U	12 U
Chloroethane	UG/KG	11 U	10 U	11 U	11 U	12 U
Methylene chloride	UG/KG	12 U	10 U	11 U	11 U	12 J
Acetone	UG/KG	12 U	10 U	130	11 U	12 U
Carbon Disulfide	UG/KG	11 U	10 U	11 U	11 U	12 U
1,1-Dichloroethene	UG/KG	11 U	10 U	11 U	11 U	12 U
1,1-Dichloroethane	UG/KG	11 U	10 U	11 U	11 U	12 U
1,2-Dichloroethene(total)	UG/KG	11 U	10 U	11 U	11 U	12 U
Chloroform	UG/KG	11 UJ	10 U	11 U	11 U	12 U
1,2-Dichloroethane	UG/KG	11 UJ	10 U	11 U	11 U	12 U
2-Butanone	UG/KG	11 U	10 U	11 U	11 U	12 U
1,1,1-Trichloroethane	UG/KG	11 U	10 U	11 U	11 U	12 U
Carbon tetrachloride	UG/KG	11 U	10 U	11 U	11 U	12 U
Bromodichloromethane	UG/KG	11 U	10 U	11 U	11 U	12 U
1,2-Dichloropropane	UG/KG	11 U	10 U	11 U	11 U	12 U
cis-1,3-Dichloropropene	UG/KG	11 U	10 U	11 U	11 U	12 U
Trichloroethene	UG/KG	11 U	10 U	11 U	11 U	12 U
Dibromochloromethane	UG/KG	11 U	10 U	11 U	11 U	12 U
1,1,2-Trichloroethane	UG/KG	11 U	10 U	11 U	11 U	12 U
Benzene	UG/KG	11 U	10 U	11 U	11 U	12 U
trans-1,3-Dichloropropene	UG/KG	11 U	10 U	11 U	11 U	12 U
Bromoform	UG/KG	11 U	10 U	11 U	11 U	12 U
4-Methyl-2-pentanone	UG/KG	11 U	10 U	11 U	11 U	12 U
2-Hexanone	UG/KG	11 U	10 U	11 U	11 U	12 U
Tetrachloroethene	UG/KG	11 U	10 U	11 U	11 U	12 U
1,1,2,2-Tetrachloroethane	UG/KG	11 U	10 U	11 U	11 U	12 U
Toluene	UG/KG	11 U	10 U	11 U	11 U	12 U
Chlorobenzene	UG/KG	11 U	10 U	11 U	11 U	12 U
Ethylbenzene	UG/KG	11 U	10 UJ	11 U	11 U	12 U
Styrene	UG/KG	11 U	10 U	11 U	11 U	12 U
Xylenes (total)	UG/KG	11 U	10 U	11 U	11 U	12 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NA-SB09-02	7-NA-SB11-03	7-NA-SB12-02	7-SWA-SB01-04	7-SWA-SB02-04	7-SWA-SB04-01
Laboratory Sample ID:	AC5464	AC5301	AC5323	AC4836	AC4932	AC4937
Date Sampled:	10/24/94	10/24/94	10/22/94	10/21/94	10/22/94	10/22/94

	UNITS						
<u>SEMIVOLATILES</u>							
Phenol	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
bis(2-Chloroethyl) ether	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
2-Chlorophenol	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
1,3-Dichlorobenzene	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
1,4-Dichlorobenzene	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
1,2-Dichlorobenzene	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
2-Methylphenol	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
2,2'-oxybis-(1-chloropropane)	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
4-Methylphenol	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
N-Nitroso-di-n-propylamine	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
Hexachloroethane	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
Nitrobenzene	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
Isophorone	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
2-Nitrophenol	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
2,4-Dimethylphenol	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
bis(2-Chloroethoxy) methane	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
2,4-Dichlorophenol	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
1,2,4-Trichlorobenzene	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
Naphthalene	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
4-Chloroaniline	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
Hexachlorobutadiene	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
4-Chloro-3-methylphenol	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
2-Methylnaphthalene	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
Hexachlorocyclopentadiene	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
2,4,6-Trichlorophenol	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
2,4,5-Trichlorophenol	UG/KG	890 U	830 U	880 U	840 U	870 U	920 U
2-Chloronaphthalene	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
2-Nitroaniline	UG/KG	370 U	830 U	880 U	840 U	870 U	920 U
Dimethyl phthalate	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
Acenaphthylene	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
2,6-Dinitrotoluene	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U
3-Nitroaniline	UG/KG	890 U	830 U	880 U	840 U	870 U	920 U
Acenaphthene	UG/KG	370 U	340 U	360 U	350 U	360 U	380 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NA-SB09-02	7-NA-SB11-03	7-NA-SB12-02	7-SWA-SB01-04	7-SWA-SB02-04	7-SWA-SB04-01
Laboratory Sample ID:	AC5464	AC5301	AC5323	AC4836	AC4932	AC4937
Date Sampled:	10/24/94	10/24/94	10/22/94	10/21/94	10/22/94	10/22/94

UNITS

SEMIVOLATILES Cont.

	7-NA-SB09-02	7-NA-SB11-03	7-NA-SB12-02	7-SWA-SB01-04	7-SWA-SB02-04	7-SWA-SB04-01
2,4-Dinitrophenol	UG/KG	890 UJ	830 UJ	880 U	840 UJ	870 UJ
4-Nitrophenol	UG/KG	890 U	830 U	880 U	840 U	870 U
Dibenzofuran	UG/KG	370 U	340 U	360 U	350 U	380 U
2,4-Dinitrotoluene	UG/KG	370 U	340 U	360 U	350 U	380 U
Diethylphthalate	UG/KG	370 U	340 U	360 U	350 U	380 U
4-Chlorophenyl phenyl ether	UG/KG	370 U	340 U	360 U	350 U	380 U
Fluorene	UG/KG	370 U	340 U	360 U	350 U	380 U
4-Nitroaniline	UG/KG	890 U	830 U	880 U	840 U	870 U
4,6-Dinitro-2-methylphenol	UG/KG	890 U	830 U	880 U	840 U	870 U
N-nitrosodiphenylamine	UG/KG	370 U	340 U	360 U	350 U	380 U
4-Bromophenyl-phenylether	UG/KG	370 U	340 U	360 U	350 U	380 U
Hexachlorobenzene	UG/KG	370 U	340 U	360 U	350 U	380 U
Pentachlorophenol	UG/KG	890 U	830 U	880 U	840 U	870 U
Phenanthrene	UG/KG	370 U	340 U	360 U	350 U	380 U
Anthracene	UG/KG	370 U	340 U	360 U	350 U	380 U
Carbazole	UG/KG	370 U	340 U	360 U	350 U	380 U
di-n-Butylphthalate	UG/KG	370 U	340 U	360 U	350 U	220 J
Fluoranthene	UG/KG	370 U	340 U	360 U	350 U	380 U
Pyrene	UG/KG	370 U	340 U	360 U	350 U	380 U
Butyl benzyl phthalate	UG/KG	370 U	340 U	360 U	350 U	380 U
3,3'-Dichlorobenzidine	UG/KG	370 U	340 U	360 U	350 U	380 U
Benzo[a]anthracene	UG/KG	370 U	340 U	360 U	350 U	380 U
Chrysene	UG/KG	370 U	340 U	360 U	350 U	380 U
bis(2-Ethylhexyl)phthalate	UG/KG	370 U	340 U	360 U	350 U	39 J
di-n-Octylphthalate	UG/KG	370 U	340 U	360 U	350 U	72 J
Benzo[b]fluoranthene	UG/KG	370 U	340 U	360 U	350 U	380 U
Benzo[k]fluoranthene	UG/KG	370 U	340 U	360 U	350 U	380 U
Benzo[a]pyrene	UG/KG	370 U	340 U	360 U	350 U	380 U
Indeno[1,2,3-cd]pyrene	UG/KG	370 U	340 U	360 U	350 U	380 U
Dibenz[a,h]anthracene	UG/KG	370 U	340 U	360 U	350 U	380 U
Benzo[g,h,i]perylene	UG/KG	370 U	340 U	360 U	350 U	380 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NA-SB09-02	7-NA-SB11-03	7-NA-SB12-02	7-SWA-SB01-04	7-SWA-SB02-04	7-SWA-SB04-01
Laboratory Sample ID:	AC5464	AC5301	AC5323	AC4836	AC4932	AC4937
Date Sampled:	10/24/94	10/24/94	10/22/94	10/21/94	10/22/94	10/22/94

	<u>UNITS</u>						
<u>PESTICIDES/PCBs</u>							
alpha-BHC	UG/KG	1.9 U	1.7 UJ	1.9 UJ	1.8 U	1.9 U	2 U
beta-BHC	UG/KG	1.9 U	1.7 UJ	1.9 UJ	1.8 U	1.9 U	2 U
delta-BHC	UG/KG	1.9 U	1.7 UJ	1.9 UJ	1.8 U	1.9 U	2 U
Lindane (gamma-BHC)	UG/KG	1.9 U	1.7 UJ	1.9 UJ	1.8 U	1.9 U	2 U
Heptachlor	UG/KG	1.9 U	1.7 UJ	1.9 UJ	1.8 U	1.9 U	2 U
Aldrin	UG/KG	1.9 U	1.7 UJ	1.9 UJ	1.8 U	1.9 U	2 U
Heptachlor epoxide	UG/KG	1.9 U	1.7 UJ	1.9 UJ	1.8 U	1.9 U	2 U
Endosulfan I	UG/KG	1.9 U	1.7 UJ	1.9 UJ	1.8 U	1.9 U	2 U
Dieldrin	UG/KG	3.8 U	3.4 UJ	3.7 UJ	3.5 U	3.7 U	98 J
4,4'-DDE	UG/KG	3.8 U	3.4 UJ	3.7 UJ	3.5 U	3.7 U	38
Endrin	UG/KG	3.8 U	3.4 UJ	3.7 UJ	3.5 U	3.7 U	4.8 J
Endosulfan II	UG/KG	5.6 U	3.4 UJ	3.7 UJ	3.5 U	3.7 U	19 J
4,4'-DDD	UG/KG	3.8 U	3.4 UJ	3.7 UJ	3.5 U	3.7 U	15 J
Endosulfan sulfate	UG/KG	3.8 U	3.4 UJ	3.7 UJ	3.5 U	3.7 U	3.8 U
4,4'-DDT	UG/KG	5.4 U	3.4 UJ	3.7 UJ	3.5 U	3.7 U	19 J
Methoxychlor	UG/KG	19 UJ	17 UJ	19 UJ	18 U	19 U	20 U
Endrin ketone	UG/KG	3.8 U	3.4 UJ	3.7 UJ	3.5 U	3.7 U	3.8 U
Endrin aldehyde	UG/KG	3.8 U	3.4 UJ	3.7 UJ	3.5 U	3.7 U	3.8 U
alpha-Chlordane	UG/KG	1.9 U	1.7 UJ	1.9 UJ	1.8 U	1.9 U	120 J
gamma-Chlordane	UG/KG	1.9 U	1.7 UJ	1.9 UJ	1.8 U	1.9 U	110 J
Toxaphene	UG/KG	190 U	170 UJ	190 UJ	180 U	190 U	200 U
Aroclor 1016	UG/KG	38 U	34 UJ	37 UJ	35 U	37 U	38 U
Aroclor 1221	UG/KG	77 U	69 UJ	75 UJ	70 U	75 U	77 U
Aroclor 1232	UG/KG	38 U	34 UJ	37 UJ	35 U	37 U	38 U
Aroclor 1242	UG/KG	38 U	34 UJ	37 UJ	35 U	37 U	38 U
Aroclor 1248	UG/KG	38 U	34 UJ	37 UJ	35 U	37 U	38 U
Aroclor 1254	UG/KG	38 U	34 UJ	37 UJ	35 U	37 U	38 U
Aroclor 1260	UG/KG	38 U	34 UJ	37 UJ	35 U	37 U	91 J

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-SWA-SB05-02	7-SWA-TP01	7-SWA-TP02	7-SWA-TP03	7-SWA-TP04	7-SWA-TP05
Laboratory Sample ID:	AC4832	AD2095	AD2093	AD2099	AD2101	AD2097
Date Sampled:	10/21/94	12/02/94	12/02/94	12/02/94	12/02/94	12/02/94

UNITS

VOLATILES

Chloromethane	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Bromomethane	UG/KG	11 U	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
Vinyl chloride	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Chloroethane	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Methylene chloride	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Acetone	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Carbon Disulfide	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethene	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethane	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloroethene(total)	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Chloroform	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloroethane	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
2-Butanone	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
1,1,1-Trichloroethane	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Carbon tetrachloride	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Bromodichloromethane	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloropropane	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
cis-1,3-Dichloropropene	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Trichloroethene	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Dibromochloromethane	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
1,1,2-Trichloroethane	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Benzene	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
trans-1,3-Dichloropropene	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Bromoform	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
4-Methyl-2-pentanone	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
2-Hexanone	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Tetrachloroethene	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
1,1,2,2-Tetrachloroethane	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Toluene	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Chlorobenzene	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Ethylbenzene	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Styrene	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U
Xylenes (total)	UG/KG	11 U	11 U	11 U	11 U	11 U	11 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-SWA-SB05-02	7-SWA-TP01	7-SWA-TP02	7-SWA-TP03	7-SWA-TP04	7-SWA-TP05
Laboratory Sample ID:	AC4832	AD2095	AD2093	AD2099	AD2101	AD2097
Date Sampled:	10/21/94	12/02/94	12/02/94	12/02/94	12/02/94	12/02/94

	<u>UNITS</u>						
<u>SEMIVOLATILES</u>							
Phenol	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
bis(2-Chloroethyl) ether	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
2-Chlorophenol	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
1,3-Dichlorobenzene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
1,4-Dichlorobenzene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
1,2-Dichlorobenzene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
2-Methylphenol	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
2,2'-oxybis-(1-chloropropane)	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
4-Methylphenol	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
N-Nitroso-di-n-propylamine	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Hexachloroethane	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Nitrobenzene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Isophorone	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
2-Nitrophenol	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
2,4-Dimethylphenol	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
bis(2-Chloroethoxy) methane	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
2,4-Dichlorophenol	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
1,2,4-Trichlorobenzene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Naphthalene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
4-Chloroaniline	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Hexachlorobutadiene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
4-Chloro-3-methylphenol	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
2-Methylnaphthalene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Hexachlorocyclopentadiene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
2,4,6-Trichlorophenol	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
2,4,5-Trichlorophenol	UG/KG	910 U	900 U	920 U	850 U	880 U	840 U
2-Chloronaphthalene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
2-Nitroaniline	UG/KG	910 U	900 U	920 U	850 U	880 U	840 U
Dimethyl phthalate	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Acenaphthylene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
2,6-Dinitrotoluene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
3-Nitroaniline	UG/KG	910 U	900 U	920 U	850 U	880 U	840 U
Acenaphthene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-SWA-SB05-02	7-SWA-TP01	7-SWA-TP02	7-SWA-TP03	7-SWA-TP04	7-SWA-TP05
Laboratory Sample ID:	AC4832	AD2095	AD2093	AD2099	AD2101	AD2097
Date Sampled:	10/21/94	12/02/94	12/02/94	12/02/94	12/02/94	12/02/94

UNITS

SEMIVOLATILES Cont.

2,4-Dinitrophenol	UG/KG	910 UJ	900 U	920 U	850 U	880 U	840 U
4-Nitrophenol	UG/KG	910 U	900 U	920 U	850 U	880 U	840 U
Dibenzofuran	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
2,4-Dinitrotoluene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Diethylphthalate	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
4-Chlorophenyl phenyl ether	UG/KG	370 U	370 UJ	380 UJ	350 UJ	360 UJ	350 UJ
Fluorene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
4-Nitroaniline	UG/KG	910 U	900 U	920 U	850 U	880 U	840 U
4,6-Dinitro-2-methylphenol	UG/KG	910 U	900 U	920 U	850 U	880 U	840 U
N-nitrosodiphenylamine	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
4-Bromophenyl-phenylether	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Hexachlorobenzene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Pentachlorophenol	UG/KG	910 U	900 U	920 U	850 U	880 U	840 U
Phenanthrene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Anthracene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Carbazole	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
di-n-Butylphthalate	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Fluoranthene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Pyrene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Butyl benzyl phthalate	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
3,3'-Dichlorobenzidine	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Benzo[a]anthracene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Chrysene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
bis(2-Ethylhexyl)phthalate	UG/KG	60 J	370 U	380 U	350 U	360 U	350 U
di-n-Octylphthalate	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Benzo[b]fluoranthene	UG/KG	370 U	370 U	380 U	350 UJ	360 UJ	350 U
Benzo[k]fluoranthene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Benzo[a]pyrene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Indeno[1,2,3-cd]pyrene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Dibenz[a,h]anthracene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U
Benzo[g,h,i]perylene	UG/KG	370 U	370 U	380 U	350 U	360 U	350 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-SWA-SB05-02	7-SWA-TP01	7-SWA-TP02	7-SWA-TP03	7-SWA-TP04	7-SWA-TP05
Laboratory Sample ID:	AC4832	AD2095	AD2093	AD2099	AD2101	AD2097
Date Sampled:	10/21/94	12/02/94	12/02/94	12/02/94	12/02/94	12/02/94

	<u>UNITS</u>					
<u>PESTICIDES/PCBs</u>						
alpha-BHC	UG/KG	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
beta-BHC	UG/KG	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
delta-BHC	UG/KG	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
Lindane (gamma-BHC)	UG/KG	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
Heptachlor	UG/KG	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
Aldrin	UG/KG	1.9 U	1.8 U	6.3	1.8 U	1.8 U
Heptachlor epoxide	UG/KG	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
Endosulfan I	UG/KG	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
Dieldrin	UG/KG	17	3.6 U	61	3.5 U	3.5 U
4,4'-DDE	UG/KG	4.9	3.6 U	19	3.5 U	3.5 U
Endrin	UG/KG	3.7 U	3.6 U	3.8 U	3.5 U	3.5 U
Endosulfan II	UG/KG	3.7 U	3.6 U	3.8 U	3.5 U	3.5 U
4,4'-DDD	UG/KG	10	3.6 U	10	3.5 U	3.5 U
Endosulfan sulfate	UG/KG	3.7 U	3.6 U	3.8 U	3.5 U	3.5 U
4,4'-DDT	UG/KG	3.7 U	3.6 U	3.8 U	3.5 U	3.5 U
Methoxychlor	UG/KG	19 U	18 U	19 U	18 U	18 U
Endrin ketone	UG/KG	3.7 U	3.6 U	3.8 U	3.5 U	3.5 U
Endrin aldehyde	UG/KG	3.7 U	3.6 U	3.8 U	3.5 U	3.5 U
alpha-Chlordane	UG/KG	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U
gamma-Chlordane	UG/KG	2.9	1.8 U	1.9 U	1.8 U	1.8 U
Toxaphene	UG/KG	190 U	180 U	190 U	180 U	180 U
Aroclor 1016	UG/KG	37 U	36 U	38 U	35 U	35 U
Aroclor 1221	UG/KG	76 U	73 U	76 U	71 U	70 U
Aroclor 1232	UG/KG	37 U	36 U	38 U	35 U	35 U
Aroclor 1242	UG/KG	37 U	36 U	38 U	35 U	35 U
Aroclor 1248	UG/KG	37 U	36 U	38 U	35 U	35 U
Aroclor 1254	UG/KG	37 U	36 U	38 U	35 U	35 U
Aroclor 1260	UG/KG	37 U	36 U	38 U	35 U	35 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:							
Laboratory Sample ID:	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	LOCATION OF	FREQUENCY	
Date Sampled:	NONDETECTED	NONDETECTED	DETECTED	DETECTED	MAXIMUM	OF	
					DETECTED	DETECTION	
	<u>UNITS</u>						
	<u>VOLATILES</u>						
Chloromethane	UG/KG	10 U	83 U	ND	ND		0/30
Bromomethane	UG/KG	10 U	83 U	ND	ND		0/30
Vinyl chloride	UG/KG	10 U	83 U	ND	ND		0/30
Chloroethane	UG/KG	10 U	83 U	ND	ND		0/30
Methylene chloride	UG/KG	10 U	83 U	12 J	12 J	7-SWA-SB04-01	1/30
Acetone	UG/KG	10 U	89 U	13	2300	7-EA-SB05-07	11/30
Carbon Disulfide	UG/KG	10 U	83 U	ND	ND		0/30
1,1-Dichloroethene	UG/KG	10 U	83 U	ND	ND		0/30
1,1-Dichloroethane	UG/KG	10 U	83 U	ND	ND		0/30
1,2-Dichloroethene(total)	UG/KG	10 U	83 U	ND	ND		0/30
Chloroform	UG/KG	10 U	83 U	ND	ND		0/30
1,2-Dichloroethane	UG/KG	10 U	83 U	ND	ND		0/30
2-Butanone	UG/KG	10 U	83 U	ND	ND		0/30
1,1,1-Trichloroethane	UG/KG	10 U	83 U	ND	ND		0/30
Carbon tetrachloride	UG/KG	10 U	83 U	ND	ND		0/30
Bromodichloromethane	UG/KG	10 U	83 U	ND	ND		0/30
1,2-Dichloropropane	UG/KG	10 U	83 U	ND	ND		0/30
cis-1,3-Dichloropropene	UG/KG	10 U	83 U	ND	ND		0/30
Trichloroethene	UG/KG	10 U	83 U	ND	ND		0/30
Dibromochloromethane	UG/KG	10 U	83 U	ND	ND		0/30
1,1,2-Trichloroethane	UG/KG	10 U	83 U	ND	ND		0/30
Benzene	UG/KG	10 U	83 U	ND	ND		0/30
trans-1,3-Dichloropropene	UG/KG	10 U	83 U	ND	ND		0/30
Bromoform	UG/KG	10 U	83 U	ND	ND		0/30
4-Methyl-2-pentanone	UG/KG	10 U	83 U	ND	ND		0/30
2-Hexanone	UG/KG	10 U	83 U	ND	ND		0/30
Tetrachloroethene	UG/KG	10 U	83 U	ND	ND		0/30
1,1,2,2-Tetrachloroethane	UG/KG	10 U	83 U	ND	ND		0/30
Toluene	UG/KG	10 U	83 U	ND	ND		0/30
Chlorobenzene	UG/KG	10 U	83 U	ND	ND		0/30
Ethylbenzene	UG/KG	10 U	83 U	ND	ND		0/30
Styrene	UG/KG	10 U	83 U	ND	ND		0/30
Xylenes (total)	UG/KG	10 U	83 U	ND	ND		0/30

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>					
	<u>SEMIVOLATILES</u>					
Phenol	UG/KG	340 UJ	430 U	ND	ND	0/29
bis(2-Chloroethyl) ether	UG/KG	340 UJ	430 U	ND	ND	0/29
2-Chlorophenol	UG/KG	340 UJ	430 U	ND	ND	0/29
1,3-Dichlorobenzene	UG/KG	340 UJ	430 U	ND	ND	0/29
1,4-Dichlorobenzene	UG/KG	340 UJ	430 U	ND	ND	0/29
1,2-Dichlorobenzene	UG/KG	340 UJ	430 U	ND	ND	0/29
2-Methylphenol	UG/KG	340 UJ	430 U	ND	ND	0/29
2,2'-oxybis-(1-chloropropane)	UG/KG	340 UJ	430 U	ND	ND	0/29
4-Methylphenol	UG/KG	340 UJ	430 U	ND	ND	0/29
N-Nitroso-di-n-propylamine	UG/KG	340 UJ	430 U	ND	ND	0/29
Hexachloroethane	UG/KG	340 UJ	430 U	ND	ND	0/29
Nitrobenzene	UG/KG	340 UJ	430 U	ND	ND	0/29
Isophorone	UG/KG	340 UJ	430 U	ND	ND	0/29
2-Nitrophenol	UG/KG	340 UJ	430 U	ND	ND	0/29
2,4-Dimethylphenol	UG/KG	340 UJ	430 U	ND	ND	0/29
bis(2-Chloroethoxy) methane	UG/KG	340 UJ	430 U	ND	ND	0/29
2,4-Dichlorophenol	UG/KG	340 UJ	430 U	ND	ND	0/29
1,2,4-Trichlorobenzene	UG/KG	340 UJ	430 U	ND	ND	0/29
Naphthalene	UG/KG	340 UJ	430 U	120 J	120 J	7-NA-SB07-02 1/29
4-Chloroaniline	UG/KG	340 UJ	430 UJ	ND	ND	0/29
Hexachlorobutadiene	UG/KG	340 UJ	430 U	ND	ND	0/29
4-Chloro-3-methylphenol	UG/KG	340 UJ	430 U	ND	ND	0/29
2-Methylnaphthalene	UG/KG	340 UJ	430 U	48 J	48 J	7-NA-SB07-02 1/29
Hexachlorocyclopentadiene	UG/KG	340 UJ	430 U	ND	ND	0/29
2,4,6-Trichlorophenol	UG/KG	340 UJ	430 U	ND	ND	0/29
2,4,5-Trichlorophenol	UG/KG	370 UJ	1100 U	ND	ND	0/29
2-Chloronaphthalene	UG/KG	340 UJ	430 U	ND	ND	0/29
2-Nitroaniline	UG/KG	370 UJ	1100 U	ND	ND	0/29
Dimethyl phthalate	UG/KG	340 UJ	430 U	ND	ND	0/29
Acenaphthylene	UG/KG	340 UJ	430 U	ND	ND	0/29
2,6-Dinitrotoluene	UG/KG	340 UJ	430 U	ND	ND	0/29
3-Nitroaniline	UG/KG	370 UJ	1100 U	ND	ND	0/29
Acenaphthene	UG/KG	340 UJ	430 U	190 J	190 J	7-NA-SB07-02 1/29

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
<u>UNITS</u>						
<u>SEMIVOLATILES Cont.</u>						
2,4-Dinitrophenol	UG/KG	820 UJ	1100 UJ	ND	ND	0/29
4-Nitrophenol	UG/KG	820 UJ	1100 U	ND	ND	0/29
Dibenzofuran	UG/KG	340 UJ	430 U	120 J	120 J	7-NA-SB07-02 1/29
2,4-Dinitrotoluene	UG/KG	340 UJ	430 U	ND	ND	0/29
Diethylphthalate	UG/KG	340 UJ	430 U	ND	ND	0/29
4-Chlorophenyl phenyl ether	UG/KG	340 UJ	430 U	ND	ND	0/29
Fluorene	UG/KG	340 UJ	430 U	260 J	260 J	7-NA-SB07-02 1/29
4-Nitroaniline	UG/KG	820 UJ	1100 U	ND	ND	0/29
4,6-Dinitro-2-methylphenol	UG/KG	820 UJ	1100 U	ND	ND	0/29
N-nitrosodiphenylamine	UG/KG	340 UJ	430 U	ND	ND	0/29
4-Bromophenyl-phenylether	UG/KG	340 UJ	430 U	ND	ND	0/29
Hexachlorobenzene	UG/KG	340 UJ	430 U	ND	ND	0/29
Pentachlorophenol	UG/KG	360 U	1100 UJ	ND	ND	0/29
Phenanthrene	UG/KG	340 UJ	430 U	1700	1700	7-NA-SB07-02 1/29
Anthracene	UG/KG	340 UJ	430 U	350 J	350 J	7-NA-SB07-02 1/29
Carbazole	UG/KG	340 UJ	430 U	450	450	7-NA-SB07-02 1/29
di-n-Butylphthalate	UG/KG	340 UJ	400 U	42 J	220 J	7-SWA-SB02-04 3/29
Fluoranthene	UG/KG	340 UJ	430 U	1800	1800	7-NA-SB07-02 1/29
Pyrene	UG/KG	340 UJ	430 U	1300	1300	7-NA-SB07-02 1/29
Butyl benzyl phthalate	UG/KG	340 UJ	430 U	ND	ND	0/29
3,3'-Dichlorobenzidine	UG/KG	340 UJ	430 U	ND	ND	0/29
Benzo[a]anthracene	UG/KG	340 UJ	430 U	740	740	7-NA-SB07-02 1/29
Chrysene	UG/KG	340 UJ	430 U	770	770	7-NA-SB07-02 1/29
bis(2-Ethylhexyl)phthalate	UG/KG	340 UJ	430 U	39 J	80 J	7-NA-SB04-02 5/29
di-n-Octylphthalate	UG/KG	340 UJ	430 U	ND	ND	0/29
Benzo[b]fluoranthene	UG/KG	340 UJ	430 U	690	690	7-NA-SB07-02 1/29
Benzo[k]fluoranthene	UG/KG	340 UJ	430 U	610	610	7-NA-SB07-02 1/29
Benzo[a]pyrene	UG/KG	340 UJ	430 U	460	460	7-NA-SB07-02 1/29
Indeno[1,2,3-cd]pyrene	UG/KG	340 UJ	430 U	390	390	7-NA-SB07-02 1/29
Dibenz[a,h]anthracene	UG/KG	340 UJ	430 U	210 J	210 J	7-NA-SB07-02 1/29
Benzo[g,h,i]perylene	UG/KG	340 UJ	430 U	330 J	330 J	7-NA-SB07-02 1/29

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>					
	<u>PESTICIDES/PCBs</u>					
alpha-BHC	UG/KG	1.7 UJ	2.2 U	ND	ND	0/28
beta-BHC	UG/KG	1.7 UJ	2.2 U	ND	ND	0/28
delta-BHC	UG/KG	1.7 UJ	2.2 U	3 J	3 J	7-EA-SB06-01 1/28
Lindane (gamma-BHC)	UG/KG	1.7 UJ	2.2 U	ND	ND	0/28
Heptachlor	UG/KG	1.7 UJ	2.2 U	ND	ND	0/28
Aldrin	UG/KG	1.7 UJ	2.2 U	6.3	6.3	7-SWA-TP02 1/28
Heptachlor epoxide	UG/KG	1.7 UJ	2.2 U	ND	ND	0/28
Endosulfan I	UG/KG	1.7 UJ	2.2 U	ND	ND	0/28
Dieldrin	UG/KG	3.4 U	4.3 U	17	98 J	7-SWA-SB04-01 3/28
4,4'-DDE	UG/KG	3.4 U	4 U	0.82 J	38	7-SWA-SB04-01 4/28
Endrin	UG/KG	3.4 U	4.3 U	4.8 J	4.8 J	7-SWA-SB04-01 1/28
Endosulfan II	UG/KG	3.4 U	5.6 U	17 J	19 J	7-SWA-SB04-01 2/28
4,4'-DDD	UG/KG	3.4 U	4 U	1.9 J	15 J	7-SWA-SB04-01 4/28
Endosulfan sulfate	UG/KG	3.4 U	4.3 U	ND	ND	0/28
4,4'-DDT	UG/KG	3.4 U	5.4 U	1.7 J	19 J	7-SWA-SB04-01 2/28
Methoxychlor	UG/KG	17 UJ	22 U	ND	ND	0/28
Endrin ketone	UG/KG	3.4 U	4.3 U	ND	ND	0/28
Endrin aldehyde	UG/KG	3.4 U	4.3 U	8.1 J	8.1 J	7-EA-SB06-01 1/28
alpha-Chlordane	UG/KG	1.7 UJ	2.2 U	120 J	120 J	7-SWA-SB04-01 1/28
gamma-Chlordane	UG/KG	1.7 UJ	2.2 U	2.9	110 J	7-SWA-SB04-01 2/28
Toxaphene	UG/KG	170 UJ	220 U	ND	ND	0/28
Aroclor 1016	UG/KG	34 U	43 U	ND	ND	0/28
Aroclor 1221	UG/KG	69 UJ	88 U	ND	ND	0/28
Aroclor 1232	UG/KG	34 U	43 U	ND	ND	0/28
Aroclor 1242	UG/KG	34 U	43 U	ND	ND	0/28
Aroclor 1248	UG/KG	34 U	43 U	ND	ND	0/28
Aroclor 1254	UG/KG	34 U	43 U	ND	ND	0/28
Aroclor 1260	UG/KG	35 U	43 U	91 J	91 J	7-SWA-SB04-01 1/28

APPENDIX I.3.A
SUBSURFACE SOIL CONFIRMATORY PCB DATA

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL PCBs

Client Sample ID:	7-EPCB-SB01-02	7-EPCB-SB02-02	7-EPCB-SB03-02	7-EPCB-SB05-01	7-NPCB-SB04-02	7-NPCB-SB05-02
Laboratory Sample ID:	AH0961	AH0963	AH0965	AH0967	AH0954	AH0952
Date Sampled:	10/06/95	10/06/95	10/06/95	10/06/95	10/07/95	10/07/95

		<u>UNITS</u>					
<u>PCBs</u>							
PCB-1016	UG/KG	20 U	21 U	22 U	22 U	23 U	24 U
PCB-1221	UG/KG	20 U	21 U	22 U	22 U	23 U	24 U
PCB-1232	UG/KG	20 U	21 U	22 U	22 U	23 U	24 U
PCB-1242	UG/KG	20 U	21 U	22 U	22 U	23 U	24 U
PCB-1248	UG/KG	20 U	21 U	22 U	22 U	23 U	24 U
PCB-1254	UG/KG	40 U	43 U	45 U	44 U	46 U	47 U
PCB-1260	UG/KG	40 U	43 U	45 U	44 U	46 U	47 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL PCBs

Client Sample ID:	7-NPCB-SB08-01	7-NPCB-SB09-02
Laboratory Sample ID:	AH0959	AH0957
Date Sampled:	10/07/95	10/07/95

	<u>UNITS</u>		
<u>PCBs</u>			
PCB-1016	UG/KG	23 U	26 U
PCB-1221	UG/KG	23 U	26 U
PCB-1232	UG/KG	23 U	26 U
PCB-1242	UG/KG	23 U	26 U
PCB-1248	UG/KG	23 U	26 U
PCB-1254	UG/KG	46 U	53 U
PCB-1260	UG/KG	46 U	53 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL PCBs

Client Sample ID: Laboratory Sample ID: Date Sampled:		MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>						
	<u>PCBs</u>						
PCB-1016	UG/KG	20 U	26 U	ND	ND		0/8
PCB-1221	UG/KG	20 U	26 U	ND	ND		0/8
PCB-1232	UG/KG	20 U	26 U	ND	ND		0/8
PCB-1242	UG/KG	20 U	26 U	ND	ND		0/8
PCB-1248	UG/KG	20 U	26 U	ND	ND		0/8
PCB-1254	UG/KG	40 U	53 U	ND	ND		0/8
PCB-1260	UG/KG	40 U	53 U	ND	ND		0/8

APPENDIX I.4
SUBSURFACE SOIL METALS

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-EA-SB01-07	7-EA-SB02-02	7-EA-SB03-08	7-EA-SB04-01	7-EA-SB05-07	7-EA-SB06-01
Laboratory Sample ID:	AC5351	AC5478	AC5349	AC5490	AC5305	AC5486
Date Sampled:	10/23/94	10/25/94	10/23/94	10/25/94	10/24/94	10/25/94

	<u>UNITS</u>						
Aluminum	MG/KG	1060	2740	1560	2350	2430	2470
Antimony	MG/KG	11.1 U	10.3 UJ	10.3 U	11 UJ	10.8 U	12.1 UJ
Arsenic	MG/KG	2.2 U	2.1 U	2.1 U	2.2 U	2.2 U	2.4 U
Barium	MG/KG	16.5	8.5	78.5	5.7	6.7	8.4
Beryllium	MG/KG	0.22 U	0.21 U	0.31	0.22 U	0.22 U	0.24 U
Cadmium	MG/KG	1.1 U	1 U	1 U	1.1 U	1.1 U	1.2 U
Calcium	MG/KG	96 U	93.4	413 U	45.5	63.4 U	883
Chromium	MG/KG	3.4	3.2	7.1	4.3	4.2	2.4 U
Cobalt	MG/KG	2.2 U	2.1 U	2.1 U	2.2 U	2.2 U	2.4 U
Copper	MG/KG	2.2 U	2.1 U	2.1 U	2.2 U	2.2 U	2.4 U
Iron	MG/KG	306 U	1690	534	2490	1720	698
Lead	MG/KG	1.9	4.9	1.6	5.1	3	4.2
Magnesium	MG/KG	28.7 U	61.9	52.2 U	54.7	73.8 U	54.4
Manganese	MG/KG	3.9 U	2.7	3.8 U	1.7	3.5 U	1.7
Mercury	MG/KG	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.12 U
Nickel	MG/KG	4.5 U	4.1 U	4.1 U	4.4 U	4.3 U	4.8 U
Potassium	MG/KG	223 U	205 U	206 U	221 U	217 U	242 U
Selenium	MG/KG	1.1 U	1 U	1 U	1.1 U	1.1 U	1.2 U
Silver	MG/KG	1.1 U	1 U	1 U	1.1 U	1.1 U	1.2 U
Sodium	MG/KG	29.4 U	20.5 U	41.8 U	28.5	37.9 U	53.1
Thallium	MG/KG	2.2 U	2.1 U	2.1 U	2.2 U	2.2 U	2.4 U
Vanadium	MG/KG	2.2 U	4.6	2.4	6.4	3.6	2.8
Zinc	MG/KG	5.1 UJ	8.7	6.2 UJ	7	9.3 UJ	6.2
Moisture	%	10.29	8.86	3.76	11.1	9.55	18.32

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-EA-SB11-02	7-MW04-08	7-MW05-06	7-NA-SB01-05	7-NA-SB02-08	7-NA-SB03-04
Laboratory Sample ID:	AC5331	AC5452	Q41118004A	AC5460	AC5341	AC5289
Date Sampled:	10/22/94	10/24/94	11/03/94	10/24/94	10/23/94	10/23/94

	UNITS						
Aluminum	MG/KG	1420	1190	887 J	1050	828	2560
Antimony	MG/KG	11.9 U	11.2 UJ	3.1 UJ	10.2 UJ	10.2 U	10.5 U
Arsenic	MG/KG	2.4 U	2.2 U	0.58 U	2 U	2 U	2.1 U
Barium	MG/KG	3.8 U	22.2	6.4	12.9	6.7	23
Beryllium	MG/KG	0.24 U	0.22 U	0.08	0.2 U	0.2 U	0.21 U
Cadmium	MG/KG	1.2 U	1.1 U	0.38 U	1 U	1 U	1.1 U
Calcium	MG/KG	26.1 U	83.2	262	74.2	31.2 U	139 U
Chromium	MG/KG	2.4 U	2.8 J	2.9 J	2.5 J	2.1	7.1
Cobalt	MG/KG	2.4 U	2.2 U	0.48 U	2 U	2 U	2.1 U
Copper	MG/KG	2.4 U	2.2 U	0.43 J	2 U	2 U	2.1 U
Iron	MG/KG	1800	163	398 J	196	325	2080
Lead	MG/KG	2.4	1.3	1.8 J	1.7	1.9	3
Magnesium	MG/KG	30.8 U	24.3	41.8	33	14.5 U	109 U
Manganese	MG/KG	1.7 U	3.1	4.1	2	1.2 U	4.2 U
Mercury	MG/KG	0.12 U	0.12 U	0.13 U	0.11 U	0.11 U	0.11 U
Nickel	MG/KG	4.8 U	4.5 U	1.1 U	4.1 U	4.1 U	4.2 U
Potassium	MG/KG	238 U	224 U	96.4 U	204 U	204 U	211 U
Selenium	MG/KG	1.2 U	1.1 U	0.66 U	1 U	1 U	1.1 U
Silver	MG/KG	1.2 U	1.1 U	0.51 U	1 U	1 U	1.1 U
Sodium	MG/KG	44 U	32.1	34.3 U	20.4 U	25.6 U	29.1 U
Thallium	MG/KG	2.4 U	2.2 U	1 U	2 U	2 U	2.1 U
Vanadium	MG/KG	3.2	2.2 U	1.5	2 U	3.7	5.2
Zinc	MG/KG	6.8 UJ	15.8	4.6 UJ	6.6	6 UJ	8.1 UJ
Moisture	%	15.87	14.07	NR	8.98	6.57	10.5

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 7 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:	7-NA-SB04-02	7-NA-SB05-08	7-NA-SB06-07	7-NA-SB07-02	7-NA-SB08-09	7-NA-SB09-02
Laboratory Sample ID:	AC5456	AC5345	AC5297	AC5317	AC5355	AC5464
Date Sampled:	10/24/94	10/23/94	10/23/94	10/22/94	10/23/94	10/24/94

	UNITS	7-NA-SB04-02	7-NA-SB05-08	7-NA-SB06-07	7-NA-SB07-02	7-NA-SB08-09	7-NA-SB09-02
Aluminum	MG/KG	3700	607	1840	8010	1270	7240
Antimony	MG/KG	11.8 UJ	10 U	10.8 U	11 U	9.7 U	11 UJ
Arsenic	MG/KG	2.4 U	2 U	2.2 U	2.2 U	1.9 U	2.6
Barium	MG/KG	56.8	10.6	46.3	21.7	39.2	15.2
Beryllium	MG/KG	0.24 U	0.2 U	0.34	0.22 U	0.24	0.22 U
Cadmium	MG/KG	1.2 U	1 U	1.1 U	1.1 U	0.97 U	1.1 U
Calcium	MG/KG	6810	30.3 U	253 U	318 U	157 U	480
Chromium	MG/KG	6.8	2 U	6.8	11.2	4	9.9
Cobalt	MG/KG	2.4 U	2 U	2.2 U	2.2 U	1.9 U	2.2 U
Copper	MG/KG	74.7	2 U	2.2 U	2.7	1.9 U	2.2 U
Iron	MG/KG	3270	187 U	732	5310	372 U	8000
Lead	MG/KG	14.6	1	2	8	1.4	6.5
Magnesium	MG/KG	662	17 U	95.8 U	255 U	29.2 U	208
Manganese	MG/KG	47.6	1.6 U	8.1 U	13.6	2.3 U	2.1
Mercury	MG/KG	0.12 U	0.1 U	0.11 U	0.11 U	0.11 U	0.11 U
Nickel	MG/KG	6.8	4 U	4.3 U	4.4 U	3.9 U	4.4 U
Potassium	MG/KG	462 J	200 U	216 U	265 U	195 U	221 U
Selenium	MG/KG	1.2 U	1 U	1.1 U	1.1 U	0.97 U	1.2
Silver	MG/KG	1.2 U	1 U	1.1 U	1.1 U	0.97 U	1.1 U
Sodium	MG/KG	81.2	20.3 U	28.5 U	61.2 U	32.7 U	28.5
Thallium	MG/KG	2.4 U	2 U	2.2 U	2.2 U	1.9 U	2.2 U
Vanadium	MG/KG	6.8	2 U	3.3	14.7	2.2	18.2
Zinc	MG/KG	123	6.4 UJ	5.8 UJ	9.1 UJ	6.4 UJ	9.9
Moisture	%	16.31	3.79	7.54	10.55	5.75	12.81

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-NA-SB11-03	7-NA-SB12-02	7-SWA-SB01-04	7-SWA-SB02-04	7-SWA-SB04-01	7-SWA-SB05-02
Laboratory Sample ID:	AC5301	AC5323	AC4836	AC4932	AC4937	AC4832
Date Sampled:	10/24/94	10/22/94	10/21/94	10/22/94	10/22/94	10/21/94

	UNITS						
Aluminum	MG/KG	1280	3490	2550 J	940	6430	5510 J
Antimony	MG/KG	9.5 U	11.3 U	10.7 UJ	10.7 U	10.9 U	10.6 UJ
Arsenic	MG/KG	1.9 U	2.3 U	2.1 U	2.1 U	2.2 U	2.1 U
Barium	MG/KG	6.9	7.1	147	26.9 J	57	11.1
Beryllium	MG/KG	0.19 U	0.23 U	0.74	0.23	0.22 U	0.21
Cadmium	MG/KG	0.95 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Calcium	MG/KG	45.8 U	58.2 U	776 J	174	9390	1210 J
Chromium	MG/KG	4.7	7	4.7 J	4.2	10	5.7 J
Cobalt	MG/KG	1.9 U	2.3 U	2.1 U	2.1 U	2.2 U	2.1 U
Copper	MG/KG	1.9 U	2.3 U	2.1 U	2.1 U	23.1	2.1 U
Iron	MG/KG	691	1070	569 J	354	3340	2400 J
Lead	MG/KG	2.2	4.3	1.6 J	1.2	18.3	6.9 J
Magnesium	MG/KG	74.3 U	165 U	51.8 J	50.5	410	167
Manganese	MG/KG	6.6 U	2.7 U	4.6 J	7.6	12.8	6.8 J
Mercury	MG/KG	0.1 U	0.11 U	0.11 U	0.11 U	0.56	0.11 U
Nickel	MG/KG	3.8 U	4.5 U	4.3 U	4.3 U	4.4 U	4.2 U
Potassium	MG/KG	189 U	227 U	213 U	215 U	218 U	211 U
Selenium	MG/KG	0.95 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Silver	MG/KG	0.95 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Sodium	MG/KG	25.5 U	29.8 U	23.8	22.7	34.5	32.2
Thallium	MG/KG	1.9 U	2.3 U	2.1 U	2.1 U	2.2 U	2.1 U
Vanadium	MG/KG	3	8.7	2.1 U	2.1 U	12.8	9.2
Zinc	MG/KG	7 UJ	8 UJ	9.1 J	4.5	135	11 J
Moisture	%	3.96	11.74	6.15	11.45	14.06	12.4

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-SWA-TP01	7-SWA-TP02	7-SWA-TP03	7-SWA-TP04	7-SWA-TP05
Laboratory Sample ID:	AD2095	AD2093	AD2099	AD2101	AD2097
Date Sampled:	12/02/94	12/02/94	12/02/94	12/02/94	12/02/94

	UNITS					
Aluminum	MG/KG	3330	11600	3470	4450	2490
Antimony	MG/KG	11.3 U	11.5 U	10.3 U	10.8 U	10.3 U
Arsenic	MG/KG	2.3 U	2.4 J	2.1 U	2.2 U	2.1 U
Barium	MG/KG	16.5	22.7	58.5	17.9	70.8
Beryllium	MG/KG	0.23 UJ	0.23 UJ	0.21 UJ	0.22 UJ	0.21 UJ
Cadmium	MG/KG	1.1 U	1.1 U	1 U	1.1 U	1 U
Calcium	MG/KG	74.8 U	66300	332	254	93300
Chromium	MG/KG	5.1	15.2	5.1	5.8	6.5
Cobalt	MG/KG	2.3 U	2.3 U	2.1 U	2.2 U	2.1 U
Copper	MG/KG	2.3 U	2.3 U	2.7	3.2	2.1 U
Iron	MG/KG	2030	6940	1660	2730	1540
Lead	MG/KG	4.2 UJ	6.6 UJ	4.6 UJ	4.8 UJ	0.62 U
Magnesium	MG/KG	115	562	135	158	294
Manganese	MG/KG	5.6 J	18	10.4 J	5.4 J	17.4
Mercury	MG/KG	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Nickel	MG/KG	4.5 U	4.6 U	4.1 U	4.3 U	4.1 U
Potassium	MG/KG	225 U	369	206 U	217 U	205 U
Selenium	MG/KG	1.1 U	1.7 U	1.3 U	1.1 U	1 U
Silver	MG/KG	1.1 U	1.1 U	1 U	1.1 U	1 U
Sodium	MG/KG	38.6 U	61.7 U	29.5 U	31.2 U	52.4 U
Thallium	MG/KG	2.3 U	2.3 U	2.1 U	2.2 U	2.1 U
Vanadium	MG/KG	5.5	15.9	4.1	2.2 U	2.5
Zinc	MG/KG	8.4 UJ	25.7 U	23 U	21.3 U	12.3 UJ
Moisture	%	NR	NR	NR	NR	NR

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - SUBSURFACE SOIL
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>					
Aluminum	MG/KG	NA	NA	607	11600	7-SWA-TP02 29/29
Antimony	MG/KG	3.1 UJ	12.1 UJ	ND	ND	0/29
Arsenic	MG/KG	0.58 U	2.4 U	2.4 J	2.6	7-NA-SB09-02 2/29
Barium	MG/KG	3.8 U	3.8 U	5.7	147	7-SWA-SB01-04 28/29
Beryllium	MG/KG	0.19 U	0.24 U	0.08	0.74	7-SWA-SB01-04 7/29
Cadmium	MG/KG	0.38 U	1.2 U	ND	ND	0/29
Calcium	MG/KG	26.1 U	413 U	45.5	93300	7-SWA-TP05 16/29
Chromium	MG/KG	2 U	2.4 U	2.1	15.2	7-SWA-TP02 26/29
Cobalt	MG/KG	0.48 U	2.4 U	ND	ND	0/29
Copper	MG/KG	1.9 U	2.4 U	0.43 J	74.7	7-NA-SB04-02 6/29
Iron	MG/KG	187 U	372 U	163	8000	7-NA-SB09-02 26/29
Lead	MG/KG	0.62 U	6.6 UJ	1	18.3	7-SWA-SB04-01 24/29
Magnesium	MG/KG	14.5 U	255 U	24.3	662	7-NA-SB04-02 17/29
Manganese	MG/KG	1.2 U	8.1 U	1.7	47.6	7-NA-SB04-02 18/29
Mercury	MG/KG	0.1 U	0.13 U	0.56	0.56	7-SWA-SB04-01 1/29
Nickel	MG/KG	1.1 U	4.8 U	6.8	6.8	7-NA-SB04-02 1/29
Potassium	MG/KG	96.4 U	265 U	369	462 J	7-NA-SB04-02 2/29
Selenium	MG/KG	0.66 U	1.7 U	1.2	1.2	7-NA-SB09-02 1/29
Silver	MG/KG	0.51 U	1.2 U	ND	ND	0/29
Sodium	MG/KG	20.3 U	61.7 U	22.7	81.2	7-NA-SB04-02 9/29
Thallium	MG/KG	1 U	2.4 U	ND	ND	0/29
Vanadium	MG/KG	2 U	2.2 U	1.5	18.2	7-NA-SB09-02 22/29
Zinc	MG/KG	4.6 UJ	25.7 U	4.5	135	7-SWA-SB04-01 11/29

Moisture %

APPENDIX I.5
GROUNDWATER ORGANICS

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-MW01-01	7-MW02-01	7-MW03-01	7-MW04-01	7-MW05-01	7-TW01-01
Laboratory Sample ID:	AD1986	AD1983	AD1974	AD1977	AD1620	AC7823
Date Sampled:	12/02/94	12/02/94	12/01/94	12/01/94	12/01/94	11/07/94

		<u>UNITS</u>					
<u>VOLATILES</u>							
Chloromethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Bromomethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Vinyl chloride	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Chloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Methylene chloride	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Acetone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	14 UJ	28 U
Carbon Disulfide	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
1,1-Dichloroethene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
1,1-Dichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
1,2-Dichloroethene(total)	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Chloroform	UG/L	10 UJ	7 J	10 UJ	10 UJ	4 J	10 U
1,2-Dichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
2-Butanone	UG/L	13 UJ	11 UJ	10 UJ	11 UJ	10 UJ	19 U
1,1,1-Trichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Carbon tetrachloride	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Bromodichloromethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
1,2-Dichloropropane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
cis-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Trichloroethene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Dibromochloromethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
1,1,2-Trichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Benzene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
trans-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Bromoform	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
4-Methyl-2-pentanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
2-Hexanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	1 J	10 U
Tetrachloroethene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Toluene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	4 J
Chlorobenzene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Ethylbenzene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Styrene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Xylenes (total)	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-MW01-01	7-MW02-01	7-MW03-01	7-MW04-01	7-MW05-01	7-TW01-01
Laboratory Sample ID:	AD1986	AD1983	AD1974	AD1977	AD1620	AC7823
Date Sampled:	12/02/94	12/02/94	12/01/94	12/01/94	12/01/94	11/07/94

	UNITS						
SEMIVOLATILES							
Phenol	UG/L	10 U	10 U	10 U	10 U	10 U	4 J
bis(2-Chloroethyl) ether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
2,2'-oxybis-(1-chloropropane)	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy) methane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
2,4,6-Trichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Dimethyl phthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-MW01-01	7-MW02-01	7-MW03-01	7-MW04-01	7-MW05-01	7-TW01-01
Laboratory Sample ID:	AD1986	AD1983	AD1974	AD1977	AD1620	AC7823
Date Sampled:	12/02/94	12/02/94	12/01/94	12/01/94	12/01/94	11/07/94

UNITS

SEMIVOLATILES Cont.

	7-MW01-01	7-MW02-01	7-MW03-01	7-MW04-01	7-MW05-01	7-TW01-01
2,4-Dinitrophenol	UG/L 25 UJ	25 UJ	25 UJ	25 UJ	25 UJ	25 U
4-Nitrophenol	UG/L 25 U	25 U	25 U	25 U	25 U	25 U
Dibenzofuran	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl phenyl ether	UG/L 10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Fluorene	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	UG/L 25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	UG/L 25 U	25 U	25 U	25 U	25 U	25 U
N-nitrosodiphenylamine	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	UG/L 10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Pentachlorophenol	UG/L 25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
di-n-Butylphthalate	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]anthracene	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L 10 U	10 U	10 U	10 U	10 U	10 UJ
di-n-Octylphthalate	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	UG/L 10 U	10 U	10 U	10 U	10 U	10 UJ
Benzo[a]pyrene	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	UG/L 10 U	10 U	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-MW01-01	7-MW02-01	7-MW03-01	7-MW04-01	7-MW05-01	7-TW01-01
Laboratory Sample ID:	AD1986	AD1983	AD1974	AD1977	AD1620	AC7823
Date Sampled:	12/02/94	12/02/94	12/01/94	12/01/94	12/01/94	11/07/94

	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/L	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
beta-BHC	UG/L	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
delta-BHC	UG/L	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
Lindane (gamma-BHC)	UG/L	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
Heptachlor	UG/L	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
Aldrin	UG/L	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
Heptachlor epoxide	UG/L	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
Endosulfan I	UG/L	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
Dieldrin	UG/L	0.1 U	0.41	0.1 UJ	0.1 U	0.1 U	0.1 UJ
4,4'-DDE	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
Endrin	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
Endosulfan II	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
4,4'-DDD	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
Endosulfan sulfate	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
4,4'-DDT	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
Methoxychlor	UG/L	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 UJ
Endrin ketone	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
Endrin aldehyde	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ
alpha-Chlordane	UG/L	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
gamma-Chlordane	UG/L	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 UJ
Toxaphene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 UJ
Aroclor 1016	UG/L	1 U	1 U	1 UJ	1 U	1 U	1 UJ
Aroclor 1221	UG/L	2 U	2 U	2 UJ	2 U	2 U	2 UJ
Aroclor 1232	UG/L	1 U	1 U	1 UJ	1 U	1 U	1 UJ
Aroclor 1242	UG/L	1 U	1 U	1 UJ	1 U	1 U	1 UJ
Aroclor 1248	UG/L	1 U	1 U	1 UJ	1 U	1 U	1 UJ
Aroclor 1254	UG/L	1 U	1 U	1 UJ	1 U	1 U	1 UJ
Aroclor 1260	UG/L	1 U	1 U	1 UJ	1 U	1 U	1 UJ

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-TW02-01	7-TW03-01
Laboratory Sample ID:	AC7826	AC7829
Date Sampled:	11/07/94	11/07/94

	<u>UNITS</u>		
<u>VOLATILES</u>			
Chloromethane	UG/L	10 U	10 U
Bromomethane	UG/L	10 UJ	10 UJ
Vinyl chloride	UG/L	10 UJ	10 UJ
Chloroethane	UG/L	10 U	10 U
Methylene chloride	UG/L	10 U	10 U
Acetone	UG/L	10 U	10 U
Carbon Disulfide	UG/L	10 U	20 U
1,1-Dichloroethene	UG/L	10 U	10 U
1,1-Dichloroethane	UG/L	10 U	10 U
1,2-Dichloroethene(total)	UG/L	10 U	10 U
Chloroform	UG/L	10 U	10 U
1,2-Dichloroethane	UG/L	10 U	10 U
2-Butanone	UG/L	14 U	14 U
1,1,1-Trichloroethane	UG/L	10 U	10 U
Carbon tetrachloride	UG/L	10 U	10 U
Bromodichloromethane	UG/L	10 U	10 U
1,2-Dichloropropane	UG/L	10 U	10 U
cis-1,3-Dichloropropene	UG/L	10 U	10 U
Trichloroethene	UG/L	10 U	10 U
Dibromochloromethane	UG/L	10 U	10 U
1,1,2-Trichloroethane	UG/L	10 U	10 U
Benzene	UG/L	10 U	10 U
trans-1,3-Dichloropropene	UG/L	10 U	10 U
Bromoform	UG/L	10 U	10 U
4-Methyl-2-pentanone	UG/L	10 U	10 U
2-Hexanone	UG/L	10 U	10 U
Tetrachloroethene	UG/L	10 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U
Toluene	UG/L	10 U	10 U
Chlorobenzene	UG/L	10 U	10 U
Ethylbenzene	UG/L	10 U	10 U
Styrene	UG/L	10 U	10 U
Xylenes (total)	UG/L	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-TW02-01	7-TW03-01
Laboratory Sample ID:	AC7826	AC7829
Date Sampled:	11/07/94	11/07/94

	<u>UNITS</u>		
<u>SEMIVOLATILES</u>			
Phenol	UG/L	10 U	10 U
bis(2-Chloroethyl) ether	UG/L	10 U	10 U
2-Chlorophenol	UG/L	10 U	10 U
1,3-Dichlorobenzene	UG/L	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U
1,2-Dichlorobenzene	UG/L	10 U	10 U
2-Methylphenol	UG/L	10 U	10 U
2,2'-oxybis-(1-chloropropane)	UG/L	10 U	10 U
4-Methylphenol	UG/L	10 U	10 U
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U
Hexachloroethane	UG/L	10 U	10 U
Nitrobenzene	UG/L	10 U	10 U
Isophorone	UG/L	10 U	10 U
2-Nitrophenol	UG/L	10 U	10 U
2,4-Dimethylphenol	UG/L	10 U	10 U
bis(2-Chloroethoxy) methane	UG/L	10 U	10 U
2,4-Dichlorophenol	UG/L	10 U	10 U
1,2,4-Trichlorobenzene	UG/L	10 U	10 U
Naphthalene	UG/L	10 U	10 U
4-Chloroaniline	UG/L	10 U	10 U
Hexachlorobutadiene	UG/L	10 U	10 U
4-Chloro-3-methylphenol	UG/L	10 U	10 U
2-Methylnaphthalene	UG/L	10 U	10 U
Hexachlorocyclopentadiene	UG/L	10 U	10 U
2,4,6-Trichlorophenol	UG/L	10 U	10 U
2,4,5-Trichlorophenol	UG/L	25 U	25 U
2-Chloronaphthalene	UG/L	10 U	10 U
2-Nitroaniline	UG/L	25 U	25 U
Dimethyl phthalate	UG/L	10 U	10 U
Acenaphthylene	UG/L	10 U	10 U
2,6-Dinitrotoluene	UG/L	10 U	10 U
3-Nitroaniline	UG/L	25 U	25 U
Acenaphthene	UG/L	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-TW02-01	7-TW03-01
Laboratory Sample ID:	AC7826	AC7829
Date Sampled:	11/07/94	11/07/94

	<u>UNITS</u>		
<u>SEMIVOLATILES Cont.</u>			
2,4-Dinitrophenol	UG/L	25 U	25 U
4-Nitrophenol	UG/L	25 U	25 U
Dibenzofuran	UG/L	10 U	10 U
2,4-Dinitrotoluene	UG/L	10 U	10 U
Diethylphthalate	UG/L	10 U	10 U
4-Chlorophenyl phenyl ether	UG/L	10 U	10 U
Fluorene	UG/L	10 U	10 U
4-Nitroaniline	UG/L	25 U	25 U
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U
N-nitrosodiphenylamine	UG/L	10 U	10 U
4-Bromophenyl-phenylether	UG/L	10 U	10 U
Hexachlorobenzene	UG/L	10 U	10 U
Pentachlorophenol	UG/L	25 U	25 U
Phenanthrene	UG/L	10 U	10 U
Anthracene	UG/L	10 U	10 U
Carbazole	UG/L	10 U	10 U
di-n-Butylphthalate	UG/L	10 U	10 U
Fluoranthene	UG/L	10 U	10 U
Pyrene	UG/L	10 U	10 U
Butyl benzyl phthalate	UG/L	10 U	10 U
3,3'-Dichlorobenzidine	UG/L	10 U	10 U
Benzo[a]anthracene	UG/L	10 U	10 U
Chrysene	UG/L	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	10 U	10 U
di-n-Octylphthalate	UG/L	10 U	10 U
Benzo[b]fluoranthene	UG/L	10 U	10 U
Benzo[k]fluoranthene	UG/L	10 U	10 U
Benzo[a]pyrene	UG/L	10 U	10 U
Indeno[1,2,3-cd]pyrene	UG/L	10 U	10 U
Dibenz[a,h]anthracene	UG/L	10 U	10 U
Benzo[g,h,i]perylene	UG/L	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-TW02-01	7-TW03-01
Laboratory Sample ID:	AC7826	AC7829
Date Sampled:	11/07/94	11/07/94

PESTICIDES/PCBs	UNITS		
alpha-BHC	UG/L	0.05 UJ	0.05 UJ
beta-BHC	UG/L	0.05 UJ	0.05 UJ
delta-BHC	UG/L	0.05 UJ	0.05 UJ
Lindane (gamma-BHC)	UG/L	0.05 UJ	0.05 UJ
Heptachlor	UG/L	0.05 UJ	0.05 UJ
Aldrin	UG/L	0.05 UJ	0.05 UJ
Heptachlor epoxide	UG/L	0.05 UJ	0.05 UJ
Endosulfan I	UG/L	0.05 UJ	0.05 UJ
Dieldrin	UG/L	0.1 UJ	0.1 UJ
4,4'-DDE	UG/L	0.1 UJ	0.1 UJ
Endrin	UG/L	0.1 UJ	0.1 UJ
Endosulfan II	UG/L	0.1 UJ	0.1 UJ
4,4'-DDD	UG/L	0.1 UJ	0.1 UJ
Endosulfan sulfate	UG/L	0.1 UJ	0.1 UJ
4,4'-DDT	UG/L	0.1 UJ	0.1 UJ
Methoxychlor	UG/L	0.5 UJ	0.5 UJ
Endrin ketone	UG/L	0.1 UJ	0.1 UJ
Endrin aldehyde	UG/L	0.1 UJ	0.1 UJ
alpha-Chlordane	UG/L	0.05 UJ	0.05 UJ
gamma-Chlordane	UG/L	0.05 UJ	0.05 UJ
Toxaphene	UG/L	5 UJ	5 UJ
Aroclor 1016	UG/L	1 UJ	1 UJ
Aroclor 1221	UG/L	2 UJ	2 UJ
Aroclor 1232	UG/L	1 UJ	1 UJ
Aroclor 1242	UG/L	1 UJ	1 UJ
Aroclor 1248	UG/L	1 UJ	1 UJ
Aroclor 1254	UG/L	1 UJ	1 UJ
Aroclor 1260	UG/L	1 UJ	1 UJ

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
<u>UNITS</u>						
<u>VOLATILES</u>						
Chloromethane	UG/L	10 UJ	10 UJ	ND	ND	0/8
Bromomethane	UG/L	10 UJ	10 UJ	ND	ND	0/8
Vinyl chloride	UG/L	10 UJ	10 UJ	ND	ND	0/8
Chloroethane	UG/L	10 UJ	10 UJ	ND	ND	0/8
Methylene chloride	UG/L	10 UJ	10 UJ	ND	ND	0/8
Acetone	UG/L	10 UJ	28 U	ND	ND	0/8
Carbon Disulfide	UG/L	10 UJ	20 U	ND	ND	0/8
1,1-Dichloroethene	UG/L	10 UJ	10 UJ	ND	ND	0/8
1,1-Dichloroethane	UG/L	10 UJ	10 UJ	ND	ND	0/8
1,2-Dichloroethene(total)	UG/L	10 UJ	10 UJ	ND	ND	0/8
Chloroform	UG/L	10 UJ	10 UJ	4 J	7 J	7-MW02-01 2/8
1,2-Dichloroethane	UG/L	10 UJ	10 UJ	ND	ND	0/8
2-Butanone	UG/L	10 UJ	19 U	ND	ND	0/8
1,1,1-Trichloroethane	UG/L	10 UJ	10 UJ	ND	ND	0/8
Carbon tetrachloride	UG/L	10 UJ	10 UJ	ND	ND	0/8
Bromodichloromethane	UG/L	10 UJ	10 UJ	ND	ND	0/8
1,2-Dichloropropane	UG/L	10 UJ	10 UJ	ND	ND	0/8
cis-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	ND	ND	0/8
Trichloroethene	UG/L	10 UJ	10 UJ	ND	ND	0/8
Dibromochloromethane	UG/L	10 UJ	10 UJ	ND	ND	0/8
1,1,2-Trichloroethane	UG/L	10 UJ	10 UJ	ND	ND	0/8
Benzene	UG/L	10 UJ	10 UJ	ND	ND	0/8
trans-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	ND	ND	0/8
Bromoform	UG/L	10 UJ	10 UJ	ND	ND	0/8
4-Methyl-2-pentanone	UG/L	10 UJ	10 UJ	ND	ND	0/8
2-Hexanone	UG/L	10 UJ	10 UJ	1 J	1 J	7-MW05-01 1/8
Tetrachloroethene	UG/L	10 UJ	10 UJ	ND	ND	0/8
1,1,2,2-Tetrachloroethane	UG/L	10 UJ	10 UJ	ND	ND	0/8
Toluene	UG/L	10 UJ	10 UJ	4 J	4 J	7-TW01-01 1/8
Chlorobenzene	UG/L	10 UJ	10 UJ	ND	ND	0/8
Ethylbenzene	UG/L	10 UJ	10 UJ	ND	ND	0/8
Styrene	UG/L	10 UJ	10 UJ	ND	ND	0/8
Xylenes (total)	UG/L	10 UJ	10 UJ	ND	ND	0/8

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>					
	<u>SEMIVOLATILES</u>					
Phenol	UG/L	10 U	10 U	4 J	4 J	7-TW01-01 1/8
bis(2-Chloroethyl) ether	UG/L	10 U	10 U	ND	ND	0/8
2-Chlorophenol	UG/L	10 U	10 U	ND	ND	0/8
1,3-Dichlorobenzene	UG/L	10 U	10 U	ND	ND	0/8
1,4-Dichlorobenzene	UG/L	10 U	10 U	ND	ND	0/8
1,2-Dichlorobenzene	UG/L	10 U	10 U	ND	ND	0/8
2-Methylphenol	UG/L	10 UJ	10 UJ	ND	ND	0/8
2,2'-oxybis-(1-chloropropane)	UG/L	10 U	10 U	ND	ND	0/8
4-Methylphenol	UG/L	10 U	10 U	10	10	7-TW01-01 1/8
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	ND	ND	0/8
Hexachloroethane	UG/L	10 U	10 U	ND	ND	0/8
Nitrobenzene	UG/L	10 U	10 U	ND	ND	0/8
Isophorone	UG/L	10 U	10 U	ND	ND	0/8
2-Nitrophenol	UG/L	10 U	10 U	ND	ND	0/8
2,4-Dimethylphenol	UG/L	10 U	10 U	ND	ND	0/8
bis(2-Chloroethoxy) methane	UG/L	10 U	10 U	ND	ND	0/8
2,4-Dichlorophenol	UG/L	10 U	10 U	ND	ND	0/8
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	ND	ND	0/8
Naphthalene	UG/L	10 U	10 U	ND	ND	0/8
4-Chloroaniline	UG/L	10 U	10 U	ND	ND	0/8
Hexachlorobutadiene	UG/L	10 U	10 U	ND	ND	0/8
4-Chloro-3-methylphenol	UG/L	10 U	10 U	ND	ND	0/8
2-Methylnaphthalene	UG/L	10 U	10 U	ND	ND	0/8
Hexachlorocyclopentadiene	UG/L	10 UJ	10 UJ	ND	ND	0/8
2,4,6-Trichlorophenol	UG/L	10 U	10 U	ND	ND	0/8
2,4,5-Trichlorophenol	UG/L	25 U	25 U	ND	ND	0/8
2-Chloronaphthalene	UG/L	10 U	10 U	ND	ND	0/8
2-Nitroaniline	UG/L	25 U	25 U	ND	ND	0/8
Dimethyl phthalate	UG/L	10 U	10 U	ND	ND	0/8
Acenaphthylene	UG/L	10 U	10 U	ND	ND	0/8
2,6-Dinitrotoluene	UG/L	10 U	10 U	ND	ND	0/8
3-Nitroaniline	UG/L	25 U	25 U	ND	ND	0/8
Acenaphthene	UG/L	10 U	10 U	ND	ND	0/8

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>					
	<u>SEMIVOLATILES Cont.</u>					
2,4-Dinitrophenol	UG/L	25 UJ	25 UJ	ND	ND	0/8
4-Nitrophenol	UG/L	25 U	25 U	ND	ND	0/8
Dibenzofuran	UG/L	10 U	10 U	ND	ND	0/8
2,4-Dinitrotoluene	UG/L	10 U	10 U	ND	ND	0/8
Diethylphthalate	UG/L	10 U	10 U	ND	ND	0/8
4-Chlorophenyl phenyl ether	UG/L	10 UJ	10 UJ	ND	ND	0/8
Fluorene	UG/L	10 U	10 U	ND	ND	0/8
4-Nitroaniline	UG/L	25 U	25 U	ND	ND	0/8
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	ND	ND	0/8
N-nitrosodiphenylamine	UG/L	10 U	10 U	ND	ND	0/8
4-Bromophenyl-phenylether	UG/L	10 U	10 U	ND	ND	0/8
Hexachlorobenzene	UG/L	10 UJ	10 UJ	ND	ND	0/8
Pentachlorophenol	UG/L	25 U	25 U	ND	ND	0/8
Phenanthrene	UG/L	10 U	10 U	ND	ND	0/8
Anthracene	UG/L	10 U	10 U	ND	ND	0/8
Carbazole	UG/L	10 U	10 U	ND	ND	0/8
di-n-Butylphthalate	UG/L	10 U	10 U	ND	ND	0/8
Fluoranthene	UG/L	10 U	10 U	ND	ND	0/8
Pyrene	UG/L	10 U	10 U	ND	ND	0/8
Butyl benzyi phthalate	UG/L	10 U	10 U	ND	ND	0/8
3,3'-Dichlorobenzidine	UG/L	10 U	10 U	ND	ND	0/8
Benzo[a]anthracene	UG/L	10 U	10 U	ND	ND	0/8
Chrysene	UG/L	10 U	10 U	ND	ND	0/8
bis(2-Ethylhexyl)phthalate	UG/L	10 U	14 U	ND	ND	0/8
di-n-Octylphthalate	UG/L	10 U	10 U	ND	ND	0/8
Benzo[b]fluoranthene	UG/L	10 U	10 U	ND	ND	0/8
Benzo[k]fluoranthene	UG/L	10 U	10 U	ND	ND	0/8
Benzo[a]pyrene	UG/L	10 U	10 U	ND	ND	0/8
Indeno[1,2,3-cd]pyrene	UG/L	10 U	10 U	ND	ND	0/8
Dibenz[a,h]anthracene	UG/L	10 U	10 U	ND	ND	0/8
Benzo[g,h,i]perylene	UG/L	10 U	10 U	ND	ND	0/8

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:		MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>						
	<u>PESTICIDES/PCBs</u>						
	alpha-BHC	UG/L	0.05 U	0.05 U	ND	ND	0/8
	beta-BHC	UG/L	0.05 U	0.05 U	ND	ND	0/8
	delta-BHC	UG/L	0.05 U	0.05 U	ND	ND	0/8
	Lindane (gamma-BHC)	UG/L	0.05 U	0.05 U	ND	ND	0/8
	Heptachlor	UG/L	0.05 U	0.05 U	ND	ND	0/8
	Aldrin	UG/L	0.05 U	0.05 U	ND	ND	0/8
	Heptachlor epoxide	UG/L	0.05 U	0.05 U	ND	ND	0/8
	Endosulfan I	UG/L	0.05 U	0.05 U	ND	ND	0/8
	Dieldrin	UG/L	0.1 U	0.1 U	0.41	0.41	7-MW02-01 1/8
	4,4'-DDE	UG/L	0.1 U	0.1 U	ND	ND	0/8
	Endrin	UG/L	0.1 U	0.1 U	ND	ND	0/8
	Endosulfan II	UG/L	0.1 U	0.1 U	ND	ND	0/8
	4,4'-DDD	UG/L	0.1 U	0.1 U	ND	ND	0/8
	Endosulfan sulfate	UG/L	0.1 U	0.1 U	ND	ND	0/8
	4,4'-DDT	UG/L	0.1 U	0.1 U	ND	ND	0/8
	Methoxychlor	UG/L	0.5 U	0.5 U	ND	ND	0/8
	Endrin ketone	UG/L	0.1 U	0.1 U	ND	ND	0/8
	Endrin aldehyde	UG/L	0.1 U	0.1 U	ND	ND	0/8
	alpha-Chlordane	UG/L	0.05 U	0.05 U	ND	ND	0/8
	gamma-Chlordane	UG/L	0.05 U	0.05 U	ND	ND	0/8
	Toxaphene	UG/L	5 U	5 U	ND	ND	0/8
	Aroclor 1016	UG/L	1 U	1 U	ND	ND	0/8
	Aroclor 1221	UG/L	2 U	2 U	ND	ND	0/8
	Aroclor 1232	UG/L	1 U	1 U	ND	ND	0/8
	Aroclor 1242	UG/L	1 U	1 U	ND	ND	0/8
	Aroclor 1248	UG/L	1 U	1 U	ND	ND	0/8
	Aroclor 1254	UG/L	1 U	1 U	ND	ND	0/8
	Aroclor 1260	UG/L	1 U	1 U	ND	ND	0/8

APPENDIX I.6
GROUNDWATER TOTAL METALS

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-MW01-01	7-MW02-01	7-MW03-01	7-MW04-01	7-MW05-01	7-TW01-01
Laboratory Sample ID:	AD1987	AD1984	AD1975	AD1978	AD1621	AC7824
Date Sampled:	12/02/94	12/02/94	12/01/94	12/01/94	12/01/94	11/07/94

	UNITS	7-MW01-01	7-MW02-01	7-MW03-01	7-MW04-01	7-MW05-01	7-TW01-01
Aluminum	UG/L	80.2 U	179 U	88800	1660	63.7 U	15600
Antimony	UG/L	50 U	50 U	50 U	50 U	50 U	50 U
Arsenic	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Barium	UG/L	3.2 J	25.3 J	370	44.6	10.5 J	225
Beryllium	UG/L	1 U	1 U	3	1 U	1 U	1.2
Cadmium	UG/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 U
Calcium	UG/L	5720	590	4450	13900	6990	5540
Chromium	UG/L	10 U	10 U	104	10 U	10 U	17.1
Cobalt	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Copper	UG/L	10 U	10 U	20.8	10 U	10 U	10.6
Iron	UG/L	969	113 U	25400	133 U	154 U	8330
Lead	UG/L	3 U	3 U	67.5 J	3 U	3 U	41.6 J
Magnesium	UG/L	2080	1860	4670	2500	2040	2590
Manganese	UG/L	18.1 J	5 J	45.4	36.6 J	56.9	42.4
Mercury	UG/L	0.2 U	0.2 U	0.4	0.2 U	0.2 U	0.32
Nickel	UG/L	20 U	20 U	20 U	20 U	20 U	20 U
Potassium	UG/L	2080	1330	3690	1510	1020	1750
Selenium	UG/L	5 U	5 U	9.4	5 U	5 UJ	5 U
Silver	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Sodium	UG/L	39800	6750	4420	5460	7530	20700
Thallium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Vanadium	UG/L	10 U	10 U	167	10 U	10 U	24.1
Zinc	UG/L	14.8 UJ	21.1 UJ	153 U	36.4 UJ	23.6 UJ	141 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-TW02-01	7-TW03-01
Laboratory Sample ID:	AC7827	AC7830
Date Sampled:	11/07/94	11/07/94

	<u>UNITS</u>		
Aluminum	UG/L	4550	17800
Antimony	UG/L	50 U	50 U
Arsenic	UG/L	10 U	10 U
Barium	UG/L	245	142
Beryllium	UG/L	1 U	1.6
Cadmium	UG/L	5 U	5 U
Calcium	UG/L	174000	12400
Chromium	UG/L	17.8	11.7
Cobalt	UG/L	10 U	10 U
Copper	UG/L	10 U	10 U
Iron	UG/L	6850	6200
Lead	UG/L	3 U	27.1 J
Magnesium	UG/L	13000	1980
Manganese	UG/L	445	18.4
Mercury	UG/L	0.2 U	0.2 U
Nickel	UG/L	20 U	20 U
Potassium	UG/L	6430	1260
Selenium	UG/L	5 U	5 U
Silver	UG/L	5 U	5 U
Sodium	UG/L	8190	8310
Thallium	UG/L	10 U	10 U
Vanadium	UG/L	10 U	28.4
Zinc	UG/L	180	167

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 7 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:							
Laboratory Sample ID:		MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	LOCATION OF	FREQUENCY
Date Sampled:		NONDETECTED	NONDETECTED	DETECTED	DETECTED	MAXIMUM	OF
						DETECTED	DETECTION
	<u>UNITS</u>						
Aluminum	UG/L	63.7 U	179 U	1660	88800	7-MW03-01	5/8
Antimony	UG/L	50 U	50 U	ND	ND		0/8
Arsenic	UG/L	10 U	10 U	ND	ND		0/8
Barium	UG/L	NA	NA	3.2 J	370	7-MW03-01	8/8
Beryllium	UG/L	1 U	1 U	1.2	3	7-MW03-01	3/8
Cadmium	UG/L	5 UJ	5 UJ	ND	ND		0/8
Calcium	UG/L	NA	NA	590	174000	7-TW02-01	8/8
Chromium	UG/L	10 U	10 U	11.7	104	7-MW03-01	4/8
Cobalt	UG/L	10 U	10 U	ND	ND		0/8
Copper	UG/L	10 U	10 U	10.6	20.8	7-MW03-01	2/8
Iron	UG/L	113 U	154 U	969	25400	7-MW03-01	5/8
Lead	UG/L	3 U	3 U	27.1 J	67.5 J	7-MW03-01	3/8
Magnesium	UG/L	NA	NA	1860	13000	7-TW02-01	8/8
Manganese	UG/L	NA	NA	5 J	445	7-TW02-01	8/8
Mercury	UG/L	0.2 U	0.2 U	0.32	0.4	7-MW03-01	2/8
Nickel	UG/L	20 U	20 U	ND	ND		0/8
Potassium	UG/L	NA	NA	1020	6430	7-TW02-01	8/8
Selenium	UG/L	5 U	5 U	9.4	9.4	7-MW03-01	1/8
Silver	UG/L	5 U	5 U	ND	ND		0/8
Sodium	UG/L	NA	NA	4420	39800	7-MW01-01	8/8
Thallium	UG/L	10 U	10 U	ND	ND		0/8
Vanadium	UG/L	10 U	10 U	24.1	167	7-MW03-01	3/8
Zinc	UG/L	14.8 UJ	153 U	167	180	7-TW02-01	2/8

APPENDIX I.7
GROUNDWATER DISSOLVED METALS

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL DISSOLVED INORGANICS

Client Sample ID:	7-MW01D-01	7-MW02D-01	7-MW03D-01	7-MW04D-01	7-MW05D-01	7-TW01D-01
Laboratory Sample ID:	AD2000	AD1999	AD1996	AD1997	AD1652	AC7832
Date Sampled:	12/02/94	12/02/94	12/01/94	12/01/94	12/01/94	11/07/94

	UNITS						
Aluminum	UG/L	108 U	128 U	90.5 U	1400	40.5 U	889
Antimony	UG/L	50 U	50 U	50 U	50 U	50 U	50 U
Arsenic	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Barium	UG/L	2 U	21.5 J	3.6 J	43 J	11.6 J	7.1 J
Beryllium	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	UG/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 U
Calcium	UG/L	6710	826	710	14300	8330	1030
Chromium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Cobalt	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Copper	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Iron	UG/L	1040	159 U	1590	40.5 U	168 U	1010
Lead	UG/L	3 U	3 U	3 U	3 U	3 U	5.2 J
Magnesium	UG/L	2340	1840	377	2460	2400	556
Manganese	UG/L	21.4 J	6.7 J	2.6 J	35.3 J	66.4	7.3 J
Mercury	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	UG/L	20 U	20 U	20 U	20 U	20 U	20 U
Potassium	UG/L	2070	1020	1000 U	1120	1150	1040
Selenium	UG/L	5 U	5 U	5 U	5 U	5 UJ	5 U
Silver	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Sodium	UG/L	45300	6710	4500	5230	9140	18300
Thallium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Vanadium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Zinc	UG/L	19.8 UJ	19.2 UJ	10.1 UJ	26.2 UJ	23 UJ	62.1 UJ

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL DISSOLVED INORGANICS

Client Sample ID:	7-TW02D-01	7-TW03D-01
Laboratory Sample ID:	AC7833	AC7834
Date Sampled:	11/07/94	11/07/94

	<u>UNITS</u>		
Aluminum	UG/L	40 U	230 U
Antimony	UG/L	50 U	50 U
Arsenic	UG/L	10 U	10 U
Barium	UG/L	212	28.2 J
Beryllium	UG/L	1 U	1 U
Cadmium	UG/L	5 U	5 U
Calcium	UG/L	201000	8440
Chromium	UG/L	11.7	10 U
Cobalt	UG/L	10 U	10 U
Copper	UG/L	16.2	10 U
Iron	UG/L	1390	2250
Lead	UG/L	3 U	3 U
Magnesium	UG/L	14800	1320
Manganese	UG/L	497	9.1 J
Mercury	UG/L	0.2 U	0.2 U
Nickel	UG/L	20 U	20 U
Potassium	UG/L	7010	1000 U
Selenium	UG/L	5 U	5 U
Silver	UG/L	5 U	5 U
Sodium	UG/L	8930	8480
Thallium	UG/L	10 U	10 U
Vanadium	UG/L	10 U	10 U
Zinc	UG/L	67.8 UJ	67.3 UJ

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11
 SITE 7 - GROUNDWATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL DISSOLVED INORGANICS

Client Sample ID:							
Laboratory Sample ID:	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	LOCATION OF	FREQUENCY	
Date Sampled:	NONDETECTED	NONDETECTED	DETECTED	DETECTED	MAXIMUM	OF	
					DETECTED	DETECTION	
	<u>UNITS</u>						
Aluminum	UG/L	40 U	230 U	889	1400	7-MW04D-01	2/8
Antimony	UG/L	50 U	50 U	ND	ND		0/8
Arsenic	UG/L	10 U	10 U	ND	ND		0/8
Barium	UG/L	2 U	2 U	3.6 J	212	7-TW02D-01	7/8
Beryllium	UG/L	1 U	1 U	ND	ND		0/8
Cadmium	UG/L	5 UJ	5 UJ	ND	ND		0/8
Calcium	UG/L	NA	NA	710	201000	7-TW02D-01	8/8
Chromium	UG/L	10 U	10 U	11.7	11.7	7-TW02D-01	1/8
Cobalt	UG/L	10 U	10 U	ND	ND		0/8
Copper	UG/L	10 U	10 U	16.2	16.2	7-TW02D-01	1/8
Iron	UG/L	40.5 U	168 U	1010	2250	7-TW03D-01	5/8
Lead	UG/L	3 U	3 U	5.2 J	5.2 J	7-TW01D-01	1/8
Magnesium	UG/L	NA	NA	377	14800	7-TW02D-01	8/8
Manganese	UG/L	NA	NA	2.6 J	497	7-TW02D-01	8/8
Mercury	UG/L	0.2 U	0.2 U	ND	ND		0/8
Nickel	UG/L	20 U	20 U	ND	ND		0/8
Potassium	UG/L	1000 U	1000 U	1020	7010	7-TW02D-01	6/8
Selenium	UG/L	5 U	5 U	ND	ND		0/8
Silver	UG/L	5 U	5 U	ND	ND		0/8
Sodium	UG/L	NA	NA	4500	45300	7-MW01D-01	8/8
Thallium	UG/L	10 U	10 U	ND	ND		0/8
Vanadium	UG/L	10 U	10 U	ND	ND		0/8
Zinc	UG/L	10.1 UJ	67.8 UJ	ND	ND		0/8

APPENDIX I.8
NORTHEAST CREEK SURFACE WATER ORGANICS

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NC-SW01	7-NC-SW02	7-NC-SW03	7-NC-SW04	7-NC-SW05	7-NC-SW06
Laboratory Sample ID:	AB1627	AB1982	AB1979	AB1994	AB1636	AB1633
Date Sampled:	6/24/94	6/26/94	6/26/94	6/26/94	6/24/94	6/24/94

UNITS

VOLATILES

	7-NC-SW01	7-NC-SW02	7-NC-SW03	7-NC-SW04	7-NC-SW05	7-NC-SW06
Chloromethane	UG/L	10 U	10 U	10 U	10 U	10 U
Bromomethane	UG/L	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	UG/L	10 U	10 U	10 U	10 U	10 U
Chloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
Methylene chloride	UG/L	10 U	10 U	10 U	11 U	10 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	UG/L	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	UG/L	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	UG/L	10 U	10 U	10 U	10 U	10 U
Chloroform	UG/L	10 U	10 U	1 J	10 U	10 U
1,2-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
2-Butanone	UG/L	10 U	10 U	2 J	10 U	10 U
1,1,1-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	UG/L	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	UG/L	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	UG/L	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U
Trichloroethene	UG/L	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	UG/L	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U
Bromoform	UG/L	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	UG/L	10 U	10 U	10 U	10 U	10 U
2-Hexanone	UG/L	10 U	10 U	1 J	10 U	10 U
Tetrachloroethene	UG/L	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
Toluene	UG/L	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	UG/L	10 U	10 U	10 U	10 U	10 U
Styrene	UG/L	10 U	10 U	10 U	10 U	10 U
Xylenes (total)	UG/L	10 U	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NC-SW01	7-NC-SW02	7-NC-SW03	7-NC-SW04	7-NC-SW05	7-NC-SW06
Laboratory Sample ID:	AB1627	AB1982	AB1979	AB1994	AB1636	AB1633
Date Sampled:	6/24/94	6/26/94	6/26/94	6/26/94	6/24/94	6/24/94

	UNITS	7-NC-SW01	7-NC-SW02	7-NC-SW03	7-NC-SW04	7-NC-SW05	7-NC-SW06
SEMIVOLATILES							
Phenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl) ether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	UG/L	5 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	UG/L	5 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	UG/L	5 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis-(1-chloropropane)	UG/L	10 U	10 U	10 U	10 U	10 UJ	10 UJ
4-Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy) methane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Dimethyl phthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NC-SW01	7-NC-SW02	7-NC-SW03	7-NC-SW04	7-NC-SW05	7-NC-SW06
Laboratory Sample ID:	AB1627	AB1982	AB1979	AB1994	AB1636	AB1633
Date Sampled:	6/24/94	6/26/94	6/26/94	6/26/94	6/24/94	6/24/94

	UNITS					
SEMIVOLATILES Cont.						
2,4-Dinitrophenol	UG/L	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	UG/L	25 U	25 U	25 U	25 U	25 U
Dibenzofuran	UG/L	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl phenyl ether	UG/L	10 U	10 U	10 U	10 U	10 U
Fluorene	UG/L	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	25 U	25 UR	25 UR
N-nitrosodiphenylamine	UG/L	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	UG/L	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U
Phenanthrene	UG/L	10 U	10 U	10 U	10 U	10 U
Anthracene	UG/L	10 U	10 U	10 U	10 U	10 U
Carbazole	UG/L	10 U	10 U	10 U	10 U	10 U
di-n-Butylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U
Fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 U
Pyrene	UG/L	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	UG/L	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	UG/L	10 U	10 U	10 U	10 U	10 U
Benzo[a]anthracene	UG/L	10 U	10 U	10 U	10 U	10 U
Chrysene	UG/L	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	10 U	10 U	10 U	10 U	10 U
di-n-Octylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	UG/L	10 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	UG/L	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	UG/L	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	UG/L	10 U	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NC-SW01	7-NC-SW02	7-NC-SW03	7-NC-SW04	7-NC-SW05	7-NC-SW06
Laboratory Sample ID:	AB1627	AB1982	AB1979	AB1994	AB1636	AB1633
Date Sampled:	6/24/94	6/26/94	6/26/94	6/26/94	6/24/94	6/24/94

	UNITS						
<u>PESTICIDES/PCBs</u>							
alpha-BHC	UG/L	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
beta-BHC	UG/L	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
delta-BHC	UG/L	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Lindane (gamma-BHC)	UG/L	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Heptachlor	UG/L	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Aldrin	UG/L	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Heptachlor epoxide	UG/L	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Endosulfan I	UG/L	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Dieldrin	UG/L	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
4,4'-DDE	UG/L	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
Endrin	UG/L	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
Endosulfan II	UG/L	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
4,4'-DDD	UG/L	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
Endosulfan sulfate	UG/L	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
4,4'-DDT	UG/L	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
Methoxychlor	UG/L	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
Endrin ketone	UG/L	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
Endrin aldehyde	UG/L	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
alpha-Chlordane	UG/L	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
gamma-Chlordane	UG/L	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Toxaphene	UG/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
Aroclor 1016	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1221	UG/L	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ
Aroclor 1232	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1242	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1248	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1254	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1260	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
<u>UNITS</u>						
<u>VOLATILES</u>						
Chloromethane	UG/L	10 U	10 U	ND	ND	0/6
Bromomethane	UG/L	10 U	10 U	ND	ND	0/6
Vinyl chloride	UG/L	10 U	10 U	ND	ND	0/6
Chloroethane	UG/L	10 U	10 U	ND	ND	0/6
Methylene chloride	UG/L	10 U	11 U	ND	ND	0/6
Acetone	UG/L	10 U	10 U	ND	ND	0/6
Carbon Disulfide	UG/L	10 U	10 U	ND	ND	0/6
1,1-Dichloroethene	UG/L	10 U	10 U	ND	ND	0/6
1,1-Dichloroethane	UG/L	10 U	10 U	ND	ND	0/6
1,2-Dichloroethene(total)	UG/L	10 U	10 U	ND	ND	0/6
Chloroform	UG/L	10 U	10 U	1 J	1 J	7-NC-SW03 1/6
1,2-Dichloroethane	UG/L	10 U	10 U	ND	ND	0/6
2-Butanone	UG/L	10 U	10 U	2 J	2 J	7-NC-SW03 1/6
1,1,1-Trichloroethane	UG/L	10 U	10 U	ND	ND	0/6
Carbon tetrachloride	UG/L	10 U	10 U	ND	ND	0/6
Bromodichloromethane	UG/L	10 U	10 U	ND	ND	0/6
1,2-Dichloropropane	UG/L	10 U	10 U	ND	ND	0/6
cis-1,3-Dichloropropene	UG/L	10 U	10 U	ND	ND	0/6
Trichloroethene	UG/L	10 U	10 U	ND	ND	0/6
Dibromochloromethane	UG/L	10 U	10 U	ND	ND	0/6
1,1,2-Trichloroethane	UG/L	10 U	10 U	ND	ND	0/6
Benzene	UG/L	10 U	10 U	ND	ND	0/6
trans-1,3-Dichloropropene	UG/L	10 U	10 U	ND	ND	0/6
Bromoform	UG/L	10 U	10 U	ND	ND	0/6
4-Methyl-2-pentanone	UG/L	10 U	10 U	ND	ND	0/6
2-Hexanone	UG/L	10 U	10 U	1 J	1 J	7-NC-SW03 1/6
Tetrachloroethene	UG/L	10 U	10 U	ND	ND	0/6
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	ND	ND	0/6
Toluene	UG/L	10 U	10 U	ND	ND	0/6
Chlorobenzene	UG/L	10 U	10 U	ND	ND	0/6
Ethylbenzene	UG/L	10 U	10 U	ND	ND	0/6
Styrene	UG/L	10 U	10 U	ND	ND	0/6
Xylenes (total)	UG/L	10 U	10 U	ND	ND	0/6

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
<u>UNITS</u>						
<u>SEMIVOLATILES</u>						
Phenol	UG/L	10 U	10 U	ND	ND	0/6
bis(2-Chloroethyl) ether	UG/L	10 U	10 U	ND	ND	0/6
2-Chlorophenol	UG/L	10 U	10 U	ND	ND	0/6
1,3-Dichlorobenzene	UG/L	5 U	10 U	ND	ND	0/6
1,4-Dichlorobenzene	UG/L	5 U	10 U	ND	ND	0/6
1,2-Dichlorobenzene	UG/L	5 U	10 U	ND	ND	0/6
2-Methylphenol	UG/L	10 U	10 U	ND	ND	0/6
2,2'-oxybis-(1-chloropropane)	UG/L	10 U	10 U	ND	ND	0/6
4-Methylphenol	UG/L	10 U	10 U	ND	ND	0/6
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	ND	ND	0/6
Hexachloroethane	UG/L	10 U	10 U	ND	ND	0/6
Nitrobenzene	UG/L	10 U	10 U	ND	ND	0/6
Isophorone	UG/L	10 U	10 U	ND	ND	0/6
2-Nitrophenol	UG/L	10 U	10 U	ND	ND	0/6
2,4-Dimethylphenol	UG/L	10 U	10 U	ND	ND	0/6
bis(2-Chloroethoxy) methane	UG/L	10 U	10 U	ND	ND	0/6
2,4-Dichlorophenol	UG/L	10 U	10 U	ND	ND	0/6
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	ND	ND	0/6
Naphthalene	UG/L	10 U	10 U	ND	ND	0/6
4-Chloroaniline	UG/L	10 U	10 U	ND	ND	0/6
Hexachlorobutadiene	UG/L	10 U	10 U	ND	ND	0/6
4-Chloro-3-methylphenol	UG/L	10 U	10 U	ND	ND	0/6
2-Methylnaphthalene	UG/L	10 U	10 U	ND	ND	0/6
Hexachlorocyclopentadiene	UG/L	10 U	10 U	ND	ND	0/6
2,4,6-Trichlorophenol	UG/L	10 U	10 U	ND	ND	0/6
2,4,5-Trichlorophenol	UG/L	25 U	25 U	ND	ND	0/6
2-Chloronaphthalene	UG/L	10 U	10 U	ND	ND	0/6
2-Nitroaniline	UG/L	25 U	25 U	ND	ND	0/6
Dimethyl phthalate	UG/L	10 U	10 U	ND	ND	0/6
Acenaphthylene	UG/L	10 U	10 U	ND	ND	0/6
2,6-Dinitrotoluene	UG/L	10 U	10 U	ND	ND	0/6
3-Nitroaniline	UG/L	25 U	25 U	ND	ND	0/6
Acenaphthene	UG/L	10 U	10 U	ND	ND	0/6

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11 (SITE 7)
NORTHEAST CREEK SURFACE WATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:		MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>						
	<u>SEMIVOLATILES Cont.</u>						
	2,4-Dinitrophenol	UG/L	25 U	25 U	ND	ND	0/6
	4-Nitrophenol	UG/L	25 U	25 U	ND	ND	0/6
	Dibenzofuran	UG/L	10 U	10 U	ND	ND	0/6
	2,4-Dinitrotoluene	UG/L	10 U	10 U	ND	ND	0/6
	Diethylphthalate	UG/L	10 U	10 U	ND	ND	0/6
	4-Chlorophenyl phenyl ether	UG/L	10 U	10 U	ND	ND	0/6
	Fluorene	UG/L	10 U	10 U	ND	ND	0/6
	4-Nitroaniline	UG/L	25 U	25 U	ND	ND	0/4
	4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	ND	ND	0/6
	N-nitrosodiphenylamine	UG/L	10 U	10 U	ND	ND	0/6
	4-Bromophenyl-phenylether	UG/L	10 U	10 U	ND	ND	0/6
	Hexachlorobenzene	UG/L	10 U	10 U	ND	ND	0/6
	Pentachlorophenol	UG/L	25 U	25 U	ND	ND	0/6
	Phenanthrene	UG/L	10 U	10 U	ND	ND	0/6
	Anthracene	UG/L	10 U	10 U	ND	ND	0/6
	Carbazole	UG/L	10 U	10 U	ND	ND	0/6
	di-n-Butylphthalate	UG/L	10 U	10 U	ND	ND	0/6
	Fluoranthene	UG/L	10 U	10 U	ND	ND	0/6
	Pyrene	UG/L	10 U	10 U	ND	ND	0/6
	Butyl benzyl phthalate	UG/L	10 U	10 U	ND	ND	0/6
	3,3'-Dichlorobenzidine	UG/L	10 U	10 U	ND	ND	0/6
	Benzo[a]anthracene	UG/L	10 U	10 U	ND	ND	0/6
	Chrysene	UG/L	10 U	10 U	ND	ND	0/6
	bis(2-Ethylhexyl)phthalate	UG/L	10 U	10 U	ND	ND	0/6
	di-n-Octylphthalate	UG/L	10 U	10 U	ND	ND	0/6
	Benzo[b]fluoranthene	UG/L	10 U	10 U	ND	ND	0/6
	Benzo[k]fluoranthene	UG/L	10 U	10 U	ND	ND	0/6
	Benzo[a]pyrene	UG/L	10 U	10 U	ND	ND	0/6
	Indeno[1,2,3-cd]pyrene	UG/L	10 U	10 U	ND	ND	0/6
	Dibenz[a,h]anthracene	UG/L	10 U	10 U	ND	ND	0/6
	Benzo[g,h,i]perylene	UG/L	10 U	10 U	ND	ND	0/6

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>					
	<u>PESTICIDES/PCBs</u>					
alpha-BHC	UG/L	0.05 UJ	0.05 UJ	ND	ND	0/6
beta-BHC	UG/L	0.05 UJ	0.05 UJ	ND	ND	0/6
delta-BHC	UG/L	0.05 UJ	0.05 UJ	ND	ND	0/6
Lindane (gamma-BHC)	UG/L	0.05 UJ	0.05 UJ	ND	ND	0/6
Heptachlor	UG/L	0.05 UJ	0.05 UJ	ND	ND	0/6
Aldrin	UG/L	0.05 UJ	0.05 UJ	ND	ND	0/6
Heptachlor epoxide	UG/L	0.05 UJ	0.05 UJ	ND	ND	0/6
Endosulfan I	UG/L	0.05 UJ	0.05 UJ	ND	ND	0/6
Dieldrin	UG/L	0.1 UJ	0.1 UJ	ND	ND	0/6
4,4'-DDE	UG/L	0.1 UJ	0.1 UJ	ND	ND	0/6
Endrin	UG/L	0.1 UJ	0.1 UJ	ND	ND	0/6
Endosulfan II	UG/L	0.1 UJ	0.1 UJ	ND	ND	0/6
4,4'-DDD	UG/L	0.1 UJ	0.1 UJ	ND	ND	0/6
Endosulfan sulfate	UG/L	0.1 UJ	0.1 UJ	ND	ND	0/6
4,4'-DDT	UG/L	0.1 UJ	0.1 UJ	ND	ND	0/6
Methoxychlor	UG/L	0.5 UJ	0.5 UJ	ND	ND	0/6
Endrin ketone	UG/L	0.1 UJ	0.1 UJ	ND	ND	0/6
Endrin aldehyde	UG/L	0.1 UJ	0.1 UJ	ND	ND	0/6
alpha-Chlordane	UG/L	0.05 UJ	0.05 UJ	ND	ND	0/6
gamma-Chlordane	UG/L	0.05 UJ	0.05 UJ	ND	ND	0/6
Toxaphene	UG/L	5 UJ	5 UJ	ND	ND	0/6
Aroclor 1016	UG/L	1 UJ	1 UJ	ND	ND	0/6
Aroclor 1221	UG/L	2 UJ	2 UJ	ND	ND	0/6
Aroclor 1232	UG/L	1 UJ	1 UJ	ND	ND	0/6
Aroclor 1242	UG/L	1 UJ	1 UJ	ND	ND	0/6
Aroclor 1248	UG/L	1 UJ	1 UJ	ND	ND	0/6
Aroclor 1254	UG/L	1 UJ	1 UJ	ND	ND	0/6
Aroclor 1260	UG/L	1 UJ	1 UJ	ND	ND	0/6

APPENDIX I.9
NORTHEAST CREEK SURFACE WATER METALS

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-NC-SW01	7-NC-SW02	7-NC-SW03	7-NC-SW04	7-NC-SW05	7-NC-SW06
Laboratory Sample ID:	AB1629	AB1984	AB1981	AB1996	AB1638	AB1635
Date Sampled:	6/24/94	6/26/94	6/26/94	6/26/94	6/24/94	6/24/94
	<u>UNITS</u>					
Aluminum	UG/L 453	1910 J	2200 J	290 J	839	380
Antimony	UG/L 50 U	50 U	50 U	50 U	50 U	50 U
Arsenic	UG/L 2 U	2.4 J	2.1 J	2 UJ	2 U	2 U
Barium	UG/L 19.6	27.5	37.2	19	19	18.9
Beryllium	UG/L 1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	UG/L 5 U	5 U	5 U	5 U	5 U	5 U
Calcium	UG/L 152000	167000 J	171000 J	147000	160000	160000
Chromium	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
Cobalt	UG/L 10 UJ	10 UJ	10 UJ	10 U	10 UJ	10 UJ
Copper	UG/L 10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Iron	UG/L 298 J	1570 J	2160 J	208 J	530 J	313 J
Lead	UG/L 4.2 J	23.6	27.1	2.9 UJ	5.4 J	13.2 J
Magnesium	UG/L 482000	548000	573000	476000	547000	531000
Manganese	UG/L 10.1	22.5	68.9	13.4	14	12.6
Mercury	UG/L 0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	UG/L 20 UJ	20 UJ	20 UJ	20 U	20 UJ	20 UJ
Potassium	UG/L 149000	175000	179000	157000	159000	158000
Selenium	UG/L 2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ
Silver	UG/L 5 UJ	6.6	9.6	6.8	6.5 J	5.1 J
Sodium	UG/L 4650000	4230000 J	4410000 J	3800000	4110000	4050000
Thallium	UG/L 10 UJ	10 UJ	10 UJ	10 UJ	2 UJ	10 UJ
Vanadium	UG/L 10 U	10 U	10 U	10 U	10 U	10 U
Zinc	UG/L 27.6 J	46.3 U	46 U	5 UJ	32.9 J	22.5 J

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	
	<u>UNITS</u>						
Aluminum	UG/L	NA	NA	290 J	2200 J	7-NC-SW03	6/6
Antimony	UG/L	50 U	50 U	ND	ND		0/6
Arsenic	UG/L	2 U	2 U	2.1 J	2.4 J	7-NC-SW02	2/6
Barium	UG/L	NA	NA	18.9	37.2	7-NC-SW03	6/6
Beryllium	UG/L	1 U	1 U	ND	ND		0/6
Cadmium	UG/L	5 U	5 U	ND	ND		0/6
Calcium	UG/L	NA	NA	147000	171000 J	7-NC-SW03	6/6
Chromium	UG/L	10 U	10 U	ND	ND		0/6
Cobalt	UG/L	10 UJ	10 UJ	ND	ND		0/6
Copper	UG/L	10 U	10 U	ND	ND		0/6
Iron	UG/L	NA	NA	208 J	2160 J	7-NC-SW03	6/6
Lead	UG/L	2.9 UJ	2.9 UJ	4.2 J	27.1	7-NC-SW03	5/6
Magnesium	UG/L	NA	NA	476000	573000	7-NC-SW03	6/6
Manganese	UG/L	NA	NA	10.1	68.9	7-NC-SW03	6/6
Mercury	UG/L	0.2 U	0.2 U	ND	ND		0/6
Nickel	UG/L	20 UJ	20 UJ	ND	ND		0/6
Potassium	UG/L	NA	NA	149000	179000	7-NC-SW03	6/6
Selenium	UG/L	2 UJ	2 UJ	ND	ND		0/6
Silver	UG/L	5 UJ	5 UJ	5.1 J	9.6	7-NC-SW03	5/6
Sodium	UG/L	NA	NA	3800000	4650000	7-NC-SW01	6/6
Thallium	UG/L	2 UJ	10 UJ	ND	ND		0/6
Vanadium	UG/L	10 U	10 U	ND	ND		0/6
Zinc	UG/L	5 UJ	46.3 U	22.5 J	32.9 J	7-NC-SW05	3/6

APPENDIX I.10
EAST AND WEST TRIBUTARIES AND DRAINAGE DITCH
SURFACE WATER ORGANICS

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-DD-SW01	7-DD-SW02	7-ET-SW01	7-ET-SW02	7-WT-SW01	7-WT-SW02
Laboratory Sample ID:	AB1368	AB1371	AB1384	AB1652	AB1618	AB1655
Date Sampled:	6/22/94	6/22/94	6/23/94	6/24/94	6/24/94	6/23/94

	UNITS	7-DD-SW01	7-DD-SW02	7-ET-SW01	7-ET-SW02	7-WT-SW01	7-WT-SW02
<u>VOLATILES</u>							
Chloromethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Chloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	UG/L	10 U	10 U	10 U	10 U	3 J	2 J
1,2-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 U
Bromoform	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	UG/L	10 U	10 U	10 U	1 J	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-DD-SW01	7-DD-SW02	7-ET-SW01	7-ET-SW02	7-WT-SW01	7-WT-SW02
Laboratory Sample ID:	AB1368	AB1371	AB1384	AB1652	AB1618	AB1655
Date Sampled:	6/22/94	6/22/94	6/23/94	6/24/94	6/24/94	6/23/94

UNITS

<u>SEMIVOLATILES</u>		7-DD-SW01	7-DD-SW02	7-ET-SW01	7-ET-SW02	7-WT-SW01	7-WT-SW02
Phenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	5 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	5 U
1,2-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	5 U
2-Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis(1-Chloropropane)	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-DD-SW01	7-DD-SW02	7-ET-SW01	7-ET-SW02	7-WT-SW01	7-WT-SW02
Laboratory Sample ID:	AB1368	AB1371	AB1384	AB1652	AB1618	AB1655
Date Sampled:	6/22/94	6/22/94	6/23/94	6/24/94	6/24/94	6/23/94

UNITS

SEMIVOLATILES Cont.

2,4-Dinitrophenol	UG/L	25 U	25 UJ	25 UJ	25 U	25 U	25 U
Dibenzofuran	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	UG/L	10 U	10 UJ	10 UJ	10 U	10 U	10 U
Di-n-butylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	10 U	10 U	10 U	77 B	10 U	10 U
Di-n-octylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-DD-SW01	7-DD-SW02	7-ET-SW01	7-ET-SW02	7-WT-SW01	7-WT-SW02
Laboratory Sample ID:	AB1368	AB1371	AB1384	AB1652	AB1618	AB1655
Date Sampled:	6/22/94	6/22/94	6/23/94	6/24/94	6/24/94	6/23/94

UNITS

PESTICIDE/PCBs

	7-DD-SW01	7-DD-SW02	7-ET-SW01	7-ET-SW02	7-WT-SW01	7-WT-SW02
alpha-BHC	0.054 U	0.053 U	0.054 UJ	0.05 UJ	0.05 U	0.05 U
beta-BHC	0.054 U	0.053 U	0.054 UJ	0.05 UJ	0.05 U	0.05 U
delta-BHC	0.054 U	0.053 U	0.054 UJ	0.05 UJ	0.05 U	0.05 U
Lindane (gamma-BHC)	0.054 U	0.053 U	0.054 UJ	0.05 UJ	0.05 U	0.05 U
Heptachlor	0.054 U	0.053 U	0.054 UJ	0.05 UJ	0.05 U	0.05 U
Aldrin	0.054 U	0.053 U	0.054 UJ	0.05 UJ	0.05 U	0.05 U
Heptachlor epoxide	0.054 U	0.053 U	0.054 UJ	0.05 UJ	0.05 U	0.05 U
Endosulfan I	0.054 U	0.053 U	0.054 UJ	0.05 UJ	0.05 U	0.05 U
Dieldrin	0.11 U	0.11 U	0.11 UJ	0.1 UJ	0.5	0.4
4,4'-DDE	0.11 U	0.11 U	0.11 UJ	0.1 UJ	0.1 U	0.1 U
Endrin	0.11 U	0.11 U	0.11 UJ	0.1 UJ	0.1 U	0.1 U
Endosulfan II	0.11 U	0.11 U	0.11 UJ	0.1 UJ	0.1 U	0.1 U
4,4'-DDD	0.11 U	0.11 U	0.11 UJ	0.1 UJ	0.1 U	0.1 U
Endosulfan sulfate	0.11 U	0.11 U	0.11 UJ	0.1 UJ	0.1 U	0.1 U
4,4'-DDT	0.11 U	0.11 U	0.11 UJ	0.1 UJ	0.1 U	0.1 U
Methoxychlor	0.54 U	0.53 U	0.54 UJ	0.5 UJ	0.5 U	0.5 U
Endrin ketone	0.11 U	0.11 U	0.11 UJ	0.1 UJ	0.12	0.13
Endrin aldehyde	0.11 U	0.11 U	0.11 UJ	0.1 UJ	0.1 U	0.1 U
alpha-Chlordane	0.054 U	0.053 U	0.054 UJ	0.05 UJ	0.05 U	0.05 U
gamma-Chlordane	0.054 U	0.053 U	0.054 UJ	0.05 UJ	0.05 U	0.05 U
Toxaphene	5.4 U	5.3 U	5.4 UJ	5 UJ	5 U	5 U
Aroclor 1016	1.1 U	1.1 U	1.1 UJ	1 UJ	1 U	1 U
Aroclor 1221	2.2 U	2.1 U	2.2 UJ	2 UJ	2 U	2 U
Aroclor 1232	1.1 U	1.1 U	1.1 UJ	1 UJ	1 U	1 U
Aroclor 1242	1.1 U	1.1 U	1.1 UJ	1 UJ	1 U	1 U
Aroclor 1248	1.1 U	1.1 U	1.1 UJ	1 UJ	1 U	1 U
Aroclor 1254	1.1 U	1.1 U	1.1 UJ	1 UJ	1 U	1 U
Aroclor 1260	1.1 U	1.1 U	1.1 UJ	1 UJ	1 U	1 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11 (SITE 7)
WEST AND EAST TRIBUTARIES; DRAINAGE DITCH SURFACE WATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: 7-WT-SW03
 Laboratory Sample ID: AB1621
 Date Sampled: 6/24/94

	<u>UNITS</u>	
<u>VOLATILES</u>		
Chloromethane	UG/L	10 U
Bromomethane	UG/L	10 U
Vinyl Chloride	UG/L	10 U
Chloroethane	UG/L	10 U
Methylene Chloride	UG/L	10 U
Acetone	UG/L	10 U
Carbon Disulfide	UG/L	10 U
1,1-Dichloroethene	UG/L	10 U
1,1-Dichloroethane	UG/L	10 U
1,2-Dichloroethene (total)	UG/L	10 U
Chloroform	UG/L	10 U
1,2-Dichloroethane	UG/L	10 U
2-Butanone	UG/L	10 U
1,1,1-Trichloroethane	UG/L	10 U
Carbon Tetrachloride	UG/L	10 U
Bromodichloromethane	UG/L	10 U
1,2-Dichloropropane	UG/L	10 U
cis-1,3-Dichloropropene	UG/L	10 U
Trichloroethene	UG/L	10 U
Dibromochloromethane	UG/L	10 U
1,1,2-Trichloroethane	UG/L	10 U
Benzene	UG/L	10 U
trans-1,3-Dichloropropene	UG/L	10 U
Bromoform	UG/L	10 U
4-Methyl-2-Pentanone	UG/L	10 U
2-Hexanone	UG/L	10 U
Tetrachloroethene	UG/L	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 U
Toluene	UG/L	10 U
Chlorobenzene	UG/L	10 U
Ethylbenzene	UG/L	10 U
Styrene	UG/L	10 U
Xylene (total)	UG/L	10 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11 (SITE 7)
WEST AND EAST TRIBUTARIES; DRAINAGE DITCH SURFACE WATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: 7-WT-SW03
 Laboratory Sample ID: AB1621
 Date Sampled: 6/24/94

	<u>UNITS</u>	
<u>SEMIVOLATILES</u>		
Phenol	UG/L	10 U
bis(2-Chloroethyl)ether	UG/L	10 U
2-Chlorophenol	UG/L	10 U
1,3-Dichlorobenzene	UG/L	5 U
1,4-Dichlorobenzene	UG/L	5 U
1,2-Dichlorobenzene	UG/L	5 U
2-Methylphenol	UG/L	10 U
2,2'-oxybis(1-Chloropropane)	UG/L	10 U
4-Methylphenol	UG/L	10 U
N-Nitroso-di-n-propylamine	UG/L	10 U
Hexachloroethane	UG/L	10 U
Nitrobenzene	UG/L	10 U
Isophorone	UG/L	10 U
2-Nitrophenol	UG/L	10 U
2,4-Dimethylphenol	UG/L	10 U
bis(2-Chloroethoxy)methane	UG/L	10 U
2,4-Dichlorophenol	UG/L	10 U
1,2,4-Trichlorobenzene	UG/L	10 U
Naphthalene	UG/L	10 U
4-Chloroaniline	UG/L	10 U
Hexachlorobutadiene	UG/L	10 U
4-Chloro-3-methylphenol	UG/L	10 U
2-Methylnaphthalene	UG/L	10 U
Hexachlorocyclopentadiene	UG/L	10 U
2,4,6-Trichlorophenol	UG/L	10 U
2,4,5-Trichlorophenol	UG/L	25 U
2-Chloronaphthalene	UG/L	10 U
2-Nitroaniline	UG/L	25 U
Dimethylphthalate	UG/L	10 U
Acenaphthylene	UG/L	10 U
2,6-Dinitrotoluene	UG/L	10 U
3-Nitroaniline	UG/L	25 U
Acenaphthene	UG/L	10 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: 7-WT-SW03
 Laboratory Sample ID: AB1621
 Date Sampled: 6/24/94

UNITS

SEMIVOLATILES Cont.

2,4-Dinitrophenol	UG/L	25 U
Dibenzofuran	UG/L	25 U
4-Nitrophenol	UG/L	10 U
2,4-Dinitrotoluene	UG/L	10 U
Diethylphthalate	UG/L	10 U
Fluorene	UG/L	10 U
4-Chlorophenyl-phenylether	UG/L	10 U
4-Nitroaniline	UG/L	25 U
4,6-Dinitro-2-methylphenol	UG/L	25 U
N-Nitrosodiphenylamine	UG/L	10 U
4-Bromophenyl-phenylether	UG/L	10 U
Hexachlorobenzene	UG/L	10 U
Pentachlorophenol	UG/L	25 U
Phenanthrene	UG/L	10 U
Anthracene	UG/L	10 U
Carbazole	UG/L	10 U
Di-n-butylphthalate	UG/L	10 U
Fluoranthene	UG/L	10 U
Pyrene	UG/L	10 U
Butylbenzylphthalate	UG/L	10 U
Benzo(a)anthracene	UG/L	10 U
3,3'-Dichlorobenzidine	UG/L	10 U
Chrysene	UG/L	10 U
bis(2-Ethylhexyl)phthalate	UG/L	10 U
Di-n-octylphthalate	UG/L	10 U
Benzo(b)fluoranthene	UG/L	10 U
Benzo(k)fluoranthene	UG/L	10 U
Benzo(a)pyrene	UG/L	10 U
Indeno(1,2,3-cd)pyrene	UG/L	10 U
Dibenz(a,h)anthracene	UG/L	10 U
Benzo(g,h,i)perylene	UG/L	10 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: 7-WT-SW03
 Laboratory Sample ID: AB1621
 Date Sampled: 6/24/94

	<u>UNITS</u>	
<u>PESTICIDE/PCBs</u>		
alpha-BHC	UG/L	0.05 UJ
beta-BHC	UG/L	0.05 UJ
delta-BHC	UG/L	0.05 UJ
Lindane (gamma-BHC)	UG/L	0.05 UJ
Heptachlor	UG/L	0.05 UJ
Aldrin	UG/L	0.05 UJ
Heptachlor epoxide	UG/L	0.05 UJ
Endosulfan I	UG/L	0.05 UJ
Dieldrin	UG/L	0.1 UJ
4,4'-DDE	UG/L	0.1 UJ
Endrin	UG/L	0.1 UJ
Endosulfan II	UG/L	0.1 UJ
4,4'-DDD	UG/L	0.1 UJ
Endosulfan sulfate	UG/L	0.1 UJ
4,4'-DDT	UG/L	0.1 UJ
Methoxychlor	UG/L	0.5 UJ
Endrin ketone	UG/L	0.1 UJ
Endrin aldehyde	UG/L	0.1 UJ
alpha-Chlordane	UG/L	0.05 UJ
gamma-Chlordane	UG/L	0.05 UJ
Toxaphene	UG/L	5 UJ
Aroclor 1016	UG/L	1 UJ
Aroclor 1221	UG/L	2 UJ
Aroclor 1232	UG/L	1 UJ
Aroclor 1242	UG/L	1 UJ
Aroclor 1248	UG/L	1 UJ
Aroclor 1254	UG/L	1 UJ
Aroclor 1260	UG/L	1 UJ

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11 (SITE 7)
WEST AND EAST TRIBUTARIES; DRAINAGE DITCH SURFACE WATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
VOLATILES						
	UNITS					
Chloromethane	UG/L	10 U	10 U	ND	ND	0/7
Bromomethane	UG/L	10 U	10 U	ND	ND	0/7
Vinyl Chloride	UG/L	10 U	10 U	ND	ND	0/7
Chloroethane	UG/L	10 U	10 U	ND	ND	0/7
Methylene Chloride	UG/L	10 U	10 U	ND	ND	0/7
Acetone	UG/L	10 U	10 U	ND	ND	0/7
Carbon Disulfide	UG/L	10 U	10 U	ND	ND	0/7
1,1-Dichloroethene	UG/L	10 U	10 U	ND	ND	0/7
1,1-Dichloroethane	UG/L	10 U	10 U	ND	ND	0/7
1,2-Dichloroethene (total)	UG/L	10 U	10 U	ND	ND	0/7
Chloroform	UG/L	10 U	10 U	2 J	3 J	7-WT-SW01 2/7
1,2-Dichloroethane	UG/L	10 U	10 U	ND	ND	0/7
2-Butanone	UG/L	10 U	10 U	ND	ND	0/7
1,1,1-Trichloroethane	UG/L	10 U	10 U	ND	ND	0/7
Carbon Tetrachloride	UG/L	10 U	10 U	ND	ND	0/7
Bromodichloromethane	UG/L	10 U	10 U	ND	ND	0/7
1,2-Dichloropropane	UG/L	10 U	10 U	ND	ND	0/7
cis-1,3-Dichloropropene	UG/L	10 U	10 U	ND	ND	0/7
Trichloroethene	UG/L	10 U	10 U	ND	ND	0/7
Dibromochloromethane	UG/L	10 U	10 U	ND	ND	0/7
1,1,2-Trichloroethane	UG/L	10 U	10 U	ND	ND	0/7
Benzene	UG/L	10 U	10 U	ND	ND	0/7
trans-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	ND	ND	0/7
Bromoform	UG/L	10 U	10 U	ND	ND	0/7
4-Methyl-2-Pentanone	UG/L	10 U	10 U	ND	ND	0/7
2-Hexanone	UG/L	10 U	10 U	ND	ND	0/7
Tetrachloroethene	UG/L	10 U	10 U	ND	ND	0/7
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	ND	ND	0/7
Toluene	UG/L	10 U	10 U	ND	ND	0/7
Chlorobenzene	UG/L	10 U	10 U	ND	ND	0/7
Ethylbenzene	UG/L	10 U	10 U	ND	ND	0/7
Styrene	UG/L	10 U	10 U	ND	ND	0/7
Xylene (total)	UG/L	10 U	10 U	1 J	1 J	7-ET-SW02 1/7

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
<u>UNITS</u>						
<u>SEMIVOLATILES</u>						
Phenol	UG/L	10 U	10 U	ND	ND	0/7
bis(2-Chloroethyl)ether	UG/L	10 U	10 U	ND	ND	0/7
2-Chlorophenol	UG/L	10 U	10 U	ND	ND	0/7
1,3-Dichlorobenzene	UG/L	5 U	10 U	ND	ND	0/7
1,4-Dichlorobenzene	UG/L	5 U	10 U	ND	ND	0/7
1,2-Dichlorobenzene	UG/L	5 U	10 U	ND	ND	0/7
2-Methylphenol	UG/L	10 U	10 U	ND	ND	0/7
2,2'-oxybis(1-Chloropropane)	UG/L	10 U	10 U	ND	ND	0/7
4-Methylphenol	UG/L	10 U	10 U	ND	ND	0/7
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	ND	ND	0/7
Hexachloroethane	UG/L	10 U	10 U	ND	ND	0/7
Nitrobenzene	UG/L	10 U	10 U	ND	ND	0/7
Isophorone	UG/L	10 U	10 U	ND	ND	0/7
2-Nitrophenol	UG/L	10 U	10 U	ND	ND	0/7
2,4-Dimethylphenol	UG/L	10 U	10 U	ND	ND	0/7
bis(2-Chloroethoxy)methane	UG/L	10 U	10 U	ND	ND	0/7
2,4-Dichlorophenol	UG/L	10 U	10 U	ND	ND	0/7
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	ND	ND	0/7
Naphthalene	UG/L	10 U	10 U	ND	ND	0/7
4-Chloroaniline	UG/L	10 U	10 U	ND	ND	0/7
Hexachlorobutadiene	UG/L	10 U	10 U	ND	ND	0/7
4-Chloro-3-methylphenol	UG/L	10 U	10 U	ND	ND	0/7
2-Methylnaphthalene	UG/L	10 U	10 U	ND	ND	0/7
Hexachlorocyclopentadiene	UG/L	10 U	10 U	ND	ND	0/7
2,4,6-Trichlorophenol	UG/L	10 U	10 U	ND	ND	0/7
2,4,5-Trichlorophenol	UG/L	25 U	25 U	ND	ND	0/7
2-Chloronaphthalene	UG/L	10 U	10 U	ND	ND	0/7
2-Nitroaniline	UG/L	25 U	25 U	ND	ND	0/7
Dimethylphthalate	UG/L	10 U	10 U	ND	ND	0/7
Acenaphthylene	UG/L	10 U	10 U	ND	ND	0/7
2,6-Dinitrotoluene	UG/L	10 U	10 U	ND	ND	0/7
3-Nitroaniline	UG/L	25 U	25 U	ND	ND	0/7
Acenaphthene	UG/L	10 U	10 U	ND	ND	0/7

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>					
<u>SEMIVOLATILES Cont.</u>						
2,4-Dinitrophenol	UG/L	25 U	25 U	ND	ND	0/7
Dibenzofuran	UG/L	25 U	25 U	ND	ND	0/7
4-Nitrophenol	UG/L	10 U	10 U	ND	ND	0/7
2,4-Dinitrotoluene	UG/L	10 U	10 U	ND	ND	0/7
Diethylphthalate	UG/L	10 U	10 U	ND	ND	0/7
Fluorene	UG/L	10 U	10 U	ND	ND	0/7
4-Chlorophenyl-phenylether	UG/L	10 U	10 U	ND	ND	0/7
4-Nitroaniline	UG/L	25 U	25 U	ND	ND	0/7
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	ND	ND	0/7
N-Nitrosodiphenylamine	UG/L	10 U	10 U	ND	ND	0/7
4-Bromophenyl-phenylether	UG/L	10 U	10 U	ND	ND	0/7
Hexachlorobenzene	UG/L	10 U	10 U	ND	ND	0/7
Pentachlorophenol	UG/L	25 U	25 U	ND	ND	0/7
Phenanthrene	UG/L	10 U	10 U	ND	ND	0/7
Anthracene	UG/L	10 U	10 U	ND	ND	0/7
Carbazole	UG/L	10 U	10 U	ND	ND	0/7
Di-n-butylphthalate	UG/L	10 U	10 U	ND	ND	0/7
Fluoranthene	UG/L	10 U	10 U	ND	ND	0/7
Pyrene	UG/L	10 U	10 U	ND	ND	0/7
Butylbenzylphthalate	UG/L	10 U	10 U	ND	ND	0/7
Benzo(a)anthracene	UG/L	10 U	10 U	ND	ND	0/7
3,3'-Dichlorobenzidine	UG/L	10 U	10 U	ND	ND	0/7
Chrysene	UG/L	10 U	10 U	ND	ND	0/7
bis(2-Ethylhexyl)phthalate	UG/L	10 U	10 U	77 B	77 B	1/7
Di-n-octylphthalate	UG/L	10 U	10 U	ND	ND	0/7
Benzo(b)fluoranthene	UG/L	10 U	10 U	ND	ND	0/7
Benzo(k)fluoranthene	UG/L	10 U	10 U	ND	ND	0/7
Benzo(a)pyrene	UG/L	10 U	10 U	ND	ND	0/7
Indeno(1,2,3-cd)pyrene	UG/L	10 U	10 U	ND	ND	0/7
Dibenz(a,h)anthracene	UG/L	10 U	10 U	ND	ND	0/7
Benzo(g,h,i)perylene	UG/L	10 U	10 U	ND	ND	0/7

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>					
	<u>PESTICIDE/PCBs</u>					
alpha-BHC	UG/L	0.05 UJ	0.054 U	ND	ND	0/7
beta-BHC	UG/L	0.05 UJ	0.054 U	ND	ND	0/7
delta-BHC	UG/L	0.05 UJ	0.054 U	ND	ND	0/7
Lindane (gamma-BHC)	UG/L	0.05 UJ	0.054 U	ND	ND	0/7
Heptachlor	UG/L	0.05 UJ	0.054 U	ND	ND	0/7
Aldrin	UG/L	0.05 UJ	0.054 U	ND	ND	0/7
Heptachlor epoxide	UG/L	0.05 UJ	0.054 U	ND	ND	0/7
Endosulfan I	UG/L	0.05 UJ	0.054 U	ND	ND	0/7
Dieldrin	UG/L	0.1 UJ	0.11 U	0.4	0.5	7-WT-SW01 2/7
4,4'-DDE	UG/L	0.1 UJ	0.11 U	ND	ND	0/7
Endrin	UG/L	0.1 UJ	0.11 U	ND	ND	0/7
Endosulfan II	UG/L	0.1 UJ	0.11 U	ND	ND	0/7
4,4'-DDD	UG/L	0.1 UJ	0.11 U	ND	ND	0/7
Endosulfan sulfate	UG/L	0.1 UJ	0.11 U	ND	ND	0/7
4,4'-DDT	UG/L	0.1 UJ	0.11 U	ND	ND	0/7
Methoxychlor	UG/L	0.5 UJ	0.54 U	ND	ND	0/7
Endrin ketone	UG/L	0.1 UJ	0.11 U	0.12	0.13	7-WT-SW02 2/7
Endrin aldehyde	UG/L	0.1 UJ	0.11 U	ND	ND	0/7
alpha-Chlordane	UG/L	0.05 UJ	0.054 U	ND	ND	0/7
gamma-Chlordane	UG/L	0.05 UJ	0.054 U	ND	ND	0/7
Toxaphene	UG/L	5 UJ	5.4 U	ND	ND	0/7
Aroclor 1016	UG/L	1 UJ	1.1 U	ND	ND	0/7
Aroclor 1221	UG/L	2 UJ	2.2 U	ND	ND	0/7
Aroclor 1232	UG/L	1 UJ	1.1 U	ND	ND	0/7
Aroclor 1242	UG/L	1 UJ	1.1 U	ND	ND	0/7
Aroclor 1248	UG/L	1 UJ	1.1 U	ND	ND	0/7
Aroclor 1254	UG/L	1 UJ	1.1 U	ND	ND	0/7
Aroclor 1260	UG/L	1 UJ	1.1 U	ND	ND	0/7

APPENDIX I.11
EAST AND WEST TRIBUTARIES AND DRAINAGE DITCH
SURFACE WATER METALS

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-DD-SW01	7-DD-SW02	7-ET-SW01	7-ET-SW02	7-WT-SW01	7-WT-SW02	
Laboratory Sample ID:	B1370	B1373	AB1386	AB1654	AB1620	AB1657	
Date Sampled:	6/22/94	6/22/94	6/23/94	6/24/94	6/23/94	6/23/94	
	<u>UNITS</u>						
Aluminum	UG/L	137	1860	243	123	155	77.1
Antimony	UG/L	50 U	50 U	50 U	50 U	50 U	50 U
Arsenic	UG/L	2 U	2 U	2 U	10 U	2 U	2 U
Barium	UG/L	28.9	27.8	26.1	19.5	20.8	16.4
Beryllium	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Calcium	UG/L	12800	5940	62900	149000	10400	9100
Chromium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Cobalt	UG/L	10 U	10 U	10 U	10 UJ	10 UJ	10 UJ
Copper	UG/L	10 U	10 U	12.3	10 U	10 U	10 U
Iron	UG/L	727	1630	750	175 J	655 J	410 J
Lead	UG/L	2 U	15.9	2 U	7.1 J	2.5 J	7.8 J
Magnesium	UG/L	1960	2870	125000	468000	1680	2480
Manganese	UG/L	11.2	11.8	21.3	15.4	14.4	11.2
Mercury	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	UG/L	20 U	20 U	20 U	20 UJ	20 UJ	20 UJ
Potassium	UG/L	1000 U	1620 U	39600	144000	2370 U	2350 U
Selenium	UG/L	2 U	2 U	2 UJ	10 UJ	2 UJ	2 UJ
Silver	UG/L	5 U	5 U	5 U	6.6 J	5 UJ	5 UJ
Sodium	UG/L	12100	14000	1090000	3730000	7100	14500
Thallium	UG/L	2 UJ	2 UJ	10 UJ	10 UJ	2 UJ	2 UJ
Vanadium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Zinc	UG/L	6.4	28.5	15.4	5 UJ	168 J	40 J

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11 (SITE 7)
WEST AND EAST TRIBUTARIES; DRAINAGE DITCH SURFACE WATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID: 7-WT-SW03
Laboratory Sample ID: AB1623
Date Sampled: 6/24/94

	<u>UNITS</u>	
Aluminum	UG/L	274
Antimony	UG/L	50 U
Arsenic	UG/L	2 U
Barium	UG/L	18.5
Beryllium	UG/L	1 U
Cadmium	UG/L	5 U
Calcium	UG/L	131000
Chromium	UG/L	10 U
Cobalt	UG/L	10 UJ
Copper	UG/L	10 U
Iron	UG/L	213 J
Lead	UG/L	4.3 J
Magnesium	UG/L	410000
Manganese	UG/L	12.8
Mercury	UG/L	0.2 U
Nickel	UG/L	20 UJ
Potassium	UG/L	126000
Selenium	UG/L	2 UJ
Silver	UG/L	5 UJ
Sodium	UG/L	3260000
Thallium	UG/L	10 UJ
Vanadium	UG/L	10 U
Zinc	UG/L	8.1 J

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH SURFACE WATER
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	
	<u>UNITS</u>						
Aluminum	UG/L	NA	NA	77.1	1860	7-DD-SW02	7/7
Antimony	UG/L	50 U	50 U	ND	ND		0/7
Arsenic	UG/L	2 U	10 U	ND	ND		0/7
Barium	UG/L	NA	NA	16.4	28.9	7-DD-SW01	7/7
Beryllium	UG/L	1 U	1 U	ND	ND		0/7
Cadmium	UG/L	5 U	5 U	ND	ND		0/7
Calcium	UG/L	NA	NA	5940	149000	7-ET-SW02	7/7
Chromium	UG/L	10 U	10 U	ND	ND		0/7
Cobalt	UG/L	10 U	10 U	ND	ND		0/7
Copper	UG/L	10 U	10 U	12.3	12.3	7-ET-SW01	1/7
Iron	UG/L	NA	NA	175 J	1630	7-DD-SW02	7/7
Lead	UG/L	2 U	2 U	2.5 J	15.9	7-DD-SW02	5/7
Magnesium	UG/L	NA	NA	1680	468000	7-ET-SW02	7/7
Manganese	UG/L	NA	NA	11.2	21.3	7-ET-SW01	7/7
Mercury	UG/L	0.2 U	0.2 U	ND	ND		0/7
Nickel	UG/L	20 U	20 U	ND	ND		0/7
Potassium	UG/L	1000 U	2370 U	39600	144000	7-ET-SW02	3/7
Selenium	UG/L	2 U	10 UJ	ND	ND		0/7
Silver	UG/L	5 U	5 U	6.6 J	6.6 J	7-ET-SW02	1/7
Sodium	UG/L	NA	NA	7100	3730000	7-ET-SW02	7/7
Thallium	UG/L	2 UJ	10 UJ	ND	ND		0/7
Vanadium	UG/L	10 U	10 U	ND	ND		0/7
Zinc	UG/L	5 UJ	5 UJ	6.4	168 J	7-WT-SW01	6/7

APPENDIX I.12
NORTHEAST CREEK SEDIMENT ORGANICS

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SEDIMENT
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NC-SD01-06	7-NC-SD01-612	7-NC-SD02-06	7-NC-SD02-612	7-NC-SD03-06	7-NC-SD03-612
Laboratory Sample ID:	AB1671	AB1660	AB2051	AB2028	AB2033	AB2016
Date Sampled:	6/24/94	6/24/94	6/26/94	6/26/94	6/26/94	6/26/94

UNITS

VOLATILES

Chloromethane	UG/KG	100 U	100 U	13 UJ	28 UJ	14 U	110 U
Bromomethane	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
Vinyl chloride	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
Chloroethane	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
Methylene chloride	UG/KG	100 U	100 U	13 U	28 U	50 U	540 U
Acetone	UG/KG	450 U	260 U	14 U	130 U	14 U	130 U
Carbon Disulfide	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
1,1-Dichloroethene	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
1,1-Dichloroethane	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
1,2-Dichloroethene(total)	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
Chloroform	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
1,2-Dichloroethane	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
2-Butanone	UG/KG	53 J	100 U	1 J	7 J	14 U	110 U
1,1,1-Trichloroethane	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
Carbon tetrachloride	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
Bromodichloromethane	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
1,2-Dichloropropane	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
cis-1,3-Dichloropropene	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
Trichloroethene	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
Dibromochloromethane	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
1,1,2-Trichloroethane	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
Benzene	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
trans-1,3-Dichloropropene	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
Bromoform	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
4-Methyl-2-pentanone	UG/KG	100 U	100 U	13 U	28 U	14 U	110 U
2-Hexanone	UG/KG	100 UJ	100 U	13 U	28 U	14 U	110 U
Tetrachloroethene	UG/KG	100 UJ	100 U	13 U	28 U	14 U	110 U
1,1,2,2-Tetrachloroethane	UG/KG	100 UJ	100 U	13 U	28 U	14 U	110 U
Toluene	UG/KG	100 UJ	100 U	13 U	28 U	14 U	110 U
Chlorobenzene	UG/KG	100 UJ	100 U	13 U	28 U	14 U	110 U
Ethylbenzene	UG/KG	100 UJ	100 U	13 U	28 U	14 U	110 U
Styrene	UG/KG	100 UJ	100 U	13 U	28 U	14 U	110 U
Xylenes (total)	UG/KG	100 UJ	100 U	13 U	28 U	14 U	110 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SEDIMENT
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NC-SD01-06	7-NC-SD01-612	7-NC-SD02-06	7-NC-SD02-612	7-NC-SD03-06	7-NC-SD03-612
Laboratory Sample ID:	AB1671	AB1660	AB2051	AB2028	AB2033	AB2016
Date Sampled:	6/24/94	6/24/94	6/26/94	6/26/94	6/26/94	6/26/94

UNITS

SEMIVOLATILES

Phenol	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
bis(2-Chloroethyl) ether	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
2-Chlorophenol	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
1,3-Dichlorobenzene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
1,4-Dichlorobenzene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
1,2-Dichlorobenzene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
2-Methylphenol	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
2,2'-oxybis-(1-chloropropane)	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
4-Methylphenol	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
N-Nitroso-di-n-propylamine	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Hexachloroethane	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Nitrobenzene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Isophorone	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
2-Nitrophenol	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
2,4-Dimethylphenol	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
bis(2-Chloroethoxy) methane	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
2,4-Dichlorophenol	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
1,2,4-Trichlorobenzene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Naphthalene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
4-Chloroaniline	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Hexachlorobutadiene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
4-Chloro-3-methylphenol	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
2-Methylnaphthalene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Hexachlorocyclopentadiene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
2,4,6-Trichlorophenol	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
2,4,5-Trichlorophenol	UG/KG	7900 U	7900 U	1000 U	11000 U	1200 U	8900 U
2-Chloronaphthalene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
2-Nitroaniline	UG/KG	7900 U	7900 U	1000 U	11000 U	1200 U	8900 U
Dimethyl phthalate	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Acenaphthylene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
2,6-Dinitrotoluene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
3-Nitroaniline	UG/KG	7900 U	7900 U	1000 U	11000 U	1200 U	8900 U
Acenaphthene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SEDIMENT
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NC-SD01-06	7-NC-SD01-612	7-NC-SD02-06	7-NC-SD02-612	7-NC-SD03-06	7-NC-SD03-612
Laboratory Sample ID:	AB1671	AB1660	AB2051	AB2028	AB2033	AB2016
Date Sampled:	6/24/94	6/24/94	6/26/94	6/26/94	6/26/94	6/26/94

UNITS

<u>SEMIVOLATILES Cont.</u>	UG/KG	7900 U	7900 U	1000 U	11000 U	1200 U	8900 U
2,4-Dinitrophenol	UG/KG	7900 U	7900 U	1000 U	11000 U	1200 U	8900 U
4-Nitrophenol	UG/KG	7900 U	7900 U	1000 U	11000 U	1200 U	8900 U
Dibenzofuran	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
2,4-Dinitrotoluene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Diethylphthalate	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
4-Chlorophenyl phenyl ether	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Fluorene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
4-Nitroaniline	UG/KG	7900 U	7900 U	1000 U	11000 U	1200 U	8900 U
4,6-Dinitro-2-methylphenol	UG/KG	7900 U	7900 U	1000 U	11000 U	1200 U	8900 U
N-nitrosodiphenylamine	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
4-Bromophenyl-phenylether	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Hexachlorobenzene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Pentachlorophenol	UG/KG	7900 U	7900 U	1000 U	11000 U	1200 U	8900 U
Phenanthrene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Anthracene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Carbazole	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
di-n-Butylphthalate	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Fluoranthene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Pyrene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Butyl benzyl phthalate	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
3,3'-Dichlorobenzidine	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Benzo[a]anthracene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Chrysene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
bis(2-Ethylhexyl)phthalate	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
di-n-Octylphthalate	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Benzo[b]fluoranthene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Benzo[k]fluoranthene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Benzo[a]pyrene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Indeno[1,2,3-cd]pyrene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Dibenz[a,h]anthracene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U
Benzo[g,h,i]perylene	UG/KG	3300 U	3300 U	430 U	4600 U	480 U	3700 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SEDIMENT
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NC-SD01-06	7-NC-SD01-612	7-NC-SD02-06	7-NC-SD02-612	7-NC-SD03-06	7-NC-SD03-612
Laboratory Sample ID:	AB1671	AB1660	AB2051	AB2028	AB2033	AB2016
Date Sampled:	6/24/94	6/24/94	6/26/94	6/26/94	6/26/94	6/26/94

	UNITS						
<u>PESTICIDES/PCBs</u>							
alpha-BHC	UG/KG	17 U	17 U	2.2 U	4.6 U	2.4 U	19 U
beta-BHC	UG/KG	17 U	17 U	2.2 U	4.6 U	2.4 U	19 U
delta-BHC	UG/KG	17 U	17 U	2.2 U	4.6 U	2.4 U	19 U
Lindane (gamma-BHC)	UG/KG	17 U	17 U	2.2 U	4.6 U	2.4 U	19 U
Heptachlor	UG/KG	17 U	17 U	2.2 U	4.6 U	2.4 U	19 U
Aldrin	UG/KG	17 U	17 U	2.2 U	4.6 U	2.4 U	19 U
Heptachlor epoxide	UG/KG	17 U	17 U	2.2 U	4.6 U	2.4 U	19 U
Endosulfan I	UG/KG	17 U	17 U	2.2 U	4.6 U	2.4 U	19 U
Dieldrin	UG/KG	33 U	32 U	5.7	8.9 U	4.7 U	36 U
4,4'-DDE	UG/KG	33 U	32 U	4.3 U	8.9 U	4.7 U	36 U
Endrin	UG/KG	33 U	32 U	4.3 U	8.9 U	4.7 U	36 U
Endosulfan II	UG/KG	33 U	32 U	4.3 U	8.9 U	4.7 U	36 U
4,4'-DDD	UG/KG	33 U	32 U	5.3 J	8.9 U	4.7 U	36 U
Endosulfan sulfate	UG/KG	33 U	32 U	4.3 U	8.9 U	4.7 U	36 U
4,4'-DDT	UG/KG	33 U	32 U	4.3 U	8.9 U	4.7 U	36 U
Methoxychlor	UG/KG	170 U	170 U	22 U	46 U	24 U	190 U
Endrin ketone	UG/KG	33 U	32 U	4.3 UJ	8.9 UJ	4.7 UJ	36 U
Endrin aldehyde	UG/KG	33 U	32 U	4.3 U	8.9 U	4.7 U	36 U
alpha-Chlordane	UG/KG	17 U	17 U	5.4	4.9 J	2.4 U	19 U
gamma-Chlordane	UG/KG	17 U	17 U	5.2	4.6 U	2.4 U	19 U
Toxaphene	UG/KG	1700 U	1700 U	220 U	460 U	240 U	1900 U
Aroclor 1016	UG/KG	330 U	320 U	43 U	89 U	47 U	360 U
Aroclor 1221	UG/KG	670 U	650 U	88 U	180 U	95 U	730 U
Aroclor 1232	UG/KG	330 U	320 U	43 U	89 U	47 U	360 U
Aroclor 1242	UG/KG	330 U	320 U	43 U	89 U	47 U	360 U
Aroclor 1248	UG/KG	330 U	320 U	43 U	89 U	47 U	360 U
Aroclor 1254	UG/KG	330 U	320 U	43 U	89 U	47 U	360 U
Aroclor 1260	UG/KG	330 U	320 U	43 U	89 U	47 U	360 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SEDIMENT
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NC-SD04-06	7-NC-SD04-612	7-NC-SD05-06	7-NC-SD05-612	7-NC-SD06-06	7-NC-SD06-612
Laboratory Sample ID:	AB2039	AB2022	AB1682	AB1662	AB1668	AB1658
Date Sampled:	6/26/94	6/26/94	6/24/94	6/24/94	6/24/94	6/24/94
	<u>UNITS</u>					
<u>VOLATILES</u>						
Chloromethane	UG/KG	13 U	13 U	83 U	83 U	13 U
Bromomethane	UG/KG	13 U	13 U	83 U	83 U	13 U
Vinyl chloride	UG/KG	13 U	13 U	83 U	83 U	13 U
Chloroethane	UG/KG	13 U	13 U	83 U	83 U	13 U
Methylene chloride	UG/KG	52 U	14 U	83 U	83 U	13 U
Acetone	UG/KG	17 U	21 U	83 U	410 U	23 U
Carbon Disulfide	UG/KG	13 U	13 U	83 U	83 U	13 U
1,1-Dichloroethene	UG/KG	13 U	13 U	83 U	83 U	13 U
1,1-Dichloroethane	UG/KG	13 U	13 U	83 U	83 U	13 U
1,2-Dichloroethene(total)	UG/KG	13 U	13 U	83 U	83 U	13 U
Chloroform	UG/KG	13 U	13 U	83 U	83 U	13 U
1,2-Dichloroethane	UG/KG	13 U	13 U	83 U	83 U	13 U
2-Butanone	UG/KG	13 U	13 U	83 U	83 U	4 J
1,1,1-Trichloroethane	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
Carbon tetrachloride	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
Bromodichloromethane	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
1,2-Dichloropropane	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
cis-1,3-Dichloropropene	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
Trichloroethene	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
Dibromochloromethane	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
1,1,2-Trichloroethane	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
Benzene	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
trans-1,3-Dichloropropene	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
Bromoform	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
4-Methyl-2-pentanone	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
2-Hexanone	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
Tetrachloroethene	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
1,1,2,2-Tetrachloroethane	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
Toluene	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
Chlorobenzene	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
Ethylbenzene	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
Styrene	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U
Xylenes (total)	UG/KG	13 U	13 U	83 UJ	83 UJ	13 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SEDIMENT
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NC-SD04-06	7-NC-SD04-612	7-NC-SD05-06	7-NC-SD05-612	7-NC-SD06-06	7-NC-SD06-612
Laboratory Sample ID:	AB2039	AB2022	AB1682	AB1662	AB1668	AB1658
Date Sampled:	6/26/94	6/26/94	6/24/94	6/24/94	6/24/94	6/24/94

	<u>UNITS</u>						
<u>SEMIVOLATILES</u>							
Phenol	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
bis(2-Chloroethyl) ether	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
2-Chlorophenol	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
1,3-Dichlorobenzene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
1,4-Dichlorobenzene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
1,2-Dichlorobenzene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
2-Methylphenol	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
2,2'-oxybis-(1-chloropropane)	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
4-Methylphenol	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
N-Nitroso-di-n-propylamine	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
Hexachloroethane	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
Nitrobenzene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
Isophorone	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
2-Nitrophenol	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
2,4-Dimethylphenol	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
bis(2-Chloroethoxy) methane	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
2,4-Dichlorophenol	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
1,2,4-Trichlorobenzene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
Naphthalene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
4-Chloroaniline	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
Hexachlorobutadiene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
4-Chloro-3-methylphenol	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
2-Methylnaphthalene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
Hexachlorocyclopentadiene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
2,4,6-Trichlorophenol	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
2,4,5-Trichlorophenol	UG/KG	1000 U	1000 U	6600 U	6600 U	1000 U	1000 U
2-Chloronaphthalene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
2-Nitroaniline	UG/KG	1000 U	1000 U	6600 U	6600 U	1000 U	1000 U
Dimethyl phthalate	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
Acenaphthylene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
2,6-Dinitrotoluene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
3-Nitroaniline	UG/KG	1000 U	1000 U	6600 U	6600 U	1000 U	1000 U
Acenaphthene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SEDIMENT
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NC-SD04-06	7-NC-SD04-612	7-NC-SD05-06	7-NC-SD05-612	7-NC-SD06-06	7-NC-SD06-612
Laboratory Sample ID:	AB2039	AB2022	AB1682	AB1662	AB1668	AB1658
Date Sampled:	6/26/94	6/26/94	6/24/94	6/24/94	6/24/94	6/24/94

UNITS

SEMIVOLATILES Cont.

	UG/KG	1000 U	1000 U	6600 U	6600 U	1000 U	1000 U
2,4-Dinitrophenol	UG/KG	1000 U	1000 U	6600 U	6600 U	1000 U	1000 U
4-Nitrophenol	UG/KG	1000 UJ	1000 UJ	6600 U	6600 U	1000 U	1000 U
Dibenzofuran	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
2,4-Dinitrotoluene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
Diethylphthalate	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
4-Chlorophenyl phenyl ether	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
Fluorene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
4-Nitroaniline	UG/KG	1000 U	1000 U	6600 U	6600 U	1000 U	1000 U
4,6-Dinitro-2-methylphenol	UG/KG	1000 U	1000 U	6600 U	6600 U	1000 U	1000 U
N-nitrosodiphenylamine	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
4-Bromophenyl-phenylether	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
Hexachlorobenzene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
Pentachlorophenol	UG/KG	1000 U	1000 U	6600 U	6600 U	1000 U	1000 U
Phenanthrene	UG/KG	410 U	91 J	2700 U	2700 U	410 U	420 U
Anthracene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
Carbazole	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
di-n-Butylphthalate	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
Fluoranthene	UG/KG	410 U	120 J	2700 U	2700 U	42 J	420 U
Pyrene	UG/KG	410 U	170 J	2700 U	2700 U	49 J	43 J
Butyl benzyl phthalate	UG/KG	410 U	47 J	2700 U	2700 U	410 U	420 U
3,3'-Dichlorobenzidine	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
Benzo[a]anthracene	UG/KG	410 U	74 J	2700 U	2700 U	410 U	420 U
Chrysene	UG/KG	410 U	70 J	2700 U	2700 U	410 U	420 U
bis(2-Ethylhexyl)phthalate	UG/KG	410 U	980 U	2700 U	2700 U	410 U	420 U
di-n-Octylphthalate	UG/KG	410 U	430 U	500 J	2700 U	410 U	420 U
Benzo[b]fluoranthene	UG/KG	410 U	46 J	2700 U	2700 U	410 U	420 U
Benzo[k]fluoranthene	UG/KG	410 U	57 J	2700 U	2700 U	410 U	420 U
Benzo[a]pyrene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
Indeno[1,2,3-cd]pyrene	UG/KG	410 U	53 J	2700 U	2700 U	410 U	420 U
Dibenz[a,h]anthracene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U
Benzo[g,h,i]perylene	UG/KG	410 U	430 U	2700 U	2700 U	410 U	420 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SEDIMENT
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-NC-SD04-06	7-NC-SD04-612	7-NC-SD05-06	7-NC-SD05-612	7-NC-SD06-06	7-NC-SD06-612
Laboratory Sample ID:	AB2039	AB2022	AB1682	AB1662	AB1668	AB1658
Date Sampled:	6/26/94	6/26/94	6/24/94	6/24/94	6/24/94	6/24/94

	UNITS					
<u>PESTICIDES/PCBs</u>						
alpha-BHC	UG/KG	2.1 U	2.2 U	NA	14 U	2.1 U 2.2 U
beta-BHC	UG/KG	2.1 U	2.2 U	NA	14 U	2.1 U 2.2 U
delta-BHC	UG/KG	2.1 U	2.2 U	NA	14 U	2.1 U 2.2 U
Lindane (gamma-BHC)	UG/KG	2.1 U	2.2 U	NA	14 U	2.1 U 2.2 U
Heptachlor	UG/KG	2.1 U	2.2 U	NA	14 U	2.1 U 2.2 U
Aldrin	UG/KG	2.1 U	2.2 U	NA	14 U	2.1 U 2.2 U
Heptachlor epoxide	UG/KG	2.1 U	2.2 U	NA	14 U	2.1 U 2.2 U
Endosulfan I	UG/KG	2.1 U	2.2 U	NA	14 U	2.1 U 2.2 U
Dieldrin	UG/KG	4.1 U	7.9 J	NA	27 U	4.1 U 4.2 U
4,4'-DDE	UG/KG	4.1 U	20 J	NA	27 U	4.5 5.1
Endrin	UG/KG	4.1 U	4.3 U	NA	27 U	4.1 U 4.2 U
Endosulfan II	UG/KG	4.1 U	4.3 U	NA	27 U	4.1 U 4.2 U
4,4'-DDD	UG/KG	4.3	44 J	NA	27 U	4.1 U 4.2 U
Endosulfan sulfate	UG/KG	4.1 U	4.3 U	NA	27 U	4.1 U 4.2 U
4,4'-DDT	UG/KG	4.1 U	8.8	NA	27 U	4.1 U 4.2 U
Methoxychlor	UG/KG	21 U	22 U	NA	140 U	21 U 22 U
Endrin ketone	UG/KG	4.1 UJ	4.3 U	NA	27 U	4.1 U 4.2 U
Endrin aldehyde	UG/KG	4.1 U	4.3 U	NA	27 U	4.1 U 4.2 U
alpha-Chlordane	UG/KG	2.1 U	14	NA	14 U	2.1 U 2.2 U
gamma-Chlordane	UG/KG	2.1 U	11	NA	14 U	2.1 U 2.2 U
Toxaphene	UG/KG	210 U	220 U	NA	1400 U	210 U 220 U
Aroclor 1016	UG/KG	41 U	43 U	NA	270 U	41 U 42 U
Aroclor 1221	UG/KG	83 U	88 U	NA	550 U	83 U 85 U
Aroclor 1232	UG/KG	41 U	43 U	NA	270 U	41 U 42 U
Aroclor 1242	UG/KG	41 U	43 U	NA	270 U	41 U 42 U
Aroclor 1248	UG/KG	41 U	43 U	NA	270 U	41 U 42 U
Aroclor 1254	UG/KG	41 U	43 U	NA	270 U	41 U 42 U
Aroclor 1260	UG/KG	41 U	43 U	NA	270 U	41 U 42 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SEDIMENT
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>					
	<u>VOLATILES</u>					
Chloromethane	UG/KG	13 UJ	110 U	ND	ND	0/12
Bromomethane	UG/KG	13 U	110 U	ND	ND	0/12
Vinyl chloride	UG/KG	13 U	110 U	ND	ND	0/12
Chloroethane	UG/KG	13 U	110 U	ND	ND	0/12
Methylene chloride	UG/KG	13 U	540 U	ND	ND	0/12
Acetone	UG/KG	13 U	450 U	ND	ND	0/12
Carbon Disulfide	UG/KG	13 U	110 U	ND	ND	0/12
1,1-Dichloroethene	UG/KG	13 U	110 U	ND	ND	0/12
1,1-Dichloroethane	UG/KG	13 U	110 U	ND	ND	0/12
1,2-Dichloroethene(total)	UG/KG	13 U	110 U	ND	ND	0/12
Chloroform	UG/KG	13 U	110 U	ND	ND	0/12
1,2-Dichloroethane	UG/KG	13 U	110 U	ND	ND	0/12
2-Butanone	UG/KG	13 U	110 U	1 J	53 J	7-NC-SD01-06 4/12
1,1,1-Trichloroethane	UG/KG	13 U	110 U	ND	ND	0/12
Carbon tetrachloride	UG/KG	13 U	110 U	ND	ND	0/12
Bromodichloromethane	UG/KG	13 U	110 U	ND	ND	0/12
1,2-Dichloropropane	UG/KG	13 U	110 U	ND	ND	0/12
cis-1,3-Dichloropropene	UG/KG	13 U	110 U	ND	ND	0/12
Trichloroethene	UG/KG	13 U	110 U	ND	ND	0/12
Dibromochloromethane	UG/KG	13 U	110 U	ND	ND	0/12
1,1,2-Trichloroethane	UG/KG	13 U	110 U	ND	ND	0/12
Benzene	UG/KG	13 U	110 U	ND	ND	0/12
trans-1,3-Dichloropropene	UG/KG	13 U	110 U	ND	ND	0/12
Bromoform	UG/KG	13 U	110 U	ND	ND	0/12
4-Methyl-2-pentanone	UG/KG	13 U	110 U	ND	ND	0/12
2-Hexanone	UG/KG	13 U	110 U	ND	ND	0/12
Tetrachloroethene	UG/KG	13 U	110 U	ND	ND	0/12
1,1,2,2-Tetrachloroethane	UG/KG	13 U	110 U	ND	ND	0/12
Toluene	UG/KG	13 U	110 U	ND	ND	0/12
Chlorobenzene	UG/KG	13 U	110 U	ND	ND	0/12
Ethylbenzene	UG/KG	13 U	110 U	ND	ND	0/12
Styrene	UG/KG	13 U	110 U	ND	ND	0/12
Xylenes (total)	UG/KG	13 U	110 U	ND	ND	0/12

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SEDIMENT
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:		MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>						
	<u>SEMIVOLATILES</u>						
	Phenol	UG/KG	410 U	4600 U	ND	ND	0/12
	bis(2-Chloroethyl) ether	UG/KG	410 U	4600 U	ND	ND	0/12
	2-Chlorophenol	UG/KG	410 U	4600 U	ND	ND	0/12
	1,3-Dichlorobenzene	UG/KG	410 U	4600 U	ND	ND	0/12
	1,4-Dichlorobenzene	UG/KG	410 U	4600 U	ND	ND	0/12
	1,2-Dichlorobenzene	UG/KG	410 U	4600 U	ND	ND	0/12
	2-Methylphenol	UG/KG	410 U	4600 U	ND	ND	0/12
	2,2'-oxybis-(1-chloropropane)	UG/KG	410 U	4600 U	ND	ND	0/12
	4-Methylphenol	UG/KG	410 U	4600 U	ND	ND	0/12
	N-Nitroso-di-n-propylamine	UG/KG	410 U	4600 U	ND	ND	0/12
	Hexachloroethane	UG/KG	410 U	4600 U	ND	ND	0/12
	Nitrobenzene	UG/KG	410 U	4600 U	ND	ND	0/12
	Isophorone	UG/KG	410 U	4600 U	ND	ND	0/12
	2-Nitrophenol	UG/KG	410 U	4600 U	ND	ND	0/12
	2,4-Dimethylphenol	UG/KG	410 U	4600 U	ND	ND	0/12
	bis(2-Chloroethoxy) methane	UG/KG	410 U	4600 U	ND	ND	0/12
	2,4-Dichlorophenol	UG/KG	410 U	4600 U	ND	ND	0/12
	1,2,4-Trichlorobenzene	UG/KG	410 U	4600 U	ND	ND	0/12
	Naphthalene	UG/KG	410 U	4600 U	ND	ND	0/12
	4-Chloroaniline	UG/KG	410 U	4600 U	ND	ND	0/12
	Hexachlorobutadiene	UG/KG	410 U	4600 U	ND	ND	0/12
	4-Chloro-3-methylphenol	UG/KG	410 U	4600 U	ND	ND	0/12
	2-Methylnaphthalene	UG/KG	410 U	4600 U	ND	ND	0/12
	Hexachlorocyclopentadiene	UG/KG	410 U	4600 U	ND	ND	0/12
	2,4,6-Trichlorophenol	UG/KG	410 U	4600 U	ND	ND	0/12
	2,4,5-Trichlorophenol	UG/KG	1000 U	11000 U	ND	ND	0/12
	2-Chloronaphthalene	UG/KG	410 U	4600 U	ND	ND	0/12
	2-Nitroaniline	UG/KG	1000 U	11000 U	ND	ND	0/12
	Dimethyl phthalate	UG/KG	410 U	4600 U	ND	ND	0/12
	Acenaphthylene	UG/KG	410 U	4600 U	ND	ND	0/12
	2,6-Dinitrotoluene	UG/KG	410 U	4600 U	ND	ND	0/12
	3-Nitroaniline	UG/KG	1000 U	11000 U	ND	ND	0/12
	Acenaphthene	UG/KG	410 U	4600 U	ND	ND	0/12

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SEDIMENT
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:		MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>						
	<u>SEMIVOLATILES Cont.</u>						
	2,4-Dinitrophenol	UG/KG	1000 U	11000 U	ND	ND	0/12
	4-Nitrophenol	UG/KG	1000 UJ	11000 UJ	ND	ND	0/12
	Dibenzofuran	UG/KG	410 U	4600 U	ND	ND	0/12
	2,4-Dinitrotoluene	UG/KG	410 U	4600 U	ND	ND	0/12
	Diethylphthalate	UG/KG	410 U	4600 U	ND	ND	0/12
	4-Chlorophenyl phenyl ether	UG/KG	410 U	4600 U	ND	ND	0/12
	Fluorene	UG/KG	410 U	4600 U	ND	ND	0/12
	4-Nitroaniline	UG/KG	1000 U	11000 U	ND	ND	0/12
	4,6-Dinitro-2-methylphenol	UG/KG	1000 U	11000 U	ND	ND	0/12
	N-nitrosodiphenylamine	UG/KG	410 U	4600 U	ND	ND	0/12
	4-Bromophenyl-phenylether	UG/KG	410 U	4600 U	ND	ND	0/12
	Hexachlorobenzene	UG/KG	410 U	4600 U	ND	ND	0/12
	Pentachlorophenol	UG/KG	1000 U	11000 U	ND	ND	0/12
	Phenanthrene	UG/KG	410 U	4600 U	91 J	91 J	7-NC-SD04-612 1/12
	Anthracene	UG/KG	410 U	4600 U	ND	ND	0/12
	Carbazole	UG/KG	410 U	4600 U	ND	ND	0/12
	di-n-Butylphthalate	UG/KG	410 U	4600 U	ND	ND	0/12
	Fluoranthene	UG/KG	410 U	4600 U	42 J	120 J	7-NC-SD04-612 2/12
	Pyrene	UG/KG	410 U	4600 U	43 J	170 J	7-NC-SD04-612 3/12
	Butyl benzyl phthalate	UG/KG	410 U	4600 U	47 J	47 J	7-NC-SD04-612 1/12
	3,3'-Dichlorobenzidine	UG/KG	410 U	4600 U	ND	ND	0/12
	Benzo[a]anthracene	UG/KG	410 U	4600 U	74 J	74 J	7-NC-SD04-612 1/12
	Chrysene	UG/KG	410 U	4600 U	70 J	70 J	7-NC-SD04-612 1/12
	bis(2-Ethylhexyl)phthalate	UG/KG	410 U	4600 U	ND	ND	0/12
	di-n-Octylphthalate	UG/KG	410 U	4600 U	500 J	500 J	7-NC-SD05-06 1/12
	Benzo[b]fluoranthene	UG/KG	410 U	4600 U	46 J	46 J	7-NC-SD04-612 1/12
	Benzo[k]fluoranthene	UG/KG	410 U	4600 U	57 J	57 J	7-NC-SD04-612 1/12
	Benzo[a]pyrene	UG/KG	410 U	4600 U	ND	ND	0/12
	Indeno[1,2,3-cd]pyrene	UG/KG	410 U	4600 U	53 J	53 J	7-NC-SD04-612 1/12
	Dibenz[a,h]anthracene	UG/KG	410 U	4600 U	ND	ND	0/12
	Benzo[g,h,i]perylene	UG/KG	410 U	4600 U	ND	ND	0/12

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SEDIMENT
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
<u>UNITS</u>						
<u>PESTICIDES/PCBs</u>						
alpha-BHC	UG/KG	2.1 U	19 U	ND	ND	0/11
beta-BHC	UG/KG	2.1 U	19 U	ND	ND	0/11
delta-BHC	UG/KG	2.1 U	19 U	ND	ND	0/11
Lindane (gamma-BHC)	UG/KG	2.1 U	19 U	ND	ND	0/11
Heptachlor	UG/KG	2.1 U	19 U	ND	ND	0/11
Aldrin	UG/KG	2.1 U	19 U	ND	ND	0/11
Heptachlor epoxide	UG/KG	2.1 U	19 U	ND	ND	0/11
Endosulfan I	UG/KG	2.1 U	19 U	ND	ND	0/11
Dieldrin	UG/KG	4.1 U	36 U	5.7	7.9 J	7-NC-SD04-612 2/11
4,4'-DDE	UG/KG	4.1 U	36 U	4.5	20 J	7-NC-SD04-612 3/11
Endrin	UG/KG	4.1 U	36 U	ND	ND	0/11
Endosulfan II	UG/KG	4.1 U	36 U	ND	ND	0/11
4,4'-DDD	UG/KG	4.1 U	36 U	4.3	44 J	7-NC-SD04-612 3/11
Endosulfan sulfate	UG/KG	4.1 U	36 U	ND	ND	0/11
4,4'-DDT	UG/KG	4.1 U	36 U	8.8	8.8	7-NC-SD04-612 1/11
Methoxychlor	UG/KG	21 U	190 U	ND	ND	0/11
Endrin ketone	UG/KG	4.1 UJ	36 U	ND	ND	0/11
Endrin aldehyde	UG/KG	4.1 U	36 U	ND	ND	0/11
alpha-Chlordane	UG/KG	2.1 U	19 U	4.9 J	14	7-NC-SD04-612 3/11
gamma-Chlordane	UG/KG	2.1 U	19 U	5.2	11	7-NC-SD04-612 2/11
Toxaphene	UG/KG	210 U	1900 U	ND	ND	0/11
Aroclor 1016	UG/KG	41 U	360 U	ND	ND	0/11
Aroclor 1221	UG/KG	83 U	730 U	ND	ND	0/11
Aroclor 1232	UG/KG	41 U	360 U	ND	ND	0/11
Aroclor 1242	UG/KG	41 U	360 U	ND	ND	0/11
Aroclor 1248	UG/KG	41 U	360 U	ND	ND	0/11
Aroclor 1254	UG/KG	41 U	360 U	ND	ND	0/11
Aroclor 1260	UG/KG	41 U	360 U	ND	ND	0/11

APPENDIX I.13
NORTHEAST CREEK SEDIMENT METALS

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SEDIMENT
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-NC-SD01-06	7-NC-SD01-612	7-NC-SD02-06	7-NC-SD02-612	7-NC-SD03-06	7-NC-SD03-612	
Laboratory Sample ID:	AB1672	AB1661	AB2052	AB2029	AB2034	AB2017	
Date Sampled:	6/24/94	6/24/94	6/26/94	6/26/94	6/26/94	6/26/94	
	UNITS						
Aluminum	MG/KG	1170	727	855 J	3130 J	320 J	2530 J
Antimony	MG/KG	100 U	93.4 U	12.3 U	26.8 U	13.6 U	103 U
Arsenic	MG/KG	4 U	3.6 U	0.5 UJ	1.3 J	0.54 UJ	4.3 UJ
Barium	MG/KG	6.8	4.6	14.8	9.9	1.4	13.9
Beryllium	MG/KG	2 U	1.9 U	0.25 U	0.54 U	0.27 U	2.1 U
Cadmium	MG/KG	10 U	9.3 U	1.2 U	2.7 U	1.4 U	10.3 U
Calcium	MG/KG	10900	10400	1420	2830	1300	10000
Chromium	MG/KG	20 U	18.7 U	3.4	6.2	2.7 U	20.6 U
Cobalt	MG/KG	20 U	18.7 U	2.5 U	5.4 U	2.7 U	20.6 U
Copper	MG/KG	20 U	18.7 U	2.5 UJ	5.4 UJ	2.7 UJ	20.6 UJ
Iron	MG/KG	771	197	983 J	1670 J	203 J	1160 J
Lead	MG/KG	14.7 J	8.4 J	11.9 J	13.2 J	3.9 J	6.2 J
Magnesium	MG/KG	13900	12700	323 U	1600	1440	9590
Manganese	MG/KG	15.2	8.2	5	5.7	2.2	7.7
Mercury	MG/KG	1 U	0.95 U	0.12 U	0.24 U	0.15 U	1.1 U
Nickel	MG/KG	40 U	37.3 U	4.9 U	10.7 U	5.4 U	41.2 U
Potassium	MG/KG	4810 U	3280 U	424 U	998 U	390 U	3950 U
Selenium	MG/KG	4 U	3.6 U	0.5 U	1.1 U	0.54 U	4.3 U
Silver	MG/KG	10 U	9.3 U	1.2 U	2.7 U	1.4 U	10.3 U
Sodium	MG/KG	48700	42300	1400	4750	4740	25600
Thallium	MG/KG	4.6 J	4.9 J	0.5 U	1.1 UJ	0.54 UJ	4.3 UJ
Vanadium	MG/KG	20 U	18.7 U	3.2	8.1	2.7 U	20.6 U
Zinc	MG/KG	11.1	9.3 U	20.6 J	15.3 J	2.9 J	20.3 J

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 NORTHEAST CREEK SEDIMENT
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-NC-SD04-06	7-NC-SD04-612	7-NC-SD05-06	7-NC-SD05-612	7-NC-SD06-06	7-NC-SD06-612	
Laboratory Sample ID:	AB2040	AB2023	AB1683	AB1663	AB1669	AB1659	
Date Sampled:	6/26/94	6/26/94	6/24/94	6/24/94	6/24/94	6/24/94	
	<u>UNITS</u>						
Aluminum	MG/KG	820 J	5480 J	2440	940	1250	696
Antimony	MG/KG	12 U	12.7 U	83.9 U	80.8 U	12.1 U	12.1 U
Arsenic	MG/KG	0.49 UJ	0.89 UJ	3.2 U	3.1 U	0.51 U	0.8
Barium	MG/KG	4.6	9.6	8.4	6.8	3.1	2.3
Beryllium	MG/KG	0.24 U	0.28	1.7 U	1.6 U	0.24 U	0.24 U
Cadmium	MG/KG	1.2 U	1.3 U	8.4 U	8.1 U	1.2 U	1.2 U
Calcium	MG/KG	347	1170	10200	10500	39500	15500
Chromium	MG/KG	3.6	10	16.8 U	16.2 U	4.4	2.9
Cobalt	MG/KG	2.4 U	2.5 U	16.8 U	16.2 U	2.4 U	2.4 U
Copper	MG/KG	9.3 J	3.7 J	16.8 U	16.2 U	2.4 U	6.9
Iron	MG/KG	397 J	2370 J	1970	322	990	1030
Lead	MG/KG	4.3 J	86 J	28.2 J	12.3 J	5.4 J	4.7 J
Magnesium	MG/KG	372 U	963	11200	11300	869	540
Manganese	MG/KG	1.9	7.6	11.7	5.4	10.1	7.2
Mercury	MG/KG	0.12 U	0.13 U	0.85 U	0.76 U	0.11 U	0.13 U
Nickel	MG/KG	4.8 U	5.1 U	33.6 U	32.3 U	4.8 U	4.9 U
Potassium	MG/KG	508 U	818 U	2910 U	2740 U	479 U	369 U
Selenium	MG/KG	0.49 U	0.5 U	3.2 U	3.1 U	0.51 U	0.49 U
Silver	MG/KG	1.2 U	1.3 U	8.4 U	8.1 U	1.2 U	1.2 U
Sodium	MG/KG	1590	1730	33600	23400	1910	1290
Thallium	MG/KG	0.49 U	0.5 UJ	3.2 UJ	4.9 J	0.61 J	0.7 J
Vanadium	MG/KG	2.4 U	10.1	16.8 U	16.2 U	3.1	3
Zinc	MG/KG	5.9 J	74.5 J	15.9	16.2	9.6	6.9

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11 (SITE 7)
NORTHEAST CREEK SEDIMENT
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	
	UNITS						
Aluminum	MG/KG	NA	NA	320 J	5480 J	7-NC-SD04-612	12/12
Antimony	MG/KG	12 U	103 U	ND	ND		0/12
Arsenic	MG/KG	0.49 UJ	4.3 UJ	0.8	1.3 J	7-NC-SD02-612	2/12
Barium	MG/KG	NA	NA	1.4	14.8	7-NC-SD02-06	12/12
Beryllium	MG/KG	0.24 U	2.1 U	0.28	0.28	7-NC-SD04-612	1/12
Cadmium	MG/KG	1.2 U	10.3 U	ND	ND		0/12
Calcium	MG/KG	NA	NA	347	39500	7-NC-SD06-06	12/12
Chromium	MG/KG	2.7 U	20.6 U	2.9	10	7-NC-SD04-612	6/12
Cobalt	MG/KG	2.4 U	20.6 U	ND	ND		0/12
Copper	MG/KG	2.4 U	20.6 UJ	3.7 J	9.3 J	7-NC-SD04-06	3/12
Iron	MG/KG	NA	NA	197	2370 J	7-NC-SD04-612	12/12
Lead	MG/KG	NA	NA	3.9 J	86 J	7-NC-SD04-612	12/12
Magnesium	MG/KG	323 U	372 U	540	13900	7-NC-SD01-06	10/12
Manganese	MG/KG	NA	NA	1.9	15.2	7-NC-SD01-06	12/12
Mercury	MG/KG	0.11 U	1.1 U	ND	ND		0/12
Nickel	MG/KG	4.8 U	41.2 U	ND	ND		0/12
Potassium	MG/KG	369 U	4810 U	ND	ND		0/12
Selenium	MG/KG	0.49 U	4.3 U	ND	ND		0/12
Silver	MG/KG	1.2 U	10.3 U	ND	ND		0/12
Sodium	MG/KG	NA	NA	1290	48700	7-NC-SD01-06	12/12
Thallium	MG/KG	0.49 U	4.3 UJ	0.61 J	4.9 J	7-NC-SD05-612	5/12
Vanadium	MG/KG	2.4 U	20.6 U	3	10.1	7-NC-SD04-612	5/12
Zinc	MG/KG	9.3 U	9.3 U	2.9 J	74.5 J	7-NC-SD04-612	11/12

APPENDIX I.14
EAST AND WEST TRIBUTARIES, DRAINAGE DITCH,
AND MARSH AREA SEDIMENT ORGANICS

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-DD-SD01-06	7-DD-SD02-06	7-ET-SD01-06	7-ET-SD02-06	7-MA-SD01-06	7-MA-SD01-612
Laboratory Sample ID:	AB1377	AB1374	AB1396	AB1687	AB1399	AB1403
Date Sampled:	6/22/94	6/22/94	6/23/94	6/24/94	6/23/94	6/23/94

	UNITS						
VOLATILES							
Chloromethane	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
Bromomethane	UG/KG	14 U	14 U	77 UJ	67 U	59 UJ	100 UJ
Vinyl Chloride	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
Chloroethane	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
Methylene Chloride	UG/KG	14 U	14 U	77 UJ	67 U	59 UJ	100 UJ
Acetone	UG/KG	14 U	33 U	1200 UJ	190 U	330 U	780 U
Carbon Disulfide	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
1,1-Dichloroethene	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
1,1-Dichloroethane	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
1,2-Dichloroethene (total)	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
Chloroform	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
1,2-Dichloroethane	UG/KG	14 UJ	14 UJ	77 UJ	67 U	59 U	100 UJ
2-Butanone	UG/KG	14 U	7 J	250 J	67 U	91	180 J
1,1,1-Trichloroethane	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
Carbon Tetrachloride	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
Bromodichloromethane	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
1,2-Dichloropropane	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
cis-1,3-Dichloropropene	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
Trichloroethene	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
Dibromochloromethane	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
1,1,2-Trichloroethane	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
Benzene	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
trans-1,3-Dichloropropene	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
Bromoform	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
4-Methyl-2-Pentanone	UG/KG	14 U	14 U	77 UJ	67 U	59 U	100 UJ
2-Hexanone	UG/KG	14 U	14 U	77 UJ	67 UJ	59 U	100 UJ
Tetrachloroethene	UG/KG	14 U	14 U	77 UJ	67 UJ	59 U	100 UJ
1,1,2,2-Tetrachloroethane	UG/KG	14 U	14 U	77 UJ	67 UJ	59 U	100 UJ
Toluene	UG/KG	14 U	14 U	36 J	67 UJ	10 J	20 J
Chlorobenzene	UG/KG	14 U	14 U	77 UJ	67 UJ	59 U	100 UJ
Ethylbenzene	UG/KG	14 U	14 U	77 UJ	67 UJ	59 U	100 UJ
Styrene	UG/KG	14 U	14 U	77 UJ	67 UJ	59 U	100 UJ
Xylene (total)	UG/KG	14 U	14 U	77 UJ	67 UJ	59 U	100 UJ

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-DD-SD01-06	7-DD-SD02-06	7-ET-SD01-06	7-ET-SD02-06	7-MA-SD01-06	7-MA-SD01-612
Laboratory Sample ID:	AB1377	AB1374	AB1396	AB1687	AB1399	AB1403
Date Sampled:	6/22/94	6/22/94	6/23/94	6/24/94	6/23/94	6/23/94

	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
bis(2-Chloroethyl)ether	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
2-Chlorophenol	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
1,3-Dichlorobenzene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
1,4-Dichlorobenzene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
1,2-Dichlorobenzene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
2-Methylphenol	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
2,2'-oxybis(1-Chloropropane)	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
4-Methylphenol	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
N-Nitroso-di-n-propylamine	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
Hexachloroethane	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
Nitrobenzene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
Isophorone	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
2-Nitrophenol	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
2,4-Dimethylphenol	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
bis(2-Chloroethoxy)methane	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
2,4-Dichlorophenol	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
1,2,4-Trichlorobenzene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
Naphthalene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
4-Chloroaniline	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
Hexachlorobutadiene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
4-Chloro-3-methylphenol	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
2-Methylnaphthalene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
Hexachlorocyclopentadiene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
2,4,6-Trichlorophenol	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
2,4,5-Trichlorophenol	UG/KG	1100 U	1200 U	6100 U	5300 U	4700 U	7900 U
2-Chloronaphthalene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
2-Nitroaniline	UG/KG	1100 U	1200 U	6100 U	5300 U	4700 U	7900 U
Dimethylphthalate	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
Acenaphthylene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
2,6-Dinitrotoluene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
3-Nitroaniline	UG/KG	1100 U	1200 U	6100 U	5300 U	4700 U	7900 U
Acenaphthene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-DD-SD01-06	7-DD-SD02-06	7-ET-SD01-06	7-ET-SD02-06	7-MA-SD01-06	7-MA-SD01-612
Laboratory Sample ID:	AB1377	AB1374	AB1396	AB1687	AB1399	AB1403
Date Sampled:	6/22/94	6/22/94	6/23/94	6/24/94	6/23/94	6/23/94

	UNITS						
<u>SEMIVOLATILES Cont.</u>							
2,4-Dinitrophenol	UG/KG	1100 U	1200 U	6100 UJ	5300 U	4700 UJ	7900 UJ
Dibenzofuran	UG/KG	1100 U	130 J	6100 U	5300 U	4700 U	7900 U
4-Nitrophenol	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
2,4-Dinitrotoluene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
Diethylphthalate	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
Fluorene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
4-Chlorophenyl-phenylether	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
4-Nitroaniline	UG/KG	1100 U	1200 U	6100 UJ	5300 U	4700 UJ	7900 U
4,6-Dinitro-2-methylphenol	UG/KG	1100 U	1200 U	6100 UJ	5300 U	4700 UJ	7900 U
N-Nitrosodiphenylamine	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
4-Bromophenyl-phenylether	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
Hexachlorobenzene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
Pentachlorophenol	UG/KG	1100 U	1200 U	6100 U	5300 U	4700 U	7900 U
Phenanthrene	UG/KG	440 U	100 J	2500 U	2200 U	1900 U	3300 U
Anthracene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
Carbazole	UG/KG	440 U	480 U	2500 UJ	2200 U	1900 UJ	3300 UJ
Di-n-butylphthalate	UG/KG	76 J	210 J	2500 U	2200 U	310 J	3300 U
Fluoranthene	UG/KG	440 U	170 J	2500 U	2200 U	1900 U	3300 U
Pyrene	UG/KG	440 U	130 J	2500 U	2200 U	1900 U	3300 U
Butylbenzylphthalate	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
Benzo(a)anthracene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
3,3'-Dichlorobenzidine	UG/KG	440 U	110 J	2500 U	2200 U	1900 U	3300 U
Chrysene	UG/KG	440 U	110 J	2500 U	2200 U	1900 U	3300 U
bis(2-Ethylhexyl)phthalate	UG/KG	440 U	510	2500 U	2200 U	1900 U	3300 U
Di-n-octylphthalate	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
Benzo(b)fluoranthene	UG/KG	440 U	85 J	2500 U	2200 U	1900 U	3300 U
Benzo(k)fluoranthene	UG/KG	440 U	110 J	2500 U	2200 U	1900 U	3300 U
Benzo(a)pyrene	UG/KG	440 U	110 J	2500 U	2200 U	1900 U	3300 U
Indeno(1,2,3-cd)pyrene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
Dibenz(a,h)anthracene	UG/KG	440 U	480 U	2500 U	2200 U	1900 U	3300 U
Benzo(g,h,i)perylene	UG/KG	440 U	65 J	2500 U	2200 U	1900 U	3300 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-DD-SD01-06	7-DD-SD02-06	7-ET-SD01-06	7-ET-SD02-06	7-MA-SD01-06	7-MA-SD01-612
Laboratory Sample ID:	AB1377	AB1374	AB1396	AB1687	AB1399	AB1403
Date Sampled:	6/22/94	6/22/94	6/23/94	6/24/94	6/23/94	6/23/94

	UNITS						
<u>PESTICIDE/PCBs</u>							
alpha-BHC	UG/KG	2.3 U	2.4 U	13 UJ	11 U	9.7 UJ	17 UJ
beta-BHC	UG/KG	2.3 U	2.4 U	13 UJ	11 U	9.7 UJ	17 UJ
delta-BHC	UG/KG	2.3 U	2.4 U	13 UJ	11 U	9.7 UJ	17 UJ
Lindane (gamma-BHC)	UG/KG	2.3 U	2.4 U	13 UJ	11 U	9.7 UJ	17 UJ
Heptachlor	UG/KG	2.3 U	2.4 U	13 UJ	11 U	9.7 UJ	17 UJ
Aldrin	UG/KG	2.3 J	3.1 J	13 UJ	11 U	9.7 UJ	17 UJ
Heptachlor epoxide	UG/KG	2.3 U	2.4 U	13 UJ	11 U	9.7 UJ	17 UJ
Endosulfan I	UG/KG	2.3 U	2.4 U	13 UJ	11 U	9.7 UJ	17 UJ
Dieldrin	UG/KG	4.4 U	17 J	25 UJ	22 U	19 UJ	32 UJ
4,4'-DDE	UG/KG	14 J	28 J	25 UJ	22 U	67 J	39 J
Endrin	UG/KG	4.4 U	4.7 U	25 UJ	22 U	19 UJ	32 UJ
Endosulfan II	UG/KG	4.4 U	4.7 U	25 UJ	22 U	19 UJ	32 UJ
4,4'-DDD	UG/KG	23 J	120 J	25 UJ	22 U	39 J	33 J
Endosulfan sulfate	UG/KG	4.4 U	4.7 U	25 UJ	22 U	19 UJ	32 UJ
4,4'-DDT	UG/KG	110 J	110 J	25 UJ	22 U	16 J	2.3 J
Methoxychlor	UG/KG	23 U	24 U	130 UJ	110 U	97 UJ	170 UJ
Endrin ketone	UG/KG	4.4 U	6.5 J	25 UJ	22 U	19 UJ	32 UJ
Endrin aldehyde	UG/KG	4.4 U	4.7 U	25 UJ	22 U	19 UJ	32 UJ
alpha-Chlordane	UG/KG	2.3 U	9.2 J	13 UJ	13 J	42 J	30 J
gamma-Chlordane	UG/KG	2.3 U	4.7 J	13 UJ	11 U	29 J	17 UJ
Toxaphene	UG/KG	230 U	240 U	1300 UJ	1100 U	970 UJ	1700 UJ
Aroclor 1016	UG/KG	44 U	47 U	250 UJ	220 U	190 UJ	320 UJ
Aroclor 1221	UG/KG	90 U	96 U	500 UJ	440 U	380 UJ	660 UJ
Aroclor 1232	UG/KG	44 U	47 U	250 UJ	220 U	190 UJ	320 UJ
Aroclor 1242	UG/KG	44 U	47 U	250 UJ	220 U	190 UJ	320 UJ
Aroclor 1248	UG/KG	44 U	47 U	250 UJ	220 U	190 UJ	320 UJ
Aroclor 1254	UG/KG	44 U	47 U	250 UJ	220 U	190 UJ	320 UJ
Aroclor 1260	UG/KG	44 U	47 U	250 UJ	220 U	450 J	320 UJ

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-MA-SD02-06	7-MA-SD02-612	7-MA-SD03-06	7-MA-SD03-612	7-MA-SD04-06	7-MA-SD04-612
Laboratory Sample ID:	AB1409	AB1413	AB1390	AB1393	AB1405	AB1407
Date Sampled:	6/23/94	6/23/94	6/23/94	6/23/94	6/23/94	6/23/94

	<u>UNITS</u>						
<u>VOLATILES</u>							
Chloromethane	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Bromomethane	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Vinyl Chloride	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Chloroethane	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Methylene Chloride	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Acetone	UG/KG	140 U	630 U	210 U	570 UJ	650 U	860 U
Carbon Disulfide	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
1,1-Dichloroethene	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
1,1-Dichloroethane	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
1,2-Dichloroethene (total)	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Chloroform	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
1,2-Dichloroethane	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
2-Butanone	UG/KG	62 UJ	110 J	47 J	160 J	140 J	190 J
1,1,1-Trichloroethane	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Carbon Tetrachloride	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Bromodichloromethane	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
1,2-Dichloropropane	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
cis-1,3-Dichloropropene	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Trichloroethene	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Dibromochloromethane	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
1,1,2-Trichloroethane	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Benzene	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
trans-1,3-Dichloropropene	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Bromoform	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
4-Methyl-2-Pentanone	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
2-Hexanone	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Tetrachloroethene	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
1,1,2,2-Tetrachloroethane	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Toluene	UG/KG	21 J	30 J	17 J	16 J	37 J	39 J
Chlorobenzene	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Ethylbenzene	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Styrene	UG/KG	28 J	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ
Xylene (total)	UG/KG	62 UJ	71 UJ	48 UJ	74 UJ	59 UJ	71 UJ

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-MA-SD02-06	7-MA-SD02-612	7-MA-SD03-06	7-MA-SD03-612	7-MA-SD04-06	7-MA-SD04-612
Laboratory Sample ID:	AB1409	AB1413	AB1390	AB1393	AB1405	AB1407
Date Sampled:	6/23/94	6/23/94	6/23/94	6/23/94	6/23/94	6/23/94

	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
bis(2-Chloroethyl)ether	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
2-Chlorophenol	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
1,3-Dichlorobenzene	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
1,4-Dichlorobenzene	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
1,2-Dichlorobenzene	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
2-Methylphenol	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
2,2'-oxybis(1-Chloropropane)	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
4-Methylphenol	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
N-Nitroso-di-n-propylamine	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
Hexachloroethane	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
Nitrobenzene	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
Isophorone	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
2-Nitrophenol	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
2,4-Dimethylphenol	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
bis(2-Chloroethoxy)methane	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
2,4-Dichlorophenol	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
1,2,4-Trichlorobenzene	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
Naphthalene	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
4-Chloroaniline	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
Hexachlorobutadiene	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
4-Chloro-3-methylphenol	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
2-Methylnaphthalene	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
Hexachlorocyclopentadiene	UG/KG	1900 U	2300 U	1600 UJ	1900 UJ	1900 U	2300 U
2,4,6-Trichlorophenol	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
2,4,5-Trichlorophenol	UG/KG	4700 U	5700 U	3800 U	4700 U	4700 U	5700 U
2-Chloronaphthalene	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
2-Nitroaniline	UG/KG	4700 U	5700 U	3800 U	4700 U	4700 U	5700 U
Dimethylphthalate	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
Acenaphthylene	UG/KG	1900 U	2300 U	1600 U	1900 U	250 J	2300 U
2,6-Dinitrotoluene	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U
3-Nitroaniline	UG/KG	4700 U	5700 U	3800 U	4700 U	4700 U	5700 U
Acenaphthene	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U	2300 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-MA-SD02-06	7-MA-SD02-612	7-MA-SD03-06	7-MA-SD03-612	7-MA-SD04-06	7-MA-SD04-612
Laboratory Sample ID:	AB1409	AB1413	AB1390	AB1393	AB1405	AB1407
Date Sampled:	6/23/94	6/23/94	6/23/94	6/23/94	6/23/94	6/23/94
	UNITS					
SEMIVOLATILES Cont.						
2,4-Dinitrophenol	UG/KG	4700 UJ	5700 UJ	3800 UJ	4700 UJ	5700 UJ
Dibenzofuran	UG/KG	4700 U	5700 U	3800 U	4700 U	5700 U
4-Nitrophenol	UG/KG	1900 U	2300 U	1600 U	1900 U	2300 U
2,4-Dinitrotoluene	UG/KG	1900 U	2300 U	1600 U	1900 U	2300 U
Diethylphthalate	UG/KG	1900 U	2300 U	1600 U	1900 U	2300 U
Fluorene	UG/KG	1900 U	2300 U	1600 U	1900 U	2300 U
4-Chlorophenyl-phenylether	UG/KG	1900 U	2300 U	1600 U	1900 U	2300 U
4-Nitroaniline	UG/KG	4700 U	5700 U	3800 UJ	4700 UJ	5700 U
4,6-Dinitro-2-methylphenol	UG/KG	4700 U	5700 U	3800 UJ	4700 UJ	5700 U
N-Nitrosodiphenylamine	UG/KG	1900 U	2300 U	1600 U	1900 U	2300 U
4-Bromophenyl-phenylether	UG/KG	1900 U	2300 U	1600 U	1900 U	2300 U
Hexachlorobenzene	UG/KG	1900 U	2300 U	1600 U	1900 U	2300 U
Pentachlorophenol	UG/KG	4700 U	5700 U	3800 U	4700 U	5700 U
Phenanthrene	UG/KG	1900 U	2300 U	1600 U	1900 U	2300 U
Anthracene	UG/KG	1900 U	2300 U	1600 U	1900 U	350 J
Carbazole	UG/KG	1900 UJ	2300 UJ	1600 UJ	1900 UJ	2300 UJ
Di-n-butylphthalate	UG/KG	880 J	480 J	740 J	390 J	1300 J
Fluoranthene	UG/KG	1900 U	2300 U	1600 U	1900 U	450 J
Pyrene	UG/KG	1900 U	2300 U	1600 U	1900 U	430 J
Butylbenzylphthalate	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U
Benzo(a)anthracene	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U
3,3'-Dichlorobenzidine	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U
Chrysene	UG/KG	1900 U	2300 U	1600 U	1900 U	320 J
bis(2-Ethylhexyl)phthalate	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U
Di-n-octylphthalate	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U
Benzo(b)fluoranthene	UG/KG	1900 U	2300 U	1600 U	1900 U	270 NJ
Benzo(k)fluoranthene	UG/KG	1900 U	2300 U	1600 U	1900 U	230 NJ
Benzo(a)pyrene	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U
Indeno(1,2,3-cd)pyrene	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U
Dibenz(a,h)anthracene	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U
Benzo(g,h,i)perylene	UG/KG	1900 U	2300 U	1600 U	1900 U	1900 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-MA-SD02-06	7-MA-SD02-612	7-MA-SD03-06	7-MA-SD03-612	7-MA-SD04-06	7-MA-SD04-612
Laboratory Sample ID:	AB1409	AB1413	AB1390	AB1393	AB1405	AB1407
Date Sampled:	6/23/94	6/23/94	6/23/94	6/23/94	6/23/94	6/23/94

UNITS

PESTICIDE/PCBs

	7-MA-SD02-06	7-MA-SD02-612	7-MA-SD03-06	7-MA-SD03-612	7-MA-SD04-06	7-MA-SD04-612
alpha-BHC	UG/KG 9.8 U	12 U	8 U	9.9 U	9.8 UJ	12 U
beta-BHC	UG/KG 9.8 U	12 U	8 U	9.9 U	9.8 UJ	12 U
delta-BHC	UG/KG 9.8 U	12 U	8 U	9.9 U	9.8 UJ	12 U
Lindane (gamma-BHC)	UG/KG 9.8 U	12 U	8 U	9.9 U	9.8 UJ	12 U
Heptachlor	UG/KG 9.8 U	12 U	8 U	9.9 U	9.8 UJ	12 U
Aldrin	UG/KG 9.8 U	12 U	8 U	9.9 U	9.8 UJ	12 U
Heptachlor epoxide	UG/KG 9.8 U	12 U	8 U	9.9 U	9.8 UJ	12 U
Endosulfan I	UG/KG 9.8 U	12 U	8 U	9.9 U	9.8 UJ	12 U
Dieldrin	UG/KG 19 U	23 U	39	41	19 UJ	23 U
4,4'-DDE	UG/KG 130	23 U	89	47	180 J	27
Endrin	UG/KG 19 U	23 U	16 U	19 U	19 UJ	23 U
Endosulfan II	UG/KG 19 U	23 U	16 U	19 U	19 UJ	23 U
4,4'-DDD	UG/KG 39 J	23 U	21	19 U	65 J	23 U
Endosulfan sulfate	UG/KG 19 U	23 U	16 U	19 U	19 UJ	23 U
4,4'-DDT	UG/KG 36 J	23 U	16 U	19 U	27 J	23 U
Methoxychlor	UG/KG 98 U	120 U	80 U	99 U	98 UJ	120 U
Endrin ketone	UG/KG 19 U	23 U	16 U	19 U	19 UJ	23 U
Endrin aldehyde	UG/KG 19 U	23 U	16 U	19 U	19 UJ	23 U
alpha-Chlordane	UG/KG 38 J	12 U	13	9.9 U	9.8 UJ	12 U
gamma-Chlordane	UG/KG 9.8 U	12 U	8 U	9.9 U	9.8 UJ	12 U
Toxaphene	UG/KG 980 U	1200 U	800 U	990 U	980 UJ	1200 U
Aroclor 1016	UG/KG 190 U	230 U	160 U	190 U	190 UJ	230 U
Aroclor 1221	UG/KG 390 U	470 U	320 U	390 U	390 UJ	470 U
Aroclor 1232	UG/KG 190 U	230 U	160 U	190 U	190 UJ	230 U
Aroclor 1242	UG/KG 190 U	230 U	160 U	190 U	190 UJ	230 U
Aroclor 1248	UG/KG 190 U	230 U	160 U	190 U	190 UJ	230 U
Aroclor 1254	UG/KG 190 U	230 U	160 U	190 U	190 UJ	230 U
Aroclor 1260	UG/KG 190 U	230 U	160 U	190 U	190 UJ	230 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-WT-SD01-06	7-WT-SD02-06	7-WT-SD03-06
Laboratory Sample ID:	AB1676	AB1692	AB1679
Date Sampled:	6/23/94	6/23/94	6/24/94

	<u>UNITS</u>		
<u>VOLATILES</u>			
Chloromethane	UG/KG	12 U	13 U
Bromomethane	UG/KG	12 U	13 U
Vinyl Chloride	UG/KG	12 U	13 U
Chloroethane	UG/KG	12 U	13 U
Methylene Chloride	UG/KG	12 U	13 U
Acetone	UG/KG	12 U	55 U
Carbon Disulfide	UG/KG	12 U	13 U
1,1-Dichloroethene	UG/KG	12 U	13 U
1,1-Dichloroethane	UG/KG	12 U	13 U
1,2-Dichloroethene (total)	UG/KG	12 U	13 U
Chloroform	UG/KG	12 U	13 U
1,2-Dichloroethane	UG/KG	12 U	13 U
2-Butanone	UG/KG	12 U	9 J
1,1,1-Trichloroethane	UG/KG	12 U	13 U
Carbon Tetrachloride	UG/KG	12 U	13 U
Bromodichloromethane	UG/KG	12 U	13 U
1,2-Dichloropropane	UG/KG	12 U	13 U
cis-1,3-Dichloropropene	UG/KG	12 U	13 U
Trichloroethene	UG/KG	12 U	13 U
Dibromochloromethane	UG/KG	12 U	13 U
1,1,2-Trichloroethane	UG/KG	12 U	13 U
Benzene	UG/KG	12 U	13 U
trans-1,3-Dichloropropene	UG/KG	12 U	13 U
Bromoform	UG/KG	12 U	13 U
4-Methyl-2-Pentanone	UG/KG	12 U	13 U
2-Hexanone	UG/KG	12 U	13 U
Tetrachloroethene	UG/KG	12 U	13 U
1,1,2,2-Tetrachloroethane	UG/KG	12 U	13 U
Toluene	UG/KG	12 U	13 U
Chlorobenzene	UG/KG	12 U	13 U
Ethylbenzene	UG/KG	12 U	13 U
Styrene	UG/KG	12 U	13 U
Xylene (total)	UG/KG	12 U	13 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-WT-SD01-06	7-WT-SD02-06	7-WT-SD03-06
Laboratory Sample ID:	AB1676	AB1692	AB1679
Date Sampled:	6/23/94	6/23/94	6/24/94

	UNITS			
<u>SEMIVOLATILES</u>				
Phenol	UG/KG	390 U	410 U	440 U
bis(2-Chloroethyl)ether	UG/KG	390 U	410 U	440 U
2-Chlorophenol	UG/KG	390 U	410 U	440 U
1,3-Dichlorobenzene	UG/KG	390 U	410 U	440 U
1,4-Dichlorobenzene	UG/KG	390 U	410 U	440 U
1,2-Dichlorobenzene	UG/KG	390 U	410 U	440 U
2-Methylphenol	UG/KG	390 U	410 U	440 U
2,2'-oxybis(1-Chloropropane)	UG/KG	390 U	410 U	440 U
4-Methylphenol	UG/KG	390 U	410 U	440 U
N-Nitroso-di-n-propylamine	UG/KG	390 U	410 U	440 U
Hexachloroethane	UG/KG	390 U	410 U	440 U
Nitrobenzene	UG/KG	390 U	410 U	440 U
Isophorone	UG/KG	390 U	410 U	440 U
2-Nitrophenol	UG/KG	390 U	410 U	440 U
2,4-Dimethylphenol	UG/KG	390 U	410 U	440 U
bis(2-Chloroethoxy)methane	UG/KG	390 U	410 U	440 U
2,4-Dichlorophenol	UG/KG	390 U	410 U	440 U
1,2,4-Trichlorobenzene	UG/KG	390 U	410 U	440 U
Naphthalene	UG/KG	390 U	410 U	440 U
4-Chloroaniline	UG/KG	390 U	410 U	440 U
Hexachlorobutadiene	UG/KG	390 U	410 U	440 U
4-Chloro-3-methylphenol	UG/KG	390 U	410 U	440 U
2-Methylnaphthalene	UG/KG	390 U	410 U	440 U
Hexachlorocyclopentadiene	UG/KG	390 U	410 U	440 U
2,4,6-Trichlorophenol	UG/KG	390 U	410 U	440 U
2,4,5-Trichlorophenol	UG/KG	950 U	990 U	1100 U
2-Chloronaphthalene	UG/KG	390 U	410 U	440 U
2-Nitroaniline	UG/KG	950 U	990 U	1100 U
Dimethylphthalate	UG/KG	390 U	410 U	440 U
Acenaphthylene	UG/KG	390 U	410 U	440 U
2,6-Dinitrotoluene	UG/KG	390 U	410 U	440 U
3-Nitroaniline	UG/KG	950 U	990 U	1100 U
Acenaphthene	UG/KG	390 U	410 U	440 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-WT-SD01-06	7-WT-SD02-06	7-WT-SD03-06
Laboratory Sample ID:	AB1676	AB1692	AB1679
Date Sampled:	6/23/94	6/23/94	6/24/94

	<u>UNITS</u>			
<u>SEMIVOLATILES Cont.</u>				
2,4-Dinitrophenol	UG/KG	950 U	990 U	1100 U
Dibenzofuran	UG/KG	950 U	990 U	1100 U
4-Nitrophenol	UG/KG	390 U	410 U	440 U
2,4-Dinitrotoluene	UG/KG	390 U	410 U	440 U
Diethylphthalate	UG/KG	390 U	410 U	440 U
Fluorene	UG/KG	390 U	410 U	440 U
4-Chlorophenyl-phenylether	UG/KG	390 U	410 U	440 U
4-Nitroaniline	UG/KG	950 U	990 U	1100 U
4,6-Dinitro-2-methylphenol	UG/KG	950 U	990 U	1100 U
N-Nitrosodiphenylamine	UG/KG	390 U	410 U	440 U
4-Bromophenyl-phenylether	UG/KG	390 U	410 U	440 U
Hexachlorobenzene	UG/KG	390 U	410 U	440 U
Pentachlorophenol	UG/KG	950 U	990 U	1100 U
Phenanthrene	UG/KG	390 U	410 U	440 U
Anthracene	UG/KG	390 U	410 U	440 U
Carbazole	UG/KG	390 U	410 U	440 U
Di-n-butylphthalate	UG/KG	390 U	410 U	440 U
Fluoranthene	UG/KG	390 U	410 U	72 J
Pyrene	UG/KG	390 U	410 U	87 J
Butylbenzylphthalate	UG/KG	390 U	410 U	47 J
Benzo(a)anthracene	UG/KG	390 U	410 U	440 U
3,3'-Dichlorobenzidine	UG/KG	390 U	410 U	440 U
Chrysene	UG/KG	390 U	410 U	440 U
bis(2-Ethylhexyl)phthalate	UG/KG	390 U	410 U	810
Di-n-octylphthalate	UG/KG	390 U	410 U	440 U
Benzo(b)fluoranthene	UG/KG	390 U	410 U	440 U
Benzo(k)fluoranthene	UG/KG	390 U	410 U	440 U
Benzo(a)pyrene	UG/KG	390 U	410 U	440 U
Indeno(1,2,3-cd)pyrene	UG/KG	390 U	410 U	440 U
Dibenz(a,h)anthracene	UG/KG	390 U	410 U	440 U
Benzo(g,h,i)perylene	UG/KG	390 U	410 U	440 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID:	7-WT-SD01-06	7-WT-SD02-06	7-WT-SD03-06
Laboratory Sample ID:	AB1676	AB1692	AB1679
Date Sampled:	6/23/94	6/23/94	6/24/94

	<u>UNITS</u>			
<u>PESTICIDE/PCBs</u>				
alpha-BHC	UG/KG	2 U	2.1 U	2.3 U
beta-BHC	UG/KG	2 U	2.1 U	2.3 U
delta-BHC	UG/KG	2 U	2.1 U	2.3 U
Lindane (gamma-BHC)	UG/KG	2 U	2.1 U	2.3 U
Heptachlor	UG/KG	2 U	2.1 U	2.3 U
Aldrin	UG/KG	2 U	2.1 U	2.3 U
Heptachlor epoxide	UG/KG	2 U	2.1 U	2.3 U
Endosulfan I	UG/KG	2 U	2.1 U	2.3 U
Dieldrin	UG/KG	71	22	5.4
4,4'-DDE	UG/KG	3.9 U	4 U	11
Endrin	UG/KG	3.9 U	4 U	4.4 U
Endosulfan II	UG/KG	3.9 U	4 U	4.4 U
4,4'-DDD	UG/KG	3.9 U	4 U	8.4
Endosulfan sulfate	UG/KG	3.9 U	4 U	4.4 U
4,4'-DDT	UG/KG	3.9 U	4 U	4.4 U
Methoxychlor	UG/KG	20 U	21 U	23 U
Endrin ketone	UG/KG	3.9 U	4 U	4.4 U
Endrin aldehyde	UG/KG	3.9 U	4 U	4.4 U
alpha-Chlordane	UG/KG	2 U	2.7	8.2
gamma-Chlordane	UG/KG	2 U	2.1 U	7.5
Toxaphene	UG/KG	200 U	210 U	230 U
Aroclor 1016	UG/KG	39 U	40 U	44 U
Aroclor 1221	UG/KG	79 U	81 U	89 U
Aroclor 1232	UG/KG	39 U	40 U	44 U
Aroclor 1242	UG/KG	39 U	40 U	44 U
Aroclor 1248	UG/KG	39 U	40 U	44 U
Aroclor 1254	UG/KG	39 U	40 UJ	44 U
Aroclor 1260	UG/KG	39 U	40 U	44 U

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>					
	<u>VOLATILES</u>					
Chloromethane	UG/KG	12 U	100 UJ	ND	ND	0/15
Bromomethane	UG/KG	12 U	100 UJ	ND	ND	0/15
Vinyl Chloride	UG/KG	12 U	100 UJ	ND	ND	0/15
Chloroethane	UG/KG	12 U	100 UJ	ND	ND	0/15
Methylene Chloride	UG/KG	12 U	100 UJ	ND	ND	0/15
Acetone	UG/KG	12 U	1200 UJ	ND	ND	0/15
Carbon Disulfide	UG/KG	12 U	100 UJ	ND	ND	0/15
1,1-Dichloroethene	UG/KG	12 U	100 UJ	ND	ND	0/15
1,1-Dichloroethane	UG/KG	12 U	100 UJ	ND	ND	0/15
1,2-Dichloroethene (total)	UG/KG	12 U	100 UJ	ND	ND	0/15
Chloroform	UG/KG	12 U	100 UJ	ND	ND	0/15
1,2-Dichloroethane	UG/KG	12 U	100 UJ	ND	ND	0/15
2-Butanone	UG/KG	12 U	67 U	7 J	250 J	7-ET-SD01-06 10/15
1,1,1-Trichloroethane	UG/KG	12 U	100 UJ	ND	ND	0/15
Carbon Tetrachloride	UG/KG	12 U	100 UJ	ND	ND	0/15
Bromodichloromethane	UG/KG	12 U	100 UJ	ND	ND	0/15
1,2-Dichloropropane	UG/KG	12 U	100 UJ	ND	ND	0/15
cis-1,3-Dichloropropene	UG/KG	12 U	100 UJ	ND	ND	0/15
Trichloroethene	UG/KG	12 U	100 UJ	ND	ND	0/15
Dibromochloromethane	UG/KG	12 U	100 UJ	ND	ND	0/15
1,1,2-Trichloroethane	UG/KG	12 U	100 UJ	ND	ND	0/15
Benzene	UG/KG	12 U	100 UJ	ND	ND	0/15
trans-1,3-Dichloropropene	UG/KG	12 U	100 UJ	ND	ND	0/15
Bromoform	UG/KG	12 U	100 UJ	ND	ND	0/15
4-Methyl-2-Pentanone	UG/KG	12 U	100 UJ	ND	ND	0/15
2-Hexanone	UG/KG	12 U	100 UJ	ND	ND	0/15
Tetrachloroethene	UG/KG	12 U	100 UJ	ND	ND	0/15
1,1,2,2-Tetrachloroethane	UG/KG	12 U	100 UJ	ND	ND	0/15
Toluene	UG/KG	12 U	67 UJ	10 J	39 J	7-MA-SD04-612 9/15
Chlorobenzene	UG/KG	12 U	100 UJ	ND	ND	0/15
Ethylbenzene	UG/KG	12 U	100 UJ	ND	ND	0/15
Styrene	UG/KG	12 U	100 UJ	28 J	28 J	7-MA-SD02-06 1/15
Xylene (total)	UG/KG	12 U	100 UJ	ND	ND	0/15

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>					
	<u>SEMIVOLATILES</u>					
Phenol	UG/KG	390 U	3300 U	ND	ND	0/15
bis(2-Chloroethyl)ether	UG/KG	390 U	3300 U	ND	ND	0/15
2-Chlorophenol	UG/KG	390 U	3300 U	ND	ND	0/15
1,3-Dichlorobenzene	UG/KG	390 U	3300 U	ND	ND	0/15
1,4-Dichlorobenzene	UG/KG	390 U	3300 U	ND	ND	0/15
1,2-Dichlorobenzene	UG/KG	390 U	3300 U	ND	ND	0/15
2-Methylphenol	UG/KG	390 U	3300 U	ND	ND	0/15
2,2'-oxybis(1-Chloropropane)	UG/KG	390 U	3300 U	ND	ND	0/15
4-Methylphenol	UG/KG	390 U	3300 U	ND	ND	0/15
N-Nitroso-di-n-propylamine	UG/KG	390 U	3300 U	ND	ND	0/15
Hexachloroethane	UG/KG	390 U	3300 U	ND	ND	0/15
Nitrobenzene	UG/KG	390 U	3300 U	ND	ND	0/15
Isophorone	UG/KG	390 U	3300 U	ND	ND	0/15
2-Nitrophenol	UG/KG	390 U	3300 U	ND	ND	0/15
2,4-Dimethylphenol	UG/KG	390 U	3300 U	ND	ND	0/15
bis(2-Chloroethoxy)methane	UG/KG	390 U	3300 U	ND	ND	0/15
2,4-Dichlorophenol	UG/KG	390 U	3300 U	ND	ND	0/15
1,2,4-Trichlorobenzene	UG/KG	390 U	3300 U	ND	ND	0/15
Naphthalene	UG/KG	390 U	3300 U	ND	ND	0/15
4-Chloroaniline	UG/KG	390 U	3300 U	ND	ND	0/15
Hexachlorobutadiene	UG/KG	390 U	3300 U	ND	ND	0/15
4-Chloro-3-methylphenol	UG/KG	390 U	3300 U	ND	ND	0/15
2-Methylnaphthalene	UG/KG	390 U	3300 U	ND	ND	0/15
Hexachlorocyclopentadiene	UG/KG	390 U	3300 U	ND	ND	0/15
2,4,6-Trichlorophenol	UG/KG	390 U	3300 U	ND	ND	0/15
2,4,5-Trichlorophenol	UG/KG	950 U	7900 U	ND	ND	0/15
2-Chloronaphthalene	UG/KG	390 U	3300 U	ND	ND	0/15
2-Nitroaniline	UG/KG	950 U	7900 U	ND	ND	0/15
Dimethylphthalate	UG/KG	390 U	3300 U	ND	ND	0/15
Acenaphthylene	UG/KG	390 U	3300 U	250 J	250 J	7-MA-SD04-06 1/15
2,6-Dinitrotoluene	UG/KG	390 U	3300 U	ND	ND	0/15
3-Nitroaniline	UG/KG	950 U	7900 U	ND	ND	0/15
Acenaphthene	UG/KG	390 U	3300 U	ND	ND	0/15

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:		MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>						
	<u>SEMIVOLATILES Cont.</u>						
	2,4-Dinitrophenol	UG/KG	950 U	7900 UJ	ND	ND	0/15
	Dibenzofuran	UG/KG	950 U	7900 U	130 J	130 J	7-DD-SD02-06 1/15
	4-Nitrophenol	UG/KG	390 U	3300 U	ND	ND	0/15
	2,4-Dinitrotoluene	UG/KG	390 U	3300 U	ND	ND	0/15
	Diethylphthalate	UG/KG	390 U	3300 U	ND	ND	0/15
	Fluorene	UG/KG	390 U	3300 U	ND	ND	0/15
	4-Chlorophenyl-phenylether	UG/KG	390 U	3300 U	ND	ND	0/15
	4-Nitroaniline	UG/KG	950 U	7900 U	ND	ND	0/15
	4,6-Dinitro-2-methylphenol	UG/KG	950 U	7900 U	ND	ND	0/15
	N-Nitrosodiphenylamine	UG/KG	390 U	3300 U	ND	ND	0/15
	4-Bromophenyl-phenylether	UG/KG	390 U	3300 U	ND	ND	0/15
	Hexachlorobenzene	UG/KG	390 U	3300 U	ND	ND	0/15
	Pentachlorophenol	UG/KG	950 U	7900 U	ND	ND	0/15
	Phenanthrene	UG/KG	390 U	3300 U	100 J	210 J	7-MA-SD04-06 2/15
	Anthracene	UG/KG	390 U	3300 U	350 J	350 J	7-MA-SD04-06 1/15
	Carbazole	UG/KG	390 U	3300 UJ	ND	ND	0/15
	Di-n-butylphthalate	UG/KG	390 U	3300 U	76 J	1300 J	7-MA-SD04-06 9/15
	Fluoranthene	UG/KG	390 U	3300 U	72 J	450 J	7-MA-SD04-06 3/15
	Pyrene	UG/KG	390 U	3300 U	87 J	430 J	7-MA-SD04-06 3/15
	Butylbenzylphthalate	UG/KG	390 U	3300 U	47 J	47 J	7-WT-SD03-06 1/15
	Benzo(a)anthracene	UG/KG	390 U	3300 U	ND	ND	0/15
	3,3'-Dichlorobenzidine	UG/KG	390 U	3300 U	110 J	110 J	7-DD-SD02-06 1/15
	Chrysene	UG/KG	390 U	3300 U	110 J	320 J	7-MA-SD04-06 2/15
	bis(2-Ethylhexyl)phthalate	UG/KG	390 U	3300 U	510	810	7-WT-SD03-06 2/15
	Di-n-octylphthalate	UG/KG	390 U	3300 U	ND	ND	0/15
	Benzo(b)fluoranthene	UG/KG	390 U	3300 U	85 J	270 NJ	7-MA-SD04-06 2/15
	Benzo(k)fluoranthene	UG/KG	390 U	3300 U	110 J	230 NJ	7-MA-SD04-06 2/15
	Benzo(a)pyrene	UG/KG	390 U	3300 U	110 J	110 J	7-DD-SD02-06 1/15
	Indeno(1,2,3-cd)pyrene	UG/KG	390 U	3300 U	ND	ND	0/15
	Dibenz(a,h)anthracene	UG/KG	390 U	3300 U	ND	ND	0/15
	Benzo(g,h,i)perylene	UG/KG	390 U	3300 U	65 J	65 J	7-DD-SD02-06 1/15

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>					
	<u>PESTICIDE/PCBs</u>					
alpha-BHC	UG/KG	2 U	17 UJ	ND	ND	0/15
beta-BHC	UG/KG	2 U	17 UJ	ND	ND	0/15
delta-BHC	UG/KG	2 U	17 UJ	ND	ND	0/15
Lindane (gamma-BHC)	UG/KG	2 U	17 UJ	ND	ND	0/15
Heptachlor	UG/KG	2 U	17 UJ	ND	ND	0/15
Aldrin	UG/KG	2 U	17 UJ	3.1 J	3.1 J	7-DD-SD02-06 1/15
Heptachlor epoxide	UG/KG	2 U	17 UJ	ND	ND	0/15
Endosulfan I	UG/KG	2 U	17 UJ	ND	ND	0/15
Dieldrin	UG/KG	4.4 U	32 UJ	5.4	71	7-WT-SD01-06 6/15
4,4'-DDE	UG/KG	3.9 U	25 UJ	11	180 J	7-MA-SD04-06 10/15
Endrin	UG/KG	3.9 U	32 UJ	ND	ND	0/15
Endosulfan II	UG/KG	3.9 U	32 UJ	ND	ND	0/15
4,4'-DDD	UG/KG	3.9 U	25 UJ	8.4	120 J	7-DD-SD02-06 8/15
Endosulfan sulfate	UG/KG	3.9 U	32 UJ	ND	ND	0/15
4,4'-DDT	UG/KG	3.9 U	25 UJ	2.3 J	110 J	7-DD-SD02-06 6/15
Methoxychlor	UG/KG	20 U	170 UJ	ND	ND	0/15
Endrin ketone	UG/KG	3.9 U	32 UJ	6.5 J	6.5 J	7-DD-SD02-06 1/15
Endrin aldehyde	UG/KG	3.9 U	32 UJ	ND	ND	0/15
alpha-Chlordane	UG/KG	2 U	13 UJ	2.7	42 J	7-MA-SD01-06 8/15
gamma-Chlordane	UG/KG	2 U	17 UJ	4.7 J	29 J	7-MA-SD01-06 3/15
Toxaphene	UG/KG	200 U	1700 UJ	ND	ND	0/15
Aroclor 1016	UG/KG	39 U	320 UJ	ND	ND	0/15
Aroclor 1221	UG/KG	79 U	660 UJ	ND	ND	0/15
Aroclor 1232	UG/KG	39 U	320 UJ	ND	ND	0/15
Aroclor 1242	UG/KG	39 U	320 UJ	ND	ND	0/15
Aroclor 1248	UG/KG	39 U	320 UJ	ND	ND	0/15
Aroclor 1254	UG/KG	39 U	320 UJ	ND	ND	0/15
Aroclor 1260	UG/KG	39 U	320 UJ	450 J	450 J	7-MA-SD01-06 1/15

APPENDIX I.15
EAST AND WEST TRIBUTARIES, DRAINAGE DITCH,
AND MARCH AREA SEDIMENT METALS

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-DD-SD01-06	7-DD-SD02-06	7-ET-SD01-06	7-ET-SD02-06	7-MA-SD01-06	7-MA-SD01-612
Laboratory Sample ID:	B1378	B1375	AB1397	AB1688	AB1400	AB1404
Date Sampled:	6/22/94	6/22/94	6/23/94	6/24/94	6/23/94	6/23/94

	UNITS	7-DD-SD01-06	7-DD-SD02-06	7-ET-SD01-06	7-ET-SD02-06	7-MA-SD01-06	7-MA-SD01-612
Aluminum	MG/KG	5720 J	1470	5930	2060 J	10500	4540
Antimony	MG/KG	12.8 U	14.2 U	76 U	64.7 U	56.4 U	94.3 U
Arsenic	MG/KG	0.51 U	0.55 U	3 U	3	2.3 UJ	3.8 U
Barium	MG/KG	18 J	10.4	279	7	206	160
Beryllium	MG/KG	0.44	0.28 U	8	1.3 U	1.1 U	1.9 U
Cadmium	MG/KG	1.3 U	1.4 U	7.6 U	6.5 U	5.6 U	9.4 U
Calcium	MG/KG	522 J	593	3910	5400	13400	10300
Chromium	MG/KG	7.5 J	2.8 U	15.2 U	12.9 U	19.4	18.9 U
Cobalt	MG/KG	2.6 U	2.8 U	15.2 U	12.9 U	11.3 U	18.9 U
Copper	MG/KG	2.6 U	5.5	15.2 U	12.9 U	95.8	47.6
Iron	MG/KG	757	728	883	1120 J	6060	2990
Lead	MG/KG	4.8 J	40.7	9.3	17.3 J	72.2	46.8
Magnesium	MG/KG	190	153	2920	5390	2730	1930
Manganese	MG/KG	5.1 J	3.4	16.4	5.5	30.6	18.8
Mercury	MG/KG	0.14 U	0.15 U	0.78 U	0.57 U	2.6	1.6
Nickel	MG/KG	5.1 U	5.7 U	30.4 U	25.9 U	22.5 U	37.7 U
Potassium	MG/KG	471 U	285 U	1520 U	3380 U	1780	1890 U
Selenium	MG/KG	0.51 U	0.55 U	23.4	2.5 U	2.3 U	3.8 U
Silver	MG/KG	1.3 U	1.4 U	7.6 U	6.5 U	5.6 U	9.4 U
Sodium	MG/KG	40.9	46.8	1190	20700	951	761
Thallium	MG/KG	0.51 U	0.55 UJ	3 UJ	2.5 UJ	2.3 UJ	3.8 UJ
Vanadium	MG/KG	5.5 J	2.9	37.5	12.9 U	21.5	18.9 U
Zinc	MG/KG	4.7	19.8	45.9	38.1	536	344

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-MA-SD02-06	7-MA-SD02-612	7-MA-SD03-06	7-MA-SD03-612	7-MA-SD04-06	7-MA-SD04-612
Laboratory Sample ID:	AB1410	AB1414	AB1391	AB1394	AB1406	AB1408
Date Sampled:	6/23/94	6/23/94	6/23/94	6/23/94	6/23/94	6/23/94
	UNITS					
Aluminum	MG/KG	1170	1460	9200	7950	1880
Antimony	MG/KG	60 U	69.2 U	44.3 U	56.3 U	70.2 U
Arsenic	MG/KG	2.4 U	2.8 U	1.8 UJ	2.1 UJ	2.8 UJ
Barium	MG/KG	31.7	97.9	146	195	250
Beryllium	MG/KG	1.2 U	1.4 U	0.89 U	1.6	1.4 U
Cadmium	MG/KG	6 U	6.9 U	4.4 U	5.6 U	7 U
Calcium	MG/KG	2990	4750	6550	7780	5800
Chromium	MG/KG	12 U	13.8 U	8.9 U	11.3 U	14 U
Cobalt	MG/KG	12 U	13.8 U	8.9 U	11.3 U	14 U
Copper	MG/KG	12 U	13.8 U	8.9 U	11.3 U	14 U
Iron	MG/KG	570	627	4690	4180	1060
Lead	MG/KG	46.9	28.4	90.8	34.2	18.8
Magnesium	MG/KG	2420	3190	2990	3110	5910
Manganese	MG/KG	4.7	5.4	18.9	20.7	5.4
Mercury	MG/KG	0.61 U	0.65 U	0.43 U	0.57 U	0.66 U
Nickel	MG/KG	24 U	27.7 U	17.7 U	22.5 U	28.1 U
Potassium	MG/KG	1200 U	1380 U	886 U	1610	1400 U
Selenium	MG/KG	2.4 U	2.8 U	1.8 U	2.1 U	2.8 U
Silver	MG/KG	6 U	6.9 U	4.4 U	5.6 U	7 U
Sodium	MG/KG	3810	3450	2300	2050	5860
Thallium	MG/KG	2.4 UJ	2.8 UJ	1.8 UJ	2.1 UJ	2.8 UJ
Vanadium	MG/KG	12 U	13.8 U	14.2	15.8	14 U
Zinc	MG/KG	10.7 J	33.8	38.2	42.1	18.2

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID:	7-WT-SD01-06	7-WT-SD02-06	7-WT-SD03-06
Laboratory Sample ID:	AB1677	AB1693	AB1680
Date Sampled:	6/23/94	6/23/94	6/24/94

	UNITS			
Aluminum	MG/KG	4060	1690 J	3130
Antimony	MG/KG	11.7 U	12.2 U	12.9 U
Arsenic	MG/KG	0.47 U	0.45 U	0.51 U
Barium	MG/KG	11.3	9	7.1
Beryllium	MG/KG	0.23 U	0.24 U	0.26 U
Cadmium	MG/KG	1.2 U	1.2 U	1.3 U
Calcium	MG/KG	299	877	379
Chromium	MG/KG	6.3	4.2	5.7
Cobalt	MG/KG	2.3 U	2.4 U	2.6 U
Copper	MG/KG	2.3 U	3.2	2.6 U
Iron	MG/KG	1280	975	1430
Lead	MG/KG	7 J	16.7 J	14.6 J
Magnesium	MG/KG	210	138	358
Manganese	MG/KG	4.1	3.8	9.5
Mercury	MG/KG	0.12 U	0.11 U	0.12 U
Nickel	MG/KG	4.7 U	4.9 U	5.2 U
Potassium	MG/KG	571 U	395 U	607 U
Selenium	MG/KG	0.47 U	0.45 U	0.51 U
Silver	MG/KG	1.2 U	1.2 U	1.3 U
Sodium	MG/KG	29.2	206	426
Thallium	MG/KG	0.47 UJ	0.45 UJ	0.66 J
Vanadium	MG/KG	5.7	4.1	5.5
Zinc	MG/KG	4.1	15.2	20.4

FREQUENCY OF DETECTION SUMMARY
 OPERABLE UNIT No. 11 (SITE 7)
 WEST AND EAST TRIBUTARIES; DRAINAGE DITCH; MARSH AREA SEDIMENTS
 REMEDIAL INVESTIGATION CTO-0274
 MCB CAMP LEJEUNE, NORTH CAROLINA
 TAL INORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	<u>UNITS</u>					
Aluminum	NA	NA	1170	10500	7-MA-SD01-06	15/15
Antimony	11.7 U	94.3 U	ND	ND		0/15
Arsenic	0.45 U	3.8 U	3	3	7-ET-SD02-06	1/15
Barium	NA	NA	7	279	7-ET-SD01-06	15/15
Beryllium	0.23 U	1.9 U	0.44	8	7-ET-SD01-06	3/15
Cadmium	1.2 U	9.4 U	ND	ND		0/15
Calcium	NA	NA	299	13400	7-MA-SD01-06	15/15
Chromium	2.8 U	18.9 U	4.2	19.4	7-MA-SD01-06	5/15
Cobalt	2.3 U	18.9 U	ND	ND		0/15
Copper	2.3 U	15.2 U	3.2	95.8	7-MA-SD01-06	4/15
Iron	NA	NA	570	6060	7-MA-SD01-06	15/15
Lead	NA	NA	4.8 J	90.8	7-MA-SD03-06	15/15
Magnesium	NA	NA	138	6180	7-MA-SD04-06	15/15
Manganese	NA	NA	3.4	30.6	7-MA-SD01-06	15/15
Mercury	0.11 U	0.78 U	1.6	2.6	7-MA-SD01-06	2/15
Nickel	4.7 U	37.7 U	ND	ND		0/15
Potassium	285 U	3380 U	1540	1780	7-MA-SD01-06	3/15
Selenium	0.45 U	3.8 U	23.4	23.4	7-ET-SD01-06	1/15
Silver	1.2 U	9.4 U	ND	ND		0/15
Sodium	NA	NA	29.2	20700	7-ET-SD02-06	15/15
Thallium	0.45 UJ	3.8 UJ	0.66 J	0.66 J	7-WT-SD03-06	1/15
Vanadium	11.3 U	18.9 U	2.9	37.5	7-ET-SD01-06	9/15
Zinc	NA	NA	4.1	536	7-MA-SD01-06	15/15