FINAL

REMEDIAL INVESTIGATION REPORT
OPERABLE UNIT NO. 11 (SITE 80)

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

APPENDICES

CONTRACT TASK ORDER 0274

APRIL 5, 1996

Prepared For:

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

Under:

LANTDIV CLEAN Program
Contract N62470-89-D-4814

Prepared by:

BAKER ENVIRONMENTAL, INC.
Coraopolis, Pennsylvania

APPENDIX A
FIELD INVESTIGATION DOCUMENTATION

APPENDIX A.1
TEST BORING LOGS

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-DA-SB01

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 16.22' msl
TOTAL DEPTH: 1.0' bgs

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

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-DA-SB02

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 16.22' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
16:00	0.0		S-1	HA	-	-	0.0	0.0		SILTY SAND: Fine grained, trace of root material at surface, trace to little clay, dark brown/brown, damp, very loose to medium dense	0.0
15:00	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
14:00	2.0										2.0
13:00	3.0										3.0
12:00	4.0										4.0
11:00	5.0										5.0
10:00	6.0										6.0
9:00	7.0										7.0
8:00	8.0										8.0
7:00	9.0										9.0
6:00	10.0										10.0
5:00	11.0										11.0
4:00	12.0										12.0
3:00	13.0										13.0
2:00	14.0										14.0
1:00	15.0										15.0
0:00	16.0										16.0
1:00	17.0										17.0
2:00	18.0										18.0
3:00	19.0										19.0
4:00	20.0										20.0
5:00	21.0										21.0
6:00	22.0										22.0
7:00	23.0										23.0
8:00	24.0										24.0
9:00	25.0										25.0
10:00	26.0										26.0
11:00	27.0										27.0
12:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-DPA-SB03
SHEET 1 OF 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: PARRATT-WOLFF, INC
RIG TYPE & NUMBER: TRUCK RIG - CME 55
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: OVERCAST, COOL, DRIZZLE, BREEZY
GEOLOGIST: M.K. DEJOHN
ENV. SCIENTIST: -
DATE BEGUN: 6/13/95 DATE COMPLETED: 6/13/95

GROUND SURFACE ELEVATION: 13.20' msl
TOTAL DEPTH: 11.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
13-00	0.0		S-1	HA	-	-	1.1	1.1		SILT: some fine grained sand, little clay, black, moist.	0.0
12-00	1.0		S-2	SS	2 2 2 3	1.7	0.4	0.4		SAND: fine grained, some silt, some to little clay, gray/orangish brown, damp, loose to stiff	1.0
11-00	2.0										2.0
10-00	3.0		S-3	SS	2 4 6 9	1.5	0.4	0.4			3.0
9-00	4.0										4.0
8-00	5.0		S-4	SS	3 4 4 5	1.7	0.4	0.4		CLAY: some silt, little fine grained sand, brown/gray (mottled), damp, stiff	5.0
7-00	6.0										6.0
6-00	7.0		S-5	SS	6 6 7 8	1.6	0.4	0.4		SAND: fine grained, some silt, little to trace clay, orange/gray/orangish brown, moist to wet, dense to loose	7.0
5-00	8.0										8.0
4-00	9.0										9.0
3-00	10.0		S-6	SS	7 4 4 5	2.0	0.4	0.4			10.0
2-00	11.0										11.0
1-00	12.0									BOTTOM OF BOREHOLE @ 11.0'	12.0
0-00	13.0									NOTES: 1) Groundwater encountered at 9.5' during drilling.	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

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-DPA-SB20

SHEET: 1 OF 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: PARRATT-WOLFF, INC
RIG TYPE & NUMBER: TRUCK RIG - CME 55
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY, WARM
GEOLOGIST: M.K. DEJOHN
ENV SCIENTIST: -
DATE BEGUN: 6/14/95 DATE COMPLETED: 6/14/95

GROUND SURFACE ELEVATION: 11.90' msl
TOTAL DEPTH: 11.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	HA	-	-	1.0	1.0		SAND: Fine grained, some silt, little to some clay, gray/brown, wet to moist, soft	0.0
11:00	1.0										1.0
10:00	2.0		S-2	SS	1 1 2 2	1.3	1.0	1.0			2.0
9:00	3.0										3.0
8:00	4.0		S-3	SS	2 3 3 2	1.0	0.9	0.9		CLAY: some to trace silt, little to some fine grained sand 3-10', brown/gray, moist to wet, medium stiff to very soft	4.0
7:00	5.0										5.0
6:00	6.0		S-4	SS	1 1 1 1	1.1	0.5	0.5			6.0
5:00	7.0										7.0
4:00	8.0		S-5	SS	1 1 2 2	1.1	0.5	0.5			8.0
3:00	9.0										9.0
2:00	10.0		S-6	SS	WOH WOH 1 2	1.5	0.5	0.5			10.0
1:00	11.0									BOTTOM OF BOREHOLE @ 11.0'	11.0
0:00	12.0									NOTES: 1) Groundwater encountered at 7.0' during drilling	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
16:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-DPA-SB17

SHEET 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: PARRATT-WOLFF, INC.
RIG TYPE & NUMBER: TRUCK RIG - CME 55
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY, WARM
GEOLOGIST: M.K. DEJOHN
ENV. SCIENTIST: -
DATE BEGUN: 6/14/95 DATE COMPLETED: 6/14/95

GROUND SURFACE ELEVATION: 12.80' msl
TOTAL DEPTH: 11.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	HA	-	-	1.0	1.0		SAND: Fine grained, some silt, little clay 0-1'/3-5', some rock fragments 1-3', gray to dark gray, damp, loose to medium stiff	0.0
12:00	1.0										1.0
11:00	2.0		S-2	SS	3 4 3 3	0.9'	0.6	0.6			2.0
10:00	3.0										3.0
9:00	4.0		S-3	SS	3 2 3 3	1.5	0.6	0.6			4.0
8:00	5.0										5.0
7:00	6.0		S-4	SS	1 3 4 4	2.0	0.6	0.6		CLAY: some silt, little fine grained sand, brown and gray (mottled), damp to moist, medium stiff	6.0
6:00	7.0										7.0
5:00	8.0		S-5	SS	4 6 6 7	1.7	0.5	0.5			8.0
4:00	9.0										9.0
3:00	10.0		S-6	SS	2 10 10 12	1.5	0.5	0.5			10.0
2:00	11.0									SAND: fine grained, some silt, little clay, brown, wet, medium dense	11.0
1:00	12.0									BOTTOM OF BOREHOLE @ 11.0'	12.0
0:00	13.0									NOTES: 1) Groundwater encountered at 10.0' during drilling.	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

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-LA-SB01

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF/J.E. ZIMMERMAN
ENV. SCIENTIST: -
DATE BEGUN: 11/5/94 DATE COMPLETED: 11/5/94

GROUND SURFACE ELEVATION: 14.58' msl
TOTAL DEPTH: 13.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
14:00	0.0		S-1	SS	-	-	0.2	0.2		SILTY SAND: fine grained, trace coarse gravel, root material at surface, dark brown/brown, damp, very loose (probable fill to approx. 1')	0.0
13:00	1.0		S-2	SS	-	-	0.2	0.2			1.0
12:00	2.0		S-3	SS	-	-	0.2	0.2			2.0
11:00	3.0		S-4	SS	-	-	0.2	0.2			3.0
10:00	4.0		S-5	SS	-	-	0.2	0.2			4.0
9:00	5.0		S-6	SS	-	-	0.2	0.2			5.0
8:00	6.0		S-7	SS	-	-	0.2	0.2			6.0
7:00	7.0		S-8	SS	-	-	0.2	0.2		SILTY CLAY: some fine grained sand, brown, damp, very loose	7.0
6:00	8.0		S-9	SS	-	-	0.2	0.2			8.0
5:00	9.0		S-10	SS	-	-	0.2	0.2		SILTY SAND: fine grained, some to little clay, light gray/light brown, damp to wet, very loose	9.0
4:00	10.0		S-11	SS	-	-	0.2	0.2			10.0
3:00	11.0		S-12	SS	-	-	0.2	0.2			11.0
2:00	12.0		S-13	SS	-	-	0.2	0.2			12.0
1:00	13.0									BOTTOM OF BOREHOLE @ 13.0'	13.0
0:00	14.0									NOTES:	14.0
1:00	15.0									1) Groundwater encountered at 12.5' during drilling.	15.0
2:00	16.0										16.0
3:00	17.0										17.0
4:00	18.0										18.0
5:00	19.0										19.0
6:00	20.0										20.0
7:00	21.0										21.0
8:00	22.0										22.0
9:00	23.0										23.0
10:00	24.0										24.0
11:00	25.0										25.0
12:00	26.0										26.0
13:00	27.0										27.0
	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-LA-SB02

SHEET: 1 OF: 1

PROJECT NUMBER	62470-274
PROJECT NAME	SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION	MCB CAMP LEJEUNE, NC
DRILLING COMPANY	HARDIN-HUBER, INC.
RIG TYPE & NUMBER	ATV
DRILLING METHOD	HOLLOW STEM AUGERS
WEATHER	SUNNY
GEOLOGIST	M K. DEJOHN
ENV SCIENTIST	M.O. SMITH
DATE BEGUN	11/1/94 DATE COMPLETED: 11/1/94
GROUND SURFACE ELEVATION	14 23' msl
TOTAL DEPTH	15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
14+00	0.0		S-1	SS	-	-	-	-			0.0
13 00	1.0									SILTY SAND: fine grained, trace to little clay, root material at surface, dark brown/ light grayish brown/light brown, damp, very loose to medium dense	1.0
12 00	2.0		S-2	SS	4 7 7 7	2.0	0.6	0.6			2.0
11-00	3.0										3.0
10-00	4.0		S-3	SS	2 4 6 8	1.6	0.6	0.6			4.0
9-00	5.0										5.0
8-00	6.0		S-4	SS	2 6 5 7	1.6	0.6	0.6			6.0
7-00	7.0										7.0
6-00	8.0		S-5	SS	4 3 5 7	1.8	0.6	0.6		SILTY CLAY: trace fine grained sand, light brown, damp, medium stiff/stiff/very stiff	8.0
5-00	9.0										9.0
4-00	10.0		S-6	SS	3 6 8 12	2.0	0.6	0.6			10.0
3-00	11.0										11.0
2-00	12.0		S-7	SS	12 12 20 7	1.8	0.6	0.6		SILTY SAND: fine grained, occasional trace clay, light brown, damp to wet, medium dense to dense	12.0
1-00	13.0										13.0
0-00	14.0		S-8	SS	2 4 10 20	1.5	0.6	0.6			14.0
1 00	15.0										15.0
2-00	16.0									BOTTOM OF BOREHOLE @ 15.0' NOTES: 1) Groundwater encountered at 14.0' during drilling.	16.0
3-00	17.0										17.0
4-00	18.0										18.0
5-00	19.0										19.0
6-00	20.0										20.0
7 00	21.0										21.0
8-00	22.0										22.0
9 00	23.0										23.0
10-00	24.0										24.0
11 00	25.0										25.0
12 00	26.0										26.0
13-00	27.0										27.0
14-00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-LA-SB03

SHEET 1 OF 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: M.K. DEJOHN
DATE BEGUN: 11/1/94 DATE COMPLETED: 11/1/94

GROUND SURFACE ELEVATION: 14.68' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-			0.0
14:00	1.0									SILTY SAND: Fine grained, root material at surface, trace clay, dark brown/brown/light brown, damp, very loose to medium dense	1.0
13:00	2.0		S-2	SS	5 6 6 6	2.0	0.6	0.6			2.0
12:00	3.0										3.0
11:00	4.0		S-3	SS	2 3 5 6	2.0	0.6	0.6			4.0
10:00	5.0										5.0
9:00	6.0		S-4	SS	3 5 5 6	2.0	0.6	0.6			6.0
8:00	7.0										7.0
7:00	8.0		S-5	SS	4 4 6 10	2.0	0.6	0.6		SILTY CLAY: trace fine grained sand, light gray, damp, medium stiff/stiff	8.0
6:00	9.0										9.0
5:00	10.0		S-6	SS	3 7 10 15	1.9	0.6	0.6			10.0
4:00	11.0										11.0
3:00	12.0		S-7	SS	5 6 10 13	1.4	0.6	0.6		SILTY SAND: Fine grained, trace clay, light gray, damp to wet, medium dense to dense	12.0
2:00	13.0										13.0
1:00	14.0		S-8	SS	3 3 7 10	1.8	0.6	0.6			14.0
0:00	15.0										15.0
1:00	16.0									BOTTOM OF BOREHOLE @ 15.0'	16.0
2:00	17.0									NOTES:	17.0
3:00	18.0									1) Groundwater encountered at 14.0' during drilling.	18.0
4:00	19.0										19.0
5:00	20.0										20.0
6:00	21.0										21.0
7:00	22.0										22.0
8:00	23.0										23.0
9:00	24.0										24.0
10:00	25.0										25.0
11:00	26.0										26.0
12:00	27.0										27.0
13:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-LA-SB04

SHEET 1 OF 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 14.02' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
14.00	0.0		S-1	SS	-	-	-	-		SILTY SAND: fine grained, trace root material at surface, trace clay, dark brown/brown/black/light brown, damp to moist, very loose to loose	0.0
13.00	1.0				3						1.0
12.00	2.0		S-2	SS	3 5 8	0.9	0.1	0.1			2.0
11.00	3.0				1						3.0
10.00	4.0		S-3	SS	3 2 3	0.5	0.1	0.1			4.0
9.00	5.0				1						5.0
8.00	6.0		S-4	SS	3 4 6	2.0	0.1	0.1			6.0
7.00	7.0				2						7.0
6.00	8.0		S-5	SS	4 5 8	2.0	0.1	0.1		SILTY CLAY: trace fine grained sand, light gray, damp to moist, loose to medium stiff	8.0
5.00	9.0				4						9.0
4.00	10.0		S-6	SS	5 7 10	2.0	0.1	0.1			10.0
3.00	11.0				4						11.0
2.00	12.0		S-7	SS	5 15 18	1.8	0.1	0.1			12.0
1.00	13.0				2						13.0
0.00	14.0		S-8	SS	4 6 6	2.0	0.1	0.1		SILTY SAND: fine grained, light gray, moist to wet, medium dense	14.0
-1.00	15.0									BOTTOM OF BOREHOLE @ 15.0'	15.0
-2.00	16.0									NOTES: 1) Groundwater encountered at 14.0' during drilling	16.0
-3.00	17.0										17.0
-4.00	18.0										18.0
-5.00	19.0										19.0
-6.00	20.0										20.0
-7.00	21.0										21.0
-8.00	22.0										22.0
-9.00	23.0										23.0
-10.00	24.0										24.0
-11.00	25.0										25.0
-12.00	26.0										26.0
-13.00	27.0										27.0
-14.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-LA-SB05

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: M.K. DEJOHN
DATE BEGUN: 11/1/94 DATE COMPLETED: 11/1/94

GROUND SURFACE ELEVATION: 14.65' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-		SILTY SAND: fine grained, root material at surface, trace clay, dark brown/brown/light brown, damp, very loose to medium dense	0.0
14:00	1.0				4						1.0
13:00	2.0		S-2	SS	5 4 7	1.1	0.5	0.5			2.0
12:00	3.0				4						3.0
11:00	4.0		S-3	SS	5 7 12	1.5	0.5	0.5			4.0
10:00	5.0				8						5.0
9:00	6.0		S-4	SS	12 10 10	1.3	0.5	0.5			6.0
8:00	7.0				6						7.0
7:00	8.0		S-5	SS	8 10 15	1.3	0.5	0.5		SILTY CLAY: trace fine grained sand, light gray, damp, stiff/medium stiff	8.0
6:00	9.0				7						9.0
5:00	10.0		S-6	SS	10 11 16	1.4	0.5	0.5		SILTY SAND: fine grained, trace clay, brown/ light brown/light gray, damp to wet, medium dense	10.0
4:00	11.0				6						11.0
3:00	12.0		S-7	SS	7 7 6	1.5	0.5	0.5			12.0
2:00	13.0				3						13.0
1:00	14.0		S-8	SS	5 8 11	1.5	0.5	0.5			14.0
0:00	15.0									BOTTOM OF BOREHOLE @ 15.0'	15.0
1:00	16.0									NOTES	16.0
2:00	17.0									1) Groundwater encountered at 14.0' during drilling	17.0
3:00	18.0										18.0
4:00	19.0										19.0
5:00	20.0										20.0
6:00	21.0										21.0
7:00	22.0										22.0
8:00	23.0										23.0
9:00	24.0										24.0
10:00	25.0										25.0
11:00	26.0										26.0
12:00	27.0										27.0
13:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-LA-SB06

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC
RIG TYPE & NUMBER ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST L.H. JOHNSON
DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 14.49' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-		SILTY SAND: fine grained, trace root material at surface, trace to little clay, dark brown/brown/light brown/ light gray, damp, very loose to loose	0.0
14+00	1.0				5						1.0
13+00	2.0		S-2	SS	4 4 5	1.2	0.2	0.2			2.0
12+00	3.0				1						3.0
11+00	4.0		S-3	SS	2 3 4	1.4	0.2	0.2			4.0
10+00	5.0				3						5.0
9+00	6.0		S-4	SS	3 5 6	1.7	0.2	0.2			6.0
8+00	7.0				2						7.0
7+00	8.0		S-5	SS	4 5 8	1.8	0.2	0.2			8.0
6+00	9.0										9.0
5+00	10.0		S-6	SS	2 5 7 8	1.8	0.2	0.2		SILTY CLAY: trace fine grained sand, light gray, damp, stiff	10.0
4+00	11.0										11.0
3+00	12.0		S-7	SS	3 5 7 13	1.5	0.2	0.2		SILTY SAND: fine grained, light gray, damp to wet, medium dense	12.0
2+00	13.0										13.0
1+00	14.0		S-8	SS	2 5 7 9	1.6	0.2	0.2			14.0
0+00	15.0									BOTTOM OF BOREHOLE @ 15.0'	15.0
1-00	16.0									NOTES: 1) Groundwater encountered at 14.0' during drilling	16.0
2-00	17.0										17.0
3+00	18.0										18.0
4+00	19.0										19.0
5+00	20.0										20.0
6+00	21.0										21.0
7+00	22.0										22.0
8+00	23.0										23.0
9+00	24.0										24.0
10+00	25.0										25.0
11+00	26.0										26.0
12+00	27.0										27.0
13+00	28.0										28.0
14+00											

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-LA-SB07

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 13.59' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-		SILTY SAND: Fine grained, trace root material at surface, trace to little clay, dark brown/brown/light brown/ light gray, damp, very loose/loose/medium dense	0.0
13-00	1.0										1.0
12-00	2.0		S-2	SS	2 2 4 5	1.2	0.2	0.2			2.0
11-00	3.0										3.0
10-00	4.0		S-3	SS	2 2 6 8	1.6	0.2	0.2			4.0
9-00	5.0										5.0
8-00	6.0		S-4	SS	7 11 10 11	1.6	0.2	0.2			6.0
7-00	7.0										7.0
6-00	8.0		S-5	SS	11 10 15 13	1.7	0.2	0.2			8.0
5-00	9.0										9.0
4-00	10.0		S-6	SS	5 7 8 12	1.6	0.2	0.2		SILTY CLAY: trace fine grained sand, light gray, damp, stiff	10.0
3-00	11.0										11.0
2-00	12.0		S-7	SS	11 9 6 7	1.6	0.2	0.2		SILTY SAND: fine grained, light gray, damp to wet, medium dense	12.0
1-00	13.0										13.0
0-00	14.0		S-8	SS	2 4 6 7	1.6	0.2	0.2			14.0
1-00	15.0										15.0
2-00	16.0									BOTTOM OF BOREHOLE @ 15.0'	16.0
3-00	17.0									NOTES:	17.0
4-00	18.0									1) Groundwater encountered at 14.0' during drilling.	18.0
5-00	19.0										19.0
6-00	20.0										20.0
7-00	21.0										21.0
8-00	22.0										22.0
9-00	23.0										23.0
10-00	24.0										24.0
11-00	25.0										25.0
12-00	26.0										26.0
13-00	27.0										27.0
14-00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-MA-SB01

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: M.K. DEJOHN
DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 14.73' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-			0.0
14.00	1.0				2					SILTY SAND: Fine grained, trace coarse gravel and root material at surface, trace clay, dark brown/ brown, damp, very loose to medium dense	1.0
13.00	2.0		S-2	SS	1 2 3	1.7	0.2	0.2			2.0
12.00	3.0				2						3.0
11.00	4.0		S-3	SS	4 5 6	1.3	0.2	0.2			4.0
10.00	5.0				4						5.0
9.00	6.0		S-4	SS	7 7 7	0.8	0.2	0.2		SILTY CLAY trace fine grained sand, brown/light gray /light brown, damp to moist, medium stiff	6.0
8.00	7.0										7.0
7.00	8.0		S-5	SS	2 4 6 9	1.7	0.2	0.2			8.0
6.00	9.0										9.0
5.00	10.0		S-6	SS	3 6 10 9	1.8	0.2	0.2		10' to 11' SAND fine grained, trace to little clay	10.0
4.00	11.0										11.0
3.00	12.0		S-7	SS	2 2 5 6	2.0	0.2	0.2			12.0
2.00	13.0										13.0
1.00	14.0		S-8	SS	1 1 5 7	1.4	0.2	0.2		SILTY SAND fine grained, light gray, moist to wet, loose	14.0
0.00	15.0										15.0
-1.00	16.0									BOTTOM OF BOREHOLE @ 15.0'	16.0
-2.00	17.0									NOTES:	17.0
-3.00	18.0									1) Groundwater encountered at 14.0' during drilling	18.0
-4.00	19.0										19.0
-5.00	20.0										20.0
-6.00	21.0										21.0
-7.00	22.0										22.0
-8.00	23.0										23.0
-9.00	24.0										24.0
-10.00	25.0										25.0
-11.00	26.0										26.0
-12.00	27.0										27.0
-13.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-MA-SB02

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: M.K. DEJOHN
DATE BEGUN: 11/1/94 DATE COMPLETED: 11/1/94

GROUND SURFACE ELEVATION: 15.32' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
15.00	0.0		S-1	SS	-	-	-	-			0.0
14.00	1.0		S-2	SS	10 15 10 10	1.8	0.5	0.5		SILTY SAND: fine grained, trace coarse gravel at surface, trace clay, dark brown/brown, damp, very loose to medium dense	1.0
13.00	2.0										2.0
12.00	3.0		S-3	SS	3 6 10 12	1.6	0.5	0.5			3.0
11.00	4.0										4.0
10.00	5.0		S-4	SS	5 7 10 7	1.8	0.5	0.5			5.0
9.00	6.0										6.0
8.00	7.0		S-5	SS	4 9 10 14	1.4	0.5	0.5			7.0
7.00	8.0									SILTY CLAY: trace fine grained sand, brown, damp, stiff	8.0
6.00	9.0										9.0
5.00	10.0		S-6	SS	4 5 8 11	1.7	0.5	0.5			10.0
4.00	11.0										11.0
3.00	12.0		S-7	SS	5 7 10 8	1.8	0.5	0.5			12.0
2.00	13.0									SILTY SAND: fine grained, trace clay, light brown/ light gray, damp to wet, medium dense	13.0
1.00	14.0		S-8	SS	4 7 9 12	1.5	0.5	0.5			14.0
0.00	15.0										15.0
1.00	16.0									BOTTOM OF BOREHOLE @ 15.0'	16.0
2.00	17.0									NOTES:	17.0
3.00	18.0									1) Groundwater encountered at 14.0' during drilling	18.0
4.00	19.0										19.0
5.00	20.0										20.0
6.00	21.0										21.0
7.00	22.0										22.0
8.00	23.0										23.0
9.00	24.0										24.0
10.00	25.0										25.0
11.00	26.0										26.0
12.00	27.0										27.0
13.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-MA-SB03

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: M.K. DEJOHN
DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 14.97' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-		SILTY SAND: fine grained, trace coarse gravel at surface, trace clay, dark brown/brown, damp, very loose to medium dense	0.0
+14.00	1.0		S-2	SS	6 10 10 9	1.5	0.2	0.2			1.0
+13.00	2.0										2.0
+12.00	3.0		S-3	SS	6 6 9 10	1.1	0.2	0.2			3.0
+11.00	4.0										4.0
+10.00	5.0		S-4	SS	4 6 8 6	1.5	0.2	0.2		SILTY CLAY: trace fine grained sand, brown/light gray/ light brown, damp to moist, stiff	5.0
+9.00	6.0										6.0
+8.00	7.0										7.0
+7.00	8.0		S-5	SS	3 6 6 7	1.7	0.2	0.2			8.0
+6.00	9.0										9.0
+5.00	10.0		S-6	SS	3 6 7 10	2.0	0.2	0.2			10.0
+4.00	11.0										11.0
+3.00	12.0		S-7	SS	4 6 7 9	1.0	0.2	0.2			12.0
+2.00	13.0										13.0
+1.00	14.0		S-8	SS	2 2 4 6	1.2	0.2	0.2		SILTY SAND: fine grained, light gray, moist to wet	14.0
+0.00	15.0									BOTTOM OF BOREHOLE @ 15.0'	15.0
-1.00	16.0									NOTES: 1) Groundwater encountered at 14.0' during drilling	16.0
-2.00	17.0										17.0
-3.00	18.0										18.0
-4.00	19.0										19.0
-5.00	20.0										20.0
-6.00	21.0										21.0
-7.00	22.0										22.0
-8.00	23.0										23.0
-9.00	24.0										24.0
-10.00	25.0										25.0
-11.00	26.0										26.0
-12.00	27.0										27.0
-13.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-MA-SB04

SHEET 1 OF 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: M.K. DEJOHN
DATE BEGUN: 11/1/94 DATE COMPLETED: 11/1/94

GROUND SURFACE ELEVATION: 15.14' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
15.00	0.0		S-1	SS	-	-		-			0.0
14.00	1.0		S-2	SS	7 9 6 6	1.5	0.5	0.5		SILTY SAND: fine grained, trace coarse gravel at surface, trace clay, dark brown/brown, damp, very loose to medium dense	1.0
13.00	2.0										2.0
12.00	3.0		S-3	SS	2 5 7 6	1.5	0.5	0.5			3.0
11.00	4.0										4.0
10.00	5.0		S-4	SS	3 6 7 8	1.8	0.5	0.5			5.0
9.00	6.0										6.0
8.00	7.0		S-5	SS	6 6 8 9	2.0	0.5	0.5			7.0
7.00	8.0										8.0
6.00	9.0		S-6	SS	5 5 6 12	1.8	0.5	0.5		SILTY CLAY: trace fine grained sand, brown, damp, medium dense/stiff	9.0
5.00	10.0										10.0
4.00	11.0										11.0
3.00	12.0		S-7	SS	4 7 11 9	1.6	0.5	0.5		SILTY SAND: fine grained, trace clay, light brown/light gray, damp to wet, medium dense	12.0
2.00	13.0										13.0
1.00	14.0		S-8	SS	4 6 7 12	1.7	0.5	0.5			14.0
0.00	15.0										15.0
-1.00	16.0									BOTTOM OF BOREHOLE @ 15.0'	16.0
-2.00	17.0									NOTES:	17.0
-3.00	18.0									1) Groundwater encountered at 14.0' during drilling	18.0
-4.00	19.0										19.0
-5.00	20.0										20.0
-6.00	21.0										21.0
-7.00	22.0										22.0
-8.00	23.0										23.0
-9.00	24.0										24.0
-10.00	25.0										25.0
-11.00	26.0										26.0
-12.00	27.0										27.0
-13.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-OA-SB01

SHEET 1 OF 1

PROJECT NUMBER: 62470-279
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 17.47' msl
TOTAL DEPTH: 17.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-		SILTY SAND: fine grained, trace wood at surface, trace to little clay, dark brown/brown, damp, very loose to medium dense	0.0
17.00	1.0										1.0
16.00	2.0		S-2	SS	4 8 12 15	1.8	0.2	0.5			2.0
15.00	3.0										3.0
14.00	4.0		S-3	SS	4 14 9 7	0.9	0.2	0.2			4.0
13.00	5.0										5.0
12.00	6.0		S-4	SS	4 5 5 7	1.8	0.2	0.2			6.0
11.00	7.0										7.0
10.00	8.0		S-5	SS	1 3 5 8	1.6	0.2	0.2		SILTY CLAY: trace fine grained sand, light gray, damp, stiff	8.0
9.00	9.0										9.0
8.00	10.0		S-6	SS	2 6 13 13	1.7	0.2	0.2			10.0
7.00	11.0										11.0
6.00	12.0		S-7	SS	3 5 15 21	1.3	0.3	0.3		SAND: fine grained, trace silt, light brown/light gray, damp to wet, medium dense	12.0
5.00	13.0										13.0
4.00	14.0		S-8	SS	2 5 10 21	1.5	0.2	0.2			14.0
3.00	15.0										15.0
2.00	16.0		S-9	SS	5 7 12 12	1.2	0.2	0.2			16.0
1.00	17.0										17.0
0.00	18.0									BOTTOM OF BOREHOLE @ 17.0'	18.0
	19.0									NOTES:	19.0
	20.0									1) Groundwater encountered at 15.5' during drilling	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

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-0A-SB02

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-279
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 16.85' msl
TOTAL DEPTH: 17.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-			0.0
16.00	1.0		S-2	SS	11 11 12 10	0.7	0.2	0.2		SILTY SAND: fine grained, trace wood at surface, trace clay, dark brown/brown, damp, very loose to medium dense	1.0
15.00	2.0										2.0
14.00	3.0		S-3	SS	5 8 12 14	0.9	0.2	0.2			3.0
13.00	4.0										4.0
12.00	5.0		S-4	SS	12 9 9 8	NR	0.2	0.2			5.0
11.00	6.0										6.0
10.00	7.0		S-5	SS	5 4 6 9	1.3	0.2	0.2		SILTY CLAY: trace fine grained sand, brown, damp, stiff	7.0
9.00	8.0										8.0
8.00	9.0		S-6	SS	4 9 12 12	1.0	0.2	0.2		SAND: fine grained, some to trace silt, occasional trace clay, light brown/light gray, damp to wet, medium dense to dense	9.0
7.00	10.0										10.0
6.00	11.0										11.0
5.00	12.0		S-7	SS	7 12 19 22	1.2	0.2	0.2			12.0
4.00	13.0										13.0
3.00	14.0		S-8	SS	4 7 16 16	1.9	0.2	0.2			14.0
2.00	15.0										15.0
1.00	16.0		S-9	SS	4 7 9 9	1.0	0.2	1.1			16.0
0.00	17.0									BOTTOM OF BOREHOLE @ 17.0'	17.0
-1.00	18.0									NOTES: 1) Groundwater encountered at 15.5' during drilling	18.0
-2.00	19.0										19.0
-3.00	20.0										20.0
-4.00	21.0										21.0
-5.00	22.0										22.0
-6.00	23.0										23.0
-7.00	24.0										24.0
-8.00	25.0										25.0
-9.00	26.0										26.0
-10.00	27.0										27.0
-11.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: SD-OA-SB03
SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 16.73' msl
TOTAL DEPTH: 17.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	0.3	0.3		SILTY SAND: Fine grained, trace wood at surface, trace to little clay, dark brown/brown, damp, very loose/medium dense	0.0
16:00	1.0										1.0
15:00	2.0		S-2	SS	8 5 7 11	0.9	0.2	0.2			2.0
14:00	3.0										3.0
13:00	4.0		S-3	SS	3 7 9 10	1.1	0.2	0.2			4.0
12:00	5.0										5.0
11:00	6.0		S-4	SS	3 4 5 7	1.8	0.2	0.2			6.0
10:00	7.0									7 to 7.5' SILTY CLAY: trace fine grained sand	7.0
9:00	8.0		S-5	SS	2 5 6 12	1.2	0.3	0.3		SAND: Fine grained, trace silt, light brown/light gray, damp to wet, medium dense	8.0
8:00	9.0										9.0
7:00	10.0		S-6	SS	3 4 5 8	1.2	0.2	0.2			10.0
6:00	11.0										11.0
5:00	12.0		S-7	SS	2 9 12 10	1.4	0.3	0.3			12.0
4:00	13.0										13.0
3:00	14.0		S-8	SS	5 7 12 10	1.5	0.2	0.2			14.0
2:00	15.0										15.0
1:00	16.0		S-9	SS	2 2 7 10	1.3	0.2	0.2			16.0
0:00	17.0									BOTTOM OF BOREHOLE @ 17.0'	17.0
1:00	18.0									NOTES: 1) Groundwater encountered at 15.5' during drilling.	18.0
2:00	19.0										19.0
3:00	20.0										20.0
4:00	21.0										21.0
5:00	22.0										22.0
6:00	23.0										23.0
7:00	24.0										24.0
8:00	25.0										25.0
9:00	26.0										26.0
10:00	27.0										27.0
11:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-0A-SB04

SHEET: 1 OF: 1

PROJECT NUMBER	62470-274
PROJECT NAME	SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION	MCB CAMP LEJEUNE, NC
DRILLING COMPANY	HARDIN-HUBER, INC.
RIG TYPE & NUMBER	ATV
DRILLING METHOD	HOLLOW STEM AUGERS
WEATHER	SUNNY
GEOLOGIST	M.K. DEJOHN
ENV. SCIENTIST	M.D. SMITH
DATE BEGUN	11/4/94
DATE COMPLETED	11/4/94
GROUND SURFACE ELEVATION	17.99' msl
TOTAL DEPTH	15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-		SILTY SAND: fine grained, little clay, trace roots, dark brown, moist	0.0
17:00	1.0										1.0
16:00	2.0		S-2	SS	8 7 5 5	1.3	0.0	0.3			2.0
15:00	3.0									CLAY: some silt, little to trace fine grained sand, brown/orange, damp, stiff	3.0
14:00	4.0		S-3	SS	2 5 5 6	1.2	0.0	BG			4.0
13:00	5.0										5.0
12:00	6.0		S-4	SS	3 5 6 8	1.5	0.0	BG			6.0
11:00	7.0										7.0
10:00	8.0		S-5	SS	5 9 13 13	1.2	0.0	BG		SAND: fine grained, some to trace silt, occasional trace clay, brown/orange/gray/buff, damp to wet, medium dense to dense	8.0
9:00	9.0										9.0
8:00	10.0		S-6	SS	4 8 10 14	1.3	0.0	0.6			10.0
7:00	11.0										11.0
6:00	12.0		S-7	SS	10 14 17 19	1.6	0.0	BG			12.0
5:00	13.0										13.0
4:00	14.0		S-8	SS	4 5 5 7	1.5	0.0	0.0			14.0
3:00	15.0										15.0
2:00	16.0									BOTTOM OF BOREHOLE @ 15.0'	16.0
1:00	17.0									NOTES:	17.0
0:00	18.0									1) Groundwater encountered at 14.0' during drilling.	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
10:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-OA-SB05

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: M.K. DEJOHN
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/4/94 DATE COMPLETED: 11/4/94

GROUND SURFACE ELEVATION: 16.76' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-		SAND: Fine grained, trace silt, gray, damp	0.0
16.00	1.0										1.0
15.00	2.0		S-2	SS	2 4 6 9	1.5	0.0	BG		SILT: some clay, trace fine grained sand, brown, damp	2.0
14.00	3.0										3.0
13.00	4.0		S-3	SS	3 5 5 5	0.8	0.0	BG		CLAY: little silt, trace roots, gray to brown, stiff	4.0
12.00	5.0										5.0
11.00	6.0		S-4	SS	4 4 7 10	1.4	0.0	BG			6.0
10.00	7.0									SAND: Fine grained, trace to little silt, trace clay, gray, damp to wet, medium dense	7.0
9.00	8.0		S-5	SS	4 6 7 8	1.1	0.0	1.8			8.0
8.00	9.0										9.0
7.00	10.0		S-6	SS	5 7 10 11	1.3	0.2	0.8			10.0
6.00	11.0										11.0
5.00	12.0		S-7	SS	8 10 10 17	1.6	0.0	1.2			12.0
4.00	13.0										13.0
3.00	14.0		S-8	SS	7 7 7 9	1.5	0.0	4.4			14.0
2.00	15.0										15.0
1.00	16.0									BOTTOM OF BOREHOLE @ 15.0'	16.0
0.00	17.0									NOTES	17.0
-1.00	18.0									1) Groundwater encountered at 14.0' during drilling	18.0
-2.00	19.0										19.0
-3.00	20.0										20.0
-4.00	21.0										21.0
-5.00	22.0										22.0
-6.00	23.0										23.0
-7.00	24.0										24.0
-8.00	25.0										25.0
-9.00	26.0										26.0
-10.00	27.0										27.0
-11.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-OA-SB06

SHEET: 1 OF 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: M.K. DEJOHN
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/4/99 DATE COMPLETED: 11/4/99

GROUND SURFACE ELEVATION: 16.47' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
16.00	0.0		S-1	SS	-	-	-	-		SILT: trace clay and roots, dark brown, damp	0.0
	1.0										1.0
15.00	2.0		S-2	SS	4 4 8 12	0.8	0.0	0.3		SILTY CLAY: trace fine grained sand, brown/orange, damp, stiff	2.0
14.00	3.0										3.0
13.00	4.0		S-3	SS	6 4 6 6	1.3	0.0	BG		CLAYEY SILT: trace fine grained sand, trace roots, brown/orange, medium stiff	4.0
12.00	5.0										5.0
11.00	6.0		S-4	SS	5 10 10 12	1.4	0.0	BG		SAND: fine grained, some to trace silt, occasional trace clay, brown/orange/gray/buff, damp to wet, medium dense	6.0
10.00	7.0										7.0
9.00	8.0		S-5	SS	5 10 12 15	1.4	0.0	BG			8.0
8.00	9.0										9.0
7.00	10.0		S-6	SS	3 8 8 10	1.3	0.0	BG			10.0
6.00	11.0										11.0
5.00	12.0		S-7	SS	8 12 16 17	1.6	0.0	BG			12.0
4.00	13.0										13.0
3.00	14.0		S-8	SS	8 9 9 12	1.7	0.0	BG			14.0
2.00	15.0										15.0
1.00	16.0									BOTTOM OF BOREHOLE @ 15.0'	16.0
0.00	17.0									NOTES:	17.0
1.00	18.0									1) Groundwater encountered at 13.0' during drilling	18.0
2.00	19.0										19.0
3.00	20.0										20.0
4.00	21.0										21.0
5.00	22.0										22.0
6.00	23.0										23.0
7.00	24.0										24.0
8.00	25.0										25.0
9.00	26.0										26.0
10.00	27.0										27.0
11.00	28.0										28.0
12.00											

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB01

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 23.05' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
23.00	0.0		S-1	HA	-	-	0.0	0.0		SILTY SAND: fine grained, brown/tan, damp, loose (Fill)	0.0
22.00	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
21.00	2.0										2.0
20.00	3.0										3.0
19.00	4.0										4.0
18.00	5.0										5.0
17.00	6.0										6.0
16.00	7.0										7.0
15.00	8.0										8.0
14.00	9.0										9.0
13.00	10.0										10.0
12.00	11.0										11.0
11.00	12.0										12.0
10.00	13.0										13.0
9.00	14.0										14.0
8.00	15.0										15.0
7.00	16.0										16.0
6.00	17.0										17.0
5.00	18.0										18.0
4.00	19.0										19.0
3.00	20.0										20.0
2.00	21.0										21.0
1.00	22.0										22.0
0.00	23.0										23.0
1.00	24.0										24.0
2.00	25.0										25.0
3.00	26.0										26.0
4.00	27.0										27.0
5.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB02

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 25.07' msl
TOTAL DEPTH: 6.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
25.00	0.0		S-1	HA	-	-	0.0	0.0		SILTY SAND: fine grained, brown/tan, damp, loose (fill)	0.0
24.00	1.0		S-2	HA	-	-	0.0	0.0			1.0
23.00	2.0		S-3	HA	-	-	0.0	0.0			2.0
22.00	3.0		S-4	HA	-	-	0.0	0.0			3.0
21.00	4.0		S-5	HA	-	-	0.0	0.0			4.0
20.00	5.0		S-6	HA	-	-	0.0	0.0			5.0
19.00	6.0									SILT: trace clay, dark brown/gray, damp, stiff	6.0
18.00	7.0									BOTTOM OF BOREHOLE @ 6.0'	7.0
17.00	8.0										8.0
16.00	9.0										9.0
15.00	10.0										10.0
14.00	11.0										11.0
13.00	12.0										12.0
12.00	13.0										13.0
11.00	14.0										14.0
10.00	15.0										15.0
9.00	16.0										16.0
8.00	17.0										17.0
7.00	18.0										18.0
6.00	19.0										19.0
5.00	20.0										20.0
4.00	21.0										21.0
3.00	22.0										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

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB03

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.O. SMITH
DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 23.41' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
23:00	0.0		S-1	HA	-	-	0.0	0.0		SILTY SAND: Fine grained, brown/tan, damp, loose (Fill)	0.0
22:00	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
21:00	2.0										2.0
20:00	3.0										3.0
19:00	4.0										4.0
18:00	5.0										5.0
17:00	6.0										6.0
16:00	7.0										7.0
15:00	8.0										8.0
14:00	9.0										9.0
13:00	10.0										10.0
12:00	11.0										11.0
11:00	12.0										12.0
10:00	13.0										13.0
9:00	14.0										14.0
8:00	15.0										15.0
7:00	16.0										16.0
6:00	17.0										17.0
5:00	18.0										18.0
4:00	19.0										19.0
3:00	20.0										20.0
2:00	21.0										21.0
1:00	22.0										22.0
0:00	23.0										23.0
1:00	24.0										24.0
2:00	25.0										25.0
3:00	26.0										26.0
4:00	27.0										27.0
5:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB04

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 26.39' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
26.00	0.0		SS-1	HA	-	-	0.0	0.0		SILTY SAND: Fine grained, brown/tan, damp, loose (fill)	0.0
25.00	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
24.00	2.0										2.0
23.00	3.0										3.0
22.00	4.0										4.0
21.00	5.0										5.0
20.00	6.0										6.0
19.00	7.0										7.0
18.00	8.0										8.0
17.00	9.0										9.0
16.00	10.0										10.0
15.00	11.0										11.0
14.00	12.0										12.0
13.00	13.0										13.0
12.00	14.0										14.0
11.00	15.0										15.0
10.00	16.0										16.0
9.00	17.0										17.0
8.00	18.0										18.0
7.00	19.0										19.0
6.00	20.0										20.0
5.00	21.0										21.0
4.00	22.0										22.0
3.00	23.0										23.0
2.00	24.0										24.0
1.00	25.0										25.0
0.00	26.0										26.0
-1.00	27.0										27.0
-2.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB05

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.G. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 24.47' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
24.00	0.0		S-1	HA	-	-	0.0	0.0		SILTY SAND: fine grained, brown/tan, damp, loose (Fill)	0.0
23.00	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
22.00	2.0										2.0
21.00	3.0										3.0
20.00	4.0										4.0
19.00	5.0										5.0
18.00	6.0										6.0
17.00	7.0										7.0
16.00	8.0										8.0
15.00	9.0										9.0
14.00	10.0										10.0
13.00	11.0										11.0
12.00	12.0										12.0
11.00	13.0										13.0
10.00	14.0										14.0
9.00	15.0										15.0
8.00	16.0										16.0
7.00	17.0										17.0
6.00	18.0										18.0
5.00	19.0										19.0
4.00	20.0										20.0
3.00	21.0										21.0
2.00	22.0										22.0
1.00	23.0										23.0
0.00	24.0										24.0
1.00	25.0										25.0
2.00	26.0										26.0
3.00	27.0										27.0
	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB06

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 21.55' msl
TOTAL DEPTH: 6.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
21:00	0.0		S-1	HA	-	-	0.0	0.0		SILTY SAND: Fine grained, brown/tan, damp, loose (Fill)	0.0
20:00	1.0		S-2	HA	-	-	0.0	0.0			1.0
19:00	2.0		S-3	HA	-	-	0.0	0.0			2.0
18:00	3.0		S-4	HA	-	-	0.0	0.0			3.0
17:00	4.0		S-5	HA	-	-	0.0	0.0			4.0
16:00	5.0		S-6	HA	-	-	0.0	0.0			5.0
15:00	6.0									SILT: trace clay, dark brown/gray, damp, stiff	6.0
14:00	7.0									BOTTOM OF BOREHOLE @ 6.0'	7.0
13:00	8.0										8.0
12:00	9.0										9.0
11:00	10.0										10.0
10:00	11.0										11.0
9:00	12.0										12.0
8:00	13.0										13.0
7:00	14.0										14.0
6:00	15.0										15.0
5:00	16.0										16.0
4:00	17.0										17.0
3:00	18.0										18.0
2:00	19.0										19.0
1:00	20.0										20.0
0:00	21.0										21.0
1:00	22.0										22.0
2:00	23.0										23.0
3:00	24.0										24.0
4:00	25.0										25.0
5:00	26.0										26.0
6:00	27.0										27.0
	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB07

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 24.22' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
24.00	0.0		S-1	HA	-	-	0.0	0.0		SILTY SAND: fine grained, brown/tan, damp, loose (fill)	0.0
23.00	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
22.00	2.0										2.0
21.00	3.0										3.0
20.00	4.0										4.0
19.00	5.0										5.0
18.00	6.0										6.0
17.00	7.0										7.0
16.00	8.0										8.0
15.00	9.0										9.0
14.00	10.0										10.0
13.00	11.0										11.0
12.00	12.0										12.0
11.00	13.0										13.0
10.00	14.0										14.0
9.00	15.0										15.0
8.00	16.0										16.0
7.00	17.0										17.0
6.00	18.0										18.0
5.00	19.0										19.0
4.00	20.0										20.0
3.00	21.0										21.0
2.00	22.0										22.0
1.00	23.0										23.0
0.00	24.0										24.0
1.00	25.0										25.0
2.00	26.0										26.0
3.00	27.0										27.0
4.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB08

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 21.91' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	HA	-	-	0.0	0.0		SILTY SAND: fine grained, brown/tan, damp, loose (Fill)	0.0
21:00	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
20:00	2.0										2.0
19:00	3.0										3.0
18:00	4.0										4.0
17:00	5.0										5.0
16:00	6.0										6.0
15:00	7.0										7.0
14:00	8.0										8.0
13:00	9.0										9.0
12:00	10.0										10.0
11:00	11.0										11.0
10:00	12.0										12.0
9:00	13.0										13.0
8:00	14.0										14.0
7:00	15.0										15.0
6:00	16.0										16.0
5:00	17.0										17.0
4:00	18.0										18.0
3:00	19.0										19.0
2:00	20.0										20.0
1:00	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: 80-SM-SB09

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 22.12' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
22:00	0.0		SS-1	HA	-	-	0.0	0.0		SILTY SAND: Fine grained, brown/tan, damp, loose (fill)	0.0
21:00	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
20:00	2.0										2.0
19:00	3.0										3.0
18:00	4.0										4.0
17:00	5.0										5.0
16:00	6.0										6.0
15:00	7.0										7.0
14:00	8.0										8.0
13:00	9.0										9.0
12:00	10.0										10.0
11:00	11.0										11.0
10:00	12.0										12.0
9:00	13.0										13.0
8:00	14.0										14.0
7:00	15.0										15.0
6:00	16.0										16.0
5:00	17.0										17.0
4:00	18.0										18.0
3:00	19.0										19.0
2:00	20.0										20.0
1:00	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: 80-SM-SB10

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 20.53' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
20:00	0.0		S-1	HA	-	-	0.0	0.0		SILTY SAND: fine grained, brown/tan, damp, loose (Fill)	0.0
	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
19:00	2.0										2.0
18:00	3.0										3.0
17:00	4.0										4.0
16:00	5.0										5.0
15:00	6.0										6.0
14:00	7.0										7.0
13:00	8.0										8.0
12:00	9.0										9.0
11:00	10.0										10.0
10:00	11.0										11.0
9:00	12.0										12.0
8:00	13.0										13.0
7:00	14.0										14.0
6:00	15.0										15.0
5:00	16.0										16.0
4:00	17.0										17.0
3:00	18.0										18.0
2:00	19.0										19.0
1:00	20.0										20.0
0:00	21.0										21.0
1:00	22.0										22.0
2:00	23.0										23.0
3:00	24.0										24.0
4:00	25.0										25.0
5:00	26.0										26.0
6:00	27.0										27.0
7:00	28.0										28.0

APPENDIX A.2
WELL CONSTRUCTION LOGS

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW03IW

SHEET: 1 OF 3

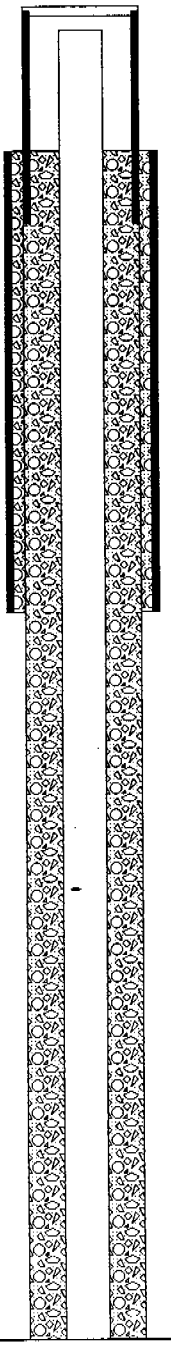
PROJECT NUMBER: 62170-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: MUD ROTARY
WEATHER: SUNNY, HOT, HUMID
GEOLOGIST: J E ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/5/94 DATE COMPLETED: 11/5/94

GROUND SURFACE ELEVATION: 14.41' msl
TOP OF CASING ELEVATION: 16.98' msl

WELL DETAILS (FT)

STICKUP:	3.0
INNER CASING (10"I.D.):	9.5
LENGTH OF RISER (2"I.D.):	57.0
LENGTH OF SCREEN (2"I.D.):	15.0
THICKNESS OF GROUT:	52.0
THICKNESS OF SEAL	2.0
THICKNESS OF SAND PACK	18.0

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE	BLOWS/0.5'	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
18:00	4.0										4.0	
17:00	3.0										3.0	
16:00	2.0										2.0	
15:00	1.0										1.0	
14:00	0.0		S-1	SS	-	-	0.2	0.2		SILTY SAND: fine grained, little clay, trace root material at surface, dark brown, damp, very loose/medium dense (Fill)	0.0	
13:00	1.0		S-2	SS	6 12 5 6	0.2	0.2	0.2			1.0	
12:00	2.0										2.0	
11:00	3.0		S-3	SS	1 4 3 4	0.5	0.2	0.2		SILTY CLAY: little to some fine grained sand, trace charcoal and burnt soil, brown/black, damp to moist, loose/medium dense (Fill)	3.0	
10:00	4.0										4.0	
9:00	5.0		S-4	SS	2 3 3 4	2.0	0.2	0.2			5.0	
8:00	6.0										6.0	
7:00	7.0		S-5	SS	2 3 5 8	2.0	0.2	0.2		SILTY CLAY: trace fine grained sand, light gray, damp to moist, stiff/medium stiff	7.0	
6:00	8.0										8.0	
5:00	9.0		S-6	SS	2 4 4 8	1.8	0.2	0.2			9.0	
4:00	10.0										10.0	
3:00	11.0									SILTY SAND: fine grained, little clay, brown, moist, loose	11.0	
2:00	12.0		S-7	SS	8 12 14 19	0.9	0.2	0.2		SAND: fine to medium grained, little to trace silt, trace clay (11 - 13'), light gray/light brown, damp to wet, medium dense/dense/very dense/loose	12.0	
1:00	13.0										13.0	
0:00	14.0		S-8	SS	8 9 14 15	0.8	0.2	0.2			14.0	
1:00	15.0										15.0	
2:00	16.0										16.0	
3:00	17.0										17.0	
4:00	18.0		S-9	SS	3 8 11 13	0.9	0.2	0.2			18.0	
5:00	19.0										19.0	
6:00	20.0										20.0	
7:00	21.0										21.0	
8:00	22.0										22.0	
9:00	23.0										23.0	
10:00	24.0										24.0	



BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER
80-MW03IW
SHEET 2 OF 3

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
6:00	20.0									SAND: fine grained, little to trace silt, light gray/light brown, damp to wet, medium dense/dense/very dense/loose.	20.0	
7:00	21.0										21.0	
8:00	22.0										22.0	
9:00	23.0										23.0	
10:00	24.0		S-10	SS	7 18 19 22	1.0	0.2	0.2			24.0	
11:00	25.0										25.0	
12:00	26.0										26.0	
13:00	27.0										27.0	
14:00	28.0										28.0	
15:00	29.0		S-11	SS	10 16 20 23	0.8	0.2	0.2			29.0	
16:00	30.0										30.0	
17:00	31.0										31.0	
18:00	32.0										32.0	
19:00	33.0										33.0	
20:00	34.0		S-12	SS	8 13 13 15	1.2	0.2	0.2			34.0	
21:00	35.0										35.0	
22:00	36.0										36.0	
23:00	37.0										37.0	
24:00	38.0										38.0	
25:00	39.0		S-13	SS	28 22 31 34	1.0	0.2	0.2			39.0	
26:00	40.0										40.0	
27:00	41.0										41.0	
28:00	42.0										42.0	
29:00	43.0										43.0	
30:00	44.0		S-14	SS	17 31 31 33	1.1	0.2	0.2			44.0	
31:00	45.0										45.0	
32:00	46.0										46.0	
33:00	47.0										47.0	
34:00	48.0										48.0	
35:00	49.0		S-15	SS	2 3 4 6	1.8	0.2	0.2			49.0	
36:00	50.0										50.0	
37:00	51.0										51.0	
38:00	52.0										52.0	

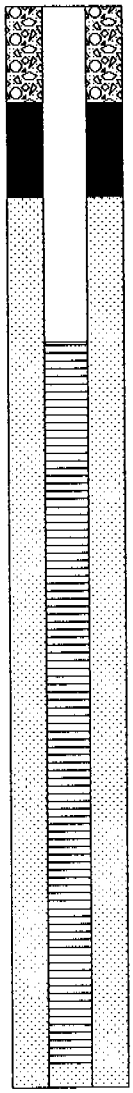
BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW03IW

SHEET: 3 OF: 3

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION
36:00	50.0									SAND: Fine grained, little to trace silt, light gray/light brown, damp to wet, medium dense/dense/very dense/loose
37:00	51.0									
38:00	52.0									
39:00	53.0									
40:00	54.0		S-16	SS	-	-	-	-		SAND: Fine grained, trace silt, trace shell fragments, light grayish green, wet, medium dense/dense/very dense
41:00	55.0									
42:00	56.0									
43:00	57.0									
44:00	58.0		S-17	SS	8 12 14 23	1.8	0.2	0.2		
45:00	59.0									
46:00	60.0									
47:00	61.0									
48:00	62.0									
49:00	63.0		S-18	SS	22 17 28 38	2.0	0.2	0.2		
50:00	64.0									
51:00	65.0									
52:00	66.0									
53:00	67.0									
54:00	68.0		S-19	SS	22 28 34 44	1.3	0.2	0.2		
55:00	69.0									
56:00	70.0									
57:00	71.0									
58:00	72.0									
59:00	73.0									BOTTOM OF BOREHOLE 72.5'
60:00	74.0									NOTES:
61:00	75.0									1) Groundwater encountered @ 14.0' during drilling.
62:00	76.0									
63:00	77.0									
64:00	78.0									
65:00	79.0									
66:00	80.0									
67:00	81.0									
68:00	82.0									

DEPTH	WELL INSTALLATION
50.0	
51.0	
52.0	
53.0	
54.0	
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76.0	
77.0	
78.0	
79.0	
80.0	
81.0	
82.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW04

SHEET: 1 OF 2

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: TRUCK RIG
DRILLING METHOD: AUGERS
WEATHER: SUNNY, HOT, HUMID
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 13.70' msl
TOP OF PVC CASING ELEVATION: 16.07' msl

WELL DETAILS (FT)

STICKUP:	2.5
LENGTH OF RISER (2"I.D.):	11.5
LENGTH OF SCREEN (2"I.D.):	15.0
THICKNESS OF GROUT:	7.0
THICKNESS OF SEAL:	2.0
THICKNESS OF SAND PACK:	18.0

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
17:00	4.0										4.0	
16:00	3.0										3.0	
15:00	2.0										2.0	
14:00	1.0										1.0	
13:00	0.0		S-1	SS	-	-	0.2	0.2		SILTY SAND: Fine grained, trace of root material at surface, trace to little clay, dark brown/brown, damp, very loose to medium dense	0.0	
12:00	1.0		S-2	SS	3 3 5 7	1.6	0.2	0.2			1.0	
11:00	2.0		S-3	SS	3 7 8 11	1.1	0.1	0.1			2.0	
10:00	3.0										3.0	
9:00	4.0		S-4	SS	4 6 10 14	1.5	0.2	0.2			4.0	
8:00	5.0										5.0	
7:00	6.0		S-5	SS	2 4 5 6	1.5	0.2	0.2			6.0	
6:00	7.0										7.0	
5:00	8.0		S-6	SS	1 3 3 3	1.5	0.2	0.2			8.0	
4:00	9.0										9.0	
3:00	10.0		S-7	SS	2 6 8 10	1.1	0.1	0.1		SILTY CLAY: trace fine grained sand, brown, damp, stiff	10.0	
2:00	11.0										11.0	
1:00	12.0										12.0	
0:00	13.0		S-8	SS	2 4 4 4	1.3	0.1	0.1			13.0	
1:00	14.0										14.0	
2:00	15.0		S-9	SS	4 8 30 33	1.0	0.3	0.3		SILTY SAND: Fine grained, little clay, brown/light gray, moist to wet, medium dense/loose	15.0	
3:00	16.0										16.0	
4:00	17.0		S-10	SS	9 18 15 19	1.5	0.3	0.3			17.0	
5:00	18.0										18.0	
6:00	19.0		S-11	SS	10 12 19 18	1.6	0.3	0.3			19.0	
7:00	20.0										20.0	
8:00	21.0		S-12	SS	7 13 19 17	1.0	0.2	0.3		SAND: Fine to medium grained, trace silt, brown/light gray/light brown, wet, dense/medium dense/loose	21.0	
9:00	22.0										22.0	
10:00	23.0										23.0	
	24.0										24.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW09

SHEET: 2 OF 2

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
6:00	20.0										20.0	
7:00	21.0		S-12	SS	7 13 19 17	1.0	0.2	0.3		SAND: Fine grained, trace silt, light brown, wet, medium dense to loose	21.0	
8:00	22.0										22.0	
9:00	23.0		S-13	SS	6 8 10 12	1.4	0.1	0.1			23.0	
10:00	24.0										24.0	
11:00	25.0		S-14	SS	9 6 3 3	1.1	0.1	0.1			25.0	
12:00	26.0										26.0	
13:00	27.0									BOTTOM OF BOREHOLE @ 27.0'	27.0	
14:00	28.0									NOTES:	28.0	
15:00	29.0									1) Groundwater encountered @ 13.5' during drilling	29.0	
16:00	30.0										30.0	
17:00	31.0										31.0	
18:00	32.0										32.0	
19:00	33.0										33.0	
20:00	34.0										34.0	
21:00	35.0										35.0	
22:00	36.0										36.0	
23:00	37.0										37.0	
24:00	38.0										38.0	
25:00	39.0										39.0	
26:00	40.0										40.0	
27:00	41.0										41.0	
28:00	42.0										42.0	
29:00	43.0										43.0	
30:00	44.0										44.0	
31:00	45.0										45.0	
32:00	46.0										46.0	
33:00	47.0										47.0	
34:00	48.0										48.0	
35:00	49.0										49.0	
36:00	50.0										50.0	
37:00	51.0										51.0	
38:00	52.0										52.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW05

SHEET: 1 OF 2

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: TRUCK RIG
DRILLING METHOD: AUGERS
WEATHER: SUNNY, HOT, HUMID
GEOLOGIST: J.E. ZIMMERMAN
ENV SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/4/94 DATE COMPLETED: 11/4/94

GROUND SURFACE ELEVATION: 16.22' msl
TOP OF PVC CASING ELEVATION: 18.54' msl

WELL DETAILS (FT)

STICKUP:	2.5
LENGTH OF RISER (2"I.D.):	12.0
LENGTH OF SCREEN (2"I.D.):	15.0
THICKNESS OF GROUT:	8.0
THICKNESS OF SEAL:	2.0
THICKNESS OF SAND PACK:	17.0

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
20-00	4.0										4.0	
19-00	3.0										3.0	
18-00	2.0										2.0	
17-00	1.0										1.0	
16-00	0.0		S-1	SS	-	-	0.2	0.2		SILTY SAND: fine grained, trace of root material at surface, trace to little clay, dark brown/ brown, damp, very loose to medium dense	0.0	
15-00	1.0		S-2	SS	3 5 5 9	1.5	0.1	0.1			1.0	
14-00	2.0										2.0	
13-00	3.0		S-3	SS	5 8 14 9	1.2	0.2	0.2		SILTY CLAY: trace to little fine grained sand, brown/light gray, damp, stiff/medium dense/ very stiff	3.0	
12-00	4.0										4.0	
11-00	5.0		S-4	SS	13 14 18 15	1.7	0.2	0.2			5.0	
10-00	6.0										6.0	
9-00	7.0		S-5	SS	9 10 10 12	1.0	0.2	0.2			7.0	
8-00	8.0										8.0	
7-00	9.0		S-6	SS	4 10 10 12	1.7	0.2	0.2		SAND: fine grained, trace silt, brown/light gray, damp to wet, medium dense	9.0	
6-00	10.0										10.0	
5-00	11.0		S-7	SS	3 7 18 21	1.3	0.2	0.2			11.0	
4-00	12.0										12.0	
3-00	13.0		S-8	SS	3 5 12 11	1.0	0.2	0.2			13.0	
2-00	14.0										14.0	
1-00	15.0		S-9	SS	3 5 10 11	1.3	0.2	0.2			15.0	
0-00	16.0										16.0	
1-00	17.0		S-10	SS	6 11 12 17	1.2	0.2	0.2			17.0	
2-00	18.0										18.0	
3-00	19.0		S-11	SS	4 5 12 18	1.3	0.2	0.2			19.0	
4-00	20.0										20.0	
5-00	21.0										21.0	
6-00	22.0		S-12	SS	4 5 8 7	1.2	0.2	0.2			22.0	
7-00	23.0										23.0	
8-00	24.0									SAND: fine grained, trace to little silt, trace clay, light gray, wet, loose/medium dense	24.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW05

SHEET: 2 OF: 2

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
4:00	20.0										20.0	
5:00	21.0		S-12	SS	4 5 8 7	1.2	0.2	0.2		SAND: Fine grained, trace silt, brown/light gray, damp to wet, medium dense	21.0	
6:00	22.0										22.0	
7:00	23.0		S-13	SS	2 4 5 2	1.1	0.2	0.2		SAND: Fine grained, trace to little silt, trace clay, light gray, wet, loose/medium dense	23.0	
8:00	24.0										24.0	
9:00	25.0		S-14	SS	4 5 8 5	1.3	0.2	0.2			25.0	
10:00	26.0										26.0	
11:00	27.0										27.0	
12:00	28.0									BOTTOM OF BOREHOLE @ 27.5'	28.0	
13:00	29.0									NOTES:	29.0	
14:00	30.0									1) Groundwater encountered @ 14' during drilling	30.0	
15:00	31.0										31.0	
16:00	32.0										32.0	
17:00	33.0										33.0	
18:00	34.0										34.0	
19:00	35.0										35.0	
20:00	36.0										36.0	
21:00	37.0										37.0	
22:00	38.0										38.0	
23:00	39.0										39.0	
24:00	40.0										40.0	
25:00	41.0										41.0	
26:00	42.0										42.0	
27:00	43.0										43.0	
28:00	44.0										44.0	
29:00	45.0										45.0	
30:00	46.0										46.0	
31:00	47.0										47.0	
32:00	48.0										48.0	
33:00	49.0										49.0	
34:00	50.0										50.0	
35:00	51.0										51.0	
36:00	52.0										52.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW06

SHEET: 1 OF 2

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
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: 11/5/94 DATE COMPLETED: 11/5/94

GROUND SURFACE ELEVATION: 17.06' msl
TOP OF PVC CASING ELEVATION: 19.42' msl

WELL DETAILS (FT)

STICKUP:	2.5
LENGTH OF RISER (2"I.D.):	11.0
LENGTH OF SCREEN (2"I.D.):	15.0
THICKNESS OF GROUT:	7.0
THICKNESS OF SEAL:	2.0
THICKNESS OF SAND PACK:	18.0

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
21.00	4.0										4.0	
20.00	3.0										3.0	
19.00	2.0										2.0	
18.00	1.0										1.0	
17.00	0.0		S-1	SS	-	-	0.0	0.0		SILT: trace to some clay, dark brown/ gray, damp, stiff	0.0	
16.00	1.0		S-2	SS	7 8 7 9	1.2	0.0	0.0			1.0	
15.00	2.0										2.0	
14.00	3.0		S-3	SS	6 5 5 6	1.5	0.0	0.0			3.0	
13.00	4.0										4.0	
12.00	5.0		S-4	SS	3 6 7 8	1.4	0.0	0.0		SILTY CLAY: brown/gray/orange, damp, stiff	5.0	
11.00	6.0										6.0	
10.00	7.0		S-5	SS	7 9 9 12	1.9	0.0	0.0			7.0	
9.00	8.0										8.0	
8.00	9.0		S-6	SS	10 11 11 12	1.4	0.0	0.0		SAND: fine to medium grained, little to some silt, tan/orange/gray, damp to wet, medium dense	9.0	
7.00	10.0										10.0	
6.00	11.0										11.0	
5.00	12.0		S-7	SS	6 8 10 13	1.1	0.0	0.0			12.0	
4.00	13.0										13.0	
3.00	14.0		S-8	SS	7 8 4 2	1.8	0.0	0.0			14.0	
2.00	15.0										15.0	
1.00	16.0		S-9	SS	WOH 1 2 3	1.1	0.0	0.0		CLAY: trace silt, trace fine grained sand @ 18.0', wet, medium dense	16.0	
0.00	17.0										17.0	
1.00	18.0		S-10	SS	4 4 7 10	2.0	0.0	0.0			18.0	
2.00	19.0										19.0	
3.00	20.0		S-11	SS	6 8 9 13	1.1	0.0	0.0		SAND: fine to medium grained, some to little silt, orange/brown/gray, wet, medium dense to dense	20.0	
4.00	21.0										21.0	
5.00	22.0		S-12	SS	9 17 28 33	1.1	0.0	0.0			22.0	
6.00	23.0										23.0	
7.00	24.0										24.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW06

SHEET: 2 OF: 2

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
4-00	20.0									SAND: Fine to medium grained, some to little silt, orange/brown/gray, wet, medium dense to dense	20.0	
5-00	21.0		S-12	SS	9 17 28 33	1.1	0.0	0.0			21.0	
6-00	22.0										22.0	
7-00	23.0		S-13	SS	12 19 22 24	1.0	0.0	0.0			23.0	
8-00	24.0										24.0	
9-00	25.0		S-14	SS	16 18 23 26	1.0	0.0	0.0			25.0	
10-00	26.0										26.0	
11-00	27.0										27.0	
12-00	28.0									BOTTOM OF BOREHOLE @ 27.5'	28.0	
13-00	29.0									NOTES:	29.0	
14-00	30.0									1) Groundwater encountered @ 14.5' during drilling	30.0	
15-00	31.0										31.0	
16-00	32.0										32.0	
17-00	33.0										33.0	
18-00	34.0										34.0	
19-00	35.0										35.0	
20-00	36.0										36.0	
21-00	37.0										37.0	
22-00	38.0										38.0	
23-00	39.0										39.0	
24-00	40.0										40.0	
25-00	41.0										41.0	
26-00	42.0										42.0	
27-00	43.0										43.0	
28-00	44.0										44.0	
29-00	45.0										45.0	
30-00	46.0										46.0	
31-00	47.0										47.0	
32-00	48.0										48.0	
33-00	49.0										49.0	
34-00	50.0										50.0	
35-00	51.0										51.0	
36-00	52.0										52.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW07

SHEET: 1 OF 2

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: TRUCK RIG
DRILLING METHOD: AUGERS
WEATHER: SUNNY, HOT, HUMID
GEOLOGIST: J E. ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/4/94 DATE COMPLETED: 11/4/94

GROUND SURFACE ELEVATION: 16.21' msl
TOP OF PVC CASING ELEVATION: 18.49' msl

WELL DETAILS (FT)

STICKUP:	2.5
LENGTH OF RISER (2"I.D.):	12.5
LENGTH OF SCREEN (2"I.D.):	15.0
THICKNESS OF GROUT:	8.0
THICKNESS OF SEAL:	2.0
THICKNESS OF SAND PACK:	17.5

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
20.00	4.0										4.0	
19.00	3.0										3.0	
18.00	2.0										2.0	
17.00	1.0										1.0	
16.00	0.0		S-1	SS	-	-	0.2	0.2		SILTY SAND: Fine grained, trace of root material at surface, trace to little clay, dark brown/brown, damp, very loose/medium dense/loose	0.0	
15.00	1.0		S-2	SS	4 5 6 7	0.8	0.2	0.2			1.0	
14.00	2.0										2.0	
13.00	3.0		S-3	SS	2 4 4 6	0.7	0.2	0.2			3.0	
12.00	4.0										4.0	
11.00	5.0		S-4	SS	3 4 8 9	1.1	0.2	0.2			5.0	
10.00	6.0										6.0	
9.00	7.0		S-5	SS	5 6 8 10	1.6	0.2	0.2		SILTY CLAY: trace fine grained sand, brown/ light gray, damp, stiff/medium dense	7.0	
8.00	8.0										8.0	
7.00	9.0		S-6	SS	8 9 9 10	1.6	0.2	0.2			9.0	
6.00	10.0									SILTY SAND: Fine grained, trace clay, light brown/ light gray, damp to moist, medium dense	10.0	
5.00	11.0										11.0	
4.00	12.0		S-7	SS	4 7 9 15	2.0	0.2	0.2			12.0	
3.00	13.0										13.0	
2.00	14.0		S-8	SS	4 9 10 10	1.6	0.2	0.2			14.0	
1.00	15.0										15.0	
0.00	16.0		S-9	SS	4 5 9 9	1.4	0.2	0.2		SAND: Fine grained, trace silt, light gray/buff, wet, medium dense/loose	16.0	
1.00	17.0										17.0	
2.00	18.0		S-10	SS	3 2 5 10	1.2	0.2	0.2			18.0	
3.00	19.0										19.0	
4.00	20.0		S-11	SS	3 6 9 7	1.1	0.3	0.3			20.0	
5.00	21.0										21.0	
6.00	22.0		S-12	SS	10 15 14 9	1.1	0.2	0.2			22.0	
7.00	23.0										23.0	
8.00	24.0										24.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW07

SHEET: 2 OF: 2

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
4:00	20.0										20.0	
5:00	21.0		S-12	SS	10 15 14 9	1.1	0.2	0.2		SAND: Fine grained, trace silt, light gray/buff, wet, medium dense/loose	21.0	
6:00	22.0										22.0	
7:00	23.0										23.0	
8:00	24.0		S-13	SS	6 7 3 7	1.1	0.2	0.2		SAND: Fine to medium grained, trace silt, light gray, wet, medium dense	24.0	
9:00	25.0										25.0	
10:00	26.0		S-14	SS	4 2 2 1	1.8	0.2	0.2			26.0	
11:00	27.0										27.0	
12:00	28.0										28.0	
13:00	29.0										29.0	
14:00	30.0										30.0	
15:00	31.0										31.0	
16:00	32.0										32.0	
17:00	33.0										33.0	
18:00	34.0										34.0	
19:00	35.0										35.0	
20:00	36.0										36.0	
21:00	37.0										37.0	
22:00	38.0										38.0	
23:00	39.0										39.0	
24:00	40.0										40.0	
25:00	41.0										41.0	
26:00	42.0										42.0	
27:00	43.0										43.0	
28:00	44.0										44.0	
29:00	45.0										45.0	
30:00	46.0										46.0	
31:00	47.0										47.0	
32:00	48.0										48.0	
33:00	49.0										49.0	
34:00	50.0										50.0	
35:00	51.0										51.0	
36:00	52.0										52.0	

BOTTOM OF BOREHOLE @ 28.0'

NOTES:

1) Groundwater encountered @ 14.5' during drilling

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW08

SHEET 1 OF 2

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: PARRATT-WOLFF, INC
RIG TYPE & NUMBER: TRUCK RIG - CME 55
DRILLING METHOD: AUGERS
WEATHER: OVERCAST, COOL, DRIZZLE, BREEZY
GEOLOGIST: M. K. DEJOHN
ENV SCIENTIST: -
DATE BEGUN: 6/13/95 DATE COMPLETED: 6/13/95

GROUND SURFACE ELEVATION: 15.00' msl
TOP OF PVC CASING ELEVATION: 17.33' msl

WELL DETAILS (FT)

STICKUP:	2.33
LENGTH OF RISER (2"I.D.):	10.0
LENGTH OF SCREEN (2"I.D.):	15.0
THICKNESS OF GROUT:	6.0
THICKNESS OF SEAL:	2.0
THICKNESS OF SAND PACK:	17.0

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
19:00	4.0										4.0	
18:00	3.0										3.0	
17:00	2.0										2.0	
16:00	1.0										1.0	
15:00	0.0		S-1	HA	-	-	1.1	1.1		SILTY SAND: fine grained, trace gravel, trace coarse sand, trace clay, brownish gray, damp	0.0	
14:00	1.0		S-2	SS	1 2 3 2	1.0	0.5	0.5		SANDY SILT: fine grained sand, trace to little clay, brown to orangish brown, damp, loose	1.0	
13:00	2.0										2.0	
12:00	3.0		S-3	SS	2 3 3 3	1.6	0.5	0.5			3.0	
11:00	4.0										4.0	
10:00	5.0		S-4	SS	5 4 5 5	1.8	0.6	0.6			5.0	
9:00	6.0										6.0	
8:00	7.0		S-5	SS	5 4 4 5	1.6	0.5	0.5			7.0	
7:00	8.0										8.0	
6:00	9.0		S-6	SS	3 3 2 3	1.7	0.5	0.5		CLAY: some to trace silt, little fine to medium grained sand @ 8.2-9', gray layers of rock fragments @ 9-13.8', reddish gray to orangish brown, damp to wet, medium stiff	9.0	
5:00	10.0										10.0	
4:00	11.0		S-7	SS	3 3 2 4	1.3	0.5	0.5			11.0	
3:00	12.0										12.0	
2:00	13.0										13.0	
1:00	14.0		S-8	SS	2 3 3 5	1.8	0.4	0.4			14.0	
0:00	15.0									SILT: little clay and fine sand, gray, wet, medium stiff	15.0	
1:00	16.0		S-9	SS	3 5 6 8	2.0	-	-		SAND: fine grained, trace to some silt, trace to little clay, gray w/iron staining/black and orangish brown, wet, medium dense/ loose @ 21-23'	16.0	
2:00	17.0										17.0	
3:00	18.0		S-10	SS	6 6 8 10	1.0	-	-			18.0	
4:00	19.0										19.0	
5:00	20.0		S-11	SS	9 11 16 19	2.0	-	-			20.0	
6:00	21.0										21.0	
7:00	22.0		S-12	SS	WOH WOH 2 3	1.0	-	-			22.0	
8:00	23.0										23.0	
9:00	24.0										24.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW08

SHEET 2 OF 2

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
5-00	20.0										20.0	
6-00	21.0										21.0	
7-00	22.0		S-12	SS	WOH WOH 2 3	1.0	-	-		SAND: fine grained, trace to some silt, trace to little clay, gray w/iron staining/black and orangish brown, wet, medium dense/ loose @ 21-23'	22.0	
8-00	23.0										23.0	
9-00	24.0		S-13	SS	8 9 12 12	2.0	-	-			24.0	
10-00	25.0									BOTTOM OF BOREHOLE @ 25.0'	25.0	
11-00	26.0									NOTES	26.0	
12-00	27.0									1) Groundwater encountered @ 12.0' during drilling	27.0	
13-00	28.0										28.0	
14-00	29.0										29.0	
15-00	30.0										30.0	
16-00	31.0										31.0	
17-00	32.0										32.0	
18-00	33.0										33.0	
19-00	34.0										34.0	
20-00	35.0										35.0	
21-00	36.0										36.0	
22-00	37.0										37.0	
23-00	38.0										38.0	
24-00	39.0										39.0	
25-00	40.0										40.0	
26-00	41.0										41.0	
27-00	42.0										42.0	
28-00	43.0										43.0	
29-00	44.0										44.0	
30-00	45.0										45.0	
31-00	46.0										46.0	
32-00	47.0										47.0	
33-00	48.0										48.0	
34-00	49.0										49.0	
35-00	50.0										50.0	
36-00	51.0										51.0	
37-00	52.0										52.0	

APPENDIX A.3
BACKGROUND TEST BORING LOGS

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-BB-SB01

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: M.K. DEJOHN
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/5/94 DATE COMPLETED: 11/5/94

GROUND SURFACE ELEVATION: 16.56' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
16.00	0.0		S-1	SS	-	-	-	BG		SILT: trace fine grained sand, trace clay 3-5', brown to gray, damp, very loose to very stiff	0.0
15.00	1.0										1.0
	2.0		S-2	SS	1 1 2 3	1.5	0.0	BG			2.0
14.00	3.0										3.0
13.00	4.0		S-3	SS	5 8 11 14	1.6	0.0	BG			4.0
12.00	5.0										5.0
11.00	6.0		S-4	SS	7 14 18 14	1.6	0.0	BG		SAND: fine grained and fine to medium grained, little to trace silt, occasional trace clay, tan/orange, damp to wet, medium dense	6.0
10.00	7.0										7.0
9.00	8.0		S-5	SS	5 4 3 3	1.6	0.0	BG			8.0
8.00	9.0										9.0
7.00	10.0		S-6	SS	9 11 2 2	1.6	0.0	BG			10.0
6.00	11.0										11.0
5.00	12.0		S-7	SS	1 1 2 2	1.9	0.0	BG		CLAY: trace silt, rock fragments at 14.5', orange/brown, damp to wet, soft to very soft	12.0
4.00	13.0										13.0
3.00	14.0		S-8	SS	WOH 1 1 1	1.9	0.0	BG			14.0
2.00	15.0									BOTTOM OF BOREHOLE @ 15.0'	15.0
1.00	16.0									NOTES: 1) Groundwater encountered at 13.5' during drilling.	16.0
0.00	17.0										17.0
1.00	18.0										18.0
2.00	19.0										19.0
3.00	20.0										20.0
4.00	21.0										21.0
5.00	22.0										22.0
6.00	23.0										23.0
7.00	24.0										24.0
8.00	25.0										25.0
9.00	26.0										26.0
10.00	27.0										27.0
11.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-BB-SB02

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: M.K. DEJOHN
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/4/94 DATE COMPLETED: 11/4/94

GROUND SURFACE ELEVATION: 16.70' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	BG		SILTY CLAY: trace fine grained sand, trace roots, brown, damp	0.0
16:00	1.0										1.0
15:00	2.0		S-2	SS	1 1 2 3	1.3	0.0	BG		SILT: trace clay, trace fine grained sand, brown, damp, stiff	2.0
14:00	3.0										3.0
13:00	4.0		S-3	SS	3 4 5 6	1.2	0.0	BG			4.0
12:00	5.0										5.0
11:00	6.0		S-4	SS	6 6 7 9	1.6	0.0	BG		CLAY: trace silt and fine grained sand, brown/orange/gray, damp, stiff	6.0
10:00	7.0										7.0
9:00	8.0		S-5	SS	5 5 7 9	1.3	0.0	BG			8.0
8:00	9.0										9.0
7:00	10.0		S-6	SS	4 7 12 24	1.8	0.0	BG		SAND: little clay, trace silt, orange/gray, damp to moist, medium dense	10.0
6:00	11.0										11.0
5:00	12.0		S-7	SS	16 5 4 3	1.8	0.0	BG			12.0
4:00	13.0										13.0
3:00	14.0		S-8	SS	1 1 2 3	1.4	0.0	-		CLAY: trace silt, soft, wet	14.0
2:00	15.0										15.0
1:00	16.0									BOTTOM OF BOREHOLE @ 15.0'	16.0
0:00	17.0									NOTES:	17.0
1:00	18.0									1) Groundwater encountered at 14.0' during drilling.	18.0
2:00	19.0										19.0
3:00	20.0										20.0
4:00	21.0										21.0
5:00	22.0										22.0
6:00	23.0										23.0
7:00	24.0										24.0
8:00	25.0										25.0
9:00	26.0										26.0
10:00	27.0										27.0
11:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-BB-SB03

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: M.K. DEJOHN
ENV SCIENTIST: M.D. SMITH
DATE BEGUN: 11/5/94 DATE COMPLETED: 11/5/94

GROUND SURFACE ELEVATION: 16.97' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-		SILT: trace to some clay, little fine grained sand at 6-7', brown, damp, soft to hard	0.0
16.00	1.0										1.0
15.00	2.0		S-2	SS	1 1 3 11	0.8	0.0	BG			2.0
14.00	3.0										3.0
13.00	4.0		S-3	SS	10 15 18 22	1.5	0.0	BG			4.0
12.00	5.0										5.0
11.00	6.0		S-4	SS	10 26 28 33	1.2	0.0	0.6			6.0
10.00	7.0										7.0
9.00	8.0		S-5	SS	6 8 9 11	1.5	0.0	0.7		SAND: fine grained, trace to little silt, occasional trace clay, gray to brown, damp to wet, medium dense	8.0
8.00	9.0										9.0
7.00	10.0		S-6	SS	6 8 9 9	1.8	0.0	BG			10.0
6.00	11.0										11.0
5.00	12.0		S-7	SS	5 7 8 10	1.6	0.0	BG			12.0
4.00	13.0										13.0
3.00	14.0		S-8	SS	5 5 6 7	1.4	0.0	BG			14.0
2.00	15.0										15.0
1.00	16.0									BOTTOM OF BOREHOLE @ 15.0'	16.0
0.00	17.0									NOTES:	17.0
-1.00	18.0									1) Groundwater encountered at 14.0' during drilling	18.0
-2.00	19.0										19.0
-3.00	20.0										20.0
-4.00	21.0										21.0
-5.00	22.0										22.0
-6.00	23.0										23.0
-7.00	24.0										24.0
-8.00	25.0										25.0
-9.00	26.0										26.0
-10.00	27.0										27.0
-11.00	28.0										28.0

APPENDIX B
SAMPLE DOCUMENTATION

APPENDIX B.1
CHAIN-OF-CUSTODY RECORDS

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

COC # 80001
Reference Document No. 325352
Page 1 of 2

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 DAY TURN.

Samples Shipment Date[7]
Lab Destination[8]
Lab Contact[9] S. SCHNEIDER
Project Contact/Phone[12]
Carrier/Waybill No.[13]

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

White: To accompany samples
Yellow: Field copy

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
80-RS-01	RINSATE LIQUID SPLIT SPOON	11/1/94 1107	G/P			TCL-ORGANICS TAL-INORGANICS		
80-TB-01	TRIP BLANK LIQUID	11/1/94 1330	G			TCL-ORGANICS *VOAs ONLY	FOR LAB USE ONLY	
80-LA-SB02-00	SOIL	11/1/94 0912	G			TCL-ORGANICS TAL-INORGANICS		
80-LA-SB02-06	SOIL	11/1/94 0951	G			TCL-ORGANICS TAL-INORGANICS		
80-LA-SB03-00	SOIL	11/1/94 1028	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
80-LA-SB03-06	SOIL	11/1/94 1119	G			TCL-ORGANICS TAL-INORGANICS		
80-LA-SB05-00	SOIL	11/1/94 1353	G			TCL-ORGANICS TAL-INORGANICS		
80-LA-SB05-06	SOIL	11/1/94 1430	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) C.J. Kleinhof	Date: 1 Nov. 1994 Time: 1630 H	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 AIR BILL # 139660175

*See back of form for special instructions.

MCA 3/15/91

COC # 80001

INTERNATIONAL TECHNOLOGY CORPORATION

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

Reference Document No.[30] 325352

Page 2 of 2

Project Name MCB CAMP LEJEUNE

Project No. CTO - 0274

Samples Shipment Date 11/1/94

ONE CONTAINER PER LINE

Sample Number [14]	Sample Description/Type [15]	Date/Time Collected [16]	Container Type [17]	Sample Volume [18]	Preservative [19]	Requested Testing Program [20]	Condition on Receipt [21]	Disposal Record No. [22]
80-MA-SB04-00	SOIL	11/1/94 1456	G			TCL-ORGANICS TAL-INORGANICS		
80-MA-SB04-06	SOIL	11/1/94 1530	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	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

COPY

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

C.O.C. # 80002

Reference Document N 325353

Page 1 of 2

IT INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

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-DAYS

Samples Shipment Date 7

Lab Destination 8

Lab Contact 9

Project Contact/Phone 12

Carrier/Waybill No. 13 FED-EX 1396601743.

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
80-MA-SB02-00	SOIL	11/1/94 1608	G			TCL-ORGANICS TAL-INORGANICS		
80-MA-SB02-06	SOIL	11/1/94 1632	G			TCL-ORGANICS TAL-INORGANICS.		
80-RS-02	* S.S. SPOON. ~~SO~~ LIQUID	11/2/94 0845	G/P			TCL-ORGANICS TAL-INORGANICS		
80-TB-02	LIQUID	11/2/94 1000	G			TCL-ORGANICS.		
80-LA-SB04-00	* SOIL	11/2/94 1317	G			TCL-ORGANICS TAL-INORGANICS.		
80-LA-SB04-00D	SOIL	11/2/94 1317	G			TCL-ORGANICS TAL-INORGANICS.		
80-SM-SB01-00	SOIL	11/2/94 1110	G			TCL-ORGANICS TAL-INORGANICS.		
80-SM-SB02-00	SOIL	11/2/94 1125	G			TCL-ORGANICS TAL-INORGANICS.		

FOR LAB USE ONLY

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/Affiliation) Peter A Monday	Date: 11/2/94 Time: 1630.	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 * DO NOT ANALYZE "HOLD"

* MS/MSD - PROVIDED

White: To accompany samples

Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

C.o.C. # 80002

INTERNATIONAL TECHNOLOGY CORPORATION

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

Reference Document No.[30] _____

Page 2 of 2

Project Name CTO-274

Project No. CTO-274

Samples Shipment Date _____

ONE CONTAINER PER LINE

Sample Number [14]	Sample Description/Type [15]	Date/Time Collected [16]	Container Type [17]	Sample Volume [18]	Preservative [19]	Requested Testing Program [20]	Condition on Receipt [21]	Disposal Record No. [22]
80-SM-SB02-03	Soil	11/2/94 1140	G			TCL-ORGANICS TAL-INORGANICS		
80-SM-SB03-00	Soil	11/2/94 1155	G			TCL-ORGANICS TAL-INORGANICS	* NOTE MS/MSD PROVIDED	
80-SM-SB03-00D	Soil	11/2/94 1155	G			TCL-ORGANICS TAL-INORGANICS		
80-MA-SB01-00	Soil	11/2/94 0850	G			TCL-ORGANICS TAL-INORGANICS	* NOTE MS/MSD PROVIDED.	
80-MA-SB01-06	Soil	11/2/94 0930	G			TCL-ORGANICS TAL-INORGANICS	* NOTE MS/MSD PROVIDED	
80-MA-SB03-00	Soil	11/2/94 1022	G			TCL-ORGANICS TAL-INORGANICS.		
80-MA-SB03-06	Soil	11/2/94 1046	G			TAL-ORGANICS TAL-INORGANICS.		
80-MA-SB01-00D	Soil	11/2/94 0850	G			TCL-ORGANICS TAL-INORGANICS.		
80-MA-SB01-06D	Soil	11/2/94 0930	G			TCL-ORGANICS TAL-INORGANICS		
~~80-MA-LA-FM~~								
80-LA-SB04-06	Soil	11/2/94 1358	G			TCL-ORGANICS TAL-INORGANICS	* NOTE MS/MSD PROVIDED.	
80-LA-SB04-06D	Soil	11/2/94 1358	G			TCL-ORGANICS TAL-INORGANICS		
80-LA-SB06-00	Soil	11/2/94 1510	G			TCL-ORGANICS TAL-INORGANICS		
80-LA-SB06-00	Soil	11/2/94 1537	G			TCL-ORGANICS TAL-INORGANICS		

FOR LAB USE ONLY

COPY

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

IT INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

C.O.C. # 80003

Reference Document No. 325355

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]

Lab Destination[8]

Lab Contact[9]

Project Contact/Phone[12]

Carrier/Waybill No.[13] 1396601732,

Bill to:[5] BAKER ENVIRONMENTAL INC.

Report to:[10] MATT BARTMAN

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]
80-LA-SB07-00	SOIL	11/2/94 1422	6			TCL-ORGANICS TAL-INORGANICS		
80-LA-SB07-06	SOIL	11/2/94 1447	6			TCL-ORGANICS TAL-INORGANICS.	FOR LAB USE ONLY	
80-SM-SB04-00	SOIL	11/3/94 0958	6			TCL-ORGANICS TAL-INORGANICS		
80-SM-SB05-00	SOIL	11/3/94 0930	6			TCL-ORGANICS TAL-INORGANICS		
80-SM-SB06-00	SOIL	11/3/94 0930	6			TCL-ORGANICS TAL-INORG.		
80-SM-SB06-03	SOIL	11/3/94 0940	6			TCL-ORG. TAL-INORG.	FOR LAB USE ONLY	
80-SM-SB07-00	SOIL	11/3/94 0958	6			TCL-ORG. TAL-INORG.		
80-SM-SB08-00	SOIL	11/3/94 1108	6			TCL-ORG. TAL-INORG		

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/Affiliation) [signature]	Date: 11/3/94 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] FED EX BILL # 1396601732

MCA 3/15/91

C.O.C. # 80 003

INTERNATIONAL TECHNOLOGY CORPORATION

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

Reference Document No.[30] 325355

Page 2 of 2

Project Name CTO-274

Project No. CTO-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.
80-SM-SB09-00	SOIL	11/3/94 1040	6			TCL-ORG. TAL-INORG.		
80-SM-SB09-03	SOIL	11/3/94 1048	6			TCL-ORG. TAL-INORG.		
80-SM-SB10-00	SOIL	11/3/94 1015	6			TCL-ORG. TAL-INORG.		
80-DA-SB02-00	SOIL	11/3/94 1133	6			TCL-ORG. TAL-INORG.		
80-DA-SB01-00	SOIL	11/3/94 1145	6			TCL-ORG. TAL-INORG.		
80-RS-03	Bucket Auger LIQUID RINSATE	11/3/94 0845	6/P		HCL/HNO3	TCL-ORG. TAL-INORG.		
80-TB-03	LIQUID	11/3/94 1515	6		HCL	TCL-ORG TRIP BLANK.		
80-DA-SB01-00	SOIL	11/3/94 0937	6			TCL-ORG. TAL-INORG.	* MS/MSD PROVIDED	
80-DA-SB04-00D	SOIL	11/3/94 0837	6			TCL-ORG. TAL-INORG		
80-DA-SB01-07	SOIL	11/3/94 1037	6			TCL-ORG. TAL-INORG.		
80-DA-SB01-07D	SOIL	11/3/94 1029	6			TCL-ORG. TAL-INORG		
80-DA-SB02-00	SOIL	11/3/94 0841	6			TCL-ORG. TAL-INORG.		
80-DA-SB02-07	SOIL	11/3/94 0913	6			TCL-ORG. TAL-INORG		
80-DA-SB03-00	SOIL	11/3/94 1114	6			TCL-ORG. TAL-INORG.		
80-DA-SB03-06	SOIL	11/3/94 1155	6			TCL-ORG. TAL-INORG.		

COPY

FOR LAB USE ONLY

White: To accompany samples Yellow: Field copy

*See back of form for special instructions.

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

C.O.C.# 80 004

Reference Document No. 325357

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] 11/4/94.

Lab Destination[8]

Lab Contact[9]

Project Contact/Phone[12]

Carrier/Waybill No.[13] 139660/710

Bill to:[5] BAKER ENVIRONMENTAL INC

Report to:[10] MATT BARTMAN

White: To accompany samples

Yellow: Field copy

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]
80-OA-SB05-00	SOIL	11/4/94 0849	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
80-OA-SB05-06	SOIL	11/4/94 0931	G			TCL-ORG. TAL-INORG.		
80-OA-SB06-00	SOIL	11/4/94 1030	G			TCL-ORG TAL-INORG.		
80-OA-SB06-03	SOIL	11/4/94 1103	G			TCL-ORG. TAL-INORG.		
80-OA-SB06-06	SOIL	11/4/94 1130	G			TCL-ORG. TAL-INORG	FOR LAB USE ONLY	
80-MW04-00	SOIL	11/3/94 1431	G			TCL-ORG TAL-INORG.		
80-MW04-06	SOIL	11/3/94 1500	G			TCL-ORG. TAL-INORG.		
80-MW05-00	SOIL	11/4/94 0958	G			TCL-ORG TAL-INORG		

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/Affiliation) Kelly a Monday	Date: 11/4/94 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]

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

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

C.O.C # 80 604.

Reference Document No.[30] 325357

Page 2 of 2.

Project Name CTO-274

Project No. CTO-274

Samples Shipment Date 11/4/94

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.
80-MW05-04	Soil	11/4/94 1022	G			TCL-ORG TAL-INORG.		
80-MW05-06	Soil	11/4/94 1038	G			TCL-ORG. TAL-INORG.	FOR LAB USE ONLY	
80-RS-04	RINSATE - SPLIT SPOON LIQUID	11/4/94 0900	G/P		HCL/HNO3	TCL-ORG TAL-INORG *	HOLD - DO NOT ANALYZE *	
80-TB-04	LIQUID	11/4/94 1430	G		HCL	TCL-ORG. TRIP BLANK		
80-OA-SB04-00	Soil	11/4/94/1315	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
80-OA-SB04-03	Soil	11/4/94/1401	G			TCL-ORGANICS TAL-INORGANICS		
80-OA-SB04-06	Soil	11/4/94/1426	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	

COPY

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*See back of form for special instructions.

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

C.O.C. # 80005

Reference Document No: 325358

Page 1 of 2

Project Name/No.[1] CTO-274 | Samples Shipment Date[7] 11/5/94 | Bill to:[5] BAKER ENVIRONMENTAL

Sample Team Members[2] | Lab Destination[8]

Profit Center No.[3] | Lab Contact[9]

Project Manager[4] MATT BARTMAN | Project Contact/Phone[12] | Report to:[10] MATT BARTMAN

Purchase Order No.[6] | Carrier/Waybill No.[13] 139660721

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]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
80-BB-SB02-00	Soil	11/4/94 1433	G			TCL Organics TAL Inorganics	FOR LAB USE ONLY	
80-BB-SB02-03	Soil	11-4-94 1645	G			TCL Organics TAL Inorganics		
80-BB-SB02-06	Soil	11-4-94 1703	G			TCL Organics TAL Inorganics		
80-MW07-00	Soil	11-4-94 1517	G			TCL Organics TAL Inorganics		
80-MW07-04	Soil	11-4-94 1536	G			TCL Organics TAL Inorganics	FOR LAB USE ONLY	
80-MW07-06	Soil	11-4-94 1556	G			TCL Organics TAL Inorganics		
80-BB-SB03-00	Soil	11-5-94 0845	G			TCL Organics TAL Inorganics		
80-BB-SB03-03	Soil	11-5-94 0916	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 TURN

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

1. Relinquished by[28] (Signature/Affiliation) Linda Johnson	Date: 11-5-94 Time: 1400	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]

MCA 3/15/91

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C.O.C # 80 005

INTERNATIONAL TECHNOLOGY CORPORATION

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

Reference Document No.[30] 325358
Page 2 of 2

Project Name CTO-0274 Project No. CTO-0274 Samples Shipment Date 11-5-94

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.
80-BB-SB03-00	Soil	11-5-94 0944	G			TCL Organics TAL Inorganics		
80-BB-SB01-00	Soil	11-5-94 1036	G			TCL Organics TAL Inorganics		
80-RS-05	Liquid-Rinsate split spoon	11-5-94 0835	G/P		HCL/HNO3	TCL Organics TAL Inorganics		
80-TB-05	Liquid Trip Blank	11-5-94 0800	G		HCL	TCL Organics		
80-BB-SB01-00 LHJ	Soil	11-5-94 1056 LHJ	G			TCL Organics TAL Inorganics		
80-BB-SB03-00 LHJ	Soil	11-5-94 1119	G			TCL Organics TAL Inorganics		
80-MW03-1W-00 LHJ	Soil	11-5-94 1137	G			TCL Organics TAL Inorganics		
80-MW03-1W-00	Soil	11-5-94 1200	G			TCL Organics TAL Inorganics	*MS/MSD provided	
80-MW03-1W-03D	Soil	11-5-94 1200	G			TCL Organics TAL Inorganics		

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*See back of form for special instructions.

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

C.O.C. # 80006

Reference Document No. 325463

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] 139660169 5.

Bill to:[5] BAKER ENVIRONMENTAL INC

Report to:[10] MATT BARTMAN

White: To accompany samples

Yellow: Field copy

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]
80-LA-SB01-00	SOIL	11/5/94 1433	G			TCL-ORGANICS TAL-INORGANICS		
80-LA-SB01-03	SOIL	11/5/94 1452	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
80-LA-SB01-06	SOIL	11/5/94 1515	G			TCL-ORGANICS TAL-INORGANICS		
80-MW06-00	SOIL	11/5/94 1436	G			TCL-ORGANICS TAL-INORGANICS		
80-MW06-03	SOIL	11/5/94 1442	G			TCL-ORGANICS TAL-INORGANICS		
80-MW06-06	SOIL	11/5/94 1509	G			TCL-ORGANICS TAL-INORGANICS	FOR LAB USE ONLY	
80-RS-06	RINSATE: SS. BOWL LIQUID	11/6/94 0900	G/P		HCL/HNO3	TCL-ORGANICS TAL-INORGANICS	* HOLD DON'T ANALYZE	
80-TB-06	LIQUID	11/6/94 0835	G		HCL	TCL-ORGANICS		

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/Affiliation) Kevin Monday	Date: 11/7/94 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]

*See back of form for special instructions.

MCA 3/15/91

C.O.C.# 80 00

INTERNATIONAL TECHNOLOGY CORPORATION

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

Reference Document No.[30] 325463

Page 2 of 2

Project Name CTO 274

Project No. CTO 274

Samples Shipment Date

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]
80-MW03Iw-06	SOIL	11/7/94 0910	G			~~TCL-ORGANICS~~ TCL-ORGANICS ~~TAL~~ TAL-INORGANICS		
80-MB-01	MW0-BLANK	11/7/94 1500	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	
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							FOR LAB USE ONLY	

COPY

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MCA 2/15/91

COC # 80007 Cooler 2

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 325350
Page 1 of 1

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] 11-21-94
Lab Destination[8]
Lab Contact[9]
Project Contact/Phone[12] 13966O1290
Carrier/Waybill No.[13] ~~4300204683~~

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

White: To accompany samples
Yellow: Field copy

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
80-RS-07	Rinsate, bailer Liquid	11-20-94/1120	P,G		HNO_3	TCL-Pest/PCB, TCL-SVOA TCL-Inorganics (Total)	FOR LAB USE ONLY	
80-RSD-07	Rinsate, bailer Liquid	11-20-94/1120	P		HNO_3	TCL-Inorganics (dissolved)		
80-MW04-01	Liquid	11-19-94/1300	P,G		HNO_3	TCL-Pest/PCB, TCL-SVOA TCL-Inorganics (Total)		
80-MW04D-01	Liquid	11-19-94/1300	P		HNO_3	TCL-Inorganics (dissolved)		
80-MW07-01	Liquid	11-19-94/1710	P,G		HNO_3	TCL-Pest/PCB, TCL-SVOA TCL-Inorganics (Total)	FOR LAB USE ONLY	
80-MW07D-01	Liquid	11-19-94/1710	P		HNO_3	TCL-Inorganics (dissolved)		

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/Affiliation) Peter Monday	Date: 11/21/94 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]

*See back of form for special instructions.

MCA 3/15/91

COCH 8000 B COOLER 1

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 390573
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 11-21-94
Lab Destination 8
Lab Contact 9
Project Contact/Phone 12
Carrier/Waybill No. 13 ~~4300204683~~ 1396601290

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

White: To accompany samples
Yellow: Field copy

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
80-RS-07	Rinsate, bailer Liquid	11-20-94/1120	G		HCL	TCL-VOA		
80-MW04-01	Liquid	11-19-94/1300	G		HCL	TCL-VOA		
80-MW07-01	Liquid	11-19-94/1710	G		HCL	TCL-VOA		
80-MW06-01	LiQuiD	11/20/94 1610	G		HCL	TCL-VOA	* NOTE MS/MSD PROVIDED.	
80-MW06-01D	LiQuiD	11/20/94 1610	G		HCL	TCL-VOA		
80-MW05-01	LiQuiD	11/20/94 1140	G		HCL	TCL-VOA		
80-MW03-01	LiQuiD	11/20/94 1240	G		HCL	TCL-VOA		
80-MW01-01	LiQuiD	11/21/94 1045	G		HCL	TCL-VOA		

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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) Peter A Monday	Date: 11/21/94 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

*See back of form for special instructions.

MCA 3/15/91

C.O.C. # 80008 cooler 1

INTERNATIONAL TECHNOLOGY CORPORATION

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

Reference Document No.[30] 390573

Page 2 of 2

Project Name CTO-274

Project No. CTO-274

Samples Shipment Date

ONE CONTAINER PER LINE

Sample Number [14]	Sample Description/Type [15]	Date/Time Collected [16]	Container Type [17]	Sample Volume [18]	Preservative [19]	Requested Testing Program [20]	Condition on Receipt [21]	Disposal Record No. [22]
80-RS-08	LIQUID	11/21/94 1200	G		HCL	TCL-VOA	* HOLD - DO NOT ANALYZE.	
80-MW02-01	LIQUID	11/21/94 1450	G		HCL	TCL-VOA	FOR LAB USE ONLY	
80-TB-07	TRIP BLANK LIQUID	11/21/94 1445	G		HCL	TCL-VOA	FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
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COPY

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*See back of form for special instructions.

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

C.O.C. # 80 00 9 ORDER 3

Reference Document No. 325318

Page 1 of 1

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]

Lab Destination[8]

Lab Contact[9]

Project Contact/Phone[12]

Carrier/Waybill No.[13] 139660290

Bill to:[5] BAKER ENVIRONMENTAL INC.

Report to:[10] MATT BARTMAN

White: To accompany samples

Yellow: Field copy

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
80-MW06-01	LIQUID	11/20/94 1610	G/P		HNO3	TCL-SVOA, PEST/PCBS TAL-TOTAL-METALS	*NOTE MS/MSD PROVIDED	
80-MW06D-01	LIQUID	11/20/94 1610	G/P		HNO3	DISSOLVED METALS.	*NOTE MS/MSD PROVIDED	
80-MW06-01D	LIQUID	11/20/94 1610	G/P		HNO3	TCL-SVOA, PEST/PCBS TAL-TOTAL-METALS		
80-MW06D-01D	LIQUID	11/20/94 1610	P		HNO3	DISSOLVED METALS		
80-MW05-01	LIQUID	11/20/94 1140	G/P		HNO3	TCL-SVOA, PEST/PCB'S TAL-TOTAL-METALS		
80-MW05D-01	LIQUID	11/20/94 1140	P		HNO3	DISSOLVED METALS.		

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)	Date: 11/21/94 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]

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

COC 80010 cop R4

Reference Document No. 325319

Page 1 of 1

White: To accompany samples

Yellow: Field copy

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] 11/21/94

Lab Destination[8]

Lab Contact[9]

Project Contact/Phone[12]

Carrier/Waybill No.[13] 139660290

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]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
80-MW03-01	LIQUID	11/20/94 1240	G/P		HNO3	TCL-SVOA, PEST/PCBS TAL-TOTAL-METALS		
80-MW03D-01	LIQUID	11/20/94 1240	P		HNO3	DISSOLVED METALS		
80-MW01-01	LIQUID	11/21/94 1045	G/P		HNO3	TCL-SVOA, PEST/PCBS TAL-TOTAL-METALS		
80-MW01D-01	LIQUID	11/21/94 1045	P		HNO3	DISSOLVED METALS.		
80-RS-08	RINSATE - EFFOR BAILER LIQUID	11/21/94 1200	G/P		HNO3	TCL-SVOA, PEST/PCBS TAL-TOTAL-METALS	* HOLD "DO NOT ANALYZE"	
80-RSD-08	LIQUID	11/21/94 1200	P		HNO3	DISSOLVED METALS	* HOLD "DO NOT ANALYZE"	
80-MW02-01	LIQUID	11/21/94 1450	G/P		HNO3	TCL-SVOA, PEST/PCBS TAL-TOTAL-METALS		
80-MW02D-01	LIQUID	11/21/94 1450	P		HNO3	DISSOLVED METALS		

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) Teresa Monday	Date: 11/21/94 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]

*See back of form for special instructions.

MCA 3/15/91

C.O.C # 80011 Cooler #1

Reference Document No. 325333

Page 1 of 1

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

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] 12/3/94

Lab Destination[8]

Lab Contact[9]

Project Contact/Phone[12]

Carrier/Waybill No.[13] 139660625.

Bill to:[5] BAKER ENVIRONMENTAL.

Report to:[10] MATT BARTMAN.

White: To accompany samples

Yellow: Field copy

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]
80-MW03IW-01	LIQUID	12/3/94/1230	G/P		HCl/HNO3	TCL-ORGANICS & TAL-TOTAL METALS		
80-MW03IWD-01			P		HNO3	DISSOLVED METALS.	FOR LAB USE ONLY	
80-MW03IW-010			G/P		HCl/HNO3	TCL-ORGANICS TAL-TOTAL METALS		
80-MW03IWD-010			P		HNO3	DISSOLVED 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 _____ (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)	Date: 12/3/94 Time: 1300	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]

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 390395

Page 1 of 3

Project Name/No.[1] 62470-274-000-3500

Sample Team Members SMITH/McDaniel/Zimmerman

Profit Center No.[3]

Project Manager[4] MD BARTMAN

Purchase Order No.[6]

Required Report Date[11]

Samples Shipment Date[7] 6/13/95

Lab Destination[8] Knoxville

Lab Contact[9] JAMIE McKINNEY OR CARLA SMITH GAMBLE

Project Contact/Phone[12] 800-553-1153

Carrier/Waybill No.[13] 4706224880

Bill to:[5]

Report to:[10]

White: To accompany samples

Yellow: Field copy

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
02-MW08-05	SOIL	6/13@0850	AMBER	40z	-	TCL SVOA (STANDARD) PESTICIDES		
03-MW08-00	SOIL	6/13@0855	AMBER	40z	-	TCL SVOA (STANDARD) ONLY		
							FOR LAB USE ONLY	
							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 ☐ SEE COMMENTS

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

1. Relinquished by[28] (Signature/Affiliation) Mark D Smith SEE COMMENTS	Date: 6-13-95 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] STANDARD = 28 DAY TURN

*See back of form for special instructions.

MCA 3/15/91

Quanterra Environmental Services
5815 Middlebrook Pike
Knoxville, Tennessee 37921
(615) 588-6401

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 2939
Page 1 of 4

Project Name/No. [1] K2470-E14-000-03500
Sample Team Members [2] MDS/JEZ / MD
Profit Center No. [3]
Project Manager [4] MD BARTMAN
Purchase Order No. [6]
Required Report Date [11]

Samples Shipment Date [7] 6/14/95
Lab Destination [8] KNOXVILLE, TN
Lab Contact [9] JAMIE MCKINNEY
Project Contact/Phone [12] 800-553-1153
Carrier/Waybill No. [13] 407622477 3

Bill to: [5]
Report to: [10]

White: To accompany samples
Yellow: Field copy

ONE CONTAINER PER LINE

Sample Number [14]	Sample Description/Type [15]	Date/Time Collected [16]	Container Type [17]	Sample Volume [18]	Preservative [19]	Requested Testing Program [20]	Condition on Receipt [21]	Disposal Record No. [22]
80-DPA-SB01-03	SOIL	6/13 @ 1711	1L AMBER	1L	—	TCL PESTICIDE	FOR LAB USE ONLY	
80-DPA-SB01-00	SOIL	6/13 @ 1656	1L AMBER	1L	—	TCL PESTICIDE		
80-DPA-SB02-04	SOIL	6/13 @ 1645			—			
80-DPA-SB02-00	SOIL	6/13 @ 1601			—			
80-DPA-SB03-00	SOIL	6/13 @ 1449			—		FOR LAB USE ONLY	
80-DPA-SB03-04	SOIL	6/13 @ 1507			—			
80-DPA-SB04-04	SOIL	6/13 @ 1807			—			
80-DPA-SB04-00	SOIL	6/13 @ 1758			—			

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 ☐

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

1. Relinquished by [28] (Signature/Affiliation) Michael P Smith	Date: 6-14-95 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] STANDARD 28 DAY TURN

*See back of form for special instructions.

MCA 3/15/91

Quanterra Environmental Services
5815 Middlebrook Pike
Knoxville, Tennessee 37921
(615) 588-6401

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 2940
Page 1/2 of 4

Project Name/No.[1] 62470-274-000-03500
Sample Team Members[2] MDS/JES/MKD
Profit Center No.[3]
Project Manager[4] MD BARTMAN
Purchase Order No.[6]
Required Report Date[11]

Samples Shipment Date[7] 6/14/95
Lab Destination[8] KNOXVILLE, TN
Lab Contact[9] JAMIE McKINNEY
Project Contact/Phone[12] 800-552-1153
Carrier/Waybill No.[13] 407622-4773

Bill to:[5]
Report to:[10]

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
80-DPA-SB08-04	SOIL	6/13 @ 1832	1 LAMBDA	1L	-	TCL PESTICIDE	FOR LAB USE ONLY	
80-DPA-SB08-00	SOIL	6/13 @ 1823						
80-DPA-SB20-00	SOIL	6/14 @ 0823						
80-DPA-SB10-04	SOIL	6/14 @ 0840						
80-DPA-SB13-00	SOIL	6/14 @ 1108					FOR LAB USE ONLY	
80-DPA-SB13-04	SOIL	6/14 @ 1123						
80-DPA-SB17-08	SOIL	6/14 @ 1012						
80-DPA-SB17-00	SOIL	6/14 @ 0955						

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 X Rush ☐

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

1. Relinquished by[28] (Signature/Affiliation) Michael D Smith	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]
STANDARD 28 DAY TURN

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

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

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

Reference Document No.[30] _____
Page 3 of ____

Project Name _____ Project No. _____ Samples Shipment Date _____

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]
03-~~TA~~ DPA-SB50-00	SOIL	6/15 @ 0851	GLASS	2oz	—	TCL VOAS		
03-~~TA~~ DPA-SB50-00	SOIL	6/15 @ 0851	AMBER	4oz	—	TCL SVOAS		
03-~~TA~~ DPA-SB50-04	SOIL	6/15 @ 0904	GLASS	2oz	—	TCL VOAS		
03-~~TA~~ DPA-SB50-04	SOIL	6/15 @ 0904	AMBER	4oz	—	TCL SVOAS		
80-~~TA~~ DPA-SB05-00	SOIL	6/14 @ 1800	AMBER	4oz	—	TCL PESTICIDES		
80-~~TA~~ DPA-SB06-00		6/14 @ 1805						
80-~~TA~~ DPA-SB07-00		6/14 @ 1806						
80-~~TA~~ DPA-SB10-00		6/14 @ 1808						
80-~~TA~~ DPA-SB11-00		6/14 @ 1810						
80-~~TA~~ DPA-SB14-00		6/14 @ 1815						
80-DPA-SB09-00		6/14 @ 1145						
80-DPA-SB09-04		6/14 @ 1156						
80-DPA-SB09-00D		6/14 @ 1145						
80-DPA-SB09-04D		6/14 @ 1156						
80-DPA-SB12-04		6/14 @ 1530						
80-~~TA~~ DPA-SB15-00		6/14 @ 1817						
80-~~TA~~ DPA-SB16-00		6/14 @ 1830						
80-DPA-SB18-00		6/14 @ 1554						
80-DPA-SB18-04		6/14 @ 1603						
80-D -SB19-00		6/14 @ 1820						

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FOR LAB USE ONLY

FOR LAB USE ONLY

FOR LAB USE ONLY

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FOR LAB USE ONLY

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Yellow: Field copy

*See b form for special instructions.

MCA 3/15/91

JUN-16-95 FRI 6:42 AM BAKER ENVIRONMENTAL FAX NO. 3104311720 P. 4

INTERNATIONAL TECHNOLOGY CORPORATION

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

Reference Document No.[30] ________
Page 4 of ____

Project Name ________ Project No. ________ Samples Shipment Date ________

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
80-D/A-SB19-04	SOIL	6/14 @ 1431	AMBER	4oz	—	TCL PESTICIDES		
03-RB12	WATER	6/14 @ 1915	AMBER	1L (2 BOTTLES)		TCL SVOAS	(HOLD) FOR LAB USE ONLY	
03-RB12	WATER	6/14 @ 1915	GLASS VIAL	40ml (2 VIALS)		TCL VOAS	(HOLD)	
80-RB13	WATER	6/14 @ 1920	AMBER	1L (2 BOTTLES)		TCL PESTICIDES	(RUN) FOR LAB USE ONLY	
TB-102	WATER	6/15 @ 2300	GLASS VIAL	40ml (2 VIALS)		TCL VOAS		
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

COPY

White: To accompany sar... Yellow: Field copy *See ...orm for special instructions.

MCA 3/15/91

JUN-16-95 FRI 6:43 AM BAKER ENVIRONMENTAL FAX NO.

Quanterra Environmental Services
5815 Middlebrook Pike
Knoxville, Tennessee 37921
(615) 588-6401

ANALYSIS REUEST AND CHAIN OF CUSTOY RECORD*

Reference Document No. 2946
Page 1 of 1

Project Name/No.[1] 62470-274-000-03500
Samples Shipment Dat[7] 6-19-95
Bill to:[5]

Sample Team Members[2] SMITH
Lab Destinatio[3] KNOXVILLE, TN

Profit Center No.[3] —
Lab Contac[3] JANIE MCKINNEY

Project Manager[4] MDSARTMAN
Project Contact/Phon[12] 1-800-553-1153
Report to:[10]

Purchase Order No.[6]
Carrier/Waybill N[13] 407622 4832

Required Report Date[11]

ONE CONTINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume	Pre-servativ[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
80-RB/6	WATER	6/18 @ 1950	AMBER	2,1L	—	TCL PESTICIDES	(HOLD)	
03-RB/5	WATER	6/18 @ 1940	AMBER	2,1L	—	TCL SVOA	(RUN)	
			VIALS	2,40m	HCL	TCL VOA		
03 RB/7	WATER	6/18 @ 2010	AMBER	2,1L		TCL SVOA	(HOLD)	
			VIALS	2,40m	HCL	TCL VOA	(HOLD)	
03-TA-SB46-00	SOIL	6/18 @ 1445	GLASS	20z	—	TCL VOA		
			AMBER	40z	—	TCL SVOA		
03-TA-SB46-02	SOIL	6/18 @ 1515	GLASS	20z	—	TCL VOA		
			AMBER	40z	—	TCL SVOA		
80-DPA-SB2-00	SOIL	6/18 @ 1640	AMBER	40z	—	TCL PESTICIDE		
TE-104	WATER	6/19 @ 1130	VIALS	2,40	HCL	TCL VOA		

FOR LAB USE ONLY

FOR LAB USE ONLY

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknow ☐

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☐ Archive (mos.)

Turnaround Time Required:[26]
Normal ☒ Rush ☐

QC Level:
I ☐ II ☐ III ☐ Project Specific (specify):

1. Relinquished by[28] (Signature/Affiliation) Michael D. Smith	Date: 6-19-95 Time: 1530	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

JUN 19 95 MON 11:49 AM QUANTERRA ENVIRONMENTAL

MCA 3/15/91

SENT BY:KNOX. LAB 615/588-6401; 7-17-95 ; 11:57 ;QUANTERRA KNOXVILLE → 412 269 2002;# 3/ 4

Quanterra Environmental Services
5815 Middlebrook Pike
Knoxville, Tennessee 37921
(615) 588-6401

COC NO. *0004727*

62470-274-0000-3500

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 2950
Page 1 of 1

Project Name/No. 1
Sample Team Members 2 MDS/MKD
Profit Center No. 3 —
Project Manager 4 MD BARTMAN
Purchase Order No. 6 —
Required Report Date 11 —

Samples Shipment Date 7 7/14/95
Lab Destination 8 KNOXVILLE, TN
Lab Contact 9 JAMIE McKINNEY
Project Contact/Phone 12 MD BARTMAN 800-553-1153
Carrier/Waybill No. 13 1396621905

Bill to: 5 MD BARTMAN
C/O BAKER ENVIRONMENTAL (SRN)
420 ROUSER RD
CORAOPOLIS, PA

Report to: 10 SAME

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Preservative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
3-MW01-01	GROUND WATER	7/13 2020	Vial Amber	2,40ml 2,1L	HCL —	TCL VOA TCL SVOA	Rec'd at 23°C with custody seals intact. BEA 7/17/95	
3-MW03-02	↓	7/13 1700	Vial Amber	2,40ml 2,1L	HCL —	TCL VOA TCL SVOA		
3-MW13-01	↓	7/13 1920	Vial Amber	2,40ml 2,1L	HCL —	TCL VOA TCL SVOA		
3 MD 7/14 ~~80~~-RB20	WATER	7/14 0815	Vial Amber	2,40ml 2,1L	HCL —	TCL VOA TCL SVOA	HOLD	
3-RB21	↓	7/14 ~~MD 945~~ 1100	Vial Amber	2,40ml 2,1L	HCL —	TCL VOA TCL SVOA		
80-RB22	↓	7/14 0745	Amber	2,1L	—	TCL PESTICIDES		
~~80~~-MW08-01 ~~FB-11~~ MDS	GROUND WATER	7/14	Amber	2,1L	—	TCL PESTICIDES		
FB-11	WATER	7/14 0900	Vials	2,40ml	HCL	TCL VOA		
FB-11	↓	↓	AMBER	2,1L	—	TCL SVOA		

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 ☐

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

1. Relinquished by 28 (Signature/Affiliation) MD Smith	Date: 7-14-95 Time: 1200	1. Received by 28 (Signature/Affiliation) Ron Anderson	Date: 7/17/95 Time: 0830
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.

SENT BY:KNOX. LAB 615/588-6401; 7-17-95 ; 11:57 ;QUANTERRA KNOXVILLE → 412 269 2002;# 4/ 4

RFA/COC# 4727 W.O.# 4164 RL# 4122

INTERNATIONAL TECHNOLOGY CORPORATION

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

Reference Document No.[30] 2950
Page 2 of 2

Project Name SITE 3 & 80 Project No. CTO 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.
TB-202	WATER	7/14 1000	Vial	2, 40ml	HCL	TCL VOA	BEA 7/18/95	

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

APPENDIX B.2
INTERNAL TRACKING FORMS

CTO-0274
SITE 80, SOIL BORINGS

		Analysis Requested									Analysis Received												
		organics					Eng. P				organics					Eng. P.							
DATE SHIPPED	SAMPLE ID	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		DATE EXPECTED	DATE REC'D	TURNAROUND TIME	SDG NO.	COMMENTS
11/1/94	80-RS-01	x	x	x	x						x	x	x	x						12/7/94	12/22/94	51	1864	
11/1/94	80-TB-01	x									x									12/7/94	12/22/94	51	1864	
11/1/94	80-LA-SB02-00	x	x	x	x						x	x	x	x						12/7/94	12/22/94	51	1864	
11/1/94	80-LA-SB02-06	x	x	x	x						x	x	x	x						12/7/94	12/22/94	51	1864	
11/1/94	80-LA-SB03-00	x	x	x	x						x	x	x	x						12/7/94	12/22/94	51	1864	
11/1/94	80-LA-SB03-06	x	x	x	x						x	x	x	x						12/7/94	12/22/94	51	1864	
11/1/94	80-LA-SB05-00	x	x	x	x						x	x	x	x						12/7/94	12/22/94	51	1864	
11/1/94	80-LA-SB05-06	x	x	x	x						x	x	x	x						12/7/94	12/22/94	51	1864	
11/1/94	80-MA-SB04-00	x	x	x	x						x	x	x	x						12/7/94	12/22/94	51	1864	
11/1/94	80-MA-SB04-06	x	x	x	x						x	x	x	x						12/7/94	12/22/94	51	1864	
11/2/94	80-MA-SB02-00	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	
11/2/94	80-MA-SB02-06	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	
11/2/94	80-RS-02	x	x	x	x															12/8/94	12/23/94	51	1881	HOLD do not analyze
11/2/94	80-TB-02	x									x									12/8/94	12/23/94	51	1881	
11/2/94	80-LA-SB04-00	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	MS/MSD
11/2/94	80-LA-SB04-00D	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	
11/2/94	80-SM-SB01-00	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	
11/2/94	80-SM-SB02-00	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	
11/2/94	80-SM-SB02-03	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	
11/2/94	80-SM-SB03-00	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	MS/MSD
11/2/94	80-SM-SB03-00D	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	
11/2/94	80-MA-SB01-00	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	MS/MSD
11/2/94	80-MA-SB01-06	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	MS/MSD
11/2/94	80-MA-SB03-00	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	
11/2/94	80-MA-SB03-06	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	
11/2/94	80-MA-SB01-00D	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	
11/2/94	80-MA-SB01-06D	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	
11/2/94	80-LA-SB04-06	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	MS/MSD

CTO-0274
SITE 80, SOIL BORINGS

		Analysis Requested									Analysis Received												
		organics					Eng. P				organics					Eng. P.							
DATE SHIPPED	SAMPLE ID	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		DATE EXPECTED	DATE REC'D	TURNAROUND TIME	SDG NO.	COMMENTS
11/2/94	80-LA-SB04-06D	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	
11/2/94	80-LA-SB06-00	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	
11/2/94	80-LA-SB06-06	x	x	x	x						x	x	x	x						12/8/94	12/23/94	51	1881	
11/3/94	80-LA-SB07-00	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-LA-SB07-06	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-SM-SB04-00	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-SM-SB05-00	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-SM-SB06-00	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-SM-SB06-03	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-SM-SB07-00	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-SM-SB08-00	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-SM-SB09-00	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-SM-SB09-03	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-SM-SB10-00	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-DA-SB02-00	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-DA-SB01-00	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-RS-03	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-TB-03	x									x									12/9/94	12/19/94	46	1896	
11/3/94	80-OA-SB01-00	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	MS/MSD
11/3/94	80-OA-SB01-00D	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-OA-SB01-07	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-OA-SB01-07D	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-OA-SB02-00	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-OA-SB02-07	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	80-OA-SB03-00	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/3/94	08-OA-SB03-06	x	x	x	x						x	x	x	x						12/9/94	12/19/94	46	1896	
11/4/94	80-OA-SB05-00	x	x	x	x						x	x	x	x						12/10/94	12/21/94	47	1905	
11/4/94	80-OA-SB05-06	x	x	x	x						x	x	x	x						12/10/94	12/21/94	47	1905	

CTO-0274
SITE 80, SOIL BORINGS

		Analysis Requested								Analysis Received											
		organics					Eng. P			organics					Eng. P.						
DATE SHIPPED	SAMPLE ID	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	DATE EXPECTED	DATE REC'D	TURNAROUND TIME	SDG NO.	COMMENTS
11/4/94	80-OA-SB06-00	x	x	x	x					x	x	x	x					12/10/94	12/21/94	47	1905	
11/4/94	80-OA-SB06-03	x	x	x	x					x	x	x	x					12/10/94	12/21/94	47	1905	
11/4/94	80-OA-SB06-06	x	x	x	x					x	x	x	x					12/10/94	12/21/94	47	1905	
11/4/94	80-MW04-00	x	x	x	x					x	x	x	x					12/10/94	12/21/94	47	1905	
11/4/94	80-MW04-06	x	x	x	x					x	x	x	x					12/10/94	12/21/94	47	1905	
11/4/94	80-MW05-00	x	x	x	x					x	x	x	x					12/10/94	12/21/94	47	1905	
11/4/94	80-MW05-04	x	x	x	x					x	x	x	x					12/10/94	12/21/94	47	1905	
11/4/94	80-MW05-06	x	x	x	x					x	x	x	x					12/10/94	12/21/94	47	1905	
11/4/94	80-RS-04	x	x	x	x													12/10/94	12/21/94	47	1905	HOLD do not analyze
11/4/94	80-TB04	x								x								12/10/94	12/21/94	47	1905	
11/4/94	80-OA-SB04-00	x	x	x	x					x	x	x	x					12/10/94	12/21/94	47	1905	
11/4/94	80-OA-SB04-03	x	x	x	x					x	x	x	x					12/10/94	12/21/94	47	1905	
11/4/94	80-OA-SB04-06	x	x	x	x					x	x	x	x					12/10/94	12/21/94	47	1905	
11/5/94	80-BB-SB02-00	x	x	x	x					x	x	x	x					12/11/94	12/19/94	44	1908	
11/5/94	80-BB-SB02-03	x	x	x	x					x	x	x	x					12/11/94	12/19/94	44	1908	
11/5/94	80-BB-SB02-06	x	x	x	x					x	x	x	x					12/11/94	12/19/94	44	1908	
11/5/94	80-MW07-00	x	x	x	x					x	x	x	x					12/11/94	12/19/94	44	1908	
11/5/94	80-MW07-04	x	x	x	x					x	x	x	x					12/11/94	12/19/94	44	1908	
11/5/94	80-MW07-06	x	x	x	x					x	x	x	x					12/11/94	12/19/94	44	1908	
11/5/94	80-BB-SB03-00	x	x	x	x					x	x	x	x					12/11/94	12/19/94	44	1908	
11/5/94	80-BB-SB03-03	x	x	x	x					x	x	x	x					12/11/94	12/19/94	44	1908	
11/5/94	80-BB-SB03-06	x	x	x	x					x	x	x	x					12/11/94	12/19/94	44	1908	
11/5/94	80-BB-SB01-00	x	x	x	x					x	x	x	x					12/11/94	12/19/94	44	1908	
11/5/94	80-RS-05	x	x	x	x					x	x	x	x					12/11/94	12/19/94	44	1908	
11/5/94	80-TB-05	x								x								12/11/94	12/19/94	44	1908	
11/5/94	80-BB-SB01-03	x	x	x	x					x	x	x	x					12/11/94	12/19/94	44	1908	
11/5/94	80-BB-SB01-06	x	x	x	x					x	x	x	x					12/11/94	12/19/94	44	1908	
11/5/94	80-MW03IW-00	x	x	x	x					x	x	x	x					12/11/94	12/19/94	44	1908	

CTO-0274
SITE 80, SOIL BORINGS

		Analysis Requested								Analysis Received												
		organics					Eng. P			organics					Eng. P.							
DATE SHIPPED	SAMPLE ID	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	DATE EXPECTED	DATE REC'D	TURNAROUND TIME	SDG NO.	COMMENTS
11/5/94	80-MW03IW-03	x	x	x	x					x	x	x	x					12/11/94	12/19/94	44	1908	MS/MSD
11/5/94	80-MW03IW-03D	x	x	x	x					x	x	x	x					12/11/94	12/19/94	44	1908	
11/7/94	80-LA-SB01-00	x	x	x	x					x	x	x	x					12/13/94	12/30/94	53	1926	
11/7/94	80-LA-SB01-03	x	x	x	x					x	x	x	x					12/13/94	12/30/94	53	1926	
11/7/94	80-LA-SB01-06	x	x	x	x					x	x	x	x					12/13/94	12/30/94	53	1926	
11/7/94	80-MW06-00	x	x	x	x					x	x	x	x					12/13/94	12/30/94	53	1926	
11/7/94	80-MW06-03	x	x	x	x					x	x	x	x					12/13/94	12/30/94	53	1926	
11/7/94	80-MW06-06	x	x	x	x					x	x	x	x					12/13/94	12/30/94	53	1926	
11/7/94	80-RS-06	x	x	x	x													12/13/94	12/30/94	53	1926	HOLD do not analyze
11/7/94	80-TB-06	x								x								12/13/94	12/30/94	53	1926	
11/7/94	80-MW03IW-06	x	x	x	x					x	x	x	x					12/13/94	12/30/94	53	1926	
11/7/94	80-MB-01	x	x	x	x					x	x	x	x					12/13/94	12/30/94	53	1926	mud blank
6/13/95	80-MW08-05			x								x						7/19/95	7/11/95	28	3857; 3861	
6/13/95	80-MW08-00			x								x						7/19/95	7/11/95	28	3857; 3861	
6/14/95	80-DPA-SB08-04			x								x						7/20/95	7/13/95	29	3874	
6/14/95	80-DPA-SB08-00			x								x						7/20/95	7/13/95	29	3874	
6/14/95	80-DPA-SB20-00			x								x						7/20/95	7/13/95	29	3874	
6/14/95	80-DPA-SB20-04			x								x						7/20/95	7/13/95	29	3874	
6/14/95	80-DPA-SB13-00			x								x						7/20/95	7/13/95	29	3874	
6/14/95	80-DPA-SB13-04			x								x						7/20/95	7/13/95	29	3874	
6/14/95	80-DPA-SB17-03			x								x						7/20/95	7/13/95	29	3874	
6/14/95	80-DPA-SB17-00			x								x						7/20/95	7/13/95	29	3874	
6/14/95	80-DPA-SB01-03			x								x						7/20/95	7/13/95	29	3874	
6/14/95	80-DPA-SB01-00			x								x						7/20/95	7/13/95	29	3874	
6/14/95	80-DPA-SB02-04			x								x						7/20/95	7/13/95	29	3874	
6/14/95	80-DPA-SB02-00			x								x						7/20/95	7/13/95	29	3874	
6/14/95	80-DPA-SB03-00			x								x						7/20/95	7/13/95	29	3874	
6/14/95	80-DPA-SB03-04			x								x						7/20/95	7/13/95	29	3874	

CTO-0274
SITE 80, SOIL BORINGS

		Analysis Requested									Analysis Received													
		organics					Eng. P				organics					Eng. P.								
DATE SHIPPED	SAMPLE ID	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		DATE EXPECTED	DATE REC'D	TURNAROUND TIME	SDG NO.	COMMENTS
6/14/95	80-DPA-SB04-04			x									x							7/20/95	7/13/95	29	3874	
6/14/95	80-DPA-SB04-00			x									x							7/20/95	7/13/95	29	3874	
6/15/95	80-DPA-SB05-00			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-DPA-SB06-00			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-DPA-SB07-00			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-DPA-SB10-00			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-DPA-SB11-00			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-DPA-SB14-00			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-DPA-SB09-00			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-DPA-SB09-04			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-DPA-SB09-00D			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-DPA-SB09-04D			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-DPA-SB12-04			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-DPA-SB15-00			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-DPA-SB16-00			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-DPA-SB18-00			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-DPA-SB18-04			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-DPA-SB19-00			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-DPA-SB19-04			x									x							7/21/95	7/14/95	29	3883	
6/15/95	80-RB13			x									x							7/21/95	7/14/95	29	3883	
6/19/95	80-RB16			x																7/25/95	7/18/95	29	3905	on hold
6/19/95	80-DPA-SB12-00			x									x							7/25/95	7/18/95	29	3905	
COUNT		96	90	128	90	0	0	0	0	0	93	87	124	87	0	0	0	0	0					

CTO-0274
SITE 80, MONITORING WELLS

		Analysis Requested									Analysis Received													
		organics					Eng. P				organics					Eng. P.								
DATE SHIPPED	SAMPLE ID	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		DATE EXPECTED	DATE REC'D	TURNAROUND TIME	SDG NO.	COMMENTS
11/21/94	80-MW03-01	x	x	x	x						x	x	x	x						12/27/94	1/5/95	44	2116	
11/21/94	80-MW03D-01					x									x					12/27/94	1/5/95	44	2116	
11/21/94	80-MW01-01	x	x	x	x						x	x	x	x						12/27/94	1/5/95	44	2116	
11/21/94	80-MW01D-01					x									x					12/27/94	1/5/95	44	2116	
11/21/94	80-RS-08	x	x	x	x						x	x	x	x						12/27/94	1/5/95	44	2116	
11/21/94	80-RSD-08					x									x					12/27/94	1/5/95	44	2116	
11/21/94	80-MW02-01	x	x	x	x						x	x	x	x						12/27/94	1/5/95	44	2116	
11/21/94	80-MW02D-01					x									x					12/27/94	1/5/95	44	2116	
11/21/94	80-MW06-01	x	x	x	x						x	x	x	x						12/27/94	1/5/95	44	2116	MS/MSD
11/21/94	80-MW06D-01					x									x					12/27/94	1/5/95	44	2116	MS/MSD
11/21/94	80-MW06-01D	x	x	x	x						x	x	x	x						12/27/94	1/5/95	44	2116	
11/21/94	80-MW06D-01D					x									x					12/27/94	1/5/95	44	2116	
11/21/94	80-MW05-01	x	x	x	x						x	x	x	x						12/27/94	1/5/95	44	2116	
11/21/94	80-MW05D-01					x									x					12/27/94	1/5/95	44	2116	
11/21/94	80-TB-07	x									x									12/27/94	1/5/95	44	2116	
11/21/94	80-RS-07	x	x	x	x						x	x	x	x						12/27/94	1/5/95	44	2116	
11/21/94	80-RSD-07					x									x					12/27/94	1/5/95	44	2116	
11/21/94	80-MW04-01	x	x	x	x						x	x	x	x						12/27/94	1/5/95	44	2116	
11/21/94	80-MW04D-01					x									x					12/27/94	1/5/95	44	2116	
11/21/94	80-MW07-01	x	x	x	x						x	x	x	x						12/27/94	1/5/95	44	2116	
11/21/94	80-MW07D-01					x									x					12/27/94	1/5/95	44	2116	
12/3/94	80-MW03IW-01	x	x	x	x						x	x	x	x						1/8/95	1/11/95	38	2221	
12/3/94	80-MW03IWD-01					x									x					1/8/95	1/11/95	38	2221	
12/3/94	80-MW03IW-01D	x	x	x	x						x	x	x	x						1/8/95	1/11/95	38	2221	
12/3/94	80-MW03IWD-01D					x									x					1/8/95	1/11/95	38	2221	
7/14/95	80-MW08-01			x									x							8/19/95	8/14/95	30	4164	
7/14/95	80-RB22			x									x							8/19/95	8/14/95	30	4164	
COUNT		13	12	14	12	12	0	0	0	0	13	12	14	12	12	0	0	0	0					

APPENDIX C
WELL DEVELOPMENT RECORDS

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc

PROJECT: SITE 80 MCB CAMP LEJEUNE, NC

CTO NO.: 274 WELL NO.: 80-MW01

DATE: 20 NOVEMBER 1994

GEOLOGIST/ENGINEER: MD SMITH

TIME START	1058
TIME FINISH	1405
INITIAL WATER LEVEL (FT)	18.2
TOTAL WELL DEPTH (TD)	25.6
WELL DIAMETER (INCHES)	2"OD
CALCULATED WELL VOLUME	—
BOREHOLE DIAMETER (INCHES)	8"
BOREHOLE VOLUME	19.2 GAL.
AMOUNT OF WATER ADDED DURING DRILLING	—
DEVELOPMENT METHOD	HAND BAIL
PUMP TYPE	—
TOTAL TIME (A)	247 MIN
AVERAGE FLOW (GPM)(B)	0.2
TOTAL ESTIMATED WITHDRAWAL AxB=	60 GAL
HNU/OVA READING	—

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1058	10	4.53	18.0	800	18.0	BROWN, VERY TURBID
1124	15	4.66	18.0	725	18.0	BROWN, VERY TURBID
1148	20	4.60	18.0	800	18.0	BROWN, VERY TURBID
1218	25	4.58	18.0	800	18.0	BROWN, VERY TURBID
1239	30	4.47	18.5	800	18.5	BROWN, VERY TURBID
1258	40	4.59	19.0	800	19.0	BROWN, VERY TURBID
1337	50	4.47	18.5	800	18.5	BROWN, VERY TURBID
1405	60	4.58	18.5	850	18.5	BROWN, VERY TURBID

OBSERVATIONS/NOTES

BOTTOM OF WELL WAS VERY SANDY. EVERY 5-GAL BUCKET EMPTIED HAD 1/2 - 1" OF SAND.

FIELD WELL DEVELOPMENT RECORD

Baker
Baker Environmental, Inc

PROJECT: SITE 80 MCB CAMP LEJEUNE, NC.
CTO NO.: 274 WELL NO.: 80-MW02
DATE: 20 NOVEMBER 1994
GEOLOGIST/ENGINEER: JE ZIMMERMAN / MD SMITH

TIME START	0900
TIME FINISH	1000
INITIAL WATER LEVEL (FT)	13.50
TOTAL WELL DEPTH (TD)	17.82
WELL DIAMETER (INCHES)	2" ID
CALCULATED WELL VOLUME	—
BOREHOLE DIAMETER (INCHES)	8" OD
BOREHOLE VOLUME	11.2 GAL.
AMOUNT OF WATER ADDED DURING DRILLING	—
DEVELOPMENT METHOD	BAILING
PUMP TYPE	—
TOTAL TIME (A)	60 MINS.
AVERAGE FLOW (GPM)(B)	—
TOTAL ESTIMATED WITHDRAWAL AxB=	6 GAL.
HNU/OVA READING	

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
0910	~ 6 *	—	—	—	—	TURBID

OBSERVATIONS/NOTES

* BAILED DRY, SLOW RECHARGE, REDEVELOPMENT ABANDONED.

FIELD WELL DEVELOPMENT RECORD

Baker
Baker Environmental, Inc

PROJECT: SITE 80 MCB CAMP LEJEUNE, NC

CTO NO.: 274 WELL NO.: 80-MW03

DATE: 8 NOVEMBER 1994

GEOLOGIST/ENGINEER: _____

	DEVELOPMENT DATA						
TIME START	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
TIME FINISH							
INITIAL WATER LEVEL (FT)							
TOTAL WELL DEPTH (TD)							
WELL DIAMETER (INCHES)							
CALCULATED WELL VOLUME							
BOREHOLE DIAMETER (INCHES)							
BOREHOLE VOLUME							
AMOUNT OF WATER ADDED DURING DRILLING							
DEVELOPMENT METHOD							
PUMP TYPE							
TOTAL TIME (A)							
AVERAGE FLOW (GPM)(B)							
TOTAL ESTIMATED WITHDRAWAL AxB=							
HNU/OVA READING							

OBSERVATIONS/NOTES

* LITTLE GROUNDWATER IN WELL; BAILED DRY, SLOW RECHARGE; REDEVELOPMENT ABANDONED

FIELD WELL DEVELOPMENT RECORD

Baker
Baker Environmental, Inc

PROJECT: SITE 80 MCB CAMP LEJEUNE, NC
CTO NO.: 274 WELL NO.: 80-MW03IW
DATE: 30 NOVEMBER 1994
GEOLOGIST/ENGINEER: RM LEWIS

TIME START	1105
TIME FINISH	1225
INITIAL WATER LEVEL (FT)	12.92
TOTAL WELL DEPTH (TD)	74.0
WELL DIAMETER (INCHES)	2" ID.
CALCULATED WELL VOLUME	—
BOREHOLE DIAMETER (INCHES)	6" OD
BOREHOLE VOLUME	89.18 gals.
AMOUNT OF WATER ADDED DURING DRILLING	—
DEVELOPMENT METHOD	AIR
PUMP TYPE	—
TOTAL TIME (A)	80 MIN.
AVERAGE FLOW (GPM)(B)	5.75 gpm.
TOTAL ESTIMATED WITHDRAWAL AxB =	460 gals.
HNU/OVA READING	0.4/0.4

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1123	90	8.77	23.6	360	17	TAN, CLOUDY
1139	190	8.41	23.0	350	18	CLOUDY
1156	290	8.49	24.4	350	18	CLEAR
1214	400	8.60	24.1	350	18	CLEAR
1225	460	8.61	22.2	345	18	CLEAR

OBSERVATIONS/NOTES

FIELD WELL DEVELOPMENT RECORD

Baker
Baker Environmental, Inc

PROJECT: SITE 80 MCB CAMP LEJEUNE, NC
CTO NO.: 274 WELL NO.: 80-MW04
DATE: 8 NOVEMBER 1994
GEOLOGIST/ENGINEER: MK DEJOHN / LH JOHNSON

TIME START	1007
TIME FINISH	1042
INITIAL WATER LEVEL (FT)	13.55
TOTAL WELL DEPTH (TD)	29.70
WELL DIAMETER (INCHES)	2" OD
CALCULATED WELL VOLUME	—
BOREHOLE DIAMETER (INCHES)	8"
BOREHOLE VOLUME	42.2 GAL
AMOUNT OF WATER ADDED DURING DRILLING	—
DEVELOPMENT METHOD	PUMPING
PUMP TYPE	CENTRIFIGAL
TOTAL TIME (A)	35 MIN
AVERAGE FLOW (GPM)(B)	6.1
TOTAL ESTIMATED WITHDRAWAL AxB =	215 GAL
(HNU/OVA READING	0.6/0.7

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1008	0	4.61	23.0	179	23.0	BROWN, VERY TURBID
1014	43	4.85	21.3	156	21.3	BROWN, TURBID
1019	65	4.78	20.2	149	20.2	LIGHT BROWN SLIGHTLY TURBID
1023	86	4.72	20.1	143	20.1	BROWN MODERATELY TURBID
1026	108	4.65	20.1	140	20.1	LIGHT BROWN MODERATELY TURBID
1029	129	4.64	20.1	138	20.1	GRAY, SLIGHTLY TURBID
1034	151	4.60	20.7	133	20.7	NEARLY CLEAR
1037	172	4.58	21.0	131	21.0	NEARLY CLEAR
1039	194	4.59	21.0	131	21.0	NEARLY CLEAR
1041	215	4.58	21.0	130	21.0	CLEAR

OBSERVATIONS/NOTES

FIELD WELL DEVELOPMENT RECORD

Baker
Baker Environmental, Inc

PROJECT: SITE 80 MCB CAMP LEJEUNE, NC

CTO NO.: 274 WELL NO.: 80-MW05

DATE: 8 NOVEMBER 1994

GEOLOGIST/ENGINEER: MK DEJOHN / LH JOHNSON

TIME START	0904
TIME FINISH	0940
INITIAL WATER LEVEL (FT)	16.29
TOTAL WELL DEPTH (TD)	29.42
WELL DIAMETER (INCHES)	2" OD
CALCULATED WELL VOLUME	—
BOREHOLE DIAMETER (INCHES)	8"
BOREHOLE VOLUME	34.3 GAL
AMOUNT OF WATER ADDED DURING DRILLING	—
DEVELOPMENT METHOD	PUMPING
PUMP TYPE	CENTRIFIGAL
TOTAL TIME (A)	36 MIN
AVERAGE FLOW (GPM)(B)	4.9
TOTAL ESTIMATED WITHDRAWAL AxB=	175 GAL
(HNU)/OVA READING	0.8/0.8

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
0905	0	6.75	21.0	510	21.0	BROWN, VERY TURBID
0911	35	4.90	18.7	192	18.7	GRAY, SLIGHTLY TURBID
0919	70	4.83	18.6	170	18.6	CLEAR
0921	88	4.79	18.2	165	18.2	CLEAR
0926	105	4.77	18.8	162	18.8	CLEAR
0929	122	4.72	18.7	161	18.7	CLEAR
0932	140	4.70	18.7	160	18.7	CLEAR
0936	158	4.70	18.7	159	18.7	CLEAR
0939	175	4.68	19.0	157	19.0	CLEAR

OBSERVATIONS/NOTES

FIELD WELL DEVELOPMENT RECORD

Baker
Baker Environmental, Inc

PROJECT: SITE 80 MCB CAMP LEJEUNE, NC

CTO NO.: 274 WELL NO.: 80-MW06

DATE: 8 NOVEMBER 1994

GEOLOGIST/ENGINEER: MD SMITH

TIME START	1049
TIME FINISH	1813
INITIAL WATER LEVEL (FT)	17.22
TOTAL WELL DEPTH (TD)	29.64
WELL DIAMETER (INCHES)	2" OD
CALCULATED WELL VOLUME	—
BOREHOLE DIAMETER (INCHES)	8"
BOREHOLE VOLUME	32.4 GAL
AMOUNT OF WATER ADDED DURING DRILLING	—
DEVELOPMENT METHOD	HAND BAIL
PUMP TYPE	—
TOTAL TIME (A)	375 MIN
AVERAGE FLOW (GPM)(B)	0.4
TOTAL ESTIMATED WITHDRAWAL AxB=	132 GAL
(HNU)/OVA READING	2.1/1.1

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
0835	1.5	6.53	17.3	355	17.3	BROWN, VERY TURBID
1145	16.5	5.35	19.4	390	22.0	
1222	26	5.57	18.9	345	21.5	
1519	36	5.70	18.5	300	19.0	
1534	42	5.38	19.2	315	19.0	
1542	47	5.35	19.1	320	19.1	
1552	52	5.27	18.4	310	19.0	
1600	57	5.26	18.3	300	19.0	
1606	62	5.18	18.2	292	18.9	
1618	67	5.09	18.5	290	18.9	
1642	77	4.89	18.1	292	18.2	
1650	82	4.71	18.8	300	19.0	
1702	90	5.07	18.6	298	18.2	
1716	97	5.15	18.4	282	18.0	
1727	104	5.06	18.4	280	18.2	
1738	108	5.09	18.2	275	18.0	

OBSERVATIONS/NOTES

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc

PROJECT: 80-MW06 (CONTINUED)

CTO NO.: 274 WELL NO.:

DATE: 8 NOVEMBER 1994

GEOLOGIST/ENGINEER: MD SMITH

	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
TIME START	1750	113	4.90	18.5	300	18.0	
TIME FINISH	1758	123	5.20	18.1	290	18.2	
INITIAL WATER LEVEL (FT)	1813	132	5.16	18.2	298	18.0	
TOTAL WELL DEPTH (TD)							
WELL DIAMETER (INCHES)							
CALCULATED WELL VOLUME							
BOREHOLE DIAMETER (INCHES)							
BOREHOLE VOLUME							
AMOUNT OF WATER ADDED DURING DRILLING							
DEVELOPMENT METHOD							
PUMP TYPE							
TOTAL TIME (A)							
AVERAGE FLOW (GPM)(B)							
TOTAL ESTIMATED WITHDRAWAL AxB=							
HNU/OVA READING							

OBSERVATIONS/NOTES

WATER REMAINED TURBID THROUGHOUT DEVELOPMENT, BUT WAS IMPROVED OVER INITIAL OBSERVATIONS.

FIELD WELL DEVELOPMENT RECORD

Baker
Baker Environmental, Inc

PROJECT: SITE 80 MCB CAMP LEJEUNE, NC
CTO NO.: 274 WELL NO.: 80-MW07
DATE: 8 NOVEMBER 1994
GEOLOGIST/ENGINEER: MK DEJOHN / LH JOHNSON

TIME START	1110
TIME FINISH	1216
INITIAL WATER LEVEL (FT)	15.66
TOTAL WELL DEPTH (TD)	30.38
WELL DIAMETER (INCHES)	2"OD
CALCULATED WELL VOLUME	—
BOREHOLE DIAMETER (INCHES)	8"
BOREHOLE VOLUME	38.4
AMOUNT OF WATER ADDED DURING DRILLING	—
DEVELOPMENT METHOD	PUMPING
PUMP TYPE	CENTRIFIGAL
TOTAL TIME (A)	53 MIN
AVERAGE FLOW (GPM)(B)	3.8
TOTAL ESTIMATED WITHDRAWAL AxB=	200 GAL
HNU/OVA READING	0.9/0.9

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1111	0	5.35	21.0	221	21.0	BROWN, VERY TURBID
1118	20	5.25	20.0	279	20.0	LIGHT BROWN, TURBID
1126	40	5.19	20.0	220	20.0	BROWN, TURBID
1133	60	4.99	20.0	189	20.0	LIGHT GRAY SLIGHTLY TURBID
1139	80	4.88	20.0	180	20.0	CLEAR
1147	100	5.07	20.0	170	20.0	CLEAR
1155	120	4.88	20.0	170	20.0	CLEAR
1201	140	4.98	20.0	169	20.0	CLEAR
1209	160	4.85	19.5	160	19.5	GRAY, SLIGHTLY TURBID
1211	180	4.82	19.5	160	19.5	NEARLY CLEAR
1215	200	4.81	19.0	160	19.0	CLEAR

OBSERVATIONS/NOTES

3-MIN DOWNTIME TO REFUEL PUMP (1202-1205)

FIELD WELL DEVELOPMENT RECORD

Baker Environmental, Inc

PROJECT: SITE 80 – MCB CAMP LEJEUNE, NC

CTO NO.: 274 WELL NO.: 80-MW08

DATE: 16 JUNE 1995

GEOLOGIST/ENGINEER: M. K. DeJOHN

TIME START	1349
TIME FINISH	1647
INITIAL WATER LEVEL (FT)	13.43
TOTAL WELL DEPTH (TD)	27.20
WELL DIAMETER (INCHES)	2" I.D.
CALCULATED WELL VOLUME	2.25 GAL.
BOREHOLE DIAMETER (INCHES)	6" OD
BOREHOLE VOLUME	20.2 GAL.
AMOUNT OF WATER ADDED DURING DRILLING	—
DEVELOPMENT METHOD	PUMPING
PUMP TYPE	WATTERA
TOTAL TIME (A)	178 MIN.
AVERAGE FLOW (GPM)(B)	0.22 GPM
TOTAL ESTIMATED WITHDRAWAL AxB=	40 GAL.
HNU/OVA READING	—

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1349	2.5	4.60	25.4	321	24.9	BROWN, VERY TURBID, OPAQUE
1359	5	5.13	28.5	315	28.6	— SAME —
1422	10	5.42	29.0	274	29.2	BROWN, TURBID, TRANSLUCENT
1433	12.5	5.50	29.5	263	29.9	LT. BROWN, TURBID
1445	15	5.52	28.0	254	29.4	BROWN, SLIGHTLY TURBID
1458	17.5	5.61	29.5	238	30.0	CLOUDY
1510	20	5.63	29.2	245	30.3	— SAME —
1523	22.5	5.64	29.1	233	30.3	— SAME —
1534	25	5.71	29.1	232	30.0	— SAME —
1547	27.5	5.69	29.1	225	30.3	— SAME —
1558	30	5.73	29.0	227	30.1	— SAME —
1610	32.5	5.74	29.1	229	30.1	— SAME —
1622	35	5.76	28.8	225	30.3	— SAME —
1635	37.5	5.74	28.8	222	30.0	— SAME —
1647	40	5.78	28.4	218	30.1	— SAME

OBSERVATIONS/NOTES

APPENDIX D
IDW SUMMARY

APPENDIX D.1
IDW LETTER REPORT

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

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

January 19, 1995

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

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.

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 where 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).

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 backgroumd 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.

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

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

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		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	U
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)		

EPA SAMPLE NO.

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)

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

Number TICs found: 1

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

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

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: ____

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

EPA SAMPLE NO.

1C

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:

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

00049
EPA SAMPLE NO.

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

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

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

16TK01

Lab Name: ITAS_KNOXVILLE_____ Contract: BAKER/LEJE SDG No.: N/A___
Lab Code: ITSTU_ Case No.: 2220_ SAS No.: _____ Lab Sample ID: AD2053
Matrix (soil/water): WATER Date Received: 12/05/94
Level (low/med): LOW__
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2160			P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	25.7	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	8350			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	1620			P
7439-92-1	Lead	3.0	U		P
7439-95-4	Magnesium	1560	B		P
7439-96-5	Manganese	19.0			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	1750	B		P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	8630			P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	10.0	U		P
7440-66-6	Zinc	52.2			P

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: N/A___
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

00009
EPA SAMPLE NO.

1A
VOLATILE 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: 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

CAS NO.	COMPOUND		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)		

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

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

00044
EPA SAMPLE NO.

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

CAS NO.	COMPOUND		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

* 00046
EPA SAMPLE NO.

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	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	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.50	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.10	U
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

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

7TK01

Contract: BAKER/LEJE

Lab Name: ITAS_KNOXVILLE_____ Case No.: 2220_ SAS No.: _____ SDG No.: N/A___

Lab Code: ITSTU_ Lab Sample ID: AD2058

Matrix (soil/water): WATER Date Received: 12/05/94

Level (low/med): LOW__

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1130			P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	23.5	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	14400			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	392			P
7439-92-1	Lead	3.0	U		P
7439-95-4	Magnesium	2380	B		P
7439-96-5	Manganese	7.6	B		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	2070	B		P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	19300			P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	10.0	U		P
7440-66-6	Zinc	61.1			P

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: N/A___

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

_____

_____

_____

_____

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)

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

CAS NO.	COMPOUND		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	2	J
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)		

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)

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

Number TICs found: 3

	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)

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

CAS NO.	COMPOUND		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	5	DJ
591-78-6	2-Hexanone	5	DJ
127-18-4	Tetrachloroethene	50	U
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: ____

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

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		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

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	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	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.50	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.10	U
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

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

80TK01

Lab Name: ITAS_KNOXVILLE_____ Contract: BAKER/LEJE

Lab Code: ITSTU_ Case No.: 2227_ SAS No.: _____ SDG No.: N/A___

Matrix (soil/water): WATER Lab Sample ID: AD2153

Level (low/med): LOW__ Date Received: 09/12/93

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	422			P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	27.7	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	44100			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	10.0	U		P
7439-89-6	Iron	344			P
7439-92-1	Lead	3.0	U		P
7439-95-4	Magnesium	3160	B		P
7439-96-5	Manganese	39.0			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	1640	B		P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	22200			P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	10.0	U		P
7440-66-6	Zinc	31.9			P

Color Before: ORANGE Clarity Before: CLOUDY Texture: N/A

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

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: (ug/L or ug/Kg) UG/L	Q
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~~ 1	U J

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

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)

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

CAS NO.	COMPOUND		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

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	100	E

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

CAS NO.	COMPOUND		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	E
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

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

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		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

Rms 12/1-/94

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

3TK01

Lab Name: ITAS-KNOXVILLE Contract: _____

Lab Code: _____ Case No.: WO2227 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

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

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

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

3TK01

Lab Name: ITAS KNOXVILLE Contract: BAKER/LEJE SDG No.: N/A

Lab Code: ITSTU Case No.: 2227 SAS No.: Lab Sample ID: AD2147

Matrix (soil/water): WATER Date Received: 09/12/93

Level (low/med): LOW

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	98100			P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	36.3			P
7440-39-3	Barium	534			P
7440-41-7	Beryllium	7.5			P
7440-43-9	Cadmium	10.8			P
7440-70-2	Calcium	362000			P
7440-47-3	Chromium	220			P
7440-48-4	Cobalt	23.7	B		P
7440-50-8	Copper	286			P
7439-89-6	Iron	72700			P
7439-92-1	Lead	72.0			P
7439-95-4	Magnesium	12800			P
7439-96-5	Manganese	650			P
7439-97-6	Mercury	0.46			CV
7440-02-0	Nickel	67.6			P
7440-09-7	Potassium	7540			P
7782-49-2	Selenium	9.7			P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	17500			P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	165			P
7440-66-6	Zinc	587			P

Color Before: ORANGE Clarity Before: CLOUDY Texture: N/A

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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
chlordane	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

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.

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

3RB01T

Lab Name: ITAS_KNOXVILLE_____ Contract: BAKER/LEJE

Lab Code: ITSTU_ Case No.: 2220T_ SAS No.: _____ SDG No.: N/A___

Matrix (soil/water): WATER Lab Sample ID: AD2065

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

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	200	U		P
7440-39-3	Barium	538			P
7440-43-9	Cadmium	50.0	U		P
7440-47-3	Chromium	100	U		P
7439-92-1	Lead	200	U		P
7439-97-6	Mercury	2.0	U		CV
7782-49-2	Selenium	200	U		P
7440-22-4	Silver	50.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: N/A___

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
T_IN_THE_SAMPLE_NO._DESIGNATES_TCLP_EXTRACT._____

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.

Quanterra
Environmental Services

General Chemistry Analysis

CCO 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.

QUANTEI PITTSBURGH

BY: WAH 12-14-94

ANALYSIS SUMMARY
FOR OPEN CUP IGNITABILITY
Page 1 of 1

Method: ITS001
Reviewed by: Aw
Date: 12/14/94

Project Name: IT MIDDLEBROOK
Project Number: PC4620
Work Order No.: Q4-12-110 Q4-12-141
Case/SDG Number: ——

Date Analyzed	Laboratory Sample ID	Client Sample ID	Results
12-13-94	Q41211001	N/A	>140°F
	Q41211001 Dup		>140°F
	Q41214101		>140°F
	Q41214101 Dup		>140°F

C:05A

ITS001 Method-Placing Sample in Tare with a Thermometer and Heating to 140°F to see if Ignition occurs.

IAS P1/02-93/0028/Ignit.tbl

pH ANALYSIS

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)

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

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		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	Dibromochloromethane	480	DJ
79-00-5	1,1,2-Trichloroethane	2500	U
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)		

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:

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

CAS NO.	COMPOUND		Q
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:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	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.: WO2227 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

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

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

74DRM01

Lab Name: ITAS_KNOXVILLE_____ Contract: BAKER/LEJE

Lab Code: ITSTU_ Case No.: 2227_ SAS No.: _____ SDG No.: N/A___

Matrix (soil/water): WATER

Level (low/med): LOW__

% Solids: __0.0

Lab Sample ID: AD2150

Date Received: 09/12/93

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	24500	_		P_
7440-36-0	Antimony_	50.0	U		P_
7440-38-2	Arsenic__	10.0	U		P_
7440-39-3	Barium___	57.4	B		P_
7440-41-7	Beryllium	1.0	U		P_
7440-43-9	Cadmium__	5.0	U		P_
7440-70-2	Calcium__	12600	_		P_
7440-47-3	Chromium_	51.4	_		P_
7440-48-4	Cobalt___	10.0	U		P_
7440-50-8	Copper___	18.7	B		P_
7439-89-6	Iron____	49600	_		P_
7439-92-1	Lead____	29.9	_		P_
7439-95-4	Magnesium	1540	B		P_
7439-96-5	Manganese	292	_		P_
7439-97-6	Mercury__	0.20	U		CV
7440-02-0	Nickel___	29.5	B		P_
7440-09-7	Potassium	16500	_		P_
7782-49-2	Selenium_	9.2	_		P_
7440-22-4	Silver___	5.0	U		P_
7440-23-5	Sodium___	39400	_		P_
7440-28-0	Thallium_	10.0	U		P_
7440-62-2	Vanadium_	34.2	B		P_
7440-66-6	Zinc____	1390	_		P_

Color Before: ORANGE___ Clarity Before: CLOUDY Texture: N/A___

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

_____

_____

_____

_____

APPENDIX D.2
SUMMARY OF IDW DISPOSITION REPORT

Baker

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

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

February 20, 1995

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 inwhich 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.

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
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

NORTH CAROLINA HAZARDOUS WASTE MANIFEST

Please print or type. *(Form designed for use on elite (12-pitch) typewriter.)*

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N C 6 1 7 0 0 2 2 5 8 0 1 — Manifest Document No.: 1 1 0 0 8

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number:

B. State Generator's ID:

3. Generator's Name and Mailing Address
Commanding General AC/EMD/IR
Marine Corp Base - Camp Lejeune PSC 2004
Camp Lejeune, NC 28542-004

4. Generator's Phone (910) 451-5068

C. State Transporter's ID:

5. Transporter 1 Company Name: Four Seasons Environmental, Inc.

6. US EPA ID Number: N C D 9 9 1 2 7 7 7 3 2

D. Transporter's Phone: (910)273-2718

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address
Ecoflo, Inc.
2750 Patterson St.
Greensboro, NC 27407

10. US EPA ID Number: N C D 9 8 0 8 4 2 1 3 2

G. State Facility's ID:

H. Facility's Phone: (910)855-7925

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. Waste, Flammable Liquids, n.o.s. (methanol), 3, UN 1993, PG II	002	DF	00044	P	F003, D001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a) Lab Pack - See attached container inventories for container numbers MCB-01 and MCB-02

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Bill to : FSE PO Box 16590 Greensboro, NC 27416
Attn: K. Webb
24 Hour Emergency Phone: (910)273-2718
HAZ MAT Guide Number: 27

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment: OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR — Printed/Typed Name: Eugene H Jones — Signature: Eugene H Jones — Month Day Year: 10 2 03 95

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials — Printed/Typed Name: Kenneth Webb — Signature: Kenneth — Month Day Year: 10 2 03 95

18. Transporter 2 Acknowledgement of Receipt of Materials — Printed/Typed Name: — Signature: — Month Day Year:

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator. Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. — Printed/Typed Name: — Signature: — Month Day Year:

EPA Form 8700-22 (Rev. 11-88) Previous editions are obsolete.

INSTRUCTIONS ON BACK SHEET

ECOFLO

Specialists in chemical and environmental management

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
2) Mailing Address: Marine Corp Base - Camp Lejeune TSC 2004 Camp Lejeune, NC 28542-0004
3) Facility Address: Lot 203 - MCB Camp Lejeune Camp Lejeune, NC 28542
4) Technical Contact: Kenn Webb
5) Title: Four Seasons Project Mgr
6) Phone: (704) 332-7636 Ext.
7) FAX Num.: (704) 332-7436
8) EPA I.D.#: NC 6170022580

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 (CC): ☐ < 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 0 Cl ☐ I ☐ F ☐ Br ☐
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)

Lab Pack	100 %		
See Drum Inventory Attached			

IF UNUSED/VIRGIN MATERIAL PLEASE SUBMIT MSDS

SECTION E: SAFETY DATA

1) HAZARD ALERT SYMBOL
[2] HEALTH
[3] FLAMMABILITY
[1] REACTIVITY

2) RATED TOXICITY:
[2] Ingestion
[2] Inhalation
[1] 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 or ☒ Fiber Box ☐ Cylinder

SECTION H: SHIPPING INFORMATION SECTION (To Be Completed by W.A. Dept.)

PSN: _____
CLASS/DIV.: _____ UN/NA#: _____ PG: _____ Unspecified Labels: _____
RQ: _____ PIH (Yes/No) HAZARD ZONE: _____

SECTION I: CERTIFICATION

I HEREBY CERTIFY THAT THE ABOVE DESCRIBED MATERIAL IS NONRADIOACTIVE AND NONETIOLOGICAL/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 CORRECTION[illegible]NG CONSISTENT WITH THE RESULTS OF SAMPLE CHARACTERIZATION, AND/OR REGULATORY REQUIREMENTS. I UNDERSTAND THAT A CO[illegible]ED COPY WILL BE SENT TO ME.

AUTHORIZED SIGNATURE

Biological Science Tech 2/3/99
TITLE DATE

ORIGINAL

ECOFLO LAND DISPOSAL RESTRICTIONS NOTIFICATION AND CERTIFICATION FORM

Generator Name: MCB - Camp Lejeune

Manifest Doc. No.: N I1008

Generator USEPA ID No. NC6170022580

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 th appropriate California List constituent in Table - 2. In Coulmn 4, enter the appropriate Subcategory Key # from Table - 4, if applicable, and also ente "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 Colum 5, reference the appropriate Waste Management paragraph(s) from Table - 3 of this form. In Column 6, enter the Reference Number or Numbers fror Table - 1 for all regulated constituents associated with F001-F005, F039, D001, D002 and D012-D043. Also, if the waste is a debris, enter i 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 H Jones

Title: Biological Science Tech

Print Name: Eugene H 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: _____ 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-Nitrosomethylethylamine	189	1,1,1-Trichloroethane
120	Hexachlorodibenzo-p-dioxins	155	N-Nitrosomorpholine	190	1,1,2-Trichloroethane
121	Hexachlorocyclopentadiene	156	N-Nitrosopiperidine	191	Trichloroethylene
122	Hexachloroethane	157	N-Nitrosopyrrolidine	192	Trichloromonofluoromethane
123	Hexachloropropylene	158	Parathion	193	2,4,5-Trichlorophenol
124	Indeno (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-trifluoroethane
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	Methapyrilene	167	Phenol	202	Barium
133	Methoxychlor	168	Phorate	203	Beryllium
134	3-Methylcholanthrene	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	Propanenitrile (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 - NWW from Retort
141	Methyl parathion	176	Silvex (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	Chlorobenzilate	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-Acetylaminofluorene	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	Aramite	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	Benzal 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	66	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	Buthyl benzyl phthalate	72	p-Dichlorobenzene	110	Ethyl methacrylate
35	2-sec-Butyl-4,6-dinitrophenol(Dinosob)	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 is 40 CFR Part 268 Subpart D and all applicable prohibitions set forth on 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 268.4 I am aware that there are significant penalties for making a false certification, including the possibility of fine a 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	Waster reactives
	10	Reactive cyanides.
D006	11	Cadmium.
	12	Cadmium containing batteries.
D008	13	Lead.
	14	Lead acid batteries.
D009	15	High mercury NWW's ≥ 260 ppm with organics (and are not incinerator residues).
	16	High mercury NWW's ≥ 260 ppm with inorganics (including incinerator residues and residues from RMERC).
	17	Low mercury NWW's ≤ 260 ppm.
	18	All D009 WW's
F003 F005	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 ≥ 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 ≥ 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 ≥ 260 ppm total mercury.
	44	Nonwastewaters from RMERC residues containing ≤ 260 ppm total mercury.
	45	Nonwastewaters from incinerator residues containing ≤ 260 ppm total mercury.
	46	All P092 wastewaters.
U151	47	Nonwastewaters containing ≥ 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.

ECOFLO

DRUM INVENTORY

JOB# 95- ACCEPT. CODE

DRUM# MCB-02 HANDLING CODE

E-CODE

GENERATOR Marine Corp Base - Camp Lejeune DATE 1/24/95 MANIFEST# I1008

PROPER SHIPPING NAME Waste, Flammable Liquids, nos. (Methanol) UN/NA# UN1993

HAZARD CLASS Class 3, PG II DRUM TYPE (5-gal DA) ~~DM~~ SHIPPING WT./CU. FT.

QUANTITY	SUBSTANCE	EPA CODE	PHYS. STATE	CONT. TYPE	COMMENTS
~~5 x 1 Liter~~	Methyl alcohol with water	F003	Liquid	glass	
4 x 1 Liter		D001	"	"	

ECOFLO

DRUM INVENTORY

PAGE 1 OF 1

JOB# 95- ACCEPT. CODE

DRUM# MCB-01 HANDLING CODE

E-CODE

GENERATOR Marine Corp Base - Camp Lejeune DATE 1/24/95 MANIFEST# I1008

PROPER SHIPPING NAME Waste, Flammable Liquids, nos. (Methanol) UN/NA# UN 1993

HAZARD CLASS Class 3, PG II DRUM TYPE (DA) ~~DM~~ 5 gal SHIPPING WT./CU. FT.

QUANTITY	SUBSTANCE	EPA CODE	PHYS. STATE	CONT. TYPE	COMMENTS
~~5 x 1 Liter~~	Methyl Alcohol with Water	F003	Liquid	glass	
4 x 1 Liter		D001		"	
1 x 1/2 Liter					

PACKER Webb REVIEWER

APPENDIX E
AQUIFER CHARACTERIZATION DATA

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A Q T E S O L V

A Program for Automatic Estimation of Aquifer Coefficients From Aquifer Test Data

By:

Glenn M. Duffield
and
James O. Rumbaugh, III

Geraghty & Miller Modeling Group
1895 Preston White Drive, Suite 301
Reston, VA 22091

(703) 476 - 0335

A Q T E S O L V is a user-friendly program designed to analyze data from aquifer tests automatically. Aquifer coefficients for a variety of aquifer test conditions can be estimated by A Q T E S O L V , including the following:

- confined aquifers, unconfined aquifers, and leaky aquifers
- pumping tests, injection tests, recovery tests, and slug tests

Features:

- Interactive, menu-driven program design
- Nonlinear least-squares estimation of aquifer coefficients
- Statistical analysis of results
- Complete graphical display of results

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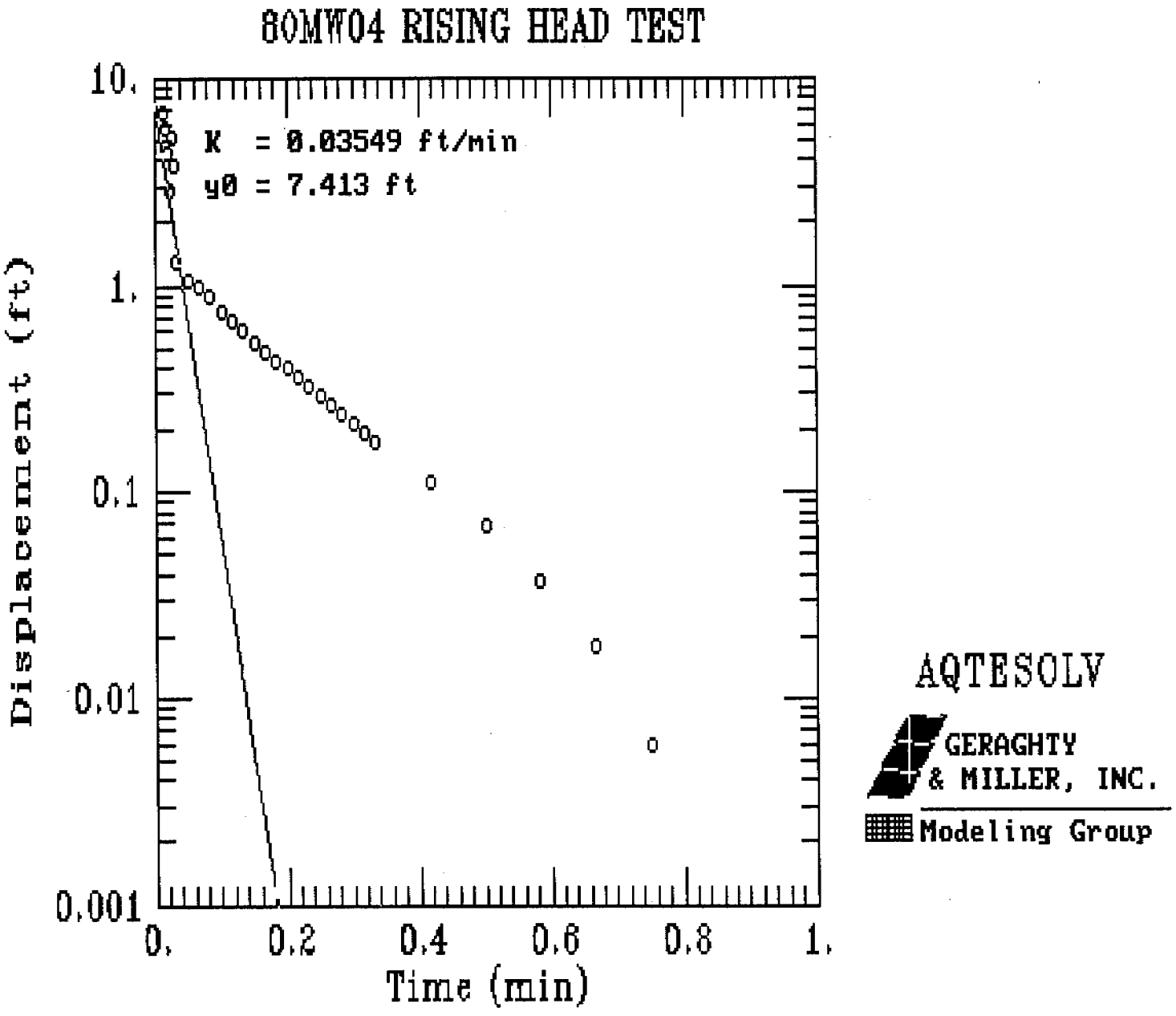
80MW04 RISING HEAD TEST
K = 0.03549 ft/min
y0 = 7.413 ft
Displacement (ft)
10.
1.
0.1
0.01
0.001
0.
0.2
0.4
0.6
0.8
1.
Time (min)
AQTESOLV
GERAGHTY
& MILLER, INC.
Modeling Group

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A Q T E S O L V   R E S U L T S
Version 1.10

03/06/95 12:46:51

TEST DESCRIPTION

Data set........... B:80MW04R.DAT
Data set title..... 80MW04 RISING HEAD TEST

Knowns and Constants:
- No. of data points.................. 30
- Radius of well casing............... 0.083
- Radius of well...................... 0.25
- Aquifer saturated thickness......... 16.4
- Well screen length.................. 15
- Static height of water in well...... 16.4
- Log(Re/Rw)........................... 3.197
- 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 =	3.2835E-002	+/-	4.9496E-003
y0 =	1.1757E+001	+/-	1.6854E+000

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
- Number of residuals............... 30
- Number of estimated parameters.... 2
- Degrees of freedom................ 28
- Residual mean..................... 0.2103
- Residual standard deviation....... 0.5907
- Residual variance................. 0.3489

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0133	6.884	6.4862	0.3978	1
0.0166	5.74	5.5963	0.14374	1
0.02	4.301	4.8069	-0.50587	1
0.0233	2.874	4.1473	-1.2733	1
0.0266	5.106	3.5783	1.5277	1

0.03	3.786	3.0736	0.71244	1
0.0333	1.289	2.6519	-1.3629	1
0.05	1.05	1.2566	-0.20661	1
0.0666	0.981	0.59813	0.38287	1
0.0833	0.874	0.28343	0.59057	1
0.1	0.755	0.13431	0.62069	1
0.1166	0.666	0.063928	0.60207	1
0.1333	0.597	0.030293	0.56671	1
0.15	0.534	0.014355	0.51965	1
0.1666	0.478	0.0068327	0.47117	1
0.1833	0.434	0.0032377	0.43076	1
0.2	0.396	0.0015342	0.39447	1
0.2166	0.358	0.00073028	0.35727	1
0.2333	0.32	0.00034605	0.31965	1
0.25	0.289	0.00016398	0.28884	1
0.2666	0.264	7.8053E-005	0.26392	1
0.2833	0.239	3.6986E-005	0.23896	1
0.3	0.214	1.7526E-005	0.21398	1
0.3166	0.195	8.3423E-006	0.19499	1
0.3333	0.176	3.9531E-006	0.176	1
0.4166	0.113	9.5297E-008	0.113	1
0.5	0.069	2.2871E-009	0.069	1
0.5833	0.037	5.5135E-011	0.037	1
0.6666	0.018	1.3291E-012	0.018	1
0.75	0.006	3.1899E-014	0.006	1

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

```
        Estimate
 K  =   3.1359E-002
 y0 =   5.1179E+000
```

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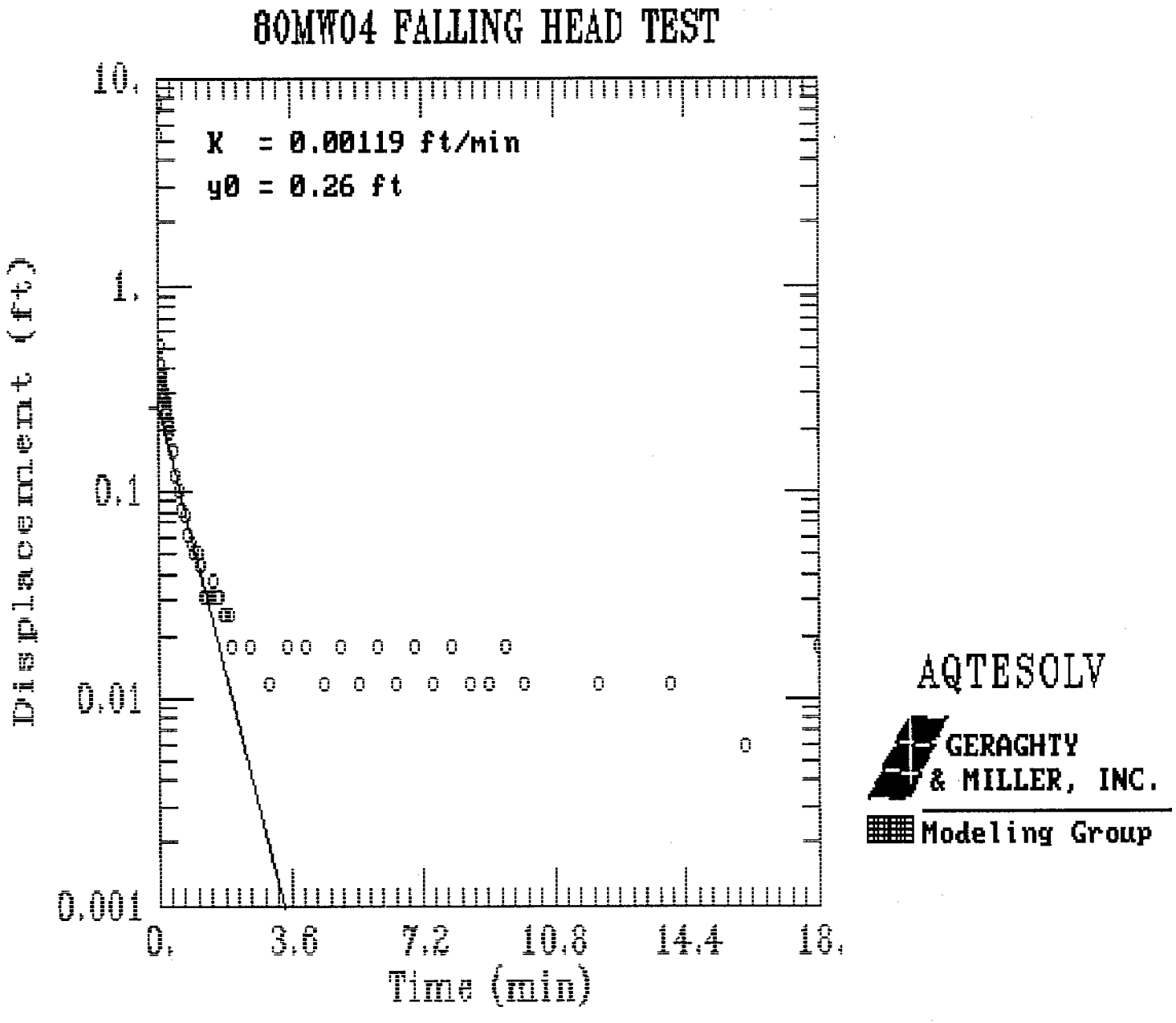
80MW04 FALLING HEAD TEST
K = 0.00119 ft/min
y0 = 0.26 ft
Displacement (ft)
10.
1.
0.1
0.01
0.001
0.
3.6
7.2
10.8
14.4
18.
Time (min)
AQTESOLV
GERAGHTY & MILLER, INC.
Modeling Group

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A Q T E S O L V   R E S U L T S

Version 1.10

03/07/95 05:58:50

TEST DESCRIPTION

Data set........... B:80MW04F.DAT
Data set title..... 80MW04 FALLING HEAD TEST

Knowns and Constants:
- No. of data points.................. 60
- Radius of well casing............... 0.083
- Radius of well...................... 0.25
- Aquifer saturated thickness......... 16.4
- Well screen length.................. 15
- Static height of water in well...... 16.4
- Log(Re/Rw).......................... 3.197
- 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 =	4.2040E-002	+/-	2.7804E-003
y0 =	3.6991E+001	+/-	4.1140E+000

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
- Number of residuals............... 60
- Number of estimated parameters.... 2
- Degrees of freedom................ 58
- Residual mean..................... 0.08801
- Residual standard deviation....... 0.1768
- Residual variance................. 0.03127

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0266	7.784	8.0658	-0.28182	1
0.03	7.21	6.639	0.571	1
0.0333	5.251	5.496	-0.24497	1
0.0666	0.509	0.81657	-0.30757	1
0.0833	0.377	0.31385	0.063147	1

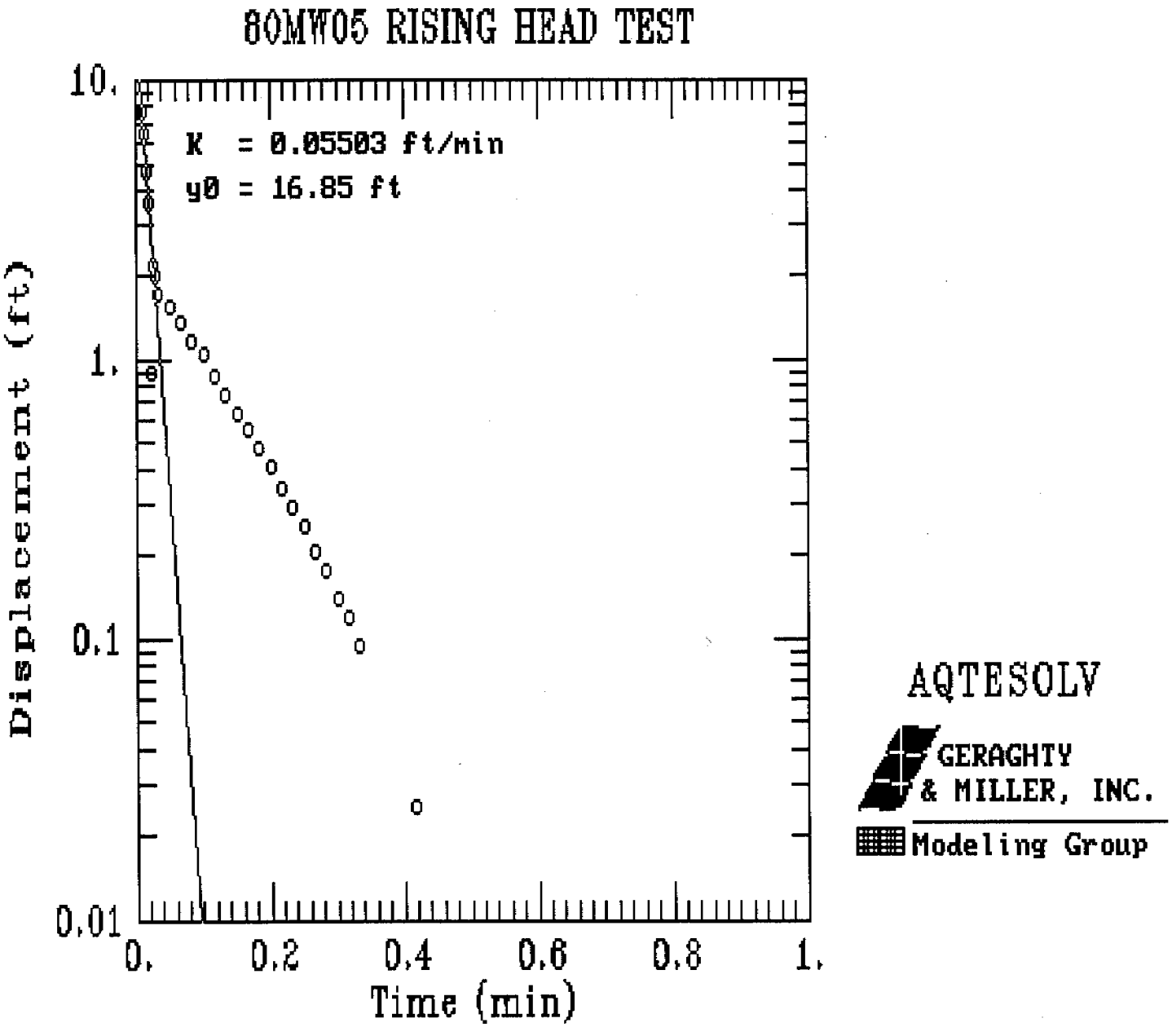
0.1	0.409	0.12063	0.28837	1
0.1166	0.377	0.046631	0.33037	1
0.1333	0.358	0.017923	0.34008	1
0.15	0.339	0.0068888	0.33211	1
0.1666	0.333	0.0026629	0.33034	1
0.1833	0.308	0.0010235	0.30698	1
0.2	0.295	0.00039339	0.29461	1
0.2166	0.283	0.00015207	0.28285	1
0.2333	0.27	5.8449E-005	0.26994	1
0.25	0.251	2.2465E-005	0.25098	1
0.2666	0.239	8.6841E-006	0.23899	1
0.2833	0.226	3.3378E-006	0.226	1
0.3	0.22	1.2829E-006	0.22	1
0.3166	0.207	4.9591E-007	0.207	1
0.3333	0.195	1.9061E-007	0.195	1
0.4166	0.157	1.6172E-009	0.157	1
0.5	0.119	1.3643E-011	0.119	1
0.5833	0.1	1.1576E-013	0.1	1
0.6666	0.081	9.8216E-016	0.081	1
0.75	0.075	8.2857E-018	0.075	1
0.8333	0.062	7.0301E-020	0.062	1
0.9166	0.056	5.9648E-022	0.056	1
1	0.05	5.032E-024	0.05	1
1.0833	0.05	4.2695E-026	0.05	1
1.1666	0.044	3.6225E-028	0.044	1
1.25	0.031	3.056E-030	0.031	1
1.3333	0.031	2.5929E-032	0.031	1
1.4166	0.031	2.2E-034	0.031	1
1.5	0.037	1.8559E-036	0.037	1
1.5833	0.031	1.5747E-038	0.031	1
1.6666	0.031	1.3361E-040	0.031	1
1.75	0.025	1.1271E-042	0.025	1
1.8333	0.025	9.5634E-045	0.025	1
1.9166	0.025	8.1142E-047	0.025	1
2	0.018	6.8453E-049	0.018	1
2.5	0.018	2.5247E-061	0.018	1
3	0.012	9.3119E-074	0.012	1
3.5	0.018	3.4345E-086	0.018	1
4	0.018	1.2667E-098	0.018	1
4.5	0.012	4.6721E-111	0.012	1
5	0.018	1.7232E-123	0.018	1
5.5	0.012	6.3557E-136	0.012	1
6	0.018	2.3441E-148	0.018	1
6.5	0.012	8.6459E-161	0.012	1
7	0.018	3.1888E-173	0.018	1
7.5	0.012	1.1761E-185	0.012	1
8	0.018	4.3379E-198	0.018	1
8.5	0.012	1.5999E-210	0.012	1
9	0.012	5.9011E-223	0.012	1
9.5	0.018	2.1765E-235	0.018	1
10	0.012	8.0275E-248	0.012	1
12	0.012	1.4855E-297	0.012	1
14	0.012	0	0.012	1
16	0.006	0	0.006	1
18	0.018	0	0.018	1

==========

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	1.1901E-003
y0 =	2.6002E-001


80MW05 RISING HEAD TEST
K = 0.05503 ft/min
y0 = 16.85 ft
Displacement (ft)
10.
1.
0.1
0.01
0.
0.2
0.4
0.6
0.8
1.
Time (min)
AQTESOLV
GERAGHTY
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A Q T E S O L V   R E S U L T S

Version 1.10

03/06/95 12:48:49

TEST DESCRIPTION

Data set........... B:80MW05R.DAT
Data set title..... 80MW05 RISING HEAD TEST

Knowns and Constants:
No. of data points.................... 27
Radius of well casing................ 0.083
Radius of well....................... 0.25
Aquifer saturated thickness......... 13.52
Well screen length................. 15
Static height of water in well...... 13.52
Log(Re/Rw)......................... 3.072
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 =	5.5028E-002	+/-	7.5868E-003
y0 =	1.6851E+001	+/-	2.7838E+000

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals............... 27
Number of estimated parameters.... 2
Degrees of freedom................ 25
Residual mean..................... 0.3565
Residual standard deviation....... 0.6976
Residual variance................. 0.4866

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.01	7.733	7.7247	0.0082655	1
0.0133	6.365	5.9718	0.39325	1
0.0166	4.726	4.6166	0.10942	1
0.02	3.62	3.5412	0.078794	1
0.0233	0.886	2.7376	-1.8516	1

0.0266	2.175	2.1164	0.058648	1
0.03	1.999	1.6234	0.37563	1
0.0333	1.716	1.255	0.46102	1
0.05	1.54	0.34116	1.1988	1
0.0666	1.345	0.093467	1.2515	1
0.0833	1.163	0.025408	1.1376	1
0.1	1.05	0.006907	1.0431	1
0.1166	0.861	0.0018923	0.85911	1
0.1333	0.754	0.00051441	0.75349	1
0.15	0.641	0.00013984	0.64086	1
0.1666	0.559	3.8312E-005	0.55896	1
0.1833	0.484	1.0415E-005	0.48399	1
0.2	0.415	2.8312E-006	0.415	1
0.2166	0.345	7.7566E-007	0.345	1
0.2333	0.295	2.1086E-007	0.295	1
0.25	0.251	5.732E-008	0.251	1
0.2666	0.207	1.5704E-008	0.207	1
0.2833	0.176	4.269E-009	0.176	1
0.3	0.138	1.1605E-009	0.138	1
0.3166	0.119	3.1794E-010	0.119	1
0.3333	0.094	8.643E-011	0.094	1
0.4166	0.025	1.3032E-013	0.025	1

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	5.5028E-002
y0 =	1.6851E+001

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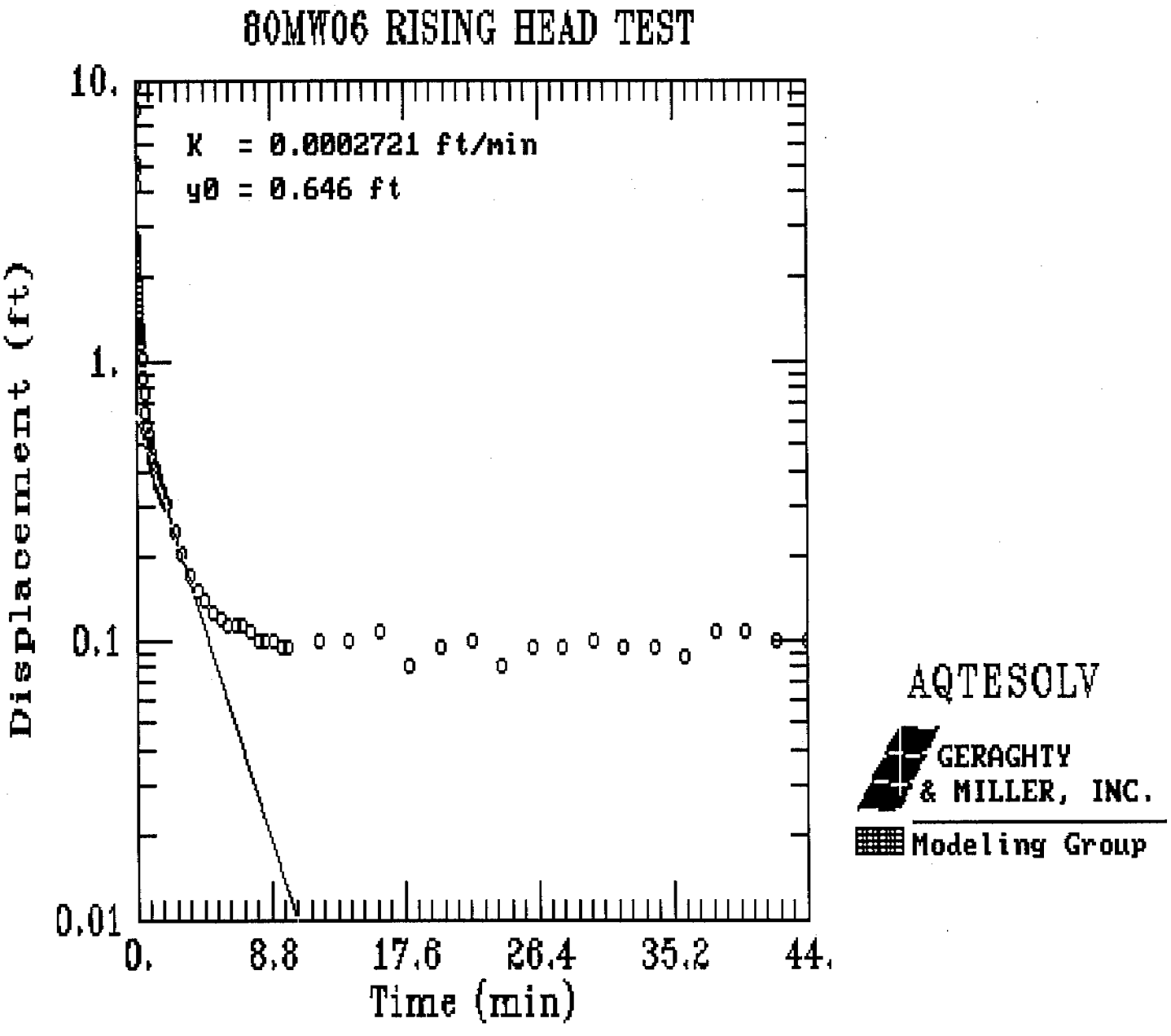
80MW06 RISING HEAD TEST
K = 0.0002721 ft/min
y0 = 0.646 ft
Displacement (ft)
10.
1.
0.1
0.01
0.
8.8
17.6
26.4
35.2
44.
Time (min)
AQTESOLV
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A Q T E S O L V   R E S U L T S
Version 1.10

03/06/95 12:51:09

TEST DESCRIPTION

Data set........... B:80MW06R.DAT
Data set title..... 80MW06 RISING HEAD TEST

Knowns and Constants:
- No. of data points................... 78
- Radius of well casing............... 0.083
- Radius of well...................... 0.25
- Aquifer saturated thickness......... 12.28
- Well screen length.................. 15
- Static height of water in well...... 12.28
- Log(Re/Rw).......................... 3.009
- 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 =	5.2515E-003	+/-	6.7886E-004
y0 =	6.0710E+000	+/-	4.0553E-001

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
- Number of residuals............... 78
- Number of estimated parameters.... 2
- Degrees of freedom................ 76
- Residual mean..................... 0.1955
- Residual standard deviation....... 0.7789
- Residual variance................. 0.6067

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0133	9.624	5.4874	4.1366	1
0.0166	7.931	5.3515	2.5795	1
0.02	5.044	5.215	-0.17099	1
0.0233	4.83	5.0858	-0.25584	1
0.0266	2.62	4.9599	-2.3399	1

0.03	4.29	4.8334	-0.54338	1
0.0333	2.733	4.7137	-1.9807	1
0.05	2.676	4.1519	-1.4759	1
0.0666	2.551	3.6598	-1.1088	1
0.0833	2.387	3.2237	-0.83666	1
0.1	2.287	2.8395	-0.55246	1
0.1166	2.161	2.5029	-0.34194	1
0.1333	2.054	2.2046	-0.15064	1
0.15	1.948	1.9419	0.0061157	1
0.1666	1.853	1.7117	0.14125	1
0.1833	1.759	1.5077	0.25126	1
0.2	1.671	1.328	0.34296	1
0.2166	1.59	1.1707	0.41935	1
0.2333	1.502	1.0311	0.47087	1
0.25	1.432	0.90824	0.52376	1
0.2666	1.37	0.8006	0.5694	1
0.2833	1.307	0.70518	0.60182	1
0.3	1.256	0.62114	0.63486	1
0.3166	1.213	0.54753	0.66547	1
0.3333	1.168	0.48227	0.68573	1
0.4166	1.018	0.25608	0.76192	1
0.5	0.873	0.13588	0.73712	1
0.5833	0.76	0.072149	0.68785	1
0.6666	0.653	0.038311	0.61469	1
0.75	0.584	0.020327	0.56367	1
0.8333	0.546	0.010794	0.53521	1
0.9166	0.502	0.0057315	0.49627	1
1	0.465	0.0030411	0.46196	1
1.0833	0.446	0.0016148	0.44439	1
1.1666	0.427	0.00085745	0.42614	1
1.25	0.408	0.00045495	0.40755	1
1.3333	0.396	0.00024158	0.39576	1
1.4166	0.383	0.00012828	0.38287	1
1.5	0.364	6.8063E-005	0.36393	1
1.5833	0.352	3.6141E-005	0.35196	1
1.6666	0.339	1.9191E-005	0.33898	1
1.75	0.333	1.0182E-005	0.33299	1
1.8333	0.32	5.4068E-006	0.31999	1
1.9166	0.32	2.871E-006	0.32	1
2	0.308	1.5233E-006	0.308	1
2.5	0.245	3.4094E-008	0.245	1
3	0.207	7.6306E-010	0.207	1
3.5	0.169	1.7078E-011	0.169	1
4	0.15	3.8223E-013	0.15	1
4.5	0.138	8.5548E-015	0.138	1
5	0.125	1.9147E-016	0.125	1
5.5	0.119	4.2853E-018	0.119	1
6	0.113	9.591E-020	0.113	1
6.5	0.113	2.1466E-021	0.113	1
7	0.113	4.8043E-023	0.113	1
7.5	0.106	1.0753E-024	0.106	1
8	0.1	2.4066E-026	0.1	1
8.5	0.1	5.3862E-028	0.1	1
9	0.1	1.2055E-029	0.1	1
9.5	0.094	2.698E-031	0.094	1
10	0.094	6.0385E-033	0.094	1
12	0.1	1.5152E-039	0.1	1
14	0.1	3.8019E-046	0.1	1
16	0.106	9.5397E-053	0.106	1
18	0.081	2.3937E-059	0.081	1
20	0.094	6.0063E-066	0.094	1
22	0.1	1.5071E-072	0.1	1
24	0.081	3.7816E-079	0.081	1
26	0.094	9.4887E-086	0.094	1
28	0.094	2.3809E-092	0.094	1
30	0.1	5.9741E-099	0.1	1

32	0.094	1.499E-105	0.094	1
34	0.094	3.7614E-112	0.094	1
36	0.088	9.438E-119	0.088	1
38	0.106	2.3682E-125	0.106	1
40	0.106	5.9422E-132	0.106	1
42	0.1	1.491E-138	0.1	1
44	0.1	3.7413E-145	0.1	1

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RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	2.4226E-004
y0 =	6.3096E-001

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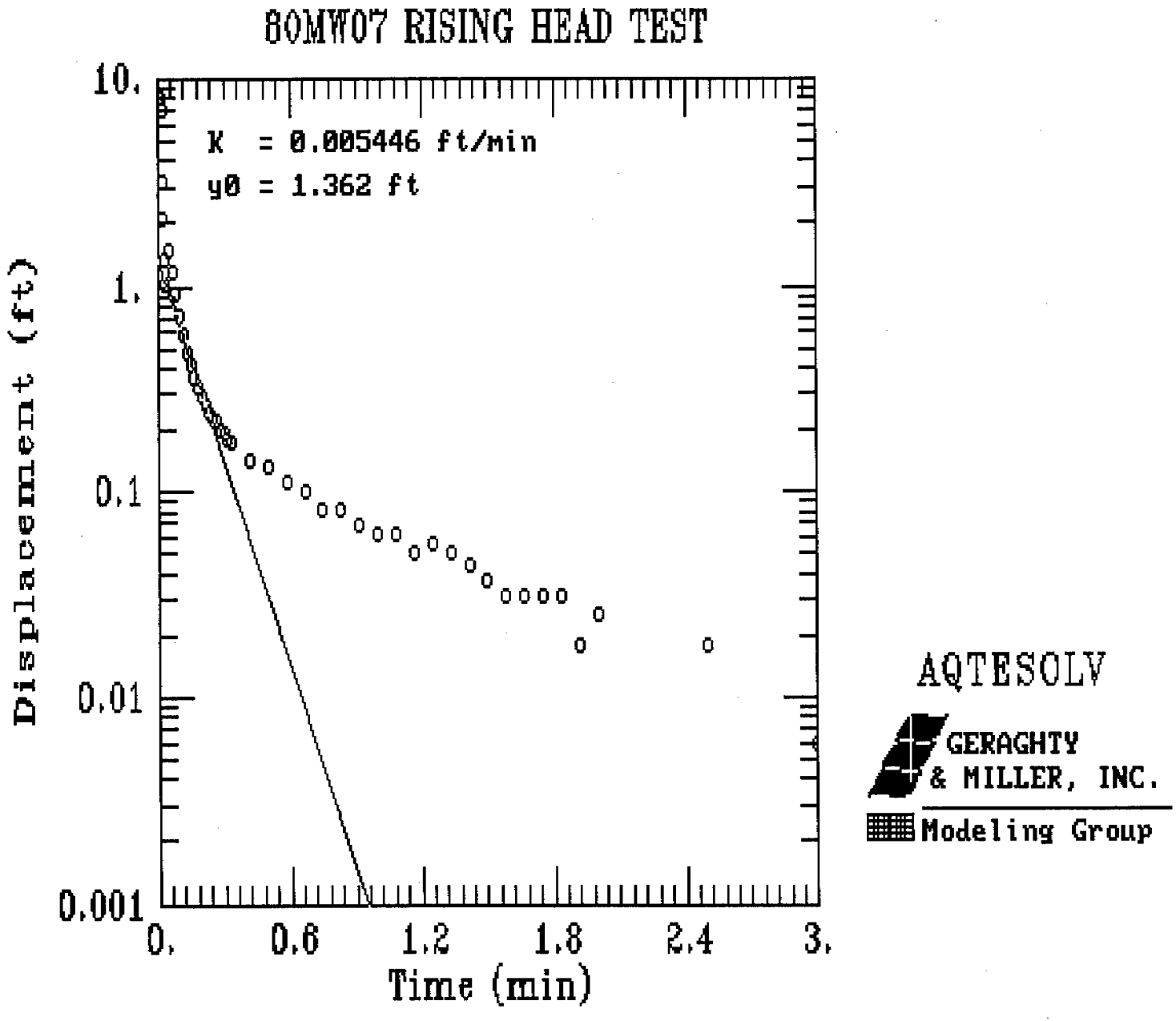
80MW07 RISING HEAD TEST
K = 0.005446 ft/min
y0 = 1.362 ft
Displacement (ft)
10.
1.
0.1
0.01
0.001
0.
0.6
1.2
1.8
2.4
3.
Time (min)
AQTESOLV
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A Q T E S O L V   R E S U L T S
Version 1.10

03/06/95 12:53:34

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TEST DESCRIPTION

Data set........... B:80MW07R.DAT
Data set title..... 80MW07 RISING HEAD TEST

Knowns and Constants:
No. of data points.................. 46
Radius of well casing............... 0.083
Radius of well...................... 0.25
Aquifer saturated thickness......... 15.04
Well screen length.................. 15
Static height of water in well...... 15.04
Log(Re/Rw).......................... 3.142
A, B, C............................. 0.000, 0.000, 2.989

==

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

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RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
K =	8.7382E-002	+/-	9.3715E-003
y0 =	6.2815E+001	+/-	1.5700E+001

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals............... 46
Number of estimated parameters.... 2
Degrees of freedom................ 44
Residual mean..................... 0.2013
Residual standard deviation....... 0.5159
Residual variance................. 0.2662

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0166	8.086	8.4106	-0.32464	1
0.02	6.968	5.5715	1.3965	1
0.0233	2.087	3.7358	-1.6488	1
0.0266	3.181	2.5049	0.67612	1
0.03	1.006	1.6593	-0.65333	1

0.0333	1.364	1.1126	0.2514	1
0.05	1.471	0.14718	1.3238	1
0.0666	1.169	0.019707	1.1493	1
0.0833	0.924	0.0026069	0.92139	1
0.1	0.729	0.00034485	0.72866	1
0.1166	0.584	4.6174E-005	0.58395	1
0.1333	0.484	6.1081E-006	0.48399	1
0.15	0.408	8.0801E-007	0.408	1
0.1666	0.364	1.0819E-007	0.364	1
0.1833	0.32	1.4312E-008	0.32	1
0.2	0.289	1.8932E-009	0.289	1
0.2166	0.264	2.535E-010	0.264	1
0.2333	0.245	3.3534E-011	0.245	1
0.25	0.232	4.436E-012	0.232	1
0.2666	0.22	5.9396E-013	0.22	1
0.2833	0.201	7.8572E-014	0.201	1
0.3	0.195	1.0394E-014	0.195	1
0.3166	0.182	1.3917E-015	0.182	1
0.3333	0.176	1.841E-016	0.176	1
0.4166	0.144	7.6404E-021	0.144	1
0.5	0.132	3.1327E-025	0.132	1
0.5833	0.113	1.3001E-029	0.113	1
0.6666	0.1	5.3957E-034	0.1	1
0.75	0.081	2.2123E-038	0.081	1
0.8333	0.081	9.1815E-043	0.081	1
0.9166	0.069	3.8105E-047	0.069	1
1	0.063	1.5624E-051	0.063	1
1.0833	0.063	6.484E-056	0.063	1
1.1666	0.05	2.691E-060	0.05	1
1.25	0.056	1.1033E-064	0.056	1
1.3333	0.05	4.579E-069	0.05	1
1.4166	0.044	1.9004E-073	0.044	1
1.5	0.037	7.7919E-078	0.037	1
1.5833	0.031	3.2337E-082	0.031	1
1.6666	0.031	1.342E-086	0.031	1
1.75	0.031	5.5026E-091	0.031	1
1.8333	0.031	2.2837E-095	0.031	1
1.9166	0.018	9.4776E-100	0.018	1
2	0.025	3.886E-104	0.025	1
2.5	0.018	1.938E-130	0.018	1
3	0.006	9.6654E-157	0.006	1

==========

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	4.3578E-003
y0 =	9.4495E-001

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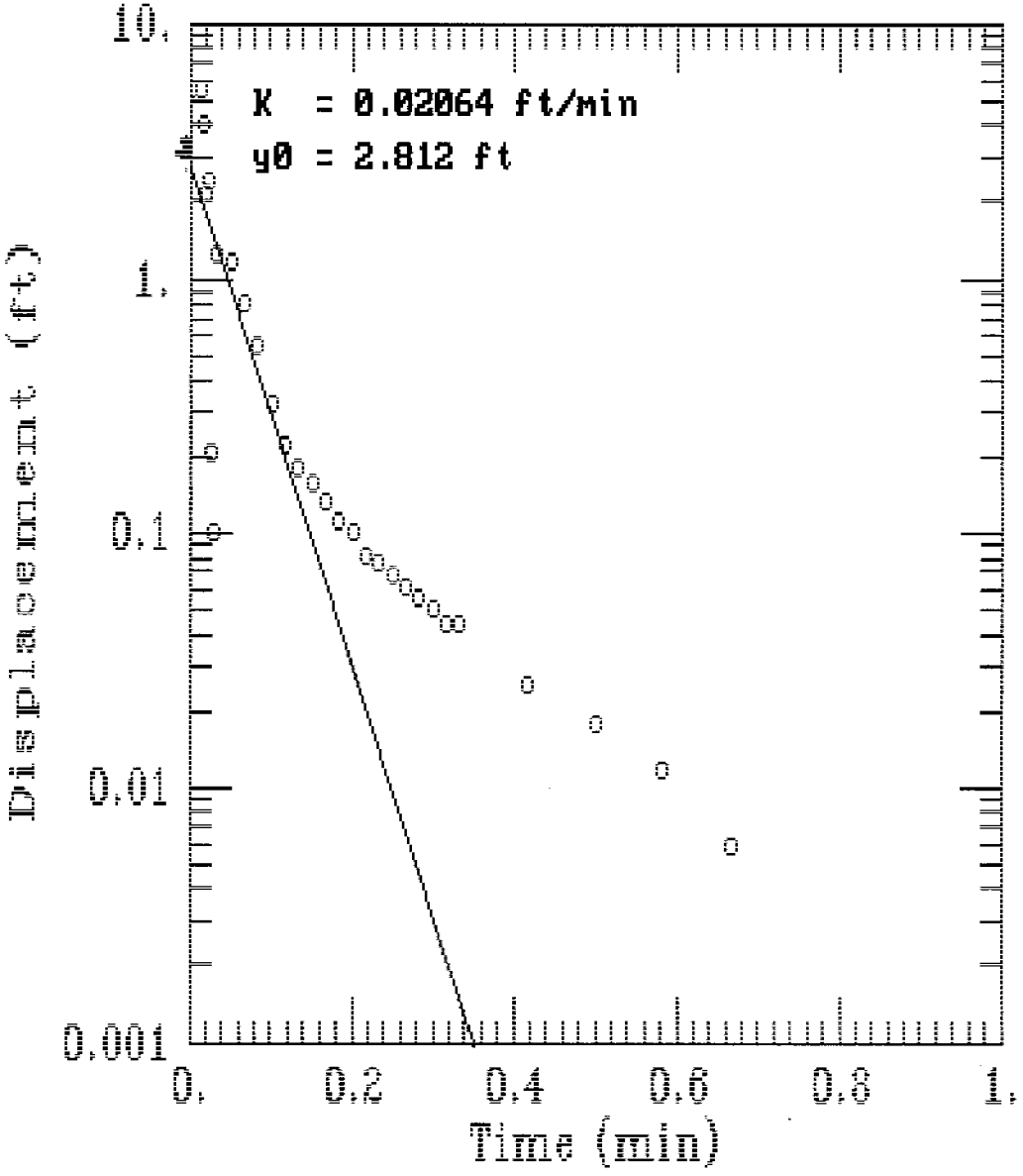
80MW03IW RISING HEAD TEST



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A Q T E S O L V R E S U L T S
Version 1.10

03/06/95 12:44:24

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TEST DESCRIPTION

Data set........... B:80MW03IR.DAT
Data set title..... 80MW03IW RISING HEAD TEST

Knowns and Constants:
- No. of data points.................... 29
- Radius of well casing................. 0.083
- Radius of well........................ 0.25
- Aquifer saturated thickness........... 60.38
- Well screen length.................... 15
- Static height of water in well........ 60.38
- Log(Re/Rw)............................ 3.995
- A, B, C............................... 0.000, 0.000, 2.989

==

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

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RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate		Std. Error
K =	1.1163E-001	+/-	1.4136E-002
y0 =	2.8371E+001	+/-	7.0578E+000

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
- Number of residuals................ 29
- Number of estimated parameters.... 2
- Degrees of freedom................ 27
- Residual mean...................... 0.1397
- Residual standard deviation....... 0.4273
- Residual variance.................. 0.1825

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0133	5.54	5.624	-0.084037	1
0.0166	4.019	3.7641	0.25488	1
0.02	2.208	2.4888	-0.28083	1
0.0233	2.416	1.6658	0.75025	1
0.0266	0.207	1.1149	-0.90787	1

0.03	0.1	0.73715	-0.63715	1
0.0333	1.233	0.49337	0.73963	1
0.05	1.183	0.064667	1.1183	1
0.0666	0.786	0.0085797	0.77742	1
0.0833	0.547	0.0011246	0.54588	1
0.1	0.327	0.0001474	0.32685	1
0.1166	0.22	1.9556E-005	0.21998	1
0.1333	0.182	2.5632E-006	0.182	1
0.15	0.157	3.3597E-007	0.157	1
0.1666	0.132	4.4575E-008	0.132	1
0.1833	0.113	5.8425E-009	0.113	1
0.2	0.1	7.6578E-010	0.1	1
0.2166	0.081	1.016E-010	0.081	1
0.2333	0.075	1.3317E-011	0.075	1
0.25	0.069	1.7455E-012	0.069	1
0.2666	0.063	2.3158E-013	0.063	1
0.2833	0.056	3.0354E-014	0.056	1
0.3	0.05	3.9785E-015	0.05	1
0.3166	0.044	5.2786E-016	0.044	1
0.3333	0.044	6.9187E-017	0.044	1
0.4166	0.025	2.7424E-021	0.025	1
0.5	0.018	1.0739E-025	0.018	1
0.5833	0.012	4.2566E-030	0.012	1
0.6666	0.006	1.6872E-034	0.006	1

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

```
        Estimate
  K  =  1.9354E-002
  y0 =  2.7227E+000
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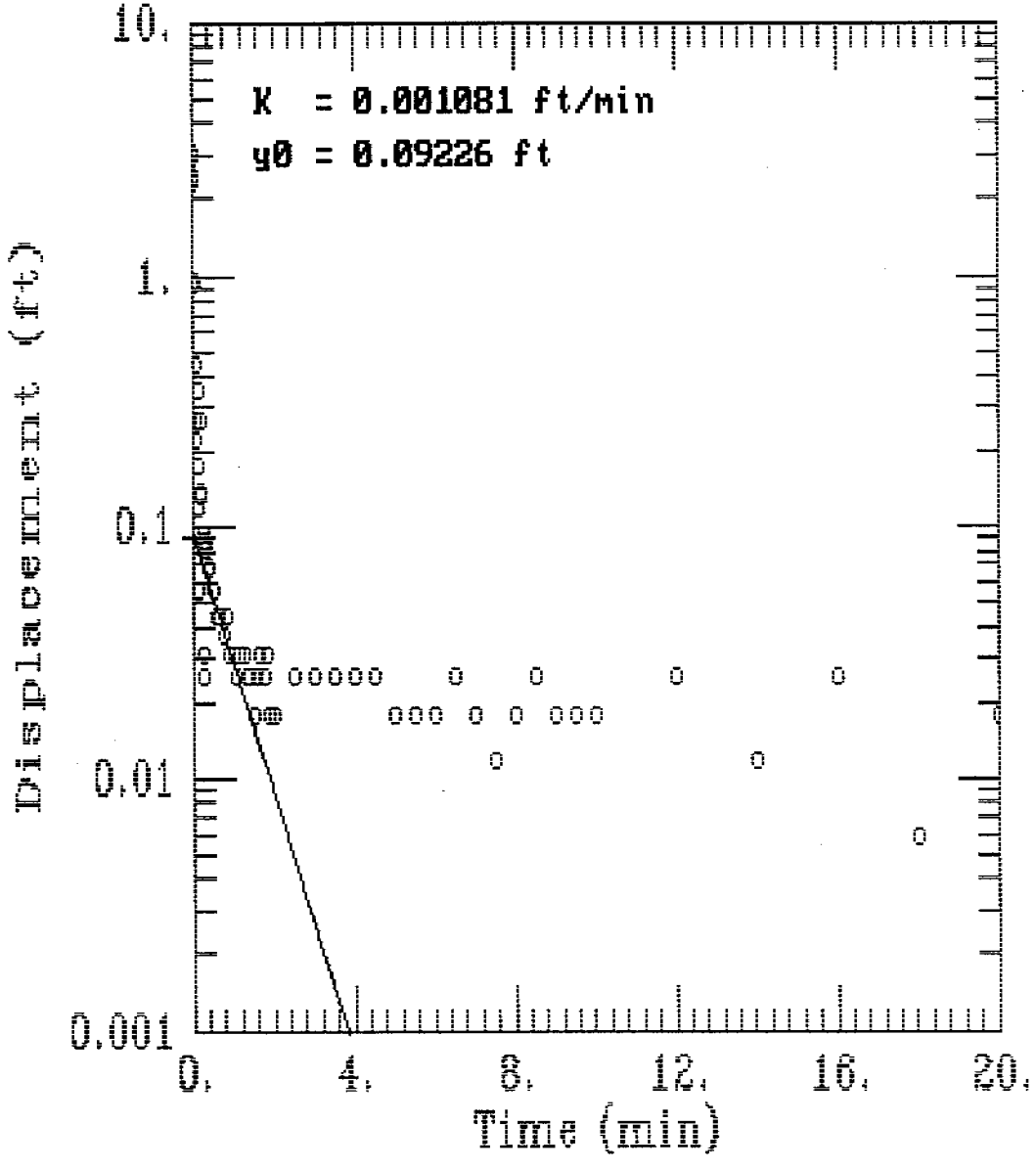
80MW03IW FALLING HEAD TEST



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A Q T E S O L V   R E S U L T S
Version 1.10

03/06/95 17:19:50

TEST DESCRIPTION

Data set........... B:80MW03IF.DAT
Data set title..... 80MW03IW FALLING HEAD TEST

Knowns and Constants:
- No. of data points................... 65
- Radius of well casing................ 0.083
- Radius of well....................... 0.25
- Aquifer saturated thickness.......... 60.38
- Well screen length................... 15
- Static height of water in well....... 60.38
- Log(Re/Rw)........................... 3.995
- 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 =	1.6485E-002	+/-	2.0911E-003
y0 =	3.7000E+000	+/-	2.9674E-001

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
- Number of residuals............... 65
- Number of estimated parameters.... 2
- Degrees of freedom................ 63
- Residual mean..................... 0.01775
- Residual standard deviation....... 0.27
- Residual variance................. 0.0729

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0166	3.047	2.7458	0.3012	1
0.02	2.322	2.5831	-0.26108	1
0.0233	0.925	2.4344	-1.5094	1
0.0266	2.436	2.2942	0.14178	1
0.03	2.952	2.1583	0.79375	1

0.0333	2.537	2.034	0.503	1
0.05	2.373	1.5067	0.86628	1
0.0666	0.963	1.1181	-0.15514	1
0.0833	0.44	0.82828	-0.38828	1
0.1	0.226	0.61356	-0.38756	1
0.1166	0.264	0.45532	-0.19132	1
0.1333	0.352	0.33729	0.014712	1
0.15	0.056	0.24985	-0.19385	1
0.1666	0.176	0.18542	-0.0094151	1
0.1833	0.119	0.13735	-0.018349	1
0.2	0.138	0.10174	0.036256	1
0.2166	0.132	0.075504	0.056496	1
0.2333	0.264	0.055931	0.20807	1
0.25	0.025	0.041432	-0.016432	1
0.2666	0.031	0.030747	0.00025349	1
0.2833	0.094	0.022776	0.071224	1
0.3	0.088	0.016872	0.071128	1
0.3166	0.088	0.01252	0.07548	1
0.3333	0.081	0.0092748	0.071725	1
0.4166	0.069	0.0020762	0.066924	1
0.5	0.056	0.00046394	0.055536	1
0.5833	0.044	0.00010386	0.043896	1
0.6666	0.044	2.3249E-005	0.043977	1
0.75	0.037	5.195E-006	0.036995	1
0.8333	0.044	1.1629E-006	0.043999	1
0.9166	0.031	2.6033E-007	0.031	1
1	0.031	5.8172E-008	0.031	1
1.0833	0.025	1.3022E-008	0.025	1
1.1666	0.031	2.9151E-009	0.031	1
1.25	0.031	6.5139E-010	0.031	1
1.3333	0.025	1.4582E-010	0.025	1
1.4166	0.025	3.2642E-011	0.025	1
1.5	0.018	7.294E-012	0.018	1
1.5833	0.025	1.6328E-012	0.025	1
1.6666	0.031	3.6552E-013	0.031	1
1.75	0.025	8.1676E-014	0.025	1
1.8333	0.031	1.8284E-014	0.031	1
1.9166	0.018	4.0929E-015	0.018	1
2	0.018	9.1458E-016	0.018	1
2.5	0.025	1.1468E-019	0.025	1
3	0.025	1.4379E-023	0.025	1
3.5	0.025	1.8029E-027	0.025	1
4	0.025	2.2607E-031	0.025	1
4.5	0.025	2.8346E-035	0.025	1
5	0.018	3.5542E-039	0.018	1
5.5	0.018	4.4565E-043	0.018	1
6	0.018	5.5879E-047	0.018	1
6.5	0.025	7.0065E-051	0.025	1
7	0.018	8.7853E-055	0.018	1
7.5	0.012	1.1016E-058	0.012	1
8	0.018	1.3812E-062	0.018	1
8.5	0.025	1.7319E-066	0.025	1
9	0.018	2.1715E-070	0.018	1
9.5	0.018	2.7228E-074	0.018	1
10	0.018	3.4141E-078	0.018	1
12	0.025	8.439E-094	0.025	1
14	0.012	2.0859E-109	0.012	1
16	0.025	5.1561E-125	0.025	1
18	0.006	1.2745E-140	0.006	1
20	0.018	3.1503E-156	0.018	1

==========

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

```
          Estimate
   K  =   1.0807E-003
   y0 =   9.2257E-002

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
```

SE1000C
Environmental Logger
12/07 17:16

Unit# 01607 Test 4

Setups:	INPUT 1
Type	Level (F)
Mode	Surface
I.D.	80004
Reference	0.000
Linearity	0.110
Scale factor	19.880
Offset	-0.060
Delay mSEC	50.000

Step 1 12/07 15:42:11

Elapsed Time	INPUT 1
0.0000	0.018
0.0033	-1.000
0.0066	-3.886
0.0100	-6.570
0.0133	-6.884
0.0166	-5.740
0.0200	-4.301
0.0233	-2.874
0.0266	-5.106
0.0300	-3.786
0.0333	-1.289
0.0500	-1.050
0.0666	-0.981
0.0833	-0.874
0.1000	-0.755
0.1166	-0.666
0.1333	-0.597
0.1500	-0.534
0.1666	-0.478
0.1833	-0.434
0.2000	-0.396
0.2166	-0.358
0.2333	-0.320
0.2500	-0.289
0.2666	-0.264
0.2833	-0.239
0.3000	-0.214
0.3166	-0.195
0.3333	-0.176
0.4166	-0.113
0.5000	-0.069
0.5833	-0.037
0.6666	-0.018
0.7500	-0.006
0.8333	0.006
0.9166	0.012
1.0000	0.012
1.0833	0.012
1.1666	0.018
1.2500	0.018
1.3333	0.025
1.4166	0.025
1.5000	0.012

1.5833	0.018
1.6666	0.025
1.7500	0.025
1.8333	0.025
1.9166	0.025
2.0000	0.018
2.5000	0.018
3.0000	0.018
3.5000	0.025
4.0000	0.031
4.5000	0.018
5.0000	0.018
5.5000	0.025
6.0000	0.031
6.5000	0.025
7.0000	0.025
7.5000	0.025
8.0000	0.018
8.5000	0.025
9.0000	0.025
9.5000	0.025
10.0000	0.025
12.0000	0.025
14.0000	0.012
16.0000	0.012
18.0000	0.018
20.0000	0.025
22.0000	0.025
24.0000	0.018
26.0000	0.018
28.0000	0.025
30.0000	0.012
32.0000	0.018
34.0000	0.025
36.0000	0.025

SE1000C
Environmental Logger
12/07 17:14

Unit# 01607 Test 4

Setups:	INPUT 1
Type	Level (F)
Mode	Surface
I.D.	80004
Reference	0.000
Linearity	0.110
Scale factor	19.880
Offset	-0.060
Delay mSEC	50.000

Step 0 12/07 15:23:33

Elapsed Time	INPUT 1
0.0000	0.006
0.0033	0.006
0.0066	0.018
0.0100	0.050
0.0133	0.113
0.0166	1.982
0.0200	5.036
0.0233	7.217
0.0266	7.784
0.0300	7.210
0.0333	5.251
0.0500	-0.364
0.0666	0.509
0.0833	0.377
0.1000	0.409
0.1166	0.377
0.1333	0.358
0.1500	0.339
0.1666	0.333
0.1833	0.308
0.2000	0.295
0.2166	0.283
0.2333	0.270
0.2500	0.251
0.2666	0.239
0.2833	0.226
0.3000	0.220
0.3166	0.207
0.3333	0.195
0.4166	0.157
0.5000	0.119
0.5833	0.100
0.6666	0.081
0.7500	0.075
0.8333	0.062
0.9166	0.056
1.0000	0.050
1.0833	0.050
1.1666	0.044
1.2500	0.031
1.3333	0.031
1.4166	0.031
1.5000	0.037

1.5833	0.031
1.6666	0.031
1.7500	0.025
1.8333	0.025
1.9166	0.025
2.0000	0.018
2.5000	0.018
3.0000	0.012
3.5000	0.018
4.0000	0.018
4.5000	0.012
5.0000	0.018
5.5000	0.012
6.0000	0.018
6.5000	0.012
7.0000	0.018
7.5000	0.012
8.0000	0.018
8.5000	0.012
9.0000	0.012
9.5000	0.018
10.0000	0.012
12.0000	0.012
14.0000	0.012
16.0000	0.006
18.0000	0.018

SE1000C
Environmental Logger
12/08 17:22

Unit# 01607 Test 1

Setups:	INPUT 1
Type	Level (F)
Mode	Surface
I.D.	80005
Reference	0.000
Linearity	0.110
Scale factor	19.880
Offset	-0.060
Delay mSEC	50.000

Step 1 12/08 13:33:37

Elapsed Time	INPUT 1
0.0000	0.056
0.0033	0.012
0.0066	-5.435
0.0100	-7.733
0.0133	-6.365
0.0166	-4.726
0.0200	-3.620
0.0233	-0.886
0.0266	-2.175
0.0300	-1.999
0.0333	-1.716
0.0500	-1.540
0.0666	-1.345
0.0833	-1.163
0.1000	-1.050
0.1166	-0.861
0.1333	-0.754
0.1500	-0.641
0.1666	-0.559
0.1833	-0.484
0.2000	-0.415
0.2166	-0.345
0.2333	-0.295
0.2500	-0.251
0.2666	-0.207
0.2833	-0.176
0.3000	-0.138
0.3166	-0.119
0.3333	-0.094
0.4166	-0.025
0.5000	0.006
0.5833	0.031
0.6666	0.044
0.7500	0.056
0.8333	0.056
0.9166	0.056
1.0000	0.062
1.0833	0.069
1.1666	0.069
1.2500	0.075
1.3333	0.069
1.4166	0.069
1.5000	0.069

1.5833	0.069
1.6666	0.075
1.7500	0.075
1.8333	0.075
1.9166	0.069
2.0000	0.075
2.5000	0.069
3.0000	0.075
3.5000	0.062
4.0000	0.062
4.5000	0.062
5.0000	0.069
5.5000	0.062
6.0000	0.069
6.5000	0.069
7.0000	0.062
7.5000	0.062
8.0000	0.062
8.5000	0.062
9.0000	0.075
9.5000	0.069
10.0000	0.069
12.0000	0.050

SE1000C
Environmental Logger
12/09 20:47

Unit# 01607 Test 0

Setups:	INPUT 1
Type	Level (F)
Mode	Surface
I.D.	80006
Reference	0.000
Linearity	0.110
Scale factor	19.880
Offset	-0.060
Delay mSEC	50.000

Step 1 12/09 08:42:16

Elapsed Time	INPUT 1
0.0000	-0.062
0.0033	-0.056
0.0066	-0.333
0.0100	-5.119
0.0133	-9.624
0.0166	-7.931
0.0200	-5.044
0.0233	-4.830
0.0266	-2.620
0.0300	-4.290
0.0333	-2.733
0.0500	-2.676
0.0666	-2.551
0.0833	-2.387
0.1000	-2.287
0.1166	-2.161
0.1333	-2.054
0.1500	-1.948
0.1666	-1.853
0.1833	-1.759
0.2000	-1.671
0.2166	-1.590
0.2333	-1.502
0.2500	-1.432
0.2666	-1.370
0.2833	-1.307
0.3000	-1.256
0.3166	-1.213
0.3333	-1.168
0.4166	-1.018
0.5000	-0.873
0.5833	-0.760
0.6666	-0.653
0.7500	-0.584
0.8333	-0.546
0.9166	-0.502
1.0000	-0.465
1.0833	-0.446
1.1666	-0.427
1.2500	-0.408
1.3333	-0.396
1.4166	-0.383
1.5000	-0.364

1.5833	-0.352
1.6666	-0.339
1.7500	-0.333
1.8333	-0.320
1.9166	-0.320
2.0000	-0.308
2.5000	-0.245
3.0000	-0.207
3.5000	-0.169
4.0000	-0.150
4.5000	-0.138
5.0000	-0.125
5.5000	-0.119
6.0000	-0.113
6.5000	-0.113
7.0000	-0.113
7.5000	-0.106
8.0000	-0.100
8.5000	-0.100
9.0000	-0.100
9.5000	-0.094
10.0000	-0.094
12.0000	-0.100
14.0000	-0.100
16.0000	-0.106
18.0000	-0.081
20.0000	-0.094
22.0000	-0.100
24.0000	-0.081
26.0000	-0.094
28.0000	-0.094
30.0000	-0.100
32.0000	-0.094
34.0000	-0.094
36.0000	-0.088
38.0000	-0.106
40.0000	-0.106
42.0000	-0.100
44.0000	-0.100

SE1000C
Environmental Logger
12/09 20:51

Unit# 01607 Test 1

Setups:	INPUT 1
Type	Level (F)
Mode	Surface
I.D.	80007
Reference	0.000
Linearity	0.110
Scale factor	19.880
Offset	-0.060
Delay mSEC	50.000

Step 1 12/09 10:02:10

Elapsed Time	INPUT 1
0.0000	0.012
0.0033	0.006
0.0066	-0.025
0.0100	-4.016
0.0133	-7.383
0.0166	-8.086
0.0200	-6.968
0.0233	-2.087
0.0266	-3.181
0.0300	-1.006
0.0333	-1.364
0.0500	-1.471
0.0666	-1.169
0.0833	-0.924
0.1000	-0.729
0.1166	-0.584
0.1333	-0.484
0.1500	-0.408
0.1666	-0.364
0.1833	-0.320
0.2000	-0.289
0.2166	-0.264
0.2333	-0.245
0.2500	-0.232
0.2666	-0.220
0.2833	-0.201
0.3000	-0.195
0.3166	-0.182
0.3333	-0.176
0.4166	-0.144
0.5000	-0.132
0.5833	-0.113
0.6666	-0.100
0.7500	-0.081
0.8333	-0.081
0.9166	-0.069
1.0000	-0.063
1.0833	-0.063
1.1666	-0.050
1.2500	-0.056
1.3333	-0.050
1.4166	-0.044
1.5000	-0.037

1.5833	-0.031
1.6666	-0.031
1.7500	-0.031
1.8333	-0.031
1.9166	-0.018
2.0000	-0.025
2.5000	-0.018
3.0000	-0.006
3.5000	0.000
4.0000	0.006
4.5000	0.000
5.0000	0.006
5.5000	0.000
6.0000	0.000
6.5000	0.006
7.0000	0.006
7.5000	0.012
8.0000	0.006
8.5000	0.006
9.0000	0.006
9.5000	0.012
10.0000	0.006

SE1000C
Environmental Logger
12/09 20:55

Unit# 01607 Test 2

Setups:	INPUT 1
Type	Level (F)
Mode	Surface
I.D.	80030
Reference	0.000
Linearity	0.110
Scale factor	19.880
Offset	-0.060
Delay mSEC	50.000

Step 1 12/09 10:55:50

Elapsed Time	INPUT 1
0.0000	0.018
0.0033	-0.044
0.0066	-3.359
0.0100	-5.339
0.0133	-5.540
0.0166	-4.019
0.0200	-2.208
0.0233	-2.416
0.0266	0.207
0.0300	0.100
0.0333	-1.233
0.0500	-1.183
0.0666	-0.786
0.0833	-0.547
0.1000	-0.327
0.1166	-0.220
0.1333	-0.182
0.1500	-0.157
0.1666	-0.132
0.1833	-0.113
0.2000	-0.100
0.2166	-0.081
0.2333	-0.075
0.2500	-0.069
0.2666	-0.063
0.2833	-0.056
0.3000	-0.050
0.3166	-0.044
0.3333	-0.044
0.4166	-0.025
0.5000	-0.018
0.5833	-0.012
0.6666	-0.006
0.7500	0.000
0.8333	0.006
0.9166	0.006
1.0000	0.006
1.0833	0.006
1.1666	0.006
1.2500	0.012
1.3333	0.018
1.4166	0.012
1.5000	0.012

1.5833	0.012
1.6666	0.018
1.7500	0.012
1.8333	0.012
1.9166	0.018
2.0000	0.025
2.5000	0.025
3.0000	0.018
3.5000	0.018
4.0000	0.018
4.5000	0.018
5.0000	0.018
5.5000	0.018
6.0000	0.018
6.5000	0.025
7.0000	0.018
7.5000	0.025
8.0000	0.018
8.5000	0.018
9.0000	0.018
9.5000	0.025
10.0000	0.018

SE1000C
Environmental Logger
12/09 20:54

Unit# 01607 Test 2

Setups:	INPUT 1
Type	Level (F)
Mode	Surface
I.D.	80030
Reference	0.000
Linearity	0.110
Scale factor	19.880
Offset	-0.060
Delay mSEC	50.000

Step 0 12/09 10:35:15

Elapsed Time	INPUT 1
0.0000	0.012
0.0033	0.018
0.0066	0.018
0.0100	0.012
0.0133	0.037
0.0166	3.047
0.0200	2.322
0.0233	0.925
0.0266	2.436
0.0300	2.952
0.0333	2.537
0.0500	2.373
0.0666	0.963
0.0833	0.440
0.1000	0.226
0.1166	0.264
0.1333	0.352
0.1500	0.056
0.1666	0.176
0.1833	0.119
0.2000	0.138
0.2166	0.132
0.2333	0.264
0.2500	0.025
0.2666	0.031
0.2833	0.094
0.3000	0.088
0.3166	0.088
0.3333	0.081
0.4166	0.069
0.5000	0.056
0.5833	0.044
0.6666	0.044
0.7500	0.037
0.8333	0.044
0.9166	0.031
1.0000	0.031
1.0833	0.025
1.1666	0.031
1.2500	0.031
1.3333	0.025
1.4166	0.025
1.5000	0.018

1.5833	0.025
1.6666	0.031
1.7500	0.025
1.8333	0.031
1.9166	0.018
2.0000	0.018
2.5000	0.025
3.0000	0.025
3.5000	0.025
4.0000	0.025
4.5000	0.025
5.0000	0.018
5.5000	0.018
6.0000	0.018
6.5000	0.025
7.0000	0.018
7.5000	0.012
8.0000	0.018
8.5000	0.025
9.0000	0.018
9.5000	0.018
10.0000	0.018
12.0000	0.025
14.0000	0.012
16.0000	0.025
18.0000	0.006
20.0000	0.018

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 millograms 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 millograms 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 millograms 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 millograms 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	0.35	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:

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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 (83µ/l), lead (27.2µ/l) and manganese (747µ/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 - 133	6.4 - 123	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 - 103	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 - 29.6	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 - 57	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 - 42500	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	2GW01		2GW03		2GW06		2GW08		2GW09	
Date	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	78GW05		78GW08		78GW15		78GW16		78GW19	
Date	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 - 70300	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 / Units	NCWQS ug/L	FEDERAL MCL ug/L	Upgradient of Site 1 1GW06 ug/L	Upgradient of Site 2 2GW09 ug/L	Upgradient of Site 6 6BP6S ug/L	Upgradient of Site 7 7GW03 ug/L	Upgradient of Site 9 9GW4S ug/L	Upgradient of Sites 21 and 78 78GW26 ug/L	Upgradient of Site 24 24GW07 ug/L	Upgradient of Site 28 28GW04 ug/L	Upgradient of Site 30	Upgradient of Site 41 41GW05 ug/L	Upgradient of Site 43	Upgradient of Site 44
Arsenic	50	50	17.8 J	12.9	ND	ND	ND	ND	3.7 J	7.4 J	No Upgradient Well Sites	13.1	No Upgradient Well Sites	No Upgradient Well Sites
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		

Well Number / Units	Upgradient of Site 48 48GW1 ug/L	Upgradient of Site 63	Upgradient of Site 65	Upgradient of Site 69 69GW07 ug/L	Upgradient of Site 78 9GW04 ug/L	Upgradient of Site 82 6MW3S ug/L	Upgradient of ABC Cleaners MW-S01 ug/L	Upgradient of Offsite Property #1	Upgradient of Offsite Property #2
Arsenic	ND	No Upgradient Well Sites	No Upgradient Well Sites	2.9	ND	ND	ND	No Upgradient Well Sites	No Upgradient Well Sites
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		

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

	Camp Lejeune Background Subsurface Soil Data	Site 1		Site 2		Site 6		Site 7		Site 9		Site 21	
		"Clean"	"Contaminated"	"Clean"	"Contaminated"	"Clean"	"Contaminated"	"Clean"	"Contaminated"	"Clean"	"Contaminated"	"Clean"	"Contaminated"
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Well Number		--	--	2GW07	2GW09	6GW18	6GW15	7GW03	7GW02	9GW5	9GW1	21GW03	21GW02
Soil Sample Number		--	--	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	3.6	5.2	6	ND	2.6 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	3.8 J	7.1	6.9 J
Manganese	0.40 - 8	NA	NA	4.3 J	4.1	ND	1.8 B	3	114	ND	3.7 J	9.8	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

	Site 24		Site 28		Site 30		Site 41		Site 43		Site 44	
Units	"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
Well Number	24GW10	24GW02	--	--	--	--	41GW04	41-GW11	43GW01	43GW02	44GW02	44GW01
Soil Sample Number	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 J	NA	NA	NA	NA	3.6	11.2	8.3	6.7	5.6 J	10 J
Copper	ND	ND	NA	NA	NA	NA	3.7	22.5	3.4	ND	6.2 J	25.4 J
Lead	4.6 J	6.2 J	NA	NA	NA	NA	4.8	110	9.8	6.1	5.5	10.7
Manganese	4.7	8.4 J	NA	NA	NA	NA	3.7	75.9	31.2	8.3	3.3	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	6.1	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.
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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

	Site 48		Site 63		Site 65		Site 69		Site 78		Site 82	
	"Clean"	"Contaminated"	"Clean"	"Contaminated"	"Clean"	"Contaminated"	"Clean"	"Contaminated"	"Clean"	"Contaminated"	"Clean"	"Contaminated"
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Well Number	48-GW01	48-GW03	63MW03	63MW02	65MW03	65MW02	69-GW11	69-GW03	78GW34	78GW24-1	6-GW28	82MW3
Soil Sample Number	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	3.9	4.7	6.8	1.7	18.5	9.7	2.6	3
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	3.7	4.3	1.1	4.5 J	2.6 J	2.7	4.3
Manganese	411	7	4.9	18.8	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	
Units	"Clean" mg/kg	"Contaminated" mg/kg	"Clean" mg/kg	"Contaminated" mg/kg	"Clean" mg/kg	"Contaminated" 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	No Deep Wells	ND	ND	No Deep Wells	ND	No Deep Wells	No Deep Wells	No Deep Wells	No Deep Wells	2.2 - 9.6	No Deep Wells	No Deep Wells	No Deep Wells	No Deep Wells	No Deep Wells	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		ND	ND		ND					4.2 - 4.7						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

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	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

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SHALLOW, INTERMEDIATE AND DEEP MONITORING WELLS
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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	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					

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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

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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	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
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

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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

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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

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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	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

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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

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	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 \ 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
DATA AND FREQUENCY SUMMARIES

APPENDIX H.1
SURFACE SOIL ORGANICS

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DA-SB01-00	80-DA-SB02-00	80-LA-SB01-00	80-LA-SB02-00	80-LA-SB03-00	80-LA-SB04-00
Laboratory Sample ID:		Q41118111	Q41118110	AC7800	AC6661	AC6679	AC6885
Date Sampled:		11/03/94	11/03/94	11/05/94	11/01/94	11/01/94	11/02/94
	UNITS						
VOLATILES							
Chloromethane	UG/KG	12 U	11 UJ	12 U	13 U	12 U	12 U
Bromomethane	UG/KG	12 U	11 UJ	12 U	13 U	12 U	12 UJ
Vinyl chloride	UG/KG	12 U	11 UJ	12 U	13 UJ	12 UJ	12 UJ
Chloroethane	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
Methylene chloride	UG/KG	33 U	11 U	12 U	13 U	12 U	12 U
Acetone	UG/KG	12 U	11 U	22 U	13 U	63 U	12 U
Carbon Disulfide	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
1,1-Dichloroethene	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
1,1-Dichloroethane	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
1,2-Dichloroethene(total)	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
Chloroform	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
1,2-Dichloroethane	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
2-Butanone	UG/KG	12 U	11 U	17 U	18 U	22 U	14 U
1,1,1-Trichloroethane	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
Carbon tetrachloride	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
Bromodichloromethane	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
1,2-Dichloropropane	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
cis-1,3-Dichloropropene	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
Trichloroethene	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
Dibromochloromethane	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
1,1,2-Trichloroethane	UG/KG	12 UJ	11 U	12 U	13 U	12 U	12 U
Benzene	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
trans-1,3-Dichloropropene	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
Bromoform	UG/KG	12 UJ	11 U	12 U	13 U	12 U	12 U
4-Methyl-2-pentanone	UG/KG	12 UJ	11 U	12 U	13 U	12 U	12 U
2-Hexanone	UG/KG	12 UJ	11 U	12 U	13 U	12 U	12 U
Tetrachloroethene	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
1,1,2,2-Tetrachloroethane	UG/KG	12 UJ	11 U	12 U	13 U	12 U	12 U
Toluene	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
Chlorobenzene	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
Ethylbenzene	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
Styrene	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U
Xylenes (total)	UG/KG	12 U	11 U	12 U	13 U	12 U	12 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DA-SB01-00	80-DA-SB02-00	80-LA-SB01-00	80-LA-SB02-00	80-LA-SB03-00	80-LA-SB04-00
Laboratory Sample ID:		Q41118111	Q41118110	AC7800	AC6661	AC6679	AC6885
Date Sampled:		11/03/94	11/03/94	11/05/94	11/01/94	11/01/94	11/02/94
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
bis(2-Chloroethyl) ether	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
2-Chlorophenol	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
1,3-Dichlorobenzene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
1,4-Dichlorobenzene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
1,2-Dichlorobenzene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
2-Methylphenol	UG/KG	410 U	360 U	380 U	4200 U	3700 UJ	370 U
2,2'-oxybis-(1-chloropropane)	UG/KG	410 U	360 U	380 U	4200 UJ	3700 U	370 U
4-Methylphenol	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
N-Nitroso-di-n-propylamine	UG/KG	410 U	360 U	380 U	4200 UJ	3700 U	370 U
Hexachloroethane	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Nitrobenzene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Isophorone	UG/KG	410 U	360 U	380 U	4200 UJ	3700 U	370 U
2-Nitrophenol	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
2,4-Dimethylphenol	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
bis(2-Chloroethoxy) methane	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
2,4-Dichlorophenol	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
1,2,4-Trichlorobenzene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Naphthalene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
4-Chloroaniline	UG/KG	410 UJ	360 UJ	380 U	4200 U	3700 U	370 U
Hexachlorobutadiene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
4-Chloro-3-methylphenol	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
2-Methylnaphthalene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Hexachlorocyclopentadiene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
2,4,6-Trichlorophenol	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
2,4,5-Trichlorophenol	UG/KG	990 U	870 U	930 U	10000 U	9100 U	900 U
2-Chloronaphthalene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
2-Nitroaniline	UG/KG	990 U	870 U	930 U	10000 U	9100 U	900 U
Dimethyl phthalate	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Acenaphthylene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
2,6-Dinitrotoluene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
3-Nitroaniline	UG/KG	990 U	870 U	930 U	10000 U	9100 U	900 U
Acenaphthene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DA-SB01-00	80-DA-SB02-00	80-LA-SB01-00	80-LA-SB02-00	80-LA-SB03-00	80-LA-SB04-00
Laboratory Sample ID:		Q41118111	Q41118110	AC7800	AC6661	AC6679	AC6885
Date Sampled:		11/03/94	11/03/94	11/05/94	11/01/94	11/01/94	11/02/94
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	990 UJ	870 UJ	930 U	10000 U	9100 U	900 U
4-Nitrophenol	UG/KG	990 U	870 U	930 U	10000 U	9100 U	900 UJ
Dibenzofuran	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
2,4-Dinitrotoluene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Diethylphthalate	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
4-Chlorophenyl phenyl ether	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Fluorene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
4-Nitroaniline	UG/KG	990 U	870 U	930 U	10000 U	9100 U	900 U
4,6-Dinitro-2-methylphenol	UG/KG	990 U	870 U	930 U	10000 U	9100 U	900 U
N-nitrosodiphenylamine	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
4-Bromophenyl-phenylether	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Hexachlorobenzene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Pentachlorophenol	UG/KG	990 UJ	870 UJ	930 U	10000 U	9100 U	900 UJ
Phenanthrene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Anthracene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Carbazole	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
di-n-Butylphthalate	UG/KG	150 J	60 J	380 U	4200 U	3700 U	370 U
Fluoranthene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Pyrene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Butyl benzyl phthalate	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
3,3'-Dichlorobenzidine	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Benzo[a]anthracene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Chrysene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
bis(2-Ethylhexyl)phthalate	UG/KG	410 U	360 U	66 J	4200 U	3700 U	370 U
di-n-Octylphthalate	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Benzo[b]fluoranthene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Benzo[k]fluoranthene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 UJ
Benzo[a]pyrene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Indeno[1,2,3-cd]pyrene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Dibenz[a,h]anthracene	UG/KG	410 U	360 U	380 U	4200 U	3700 U	370 U
Benzo[g,h,i]perylene	UG/KG	410 U	360 U	180 J	4200 U	3700 U	370 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DA-SB01-00	80-DA-SB02-00	80-LA-SB01-00	80-LA-SB02-00	80-LA-SB03-00	80-LA-SB04-00
Laboratory Sample ID:		Q41118111	Q41118110	AC7800	AC6661	AC6679	AC6885
Date Sampled:		11/03/94	11/03/94	11/05/94	11/01/94	11/01/94	11/02/94
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	2.1 U	1.8 UJ	2 U	11 U	9.8 U	3.9 U
beta-BHC	UG/KG	2.1 U	1.8 UJ	2 U	11 U	9.8 U	3.9 UJ
delta-BHC	UG/KG	2.1 U	1.8 UJ	2 U	11 U	9.8 U	3.9 U
Lindane (gamma-BHC)	UG/KG	2.1 U	1.8 UJ	2 U	11 U	9.8 U	3.9 U
Heptachlor	UG/KG	2.1 U	1.8 UJ	2 U	11 U	9.8 U	3.9 U
Aldrin	UG/KG	2.1 U	1.8 UJ	18	11 U	9.8 U	11
Heptachlor epoxide	UG/KG	2.1 U	1.8 UJ	2 U	11 U	9.8 U	3.9 U
Endosulfan I	UG/KG	2.1 U	1.8 UJ	2 U	11 U	9.8 U	3.9 U
Dieldrin	UG/KG	8.6	17 J	29	60	300	630 J
4,4'-DDE	UG/KG	11	7.4 J	69	240	740	130
Endrin	UG/KG	4.1 U	3.6 UJ	3.8 U	21 U	19 U	7.5 U
Endosulfan II	UG/KG	4.1 U	3.6 UJ	3.8 U	21 U	19 U	7.5 U
4,4'-DDD	UG/KG	4.1 U	3.6 UJ	62	780	650	24
Endosulfan sulfate	UG/KG	4.1 U	3.6 UJ	3.8 U	21 U	19 U	7.5 U
4,4'-DDT	UG/KG	6.4	4.4 J	5.7	33	210	29
Methoxychlor	UG/KG	21 U	18 UJ	20 U	110 U	98 U	39 U
Endrin ketone	UG/KG	4.1 U	3.6 UJ	3.8 U	21 U	19 U	7.5 U
Endrin aldehyde	UG/KG	4.1 U	3.6 UJ	3.8 U	21 U	19 U	7.5 U
alpha-Chlordane	UG/KG	2.1 U	1.8 UJ	32	11 U	130 J	92 J
gamma-Chlordane	UG/KG	2.1 U	1.8 UJ	31	11 U	100 J	91 J
Toxaphene	UG/KG	210 U	180 UJ	200 U	1100 U	980 U	390 U
Aroclor 1016	UG/KG	41 U	36 UJ	38 U	210 U	190 U	75 U
Aroclor 1221	UG/KG	83 U	73 UJ	77 U	420 U	390 U	150 U
Aroclor 1232	UG/KG	41 U	36 UJ	38 U	210 U	190 U	75 U
Aroclor 1242	UG/KG	41 U	36 UJ	38 U	210 U	190 U	75 U
Aroclor 1248	UG/KG	41 U	36 UJ	38 U	210 U	190 U	75 U
Aroclor 1254	UG/KG	41 U	36 UJ	38 U	210 U	190 U	75 U
Aroclor 1260	UG/KG	41 U	36 UJ	38 U	210 U	190 U	75 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-LA-SB05-00	80-LA-SB06-00	80-LA-SB07-00	80-MA-SB01-00	80-MA-SB02-00	80-MA-SB03-00
Laboratory Sample ID:		AC6684	AC6930	Q41118001	AC6904	AC6881	AC6914
Date Sampled:		11/01/94	11/02/94	11/02/94	11/02/94	11/01/94	11/02/94
	UNITS						
VOLATILES							
Chloromethane	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
Bromomethane	UG/KG	11 U	11 U	12 U	11 UJ	11 UJ	13 UJ
Vinyl chloride	UG/KG	11 UJ	11 U	12 U	11 U	11 UJ	13 U
Chloroethane	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
Methylene chloride	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
Acetone	UG/KG	11 U	11 U	12 U	11 U	34 U	13 U
Carbon Disulfide	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
1,1-Dichloroethene	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
1,1-Dichloroethane	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
1,2-Dichloroethene(total)	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
Chloroform	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
1,2-Dichloroethane	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
2-Butanone	UG/KG	11 U	17 U	12 U	14 U	20 U	19 U
1,1,1-Trichloroethane	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
Carbon tetrachloride	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
Bromodichloromethane	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
1,2-Dichloropropane	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
cis-1,3-Dichloropropene	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
Trichloroethene	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
Dibromochloromethane	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
1,1,2-Trichloroethane	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
Benzene	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
trans-1,3-Dichloropropene	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
Bromoform	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
4-Methyl-2-pentanone	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
2-Hexanone	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
Tetrachloroethene	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
1,1,2,2-Tetrachloroethane	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
Toluene	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
Chlorobenzene	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
Ethylbenzene	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
Styrene	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U
Xylenes (total)	UG/KG	11 U	11 U	12 U	11 U	11 U	13 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-LA-SB05-00	80-LA-SB06-00	80-LA-SB07-00	80-MA-SB01-00	80-MA-SB02-00	80-MA-SB03-00
Laboratory Sample ID:		AC6684	AC6930	Q41118001	AC6904	AC6881	AC6914
Date Sampled:		11/01/94	11/02/94	11/02/94	11/02/94	11/01/94	11/02/94
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
bis(2-Chloroethyl) ether	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
2-Chlorophenol	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
1,3-Dichlorobenzene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
1,4-Dichlorobenzene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
1,2-Dichlorobenzene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
2-Methylphenol	UG/KG	3800 UJ	370 U	400 U	340 U	340 U	400 U
2,2'-oxybis-(1-chloropropane)	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
4-Methylphenol	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
N-Nitroso-di-n-propylamine	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Hexachloroethane	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Nitrobenzene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Isophorone	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
2-Nitrophenol	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
2,4-Dimethylphenol	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
bis(2-Chloroethoxy) methane	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
2,4-Dichlorophenol	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
1,2,4-Trichlorobenzene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Naphthalene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
4-Chloroaniline	UG/KG	3800 U	370 U	400 UJ	340 U	340 U	400 U
Hexachlorobutadiene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
4-Chloro-3-methylphenol	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
2-Methylnaphthalene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Hexachlorocyclopentadiene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
2,4,6-Trichlorophenol	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
2,4,5-Trichlorophenol	UG/KG	9200 U	910 U	960 U	830 U	830 U	980 U
2-Chloronaphthalene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
2-Nitroaniline	UG/KG	9200 U	910 U	960 U	830 U	830 U	980 U
Dimethyl phthalate	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Acenaphthylene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
2,6-Dinitrotoluene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
3-Nitroaniline	UG/KG	9200 U	910 U	960 U	830 U	830 U	980 U
Acenaphthene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-LA-SB05-00	80-LA-SB06-00	80-LA-SB07-00	80-MA-SB01-00	80-MA-SB02-00	80-MA-SB03-00
Laboratory Sample ID:		AC6684	AC6930	Q41118001	AC6904	AC6881	AC6914
Date Sampled:		11/01/94	11/02/94	11/02/94	11/02/94	11/01/94	11/02/94
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	9200 U	910 UJ	960 UJ	830 U	830 U	980 U
4-Nitrophenol	UG/KG	9200 U	910 UJ	960 U	830 UJ	830 UJ	980 UJ
Dibenzofuran	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
2,4-Dinitrotoluene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Diethylphthalate	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
4-Chlorophenyl phenyl ether	UG/KG	3800 U	370 U	400 U	340 UJ	340 U	400 U
Fluorene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
4-Nitroaniline	UG/KG	9200 U	910 U	960 U	830 UJ	830 U	980 UJ
4,6-Dinitro-2-methylphenol	UG/KG	9200 U	910 U	960 U	830 U	830 U	980 U
N-nitrosodiphenylamine	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
4-Bromophenyl-phenylether	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Hexachlorobenzene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Pentachlorophenol	UG/KG	9200 U	910 U	960 UJ	830 U	830 UJ	980 U
Phenanthrene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Anthracene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Carbazole	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
di-n-Butylphthalate	UG/KG	3800 U	370 U	94 J	340 U	340 U	400 U
Fluoranthene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Pyrene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Butyl benzyl phthalate	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
3,3'-Dichlorobenzidine	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Benzo[a]anthracene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Chrysene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
bis(2-Ethylhexyl)phthalate	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
di-n-Octylphthalate	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Benzo[b]fluoranthene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Benzo[k]fluoranthene	UG/KG	3800 U	370 U	400 U	340 U	340 UJ	400 U
Benzo[a]pyrene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Indeno[1,2,3-cd]pyrene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Dibenz[a,h]anthracene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U
Benzo[g,h,i]perylene	UG/KG	3800 U	370 U	400 U	340 U	340 U	400 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-LA-SB05-00	80-LA-SB06-00	80-LA-SB07-00	80-MA-SB01-00	80-MA-SB02-00	80-MA-SB03-00
Laboratory Sample ID:		AC6684	AC6930	Q41118001	AC6904	AC6881	AC6914
Date Sampled:		11/01/94	11/02/94	11/02/94	11/02/94	11/01/94	11/02/94
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	1.9 UJ	1.9 U	4.1 U	1.8 U	3.5 U	2.1 U
beta-BHC	UG/KG	1.9 UJ	1.9 UJ	4.1 U	1.8 UJ	3.5 UJ	2.1 UJ
delta-BHC	UG/KG	1.9 UJ	1.9 U	4.1 U	1.8 U	3.5 U	2.1 U
Lindane (gamma-BHC)	UG/KG	1.9 UJ	1.9 U	4.1 U	1.8 U	3.5 U	2.1 U
Heptachlor	UG/KG	1.9 UJ	1.9 U	4.1 U	1.8 U	3.5 U	2.1 U
Aldrin	UG/KG	1.9 UJ	1.9 U	4.1 U	1.8 U	3.5 U	2.1 U
Heptachlor epoxide	UG/KG	1.9 UJ	1.9 U	4.1 U	1.8 U	3.5 U	2.1 U
Endosulfan I	UG/KG	1.9 UJ	1.9 U	4.1 U	1.8 U	3.5 U	2.1 U
Dieldrin	UG/KG	58 J	38	20	3.4 U	84	4.1 U
4,4'-DDE	UG/KG	68 J	110	620	89	470	210
Endrin	UG/KG	3.7 UJ	3.6 U	8 U	3.4 U	6.8 U	4.1 U
Endosulfan II	UG/KG	3.7 UJ	3.6 U	8 U	3.4 U	6.8 U	4.1 U
4,4'-DDD	UG/KG	2.1 J	7.6 J	17 J	3.4 U	510	8.6 J
Endosulfan sulfate	UG/KG	3.7 UJ	3.6 U	8 U	3.4 U	6.8 U	4.1 U
4,4'-DDT	UG/KG	13 J	110	100	68	79	450
Methoxychlor	UG/KG	19 UJ	19 U	41 U	18 U	35 U	21 U
Endrin ketone	UG/KG	3.7 UJ	3.6 U	7.7 J	3.4 U	6.8 U	4.1 U
Endrin aldehyde	UG/KG	3.7 UJ	3.6 U	8 U	3.4 U	6.8 U	4.1 U
alpha-Chlordane	UG/KG	3.7 J	4.3 J	4.1 U	1.8 U	27	2.1 U
gamma-Chlordane	UG/KG	1.2 J	2.2 J	4.1 U	1.8 U	18 J	2.9
Toxaphene	UG/KG	190 UJ	190 U	410 U	180 U	350 U	210 U
Aroclor 1016	UG/KG	37 UJ	36 U	80 U	34 U	68 U	41 U
Aroclor 1221	UG/KG	75 UJ	74 U	160 U	69 U	140 U	84 U
Aroclor 1232	UG/KG	37 UJ	36 U	80 U	34 U	68 U	41 U
Aroclor 1242	UG/KG	37 UJ	36 U	80 U	34 U	68 U	41 U
Aroclor 1248	UG/KG	37 UJ	36 U	80 U	34 U	68 U	41 U
Aroclor 1254	UG/KG	37 UJ	36 U	80 U	34 U	68 U	41 U
Aroclor 1260	UG/KG	37 UJ	36 U	80 U	34 U	68 U	41 U

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OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MA-SB04-00	80-MW031W-00	80-MW04-00	80-MW05-00	80-MW06-00	80-MW07-00
Laboratory Sample ID:		AC6690	Q41118707	Q41118401	Q41118506	AC7806	Q41118604
Date Sampled:		11/01/94	11/05/94	11/03/94	11/04/94	11/05/94	11/04/94
	UNITS						
VOLATILES							
Chloromethane	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
Bromomethane	UG/KG	11 U	12 U	12 UJ	11 U	12 U	12 U
Vinyl chloride	UG/KG	11 UJ	12 U	12 UJ	11 U	12 U	12 UJ
Chloroethane	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
Methylene chloride	UG/KG	11 U	12 U	12 U	12 U	12 U	12 U
Acetone	UG/KG	11 U	12 UJ	12 UJ	28	12 U	12 U
Carbon Disulfide	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
1,1-Dichloroethene	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
1,1-Dichloroethane	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
1,2-Dichloroethene(total)	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
Chloroform	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
1,2-Dichloroethane	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
2-Butanone	UG/KG	13 U	12 U	12 U	11 U	14 U	12 U
1,1,1-Trichloroethane	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
Carbon tetrachloride	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
Bromodichloromethane	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
1,2-Dichloropropane	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
cis-1,3-Dichloropropene	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
Trichloroethene	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
Dibromochloromethane	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
1,1,2-Trichloroethane	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
Benzene	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
trans-1,3-Dichloropropene	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
Bromoform	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
4-Methyl-2-pentanone	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
2-Hexanone	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
Tetrachloroethene	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
1,1,2,2-Tetrachloroethane	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
Toluene	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
Chlorobenzene	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
Ethylbenzene	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
Styrene	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U
Xylenes (total)	UG/KG	11 U	12 U	12 U	11 U	12 U	12 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MA-SB04-00	80-MW031W-00	80-MW04-00	80-MW05-00	80-MW06-00	80-MW07-00
Laboratory Sample ID:		AC6690	Q41118707	Q41118401	Q41118506	AC7806	Q41118604
Date Sampled:		11/01/94	11/05/94	11/03/94	11/04/94	11/05/94	11/04/94
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
bis(2-Chloroethyl) ether	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
2-Chlorophenol	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
1,3-Dichlorobenzene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
1,4-Dichlorobenzene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
1,2-Dichlorobenzene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
2-Methylphenol	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
2,2'-oxybis-(1-chloropropane)	UG/KG	350 UJ	380 U	390 U	360 U	380 U	380 U
4-Methylphenol	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
N-Nitroso-di-n-propylamine	UG/KG	350 UJ	380 U	390 U	360 U	380 U	380 U
Hexachloroethane	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
Nitrobenzene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
Isophorone	UG/KG	350 UJ	380 U	390 U	360 U	380 U	380 U
2-Nitrophenol	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
2,4-Dimethylphenol	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
bis(2-Chloroethoxy) methane	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
2,4-Dichlorophenol	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
1,2,4-Trichlorobenzene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
Naphthalene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
4-Chloroaniline	UG/KG	350 U	380 UJ	390 UJ	360 UJ	380 U	380 UJ
Hexachlorobutadiene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
4-Chloro-3-methylphenol	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
2-Methylnaphthalene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
Hexachlorocyclopentadiene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
2,4,6-Trichlorophenol	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
2,4,5-Trichlorophenol	UG/KG	850 U	930 U	940 U	880 UJ	920 U	920 UJ
2-Chloronaphthalene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
2-Nitroaniline	UG/KG	850 U	930 U	940 U	880 U	920 U	920 U
Dimethyl phthalate	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
Acenaphthylene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
2,6-Dinitrotoluene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
3-Nitroaniline	UG/KG	850 U	930 U	940 U	880 U	920 U	920 U
Acenaphthene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MA-SB04-00	80-MW031W-00	80-MW04-00	80-MW05-00	80-MW06-00	80-MW07-00
Laboratory Sample ID:		AC6690	Q41118707	Q41118401	Q41118506	AC7806	Q41118604
Date Sampled:		11/01/94	11/05/94	11/03/94	11/04/94	11/05/94	11/04/94
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	850 U	930 U	940 U	880 U	920 U	920 UJ
4-Nitrophenol	UG/KG	850 U	930 U	940 U	880 U	920 U	920 U
Dibenzofuran	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
2,4-Dinitrotoluene	UG/KG	350 U	380 U	390 U	360 UJ	380 U	380 U
Diethylphthalate	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
4-Chlorophenyl phenyl ether	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
Fluorene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
4-Nitroaniline	UG/KG	850 U	930 U	940 U	880 U	920 U	920 U
4,6-Dinitro-2-methylphenol	UG/KG	850 U	930 U	940 U	880 U	920 U	920 U
N-nitrosodiphenylamine	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
4-Bromophenyl-phenylether	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
Hexachlorobenzene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
Pentachlorophenol	UG/KG	850 U	930 U	940 U	880 U	920 U	920 U
Phenanthrene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
Anthracene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
Carbazole	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
di-n-Butylphthalate	UG/KG	350 U	4400	150 J	79 J	440 U	110 J
Fluoranthene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
Pyrene	UG/KG	350 U	380 U	60 J	360 U	380 U	380 U
Butyl benzyl phthalate	UG/KG	350 U	96 J	390 U	360 U	380 U	380 U
3,3'-Dichlorobenzidine	UG/KG	350 U	380 U	390 UJ	360 UJ	380 U	380 UJ
Benzo[a]anthracene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
Chrysene	UG/KG	350 U	380 U	40 J	360 U	380 U	380 U
bis(2-Ethylhexyl)phthalate	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
di-n-Octylphthalate	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
Benzo[b]fluoranthene	UG/KG	350 U	380 U	48 J	360 U	380 U	380 U
Benzo[k]fluoranthene	UG/KG	350 U	380 UJ	390 UJ	360 U	380 U	380 U
Benzo[a]pyrene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
Indeno[1,2,3-cd]pyrene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U
Dibenz[a,h]anthracene	UG/KG	350 U	380 U	390 U	360 UJ	380 U	380 U
Benzo[g,h,i]perylene	UG/KG	350 U	380 U	390 U	360 U	380 U	380 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MA-SB04-00	80-MW031W-00	80-MW04-00	80-MW05-00	80-MW06-00	80-MW07-00
Laboratory Sample ID:		AC6690	Q41118707	Q41118401	Q41118506	AC7806	Q41118604
Date Sampled:		11/01/94	11/05/94	11/03/94	11/04/94	11/05/94	11/04/94
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	8.8 UJ	18 U	800 U	3.7 U	2 U	1.9 U
beta-BHC	UG/KG	8.8 UJ	18 U	800 U	3.7 U	2 U	1.9 U
delta-BHC	UG/KG	8.8 UJ	18 U	800 U	3.7 U	2 U	1.9 U
Lindane (gamma-BHC)	UG/KG	8.8 UJ	18 U	800 U	3.7 U	2 U	1.9 U
Heptachlor	UG/KG	8.8 UJ	18 U	800 U	3.7 U	2 U	1.9 U
Aldrin	UG/KG	8.8 UJ	18 U	800 U	3.7 U	2 U	1.9 U
Heptachlor epoxide	UG/KG	8.8 UJ	18 U	800 U	3.7 U	2 U	1.9 U
Endosulfan I	UG/KG	8.8 UJ	18 U	800 U	3.7 U	2 U	1.9 U
Dieldrin	UG/KG	69 J	370 J	1600 U	99 J	7.2 J	3.8 U
4,4'-DDE	UG/KG	280 J	73	1500 J	81	37	21
Endrin	UG/KG	17 UJ	35 U	1600 U	7.2 U	3.8 U	3.8 U
Endosulfan II	UG/KG	17 UJ	35 U	1600 U	7.2 U	3.8 U	3.8 U
4,4'-DDD	UG/KG	610 J	16 J	87000	3.9 J	15	3.8 U
Endosulfan sulfate	UG/KG	17 UJ	35 U	1600 U	7.2 U	3.8 U	3.8 U
4,4'-DDT	UG/KG	870 J	35 U	40000	53	3.8 U	6.7
Methoxychlor	UG/KG	88 UJ	180 U	8000 U	37 U	20 U	19 U
Endrin ketone	UG/KG	17 UJ	35 U	1600 U	7.2 U	3.8 U	3.8 U
Endrin aldehyde	UG/KG	17 UJ	35 U	1600 U	7.2 U	3.8 U	3.8 U
alpha-Chlordane	UG/KG	30 J	68	800 U	3.7 U	24	1.9 U
gamma-Chlordane	UG/KG	15 J	54	800 U	3.7 U	20 J	1.9 U
Toxaphene	UG/KG	880 UJ	1800 U	80000 U	370 U	200 U	190 U
Aroclor 1016	UG/KG	170 UJ	350 U	16000 U	72 U	38 U	38 U
Aroclor 1221	UG/KG	350 UJ	700 U	32000 U	150 U	78 U	77 U
Aroclor 1232	UG/KG	170 UJ	350 U	16000 U	72 U	38 U	38 U
Aroclor 1242	UG/KG	170 UJ	350 U	16000 U	72 U	38 U	38 U
Aroclor 1248	UG/KG	170 UJ	350 U	16000 U	72 U	38 U	38 U
Aroclor 1254	UG/KG	170 UJ	350 U	16000 U	72 U	38 U	38 U
Aroclor 1260	UG/KG	170 UJ	350 U	16000 U	72 U	38 U	38 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-OA-SB01-00	80-OA-SB02-00	80-OA-SB03-00	80-OA-SB04-00	80-OA-SB05-00	80-OA-SB06-00
Laboratory Sample ID:		Q41118112	Q41118118	Q41118302	Q41118509	Q41118501	Q41118503
Date Sampled:		11/03/94	11/03/94	11/03/94	11/04/94	11/04/94	11/04/94
	UNITS						
VOLATILES							
Chloromethane	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
Bromomethane	UG/KG	12 U	12 UJ	13 UJ	12 U	11 U	10 U
Vinyl chloride	UG/KG	12 U	12 UJ	13 UJ	12 U	11 U	10 U
Chloroethane	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
Methylene chloride	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
Acetone	UG/KG	12 U	12 UJ	13 UJ	12 UJ	11 U	10 U
Carbon Disulfide	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
1,1-Dichloroethene	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
1,1-Dichloroethane	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
1,2-Dichloroethene(total)	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
Chloroform	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
1,2-Dichloroethane	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
2-Butanone	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
1,1,1-Trichloroethane	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
Carbon tetrachloride	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
Bromodichloromethane	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
1,2-Dichloropropane	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
cis-1,3-Dichloropropene	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
Trichloroethene	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
Dibromochloromethane	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
1,1,2-Trichloroethane	UG/KG	12 UJ	12 U	13 U	12 U	11 U	10 U
Benzene	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
trans-1,3-Dichloropropene	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
Bromoform	UG/KG	12 UJ	12 U	13 U	12 U	11 U	10 U
4-Methyl-2-pentanone	UG/KG	12 UJ	12 U	13 U	12 U	11 U	10 U
2-Hexanone	UG/KG	12 UJ	12 U	13 U	12 U	11 U	10 U
Tetrachloroethene	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
1,1,2,2-Tetrachloroethane	UG/KG	12 UJ	12 U	13 U	12 U	11 U	10 U
Toluene	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
Chlorobenzene	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
Ethylbenzene	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
Styrene	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U
Xylenes (total)	UG/KG	12 U	12 U	13 U	12 U	11 U	10 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-OA-SB01-00	80-OA-SB02-00	80-OA-SB03-00	80-OA-SB04-00	80-OA-SB05-00	80-OA-SB06-00
Laboratory Sample ID:		Q41118112	Q41118118	Q41118302	Q41118509	Q41118501	Q41118503
Date Sampled:		11/03/94	11/03/94	11/03/94	11/04/94	11/04/94	11/04/94
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
bis(2-Chloroethyl) ether	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
2-Chlorophenol	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
1,3-Dichlorobenzene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
1,4-Dichlorobenzene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
1,2-Dichlorobenzene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
2-Methylphenol	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
2,2'-oxybis-(1-chloropropane)	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
4-Methylphenol	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
N-Nitroso-di-n-propylamine	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Hexachloroethane	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Nitrobenzene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Isophorone	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
2-Nitrophenol	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
2,4-Dimethylphenol	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
bis(2-Chloroethoxy) methane	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
2,4-Dichlorophenol	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
1,2,4-Trichlorobenzene	UG/KG	380 U	380 U	420 U	400 UJ	370 U	360 U
Naphthalene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
4-Chloroaniline	UG/KG	380 UJ	380 UJ	420 UJ	400 UJ	370 UJ	360 UJ
Hexachlorobutadiene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
4-Chloro-3-methylphenol	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
2-Methylnaphthalene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Hexachlorocyclopentadiene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
2,4,6-Trichlorophenol	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
2,4,5-Trichlorophenol	UG/KG	930 U	930 U	1000 UJ	970 UJ	890 UJ	870 UJ
2-Chloronaphthalene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
2-Nitroaniline	UG/KG	930 U	930 U	1000 U	970 U	890 U	870 U
Dimethyl phthalate	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Acenaphthylene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
2,6-Dinitrotoluene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
3-Nitroaniline	UG/KG	930 U	930 U	1000 U	970 U	890 U	870 U
Acenaphthene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-OA-SB01-00	80-OA-SB02-00	80-OA-SB03-00	80-OA-SB04-00	80-OA-SB05-00	80-OA-SB06-00
Laboratory Sample ID:		Q41118112	Q41118118	Q41118302	Q41118509	Q41118501	Q41118503
Date Sampled:		11/03/94	11/03/94	11/03/94	11/04/94	11/04/94	11/04/94
SEMIVOLATILES Cont.	UNITS						
2,4-Dinitrophenol	UG/KG	930 UJ	930 UJ	1000 U	970 U	890 U	870 U
4-Nitrophenol	UG/KG	930 U	930 U	1000 U	970 U	890 U	870 U
Dibenzofuran	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
2,4-Dinitrotoluene	UG/KG	380 U	380 U	420 UJ	400 U	370 UJ	360 UJ
Diethylphthalate	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
4-Chlorophenyl phenyl ether	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Fluorene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
4-Nitroaniline	UG/KG	930 U	930 U	1000 U	970 U	890 U	870 U
4,6-Dinitro-2-methylphenol	UG/KG	930 U	930 U	1000 U	970 U	890 U	870 U
N-nitrosodiphenylamine	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
4-Bromophenyl-phenylether	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Hexachlorobenzene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Pentachlorophenol	UG/KG	930 UJ	930 UJ	1000 U	970 U	890 U	870 U
Phenanthrene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Anthracene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Carbazole	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
di-n-Butylphthalate	UG/KG	130 J	67 J	510	130 J	95 J	97 J
Fluoranthene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Pyrene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Butyl benzyl phthalate	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
3,3'-Dichlorobenzidine	UG/KG	380 U	380 U	420 UJ	400 UJ	370 UJ	360 UJ
Benzo[a]anthracene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Chrysene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
bis(2-Ethylhexyl)phthalate	UG/KG	380 U	380 U	58 J	400 U	42 J	360 U
di-n-Octylphthalate	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Benzo[b]fluoranthene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Benzo[k]fluoranthene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Benzo[a]pyrene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Indeno[1,2,3-cd]pyrene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U
Dibenz[a,h]anthracene	UG/KG	380 U	380 U	420 UJ	400 U	370 UJ	360 UJ
Benzo[g,h,i]perylene	UG/KG	380 U	380 U	420 U	400 U	370 U	360 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-OA-SB01-00	80-OA-SB02-00	80-OA-SB03-00	80-OA-SB04-00	80-OA-SB05-00	80-OA-SB06-00
Laboratory Sample ID:		Q41118112	Q41118118	Q41118302	Q41118509	Q41118501	Q41118503
Date Sampled:		11/03/94	11/03/94	11/03/94	11/04/94	11/04/94	11/04/94
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	2 U	4 U	2.2 U	2.1 U	1.9 U	1.8 U
beta-BHC	UG/KG	2 U	4 U	2.2 U	2.1 U	1.9 U	1.8 U
delta-BHC	UG/KG	2 U	1.2 J	2.2 U	2.1 U	1.9 U	1.8 U
Lindane (gamma-BHC)	UG/KG	2 U	4 U	2.2 U	2.1 U	1.9 U	1.8 U
Heptachlor	UG/KG	2 U	4 U	2.2 U	2.1 U	1.9 U	1.8 U
Aldrin	UG/KG	2 U	15	5.5 J	2.1 U	1.9 U	1.8 U
Heptachlor epoxide	UG/KG	2 U	2.7 J	2.2 U	2.1 U	1.9 U	1.8 U
Endosulfan I	UG/KG	2 U	4 U	2.2 U	2.1 U	1.9 U	1.8 U
Dieldrin	UG/KG	6.3	460	50	4 U	3.7 U	21
4,4'-DDE	UG/KG	26	80	36	0.6 J	3.7 U	13
Endrin	UG/KG	3.8 U	7.7 U	4.2 U	4 U	3.7 U	3.6 U
Endosulfan II	UG/KG	3.8 U	7.7 U	4.2 U	4 U	3.7 U	3.6 U
4,4'-DDD	UG/KG	6.4	20	31	4 U	12	3.6 U
Endosulfan sulfate	UG/KG	3.8 U	7.7 U	4.2 U	4 U	3.7 U	3.6 U
4,4'-DDT	UG/KG	2.1 J	8.3	2.2 J	4 U	5.9	1.6 J
Methoxychlor	UG/KG	20 U	40 U	22 U	21 U	19 U	18 U
Endrin ketone	UG/KG	3.8 U	7.7 U	4.2 U	4 U	3.7 U	3.6 U
Endrin aldehyde	UG/KG	3.8 U	7.7 U	4.2 U	4 U	3.7 U	3.6 U
alpha-Chlordane	UG/KG	2.1	27	4.8	2.1 U	1.9 U	5
gamma-Chlordane	UG/KG	2 U	21	4.9	2.1 U	1.9 U	4.2
Toxaphene	UG/KG	200 U	400 U	220 U	210 U	190 U	180 U
Aroclor 1016	UG/KG	38 U	77 U	42 U	40 U	37 U	36 U
Aroclor 1221	UG/KG	78 U	160 U	86 U	81 U	74 U	73 U
Aroclor 1232	UG/KG	38 U	77 U	42 U	40 U	37 U	36 U
Aroclor 1242	UG/KG	38 U	77 U	42 U	40 U	37 U	36 U
Aroclor 1248	UG/KG	38 U	77 U	42 U	40 U	37 U	36 U
Aroclor 1254	UG/KG	38 U	77 U	42 U	40 U	37 U	36 U
Aroclor 1260	UG/KG	38 U	77 U	42 U	40 U	37 U	36 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-SM-SB01-00	80-SM-SB02-00	80-SM-SB03-00	80-SM-SB04-00	80-SM-SB05-00	80-SM-SB06-00
Laboratory Sample ID:		AC6891	AC6893	AC6897	Q41118101	Q41118102	Q41118103
Date Sampled:		11/02/94	11/02/94	11/02/94	11/03/94	11/03/94	11/03/94
	UNITS						
VOLATILES							
Chloromethane	UG/KG	11 U	11 U	11 U	10 UJ	10 UJ	12 UJ
Bromomethane	UG/KG	11 UJ	11 UJ	11 UJ	10 UJ	10 UJ	12 UJ
Vinyl chloride	UG/KG	11 UJ	11 UJ	11 UJ	10 UJ	10 UJ	12 UJ
Chloroethane	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
Methylene chloride	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
Acetone	UG/KG	30 U	20 U	26 U	10 U	10 U	12 U
Carbon Disulfide	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
1,1-Dichloroethene	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
1,1-Dichloroethane	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
1,2-Dichloroethene(total)	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
Chloroform	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
1,2-Dichloroethane	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
2-Butanone	UG/KG	12 U	11 U	11 U	10 U	10 U	12 U
1,1,1-Trichloroethane	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
Carbon tetrachloride	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
Bromodichloromethane	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
1,2-Dichloropropane	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
cis-1,3-Dichloropropene	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
Trichloroethene	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
Dibromochloromethane	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
1,1,2-Trichloroethane	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
Benzene	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
trans-1,3-Dichloropropene	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
Bromoform	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
4-Methyl-2-pentanone	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
2-Hexanone	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
Tetrachloroethene	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
1,1,2,2-Tetrachloroethane	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
Toluene	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
Chlorobenzene	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
Ethylbenzene	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
Styrene	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U
Xylenes (total)	UG/KG	11 U	11 U	11 U	10 U	10 U	12 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-SM-SB01-00	80-SM-SB02-00	80-SM-SB03-00	80-SM-SB04-00	80-SM-SB05-00	80-SM-SB06-00
Laboratory Sample ID:		AC6891	AC6893	AC6897	Q41118101	Q41118102	Q41118103
Date Sampled:		11/02/94	11/02/94	11/02/94	11/03/94	11/03/94	11/03/94
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
bis(2-Chloroethyl) ether	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
2-Chlorophenol	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
1,3-Dichlorobenzene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
1,4-Dichlorobenzene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
1,2-Dichlorobenzene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
2-Methylphenol	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
2,2'-oxybis-(1-chloropropane)	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
4-Methylphenol	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
N-Nitroso-di-n-propylamine	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
Hexachloroethane	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
Nitrobenzene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
Isophorone	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
2-Nitrophenol	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
2,4-Dimethylphenol	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
bis(2-Chloroethoxy) methane	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
2,4-Dichlorophenol	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
1,2,4-Trichlorobenzene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
Naphthalene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
4-Chloroaniline	UG/KG	350 U	350 U	340 U	350 UJ	350 UJ	390 UJ
Hexachlorobutadiene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
4-Chloro-3-methylphenol	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
2-Methylnaphthalene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
Hexachlorocyclopentadiene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
2,4,6-Trichlorophenol	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
2,4,5-Trichlorophenol	UG/KG	850 U	840 U	830 U	850 U	860 U	950 U
2-Chloronaphthalene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
2-Nitroaniline	UG/KG	850 U	840 U	830 U	850 U	860 U	950 U
Dimethyl phthalate	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
Acenaphthylene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
2,6-Dinitrotoluene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
3-Nitroaniline	UG/KG	850 U	840 U	830 U	850 U	860 U	950 U
Acenaphthene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
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MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-SM-SB01-00	80-SM-SB02-00	80-SM-SB03-00	80-SM-SB04-00	80-SM-SB05-00	80-SM-SB06-00
Laboratory Sample ID:		AC6891	AC6893	AC6897	Q41118101	Q41118102	Q41118103
Date Sampled:		11/02/94	11/02/94	11/02/94	11/03/94	11/03/94	11/03/94
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	850 U	840 U	830 U	850 UJ	860 UJ	950 UJ
4-Nitrophenol	UG/KG	850 UJ	840 UJ	830 UJ	850 U	860 U	950 U
Dibenzofuran	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
2,4-Dinitrotoluene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
Diethyiphthalate	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
4-Chlorophenyl phenyl ether	UG/KG	350 UJ	350 UJ	340 UJ	350 U	350 U	390 U
Fluorene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
4-Nitroaniline	UG/KG	850 UJ	840 UJ	830 UJ	850 U	860 U	950 U
4,6-Dinitro-2-methylphenol	UG/KG	850 U	840 U	830 U	850 U	860 U	950 U
N-nitrosodiphenylamine	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
4-Bromophenyl-phenylether	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
Hexachlorobenzene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
Pentachlorophenol	UG/KG	850 U	840 U	830 U	850 UJ	860 UJ	950 UJ
Phenanthrene	UG/KG	350 U	350 U	340 U	100 J	350 U	390 U
Anthracene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
Carbazole	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
di-n-Butylphthalate	UG/KG	350 U	350 U	340 U	60 J	140 J	120 J
Fluoranthene	UG/KG	350 U	350 U	340 U	100 J	350 U	390 U
Pyrene	UG/KG	350 U	350 U	340 U	92 J	350 U	390 U
Butyl benzyl phthalate	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
3,3'-Dichlorobenzidine	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
Benzo[a]anthracene	UG/KG	350 U	350 U	340 U	47 J	350 U	390 U
Chrysene	UG/KG	350 U	350 U	340 U	53 J	350 U	390 U
bis(2-Ethylhexyl)phthalate	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
di-n-Octylphthalate	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
Benzo[b]fluoranthene	UG/KG	350 U	350 U	340 U	40 J	350 U	390 U
Benzo[k]fluoranthene	UG/KG	350 U	350 U	340 U	38 J	350 U	390 U
Benzo[a]pyrene	UG/KG	350 U	350 U	340 U	43 J	350 U	390 U
Indeno[1,2,3-cd]pyrene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
Dibenz[a,h]anthracene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U
Benzo[g,h,i]perylene	UG/KG	350 U	350 U	340 U	350 U	350 U	390 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-SM-SB01-00	80-SM-SB02-00	80-SM-SB03-00	80-SM-SB04-00	80-SM-SB05-00	80-SM-SB06-00
Laboratory Sample ID:		AC6891	AC6893	AC6897	Q41118101	Q41118102	Q41118103
Date Sampled:		11/02/94	11/02/94	11/02/94	11/03/94	11/03/94	11/03/94
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
beta-BHC	UG/KG	1.8 UJ	1.8 UJ	1.8 UJ	1.8 U	1.8 U	2 U
delta-BHC	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
Lindane (gamma-BHC)	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
Heptachlor	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
Aldrin	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
Heptachlor epoxide	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
Endosulfan I	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
Dieldrin	UG/KG	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.9 U
4,4'-DDE	UG/KG	3.4 U	3.4 U	3.4 U	0.9 J	3.5 U	3.9 U
Endrin	UG/KG	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.9 U
Endosulfan II	UG/KG	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.9 U
4,4'-DDD	UG/KG	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.9 U
Endosulfan sulfate	UG/KG	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.9 U
4,4'-DDT	UG/KG	3.4 U	3.4 U	3.4 U	1.3 J	3.5 U	3.9 U
Methoxychlor	UG/KG	18 U	18 U	18 U	18 U	18 U	20 U
Endrin ketone	UG/KG	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.9 U
Endrin aldehyde	UG/KG	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.9 U
alpha-Chlordane	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
gamma-Chlordane	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
Toxaphene	UG/KG	180 U	180 U	180 U	180 U	180 U	200 U
Aroclor 1016	UG/KG	34 U	34 U	34 U	35 U	35 U	39 U
Aroclor 1221	UG/KG	70 U	69 U	70 U	71 U	72 U	80 U
Aroclor 1232	UG/KG	34 U	34 U	34 U	35 U	35 U	39 U
Aroclor 1242	UG/KG	34 U	34 U	34 U	35 U	35 U	39 U
Aroclor 1248	UG/KG	34 U	34 U	34 U	35 U	35 U	39 U
Aroclor 1254	UG/KG	34 U	34 U	34 U	35 U	35 U	39 U
Aroclor 1260	UG/KG	34 U	34 U	34 U	35 U	35 U	39 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-SM-SB07-00	80-SM-SB08-00	80-SM-SB09-00	80-SM-SB10-00	80-DPA-SB01-00	80-DPA-SB02-00
Laboratory Sample ID:		Q41118105	Q41118106	Q41118107	Q41118109	AF6787	AF6789
Date Sampled:		11/03/94	11/03/94	11/03/94	11/03/94	06/13/95	06/13/95
	UNITS						
VOLATILES							
Chloromethane	UG/KG	11 UJ	14 UJ	11 UJ	11 U	NA	NA
Bromomethane	UG/KG	11 UJ	14 UJ	11 UJ	11 U	NA	NA
Vinyl chloride	UG/KG	11 UJ	14 UJ	11 UJ	11 U	NA	NA
Chloroethane	UG/KG	11 U	14 U	11 U	11 U	NA	NA
Methylene chloride	UG/KG	11 U	14 U	11 U	13 U	NA	NA
Acetone	UG/KG	11 U	14 U	11 U	11 U	NA	NA
Carbon Disulfide	UG/KG	11 U	14 U	11 U	11 U	NA	NA
1,1-Dichloroethene	UG/KG	11 U	14 U	11 U	11 U	NA	NA
1,1-Dichloroethane	UG/KG	11 U	14 U	11 U	11 U	NA	NA
1,2-Dichloroethene(total)	UG/KG	11 U	14 U	11 U	11 U	NA	NA
Chloroform	UG/KG	11 U	14 U	11 U	11 U	NA	NA
1,2-Dichloroethane	UG/KG	11 U	14 U	11 U	11 U	NA	NA
2-Butanone	UG/KG	11 U	14 U	11 U	11 U	NA	NA
1,1,1-Trichloroethane	UG/KG	11 U	14 U	11 U	11 U	NA	NA
Carbon tetrachloride	UG/KG	11 U	14 U	11 U	11 U	NA	NA
Bromodichloromethane	UG/KG	11 U	14 U	11 U	11 U	NA	NA
1,2-Dichloropropane	UG/KG	11 U	14 U	11 U	11 U	NA	NA
cis-1,3-Dichloropropene	UG/KG	11 U	14 U	11 U	11 U	NA	NA
Trichloroethene	UG/KG	11 U	14 U	11 U	11 U	NA	NA
Dibromochloromethane	UG/KG	11 U	14 U	11 U	11 U	NA	NA
1,1,2-Trichloroethane	UG/KG	11 U	14 U	11 U	11 UJ	NA	NA
Benzene	UG/KG	11 U	14 U	11 U	11 U	NA	NA
trans-1,3-Dichloropropene	UG/KG	11 U	14 U	11 U	11 U	NA	NA
Bromoform	UG/KG	11 U	14 U	11 U	11 UJ	NA	NA
4-Methyl-2-pentanone	UG/KG	11 U	14 U	11 U	11 UJ	NA	NA
2-Hexanone	UG/KG	11 U	14 U	11 U	11 UJ	NA	NA
Tetrachloroethene	UG/KG	11 U	14 U	11 U	11 U	NA	NA
1,1,2,2-Tetrachloroethane	UG/KG	11 U	14 U	11 U	11 UJ	NA	NA
Toluene	UG/KG	11 U	14 U	11 U	11 U	NA	NA
Chlorobenzene	UG/KG	11 U	14 U	11 U	11 U	NA	NA
Ethylbenzene	UG/KG	11 U	14 U	11 U	11 U	NA	NA
Styrene	UG/KG	11 U	14 U	11 U	11 U	NA	NA
Xylenes (total)	UG/KG	11 U	14 U	11 U	11 U	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-SM-SB07-00	80-SM-SB08-00	80-SM-SB09-00	80-SM-SB10-00	80-DPA-SB01-00	80-DPA-SB02-00
Laboratory Sample ID:		Q41118105	Q41118106	Q41118107	Q41118109	AF6787	AF6789
Date Sampled:		11/03/94	11/03/94	11/03/94	11/03/94	06/13/95	06/13/95
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	350 U	440 U	350 U	360 U	NA	NA
bis(2-Chloroethyl) ether	UG/KG	350 U	440 U	350 U	360 U	NA	NA
2-Chlorophenol	UG/KG	350 U	440 U	350 U	360 U	NA	NA
1,3-Dichlorobenzene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
1,4-Dichlorobenzene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
1,2-Dichlorobenzene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
2-Methylphenol	UG/KG	350 U	440 U	350 U	360 U	NA	NA
2,2'-oxybis-(1-chloropropane)	UG/KG	350 U	440 U	350 U	360 U	NA	NA
4-Methylphenol	UG/KG	350 U	440 U	350 U	360 U	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Hexachloroethane	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Nitrobenzene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Isophorone	UG/KG	350 U	440 U	350 U	360 U	NA	NA
2-Nitrophenol	UG/KG	350 U	440 U	350 U	360 U	NA	NA
2,4-Dimethylphenol	UG/KG	350 U	440 U	350 U	360 U	NA	NA
bis(2-Chloroethoxy) methane	UG/KG	350 U	440 U	350 U	360 U	NA	NA
2,4-Dichlorophenol	UG/KG	350 U	440 U	350 U	360 U	NA	NA
1,2,4-Trichlorobenzene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Naphthalene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
4-Chloroaniline	UG/KG	350 U	440 U	350 U	360 UJ	NA	NA
Hexachlorobutadiene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
4-Chloro-3-methylphenol	UG/KG	350 U	440 U	350 U	360 U	NA	NA
2-Methylnaphthalene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Hexachlorocyclopentadiene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
2,4,6-Trichlorophenol	UG/KG	350 U	440 U	350 U	360 U	NA	NA
2,4,5-Trichlorophenol	UG/KG	840 U	1100 U	860 U	880 U	NA	NA
2-Chloronaphthalene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
2-Nitroaniline	UG/KG	840 U	1100 U	860 U	880 U	NA	NA
Dimethyl phthalate	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Acenaphthylene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
2,6-Dinitrotoluene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
3-Nitroaniline	UG/KG	840 U	1100 U	860 U	880 U	NA	NA
Acenaphthene	UG/KG	350 U	440 U	350 U	360 U	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-SM-SB07-00	80-SM-SB08-00	80-SM-SB09-00	80-SM-SB10-00	80-DPA-SB01-00	80-DPA-SB02-00
Laboratory Sample ID:		Q41118105	Q41118106	Q41118107	Q41118109	AF6787	AF6789
Date Sampled:		11/03/94	11/03/94	11/03/94	11/03/94	06/13/95	06/13/95
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	840 U	1100 U	860 U	880 UJ	NA	NA
4-Nitrophenol	UG/KG	840 U	1100 U	860 U	880 U	NA	NA
Dibenzofuran	UG/KG	350 U	440 U	350 U	360 U	NA	NA
2,4-Dinitrotoluene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Diethylphthalate	UG/KG	350 U	440 U	350 U	360 U	NA	NA
4-Chlorophenyl phenyl ether	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Fluorene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
4-Nitroaniline	UG/KG	840 U	1100 U	860 U	880 U	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	840 U	1100 U	860 U	880 U	NA	NA
N-nitrosodiphenylamine	UG/KG	350 U	440 U	350 U	360 U	NA	NA
4-Bromophenyl-phenylether	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Hexachlorobenzene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Pentachlorophenol	UG/KG	840 U	1100 U	860 U	880 UJ	NA	NA
Phenanthrene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Anthracene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Carbazole	UG/KG	350 U	440 U	350 U	360 U	NA	NA
di-n-Butylphthalate	UG/KG	86 J	79 J	110 J	120 J	NA	NA
Fluoranthene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Pyrene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Butyl benzyl phthalate	UG/KG	350 U	440 U	350 U	360 U	NA	NA
3,3'-Dichlorobenzidine	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Benzo[a]anthracene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Chrysene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	350 U	440 U	350 U	38 J	NA	NA
di-n-Octylphthalate	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Benzo[b]fluoranthene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Benzo[k]fluoranthene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Benzo[a]pyrene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Indeno[1,2,3-cd]pyrene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Dibenz[a,h]anthracene	UG/KG	350 U	440 U	350 U	360 U	NA	NA
Benzo[g,h,i]perylene	UG/KG	350 U	440 U	350 U	360 U	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-SM-SB07-00	80-SM-SB08-00	80-SM-SB09-00	80-SM-SB10-00	80-DPA-SB01-00	80-DPA-SB02-00
Laboratory Sample ID:		Q41118105	Q41118106	Q41118107	Q41118109	AF6787	AF6789
Date Sampled:		11/03/94	11/03/94	11/03/94	11/03/94	06/13/95	06/13/95
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	1.8 U	2.3 U	1.8 U	1.9 U	1000 U	10 U
beta-BHC	UG/KG	1.8 U	2.3 U	1.8 U	1.9 U	1000 U	10 U
delta-BHC	UG/KG	1.8 U	2.3 U	1.8 U	1.9 U	1000 U	10 U
Lindane (gamma-BHC)	UG/KG	1.8 U	2.3 U	1.8 U	1.9 U	1000 U	10 U
Heptachlor	UG/KG	1.8 U	2.3 U	1.8 U	1.9 U	1000 U	10 U
Aldrin	UG/KG	1.8 U	2.3 U	1.8 U	1.9 U	1000 U	10 U
Heptachlor epoxide	UG/KG	1.8 U	2.3 U	1.8 U	1.9 U	1000 U	10 U
Endosulfan I	UG/KG	1.8 U	2.3 U	1.8 U	1.9 U	1000 U	10 U
Dieldrin	UG/KG	3.5 U	1.1 J	3.5 U	2 J	2000 U	63
4,4'-DDE	UG/KG	3.5 U	2.7 J	3.5 U	2.9 J	2000 U	130
Endrin	UG/KG	3.5 U	4.4 U	3.5 U	3.6 U	2000 U	19 U
Endosulfan II	UG/KG	3.5 U	4.4 U	3.5 U	3.6 U	2000 U	19 U
4,4'-DDD	UG/KG	3.5 U	1.7 J	3.5 U	1.5 J	130000	1300
Endosulfan sulfate	UG/KG	3.5 U	4.4 U	3.5 U	3.6 U	2000 U	19 U
4,4'-DDT	UG/KG	3.5 U	1.5 J	3.5 U	3.6 U	8400	100
Methoxychlor	UG/KG	18 U	23 U	18 U	19 U	10000 U	100 U
Endrin ketone	UG/KG	3.5 U	4.4 U	3.5 U	3.6 U	2000 U	19 U
Endrin aldehyde	UG/KG	3.5 U	4.4 U	3.5 U	3.6 U	2000 U	19 U
alpha-Chlordane	UG/KG	0.82 J	2.3 U	1.8 U	1.9 U	1000 U	10 U
gamma-Chlordane	UG/KG	1.8 U	2.3 U	1.8 U	1.9 U	1000 U	10 U
Toxaphene	UG/KG	180 U	230 U	180 U	190 U	100000 U	1000 U
Aroclor 1016	UG/KG	35 U	44 U	35 U	36 U	NA	NA
Aroclor 1221	UG/KG	70 U	89 U	72 U	74 U	NA	NA
Aroclor 1232	UG/KG	35 U	44 U	35 U	36 U	NA	NA
Aroclor 1242	UG/KG	35 U	44 U	35 U	36 U	NA	NA
Aroclor 1248	UG/KG	35 U	44 U	35 U	36 U	NA	NA
Aroclor 1254	UG/KG	35 U	44 U	35 U	36 U	NA	NA
Aroclor 1260	UG/KG	35 U	44 U	35 U	36 U	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB03-00	80-DPA-SB04-00	80-DPA-SB05-00	80-DPA-SB06-00	80-DPA-SB07-00	80-DPA-SB08-00
Laboratory Sample ID:		AF6790	AF6793	AF7014	AF7016	AF7018	AF6799
Date Sampled:		06/13/95	06/13/95	06/14/95	06/14/95	06/14/95	06/13/95
	UNITS						
VOLATILES							
Chloromethane	UG/KG	NA	NA	NA	NA	NA	NA
Bromomethane	UG/KG	NA	NA	NA	NA	NA	NA
Vinyl chloride	UG/KG	NA	NA	NA	NA	NA	NA
Chloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Methylene chloride	UG/KG	NA	NA	NA	NA	NA	NA
Acetone	UG/KG	NA	NA	NA	NA	NA	NA
Carbon Disulfide	UG/KG	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/KG	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/KG	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene(total)	UG/KG	NA	NA	NA	NA	NA	NA
Chloroform	UG/KG	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/KG	NA	NA	NA	NA	NA	NA
2-Butanone	UG/KG	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	UG/KG	NA	NA	NA	NA	NA	NA
Bromodichloromethane	UG/KG	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/KG	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/KG	NA	NA	NA	NA	NA	NA
Trichloroethene	UG/KG	NA	NA	NA	NA	NA	NA
Dibromochloromethane	UG/KG	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Benzene	UG/KG	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/KG	NA	NA	NA	NA	NA	NA
Bromoform	UG/KG	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	UG/KG	NA	NA	NA	NA	NA	NA
2-Hexanone	UG/KG	NA	NA	NA	NA	NA	NA
Tetrachloroethene	UG/KG	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Toluene	UG/KG	NA	NA	NA	NA	NA	NA
Chlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
Ethylbenzene	UG/KG	NA	NA	NA	NA	NA	NA
Styrene	UG/KG	NA	NA	NA	NA	NA	NA
Xylenes (total)	UG/KG	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB03-00	80-DPA-SB04-00	80-DPA-SB05-00	80-DPA-SB06-00	80-DPA-SB07-00	80-DPA-SB08-00
Laboratory Sample ID:		AF6790	AF6793	AF7014	AF7016	AF7018	AF6799
Date Sampled:		06/13/95	06/13/95	06/14/95	06/14/95	06/14/95	06/13/95
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl) ether	UG/KG	NA	NA	NA	NA	NA	NA
2-Chlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
2-Methylphenol	UG/KG	NA	NA	NA	NA	NA	NA
2,2'-oxybis-(1-chloropropane)	UG/KG	NA	NA	NA	NA	NA	NA
4-Methylphenol	UG/KG	NA	NA	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	NA	NA	NA	NA	NA	NA
Hexachloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Nitrobenzene	UG/KG	NA	NA	NA	NA	NA	NA
Isophorone	UG/KG	NA	NA	NA	NA	NA	NA
2-Nitrophenol	UG/KG	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	UG/KG	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy) methane	UG/KG	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
Naphthalene	UG/KG	NA	NA	NA	NA	NA	NA
4-Chloroaniline	UG/KG	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	UG/KG	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/KG	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	UG/KG	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/KG	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	UG/KG	NA	NA	NA	NA	NA	NA
2-Nitroaniline	UG/KG	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	UG/KG	NA	NA	NA	NA	NA	NA
Acenaphthylene	UG/KG	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/KG	NA	NA	NA	NA	NA	NA
3-Nitroaniline	UG/KG	NA	NA	NA	NA	NA	NA
Acenaphthene	UG/KG	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB03-00	80-DPA-SB04-00	80-DPA-SB05-00	80-DPA-SB06-00	80-DPA-SB07-00	80-DPA-SB08-00
Laboratory Sample ID:		AF6790	AF6793	AF7014	AF7016	AF7018	AF6799
Date Sampled:		06/13/95	06/13/95	06/14/95	06/14/95	06/14/95	06/13/95
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	NA	NA	NA	NA	NA	NA
4-Nitrophenol	UG/KG	NA	NA	NA	NA	NA	NA
Dibenzofuran	UG/KG	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/KG	NA	NA	NA	NA	NA	NA
Diethylphthalate	UG/KG	NA	NA	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	UG/KG	NA	NA	NA	NA	NA	NA
Fluorene	UG/KG	NA	NA	NA	NA	NA	NA
4-Nitroaniline	UG/KG	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	UG/KG	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/KG	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
Pentachlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
Phenanthrene	UG/KG	NA	NA	NA	NA	NA	NA
Anthracene	UG/KG	NA	NA	NA	NA	NA	NA
Carbazole	UG/KG	NA	NA	NA	NA	NA	NA
di-n-Butylphthalate	UG/KG	NA	NA	NA	NA	NA	NA
Fluoranthene	UG/KG	NA	NA	NA	NA	NA	NA
Pyrene	UG/KG	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	UG/KG	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	UG/KG	NA	NA	NA	NA	NA	NA
Chrysene	UG/KG	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	NA	NA	NA	NA	NA	NA
di-n-Octylphthalate	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	UG/KG	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	UG/KG	NA	NA	NA	NA	NA	NA
Dibenz[a,h]anthracene	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	UG/KG	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB03-00	80-DPA-SB04-00	80-DPA-SB05-00	80-DPA-SB06-00	80-DPA-SB07-00	80-DPA-SB08-00
Laboratory Sample ID:		AF6790	AF6793	AF7014	AF7016	AF7018	AF6799
Date Sampled:		06/13/95	06/13/95	06/14/95	06/14/95	06/14/95	06/13/95
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	1100 U	1.8 U	2.2 U	46 U	66 U	2 U
beta-BHC	UG/KG	1100 U	1.8 U	2.2 U	46 U	66 U	2 U
delta-BHC	UG/KG	1100 U	1.8 U	2.2 U	46 U	66 U	2 U
Lindane (gamma-BHC)	UG/KG	1100 U	1.8 U	2.2 U	46 U	66 U	2 U
Heptachlor	UG/KG	1100 U	1.8 U	2.2 U	46 U	66 U	2 U
Aldrin	UG/KG	1100 U	1.8 U	2.2 U	46 U	66 U	2 U
Heptachlor epoxide	UG/KG	1100 U	1.8 U	9.9	46 U	66 U	2 U
Endosulfan I	UG/KG	1100 U	1.8 U	2.2 U	46 U	66 U	2 U
Dieldrin	UG/KG	2100 U	30 J	590	1700	800	43 J
4,4'-DDE	UG/KG	2100 U	140	240	510	600	180
Endrin	UG/KG	2100 U	3.4 U	4.2 U	90 U	130 U	3.9 U
Endosulfan II	UG/KG	2100 U	3.4 U	4.2 U	90 U	130 U	3.9 U
4,4'-DDD	UG/KG	260000	13 J	420 J	8400 J	10000 J	64 J
Endosulfan sulfate	UG/KG	2100 U	3.4 U	4.2 U	90 U	130 U	3.9 U
4,4'-DDT	UG/KG	29000	100	400	1200	5500	220 J
Methoxychlor	UG/KG	11000 U	18 U	22 U	460 U	660 U	20 U
Endrin ketone	UG/KG	2100 U	3.4 U	4.2 U	90 U	130 U	3.9 U
Endrin aldehyde	UG/KG	2100 U	3.4 U	5.2 J	90 U	130 U	3.9 U
alpha-Chlordane	UG/KG	1100 U	11 J	130 J	130	100 J	42 J
gamma-Chlordane	UG/KG	1100 U	11	33 J	46 U	66 U	45 J
Toxaphene	UG/KG	110000 U	180 U	220 U	4600 U	6600 U	200 U
Aroclor 1016	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1221	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1232	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1242	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1248	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1254	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1260	UG/KG	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB09-00	80-DPA-SB10-00	80-DPA-SB11-00	80-DPA-SB12-00	80-DPA-SB13-00	80-DPA-SB14-00
Laboratory Sample ID:		AF7022	AF7019	AF7020	AF7314	AF6802	AF7021
Date Sampled:		06/14/95	06/14/95	06/14/95	06/18/95	06/14/95	06/14/95
	UNITS						
VOLATILES							
Chloromethane	UG/KG	NA	NA	NA	NA	NA	NA
Bromomethane	UG/KG	NA	NA	NA	NA	NA	NA
Vinyl chloride	UG/KG	NA	NA	NA	NA	NA	NA
Chloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Methylene chloride	UG/KG	NA	NA	NA	NA	NA	NA
Acetone	UG/KG	NA	NA	NA	NA	NA	NA
Carbon Disulfide	UG/KG	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/KG	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/KG	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene(total)	UG/KG	NA	NA	NA	NA	NA	NA
Chloroform	UG/KG	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/KG	NA	NA	NA	NA	NA	NA
2-Butanone	UG/KG	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	UG/KG	NA	NA	NA	NA	NA	NA
Bromodichloromethane	UG/KG	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/KG	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/KG	NA	NA	NA	NA	NA	NA
Trichloroethene	UG/KG	NA	NA	NA	NA	NA	NA
Dibromochloromethane	UG/KG	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Benzene	UG/KG	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/KG	NA	NA	NA	NA	NA	NA
Bromoform	UG/KG	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	UG/KG	NA	NA	NA	NA	NA	NA
2-Hexanone	UG/KG	NA	NA	NA	NA	NA	NA
Tetrachloroethene	UG/KG	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Toluene	UG/KG	NA	NA	NA	NA	NA	NA
Chlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
Ethylbenzene	UG/KG	NA	NA	NA	NA	NA	NA
Styrene	UG/KG	NA	NA	NA	NA	NA	NA
Xylenes (total)	UG/KG	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB09-00	80-DPA-SB10-00	80-DPA-SB11-00	80-DPA-SB12-00	80-DPA-SB13-00	80-DPA-SB14-00
Laboratory Sample ID:		AF7022	AF7019	AF7020	AF7314	AF6802	AF7021
Date Sampled:		06/14/95	06/14/95	06/14/95	06/18/95	06/14/95	06/14/95
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl) ether	UG/KG	NA	NA	NA	NA	NA	NA
2-Chlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
2-Methylphenol	UG/KG	NA	NA	NA	NA	NA	NA
2,2'-oxybis-(1-chloropropane)	UG/KG	NA	NA	NA	NA	NA	NA
4-Methylphenol	UG/KG	NA	NA	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	NA	NA	NA	NA	NA	NA
Hexachloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Nitrobenzene	UG/KG	NA	NA	NA	NA	NA	NA
Isophorone	UG/KG	NA	NA	NA	NA	NA	NA
2-Nitrophenol	UG/KG	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	UG/KG	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy) methane	UG/KG	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
Naphthalene	UG/KG	NA	NA	NA	NA	NA	NA
4-Chloroaniline	UG/KG	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	UG/KG	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/KG	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	UG/KG	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/KG	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	UG/KG	NA	NA	NA	NA	NA	NA
2-Nitroaniline	UG/KG	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	UG/KG	NA	NA	NA	NA	NA	NA
Acenaphthylene	UG/KG	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/KG	NA	NA	NA	NA	NA	NA
3-Nitroaniline	UG/KG	NA	NA	NA	NA	NA	NA
Acenaphthene	UG/KG	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB09-00	80-DPA-SB10-00	80-DPA-SB11-00	80-DPA-SB12-00	80-DPA-SB13-00	80-DPA-SB14-00
Laboratory Sample ID:		AF7022	AF7019	AF7020	AF7314	AF6802	AF7021
Date Sampled:		06/14/95	06/14/95	06/14/95	06/18/95	06/14/95	06/14/95
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	NA	NA	NA	NA	NA	NA
4-Nitrophenol	UG/KG	NA	NA	NA	NA	NA	NA
Dibenzofuran	UG/KG	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/KG	NA	NA	NA	NA	NA	NA
Diethylphthalate	UG/KG	NA	NA	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	UG/KG	NA	NA	NA	NA	NA	NA
Fluorene	UG/KG	NA	NA	NA	NA	NA	NA
4-Nitroaniline	UG/KG	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	UG/KG	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/KG	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
Pentachlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
Phenanthrene	UG/KG	NA	NA	NA	NA	NA	NA
Anthracene	UG/KG	NA	NA	NA	NA	NA	NA
Carbazole	UG/KG	NA	NA	NA	NA	NA	NA
di-n-Butylphthalate	UG/KG	NA	NA	NA	NA	NA	NA
Fluoranthene	UG/KG	NA	NA	NA	NA	NA	NA
Pyrene	UG/KG	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	UG/KG	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	UG/KG	NA	NA	NA	NA	NA	NA
Chrysene	UG/KG	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	NA	NA	NA	NA	NA	NA
di-n-Octylphthalate	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	UG/KG	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	UG/KG	NA	NA	NA	NA	NA	NA
Dibenz[a,h]anthracene	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	UG/KG	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB09-00	80-DPA-SB10-00	80-DPA-SB11-00	80-DPA-SB12-00	80-DPA-SB13-00	80-DPA-SB14-00
Laboratory Sample ID:		AF7022	AF7019	AF7020	AF7314	AF6802	AF7021
Date Sampled:		06/14/95	06/14/95	06/14/95	06/18/95	06/14/95	06/14/95
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	9.9 U	44 U	2.2 U	1.8 U	2.1 U	11 U
beta-BHC	UG/KG	9.9 U	44 U	2.2 U	1.8 U	2.1 U	11 U
delta-BHC	UG/KG	9.9 U	44 U	2.2 U	1.8 U	2.1 J	11 U
Lindane (gamma-BHC)	UG/KG	9.9 U	44 U	2.2 U	1.8 U	2.1 U	11 U
Heptachlor	UG/KG	9.9 U	44 U	2.2 U	1.8 U	2.1 U	11 U
Aldrin	UG/KG	21	49	2.2 U	1.8 U	5.4	11 U
Heptachlor epoxide	UG/KG	9.9 U	44 U	2.2 U	1.8 U	2.1 U	11 U
Endosulfan I	UG/KG	9.9 U	44 U	2.2 U	1.8 U	2.1 U	11 U
Dieldrin	UG/KG	1000	5600	24	4.5	550	1400
4,4'-DDE	UG/KG	200	460	120	13	250	310
Endrin	UG/KG	19 U	85 U	4.2 U	3.5 U	4 U	22 U
Endosulfan II	UG/KG	19 U	85 U	4.2 U	3.5 U	4 U	22 U
4,4'-DDD	UG/KG	160 J	150 J	50 J	11	150	23 J
Endosulfan sulfate	UG/KG	19 U	85 U	4.2 U	3.5 U	4 U	22 U
4,4'-DDT	UG/KG	130	260	96	18	87	210
Methoxychlor	UG/KG	99 U	440 U	22 U	18 U	21 U	110 U
Endrin ketone	UG/KG	19 U	85 U	4.2 U	3.5 U	4 U	22 U
Endrin aldehyde	UG/KG	19 U	85 U	4.2 U	3.5 U	4 U	22 U
alpha-Chlordane	UG/KG	300 J	670 J	2.2 U	2.2	80 J	72 J
gamma-Chlordane	UG/KG	240	640 J	2.2 U	1.8 U	59	27 J
Toxaphene	UG/KG	990 U	4400 U	220 U	180 U	210 U	1100 U
Aroclor 1016	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1221	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1232	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1242	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1248	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1254	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1260	UG/KG	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB15-00	80-DPA-SB16-00	80-DPA-SB17-00	80-DPA-SB18-00	80-DPA-SB19-00	80-DPA-SB20-00
Laboratory Sample ID:		AF7027	AF7028	AF6805	AF7029	AF7031	AF6800
Date Sampled:		06/14/95	06/14/95	06/14/95	06/14/95	06/14/95	06/14/95
	UNITS						
VOLATILES							
Chloromethane	UG/KG	NA	NA	NA	NA	NA	NA
Bromomethane	UG/KG	NA	NA	NA	NA	NA	NA
Vinyl chloride	UG/KG	NA	NA	NA	NA	NA	NA
Chloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Methylene chloride	UG/KG	NA	NA	NA	NA	NA	NA
Acetone	UG/KG	NA	NA	NA	NA	NA	NA
Carbon Disulfide	UG/KG	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/KG	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/KG	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene(total)	UG/KG	NA	NA	NA	NA	NA	NA
Chloroform	UG/KG	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/KG	NA	NA	NA	NA	NA	NA
2-Butanone	UG/KG	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	UG/KG	NA	NA	NA	NA	NA	NA
Bromodichloromethane	UG/KG	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/KG	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/KG	NA	NA	NA	NA	NA	NA
Trichloroethene	UG/KG	NA	NA	NA	NA	NA	NA
Dibromochloromethane	UG/KG	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Benzene	UG/KG	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/KG	NA	NA	NA	NA	NA	NA
Bromoform	UG/KG	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	UG/KG	NA	NA	NA	NA	NA	NA
2-Hexanone	UG/KG	NA	NA	NA	NA	NA	NA
Tetrachloroethene	UG/KG	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Toluene	UG/KG	NA	NA	NA	NA	NA	NA
Chlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
Ethylbenzene	UG/KG	NA	NA	NA	NA	NA	NA
Styrene	UG/KG	NA	NA	NA	NA	NA	NA
Xylenes (total)	UG/KG	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB15-00	80-DPA-SB16-00	80-DPA-SB17-00	80-DPA-SB18-00	80-DPA-SB19-00	80-DPA-SB20-00
Laboratory Sample ID:		AF7027	AF7028	AF6805	AF7029	AF7031	AF6800
Date Sampled:		06/14/95	06/14/95	06/14/95	06/14/95	06/14/95	06/14/95
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl) ether	UG/KG	NA	NA	NA	NA	NA	NA
2-Chlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
2-Methylphenol	UG/KG	NA	NA	NA	NA	NA	NA
2,2'-oxybis-(1-chloropropane)	UG/KG	NA	NA	NA	NA	NA	NA
4-Methylphenol	UG/KG	NA	NA	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	NA	NA	NA	NA	NA	NA
Hexachloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Nitrobenzene	UG/KG	NA	NA	NA	NA	NA	NA
Isophorone	UG/KG	NA	NA	NA	NA	NA	NA
2-Nitrophenol	UG/KG	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	UG/KG	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy) methane	UG/KG	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
Naphthalene	UG/KG	NA	NA	NA	NA	NA	NA
4-Chloroaniline	UG/KG	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	UG/KG	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/KG	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	UG/KG	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/KG	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	UG/KG	NA	NA	NA	NA	NA	NA
2-Nitroaniline	UG/KG	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	UG/KG	NA	NA	NA	NA	NA	NA
Acenaphthylene	UG/KG	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/KG	NA	NA	NA	NA	NA	NA
3-Nitroaniline	UG/KG	NA	NA	NA	NA	NA	NA
Acenaphthene	UG/KG	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB15-00	80-DPA-SB16-00	80-DPA-SB17-00	80-DPA-SB18-00	80-DPA-SB19-00	80-DPA-SB20-00
Laboratory Sample ID:		AF7027	AF7028	AF6805	AF7029	AF7031	AF6800
Date Sampled:		06/14/95	06/14/95	06/14/95	06/14/95	06/14/95	06/14/95
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	NA	NA	NA	NA	NA	NA
4-Nitrophenol	UG/KG	NA	NA	NA	NA	NA	NA
Dibenzofuran	UG/KG	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/KG	NA	NA	NA	NA	NA	NA
Diethylphthalate	UG/KG	NA	NA	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	UG/KG	NA	NA	NA	NA	NA	NA
Fluorene	UG/KG	NA	NA	NA	NA	NA	NA
4-Nitroaniline	UG/KG	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	UG/KG	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/KG	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
Pentachlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
Phenanthrene	UG/KG	NA	NA	NA	NA	NA	NA
Anthracene	UG/KG	NA	NA	NA	NA	NA	NA
Carbazole	UG/KG	NA	NA	NA	NA	NA	NA
di-n-Butylphthalate	UG/KG	NA	NA	NA	NA	NA	NA
Fluoranthene	UG/KG	NA	NA	NA	NA	NA	NA
Pyrene	UG/KG	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	UG/KG	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	UG/KG	NA	NA	NA	NA	NA	NA
Chrysene	UG/KG	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	NA	NA	NA	NA	NA	NA
di-n-Octylphthalate	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	UG/KG	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	UG/KG	NA	NA	NA	NA	NA	NA
Dibenz[a,h]anthracene	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	UG/KG	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB15-00	80-DPA-SB16-00	80-DPA-SB17-00	80-DPA-SB18-00	80-DPA-SB19-00	80-DPA-SB20-00
Laboratory Sample ID:		AF7027	AF7028	AF6805	AF7029	AF7031	AF6800
Date Sampled:		06/14/95	06/14/95	06/14/95	06/14/95	06/14/95	06/14/95
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	16 U	11 U	1.9 U	2 U	2.5 U	2.2 U
beta-BHC	UG/KG	16 U	11 U	1.9 U	2 U	2.5 U	2.2 U
delta-BHC	UG/KG	16 U	11 U	1.9 U	2 U	2.5 U	2.2 U
Lindane (gamma-BHC)	UG/KG	16 U	11 U	1.9 U	2 U	2.5 U	2.2 U
Heptachlor	UG/KG	16 U	11 U	1.9 U	2 U	2.5 U	2.2 U
Aldrin	UG/KG	16 U	11 U	1.9 U	2 U	2.5 U	2.2 U
Heptachlor epoxide	UG/KG	16 U	11 U	1.9 U	2 U	2.5 U	2.2 U
Endosulfan I	UG/KG	16 U	11 U	1.9 U	2 U	2.5 U	2.2 U
Dieldrin	UG/KG	470	96 J	12	3.8 U	76	12 J
4,4'-DDE	UG/KG	400	920	38	16	250	280
Endrin	UG/KG	30 U	21 U	3.7 U	3.8 U	4.8 U	4.3 U
Endosulfan II	UG/KG	30 U	21 U	3.7 U	3.8 U	4.8 U	4.3 U
4,4'-DDD	UG/KG	1300 J	65 J	15	9	27 J	77 J
Endosulfan sulfate	UG/KG	30 U	21 U	3.7 U	3.8 U	4.8 U	4.3 U
4,4'-DDT	UG/KG	3100	570	12	16	130	260
Methoxychlor	UG/KG	160 U	110 U	19 U	20 U	25 U	22 U
Endrin ketone	UG/KG	30 U	21 U	3.7 U	3.8 U	4.8 U	4.3 U
Endrin aldehyde	UG/KG	30 U	21 U	3.7 U	3.8 U	4.8 U	4.3 U
alpha-Chlordane	UG/KG	35 J	54 J	3.1 J	2 U	7.9 J	2.2 U
gamma-Chlordane	UG/KG	22	46	1.9 U	2 U	2.5 U	2.2 U
Toxaphene	UG/KG	1600 U	1100 U	190 U	200 U	250 U	220 U
Aroclor 1016	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1221	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1232	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1242	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1248	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1254	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1260	UG/KG	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-MW08-00
Laboratory Sample ID:	AF6668
Date Sampled:	06/13/95

	UNITS	
VOLATILES		
Chloromethane	UG/KG	NA
Bromomethane	UG/KG	NA
Vinyl chloride	UG/KG	NA
Chloroethane	UG/KG	NA
Methylene chloride	UG/KG	NA
Acetone	UG/KG	NA
Carbon Disulfide	UG/KG	NA
1,1-Dichloroethene	UG/KG	NA
1,1-Dichloroethane	UG/KG	NA
1,2-Dichloroethene(total)	UG/KG	NA
Chloroform	UG/KG	NA
1,2-Dichloroethane	UG/KG	NA
2-Butanone	UG/KG	NA
1,1,1-Trichloroethane	UG/KG	NA
Carbon tetrachloride	UG/KG	NA
Bromodichloromethane	UG/KG	NA
1,2-Dichloropropane	UG/KG	NA
cis-1,3-Dichloropropene	UG/KG	NA
Trichloroethene	UG/KG	NA
Dibromochloromethane	UG/KG	NA
1,1,2-Trichloroethane	UG/KG	NA
Benzene	UG/KG	NA
trans-1,3-Dichloropropene	UG/KG	NA
Bromoform	UG/KG	NA
4-Methyl-2-pentanone	UG/KG	NA
2-Hexanone	UG/KG	NA
Tetrachloroethene	UG/KG	NA
1,1,2,2-Tetrachloroethane	UG/KG	NA
Toluene	UG/KG	NA
Chlorobenzene	UG/KG	NA
Ethylbenzene	UG/KG	NA
Styrene	UG/KG	NA
Xylenes (total)	UG/KG	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-MW08-00
Laboratory Sample ID:	AF6668
Date Sampled:	06/13/95

SEMIVOLATILES	UNITS	
Phenol	UG/KG	NA
bis(2-Chloroethyl) ether	UG/KG	NA
2-Chlorophenol	UG/KG	NA
1,3-Dichlorobenzene	UG/KG	NA
1,4-Dichlorobenzene	UG/KG	NA
1,2-Dichlorobenzene	UG/KG	NA
2-Methylphenol	UG/KG	NA
2,2'-oxybis-(1-chloropropane)	UG/KG	NA
4-Methylphenol	UG/KG	NA
N-Nitroso-di-n-propylamine	UG/KG	NA
Hexachloroethane	UG/KG	NA
Nitrobenzene	UG/KG	NA
Isophorone	UG/KG	NA
2-Nitrophenol	UG/KG	NA
2,4-Dimethylphenol	UG/KG	NA
bis(2-Chloroethoxy) methane	UG/KG	NA
2,4-Dichlorophenol	UG/KG	NA
1,2,4-Trichlorobenzene	UG/KG	NA
Naphthalene	UG/KG	NA
4-Chloroaniline	UG/KG	NA
Hexachlorobutadiene	UG/KG	NA
4-Chloro-3-methylphenol	UG/KG	NA
2-Methylnaphthalene	UG/KG	NA
Hexachlorocyclopentadiene	UG/KG	NA
2,4,6-Trichlorophenol	UG/KG	NA
2,4,5-Trichlorophenol	UG/KG	NA
2-Chloronaphthalene	UG/KG	NA
2-Nitroaniline	UG/KG	NA
Dimethyl phthalate	UG/KG	NA
Acenaphthylene	UG/KG	NA
2,6-Dinitrotoluene	UG/KG	NA
3-Nitroaniline	UG/KG	NA
Acenaphthene	UG/KG	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-MW08-00
Laboratory Sample ID:	AF6668
Date Sampled:	06/13/95

SEMIVOLATILES Cont.	UNITS	
2,4-Dinitrophenol	UG/KG	NA
4-Nitrophenol	UG/KG	NA
Dibenzofuran	UG/KG	NA
2,4-Dinitrotoluene	UG/KG	NA
Diethylphthalate	UG/KG	NA
4-Chlorophenyl phenyl ether	UG/KG	NA
Fluorene	UG/KG	NA
4-Nitroaniline	UG/KG	NA
4,6-Dinitro-2-methylphenol	UG/KG	NA
N-nitrosodiphenylamine	UG/KG	NA
4-Bromophenyl-phenylether	UG/KG	NA
Hexachlorobenzene	UG/KG	NA
Pentachlorophenol	UG/KG	NA
Phenanthrene	UG/KG	NA
Anthracene	UG/KG	NA
Carbazole	UG/KG	NA
di-n-Butylphthalate	UG/KG	NA
Fluoranthene	UG/KG	NA
Pyrene	UG/KG	NA
Butyl benzyl phthalate	UG/KG	NA
3,3'-Dichlorobenzidine	UG/KG	NA
Benzo[a]anthracene	UG/KG	NA
Chrysene	UG/KG	NA
bis(2-Ethylhexyl)phthalate	UG/KG	NA
di-n-Octylphthalate	UG/KG	NA
Benzo[b]fluoranthene	UG/KG	NA
Benzo[k]fluoranthene	UG/KG	NA
Benzo[a]pyrene	UG/KG	NA
Indeno[1,2,3-cd]pyrene	UG/KG	NA
Dibenz[a,h]anthracene	UG/KG	NA
Benzo[g,h,i]perylene	UG/KG	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-MW08-00
Laboratory Sample ID:	AF6668
Date Sampled:	06/13/95

PESTICIDES/PCBs	UNITS	
alpha-BHC	UG/KG	1.9 U
beta-BHC	UG/KG	1.9 U
delta-BHC	UG/KG	1.9 U
Lindane (gamma-BHC)	UG/KG	1.9 U
Heptachlor	UG/KG	1.9 U
Aldrin	UG/KG	1.9 U
Heptachlor epoxide	UG/KG	1.9 U
Endosulfan I	UG/KG	1.9 U
Dieldrin	UG/KG	23
4,4'-DDE	UG/KG	180
Endrin	UG/KG	3.7 U
Endosulfan II	UG/KG	3.7 U
4,4'-DDD	UG/KG	52 J
Endosulfan sulfate	UG/KG	3.7 U
4,4'-DDT	UG/KG	140
Methoxychlor	UG/KG	19 U
Endrin ketone	UG/KG	3.7 U
Endrin aldehyde	UG/KG	3.7 U
alpha-Chlordane	UG/KG	3 J
gamma-Chlordane	UG/KG	1.9 U
Toxaphene	UG/KG	190 U
Aroclor 1016	UG/KG	NA
Aroclor 1221	UG/KG	NA
Aroclor 1232	UG/KG	NA
Aroclor 1242	UG/KG	NA
Aroclor 1248	UG/KG	NA
Aroclor 1254	UG/KG	NA
Aroclor 1260	UG/KG	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
VOLATILES							
Chloromethane	UG/KG	10 U	14 UJ	ND	ND		0/34
Bromomethane	UG/KG	10 U	14 UJ	ND	ND		0/34
Vinyl chloride	UG/KG	10 U	14 UJ	ND	ND		0/34
Chloroethane	UG/KG	10 U	14 U	ND	ND		0/34
Methylene chloride	UG/KG	10 U	33 U	ND	ND		0/34
Acetone	UG/KG	10 U	63 U	28	28	80-MW05-00	1/34
Carbon Disulfide	UG/KG	10 U	14 U	ND	ND		0/34
1,1-Dichloroethene	UG/KG	10 U	14 U	ND	ND		0/34
1,1-Dichloroethane	UG/KG	10 U	14 U	ND	ND		0/34
1,2-Dichloroethene(total)	UG/KG	10 U	14 U	ND	ND		0/34
Chloroform	UG/KG	10 U	14 U	ND	ND		0/34
1,2-Dichloroethane	UG/KG	10 U	14 U	ND	ND		0/34
2-Butanone	UG/KG	10 U	22 U	ND	ND		0/34
1,1,1-Trichloroethane	UG/KG	10 U	14 U	ND	ND		0/34
Carbon tetrachloride	UG/KG	10 U	14 U	ND	ND		0/34
Bromodichloromethane	UG/KG	10 U	14 U	ND	ND		0/34
1,2-Dichloropropane	UG/KG	10 U	14 U	ND	ND		0/34
cis-1,3-Dichloropropene	UG/KG	10 U	14 U	ND	ND		0/34
Trichloroethene	UG/KG	10 U	14 U	ND	ND		0/34
Dibromochloromethane	UG/KG	10 U	14 U	ND	ND		0/34
1,1,2-Trichloroethane	UG/KG	10 U	14 U	ND	ND		0/34
Benzene	UG/KG	10 U	14 U	ND	ND		0/34
trans-1,3-Dichloropropene	UG/KG	10 U	14 U	ND	ND		0/34
Bromoform	UG/KG	10 U	14 U	ND	ND		0/34
4-Methyl-2-pentanone	UG/KG	10 U	14 U	ND	ND		0/34
2-Hexanone	UG/KG	10 U	14 U	ND	ND		0/34
Tetrachloroethene	UG/KG	10 U	14 U	ND	ND		0/34
1,1,2,2-Tetrachloroethane	UG/KG	10 U	14 U	ND	ND		0/34
Toluene	UG/KG	10 U	14 U	ND	ND		0/34
Chlorobenzene	UG/KG	10 U	14 U	ND	ND		0/34
Ethylbenzene	UG/KG	10 U	14 U	ND	ND		0/34
Styrene	UG/KG	10 U	14 U	ND	ND		0/34
Xylenes (total)	UG/KG	10 U	14 U	ND	ND		0/34

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES							
Phenol	UG/KG	340 U	4200 U	ND	ND		0/34
bis(2-Chloroethyl) ether	UG/KG	340 U	4200 U	ND	ND		0/34
2-Chlorophenol	UG/KG	340 U	4200 U	ND	ND		0/34
1,3-Dichlorobenzene	UG/KG	340 U	4200 U	ND	ND		0/34
1,4-Dichlorobenzene	UG/KG	340 U	4200 U	ND	ND		0/34
1,2-Dichlorobenzene	UG/KG	340 U	4200 U	ND	ND		0/34
2-Methylphenol	UG/KG	340 U	4200 U	ND	ND		0/34
2,2'-oxybis-(1-chloropropane)	UG/KG	340 U	4200 UJ	ND	ND		0/34
4-Methylphenol	UG/KG	340 U	4200 U	ND	ND		0/34
N-Nitroso-di-n-propylamine	UG/KG	340 U	4200 UJ	ND	ND		0/34
Hexachloroethane	UG/KG	340 U	4200 U	ND	ND		0/34
Nitrobenzene	UG/KG	340 U	4200 U	ND	ND		0/34
Isophorone	UG/KG	340 U	4200 UJ	ND	ND		0/34
2-Nitrophenol	UG/KG	340 U	4200 U	ND	ND		0/34
2,4-Dimethylphenol	UG/KG	340 U	4200 U	ND	ND		0/34
bis(2-Chloroethoxy) methane	UG/KG	340 U	4200 U	ND	ND		0/34
2,4-Dichlorophenol	UG/KG	340 U	4200 U	ND	ND		0/34
1,2,4-Trichlorobenzene	UG/KG	340 U	4200 U	ND	ND		0/34
Naphthalene	UG/KG	340 U	4200 U	ND	ND		0/34
4-Chloroaniline	UG/KG	340 U	4200 U	ND	ND		0/34
Hexachlorobutadiene	UG/KG	340 U	4200 U	ND	ND		0/34
4-Chloro-3-methylphenol	UG/KG	340 U	4200 U	ND	ND		0/34
2-Methylnaphthalene	UG/KG	340 U	4200 U	ND	ND		0/34
Hexachlorocyclopentadiene	UG/KG	340 U	4200 U	ND	ND		0/34
2,4,6-Trichlorophenol	UG/KG	340 U	4200 U	ND	ND		0/34
2,4,5-Trichlorophenol	UG/KG	830 U	10000 U	ND	ND		0/34
2-Chloronaphthalene	UG/KG	340 U	4200 U	ND	ND		0/34
2-Nitroaniline	UG/KG	830 U	10000 U	ND	ND		0/34
Dimethyl phthalate	UG/KG	340 U	4200 U	ND	ND		0/34
Acenaphthylene	UG/KG	340 U	4200 U	ND	ND		0/34
2,6-Dinitrotoluene	UG/KG	340 U	4200 U	ND	ND		0/34
3-Nitroaniline	UG/KG	830 U	10000 U	ND	ND		0/34
Acenaphthene	UG/KG	340 U	4200 U	ND	ND		0/34

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	830 U	10000 U	ND	ND		0/34
4-Nitrophenol	UG/KG	830 UJ	10000 U	ND	ND		0/34
Dibenzofuran	UG/KG	340 U	4200 U	ND	ND		0/34
2,4-Dinitrotoluene	UG/KG	340 U	4200 U	ND	ND		0/34
Diethylphthalate	UG/KG	340 U	4200 U	ND	ND		0/34
4-Chlorophenyl phenyl ether	UG/KG	340 UJ	4200 U	ND	ND		0/34
Fluorene	UG/KG	340 U	4200 U	ND	ND		0/34
4-Nitroaniline	UG/KG	830 UJ	10000 U	ND	ND		0/34
4,6-Dinitro-2-methylphenol	UG/KG	830 U	10000 U	ND	ND		0/34
N-nitrosodiphenylamine	UG/KG	340 U	4200 U	ND	ND		0/34
4-Bromophenyl-phenylether	UG/KG	340 U	4200 U	ND	ND		0/34
Hexachlorobenzene	UG/KG	340 U	4200 U	ND	ND		0/34
Pentachlorophenol	UG/KG	830 U	10000 U	ND	ND		0/34
Phenanthrene	UG/KG	340 U	4200 U	100 J	100 J	80-SM-SB04-00	1/34
Anthracene	UG/KG	340 U	4200 U	ND	ND		0/34
Carbazole	UG/KG	340 U	4200 U	ND	ND		0/34
di-n-Butylphthalate	UG/KG	340 U	4200 U	60 J	4400	80-MW031W-00	20/34
Fluoranthene	UG/KG	340 U	4200 U	100 J	100 J	80-SM-SB04-00	1/34
Pyrene	UG/KG	340 U	4200 U	60 J	92 J	80-SM-SB04-00	2/34
Butyl benzyl phthalate	UG/KG	340 U	4200 U	96 J	96 J	80-MW031W-00	1/34
3,3'-Dichlorobenzidine	UG/KG	340 U	4200 U	ND	ND		0/34
Benzo[a]anthracene	UG/KG	340 U	4200 U	47 J	47 J	80-SM-SB04-00	1/34
Chrysene	UG/KG	340 U	4200 U	40 J	53 J	80-SM-SB04-00	2/34
bis(2-Ethylhexyl)phthalate	UG/KG	340 U	4200 U	38 J	66 J	80-LA-SB01-00	4/34
di-n-Octylphthalate	UG/KG	340 U	4200 U	ND	ND		0/34
Benzo[b]fluoranthene	UG/KG	340 U	4200 U	40 J	48 J	80-MW04-00	2/34
Benzo[k]fluoranthene	UG/KG	340 U	4200 U	38 J	38 J	80-SM-SB04-00	1/34
Benzo[a]pyrene	UG/KG	340 U	4200 U	43 J	43 J	80-SM-SB04-00	1/34
Indeno[1,2,3-cd]pyrene	UG/KG	340 U	4200 U	ND	ND		0/34
Dibenz[a,h]anthracene	UG/KG	340 U	4200 U	ND	ND		0/34
Benzo[g,h,i]perylene	UG/KG	340 U	4200 U	180 J	180 J	80-LA-SB01-00	1/34

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
PESTICIDES/PCBs							
alpha-BHC	UG/KG	1.8 UJ	1100 U	ND	ND		0/55
beta-BHC	UG/KG	1.8 UJ	1100 U	ND	ND		0/55
delta-BHC	UG/KG	1.8 UJ	1100 U	1.2 J	2.1 J	80-DPA-SB13-00	2/55
Lindane (gamma-BHC)	UG/KG	1.8 UJ	1100 U	ND	ND		0/55
Heptachlor	UG/KG	1.8 UJ	1100 U	ND	ND		0/55
Aldrin	UG/KG	1.8 UJ	1100 U	5.4	49	80-DPA-SB10-00	7/55
Heptachlor epoxide	UG/KG	1.8 UJ	1100 U	2.7 J	9.9	80-DPA-SB05-00	2/55
Endosulfan I	UG/KG	1.8 UJ	1100 U	ND	ND		0/55
Dieldrin	UG/KG	3.4 U	2100 U	1.1 J	5600	80-DPA-SB10-00	38/55
4,4'-DDE	UG/KG	3.4 U	2100 U	0.6 J	1500 J	80-MW04-00	45/55
Endrin	UG/KG	3.4 U	2100 U	ND	ND		0/55
Endosulfan II	UG/KG	3.4 U	2100 U	ND	ND		0/55
4,4'-DDD	UG/KG	3.4 U	4.1 U	1.5 J	260000	80-DPA-SB03-00	41/55
Endosulfan sulfate	UG/KG	3.4 U	2100 U	ND	ND		0/55
4,4'-DDT	UG/KG	3.4 U	35 U	1.3 J	40000	80-MW04-00	44/55
Methoxychlor	UG/KG	18 UJ	11000 U	ND	ND		0/55
Endrin ketone	UG/KG	3.4 U	2100 U	7.7 J	7.7 J	80-LA-SB07-00	1/55
Endrin aldehyde	UG/KG	3.4 U	2100 U	5.2 J	5.2 J	80-DPA-SB05-00	1/55
alpha-Chlordane	UG/KG	1.8 UJ	1100 U	0.82 J	670 J	80-DPA-SB10-00	29/55
gamma-Chlordane	UG/KG	1.8 UJ	1100 U	1.2 J	640 J	80-DPA-SB10-00	22/55
Toxaphene	UG/KG	180 UJ	110000 U	ND	ND		0/55
Aroclor 1016	UG/KG	34 U	16000 U	ND	ND		0/34
Aroclor 1221	UG/KG	69 U	32000 U	ND	ND		0/34
Aroclor 1232	UG/KG	34 U	16000 U	ND	ND		0/34
Aroclor 1242	UG/KG	34 U	16000 U	ND	ND		0/34
Aroclor 1248	UG/KG	34 U	16000 U	ND	ND		0/34
Aroclor 1254	UG/KG	34 U	16000 U	ND	ND		0/34
Aroclor 1260	UG/KG	34 U	16000 U	ND	ND		0/34

APPENDIX H.1.1
TCRA SURFACE SOIL ORGANICS

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-DA-SB01-00	80-DA-SB02-00	80-LA-SB01-00	80-LA-SB07-00	80-MA-SB01-00	80-MA-SB03-00
Laboratory Sample ID:	Q41118111	Q41118110	AC7800	Q41118001	AC6904	AC6914
Date Sampled:	11/03/94	11/03/94	11/05/94	11/02/94	11/02/94	11/02/94
VOLATILES (ug/kg)						
Chloromethane	12 U	11 UJ	12 U	12 U	11 U	13 U
Bromomethane	12 U	11 UJ	12 U	12 U	11 UJ	13 UJ
Vinyl chloride	12 U	11 UJ	12 U	12 U	11 U	13 U
Chloroethane	12 U	11 U	12 U	12 U	11 U	13 U
Methylene chloride	33 U	11 U	12 U	12 U	11 U	13 U
Acetone	12 U	11 U	22 U	12 U	11 U	13 U
Carbon Disulfide	12 U	11 U	12 U	12 U	11 U	13 U
1,1-Dichloroethene	12 U	11 U	12 U	12 U	11 U	13 U
1,1-Dichloroethane	12 U	11 U	12 U	12 U	11 U	13 U
1,2-Dichloroethene(total)	12 U	11 U	12 U	12 U	11 U	13 U
Chloroform	12 U	11 U	12 U	12 U	11 U	13 U
1,2-Dichloroethane	12 U	11 U	12 U	12 U	11 U	13 U
2-Butanone	12 U	11 U	17 U	12 U	14 U	19 U
1,1,1-Trichloroethane	12 U	11 U	12 U	12 U	11 U	13 U
Carbon tetrachloride	12 U	11 U	12 U	12 U	11 U	13 U
Bromodichloromethane	12 U	11 U	12 U	12 U	11 U	13 U
1,2-Dichloropropane	12 U	11 U	12 U	12 U	11 U	13 U
cis-1,3-Dichloropropene	12 U	11 U	12 U	12 U	11 U	13 U
Trichloroethene	12 U	11 U	12 U	12 U	11 U	13 U
Dibromochloromethane	12 U	11 U	12 U	12 U	11 U	13 U
1,1,2-Trichloroethane	12 UJ	11 U	12 U	12 U	11 U	13 U
Benzene	12 U	11 U	12 U	12 U	11 U	13 U
trans-1,3-Dichloropropene	12 U	11 U	12 U	12 U	11 U	13 U
Bromoform	12 UJ	11 U	12 U	12 U	11 U	13 U
4-Methyl-2-pentanone	12 UJ	11 U	12 U	12 U	11 U	13 U
2-Hexanone	12 UJ	11 U	12 U	12 U	11 U	13 U
Tetrachloroethene	12 U	11 U	12 U	12 U	11 U	13 U
1,1,2,2-Tetrachloroethane	12 UJ	11 U	12 U	12 U	11 U	13 U
Toluene	12 U	11 U	12 U	12 U	11 U	13 U
Chlorobenzene	12 U	11 U	12 U	12 U	11 U	13 U
Ethylbenzene	12 U	11 U	12 U	12 U	11 U	13 U
Styrene	12 U	11 U	12 U	12 U	11 U	13 U
Xylenes (total)	12 U	11 U	12 U	12 U	11 U	13 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-DA-SB01-00	80-DA-SB02-00	80-LA-SB01-00	80-LA-SB07-00	80-MA-SB01-00	80-MA-SB03-00
Laboratory Sample ID:	Q41118111	Q41118110	AC7800	Q41118001	AC6904	AC6914
Date Sampled:	11/03/94	11/03/94	11/05/94	11/02/94	11/02/94	11/02/94
SEMIVOLATILES (ug/kg)						
Phenol	410 U	360 U	380 U	400 U	340 U	400 U
bis(2-Chloroethyl) ether	410 U	360 U	380 U	400 U	340 U	400 U
2-Chlorophenol	410 U	360 U	380 U	400 U	340 U	400 U
1,3-Dichlorobenzene	410 U	360 U	380 U	400 U	340 U	400 U
1,4-Dichlorobenzene	410 U	360 U	380 U	400 U	340 U	400 U
1,2-Dichlorobenzene	410 U	360 U	380 U	400 U	340 U	400 U
2-Methylphenol	410 U	360 U	380 U	400 U	340 U	400 U
2,2'-oxybis-(1-chloropropane)	410 U	360 U	380 U	400 U	340 U	400 U
4-Methylphenol	410 U	360 U	380 U	400 U	340 U	400 U
N-Nitroso-di-n-propylamine	410 U	360 U	380 U	400 U	340 U	400 U
Hexachloroethane	410 U	360 U	380 U	400 U	340 U	400 U
Nitrobenzene	410 U	360 U	380 U	400 U	340 U	400 U
Isophorone	410 U	360 U	380 U	400 U	340 U	400 U
2-Nitrophenol	410 U	360 U	380 U	400 U	340 U	400 U
2,4-Dimethylphenol	410 U	360 U	380 U	400 U	340 U	400 U
bis(2-Chloroethoxy) methane	410 U	360 U	380 U	400 U	340 U	400 U
2,4-Dichlorophenol	410 U	360 U	380 U	400 U	340 U	400 U
1,2,4-Trichlorobenzene	410 U	360 U	380 U	400 U	340 U	400 U
Naphthalene	410 U	360 U	380 U	400 U	340 U	400 U
4-Chloroaniline	410 UJ	360 UJ	380 U	400 UJ	340 U	400 U
Hexachlorobutadiene	410 U	360 U	380 U	400 U	340 U	400 U
4-Chloro-3-methylphenol	410 U	360 U	380 U	400 U	340 U	400 U
2-Methylnaphthalene	410 U	360 U	380 U	400 U	340 U	400 U
Hexachlorocyclopentadiene	410 U	360 U	380 U	400 U	340 U	400 U
2,4,6-Trichlorophenol	410 U	360 U	380 U	400 U	340 U	400 U
2,4,5-Trichlorophenol	990 U	870 U	930 U	960 U	830 U	980 U
2-Chloronaphthalene	410 U	360 U	380 U	400 U	340 U	400 U
2-Nitroaniline	990 U	870 U	930 U	960 U	830 U	980 U
Dimethyl phthalate	410 U	360 U	380 U	400 U	340 U	400 U
Acenaphthylene	410 U	360 U	380 U	400 U	340 U	400 U
2,6-Dinitrotoluene	410 U	360 U	380 U	400 U	340 U	400 U
3-Nitroaniline	990 U	870 U	930 U	960 U	830 U	980 U
Acenaphthene	410 U	360 U	380 U	400 U	340 U	400 U
2,4-Dinitrophenol	990 UJ	870 UJ	930 U	960 UJ	830 U	980 U
4-Nitrophenol	990 U	870 U	930 U	960 U	830 UJ	980 UJ

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-DA-SB01-00	80-DA-SB02-00	80-LA-SB01-00	80-LA-SB07-00	80-MA-SB01-00	80-MA-SB03-00
Laboratory Sample ID:	Q41118111	Q41118110	AC7800	Q41118001	AC6904	AC6914
Date Sampled:	11/03/94	11/03/94	11/05/94	11/02/94	11/02/94	11/02/94
SEMIVOLATILES (ug/kg) cont.						
Dibenzofuran	410 U	360 U	380 U	400 U	340 U	400 U
2,4-Dinitrotoluene	410 U	360 U	380 U	400 U	340 U	400 U
Diethylphthalate	410 U	360 U	380 U	400 U	340 U	400 U
4-Chlorophenyl phenyl ether	410 U	360 U	380 U	400 U	340 UJ	400 U
Fluorene	410 U	360 U	380 U	400 U	340 U	400 U
4-Nitroaniline	990 U	870 U	930 U	960 U	830 UJ	980 UJ
4,6-Dinitro-2-methylphenol	990 U	870 U	930 U	960 U	830 U	980 U
N-nitrosodiphenylamine	410 U	360 U	380 U	400 U	340 U	400 U
4-Bromophenyl-phenylether	410 U	360 U	380 U	400 U	340 U	400 U
Hexachlorobenzene	410 U	360 U	380 U	400 U	340 U	400 U
Pentachlorophenol	990 UJ	870 UJ	930 U	960 UJ	830 U	980 U
Phenanthrene	410 U	360 U	380 U	400 U	340 U	400 U
Anthracene	410 U	360 U	380 U	400 U	340 U	400 U
Carbazole	410 U	360 U	380 U	400 U	340 U	400 U
di-n-Butylphthalate	150 J	60 J	380 U	94 J	340 U	400 U
Fluoranthene	410 U	360 U	380 U	400 U	340 U	400 U
Pyrene	410 U	360 U	380 U	400 U	340 U	400 U
Butyl benzyl phthalate	410 U	360 U	380 U	400 U	340 U	400 U
3,3'-Dichlorobenzidine	410 U	360 U	380 U	400 U	340 U	400 U
Benzo[a]anthracene	410 U	360 U	380 U	400 U	340 U	400 U
Chrysene	410 U	360 U	380 U	400 U	340 U	400 U
bis(2-Ethylhexyl)phthalate	410 U	360 U	66 J	400 U	340 U	400 U
di-n-Octylphthalate	410 U	360 U	380 U	400 U	340 U	400 U
Benzo[b]fluoranthene	410 U	360 U	380 U	400 U	340 U	400 U
Benzo[k]fluoranthene	410 U	360 U	380 U	400 U	340 U	400 U
Benzo[a]pyrene	410 U	360 U	380 U	400 U	340 U	400 U
Indeno[1,2,3-cd]pyrene	410 U	360 U	380 U	400 U	340 U	400 U
Dibenz[a,h]anthracene	410 U	360 U	380 U	400 U	340 U	400 U
Benzo[g,h,i]perylene	410 U	360 U	180 J	400 U	340 U	400 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-DA-SB01-00	80-DA-SB02-00	80-LA-SB01-00	80-LA-SB07-00	80-MA-SB01-00	80-MA-SB03-00
Laboratory Sample ID:	Q41118111	Q41118110	AC7800	Q41118001	AC6904	AC6914
Date Sampled:	11/03/94	11/03/94	11/05/94	11/02/94	11/02/94	11/02/94
PESTICIDES/PCBs (ug/kg)						
alpha-BHC	2.1 U	1.8 UJ	2 U	4.1 U	1.8 U	2.1 U
beta-BHC	2.1 U	1.8 UJ	2 U	4.1 U	1.8 UJ	2.1 UJ
delta-BHC	2.1 U	1.8 UJ	2 U	4.1 U	1.8 U	2.1 U
Lindane (gamma-BHC)	2.1 U	1.8 UJ	2 U	4.1 U	1.8 U	2.1 U
Heptachlor	2.1 U	1.8 UJ	2 U	4.1 U	1.8 U	2.1 U
Aldrin	2.1 U	1.8 UJ	18	4.1 U	1.8 U	2.1 U
Heptachlor epoxide	2.1 U	1.8 UJ	2 U	4.1 U	1.8 U	2.1 U
Endosulfan I	2.1 U	1.8 UJ	2 U	4.1 U	1.8 U	2.1 U
Dieldrin	8.6	17 J	29	20	3.4 U	4.1 U
4,4'-DDE	11	7.4 J	69	620	89	210
Endrin	4.1 U	3.6 UJ	3.8 U	8 U	3.4 U	4.1 U
Endosulfan II	4.1 U	3.6 UJ	3.8 U	8 U	3.4 U	4.1 U
4,4'-DDD	4.1 U	3.6 UJ	62	17 J	3.4 U	8.6 J
Endosulfan sulfate	4.1 U	3.6 UJ	3.8 U	8 U	3.4 U	4.1 U
4,4'-DDT	6.4	4.4 J	5.7	100	68	450
Methoxychlor	21 U	18 UJ	20 U	41 U	18 U	21 U
Endrin ketone	4.1 U	3.6 UJ	3.8 U	7.7 J	3.4 U	4.1 U
Endrin aldehyde	4.1 U	3.6 UJ	3.8 U	8 U	3.4 U	4.1 U
alpha-Chlordane	2.1 U	1.8 UJ	32	4.1 U	1.8 U	2.1 U
gamma-Chlordane	2.1 U	1.8 UJ	31	4.1 U	1.8 U	2.9
Toxaphene	210 U	180 UJ	200 U	410 U	180 U	210 U
Aroclor 1016	41 U	36 UJ	38 U	80 U	34 U	41 U
Aroclor 1221	83 U	73 UJ	77 U	160 U	69 U	84 U
Aroclor 1232	41 U	36 UJ	38 U	80 U	34 U	41 U
Aroclor 1242	41 U	36 UJ	38 U	80 U	34 U	41 U
Aroclor 1248	41 U	36 UJ	38 U	80 U	34 U	41 U
Aroclor 1254	41 U	36 UJ	38 U	80 U	34 U	41 U
Aroclor 1260	41 U	36 UJ	38 U	80 U	34 U	41 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-MW06-00	80-MW07-00	80-OA-SB01-00	80-OA-SB04-00	80-OA-SB05-00	80-OA-SB06-00
Laboratory Sample ID:	AC7806	Q41118604	Q41118112	Q41118509	Q41118501	Q41118503
Date Sampled:	11/05/94	11/04/94	11/03/94	11/04/94	11/04/94	11/04/94
VOLATILES (ug/kg)						
Chloromethane	12 U	12 U	12 U	12 U	11 U	10 U
Bromomethane	12 U	12 U	12 U	12 U	11 U	10 U
Vinyl chloride	12 U	12 UJ	12 U	12 U	11 U	10 U
Chloroethane	12 U	12 U	12 U	12 U	11 U	10 U
Methylene chloride	12 U	12 U	12 U	12 U	11 U	10 U
Acetone	12 U	12 U	12 U	12 UJ	11 U	10 U
Carbon Disulfide	12 U	12 U	12 U	12 U	11 U	10 U
1,1-Dichloroethene	12 U	12 U	12 U	12 U	11 U	10 U
1,1-Dichloroethane	12 U	12 U	12 U	12 U	11 U	10 U
1,2-Dichloroethene(total)	12 U	12 U	12 U	12 U	11 U	10 U
Chloroform	12 U	12 U	12 U	12 U	11 U	10 U
1,2-Dichloroethane	12 U	12 U	12 U	12 U	11 U	10 U
2-Butanone	14 U	12 U	12 U	12 U	11 U	10 U
1,1,1-Trichloroethane	12 U	12 U	12 U	12 U	11 U	10 U
Carbon tetrachloride	12 U	12 U	12 U	12 U	11 U	10 U
Bromodichloromethane	12 U	12 U	12 U	12 U	11 U	10 U
1,2-Dichloropropane	12 U	12 U	12 U	12 U	11 U	10 U
cis-1,3-Dichloropropene	12 U	12 U	12 U	12 U	11 U	10 U
Trichloroethene	12 U	12 U	12 U	12 U	11 U	10 U
Dibromochloromethane	12 U	12 U	12 U	12 U	11 U	10 U
1,1,2-Trichloroethane	12 U	12 U	12 UJ	12 U	11 U	10 U
Benzene	12 U	12 U	12 U	12 U	11 U	10 U
trans-1,3-Dichloropropene	12 U	12 U	12 U	12 U	11 U	10 U
Bromoform	12 U	12 U	12 UJ	12 U	11 U	10 U
4-Methyl-2-pentanone	12 U	12 U	12 UJ	12 U	11 U	10 U
2-Hexanone	12 U	12 U	12 UJ	12 U	11 U	10 U
Tetrachloroethene	12 U	12 U	12 U	12 U	11 U	10 U
1,1,2,2-Tetrachloroethane	12 U	12 U	12 UJ	12 U	11 U	10 U
Toluene	12 U	12 U	12 U	12 U	11 U	10 U
Chlorobenzene	12 U	12 U	12 U	12 U	11 U	10 U
Ethylbenzene	12 U	12 U	12 U	12 U	11 U	10 U
Styrene	12 U	12 U	12 U	12 U	11 U	10 U
Xylenes (total)	12 U	12 U	12 U	12 U	11 U	10 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-MW06-00	80-MW07-00	80-OA-SB01-00	80-OA-SB04-00	80-OA-SB05-00	80-OA-SB06-00
Laboratory Sample ID:	AC7806	Q41118604	Q41118112	Q41118509	Q41118501	Q41118503
Date Sampled:	11/05/94	11/04/94	11/03/94	11/04/94	11/04/94	11/04/94
SEMIVOLATILES (ug/kg)						
Phenol	380 U	380 U	380 U	400 U	370 U	360 U
bis(2-Chloroethyl) ether	380 U	380 U	380 U	400 U	370 U	360 U
2-Chlorophenol	380 U	380 U	380 U	400 U	370 U	360 U
1,3-Dichlorobenzene	380 U	380 U	380 U	400 U	370 U	360 U
1,4-Dichlorobenzene	380 U	380 U	380 U	400 U	370 U	360 U
1,2-Dichlorobenzene	380 U	380 U	380 U	400 U	370 U	360 U
2-Methylphenol	380 U	380 U	380 U	400 U	370 U	360 U
2,2'-oxybis-(1-chloropropane)	380 U	380 U	380 U	400 U	370 U	360 U
4-Methylphenol	380 U	380 U	380 U	400 U	370 U	360 U
N-Nitroso-di-n-propylamine	380 U	380 U	380 U	400 U	370 U	360 U
Hexachloroethane	380 U	380 U	380 U	400 U	370 U	360 U
Nitrobenzene	380 U	380 U	380 U	400 U	370 U	360 U
Isophorone	380 U	380 U	380 U	400 U	370 U	360 U
2-Nitrophenol	380 U	380 U	380 U	400 U	370 U	360 U
2,4-Dimethylphenol	380 U	380 U	380 U	400 U	370 U	360 U
bis(2-Chloroethoxy) methane	380 U	380 U	380 U	400 U	370 U	360 U
2,4-Dichlorophenol	380 U	380 U	380 U	400 U	370 U	360 U
1,2,4-Trichlorobenzene	380 U	380 U	380 U	400 UJ	370 U	360 U
Naphthalene	380 U	380 U	380 U	400 U	370 U	360 U
4-Chloroaniline	380 U	380 UJ	380 UJ	400 UJ	370 UJ	360 UJ
Hexachlorobutadiene	380 U	380 U	380 U	400 U	370 U	360 U
4-Chloro-3-methylphenol	380 U	380 U	380 U	400 U	370 U	360 U
2-Methylnaphthalene	380 U	380 U	380 U	400 U	370 U	360 U
Hexachlorocyclopentadiene	380 U	380 U	380 U	400 U	370 U	360 U
2,4,6-Trichlorophenol	380 U	380 U	380 U	400 U	370 U	360 U
2,4,5-Trichlorophenol	920 U	920 UJ	930 U	970 UJ	890 UJ	870 UJ
2-Chloronaphthalene	380 U	380 U	380 U	400 U	370 U	360 U
2-Nitroaniline	920 U	920 U	930 U	970 U	890 U	870 U
Dimethyl phthalate	380 U	380 U	380 U	400 U	370 U	360 U
Acenaphthylene	380 U	380 U	380 U	400 U	370 U	360 U
2,6-Dinitrotoluene	380 U	380 U	380 U	400 U	370 U	360 U
3-Nitroaniline	920 U	920 U	930 U	970 U	890 U	870 U
Acenaphthene	380 U	380 U	380 U	400 U	370 U	360 U
2,4-Dinitrophenol	920 U	920 UJ	930 UJ	970 U	890 U	870 U
4-Nitrophenol	920 U	920 U	930 U	970 U	890 U	870 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-MW06-00	80-MW07-00	80-OA-SB01-00	80-OA-SB04-00	80-OA-SB05-00	80-OA-SB06-00
Laboratory Sample ID:	AC7806	Q41118604	Q41118112	Q41118509	Q41118501	Q41118503
Date Sampled:	11/05/94	11/04/94	11/03/94	11/04/94	11/04/94	11/04/94
SEMIVOLATILES (ug/kg) cont.						
Dibenzofuran	380 U	380 U	380 U	400 U	370 U	360 U
2,4-Dinitrotoluene	380 U	380 U	380 U	400 U	370 UJ	360 UJ
Diethylphthalate	380 U	380 U	380 U	400 U	370 U	360 U
4-Chlorophenyl phenyl ether	380 U	380 U	380 U	400 U	370 U	360 U
Fluorene	380 U	380 U	380 U	400 U	370 U	360 U
4-Nitroaniline	920 U	920 U	930 U	970 U	890 U	870 U
4,6-Dinitro-2-methylphenol	920 U	920 U	930 U	970 U	890 U	870 U
N-nitrosodiphenylamine	380 U	380 U	380 U	400 U	370 U	360 U
4-Bromophenyl-phenylether	380 U	380 U	380 U	400 U	370 U	360 U
Hexachlorobenzene	380 U	380 U	380 U	400 U	370 U	360 U
Pentachlorophenol	920 U	920 U	930 UJ	970 U	890 U	870 U
Phenanthrene	380 U	380 U	380 U	400 U	370 U	360 U
Anthracene	380 U	380 U	380 U	400 U	370 U	360 U
Carbazole	380 U	380 U	380 U	400 U	370 U	360 U
di-n-Butylphthalate	440 U	110 J	130 J	130 J	95 J	97 J
Fluoranthene	380 U	380 U	380 U	400 U	370 U	360 U
Pyrene	380 U	380 U	380 U	400 U	370 U	360 U
Butyl benzyl phthalate	380 U	380 U	380 U	400 U	370 U	360 U
3,3'-Dichlorobenzidine	380 U	380 UJ	380 U	400 UJ	370 UJ	360 UJ
Benzo[a]anthracene	380 U	380 U	380 U	400 U	370 U	360 U
Chrysene	380 U	380 U	380 U	400 U	370 U	360 U
bis(2-Ethylhexyl)phthalate	380 U	380 U	380 U	400 U	42 J	360 U
di-n-Octylphthalate	380 U	380 U	380 U	400 U	370 U	360 U
Benzo[b]fluoranthene	380 U	380 U	380 U	400 U	370 U	360 U
Benzo[k]fluoranthene	380 U	380 U	380 U	400 U	370 U	360 U
Benzo[a]pyrene	380 U	380 U	380 U	400 U	370 U	360 U
Indeno[1,2,3-cd]pyrene	380 U	380 U	380 U	400 U	370 U	360 U
Dibenz[a,h]anthracene	380 U	380 U	380 U	400 U	370 UJ	360 UJ
Benzo[g,h,i]perylene	380 U	380 U	380 U	400 U	370 U	360 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-MW06-00	80-MW07-00	80-OA-SB01-00	80-OA-SB04-00	80-OA-SB05-00	80-OA-SB06-00
Laboratory Sample ID:	AC7806	Q41118604	Q41118112	Q41118509	Q41118501	Q41118503
Date Sampled:	11/05/94	11/04/94	11/03/94	11/04/94	11/04/94	11/04/94
PESTICIDES/PCBs (ug/kg)						
alpha-BHC	2 U	1.9 U	2 U	2.1 U	1.9 U	1.8 U
beta-BHC	2 U	1.9 U	2 U	2.1 U	1.9 U	1.8 U
delta-BHC	2 U	1.9 U	2 U	2.1 U	1.9 U	1.8 U
Lindane (gamma-BHC)	2 U	1.9 U	2 U	2.1 U	1.9 U	1.8 U
Heptachlor	2 U	1.9 U	2 U	2.1 U	1.9 U	1.8 U
Aldrin	2 U	1.9 U	2 U	2.1 U	1.9 U	1.8 U
Heptachlor epoxide	2 U	1.9 U	2 U	2.1 U	1.9 U	1.8 U
Endosulfan I	2 U	1.9 U	2 U	2.1 U	1.9 U	1.8 U
Dieldrin	7.2 J	3.8 U	6.3	4 U	3.7 U	21
4,4'-DDE	37	21	26	0.6 J	3.7 U	13
Endrin	3.8 U	3.8 U	3.8 U	4 U	3.7 U	3.6 U
Endosulfan II	3.8 U	3.8 U	3.8 U	4 U	3.7 U	3.6 U
4,4'-DDD	15	3.8 U	6.4	4 U	12	3.6 U
Endosulfan sulfate	3.8 U	3.8 U	3.8 U	4 U	3.7 U	3.6 U
4,4'-DDT	3.8 U	6.7	2.1 J	4 U	5.9	1.6 J
Methoxychlor	20 U	19 U	20 U	21 U	19 U	18 U
Endrin ketone	3.8 U	3.8 U	3.8 U	4 U	3.7 U	3.6 U
Endrin aldehyde	3.8 U	3.8 U	3.8 U	4 U	3.7 U	3.6 U
alpha-Chlordane	24	1.9 U	2.1	2.1 U	1.9 U	5
gamma-Chlordane	20 J	1.9 U	2 U	2.1 U	1.9 U	4.2
Toxaphene	200 U	190 U	200 U	210 U	190 U	180 U
Aroclor 1016	38 U	38 U	38 U	40 U	37 U	36 U
Aroclor 1221	78 U	77 U	78 U	81 U	74 U	73 U
Aroclor 1232	38 U	38 U	38 U	40 U	37 U	36 U
Aroclor 1242	38 U	38 U	38 U	40 U	37 U	36 U
Aroclor 1248	38 U	38 U	38 U	40 U	37 U	36 U
Aroclor 1254	38 U	38 U	38 U	40 U	37 U	36 U
Aroclor 1260	38 U	38 U	38 U	40 U	37 U	36 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-SM-SB01-00	80-SM-SB02-00	80-SM-SB03-00	80-SM-SB04-00	80-SM-SB05-00	80-SM-SB06-00
Laboratory Sample ID:	AC6891	AC6893	AC6897	Q41118101	Q41118102	Q41118103
Date Sampled:	11/02/94	11/02/94	11/02/94	11/03/94	11/03/94	11/03/94
VOLATILES (ug/kg)						
Chloromethane	11 U	11 U	11 U	10 UJ	10 UJ	12 UJ
Bromomethane	11 UJ	11 UJ	11 UJ	10 UJ	10 UJ	12 UJ
Vinyl chloride	11 UJ	11 UJ	11 UJ	10 UJ	10 UJ	12 UJ
Chloroethane	11 U	11 U	11 U	10 U	10 U	12 U
Methylene chloride	11 U	11 U	11 U	10 U	10 U	12 U
Acetone	30 U	20 U	26 U	10 U	10 U	12 U
Carbon Disulfide	11 U	11 U	11 U	10 U	10 U	12 U
1,1-Dichloroethene	11 U	11 U	11 U	10 U	10 U	12 U
1,1-Dichloroethane	11 U	11 U	11 U	10 U	10 U	12 U
1,2-Dichloroethene(total)	11 U	11 U	11 U	10 U	10 U	12 U
Chloroform	11 U	11 U	11 U	10 U	10 U	12 U
1,2-Dichloroethane	11 U	11 U	11 U	10 U	10 U	12 U
2-Butanone	12 U	11 U	11 U	10 U	10 U	12 U
1,1,1-Trichloroethane	11 U	11 U	11 U	10 U	10 U	12 U
Carbon tetrachloride	11 U	11 U	11 U	10 U	10 U	12 U
Bromodichloromethane	11 U	11 U	11 U	10 U	10 U	12 U
1,2-Dichloropropane	11 U	11 U	11 U	10 U	10 U	12 U
cis-1,3-Dichloropropene	11 U	11 U	11 U	10 U	10 U	12 U
Trichloroethene	11 U	11 U	11 U	10 U	10 U	12 U
Dibromochloromethane	11 U	11 U	11 U	10 U	10 U	12 U
1,1,2-Trichloroethane	11 U	11 U	11 U	10 U	10 U	12 U
Benzene	11 U	11 U	11 U	10 U	10 U	12 U
trans-1,3-Dichloropropene	11 U	11 U	11 U	10 U	10 U	12 U
Bromoform	11 U	11 U	11 U	10 U	10 U	12 U
4-Methyl-2-pentanone	11 U	11 U	11 U	10 U	10 U	12 U
2-Hexanone	11 U	11 U	11 U	10 U	10 U	12 U
Tetrachloroethene	11 U	11 U	11 U	10 U	10 U	12 U
1,1,2,2-Tetrachloroethane	11 U	11 U	11 U	10 U	10 U	12 U
Toluene	11 U	11 U	11 U	10 U	10 U	12 U
Chlorobenzene	11 U	11 U	11 U	10 U	10 U	12 U
Ethylbenzene	11 U	11 U	11 U	10 U	10 U	12 U
Styrene	11 U	11 U	11 U	10 U	10 U	12 U
Xylenes (total)	11 U	11 U	11 U	10 U	10 U	12 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-SM-SB01-00	80-SM-SB02-00	80-SM-SB03-00	80-SM-SB04-00	80-SM-SB05-00	80-SM-SB06-00
Laboratory Sample ID:	AC6891	AC6893	AC6897	Q41118101	Q41118102	Q41118103
Date Sampled:	11/02/94	11/02/94	11/02/94	11/03/94	11/03/94	11/03/94
SEMIVOLATILES (ug/kg)						
Phenol	350 U	350 U	340 U	350 U	350 U	390 U
bis(2-Chloroethyl) ether	350 U	350 U	340 U	350 U	350 U	390 U
2-Chlorophenol	350 U	350 U	340 U	350 U	350 U	390 U
1,3-Dichlorobenzene	350 U	350 U	340 U	350 U	350 U	390 U
1,4-Dichlorobenzene	350 U	350 U	340 U	350 U	350 U	390 U
1,2-Dichlorobenzene	350 U	350 U	340 U	350 U	350 U	390 U
2-Methylphenol	350 U	350 U	340 U	350 U	350 U	390 U
2,2'-oxybis-(1-chloropropane)	350 U	350 U	340 U	350 U	350 U	390 U
4-Methylphenol	350 U	350 U	340 U	350 U	350 U	390 U
N-Nitroso-di-n-propylamine	350 U	350 U	340 U	350 U	350 U	390 U
Hexachloroethane	350 U	350 U	340 U	350 U	350 U	390 U
Nitrobenzene	350 U	350 U	340 U	350 U	350 U	390 U
Isophorone	350 U	350 U	340 U	350 U	350 U	390 U
2-Nitrophenol	350 U	350 U	340 U	350 U	350 U	390 U
2,4-Dimethylphenol	350 U	350 U	340 U	350 U	350 U	390 U
bis(2-Chloroethoxy) methane	350 U	350 U	340 U	350 U	350 U	390 U
2,4-Dichlorophenol	350 U	350 U	340 U	350 U	350 U	390 U
1,2,4-Trichlorobenzene	350 U	350 U	340 U	350 U	350 U	390 U
Naphthalene	350 U	350 U	340 U	350 U	350 U	390 U
4-Chloroaniline	350 U	350 U	340 U	350 UJ	350 UJ	390 UJ
Hexachlorobutadiene	350 U	350 U	340 U	350 U	350 U	390 U
4-Chloro-3-methylphenol	350 U	350 U	340 U	350 U	350 U	390 U
2-Methylnaphthalene	350 U	350 U	340 U	350 U	350 U	390 U
Hexachlorocyclopentadiene	350 U	350 U	340 U	350 U	350 U	390 U
2,4,6-Trichlorophenol	350 U	350 U	340 U	350 U	350 U	390 U
2,4,5-Trichlorophenol	850 U	840 U	830 U	850 U	860 U	950 U
2-Chloronaphthalene	350 U	350 U	340 U	350 U	350 U	390 U
2-Nitroaniline	850 U	840 U	830 U	850 U	860 U	950 U
Dimethyl phthalate	350 U	350 U	340 U	350 U	350 U	390 U
Acenaphthylene	350 U	350 U	340 U	350 U	350 U	390 U
2,6-Dinitrotoluene	350 U	350 U	340 U	350 U	350 U	390 U
3-Nitroaniline	850 U	840 U	830 U	850 U	860 U	950 U
Acenaphthene	350 U	350 U	340 U	350 U	350 U	390 U
2,4-Dinitrophenol	850 U	840 U	830 U	850 UJ	860 UJ	950 UJ
4-Nitrophenol	850 UJ	840 UJ	830 UJ	850 U	860 U	950 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-SM-SB01-00	80-SM-SB02-00	80-SM-SB03-00	80-SM-SB04-00	80-SM-SB05-00	80-SM-SB06-00
Laboratory Sample ID:	AC6891	AC6893	AC6897	Q41118101	Q41118102	Q41118103
Date Sampled:	11/02/94	11/02/94	11/02/94	11/03/94	11/03/94	11/03/94
SEMIVOLATILES (ug/kg) cont.						
Dibenzofuran	350 U	350 U	340 U	350 U	350 U	390 U
2,4-Dinitrotoluene	350 U	350 U	340 U	350 U	350 U	390 U
Diethylphthalate	350 U	350 U	340 U	350 U	350 U	390 U
4-Chlorophenyl phenyl ether	350 UJ	350 UJ	340 UJ	350 U	350 U	390 U
Fluorene	350 U	350 U	340 U	350 U	350 U	390 U
4-Nitroaniline	850 UJ	840 UJ	830 UJ	850 U	860 U	950 U
4,6-Dinitro-2-methylphenol	850 U	840 U	830 U	850 U	860 U	950 U
N-nitrosodiphenylamine	350 U	350 U	340 U	350 U	350 U	390 U
4-Bromophenyl-phenylether	350 U	350 U	340 U	350 U	350 U	390 U
Hexachlorobenzene	350 U	350 U	340 U	350 U	350 U	390 U
Pentachlorophenol	850 U	840 U	830 U	850 UJ	860 UJ	950 UJ
Phenanthrene	350 U	350 U	340 U	100 J	350 U	390 U
Anthracene	350 U	350 U	340 U	350 U	350 U	390 U
Carbazole	350 U	350 U	340 U	350 U	350 U	390 U
di-n-Butylphthalate	350 U	350 U	340 U	60 J	140 J	120 J
Fluoranthene	350 U	350 U	340 U	100 J	350 U	390 U
Pyrene	350 U	350 U	340 U	92 J	350 U	390 U
Butyl benzyl phthalate	350 U	350 U	340 U	350 U	350 U	390 U
3,3'-Dichlorobenzidine	350 U	350 U	340 U	350 U	350 U	390 U
Benzo[a]anthracene	350 U	350 U	340 U	47 J	350 U	390 U
Chrysene	350 U	350 U	340 U	53 J	350 U	390 U
bis(2-Ethylhexyl)phthalate	350 U	350 U	340 U	350 U	350 U	390 U
di-n-Octylphthalate	350 U	350 U	340 U	350 U	350 U	390 U
Benzo[b]fluoranthene	350 U	350 U	340 U	40 J	350 U	390 U
Benzo[k]fluoranthene	350 U	350 U	340 U	38 J	350 U	390 U
Benzo[a]pyrene	350 U	350 U	340 U	43 J	350 U	390 U
Indeno[1,2,3-cd]pyrene	350 U	350 U	340 U	350 U	350 U	390 U
Dibenz[a,h]anthracene	350 U	350 U	340 U	350 U	350 U	390 U
Benzo[g,h,i]perylene	350 U	350 U	340 U	350 U	350 U	390 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-SM-SB01-00	80-SM-SB02-00	80-SM-SB03-00	80-SM-SB04-00	80-SM-SB05-00	80-SM-SB06-00
Laboratory Sample ID:	AC6891	AC6893	AC6897	Q41118101	Q41118102	Q41118103
Date Sampled:	11/02/94	11/02/94	11/02/94	11/03/94	11/03/94	11/03/94
PESTICIDES/PCBs (ug/kg)						
alpha-BHC	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
beta-BHC	1.8 UJ	1.8 UJ	1.8 UJ	1.8 U	1.8 U	2 U
delta-BHC	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
Lindane (gamma-BHC)	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
Heptachlor	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
Aldrin	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
Heptachlor epoxide	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
Endosulfan I	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
Dieldrin	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.9 U
4,4'-DDE	3.4 U	3.4 U	3.4 U	0.9 J	3.5 U	3.9 U
Endrin	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.9 U
Endosulfan II	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.9 U
4,4'-DDD	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.9 U
Endosulfan sulfate	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.9 U
4,4'-DDT	3.4 U	3.4 U	3.4 U	1.3 J	3.5 U	3.9 U
Methoxychlor	18 U	18 U	18 U	18 U	18 U	20 U
Endrin ketone	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.9 U
Endrin aldehyde	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.9 U
alpha-Chlordane	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
gamma-Chlordane	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
Toxaphene	180 U	180 U	180 U	180 U	180 U	200 U
Aroclor 1016	34 U	34 U	34 U	35 U	35 U	39 U
Aroclor 1221	70 U	69 U	70 U	71 U	72 U	80 U
Aroclor 1232	34 U	34 U	34 U	35 U	35 U	39 U
Aroclor 1242	34 U	34 U	34 U	35 U	35 U	39 U
Aroclor 1248	34 U	34 U	34 U	35 U	35 U	39 U
Aroclor 1254	34 U	34 U	34 U	35 U	35 U	39 U
Aroclor 1260	34 U	34 U	34 U	35 U	35 U	39 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-SM-SB07-00	80-SM-SB08-00	80-SM-SB09-00	80-SM-SB10-00	80-MW08-00
Laboratory Sample ID:	Q41118105	Q41118106	Q41118107	Q41118109	AF6668
Date Sampled:	11/03/94	11/03/94	11/03/94	11/03/94	06/13/95
VOLATILES (ug/kg)					
Chloromethane	11 UJ	14 UJ	11 UJ	11 U	NA
Bromomethane	11 UJ	14 UJ	11 UJ	11 U	NA
Vinyl chloride	11 UJ	14 UJ	11 UJ	11 U	NA
Chloroethane	11 U	14 U	11 U	11 U	NA
Methylene chloride	11 U	14 U	11 U	13 U	NA
Acetone	11 U	14 U	11 U	11 U	NA
Carbon Disulfide	11 U	14 U	11 U	11 U	NA
1,1-Dichloroethene	11 U	14 U	11 U	11 U	NA
1,1-Dichloroethane	11 U	14 U	11 U	11 U	NA
1,2-Dichloroethene(total)	11 U	14 U	11 U	11 U	NA
Chloroform	11 U	14 U	11 U	11 U	NA
1,2-Dichloroethane	11 U	14 U	11 U	11 U	NA
2-Butanone	11 U	14 U	11 U	11 U	NA
1,1,1-Trichloroethane	11 U	14 U	11 U	11 U	NA
Carbon tetrachloride	11 U	14 U	11 U	11 U	NA
Bromodichloromethane	11 U	14 U	11 U	11 U	NA
1,2-Dichloropropane	11 U	14 U	11 U	11 U	NA
cis-1,3-Dichloropropene	11 U	14 U	11 U	11 U	NA
Trichloroethene	11 U	14 U	11 U	11 U	NA
Dibromochloromethane	11 U	14 U	11 U	11 U	NA
1,1,2-Trichloroethane	11 U	14 U	11 U	11 UJ	NA
Benzene	11 U	14 U	11 U	11 U	NA
trans-1,3-Dichloropropene	11 U	14 U	11 U	11 U	NA
Bromoform	11 U	14 U	11 U	11 UJ	NA
4-Methyl-2-pentanone	11 U	14 U	11 U	11 UJ	NA
2-Hexanone	11 U	14 U	11 U	11 UJ	NA
Tetrachloroethene	11 U	14 U	11 U	11 U	NA
1,1,2,2-Tetrachloroethane	11 U	14 U	11 U	11 UJ	NA
Toluene	11 U	14 U	11 U	11 U	NA
Chlorobenzene	11 U	14 U	11 U	11 U	NA
Ethylbenzene	11 U	14 U	11 U	11 U	NA
Styrene	11 U	14 U	11 U	11 U	NA
Xylenes (total)	11 U	14 U	11 U	11 U	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-SM-SB07-00	80-SM-SB08-00	80-SM-SB09-00	80-SM-SB10-00	80-MW08-00
Laboratory Sample ID:	Q41118105	Q41118106	Q41118107	Q41118109	AF6668
Date Sampled:	11/03/94	11/03/94	11/03/94	11/03/94	06/13/95
SEMIVOLATILES (ug/kg)					
Phenol	350 U	440 U	350 U	360 U	NA
bis(2-Chloroethyl) ether	350 U	440 U	350 U	360 U	NA
2-Chlorophenol	350 U	440 U	350 U	360 U	NA
1,3-Dichlorobenzene	350 U	440 U	350 U	360 U	NA
1,4-Dichlorobenzene	350 U	440 U	350 U	360 U	NA
1,2-Dichlorobenzene	350 U	440 U	350 U	360 U	NA
2-Methylphenol	350 U	440 U	350 U	360 U	NA
2,2'-oxybis-(1-chloropropane)	350 U	440 U	350 U	360 U	NA
4-Methylphenol	350 U	440 U	350 U	360 U	NA
N-Nitroso-di-n-propylamine	350 U	440 U	350 U	360 U	NA
Hexachloroethane	350 U	440 U	350 U	360 U	NA
Nitrobenzene	350 U	440 U	350 U	360 U	NA
Isophorone	350 U	440 U	350 U	360 U	NA
2-Nitrophenol	350 U	440 U	350 U	360 U	NA
2,4-Dimethylphenol	350 U	440 U	350 U	360 U	NA
bis(2-Chloroethoxy) methane	350 U	440 U	350 U	360 U	NA
2,4-Dichlorophenol	350 U	440 U	350 U	360 U	NA
1,2,4-Trichlorobenzene	350 U	440 U	350 U	360 U	NA
Naphthalene	350 U	440 U	350 U	360 U	NA
4-Chloroaniline	350 U	440 U	350 U	360 UJ	NA
Hexachlorobutadiene	350 U	440 U	350 U	360 U	NA
4-Chloro-3-methylphenol	350 U	440 U	350 U	360 U	NA
2-Methylnaphthalene	350 U	440 U	350 U	360 U	NA
Hexachlorocyclopentadiene	350 U	440 U	350 U	360 U	NA
2,4,6-Trichlorophenol	350 U	440 U	350 U	360 U	NA
2,4,5-Trichlorophenol	840 U	1100 U	860 U	880 U	NA
2-Chloronaphthalene	350 U	440 U	350 U	360 U	NA
2-Nitroaniline	840 U	1100 U	860 U	880 U	NA
Dimethyl phthalate	350 U	440 U	350 U	360 U	NA
Acenaphthylene	350 U	440 U	350 U	360 U	NA
2,6-Dinitrotoluene	350 U	440 U	350 U	360 U	NA
3-Nitroaniline	840 U	1100 U	860 U	880 U	NA
Acenaphthene	350 U	440 U	350 U	360 U	NA
2,4-Dinitrophenol	840 U	1100 U	860 U	880 UJ	NA
4-Nitrophenol	840 U	1100 U	860 U	880 U	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-SM-SB07-00	80-SM-SB08-00	80-SM-SB09-00	80-SM-SB10-00	80-MW08-00
Laboratory Sample ID:	Q41118105	Q41118106	Q41118107	Q41118109	AF6668
Date Sampled:	11/03/94	11/03/94	11/03/94	11/03/94	06/13/95
SEMIVOLATILES (ug/kg) cont.					
Dibenzofuran	350 U	440 U	350 U	360 U	NA
2,4-Dinitrotoluene	350 U	440 U	350 U	360 U	NA
Diethylphthalate	350 U	440 U	350 U	360 U	NA
4-Chlorophenyl phenyl ether	350 U	440 U	350 U	360 U	NA
Fluorene	350 U	440 U	350 U	360 U	NA
4-Nitroaniline	840 U	1100 U	860 U	880 U	NA
4,6-Dinitro-2-methylphenol	840 U	1100 U	860 U	880 U	NA
N-nitrosodiphenylamine	350 U	440 U	350 U	360 U	NA
4-Bromophenyl-phenylether	350 U	440 U	350 U	360 U	NA
Hexachlorobenzene	350 U	440 U	350 U	360 U	NA
Pentachlorophenol	840 U	1100 U	860 U	880 UJ	NA
Phenanthrene	350 U	440 U	350 U	360 U	NA
Anthracene	350 U	440 U	350 U	360 U	NA
Carbazole	350 U	440 U	350 U	360 U	NA
di-n-Butylphthalate	86 J	79 J	110 J	120 J	NA
Fluoranthene	350 U	440 U	350 U	360 U	NA
Pyrene	350 U	440 U	350 U	360 U	NA
Butyl benzyl phthalate	350 U	440 U	350 U	360 U	NA
3,3'-Dichlorobenzidine	350 U	440 U	350 U	360 U	NA
Benzo[a]anthracene	350 U	440 U	350 U	360 U	NA
Chrysene	350 U	440 U	350 U	360 U	NA
bis(2-Ethylhexyl)phthalate	350 U	440 U	350 U	38 J	NA
di-n-Octylphthalate	350 U	440 U	350 U	360 U	NA
Benzo[b]fluoranthene	350 U	440 U	350 U	360 U	NA
Benzo[k]fluoranthene	350 U	440 U	350 U	360 U	NA
Benzo[a]pyrene	350 U	440 U	350 U	360 U	NA
Indeno[1,2,3-cd]pyrene	350 U	440 U	350 U	360 U	NA
Dibenz[a,h]anthracene	350 U	440 U	350 U	360 U	NA
Benzo[g,h,i]perylene	350 U	440 U	350 U	360 U	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-SM-SB07-00	80-SM-SB08-00	80-SM-SB09-00	80-SM-SB10-00	80-MW08-00
Laboratory Sample ID:	Q41118105	Q41118106	Q41118107	Q41118109	AF6668
Date Sampled:	11/03/94	11/03/94	11/03/94	11/03/94	06/13/95
PESTICIDES/PCBs (ug/kg)					
alpha-BHC	1.8 U	2.3 U	1.8 U	1.9 U	1.9 U
beta-BHC	1.8 U	2.3 U	1.8 U	1.9 U	1.9 U
delta-BHC	1.8 U	2.3 U	1.8 U	1.9 U	1.9 U
Lindane (gamma-BHC)	1.8 U	2.3 U	1.8 U	1.9 U	1.9 U
Heptachlor	1.8 U	2.3 U	1.8 U	1.9 U	1.9 U
Aldrin	1.8 U	2.3 U	1.8 U	1.9 U	1.9 U
Heptachlor epoxide	1.8 U	2.3 U	1.8 U	1.9 U	1.9 U
Endosulfan I	1.8 U	2.3 U	1.8 U	1.9 U	1.9 U
Dieldrin	3.5 U	1.1 J	3.5 U	2 J	23
4,4'-DDE	3.5 U	2.7 J	3.5 U	2.9 J	180
Endrin	3.5 U	4.4 U	3.5 U	3.6 U	3.7 U
Endosulfan II	3.5 U	4.4 U	3.5 U	3.6 U	3.7 U
4,4'-DDD	3.5 U	1.7 J	3.5 U	1.5 J	52 J
Endosulfan sulfate	3.5 U	4.4 U	3.5 U	3.6 U	3.7 U
4,4'-DDT	3.5 U	1.5 J	3.5 U	3.6 U	140
Methoxychlor	18 U	23 U	18 U	19 U	19 U
Endrin ketone	3.5 U	4.4 U	3.5 U	3.6 U	3.7 U
Endrin aldehyde	3.5 U	4.4 U	3.5 U	3.6 U	3.7 U
alpha-Chlordane	0.82 J	2.3 U	1.8 U	1.9 U	3 J
gamma-Chlordane	1.8 U	2.3 U	1.8 U	1.9 U	1.9 U
Toxaphene	180 U	230 U	180 U	190 U	190 U
Aroclor 1016	35 U	44 U	35 U	36 U	NA
Aroclor 1221	70 U	89 U	72 U	74 U	NA
Aroclor 1232	35 U	44 U	35 U	36 U	NA
Aroclor 1242	35 U	44 U	35 U	36 U	NA
Aroclor 1248	35 U	44 U	35 U	36 U	NA
Aroclor 1254	35 U	44 U	35 U	36 U	NA
Aroclor 1260	35 U	44 U	35 U	36 U	NA

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
VOLATILES (ug/kg)						
Chloromethane	10 U	14 UJ	ND	ND		0/22
Bromomethane	10 U	14 UJ	ND	ND		0/22
Vinyl chloride	10 U	14 UJ	ND	ND		0/22
Chloroethane	10 U	14 U	ND	ND		0/22
Methylene chloride	10 U	33 U	ND	ND		0/22
Acetone	10 U	30 U	ND	ND		0/22
Carbon Disulfide	10 U	14 U	ND	ND		0/22
1,1-Dichloroethene	10 U	14 U	ND	ND		0/22
1,1-Dichloroethane	10 U	14 U	ND	ND		0/22
1,2-Dichloroethene(total)	10 U	14 U	ND	ND		0/22
Chloroform	10 U	14 U	ND	ND		0/22
1,2-Dichloroethane	10 U	14 U	ND	ND		0/22
2-Butanone	10 U	19 U	ND	ND		0/22
1,1,1-Trichloroethane	10 U	14 U	ND	ND		0/22
Carbon tetrachloride	10 U	14 U	ND	ND		0/22
Bromodichloromethane	10 U	14 U	ND	ND		0/22
1,2-Dichloropropane	10 U	14 U	ND	ND		0/22
cis-1,3-Dichloropropene	10 U	14 U	ND	ND		0/22
Trichloroethene	10 U	14 U	ND	ND		0/22
Dibromochloromethane	10 U	14 U	ND	ND		0/22
1,1,2-Trichloroethane	10 U	14 U	ND	ND		0/22
Benzene	10 U	14 U	ND	ND		0/22
trans-1,3-Dichloropropene	10 U	14 U	ND	ND		0/22
Bromoform	10 U	14 U	ND	ND		0/22
4-Methyl-2-pentanone	10 U	14 U	ND	ND		0/22
2-Hexanone	10 U	14 U	ND	ND		0/22
Tetrachloroethene	10 U	14 U	ND	ND		0/22
1,1,2,2-Tetrachloroethane	10 U	14 U	ND	ND		0/22
Toluene	10 U	14 U	ND	ND		0/22
Chlorobenzene	10 U	14 U	ND	ND		0/22
Ethylbenzene	10 U	14 U	ND	ND		0/22
Styrene	10 U	14 U	ND	ND		0/22
Xylenes (total)	10 U	14 U	ND	ND		0/22

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES (ug/kg)						
Phenol	340 U	440 U	ND	ND		0/22
bis(2-Chloroethyl) ether	340 U	440 U	ND	ND		0/22
2-Chlorophenol	340 U	440 U	ND	ND		0/22
1,3-Dichlorobenzene	340 U	440 U	ND	ND		0/22
1,4-Dichlorobenzene	340 U	440 U	ND	ND		0/22
1,2-Dichlorobenzene	340 U	440 U	ND	ND		0/22
2-Methylphenol	340 U	440 U	ND	ND		0/22
2,2'-oxybis-(1-chloropropane)	340 U	440 U	ND	ND		0/22
4-Methylphenol	340 U	440 U	ND	ND		0/22
N-Nitroso-di-n-propylamine	340 U	440 U	ND	ND		0/22
Hexachloroethane	340 U	440 U	ND	ND		0/22
Nitrobenzene	340 U	440 U	ND	ND		0/22
Isophorone	340 U	440 U	ND	ND		0/22
2-Nitrophenol	340 U	440 U	ND	ND		0/22
2,4-Dimethylphenol	340 U	440 U	ND	ND		0/22
bis(2-Chloroethoxy) methane	340 U	440 U	ND	ND		0/22
2,4-Dichlorophenol	340 U	440 U	ND	ND		0/22
1,2,4-Trichlorobenzene	340 U	440 U	ND	ND		0/22
Naphthalene	340 U	440 U	ND	ND		0/22
4-Chloroaniline	340 U	440 U	ND	ND		0/22
Hexachlorobutadiene	340 U	440 U	ND	ND		0/22
4-Chloro-3-methylphenol	340 U	440 U	ND	ND		0/22
2-Methylnaphthalene	340 U	440 U	ND	ND		0/22
Hexachlorocyclopentadiene	340 U	440 U	ND	ND		0/22
2,4,6-Trichlorophenol	340 U	440 U	ND	ND		0/22
2,4,5-Trichlorophenol	830 U	1100 U	ND	ND		0/22
2-Chloronaphthalene	340 U	440 U	ND	ND		0/22
2-Nitroaniline	830 U	1100 U	ND	ND		0/22
Dimethyl phthalate	340 U	440 U	ND	ND		0/22
Acenaphthylene	340 U	440 U	ND	ND		0/22
2,6-Dinitrotoluene	340 U	440 U	ND	ND		0/22
3-Nitroaniline	830 U	1100 U	ND	ND		0/22
Acenaphthene	340 U	440 U	ND	ND		0/22
2,4-Dinitrophenol	830 U	1100 U	ND	ND		0/22
4-Nitrophenol	830 UJ	1100 U	ND	ND		0/22

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES (ug/kg) cont.						
Dibenzofuran	340 U	440 U	ND	ND		0/22
2,4-Dinitrotoluene	340 U	440 U	ND	ND		0/22
Diethylphthalate	340 U	440 U	ND	ND		0/22
4-Chlorophenyl phenyl ether	340 UJ	440 U	ND	ND		0/22
Fluorene	340 U	440 U	ND	ND		0/22
4-Nitroaniline	830 UJ	1100 U	ND	ND		0/22
4,6-Dinitro-2-methylphenol	830 U	1100 U	ND	ND		0/22
N-nitrosodiphenylamine	340 U	440 U	ND	ND		0/22
4-Bromophenyl-phenylether	340 U	440 U	ND	ND		0/22
Hexachlorobenzene	340 U	440 U	ND	ND		0/22
Pentachlorophenol	830 U	1100 U	ND	ND		0/22
Phenanthrene	340 U	440 U	100 J	100 J	80-SM-SB04-00	1/22
Anthracene	340 U	440 U	ND	ND		0/22
Carbazole	340 U	440 U	ND	ND		0/22
di-n-Butylphthalate	340 U	440 U	60 J	150 J	80-DA-SB01-00	15/22
Fluoranthene	340 U	440 U	100 J	100 J	80-SM-SB04-00	1/22
Pyrene	340 U	440 U	92 J	92 J	80-SM-SB04-00	1/22
Butyl benzyl phthalate	340 U	440 U	ND	ND		0/22
3,3'-Dichlorobenzidine	340 U	440 U	ND	ND		0/22
Benzo[a]anthracene	340 U	440 U	47 J	47 J	80-SM-SB04-00	1/22
Chrysene	340 U	440 U	53 J	53 J	80-SM-SB04-00	1/22
bis(2-Ethylhexyl)phthalate	340 U	440 U	38 J	66 J	80-LA-SB01-00	3/22
di-n-Octylphthalate	340 U	440 U	ND	ND		0/22
Benzo[b]fluoranthene	340 U	440 U	40 J	40 J	80-SM-SB04-00	1/22
Benzo[k]fluoranthene	340 U	440 U	38 J	38 J	80-SM-SB04-00	1/22
Benzo[a]pyrene	340 U	440 U	43 J	43 J	80-SM-SB04-00	1/22
Indeno[1,2,3-cd]pyrene	340 U	440 U	ND	ND		0/22
Dibenz[a,h]anthracene	340 U	440 U	ND	ND		0/22
Benzo[g,h,i]perylene	340 U	440 U	180 J	180 J	80-LA-SB01-00	1/22

Client Sample ID: Laboratory Sample ID: Date Sampled:	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
PESTICIDES/PCBs (ug/kg)						
alpha-BHC	1.8 UJ	4.1 U	ND	ND		0/23
beta-BHC	1.8 UJ	4.1 U	ND	ND		0/23
delta-BHC	1.8 UJ	4.1 U	ND	ND		0/23
Lindane (gamma-BHC)	1.8 UJ	4.1 U	ND	ND		0/23
Heptachlor	1.8 UJ	4.1 U	ND	ND		0/23
Aldrin	1.8 UJ	4.1 U	18	18	80-LA-SB01-00	1/23
Heptachlor epoxide	1.8 UJ	4.1 U	ND	ND		0/23
Endosulfan I	1.8 UJ	4.1 U	ND	ND		0/23
Dieldrin	3.4 U	4.1 U	1.1 J	29	80-LA-SB01-00	10/23
4,4'-DDE	3.4 U	3.9 U	0.6 J	620	80-LA-SB07-00	15/23
Endrin	3.4 U	8 U	ND	ND		0/23
Endosulfan II	3.4 U	8 U	ND	ND		0/23
4,4'-DDD	3.4 U	4.1 U	1.5 J	62	80-LA-SB01-00	9/23
Endosulfan sulfate	3.4 U	8 U	ND	ND		0/23
4,4'-DDT	3.4 U	4 U	1.3 J	450	80-MA-SB03-00	13/23
Methoxychlor	18 UJ	41 U	ND	ND		0/23
Endrin ketone	3.4 U	4.4 U	7.7 J	7.7 J	80-LA-SB07-00	1/23
Endrin aldehyde	3.4 U	8 U	ND	ND		0/23
alpha-Chlordane	1.8 UJ	4.1 U	0.82 J	32	80-LA-SB01-00	6/23
gamma-Chlordane	1.8 UJ	4.1 U	2.9	31	80-LA-SB01-00	4/23
Toxaphene	180 UJ	410 U	ND	ND		0/23
Aroclor 1016	34 U	80 U	ND	ND		0/22
Aroclor 1221	69 U	160 U	ND	ND		0/22
Aroclor 1232	34 U	80 U	ND	ND		0/22
Aroclor 1242	34 U	80 U	ND	ND		0/22
Aroclor 1248	34 U	80 U	ND	ND		0/22
Aroclor 1254	34 U	80 U	ND	ND		0/22
Aroclor 1260	34 U	80 U	ND	ND		0/22

APPENDIX H.2
SURFACE SOIL METALS

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:		80-DA-SB01-00	80-DA-SB02-00	80-LA-SB01-00	80-LA-SB02-00	80-LA-SB03-00	80-LA-SB04-00
Laboratory Sample ID:		Q41118111A	Q41118110A	AC7800	AC6661	AC6679	AC6885
Date Sampled:		11/03/94	11/03/94	11/05/94	11/01/94	11/01/94	11/02/94
	UNITS						
Aluminum	MG/KG	1860 J	2140 J	2510	2470 J	3040 J	12000 J
Antimony	MG/KG	2.9 UJ	2.6 UJ	11.4 U	12.8 U	11.1 U	11.5 UJ
Arsenic	MG/KG	1.1	0.84 J	63.3	3	7.9	37.7 J
Barium	MG/KG	8.4	11.1	20.3	21.6	71.3	29.1
Beryllium	MG/KG	0.03	0.14	0.23 U	0.26 U	0.22 U	0.23 U
Cadmium	MG/KG	0.35 U	0.32 U	1.1 U	1.6	2.8 J	1.1 U
Calcium	MG/KG	309	179	26400	33500 J	62700 J	6310 J
Chromium	MG/KG	1.5 J	1.5	9.7	11.3	18.8	19.8 J
Cobalt	MG/KG	0.45 U	0.41 U	2.3 U	2.6 U	2.2 U	2.3 U
Copper	MG/KG	0.33 U	0.44 J	8.8	9.6	30.2	6.7
Iron	MG/KG	713 J	821 J	3190	2050	2550	5320 J
Lead	MG/KG	7.2 J	7.8 J	31.1	42.7	51.2	63 J
Magnesium	MG/KG	76.1	70.2	1240	990	1890	785
Manganese	MG/KG	13	11.1	39.7	58.3	42	89.7 J
Mercury	MG/KG	0.15	0.11 U	0.4	0.14 U	2.7	1.8
Nickel	MG/KG	1 U	0.92 U	4.6 U	5.1 U	5.2 J	4.6 U
Potassium	MG/KG	90.1 U	81.4 U	229 U	465	222 U	561 J
Selenium	MG/KG	0.62 U	0.56 U	1.1 U	1.7	1.1 U	1.1 U
Silver	MG/KG	0.47 U	0.43 U	1.1 U	1.3 U	6.6	1.1 U
Sodium	MG/KG	70.2	57.5	54.2	89.4	69.4	33 J
Thallium	MG/KG	0.95 U	0.85 U	2.3 UJ	2.6 U	2.2 U	2.3 U
Vanadium	MG/KG	2.1	2.3	8.8	6.3	7.3	14.9 J
Zinc	MG/KG	7.8 UJ	5.2 UJ	70.6	103 J	210 J	44.4 J
Moisture	%	N/A	N/A	14.23	21.68	14.07	13.58

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:		80-LA-SB05-00	80-LA-SB06-00	80-LA-SB07-00	80-MA-SB01-00	80-MA-SB02-00	80-MA-SB03-00
Laboratory Sample ID:		AC6684	AC6930	Q41118001A	AC6904	AC6881	AC6914
Date Sampled:		11/01/94	11/02/94	11/02/94	11/02/94	11/01/94	11/02/94
	UNITS						
Aluminum	MG/KG	5390 J	5720 J	9370 J	3390 J	4500 J	5520 J
Antimony	MG/KG	11.4 U	10.8 UJ	2.9 UJ	10.5 UJ	10.4 UJ	12.2 UJ
Arsenic	MG/KG	8.5	41.5 J	15.3	2.1 UJ	5.5 J	3.8 J
Barium	MG/KG	18	35.1	35.7	13.2	13	12.3
Beryllium	MG/KG	0.23 U	0.24	0.25	0.23	0.21 U	0.24 U
Cadmium	MG/KG	1.1 U	1.1 U	0.39	1.1 U	1 U	1.2 U
Calcium	MG/KG	1600 J	7380 J	3510	23800 J	55200 J	49800 J
Chromium	MG/KG	7.6	12.9 J	9 J	5 J	11.5 J	12.1 J
Cobalt	MG/KG	2.3 U	2.2 U	1.4	2.1 U	2.1 U	2.4 U
Copper	MG/KG	3.5	12.2 J	5.2	3.2	2.4	2.4 U
Iron	MG/KG	2800	7420 J	3440 J	1360 J	2050 J	4230 J
Lead	MG/KG	22.8	211 J	27.9 J	6.9 J	9.3 J	5.8 J
Magnesium	MG/KG	271	1590	422	528	1270	1310
Manganese	MG/KG	33.5	60.9 J	133	31.4 J	32.9 J	28.5 J
Mercury	MG/KG	0.68	1.1	2.3	0.11 U	0.53	0.13 U
Nickel	MG/KG	4.6 U	4.3 U	3.4 J	4.2 U	4.2 U	4.9 U
Potassium	MG/KG	229 U	216 U	237	211 U	265 J	344
Selenium	MG/KG	1.1 U	1.2	0.63 U	1.1 U	1 U	1.2 U
Silver	MG/KG	1.1 U	1.1	0.48 U	1.1 U	1 U	1.2 U
Sodium	MG/KG	29.1	43.5	29.6 U	51.1	123	87.9
Thallium	MG/KG	2.3 U	2.2 U	0.96 U	2.1 U	2.1 U	2.4 U
Vanadium	MG/KG	7.1	12.8	9.3	5.5	8.2	12.2
Zinc	MG/KG	37.2 UJ	94.1 J	48.3 J	18.9 J	37.9 J	22.7 J
Moisture	%	13.4	12.04	N/A	6.02	5.59	20.71

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:		80-MA-SB04-00	80-MW031W-00	80-MW04-00	80-MW05-00	80-MW06-00	80-MW07-00
Laboratory Sample ID:		AC6690	Q41118707	Q41118401	Q41118506	AC7806	Q41118604
Date Sampled:		11/01/94	11/05/94	11/03/94	11/04/94	11/05/94	11/04/94
	UNITS						
Aluminum	MG/KG	5000 J	9270	2200	2170	3170	4380
Antimony	MG/KG	10.7 U	2.7 UJ	2.8 UJ	2.6 UJ	11.6 U	2.7 UJ
Arsenic	MG/KG	3.2	25.9	2.3	5.4	2.3 U	2.3
Barium	MG/KG	10.5	20.6	10.2	10.8	6.6 J	14.4
Beryllium	MG/KG	0.21 U	0.16	0.07	0.05	0.25	0.12
Cadmium	MG/KG	1.1 U	0.52 J	0.39	0.32 U	1.2 U	0.33 U
Calcium	MG/KG	91200 J	3110 J	6470	463	655	283 J
Chromium	MG/KG	22.7	16	4.8	2.5	4.6	5.2
Cobalt	MG/KG	2.1 U	1.3	0.43 U	0.41 U	2.3 U	0.61
Copper	MG/KG	2.4	5.9	3.3	1.2	2.3 U	1.4
Iron	MG/KG	3770	6210	857	1000	1370	5050
Lead	MG/KG	0.64 U	46.4	25.1	19.1	12.2 J	6.7
Magnesium	MG/KG	2030	580	207	112	98	154
Manganese	MG/KG	76.6	37.9	15.4 J	16.2 J	7.9 J	25.1
Mercury	MG/KG	0.25	1.1	0.64	0.29	0.12 U	0.1 U
Nickel	MG/KG	4.3	2.7 J	1.5	1.2 J	4.6 U	2
Potassium	MG/KG	1110	485	166 J	147 J	232 U	184
Selenium	MG/KG	1.1 U	0.57 U	0.59 U	0.56 U	1.2 U	0.57 U
Silver	MG/KG	1.1 U	0.44 U	0.46 U	0.43 U	1.2 U	0.44 U
Sodium	MG/KG	176	35.7	28.7	71.6	48.7	21.6
Thallium	MG/KG	2.1 U	0.88 U	0.91 U	0.87 U	2.3 UJ	0.87 U
Vanadium	MG/KG	39	14.8	3.5 J	3.1 J	6.1	10.3
Zinc	MG/KG	35.1 UJ	28.8	22.2	18.4	10.4 UJ	4.4
Moisture	%	7.15	N/A	N/A	N/A	13.74	N/A

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:	80-OA-SB01-00	80-OA-SB02-00	80-OA-SB03-00	80-OA-SB04-00	80-OA-SB05-00	80-OA-SB06-00
Laboratory Sample ID:	Q41118112A	Q41118118A	Q41118302A	Q41118509	Q41118501	Q41118503
Date Sampled:	11/03/94	11/03/94	11/03/94	11/04/94	11/04/94	11/04/94
	UNITS					
Aluminum	MG/KG	3150 J	2840 J	1820 J	5970	1740	3000
Antimony	MG/KG	2.7 UJ	2.8 UJ	3 UJ	2.9 UJ	2.7 UJ	2.6 UJ
Arsenic	MG/KG	1.4	17.9	4.8	1.3	0.51 U	2.1
Barium	MG/KG	7.6	10.9	7.7	9.8	7	7.6
Beryllium	MG/KG	0.04	0.05	0.05	0.05	0.05	0.05
Cadmium	MG/KG	0.33 U	0.53	0.36 U	0.35 U	0.33 U	0.32 U
Calcium	MG/KG	1260	1270	1260	2700	145	1040
Chromium	MG/KG	4.1 J	11.2 J	2.3 J	7.3	1.6 J	4.6
Cobalt	MG/KG	0.55 J	0.43 U	0.46 U	0.74	0.42 U	0.41 U
Copper	MG/KG	1.3	2.3	1.5	1.9	0.79 J	1.4
Iron	MG/KG	1900 J	1190 J	769 J	6080	565	1440
Lead	MG/KG	7.4 J	30 J	11.8 J	6.2	3.1	10.6
Magnesium	MG/KG	431	268	153	1290	81.1	236
Manganese	MG/KG	12.6	12.7	8.8	8.5 J	5.9 J	10.3 J
Mercury	MG/KG	0.12 U	0.84	0.85	0.12 U	0.11 U	0.13
Nickel	MG/KG	0.95 U	0.98 U	1 U	1.9 J	1.1 J	1.1 J
Potassium	MG/KG	132 J	90.7 J	102 J	303	139 J	455
Selenium	MG/KG	0.58 U	0.59 U	0.63 U	0.61 U	0.57 U	0.56 U
Silver	MG/KG	0.44 U	0.45 U	0.49 U	0.47 U	0.44 U	0.43 U
Sodium	MG/KG	21.2 UJ	62.5	26.5 U	29.9	70	30.8
Thallium	MG/KG	0.89 U	0.91 U	0.97 U	0.93 U	0.9	0.86 U
Vanadium	MG/KG	5.7	3.2	2.3	10.9 J	2.2 J	6 J
Zinc	MG/KG	13.9 J	15.3 J	12.1 J	10.9	2.7 U	7.1
Moisture	%	N/A	N/A	N/A	N/A	N/A	N/A

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:		80-SM-SB01-00	80-SM-SB02-00	80-SM-SB03-00	80-SM-SB04-00	80-SM-SB05-00	80-SM-SB06-00
Laboratory Sample ID:		AC6891	AC6893	AC6897	Q41118101A	Q41118102A	Q41118103A
Date Sampled:		11/02/94	11/02/94	11/02/94	11/03/94	11/03/94	11/03/94
	UNITS						
Aluminum	MG/KG	2840 J	2370 J	2250 J	3790 J	2820 J	1920 J
Antimony	MG/KG	10.4 UJ	10.6 UJ	10.5 UJ	2.6 UJ	2.5 UJ	2.9 UJ
Arsenic	MG/KG	2.1 UJ	2.1 UJ	2.1 UJ	1.5	0.9	1.6
Barium	MG/KG	6.1	6.8	6.4	7.8	7.1	5.7
Beryllium	MG/KG	0.21 U	0.21 U	0.21 U	0.03	0.03	0.02 U
Cadmium	MG/KG	1 U	1.1 U	1.1 U	0.32 U	0.31 U	0.35 U
Calcium	MG/KG	40.1 J	47.3 J	45 J	41.3	32.1	29.8
Chromium	MG/KG	4.4 J	4.4 J	4.2 J	5.3	4.4 J	3.6 J
Cobalt	MG/KG	2.1 U	2.1 U	2.1 U	0.4 U	0.4 U	0.45 U
Copper	MG/KG	2.1 U	2.1 U	2.1 U	0.6 J	0.44	0.57
Iron	MG/KG	1340 J	1790 J	1700 J	2090 J	1840 J	1440 J
Lead	MG/KG	4.6 J	4.4 J	4.7 J	4.5 J	3.9 J	3.4 J
Magnesium	MG/KG	90.7	103	75.9	169	121	65.1
Manganese	MG/KG	4 J	4.9 J	3.3 J	5.3	5.4	2.7
Mercury	MG/KG	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.12 U
Nickel	MG/KG	4.2 U	4.2 U	4.2 U	0.91 U	0.9 U	1 U
Potassium	MG/KG	208 U	252 J	211 U	200	130 J	102
Selenium	MG/KG	1 U	1.1 U	1.1 U	0.55 U	0.54 U	0.61 U
Silver	MG/KG	1 U	1.1 U	1.1 U	0.42 U	0.42 U	0.47 U
Sodium	MG/KG	30.4	26.7	35.2 J	22 U	58.3	72
Thallium	MG/KG	2.1 U	2.1 U	2.1 U	0.85 U	0.84 U	0.94 U
Vanadium	MG/KG	5.6	6.8	6.1	8.1	6.7	5.8
Zinc	MG/KG	13.4 UJ	10.2 J	11.4 J	3.4 UJ	3.6 UJ	3.5 UJ
Moisture	%	6.72	5.57	5.22	N/A	N/A	N/A

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:		80-SM-SB07-00	80-SM-SB08-00	80-SM-SB09-00	80-SM-SB10-00
Laboratory Sample ID:		Q41118105A	Q41118106A	Q41118107A	Q41118109A
Date Sampled:		11/03/94	11/03/94	11/03/94	11/03/94
	UNITS				
Aluminum	MG/KG	3150 J	2410 J	2560 J	2760 J
Antimony	MG/KG	2.5 UJ	3.3 UJ	2.5 UJ	2.6 UJ
Arsenic	MG/KG	1.5	0.93	1.1	1.6 J
Barium	MG/KG	7.8	5.9	5.1	6.5
Beryllium	MG/KG	0.04	0.03 U	0.02 U	0.03
Cadmium	MG/KG	0.3 U	0.4 U	0.31 U	0.32 U
Calcium	MG/KG	41	38.2	24 U	65.8
Chromium	MG/KG	4.9 J	3.7 J	3.7 J	4.3 J
Cobalt	MG/KG	0.4	0.51 U	0.39 U	0.41 U
Copper	MG/KG	0.69	0.37 U	0.51 J	0.67 J
Iron	MG/KG	1810 J	1540 J	1320 J	2000 J
Lead	MG/KG	4.3 J	4 J	3.2 J	4.7 J
Magnesium	MG/KG	144	100	102	111
Manganese	MG/KG	5.1	3.2	3.1	3.7
Mercury	MG/KG	0.11 U	0.13 U	0.11 U	0.64
Nickel	MG/KG	0.87 U	1.2 U	0.89 U	0.93 U
Potassium	MG/KG	187 J	117 J	122 J	179 J
Selenium	MG/KG	0.53 U	0.7 U	0.54 U	0.56 U
Silver	MG/KG	0.41 U	0.54 U	0.41 U	0.43 U
Sodium	MG/KG	25.1 U	78.5	61.6	20.4 U
Thallium	MG/KG	0.81 U	1.1 U	0.83 U	0.86 U
Vanadium	MG/KG	7.4	5.8	5.6	7
Zinc	MG/KG	5.4 UJ	5.7 UJ	5.7 UJ	6.5 UJ
Moisture	%	N/A	N/A	N/A	N/A

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	MG/KG	NA	NA	1740	12000 J	80-LA-SB04-00	34/34
Antimony	MG/KG	2.5 UJ	12.8 U	ND	ND		0/34
Arsenic	MG/KG	0.51 U	2.3 U	0.84 J	63.3	80-LA-SB01-00	28/34
Barium	MG/KG	NA	NA	5.1	71.3	80-LA-SB03-00	34/34
Beryllium	MG/KG	0.02 U	0.26 U	0.03	0.25	80-MW06-00	20/34
Cadmium	MG/KG	0.3 U	1.2 U	0.39	2.8 J	80-LA-SB03-00	6/34
Calcium	MG/KG	24 U	24 U	29.8	91200 J	80-MA-SB04-00	33/34
Chromium	MG/KG	NA	NA	1.5 J	22.7	80-MA-SB04-00	34/34
Cobalt	MG/KG	0.39 U	2.6 U	0.4	1.4	80-LA-SB07-00	6/34
Copper	MG/KG	0.33 U	2.4 U	0.44 J	30.2	80-LA-SB03-00	27/34
Iron	MG/KG	NA	NA	565	7420 J	80-LA-SB06-00	34/34
Lead	MG/KG	0.64 U	0.64 U	3.1	211 J	80-LA-SB06-00	33/34
Magnesium	MG/KG	NA	NA	65.1	2030	80-MA-SB04-00	34/34
Manganese	MG/KG	NA	NA	2.7	133	80-LA-SB07-00	34/34
Mercury	MG/KG	0.1 U	0.14 U	0.13	2.7	80-LA-SB03-00	16/34
Nickel	MG/KG	0.87 U	5.1 U	1.1 J	5.2 J	80-LA-SB03-00	10/34
Potassium	MG/KG	81.4 U	232 U	90.7 J	1110	80-MA-SB04-00	24/34
Selenium	MG/KG	0.53 U	1.2 U	1.2	1.7	80-LA-SB02-00	2/34
Silver	MG/KG	0.41 U	1.3 U	1.1	6.6	80-LA-SB03-00	2/34
Sodium	MG/KG	20.4 U	29.6 U	21.6	176	80-MA-SB04-00	28/34
Thallium	MG/KG	0.81 U	2.6 U	0.9	0.9	80-OA-SB05-00	1/34
Vanadium	MG/KG	NA	NA	2.1	39	80-MA-SB04-00	34/34
Zinc	MG/KG	2.7 U	37.2 UJ	4.4	210 J	80-LA-SB03-00	20/34
Moisture	%						

APPENDIX H.2.1
TCRA SURFACE SOIL METALS

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:	80-DA-SB01-00	80-DA-SB02-00	80-LA-SB01-00	80-LA-SB07-00	80-MA-SB01-00	80-MA-SB03-00
Laboratory Sample ID:	Q41118111A	Q41118110A	AC7800	Q41118001A	AC6904	AC6914
Date Sampled:	11/03/94	11/03/94	11/05/94	11/02/94	11/02/94	11/02/94
ANALYTES (mg/kg)						
Aluminum	1860 J	2140 J	2510	9370 J	3390 J	5520 J
Antimony	2.9 UJ	2.6 UJ	11.4 U	2.9 UJ	10.5 UJ	12.2 UJ
Arsenic	1.1	0.84 J	63.3	15.3	2.1 UJ	3.8 J
Barium	8.4	11.1	20.3	35.7	13.2	12.3
Beryllium	0.03	0.14	0.23 U	0.25	0.23	0.24 U
Cadmium	0.35 U	0.32 U	1.1 U	0.39	1.1 U	1.2 U
Calcium	309	179	26400	3510	23800 J	49800 J
Chromium	1.5 J	1.5	9.7	9 J	5 J	12.1 J
Cobalt	0.45 U	0.41 U	2.3 U	1.4	2.1 U	2.4 U
Copper	0.33 U	0.44 J	8.8	5.2	3.2	2.4 U
Iron	713 J	821 J	3190	3440 J	1360 J	4230 J
Lead	7.2 J	7.8 J	31.1	27.9 J	6.9 J	5.8 J
Magnesium	76.1	70.2	1240	422	528	1310
Manganese	13	11.1	39.7	133	31.4 J	28.5 J
Mercury	0.15	0.11 U	0.4	2.3	0.11 U	0.13 U
Nickel	1 U	0.92 U	4.6 U	3.4 J	4.2 U	4.9 U
Potassium	90.1 U	81.4 U	229 U	237	211 U	344
Selenium	0.62 U	0.56 U	1.1 U	0.63 U	1.1 U	1.2 U
Silver	0.47 U	0.43 U	1.1 U	0.48 U	1.1 U	1.2 U
Sodium	70.2	57.5	54.2	29.6 U	51.1	87.9
Thallium	0.95 U	0.85 U	2.3 UJ	0.96 U	2.1 U	2.4 U
Vanadium	2.1	2.3	8.8	9.3	5.5	12.2
Zinc	7.8 UJ	5.2 UJ	70.6	48.3 J	18.9 J	22.7 J

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:	80-MW06-00	80-MW07-00	80-OA-SB01-00	80-OA-SB04-00	80-OA-SB05-00	80-OA-SB06-00
Laboratory Sample ID:	AC7806	Q41118604	Q41118112A	Q41118509	Q41118501	Q41118503
Date Sampled:	11/05/94	11/04/94	11/03/94	11/04/94	11/04/94	11/04/94
ANALYTES (mg/kg)						
Aluminum	3170	4380	3150 J	5970	1740	3000
Antimony	11.6 U	2.7 UJ	2.7 UJ	2.9 UJ	2.7 UJ	2.6 UJ
Arsenic	2.3 U	2.3	1.4	1.3	0.51 U	2.1
Barium	6.6 J	14.4	7.6	9.8	7	7.6
Beryllium	0.25	0.12	0.04	0.05	0.05	0.05
Cadmium	1.2 U	0.33 U	0.33 U	0.35 U	0.33 U	0.32 U
Calcium	655	283 J	1260	2700	145	1040
Chromium	4.6	5.2	4.1 J	7.3	1.6 J	4.6
Cobalt	2.3 U	0.61	0.55 J	0.74	0.42 U	0.41 U
Copper	2.3 U	1.4	1.3	1.9	0.79 J	1.4
Iron	1370	5050	1900 J	6080	565	1440
Lead	12.2 J	6.7	7.4 J	6.2	3.1	10.6
Magnesium	98	154	431	1290	81.1	236
Manganese	7.9 J	25.1	12.6	8.5 J	5.9 J	10.3 J
Mercury	0.12 U	0.1 U	0.12 U	0.12 U	0.11 U	0.13
Nickel	4.6 U	2	0.95 U	1.9 J	1.1 J	1.1 J
Potassium	232 U	184	132 J	303	139 J	455
Selenium	1.2 U	0.57 U	0.58 U	0.61 U	0.57 U	0.56 U
Silver	1.2 U	0.44 U	0.44 U	0.47 U	0.44 U	0.43 U
Sodium	48.7	21.6	21.2 UJ	29.9	70	30.8
Thallium	2.3 UJ	0.87 U	0.89 U	0.93 U	0.9	0.86 U
Vanadium	6.1	10.3	5.7	10.9 J	2.2 J	6 J
Zinc	10.4 UJ	4.4	13.9 J	10.9	2.7 U	7.1

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:	80-SM-SB01-00	80-SM-SB02-00	80-SM-SB03-00	80-SM-SB04-00	80-SM-SB05-00	80-SM-SB06-00
Laboratory Sample ID:	AC6891	AC6893	AC6897	Q41118101A	Q41118102A	Q41118103A
Date Sampled:	11/02/94	11/02/94	11/02/94	11/03/94	11/03/94	11/03/94
ANALYTES (mg/kg)						
Aluminum	2840 J	2370 J	2250 J	3790 J	2820 J	1920 J
Antimony	10.4 UJ	10.6 UJ	10.5 UJ	2.6 UJ	2.5 UJ	2.9 UJ
Arsenic	2.1 UJ	2.1 UJ	2.1 UJ	1.5	0.9	1.6
Barium	6.1	6.8	6.4	7.8	7.1	5.7
Beryllium	0.21 U	0.21 U	0.21 U	0.03	0.03	0.02 U
Cadmium	1 U	1.1 U	1.1 U	0.32 U	0.31 U	0.35 U
Calcium	40.1 J	47.3 J	45 J	41.3	32.1	29.8
Chromium	4.4 J	4.4 J	4.2 J	5.3	4.4 J	3.6 J
Cobalt	2.1 U	2.1 U	2.1 U	0.4 U	0.4 U	0.45 U
Copper	2.1 U	2.1 U	2.1 U	0.6 J	0.44	0.57
Iron	1340 J	1790 J	1700 J	2090 J	1840 J	1440 J
Lead	4.6 J	4.4 J	4.7 J	4.5 J	3.9 J	3.4 J
Magnesium	90.7	103	75.9	169	121	65.1
Manganese	4 J	4.9 J	3.3 J	5.3	5.4	2.7
Mercury	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.12 U
Nickel	4.2 U	4.2 U	4.2 U	0.91 U	0.9 U	1 U
Potassium	208 U	252 J	211 U	200	130 J	102
Selenium	1 U	1.1 U	1.1 U	0.55 U	0.54 U	0.61 U
Silver	1 U	1.1 U	1.1 U	0.42 U	0.42 U	0.47 U
Sodium	30.4	26.7	35.2 J	22 U	58.3	72
Thallium	2.1 U	2.1 U	2.1 U	0.85 U	0.84 U	0.94 U
Vanadium	5.6	6.8	6.1	8.1	6.7	5.8
Zinc	13.4 UJ	10.2 J	11.4 J	3.4 UJ	3.6 UJ	3.5 UJ

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:	80-SM-SB07-00	80-SM-SB08-00	80-SM-SB09-00	80-SM-SB10-00
Laboratory Sample ID:	Q41118105A	Q41118106A	Q41118107A	Q41118109A
Date Sampled:	11/03/94	11/03/94	11/03/94	11/03/94
ANALYTES (mg/kg)				
Aluminum	3150 J	2410 J	2560 J	2760 J
Antimony	2.5 UJ	3.3 UJ	2.5 UJ	2.6 UJ
Arsenic	1.5	0.93	1.1	1.6 J
Barium	7.8	5.9	5.1	6.5
Beryllium	0.04	0.03 U	0.02 U	0.03
Cadmium	0.3 U	0.4 U	0.31 U	0.32 U
Calcium	41	38.2	24 U	65.8
Chromium	4.9 J	3.7 J	3.7 J	4.3 J
Cobalt	0.4	0.51 U	0.39 U	0.41 U
Copper	0.69	0.37 U	0.51 J	0.67 J
Iron	1810 J	1540 J	1320 J	2000 J
Lead	4.3 J	4 J	3.2 J	4.7 J
Magnesium	144	100	102	111
Manganese	5.1	3.2	3.1	3.7
Mercury	0.11 U	0.13 U	0.11 U	0.64
Nickel	0.87 U	1.2 U	0.89 U	0.93 U
Potassium	187 J	117 J	122 J	179 J
Selenium	0.53 U	0.7 U	0.54 U	0.56 U
Silver	0.41 U	0.54 U	0.41 U	0.43 U
Sodium	25.1 U	78.5	61.6	20.4 U
Thallium	0.81 U	1.1 U	0.83 U	0.86 U
Vanadium	7.4	5.8	5.6	7
Zinc	5.4 UJ	5.7 UJ	5.7 UJ	6.5 UJ

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE 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
ANALYTES (mg/kg)						
Aluminum	NA	NA	1740	9370 J	80-LA-SB07-00	22/22
Antimony	2.5 UJ	12.2 UJ	ND	ND		0/22
Arsenic	0.51 U	2.3 U	0.84 J	63.3	80-LA-SB01-00	16/22
Barium	NA	NA	5.1	35.7	80-LA-SB07-00	22/22
Beryllium	0.02 U	0.24 U	0.03	0.25	80-MW06-00	14/22
Cadmium	0.3 U	1.2 U	0.39	0.39	80-LA-SB07-00	1/22
Calcium	24 U	24 U	29.8	49800 J	80-MA-SB03-00	21/22
Chromium	NA	NA	1.5 J	12.1 J	80-MA-SB03-00	22/22
Cobalt	0.39 U	2.4 U	0.4	1.4	80-LA-SB07-00	5/22
Copper	0.33 U	2.4 U	0.44 J	8.8	80-LA-SB01-00	15/22
Iron	NA	NA	565	6080	80-OA-SB04-00	22/22
Lead	NA	NA	3.1	31.1	80-LA-SB01-00	22/22
Magnesium	NA	NA	65.1	1310	80-MA-SB03-00	22/22
Manganese	NA	NA	2.7	133	80-LA-SB07-00	22/22
Mercury	0.1 U	0.13 U	0.13	2.3	80-LA-SB07-00	5/22
Nickel	0.87 U	4.9 U	1.1 J	3.4 J	80-LA-SB07-00	5/22
Potassium	81.4 U	232 U	102	455	80-OA-SB06-00	15/22
Selenium	0.53 U	1.2 U	ND	ND		0/22
Silver	0.41 U	1.2 U	ND	ND		0/22
Sodium	20.4 U	29.6 U	21.6	87.9	80-MA-SB03-00	17/22
Thallium	0.81 U	2.4 U	0.9	0.9	80-OA-SB05-00	1/22
Vanadium	NA	NA	2.1	12.2	80-MA-SB03-00	22/22
Zinc	2.7 U	13.4 UJ	4.4	70.6	80-LA-SB01-00	10/22

APPENDIX H.3
SUBSURFACE SOIL ORGANICS

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-LA-SB01-03	80-LA-SB01-06	80-LA-SB02-06	80-LA-SB03-06	80-LA-SB04-06	80-LA-SB05-06
Laboratory Sample ID:		AC7802	AC7804	AC6673	AC6682	AC6922	AC6687
Date Sampled:		11/05/94	11/05/94	11/01/94	11/01/94	11/02/94	11/01/94
	UNITS						
VOLATILES							
Chloromethane	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Bromomethane	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Vinyl chloride	UG/KG	12 U	12 U	12 UJ	12 UJ	12 U	11 UJ
Chloroethane	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Methylene chloride	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Acetone	UG/KG	200 U	27 U	100 U	17 U	830 U	43 U
Carbon Disulfide	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
1,1-Dichloroethene	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
1,1-Dichloroethane	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
1,2-Dichloroethene(total)	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Chloroform	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
1,2-Dichloroethane	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
2-Butanone	UG/KG	23 U	15 U	19 U	13 U	19 U	13 U
1,1,1-Trichloroethane	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Carbon tetrachloride	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Bromodichloromethane	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
1,2-Dichloropropane	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
cis-1,3-Dichloropropene	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Trichloroethene	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Dibromochloromethane	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
1,1,2-Trichloroethane	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Benzene	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
trans-1,3-Dichloropropene	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Bromoform	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
4-Methyl-2-pentanone	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
2-Hexanone	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Tetrachloroethene	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
1,1,2,2-Tetrachloroethane	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Toluene	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Chlorobenzene	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Ethylbenzene	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Styrene	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U
Xylenes (total)	UG/KG	12 U	12 U	12 U	12 U	12 U	11 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-LA-SB01-03	80-LA-SB01-06	80-LA-SB02-06	80-LA-SB03-06	80-LA-SB04-06	80-LA-SB05-06
Laboratory Sample ID:		AC7802	AC7804	AC6673	AC6682	AC6922	AC6687
Date Sampled:		11/05/94	11/05/94	11/01/94	11/01/94	11/02/94	11/01/94
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	380 U	410 U	410 U	400 U	390 U	380 UR
bis(2-Chloroethyl) ether	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
2-Chlorophenol	UG/KG	380 U	410 U	410 U	400 U	390 U	380 UR
1,3-Dichlorobenzene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
1,4-Dichlorobenzene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
1,2-Dichlorobenzene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
2-Methylphenol	UG/KG	380 U	410 U	410 U	400 U	390 U	380 UR
2,2'-oxybis-(1-chloropropane)	UG/KG	380 U	410 U	410 UJ	400 UJ	390 U	380 UJ
4-Methylphenol	UG/KG	380 U	410 U	410 U	400 U	390 U	380 UR
N-Nitroso-di-n-propylamine	UG/KG	380 U	410 U	410 UJ	400 UJ	390 U	380 UJ
Hexachloroethane	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Nitrobenzene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Isophorone	UG/KG	380 U	410 U	410 UJ	400 UJ	390 U	380 UJ
2-Nitrophenol	UG/KG	380 U	410 U	410 U	400 U	390 U	380 UR
2,4-Dimethylphenol	UG/KG	380 U	410 U	410 U	400 U	390 U	380 UR
bis(2-Chloroethoxy) methane	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
2,4-Dichlorophenol	UG/KG	380 U	410 U	410 U	400 U	390 U	380 UR
1,2,4-Trichlorobenzene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Naphthalene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
4-Chloroaniline	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Hexachlorobutadiene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
4-Chloro-3-methylphenol	UG/KG	380 U	410 U	410 U	400 U	390 U	380 UR
2-Methylnaphthalene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Hexachlorocyclopentadiene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
2,4,6-Trichlorophenol	UG/KG	380 U	410 U	410 U	400 U	390 U	380 UR
2,4,5-Trichlorophenol	UG/KG	930 U	990 U	990 U	960 U	950 U	910 UR
2-Chloronaphthalene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
2-Nitroaniline	UG/KG	930 U	990 U	990 U	960 U	950 U	910 U
Dimethyl phthalate	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Acenaphthylene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
2,6-Dinitrotoluene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
3-Nitroaniline	UG/KG	930 U	990 U	990 U	960 U	950 U	910 U
Acenaphthene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-LA-SB01-03	80-LA-SB01-06	80-LA-SB02-06	80-LA-SB03-06	80-LA-SB04-06	80-LA-SB05-06
Laboratory Sample ID:		AC7802	AC7804	AC6673	AC6682	AC6922	AC6687
Date Sampled:		11/05/94	11/05/94	11/01/94	11/01/94	11/02/94	11/01/94
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	930 U	990 U	990 U	960 U	950 U	910 UR
4-Nitrophenol	UG/KG	930 U	990 U	990 U	960 U	950 UJ	910 UR
Dibenzofuran	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
2,4-Dinitrotoluene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Diethylphthalate	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
4-Chlorophenyl phenyl ether	UG/KG	380 U	410 U	410 U	400 U	390 UJ	380 U
Fluorene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
4-Nitroaniline	UG/KG	930 U	990 U	990 U	960 U	950 UJ	910 U
4,6-Dinitro-2-methylphenol	UG/KG	930 U	990 U	990 U	960 U	950 U	910 UR
N-nitrosodiphenylamine	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
4-Bromophenyl-phenylether	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Hexachlorobenzene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Pentachlorophenol	UG/KG	930 U	990 U	990 U	960 U	950 U	910 UR
Phenanthrene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Anthracene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Carbazole	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
di-n-Butylphthalate	UG/KG	470 U	520 U	410 U	400 U	390 U	370 U
Fluoranthene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Pyrene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Butyl benzyl phthalate	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
3,3'-Dichlorobenzidine	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Benzo[a]anthracene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Chrysene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
bis(2-Ethylhexyl)phthalate	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
di-n-Octylphthalate	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Benzo[b]fluoranthene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Benzo[k]fluoranthene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Benzo[a]pyrene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Indeno[1,2,3-cd]pyrene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Dibenz[a,h]anthracene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U
Benzo[g,h,i]perylene	UG/KG	380 U	410 U	410 U	400 U	390 U	380 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-LA-SB01-03	80-LA-SB01-06	80-LA-SB02-06	80-LA-SB03-06	80-LA-SB04-06	80-LA-SB05-06
Laboratory Sample ID:		AC7802	AC7804	AC6673	AC6682	AC6922	AC6687
Date Sampled:		11/05/94	11/05/94	11/01/94	11/01/94	11/02/94	11/01/94
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	2 U	2.1 U	2.1 U	2.1 U	2 U	1.9 U
beta-BHC	UG/KG	2 U	2.1 U	2.1 U	2.1 UJ	2 UJ	1.9 UJ
delta-BHC	UG/KG	2 U	2.1 U	2.1 U	2.1 U	2 U	1.9 U
Lindane (gamma-BHC)	UG/KG	2 U	2.1 U	2.1 U	2.1 U	2 U	1.9 U
Heptachlor	UG/KG	2 U	2.1 U	2.1 U	2.1 U	2 U	1.9 U
Aldrin	UG/KG	2 U	2.1 U	2.1 U	2.1 U	2.6	1.9 U
Heptachlor epoxide	UG/KG	2 U	2.1 U	2.1 U	2.1 U	2 U	1.9 U
Endosulfan I	UG/KG	2 U	2.1 U	2.1 U	2.1 U	2 U	1.9 U
Dieldrin	UG/KG	3.8 U	4 U	4 U	4 U	3.8 U	3.8 U
4,4'-DDE	UG/KG	3.8 U	4 U	4 U	4 U	3.8 U	3.8 U
Endrin	UG/KG	3.8 U	4 U	4 U	4 U	3.8 U	3.8 U
Endosulfan II	UG/KG	3.8 U	4 U	4 U	4 U	3.8 U	3.8 U
4,4'-DDD	UG/KG	3.8 U	4 U	4 U	4 U	3.8 U	3.8 U
Endosulfan sulfate	UG/KG	3.8 U	4 U	4 U	4 U	3.8 U	3.8 U
4,4'-DDT	UG/KG	3.8 U	4 U	4 U	4.7	3.8 U	3.8 U
Methoxychlor	UG/KG	20 U	21 U	21 U	21 U	20 U	19 U
Endrin ketone	UG/KG	3.8 U	4 U	4 U	4 U	3.8 U	3.8 U
Endrin aldehyde	UG/KG	3.8 U	4 U	4 U	4 U	3.8 U	3.8 U
alpha-Chlordane	UG/KG	2 U	2.1 U	2.1 U	2.1 U	2 U	1.9 U
gamma-Chlordane	UG/KG	2 U	2.1 U	2.1 U	2.1 U	2 U	1.9 U
Toxaphene	UG/KG	200 U	210 U	210 U	210 U	200 U	190 U
Aroclor 1016	UG/KG	38 U	40 U	40 U	40 U	38 U	38 U
Aroclor 1221	UG/KG	77 U	81 U	81 U	82 U	78 U	77 U
Aroclor 1232	UG/KG	38 U	40 U	40 U	40 U	38 U	38 U
Aroclor 1242	UG/KG	38 U	40 U	40 U	40 U	38 U	38 U
Aroclor 1248	UG/KG	38 U	40 U	40 U	40 U	38 U	38 U
Aroclor 1254	UG/KG	38 U	40 U	40 U	40 U	38 U	38 U
Aroclor 1260	UG/KG	38 U	40 U	40 U	40 U	38 U	38 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-LA-SB06-06	80-LA-SB07-06	80-MA-SB01-06	80-MA-SB02-06	80-MA-SB03-06	80-MA-SB04-06
Laboratory Sample ID:		AC6932	Q41118002	AC6910	AC6883	AC6916	AC6692
Date Sampled:		11/02/94	11/02/94	11/02/94	11/01/94	11/02/94	11/01/94
	UNITS						
VOLATILES							
Chloromethane	UG/KG	12 U	12 UJ	13 U	12 U	12 U	12 U
Bromomethane	UG/KG	12 U	12 UJ	13 UJ	12 UJ	12 UJ	12 U
Vinyl chloride	UG/KG	12 U	12 UJ	13 U	12 UJ	12 U	12 UJ
Chloroethane	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
Methylene chloride	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
Acetone	UG/KG	29 U	12 U	25 U	28 U	39 U	16 U
Carbon Disulfide	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
1,1-Dichloroethene	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
1,1-Dichloroethane	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
1,2-Dichloroethene(total)	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
Chloroform	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
1,2-Dichloroethane	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
2-Butanone	UG/KG	17 U	12 U	11 U	12 U	13 U	15 U
1,1,1-Trichloroethane	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
Carbon tetrachloride	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
Bromodichloromethane	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
1,2-Dichloropropane	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
cis-1,3-Dichloropropene	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
Trichloroethene	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
Dibromochloromethane	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
1,1,2-Trichloroethane	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
Benzene	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
trans-1,3-Dichloropropene	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
Bromoform	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
4-Methyl-2-pentanone	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
2-Hexanone	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
Tetrachloroethene	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
1,1,2,2-Tetrachloroethane	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
Toluene	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
Chlorobenzene	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
Ethylbenzene	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
Styrene	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U
Xylenes (total)	UG/KG	12 U	12 U	13 U	12 U	12 U	12 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-LA-SB06-06	80-LA-SB07-06	80-MA-SB01-06	80-MA-SB02-06	80-MA-SB03-06	80-MA-SB04-06
Laboratory Sample ID:		AC6932	Q41118002	AC6910	AC6883	AC6916	AC6692
Date Sampled:		11/02/94	11/02/94	11/02/94	11/01/94	11/02/94	11/01/94
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
bis(2-Chloroethyl) ether	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
2-Chlorophenol	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
1,3-Dichlorobenzene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
1,4-Dichlorobenzene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
1,2-Dichlorobenzene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
2-Methylphenol	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
2,2'-oxybis-(1-chloropropane)	UG/KG	390 U	400 U	430 U	400 U	410 U	410 UJ
4-Methylphenol	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
N-Nitroso-di-n-propylamine	UG/KG	390 U	400 U	430 U	400 U	410 U	410 UJ
Hexachloroethane	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Nitrobenzene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Isophorone	UG/KG	390 U	400 U	430 U	400 U	410 U	410 UJ
2-Nitrophenol	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
2,4-Dimethylphenol	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
bis(2-Chloroethoxy) methane	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
2,4-Dichlorophenol	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
1,2,4-Trichlorobenzene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Naphthalene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
4-Chloroaniline	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Hexachlorobutadiene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
4-Chloro-3-methylphenol	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
2-Methylnaphthalene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Hexachlorocyclopentadiene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
2,4,6-Trichlorophenol	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
2,4,5-Trichlorophenol	UG/KG	950 U	970 U	1000 U	970 U	990 U	990 U
2-Chloronaphthalene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
2-Nitroaniline	UG/KG	950 U	970 U	1000 U	970 U	990 U	990 U
Dimethyl phthalate	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Acenaphthylene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
2,6-Dinitrotoluene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
3-Nitroaniline	UG/KG	950 U	970 U	1000 U	970 U	990 U	990 U
Acenaphthene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-LA-SB06-06	80-LA-SB07-06	80-MA-SB01-06	80-MA-SB02-06	80-MA-SB03-06	80-MA-SB04-06
Laboratory Sample ID:		AC6932	Q41118002	AC6910	AC6883	AC6916	AC6692
Date Sampled:		11/02/94	11/02/94	11/02/94	11/01/94	11/02/94	11/01/94
SEMIVOLATILES Cont.	UNITS						
2,4-Dinitrophenol	UG/KG	950 UJ	970 U	1000 U	970 U	990 UJ	990 U
4-Nitrophenol	UG/KG	950 UJ	970 U	1000 UJ	970 UJ	990 UJ	990 U
Dibenzofuran	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
2,4-Dinitrotoluene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Diethylphthalate	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
4-Chlorophenyl phenyl ether	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Fluorene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
4-Nitroaniline	UG/KG	950 U	970 U	1000 UJ	970 U	990 U	990 U
4,6-Dinitro-2-methylphenol	UG/KG	950 U	970 U	1000 U	970 U	990 U	990 U
N-nitrosodiphenylamine	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
4-Bromophenyl-phenylether	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Hexachlorobenzene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Pentachlorophenol	UG/KG	950 UJ	970 U	1000 U	970 UJ	990 UJ	990 U
Phenanthrene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Anthracene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Carbazole	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
di-n-Butylphthalate	UG/KG	390 U	56 J	430 U	400 U	410 U	410 U
Fluoranthene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Pyrene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Butyl benzyl phthalate	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
3,3'-Dichlorobenzidine	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Benzo[a]anthracene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Chrysene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
bis(2-Ethylhexyl)phthalate	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
di-n-Octylphthalate	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Benzo[b]fluoranthene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Benzo[k]fluoranthene	UG/KG	390 UJ	400 U	430 U	400 UJ	410 UJ	410 U
Benzo[a]pyrene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Indeno[1,2,3-cd]pyrene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Dibenz[a,h]anthracene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U
Benzo[g,h,i]perylene	UG/KG	390 U	400 U	430 U	400 U	410 U	410 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-LA-SB06-06	80-LA-SB07-06	80-MA-SB01-06	80-MA-SB02-06	80-MA-SB03-06	80-MA-SB04-06
Laboratory Sample ID:		AC6932	Q41118002	AC6910	AC6883	AC6916	AC6692
Date Sampled:		11/02/94	11/02/94	11/02/94	11/01/94	11/02/94	11/01/94
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	2 U	2.1 U	2.2 U	2 U	2.1 U	2.1 U
beta-BHC	UG/KG	2 UJ	2.1 U	2.2 UJ	2 UJ	2.1 UJ	2.1 UJ
delta-BHC	UG/KG	2 U	2.1 U	2.2 U	2 U	2.1 U	2.1 U
Lindane (gamma-BHC)	UG/KG	2 U	2.1 U	2.2 U	2 U	2.1 U	2.1 U
Heptachlor	UG/KG	2 U	2.1 U	2.2 U	2 U	2.1 U	2.1 U
Aldrin	UG/KG	2 U	2.1 U	2.2 U	2 U	2.1 U	2.1 U
Heptachlor epoxide	UG/KG	2 U	2.1 U	2.2 U	2 U	2.1 U	2.1 U
Endosulfan I	UG/KG	2 U	2.1 U	2.2 U	2 U	2.1 U	2.1 U
Dieldrin	UG/KG	3.9 U	4 U	4.2 U	4 U	4 U	4.1 U
4,4'-DDE	UG/KG	3.9 U	4 U	4.2 U	4 U	4 U	4.1 U
Endrin	UG/KG	3.9 U	4 U	4.2 U	4 U	4 U	4.1 U
Endosulfan II	UG/KG	3.9 U	4 U	4.2 U	4 U	4 U	4.1 U
4,4'-DDD	UG/KG	3.9 U	4 U	4.2 U	4 U	4 U	4.1 U
Endosulfan sulfate	UG/KG	3.9 U	4 U	4.2 U	4 U	4 U	4.1 U
4,4'-DDT	UG/KG	3.9 U	4 U	4.2 U	4 U	4 U	4.1 U
Methoxychlor	UG/KG	20 U	21 U	22 U	20 U	21 U	21 U
Endrin ketone	UG/KG	3.9 U	4 U	4.2 U	4 U	4 U	4.1 U
Endrin aldehyde	UG/KG	3.9 U	4 U	4.2 U	4 U	4 U	4.1 U
alpha-Chlordane	UG/KG	2 U	2.1 U	2.2 U	2 U	2.1 U	2.1 U
gamma-Chlordane	UG/KG	2 U	2.1 U	2.2 U	2 U	2.1 U	2.1 U
Toxaphene	UG/KG	200 U	210 U	220 U	200 U	210 U	210 U
Aroclor 1016	UG/KG	39 U	40 U	42 U	40 U	40 U	41 U
Aroclor 1221	UG/KG	80 U	81 U	85 U	80 U	81 U	83 U
Aroclor 1232	UG/KG	39 U	40 U	42 U	40 U	40 U	41 U
Aroclor 1242	UG/KG	39 U	40 U	42 U	40 U	40 U	41 U
Aroclor 1248	UG/KG	39 U	40 U	42 U	40 U	40 U	41 U
Aroclor 1254	UG/KG	39 U	40 U	42 U	40 U	40 U	41 U
Aroclor 1260	UG/KG	39 U	40 U	42 U	40 U	40 U	41 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW031W-03	80-MW03IW-06	80-MW04-06	80-MW05-04	80-MW05-06	80-MW06-03
Laboratory Sample ID:		Q41118708	AC7812	Q41118402	Q41118507	Q41118508	AC7808
Date Sampled:		11/05/94	11/07/94	11/03/94	11/04/94	11/04/94	11/05/94
	UNITS						
VOLATILES							
Chloromethane	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
Bromomethane	UG/KG	12 U	12 U	12 UJ	12 U	13 U	12 U
Vinyl chloride	UG/KG	12 UJ	12 U	12 UJ	12 U	13 U	12 U
Chloroethane	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
Methylene chloride	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
Acetone	UG/KG	110 J	41 U	12 UJ	35 J	13 UJ	20 U
Carbon Disulfide	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
1,1-Dichloroethene	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
1,1-Dichloroethane	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
1,2-Dichloroethene(total)	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
Chloroform	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
1,2-Dichloroethane	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
2-Butanone	UG/KG	12 U	19 U	12 U	12 U	13 U	12 U
1,1,1-Trichloroethane	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
Carbon tetrachloride	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
Bromodichloromethane	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
1,2-Dichloropropane	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
cis-1,3-Dichloropropene	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
Trichloroethene	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
Dibromochloromethane	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
1,1,2-Trichloroethane	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
Benzene	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
trans-1,3-Dichloropropene	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
Bromoform	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
4-Methyl-2-pentanone	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
2-Hexanone	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
Tetrachloroethene	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
1,1,2,2-Tetrachloroethane	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
Toluene	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
Chlorobenzene	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
Ethylbenzene	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
Styrene	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U
Xylenes (total)	UG/KG	12 U	12 U	12 U	12 U	13 U	12 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW031W-03	80-MW03IW-06	80-MW04-06	80-MW05-04	80-MW05-06	80-MW06-03
Laboratory Sample ID:		Q41118708	AC7812	Q41118402	Q41118507	Q41118508	AC7808
Date Sampled:		11/05/94	11/07/94	11/03/94	11/04/94	11/04/94	11/05/94
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
bis(2-Chloroethyl) ether	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
2-Chlorophenol	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
1,3-Dichlorobenzene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
1,4-Dichlorobenzene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
1,2-Dichlorobenzene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
2-Methylphenol	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
2,2'-oxybis-(1-chloropropane)	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
4-Methylphenol	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
N-Nitroso-di-n-propylamine	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Hexachloroethane	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Nitrobenzene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Isophorone	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
2-Nitrophenol	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
2,4-Dimethylphenol	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
bis(2-Chloroethoxy) methane	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
2,4-Dichlorophenol	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
1,2,4-Trichlorobenzene	UG/KG	400 U	390 U	410 U	390 UJ	400 UJ	380 U
Naphthalene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
4-Chloroaniline	UG/KG	400 UJ	390 U	410 UJ	390 UJ	400 UJ	380 U
Hexachlorobutadiene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
4-Chloro-3-methylphenol	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
2-Methylnaphthalene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Hexachlorocyclopentadiene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
2,4,6-Trichlorophenol	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
2,4,5-Trichlorophenol	UG/KG	960 U	950 U	990 U	940 UJ	980 UJ	910 U
2-Chloronaphthalene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
2-Nitroaniline	UG/KG	960 U	950 U	990 U	940 U	980 U	910 U
Dimethyl phthalate	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Acenaphthylene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
2,6-Dinitrotoluene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
3-Nitroaniline	UG/KG	960 U	950 U	990 U	940 U	980 U	910 U
Acenaphthene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW031W-03	80-MW03IW-06	80-MW04-06	80-MW05-04	80-MW05-06	80-MW06-03
Laboratory Sample ID:		Q41118708	AC7812	Q41118402	Q41118507	Q41118508	AC7808
Date Sampled:		11/05/94	11/07/94	11/03/94	11/04/94	11/04/94	11/05/94
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	960 U	950 U	990 U	940 U	980 U	910 U
4-Nitrophenol	UG/KG	960 U	950 U	990 U	940 U	980 U	910 U
Dibenzofuran	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
2,4-Dinitrotoluene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Diethylphthalate	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
4-Chlorophenyl phenyl ether	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Fluorene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
4-Nitroaniline	UG/KG	960 U	950 U	990 U	940 U	980 U	910 U
4,6-Dinitro-2-methylphenol	UG/KG	960 U	950 U	990 U	940 U	980 U	910 U
N-nitrosodiphenylamine	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
4-Bromophenyl-phenylether	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Hexachlorobenzene	UG/KG	400 U	390 U	410 U	390 UJ	400 UJ	380 U
Pentachlorophenol	UG/KG	960 U	950 U	990 U	940 U	980 U	910 U
Phenanthrene	UG/KG	53 J	390 U	410 U	390 U	400 U	380 U
Anthracene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Carbazole	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
di-n-Butylphthalate	UG/KG	3100	480 U	120 J	150 J	270 J	430 U
Fluoranthene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Pyrene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Butyl benzyl phthalate	UG/KG	46 J	390 U	410 U	390 U	400 U	380 U
3,3'-Dichlorobenzidine	UG/KG	400 U	390 U	410 UJ	390 UJ	400 UJ	380 U
Benzo[a]anthracene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Chrysene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
bis(2-Ethylhexyl)phthalate	UG/KG	400 U	81 J	410 U	390 U	400 U	380 U
di-n-Octylphthalate	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Benzo[b]fluoranthene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Benzo[k]fluoranthene	UG/KG	400 UJ	390 U	410 UJ	390 U	400 U	380 U
Benzo[a]pyrene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Indeno[1,2,3-cd]pyrene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Dibenz[a,h]anthracene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U
Benzo[g,h,i]perylene	UG/KG	400 U	390 U	410 U	390 U	400 U	380 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW031W-03	80-MW03IW-06	80-MW04-06	80-MW05-04	80-MW05-06	80-MW06-03
Laboratory Sample ID:		Q41118708	AC7812	Q41118402	Q41118507	Q41118508	AC7808
Date Sampled:		11/05/94	11/07/94	11/03/94	11/04/94	11/04/94	11/05/94
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	2 U	2 U	4.2 U	2 U	2.1 U	2 U
beta-BHC	UG/KG	2 U	2 U	4.2 U	2 U	2.1 U	2 U
delta-BHC	UG/KG	2 U	2 U	4.2 U	2 U	2.1 U	2 U
Lindane (gamma-BHC)	UG/KG	2 U	2 U	4.2 U	2 U	2.1 U	2 U
Heptachlor	UG/KG	2 U	2 U	4.2 U	2 U	2.1 U	2 U
Aldrin	UG/KG	2 U	2 U	4.2 U	2 U	2.1 U	2 U
Heptachlor epoxide	UG/KG	2 U	2 U	4.2 U	2 U	2.1 U	2 U
Endosulfan I	UG/KG	2 U	2 U	4.2 U	2 U	2.1 U	2 U
Dieldrin	UG/KG	4 U	3.9 U	8.1 U	3.9 U	0.73 J	3.9 U
4,4'-DDE	UG/KG	4 U	3.9 U	14	3.9 U	4 U	3.9 U
Endrin	UG/KG	4 U	3.9 U	8.1 U	3.9 U	4 U	3.9 U
Endosulfan II	UG/KG	4 U	3.9 U	8.1 U	3.9 U	4 U	3.9 U
4,4'-DDD	UG/KG	2.5 J	3.9 U	510 J	3.9 U	1.3 J	3.9 U
Endosulfan sulfate	UG/KG	4 U	3.9 U	8.1 U	3.9 U	4 U	3.9 U
4,4'-DDT	UG/KG	4 U	3.9 U	240	3.9 U	4 U	3.9 U
Methoxychlor	UG/KG	20 U	20 U	42 U	20 U	21 U	20 U
Endrin ketone	UG/KG	4 U	3.9 U	8.1 U	3.9 U	4 U	3.9 U
Endrin aldehyde	UG/KG	4 U	3.9 U	8.1 U	3.9 U	4 U	3.9 U
alpha-Chlordane	UG/KG	2 U	2 U	4.2 U	2 U	2.1 U	2 U
gamma-Chlordane	UG/KG	2 U	2 U	4.2 U	2 U	2.1 U	2 U
Toxaphene	UG/KG	200 U	200 U	420 U	200 U	210 U	200 U
Aroclor 1016	UG/KG	40 U	39 U	81 U	39 U	40 U	39 U
Aroclor 1221	UG/KG	81 U	79 U	170 U	79 U	82 U	79 U
Aroclor 1232	UG/KG	40 U	39 U	81 U	39 U	40 U	39 U
Aroclor 1242	UG/KG	40 U	39 U	81 U	39 U	40 U	39 U
Aroclor 1248	UG/KG	40 U	39 U	81 U	39 U	40 U	39 U
Aroclor 1254	UG/KG	40 U	39 U	81 U	39 U	40 U	39 U
Aroclor 1260	UG/KG	40 U	39 U	81 U	39 U	40 U	39 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW06-06	80-MW07-04	80-MW07-06	80-OA-SB01-07	80-OA-SB02-07	80-OA-SB03-06
Laboratory Sample ID:		AC7810	Q41118605	Q41118606	Q41118116	Q41118301	Q41118303
Date Sampled:		11/05/94	11/04/94	11/04/94	11/03/94	11/03/94	11/03/94
	UNITS						
VOLATILES							
Chloromethane	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
Bromomethane	UG/KG	11 U	12 U	12 U	11 U	12 UJ	11 UJ
Vinyl chloride	UG/KG	11 U	12 UJ	12 UJ	11 U	12 UJ	11 UJ
Chloroethane	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
Methylene chloride	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
Acetone	UG/KG	13 U	40	12 U	45 U	12 UJ	72 UJ
Carbon Disulfide	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
1,1-Dichloroethene	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
1,1-Dichloroethane	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
1,2-Dichloroethene(total)	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
Chloroform	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
1,2-Dichloroethane	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
2-Butanone	UG/KG	13 U	12 U	12 U	11 U	12 U	11 U
1,1,1-Trichloroethane	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
Carbon tetrachloride	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
Bromodichloromethane	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
1,2-Dichloropropane	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
cis-1,3-Dichloropropene	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
Trichloroethene	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
Dibromochloromethane	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
1,1,2-Trichloroethane	UG/KG	11 U	12 U	12 U	11 UJ	12 U	11 U
Benzene	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
trans-1,3-Dichloropropene	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
Bromoform	UG/KG	11 U	12 U	12 U	11 UJ	12 U	11 U
4-Methyl-2-pentanone	UG/KG	11 U	12 U	12 U	11 UJ	12 U	11 U
2-Hexanone	UG/KG	11 U	12 U	12 U	11 UJ	12 U	11 U
Tetrachloroethene	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
1,1,2,2-Tetrachloroethane	UG/KG	11 U	12 U	12 U	11 UJ	12 U	11 U
Toluene	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
Chlorobenzene	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
Ethylbenzene	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
Styrene	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U
Xylenes (total)	UG/KG	11 U	12 U	12 U	11 U	12 U	11 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW06-06	80-MW07-04	80-MW07-06	80-OA-SB01-07	80-OA-SB02-07	80-OA-SB03-06
Laboratory Sample ID:		AC7810	Q41118605	Q41118606	Q41118116	Q41118301	Q41118303
Date Sampled:		11/05/94	11/04/94	11/04/94	11/03/94	11/03/94	11/03/94
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
bis(2-Chloroethyl) ether	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
2-Chlorophenol	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
1,3-Dichlorobenzene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
1,4-Dichlorobenzene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
1,2-Dichlorobenzene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
2-Methylphenol	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
2,2'-oxybis-(1-chloropropane)	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
4-Methylphenol	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
N-Nitroso-di-n-propylamine	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Hexachloroethane	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Nitrobenzene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Isophorone	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
2-Nitrophenol	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
2,4-Dimethylphenol	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
bis(2-Chloroethoxy) methane	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
2,4-Dichlorophenol	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
1,2,4-Trichlorobenzene	UG/KG	350 U	420 U	380 U	350 U	370 UJ	360 UJ
Naphthalene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
4-Chloroaniline	UG/KG	350 U	420 UJ	380 UJ	350 U	370 UJ	360 UJ
Hexachlorobutadiene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
4-Chloro-3-methylphenol	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
2-Methylnaphthalene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Hexachlorocyclopentadiene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
2,4,6-Trichlorophenol	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
2,4,5-Trichlorophenol	UG/KG	840 U	1000 UJ	920 UJ	860 U	900 UJ	880 UJ
2-Chloronaphthalene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
2-Nitroaniline	UG/KG	840 U	1000 U	920 U	860 U	900 U	880 UJ
Dimethyl phthalate	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Acenaphthylene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
2,6-Dinitrotoluene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
3-Nitroaniline	UG/KG	840 U	1000 U	920 U	860 U	900 U	880 UJ
Acenaphthene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW06-06	80-MW07-04	80-MW07-06	80-OA-SB01-07	80-OA-SB02-07	80-OA-SB03-06
Laboratory Sample ID:		AC7810	Q41118605	Q41118606	Q41118116	Q41118301	Q41118303
Date Sampled:		11/05/94	11/04/94	11/04/94	11/03/94	11/03/94	11/03/94
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	840 U	1000 UJ	920 UJ	860 U	900 U	880 UJ
4-Nitrophenol	UG/KG	840 U	1000 U	920 U	860 U	900 U	880 UJ
Dibenzofuran	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
2,4-Dinitrotoluene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Diethylphthalate	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
4-Chlorophenyl phenyl ether	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Fluorene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
4-Nitroaniline	UG/KG	840 U	1000 U	920 U	860 U	900 U	880 UJ
4,6-Dinitro-2-methylphenol	UG/KG	840 U	1000 U	920 U	860 U	900 U	880 UJ
N-nitrosodiphenylamine	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
4-Bromophenyl-phenylether	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Hexachlorobenzene	UG/KG	350 U	420 U	380 U	350 U	370 UJ	360 UJ
Pentachlorophenol	UG/KG	840 U	1000 U	920 U	860 U	900 U	880 UJ
Phenanthrene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Anthracene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Carbazole	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
di-n-Butylphthalate	UG/KG	350 U	150 J	170 J	70 J	330 J	170 J
Fluoranthene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Pyrene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Butyl benzyl phthalate	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
3,3'-Dichlorobenzidine	UG/KG	350 U	420 UJ	380 UJ	350 U	370 UJ	360 UJ
Benzo[a]anthracene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Chrysene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
bis(2-Ethylhexyl)phthalate	UG/KG	350 U	420 U	85 J	350 U	370 U	360 UJ
di-n-Octylphthalate	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Benzo[b]fluoranthene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Benzo[k]fluoranthene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Benzo[a]pyrene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Indeno[1,2,3-cd]pyrene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Dibenz[a,h]anthracene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ
Benzo[g,h,i]perylene	UG/KG	350 U	420 U	380 U	350 U	370 U	360 UJ

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW06-06	80-MW07-04	80-MW07-06	80-OA-SB01-07	80-OA-SB02-07	80-OA-SB03-06
Laboratory Sample ID:		AC7810	Q41118605	Q41118606	Q41118116	Q41118301	Q41118303
Date Sampled:		11/05/94	11/04/94	11/04/94	11/03/94	11/03/94	11/03/94
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	1.8 U	2.2 U	2 U	1.8 U	1.9 U	1.9 U
beta-BHC	UG/KG	1.8 U	2.2 U	2 U	1.8 U	1.9 U	1.9 U
delta-BHC	UG/KG	1.8 U	2.2 U	2 U	1.8 U	1.9 U	1.9 U
Lindane (gamma-BHC)	UG/KG	1.8 U	2.2 U	2 U	1.8 U	1.9 U	1.9 U
Heptachlor	UG/KG	1.8 U	2.2 U	2 U	1.8 U	1.9 U	1.9 U
Aldrin	UG/KG	1.8 U	2.2 U	2 U	1.8 U	1.9 U	1.9 U
Heptachlor epoxide	UG/KG	1.8 U	2.2 U	2 U	1.8 U	1.9 U	1.9 U
Endosulfan I	UG/KG	1.8 U	2.2 U	2 U	1.8 U	1.9 U	1.9 U
Dieldrin	UG/KG	3.5 U	4.2 U	3.8 U	1 J	1.4 J	3.6 U
4,4'-DDE	UG/KG	3.5 U	4.2 U	3.8 U	1.4 J	35	3.6 U
Endrin	UG/KG	3.5 U	4.2 U	3.8 U	3.5 U	3.7 U	3.6 U
Endosulfan II	UG/KG	3.5 U	4.2 U	3.8 U	3.5 U	3.7 U	3.6 U
4,4'-DDD	UG/KG	3.5 U	4.2 U	3.8 U	1.1 J	3.7 U	3.6 U
Endosulfan sulfate	UG/KG	3.5 U	4.2 U	3.8 U	3.5 U	3.7 U	3.6 U
4,4'-DDT	UG/KG	3.5 U	4.2 U	3.8 U	3.5 U	9.9	3.6 U
Methoxychlor	UG/KG	18 U	22 U	20 U	18 U	19 U	19 U
Endrin ketone	UG/KG	3.5 U	4.2 U	3.8 U	3.5 U	3.7 U	3.6 U
Endrin aldehyde	UG/KG	3.5 U	4.2 U	3.8 U	3.5 U	3.7 U	3.6 U
alpha-Chlordane	UG/KG	1.8 U	2.2 U	2 U	1.8 U	1.9 U	1.9 U
gamma-Chlordane	UG/KG	1.8 U	2.2 U	2 U	1.8 U	1.9 U	1.9 U
Toxaphene	UG/KG	180 U	220 U	200 U	180 U	190 U	190 U
Aroclor 1016	UG/KG	35 U	42 U	38 U	35 U	37 U	36 U
Aroclor 1221	UG/KG	70 U	85 U	77 U	72 U	75 U	74 U
Aroclor 1232	UG/KG	35 U	42 U	38 U	35 U	37 U	36 U
Aroclor 1242	UG/KG	35 U	42 U	38 U	35 U	37 U	36 U
Aroclor 1248	UG/KG	35 U	42 U	38 U	35 U	37 U	36 U
Aroclor 1254	UG/KG	35 U	42 U	38 U	35 U	37 U	36 U
Aroclor 1260	UG/KG	35 U	42 U	38 U	35 U	37 U	36 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-OA-SB04-03	80-OA-SB04-06	80-OA-SB05-06	80-OA-SB06-03	80-OA-SB06-06	80-SM-SB02-03
Laboratory Sample ID:		Q41118510	Q41118511	Q41118502	Q41118504	Q41118505	AC6895
Date Sampled:		11/04/94	11/04/94	11/04/94	11/04/94	11/04/94	11/02/94
	UNITS						
VOLATILES							
Chloromethane	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
Bromomethane	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 UJ
Vinyl chloride	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 UJ
Chloroethane	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
Methylene chloride	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
Acetone	UG/KG	11 J	11 UJ	11 U	11 U	11 UJ	74 U
Carbon Disulfide	UG/KG	13 U	11 U	11 U	11 U	11 UJ	13
1,1-Dichloroethene	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
1,1-Dichloroethane	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
1,2-Dichloroethene(total)	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
Chloroform	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
1,2-Dichloroethane	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
2-Butanone	UG/KG	13 U	11 U	11 U	11 U	11 UJ	15 U
1,1,1-Trichloroethane	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
Carbon tetrachloride	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
Bromodichloromethane	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
1,2-Dichloropropane	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
cis-1,3-Dichloropropene	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
Trichloroethene	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
Dibromochloromethane	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
1,1,2-Trichloroethane	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
Benzene	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
trans-1,3-Dichloropropene	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
Bromoform	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
4-Methyl-2-pentanone	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
2-Hexanone	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
Tetrachloroethene	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
1,1,2,2-Tetrachloroethane	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
Toluene	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
Chlorobenzene	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
Ethylbenzene	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
Styrene	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U
Xylenes (total)	UG/KG	13 U	11 U	11 U	11 U	11 UJ	12 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-OA-SB04-03	80-OA-SB04-06	80-OA-SB05-06	80-OA-SB06-03	80-OA-SB06-06	80-SM-SB02-03
Laboratory Sample ID:		Q41118510	Q41118511	Q41118502	Q41118504	Q41118505	AC6895
Date Sampled:		11/04/94	11/04/94	11/04/94	11/04/94	11/04/94	11/02/94
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
bis(2-Chloroethyl) ether	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
2-Chlorophenol	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
1,3-Dichlorobenzene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
1,4-Dichlorobenzene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
1,2-Dichlorobenzene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
2-Methylphenol	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
2,2'-oxybis-(1-chloropropane)	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
4-Methylphenol	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
N-Nitroso-di-n-propylamine	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
Hexachloroethane	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
Nitrobenzene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
Isophorone	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
2-Nitrophenol	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
2,4-Dimethylphenol	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
bis(2-Chloroethoxy) methane	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
2,4-Dichlorophenol	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
1,2,4-Trichlorobenzene	UG/KG	390 UJ	340 U	370 UJ	360 UJ	350 U	390 U
Naphthalene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
4-Chloroaniline	UG/KG	390 UJ	340 UJ	370 UJ	360 UJ	350 UJ	390 U
Hexachlorobutadiene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
4-Chloro-3-methylphenol	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
2-Methylnaphthalene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
Hexachlorocyclopentadiene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
2,4,6-Trichlorophenol	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
2,4,5-Trichlorophenol	UG/KG	950 UJ	830 UJ	900 UJ	880 UJ	850 UJ	940 U
2-Chloronaphthalene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
2-Nitroaniline	UG/KG	950 U	830 U	900 U	880 U	850 U	940 U
Dimethyl phthalate	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
Acenaphthylene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
2,6-Dinitrotoluene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
3-Nitroaniline	UG/KG	950 U	830 U	900 U	880 U	850 U	940 U
Acenaphthene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-OA-SB04-03	80-OA-SB04-06	80-OA-SB05-06	80-OA-SB06-03	80-OA-SB06-06	80-SM-SB02-03
Laboratory Sample ID:		Q41118510	Q41118511	Q41118502	Q41118504	Q41118505	AC6895
Date Sampled:		11/04/94	11/04/94	11/04/94	11/04/94	11/04/94	11/02/94
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	950 U	830 U	900 U	880 U	850 U	940 U
4-Nitrophenol	UG/KG	950 U	830 U	900 U	880 U	850 U	940 UJ
Dibenzofuran	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
2,4-Dinitrotoluene	UG/KG	390 U	340 UJ	370 U	360 U	350 UJ	390 U
Diethylphthalate	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
4-Chlorophenyl phenyl ether	UG/KG	390 U	340 U	370 U	360 U	350 U	390 UJ
Fluorene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
4-Nitroaniline	UG/KG	950 U	830 U	900 U	880 U	850 U	940 UJ
4,6-Dinitro-2-methylphenol	UG/KG	950 U	830 U	900 U	880 U	850 U	940 U
N-nitrosodiphenylamine	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
4-Bromophenyl-phenylether	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
Hexachlorobenzene	UG/KG	390 UJ	340 U	370 U	360 U	350 U	390 U
Pentachlorophenol	UG/KG	950 U	830 U	900 U	880 U	850 U	940 U
Phenanthrene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
Anthracene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
Carbazole	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
di-n-Butylphthalate	UG/KG	93 J	170 J	220 J	220 J	170 J	390 U
Fluoranthene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
Pyrene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
Butyl benzyl phthalate	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
3,3'-Dichlorobenzidine	UG/KG	390 UJ	340 UJ	370 UJ	360 UJ	350 UJ	390 U
Benzo[a]anthracene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
Chrysene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
bis(2-Ethylhexyl)phthalate	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
di-n-Octylphthalate	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
Benzo[b]fluoranthene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
Benzo[k]fluoranthene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
Benzo[a]pyrene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
Indeno[1,2,3-cd]pyrene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U
Dibenz[a,h]anthracene	UG/KG	390 U	340 UJ	370 U	360 U	350 UJ	390 U
Benzo[g,h,i]perylene	UG/KG	390 U	340 U	370 U	360 U	350 U	390 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-OA-SB04-03	80-OA-SB04-06	80-OA-SB05-06	80-OA-SB06-03	80-OA-SB06-06	80-SM-SB02-03
Laboratory Sample ID:		Q41118510	Q41118511	Q41118502	Q41118504	Q41118505	AC6895
Date Sampled:		11/04/94	11/04/94	11/04/94	11/04/94	11/04/94	11/02/94
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	2 U	1.8 U	1.9 U	1.9 U	1.8 U	2 U
beta-BHC	UG/KG	2 U	1.8 U	1.9 U	1.9 U	1.8 U	2 UJ
delta-BHC	UG/KG	2 U	1.8 U	1.9 U	1.9 U	1.8 U	2 U
Lindane (gamma-BHC)	UG/KG	2 U	1.8 U	1.9 U	1.9 U	1.8 U	2 U
Heptachlor	UG/KG	2 U	1.8 U	1.9 U	1.9 U	1.8 U	2 U
Aldrin	UG/KG	2 U	1.8 U	1.9 U	1.9 U	1.8 U	2 U
Heptachlor epoxide	UG/KG	2 U	1.8 U	1.9 U	1.9 U	1.8 U	2 U
Endosulfan I	UG/KG	2 U	1.8 U	1.9 U	1.9 U	1.8 U	2 U
Dieldrin	UG/KG	3.9 U	3.4 U	3.7 U	3.6 U	3.5 U	3.9 U
4,4'-DDE	UG/KG	3.9 U	3.4 U	3.7 U	3.6 U	3.5 U	3.9 U
Endrin	UG/KG	3.9 U	3.4 U	3.7 U	3.6 U	3.5 U	3.9 U
Endosulfan II	UG/KG	3.9 U	3.4 U	3.7 U	3.6 U	3.5 U	3.9 U
4,4'-DDD	UG/KG	3.9 U	3.4 U	3.7 U	3.6 U	3.5 U	4.6
Endosulfan sulfate	UG/KG	3.9 U	3.4 U	3.7 U	3.6 U	3.5 U	3.9 U
4,4'-DDT	UG/KG	3.9 U	3.4 U	3.7 U	3.6 U	3.5 U	3.9 U
Methoxychlor	UG/KG	20 U	18 U	19 U	19 U	18 U	20 U
Endrin ketone	UG/KG	3.9 U	3.4 U	3.7 U	3.6 U	3.5 U	3.9 U
Endrin aldehyde	UG/KG	3.9 U	3.4 U	3.7 U	3.6 U	3.5 U	3.9 U
alpha-Chlordane	UG/KG	2 U	1.8 U	1.9 U	1.9 U	1.8 U	2 U
gamma-Chlordane	UG/KG	2 U	1.8 U	1.9 U	1.9 U	1.8 U	2 U
Toxaphene	UG/KG	200 U	180 U	190 U	190 U	180 U	200 U
Aroclor 1016	UG/KG	39 U	34 U	37 U	36 U	35 U	39 U
Aroclor 1221	UG/KG	80 U	70 U	75 U	74 U	71 U	78 U
Aroclor 1232	UG/KG	39 U	34 U	37 U	36 U	35 U	39 U
Aroclor 1242	UG/KG	39 U	34 U	37 U	36 U	35 U	39 U
Aroclor 1248	UG/KG	39 U	34 U	37 U	36 U	35 U	39 U
Aroclor 1254	UG/KG	39 U	34 U	37 U	36 U	35 U	39 U
Aroclor 1260	UG/KG	39 U	34 U	37 U	36 U	35 U	39 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-SM-SB06-03	80-SM-SB09-03	80-DPA-SB01-03	80-DPA-SB02-04	80-DPA-SB03-04	80-DPA-SB04-04
Laboratory Sample ID:		Q41118104	Q41118108	AF6786	AF6788	AF6791	AF6792
Date Sampled:		11/03/94	11/03/94	06/13/95	06/13/95	06/13/95	06/13/95
	UNITS						
VOLATILES							
Chloromethane	UG/KG	12 UJ	12 UJ	NA	NA	NA	NA
Bromomethane	UG/KG	12 UJ	12 UJ	NA	NA	NA	NA
Vinyl chloride	UG/KG	12 UJ	12 UJ	NA	NA	NA	NA
Chloroethane	UG/KG	12 U	12 U	NA	NA	NA	NA
Methylene chloride	UG/KG	12 U	12 U	NA	NA	NA	NA
Acetone	UG/KG	12 U	12 U	NA	NA	NA	NA
Carbon Disulfide	UG/KG	12 U	12 U	NA	NA	NA	NA
1,1-Dichloroethene	UG/KG	12 U	12 U	NA	NA	NA	NA
1,1-Dichloroethane	UG/KG	12 U	12 U	NA	NA	NA	NA
1,2-Dichloroethene(total)	UG/KG	12 U	12 U	NA	NA	NA	NA
Chloroform	UG/KG	12 U	12 U	NA	NA	NA	NA
1,2-Dichloroethane	UG/KG	12 U	12 U	NA	NA	NA	NA
2-Butanone	UG/KG	12 U	12 U	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/KG	12 U	12 U	NA	NA	NA	NA
Carbon tetrachloride	UG/KG	12 U	12 U	NA	NA	NA	NA
Bromodichloromethane	UG/KG	12 U	12 U	NA	NA	NA	NA
1,2-Dichloropropane	UG/KG	12 U	12 U	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/KG	12 U	12 U	NA	NA	NA	NA
Trichloroethene	UG/KG	12 U	12 U	NA	NA	NA	NA
Dibromochloromethane	UG/KG	12 U	12 U	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/KG	12 U	12 U	NA	NA	NA	NA
Benzene	UG/KG	12 U	12 U	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/KG	12 U	12 U	NA	NA	NA	NA
Bromoform	UG/KG	12 U	12 U	NA	NA	NA	NA
4-Methyl-2-pentanone	UG/KG	12 U	12 U	NA	NA	NA	NA
2-Hexanone	UG/KG	12 U	12 U	NA	NA	NA	NA
Tetrachloroethene	UG/KG	12 U	12 U	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/KG	12 U	12 U	NA	NA	NA	NA
Toluene	UG/KG	12 U	12 U	NA	NA	NA	NA
Chlorobenzene	UG/KG	12 U	12 U	NA	NA	NA	NA
Ethylbenzene	UG/KG	12 U	12 U	NA	NA	NA	NA
Styrene	UG/KG	12 U	12 U	NA	NA	NA	NA
Xylenes (total)	UG/KG	12 U	12 U	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-SM-SB06-03	80-SM-SB09-03	80-DPA-SB01-03	80-DPA-SB02-04	80-DPA-SB03-04	80-DPA-SB04-04
Laboratory Sample ID:		Q41118104	Q41118108	AF6786	AF6788	AF6791	AF6792
Date Sampled:		11/03/94	11/03/94	06/13/95	06/13/95	06/13/95	06/13/95
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	390 U	410 U	NA	NA	NA	NA
bis(2-Chloroethyl) ether	UG/KG	390 U	410 U	NA	NA	NA	NA
2-Chlorophenol	UG/KG	390 U	410 U	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/KG	390 U	410 U	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/KG	390 U	410 U	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/KG	390 U	410 U	NA	NA	NA	NA
2-Methylphenol	UG/KG	390 U	410 U	NA	NA	NA	NA
2,2'-oxybis-(1-chloropropane)	UG/KG	390 U	410 U	NA	NA	NA	NA
4-Methylphenol	UG/KG	390 U	410 U	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	390 U	410 U	NA	NA	NA	NA
Hexachloroethane	UG/KG	390 U	410 U	NA	NA	NA	NA
Nitrobenzene	UG/KG	390 U	410 U	NA	NA	NA	NA
Isophorone	UG/KG	390 U	410 U	NA	NA	NA	NA
2-Nitrophenol	UG/KG	390 U	410 U	NA	NA	NA	NA
2,4-Dimethylphenol	UG/KG	390 U	410 U	NA	NA	NA	NA
bis(2-Chloroethoxy) methane	UG/KG	390 U	410 U	NA	NA	NA	NA
2,4-Dichlorophenol	UG/KG	390 U	410 U	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	390 U	410 U	NA	NA	NA	NA
Naphthalene	UG/KG	390 U	410 U	NA	NA	NA	NA
4-Chloroaniline	UG/KG	390 UJ	410 UJ	NA	NA	NA	NA
Hexachlorobutadiene	UG/KG	390 U	410 U	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/KG	390 U	410 U	NA	NA	NA	NA
2-Methylnaphthalene	UG/KG	390 U	410 U	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/KG	390 U	410 U	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/KG	390 U	410 U	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	950 U	1000 U	NA	NA	NA	NA
2-Chloronaphthalene	UG/KG	390 U	410 U	NA	NA	NA	NA
2-Nitroaniline	UG/KG	950 U	1000 U	NA	NA	NA	NA
Dimethyl phthalate	UG/KG	390 U	410 U	NA	NA	NA	NA
Acenaphthylene	UG/KG	390 U	410 U	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/KG	390 U	410 U	NA	NA	NA	NA
3-Nitroaniline	UG/KG	950 U	1000 U	NA	NA	NA	NA
Acenaphthene	UG/KG	390 U	410 U	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-SM-SB06-03	80-SM-SB09-03	80-DPA-SB01-03	80-DPA-SB02-04	80-DPA-SB03-04	80-DPA-SB04-04
Laboratory Sample ID:		Q41118104	Q41118108	AF6786	AF6788	AF6791	AF6792
Date Sampled:		11/03/94	11/03/94	06/13/95	06/13/95	06/13/95	06/13/95
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	950 UJ	1000 UJ	NA	NA	NA	NA
4-Nitrophenol	UG/KG	950 U	1000 U	NA	NA	NA	NA
Dibenzofuran	UG/KG	390 U	410 U	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/KG	390 U	410 U	NA	NA	NA	NA
Diethylphthalate	UG/KG	390 U	410 U	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	UG/KG	390 U	410 U	NA	NA	NA	NA
Fluorene	UG/KG	390 U	410 U	NA	NA	NA	NA
4-Nitroaniline	UG/KG	950 U	1000 U	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	950 U	1000 U	NA	NA	NA	NA
N-nitrosodiphenylamine	UG/KG	390 U	410 U	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/KG	390 U	410 U	NA	NA	NA	NA
Hexachlorobenzene	UG/KG	390 U	410 U	NA	NA	NA	NA
Pentachlorophenol	UG/KG	950 UJ	1000 UJ	NA	NA	NA	NA
Phenanthrene	UG/KG	390 U	410 U	NA	NA	NA	NA
Anthracene	UG/KG	390 U	410 U	NA	NA	NA	NA
Carbazole	UG/KG	390 U	410 U	NA	NA	NA	NA
di-n-Butylphthalate	UG/KG	150 J	89 J	NA	NA	NA	NA
Fluoranthene	UG/KG	390 U	410 U	NA	NA	NA	NA
Pyrene	UG/KG	390 U	410 U	NA	NA	NA	NA
Butyl benzyl phthalate	UG/KG	390 U	410 U	NA	NA	NA	NA
3,3'-Dichlorobenzidine	UG/KG	390 U	410 U	NA	NA	NA	NA
Benzo[a]anthracene	UG/KG	390 U	410 U	NA	NA	NA	NA
Chrysene	UG/KG	390 U	410 U	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	390 U	410 U	NA	NA	NA	NA
di-n-Octylphthalate	UG/KG	390 U	410 U	NA	NA	NA	NA
Benzo[b]fluoranthene	UG/KG	390 U	410 U	NA	NA	NA	NA
Benzo[k]fluoranthene	UG/KG	390 U	410 U	NA	NA	NA	NA
Benzo[a]pyrene	UG/KG	390 U	410 U	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	UG/KG	390 U	410 U	NA	NA	NA	NA
Dibenz[a,h]anthracene	UG/KG	390 U	410 U	NA	NA	NA	NA
Benzo[g,h,i]perylene	UG/KG	390 U	410 U	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-SM-SB06-03	80-SM-SB09-03	80-DPA-SB01-03	80-DPA-SB02-04	80-DPA-SB03-04	80-DPA-SB04-04
Laboratory Sample ID:		Q41118104	Q41118108	AF6786	AF6788	AF6791	AF6792
Date Sampled:		11/03/94	11/03/94	06/13/95	06/13/95	06/13/95	06/13/95
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U
beta-BHC	UG/KG	2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U
delta-BHC	UG/KG	0.63 J	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U
Lindane (gamma-BHC)	UG/KG	2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U
Heptachlor	UG/KG	2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U
Aldrin	UG/KG	2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U
Heptachlor epoxide	UG/KG	2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U
Endosulfan I	UG/KG	2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U
Dieldrin	UG/KG	1.3 J	4.1 U	4.3 U	4.1 U	4.1 U	4.2 U
4,4'-DDE	UG/KG	4.6	1.4 J	4.3 U	4.1 U	4.1 U	4.2 U
Endrin	UG/KG	3.9 U	4.1 U	4.3 U	4.1 U	4.1 U	4.2 U
Endosulfan II	UG/KG	3.9 U	4.1 U	4.3 U	4.1 U	4.1 U	4.2 U
4,4'-DDD	UG/KG	5.2	1.4 J	38	4.1 U	94	4.2 U
Endosulfan sulfate	UG/KG	3.9 U	4.1 U	4.3 U	4.1 U	4.1 U	4.2 U
4,4'-DDT	UG/KG	3.9 U	4.1 U	8.8	4.1 U	22	4.2 U
Methoxychlor	UG/KG	20 U	21 U	22 U	21 U	21 U	22 U
Endrin ketone	UG/KG	3.9 U	4.1 U	4.3 U	4.1 U	4.1 U	4.2 U
Endrin aldehyde	UG/KG	3.9 U	4.1 U	4.3 U	4.1 U	4.1 U	4.2 U
alpha-Chlordane	UG/KG	2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U
gamma-Chlordane	UG/KG	2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.2 U
Toxaphene	UG/KG	200 U	210 U	220 U	210 U	210 U	220 U
Aroclor 1016	UG/KG	39 U	41 U	NA	NA	NA	NA
Aroclor 1221	UG/KG	80 U	83 U	NA	NA	NA	NA
Aroclor 1232	UG/KG	39 U	41 U	NA	NA	NA	NA
Aroclor 1242	UG/KG	39 U	41 U	NA	NA	NA	NA
Aroclor 1248	UG/KG	39 U	41 U	NA	NA	NA	NA
Aroclor 1254	UG/KG	39 U	41 U	NA	NA	NA	NA
Aroclor 1260	UG/KG	39 U	41 U	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB08-04	80-DPA-SB09-04	80-DPA-SB12-04	80-DPA-SB13-04	80-DPA-SB17-03	80-DPA-SB18-04
Laboratory Sample ID:		AF6794	AF7023	AF7026	AF6803	AF6804	AF7030
Date Sampled:		06/13/95	06/14/95	06/14/95	06/14/95	06/14/95	06/14/95
	UNITS						
VOLATILES							
Chloromethane	UG/KG	NA	NA	NA	NA	NA	NA
Bromomethane	UG/KG	NA	NA	NA	NA	NA	NA
Vinyl chloride	UG/KG	NA	NA	NA	NA	NA	NA
Chloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Methylene chloride	UG/KG	NA	NA	NA	NA	NA	NA
Acetone	UG/KG	NA	NA	NA	NA	NA	NA
Carbon Disulfide	UG/KG	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/KG	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	UG/KG	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene(total)	UG/KG	NA	NA	NA	NA	NA	NA
Chloroform	UG/KG	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	UG/KG	NA	NA	NA	NA	NA	NA
2-Butanone	UG/KG	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	UG/KG	NA	NA	NA	NA	NA	NA
Bromodichloromethane	UG/KG	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	UG/KG	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/KG	NA	NA	NA	NA	NA	NA
Trichloroethene	UG/KG	NA	NA	NA	NA	NA	NA
Dibromochloromethane	UG/KG	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Benzene	UG/KG	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/KG	NA	NA	NA	NA	NA	NA
Bromoform	UG/KG	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	UG/KG	NA	NA	NA	NA	NA	NA
2-Hexanone	UG/KG	NA	NA	NA	NA	NA	NA
Tetrachloroethene	UG/KG	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Toluene	UG/KG	NA	NA	NA	NA	NA	NA
Chlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
Ethylbenzene	UG/KG	NA	NA	NA	NA	NA	NA
Styrene	UG/KG	NA	NA	NA	NA	NA	NA
Xylenes (total)	UG/KG	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB08-04	80-DPA-SB09-04	80-DPA-SB12-04	80-DPA-SB13-04	80-DPA-SB17-03	80-DPA-SB18-04
Laboratory Sample ID:		AF6794	AF7023	AF7026	AF6803	AF6804	AF7030
Date Sampled:		06/13/95	06/14/95	06/14/95	06/14/95	06/14/95	06/14/95
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl) ether	UG/KG	NA	NA	NA	NA	NA	NA
2-Chlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
2-Methylphenol	UG/KG	NA	NA	NA	NA	NA	NA
2,2'-oxybis-(1-chloropropane)	UG/KG	NA	NA	NA	NA	NA	NA
4-Methylphenol	UG/KG	NA	NA	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	NA	NA	NA	NA	NA	NA
Hexachloroethane	UG/KG	NA	NA	NA	NA	NA	NA
Nitrobenzene	UG/KG	NA	NA	NA	NA	NA	NA
Isophorone	UG/KG	NA	NA	NA	NA	NA	NA
2-Nitrophenol	UG/KG	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	UG/KG	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy) methane	UG/KG	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
Naphthalene	UG/KG	NA	NA	NA	NA	NA	NA
4-Chloroaniline	UG/KG	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	UG/KG	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/KG	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	UG/KG	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/KG	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	UG/KG	NA	NA	NA	NA	NA	NA
2-Nitroaniline	UG/KG	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	UG/KG	NA	NA	NA	NA	NA	NA
Acenaphthylene	UG/KG	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/KG	NA	NA	NA	NA	NA	NA
3-Nitroaniline	UG/KG	NA	NA	NA	NA	NA	NA
Acenaphthene	UG/KG	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB08-04	80-DPA-SB09-04	80-DPA-SB12-04	80-DPA-SB13-04	80-DPA-SB17-03	80-DPA-SB18-04
Laboratory Sample ID:		AF6794	AF7023	AF7026	AF6803	AF6804	AF7030
Date Sampled:		06/13/95	06/14/95	06/14/95	06/14/95	06/14/95	06/14/95
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	NA	NA	NA	NA	NA	NA
4-Nitrophenol	UG/KG	NA	NA	NA	NA	NA	NA
Dibenzofuran	UG/KG	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/KG	NA	NA	NA	NA	NA	NA
Diethylphthalate	UG/KG	NA	NA	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	UG/KG	NA	NA	NA	NA	NA	NA
Fluorene	UG/KG	NA	NA	NA	NA	NA	NA
4-Nitroaniline	UG/KG	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	NA	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	UG/KG	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/KG	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	UG/KG	NA	NA	NA	NA	NA	NA
Pentachlorophenol	UG/KG	NA	NA	NA	NA	NA	NA
Phenanthrene	UG/KG	NA	NA	NA	NA	NA	NA
Anthracene	UG/KG	NA	NA	NA	NA	NA	NA
Carbazole	UG/KG	NA	NA	NA	NA	NA	NA
di-n-Butylphthalate	UG/KG	NA	NA	NA	NA	NA	NA
Fluoranthene	UG/KG	NA	NA	NA	NA	NA	NA
Pyrene	UG/KG	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	UG/KG	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[a]anthracene	UG/KG	NA	NA	NA	NA	NA	NA
Chrysene	UG/KG	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	NA	NA	NA	NA	NA	NA
di-n-Octylphthalate	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[a]pyrene	UG/KG	NA	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	UG/KG	NA	NA	NA	NA	NA	NA
Dibenz[a,h]anthracene	UG/KG	NA	NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	UG/KG	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB08-04	80-DPA-SB09-04	80-DPA-SB12-04	80-DPA-SB13-04	80-DPA-SB17-03	80-DPA-SB18-04
Laboratory Sample ID:		AF6794	AF7023	AF7026	AF6803	AF6804	AF7030
Date Sampled:		06/13/95	06/14/95	06/14/95	06/14/95	06/14/95	06/14/95
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	2.2 U	2 U	2.1 U	2.2 U	2.3 U	2 U
beta-BHC	UG/KG	2.2 U	2 U	2.1 U	2.2 U	2.3 U	2 U
delta-BHC	UG/KG	2.2 U	2 U	2.1 U	2.2 U	2.3 U	2 U
Lindane (gamma-BHC)	UG/KG	2.2 U	2 U	2.1 U	2.2 U	2.3 U	2 U
Heptachlor	UG/KG	2.2 U	2 U	2.1 U	2.2 U	2.3 U	2 U
Aldrin	UG/KG	2.2 U	2 U	2.1 U	2.2 U	2.3 U	2 U
Heptachlor epoxide	UG/KG	2.2 U	2 U	2.1 U	2.2 U	2.3 U	2 U
Endosulfan I	UG/KG	2.2 U	2 U	2.1 U	2.2 U	2.3 U	2 U
Dieldrin	UG/KG	4.3 U	4 U	4.1 U	4.2 U	4.4 U	3.9 U
4,4'-DDE	UG/KG	7.3	4 U	4.1 U	4.2 U	4.4 U	19
Endrin	UG/KG	4.3 U	4 U	4.1 U	4.2 U	4.4 U	3.9 U
Endosulfan II	UG/KG	4.3 U	4 U	4.1 U	4.2 U	4.4 U	3.9 U
4,4'-DDD	UG/KG	6 J	4 U	4.1 U	4.2 U	27	3.9 U
Endosulfan sulfate	UG/KG	4.3 U	4 U	4.1 U	4.2 U	4.4 U	3.9 U
4,4'-DDT	UG/KG	42	4 U	4.1 U	4.2 U	4.4 U	9.9
Methoxychlor	UG/KG	22 U	20 U	21 U	22 U	23 U	20 U
Endrin ketone	UG/KG	4.3 U	4 U	4.1 U	4.2 U	4.4 U	3.9 U
Endrin aldehyde	UG/KG	4.3 U	4 U	4.1 U	4.2 U	4.4 U	3.9 U
alpha-Chlordane	UG/KG	2.2 U	2 U	2.1 U	2.2 U	2.3 U	2 U
gamma-Chlordane	UG/KG	2.2 U	2 U	2.1 U	2.2 U	2.3 U	2 U
Toxaphene	UG/KG	220 U	200 U	210 U	220 U	230 U	200 U
Aroclor 1016	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1221	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1232	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1242	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1248	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1254	UG/KG	NA	NA	NA	NA	NA	NA
Aroclor 1260	UG/KG	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB19-04	80-DPA-SB20-04	80-MW08-05
Laboratory Sample ID:		AF7032	AF6801	AF6665
Date Sampled:		06/14/95	06/14/95	06/13/95
	UNITS			
VOLATILES				
Chloromethane	UG/KG	NA	NA	NA
Bromomethane	UG/KG	NA	NA	NA
Vinyl chloride	UG/KG	NA	NA	NA
Chloroethane	UG/KG	NA	NA	NA
Methylene chloride	UG/KG	NA	NA	NA
Acetone	UG/KG	NA	NA	NA
Carbon Disulfide	UG/KG	NA	NA	NA
1,1-Dichloroethene	UG/KG	NA	NA	NA
1,1-Dichloroethane	UG/KG	NA	NA	NA
1,2-Dichloroethene(total)	UG/KG	NA	NA	NA
Chloroform	UG/KG	NA	NA	NA
1,2-Dichloroethane	UG/KG	NA	NA	NA
2-Butanone	UG/KG	NA	NA	NA
1,1,1-Trichloroethane	UG/KG	NA	NA	NA
Carbon tetrachloride	UG/KG	NA	NA	NA
Bromodichloromethane	UG/KG	NA	NA	NA
1,2-Dichloropropane	UG/KG	NA	NA	NA
cis-1,3-Dichloropropene	UG/KG	NA	NA	NA
Trichloroethene	UG/KG	NA	NA	NA
Dibromochloromethane	UG/KG	NA	NA	NA
1,1,2-Trichloroethane	UG/KG	NA	NA	NA
Benzene	UG/KG	NA	NA	NA
trans-1,3-Dichloropropene	UG/KG	NA	NA	NA
Bromoform	UG/KG	NA	NA	NA
4-Methyl-2-pentanone	UG/KG	NA	NA	NA
2-Hexanone	UG/KG	NA	NA	NA
Tetrachloroethene	UG/KG	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/KG	NA	NA	NA
Toluene	UG/KG	NA	NA	NA
Chlorobenzene	UG/KG	NA	NA	NA
Ethylbenzene	UG/KG	NA	NA	NA
Styrene	UG/KG	NA	NA	NA
Xylenes (total)	UG/KG	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB19-04	80-DPA-SB20-04	80-MW08-05
Laboratory Sample ID:		AF7032	AF6801	AF6665
Date Sampled:		06/14/95	06/14/95	06/13/95
	UNITS			
SEMIVOLATILES				
Phenol	UG/KG	NA	NA	NA
bis(2-Chloroethyl) ether	UG/KG	NA	NA	NA
2-Chlorophenol	UG/KG	NA	NA	NA
1,3-Dichlorobenzene	UG/KG	NA	NA	NA
1,4-Dichlorobenzene	UG/KG	NA	NA	NA
1,2-Dichlorobenzene	UG/KG	NA	NA	NA
2-Methylphenol	UG/KG	NA	NA	NA
2,2'-oxybis-(1-chloropropane)	UG/KG	NA	NA	NA
4-Methylphenol	UG/KG	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	NA	NA	NA
Hexachloroethane	UG/KG	NA	NA	NA
Nitrobenzene	UG/KG	NA	NA	NA
Isophorone	UG/KG	NA	NA	NA
2-Nitrophenol	UG/KG	NA	NA	NA
2,4-Dimethylphenol	UG/KG	NA	NA	NA
bis(2-Chloroethoxy) methane	UG/KG	NA	NA	NA
2,4-Dichlorophenol	UG/KG	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	NA	NA	NA
Naphthalene	UG/KG	NA	NA	NA
4-Chloroaniline	UG/KG	NA	NA	NA
Hexachlorobutadiene	UG/KG	NA	NA	NA
4-Chloro-3-methylphenol	UG/KG	NA	NA	NA
2-Methylnaphthalene	UG/KG	NA	NA	NA
Hexachlorocyclopentadiene	UG/KG	NA	NA	NA
2,4,6-Trichlorophenol	UG/KG	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	NA	NA	NA
2-Chloronaphthalene	UG/KG	NA	NA	NA
2-Nitroaniline	UG/KG	NA	NA	NA
Dimethyl phthalate	UG/KG	NA	NA	NA
Acenaphthylene	UG/KG	NA	NA	NA
2,6-Dinitrotoluene	UG/KG	NA	NA	NA
3-Nitroaniline	UG/KG	NA	NA	NA
Acenaphthene	UG/KG	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB19-04	80-DPA-SB20-04	80-MW08-05
Laboratory Sample ID:		AF7032	AF6801	AF6665
Date Sampled:		06/14/95	06/14/95	06/13/95
	UNITS			
SEMIVOLATILES Cont.				
2,4-Dinitrophenol	UG/KG	NA	NA	NA
4-Nitrophenol	UG/KG	NA	NA	NA
Dibenzofuran	UG/KG	NA	NA	NA
2,4-Dinitrotoluene	UG/KG	NA	NA	NA
Diethylphthalate	UG/KG	NA	NA	NA
4-Chlorophenyl phenyl ether	UG/KG	NA	NA	NA
Fluorene	UG/KG	NA	NA	NA
4-Nitroaniline	UG/KG	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	NA	NA	NA
N-nitrosodiphenylamine	UG/KG	NA	NA	NA
4-Bromophenyl-phenylether	UG/KG	NA	NA	NA
Hexachlorobenzene	UG/KG	NA	NA	NA
Pentachlorophenol	UG/KG	NA	NA	NA
Phenanthrene	UG/KG	NA	NA	NA
Anthracene	UG/KG	NA	NA	NA
Carbazole	UG/KG	NA	NA	NA
di-n-Butylphthalate	UG/KG	NA	NA	NA
Fluoranthene	UG/KG	NA	NA	NA
Pyrene	UG/KG	NA	NA	NA
Butyl benzyl phthalate	UG/KG	NA	NA	NA
3,3'-Dichlorobenzidine	UG/KG	NA	NA	NA
Benzo[a]anthracene	UG/KG	NA	NA	NA
Chrysene	UG/KG	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	NA	NA	NA
di-n-Octylphthalate	UG/KG	NA	NA	NA
Benzo[b]fluoranthene	UG/KG	NA	NA	NA
Benzo[k]fluoranthene	UG/KG	NA	NA	NA
Benzo[a]pyrene	UG/KG	NA	NA	NA
Indeno[1,2,3-cd]pyrene	UG/KG	NA	NA	NA
Dibenz[a,h]anthracene	UG/KG	NA	NA	NA
Benzo[g,h,i]perylene	UG/KG	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB19-04	80-DPA-SB20-04	80-MW08-05
Laboratory Sample ID:		AF7032	AF6801	AF6665
Date Sampled:		06/14/95	06/14/95	06/13/95
	UNITS			
PESTICIDES/PCBs				
alpha-BHC	UG/KG	2.2 U	2.2 U	2.3 U
beta-BHC	UG/KG	2.2 U	2.2 U	2.3 U
delta-BHC	UG/KG	2.2 U	2.2 U	2.3 U
Lindane (gamma-BHC)	UG/KG	2.2 U	2.2 U	2.3 U
Heptachlor	UG/KG	2.2 U	2.2 U	2.3 U
Aldrin	UG/KG	2.2 U	2.2 U	2.3 U
Heptachlor epoxide	UG/KG	2.2 U	2.2 U	2.3 U
Endosulfan I	UG/KG	2.2 U	2.2 U	2.3 U
Dieldrin	UG/KG	4.2 U	4.2 U	4.5 U
4,4'-DDE	UG/KG	4.2 U	4.2 U	4.5 U
Endrin	UG/KG	4.2 U	4.2 U	4.5 U
Endosulfan II	UG/KG	4.2 U	4.2 U	4.5 U
4,4'-DDD	UG/KG	4.2 U	4.2 U	300
Endosulfan sulfate	UG/KG	4.2 U	4.2 U	4.5 U
4,4'-DDT	UG/KG	4.2 U	5.8	21
Methoxychlor	UG/KG	22 U	22 U	23 U
Endrin ketone	UG/KG	4.2 U	4.2 U	4.5 U
Endrin aldehyde	UG/KG	4.2 U	4.2 U	4.5 U
alpha-Chlordane	UG/KG	2.2 U	2.2 U	2.3 U
gamma-Chlordane	UG/KG	2.2 U	2.2 U	2.3 U
Toxaphene	UG/KG	220 U	220 U	230 U
Aroclor 1016	UG/KG	NA	NA	NA
Aroclor 1221	UG/KG	NA	NA	NA
Aroclor 1232	UG/KG	NA	NA	NA
Aroclor 1242	UG/KG	NA	NA	NA
Aroclor 1248	UG/KG	NA	NA	NA
Aroclor 1254	UG/KG	NA	NA	NA
Aroclor 1260	UG/KG	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - 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
	UNITS						
VOLATILES							
Chloromethane	UG/KG	11 U	13 U	ND	ND		0/32
Bromomethane	UG/KG	11 U	13 UJ	ND	ND		0/32
Vinyl chloride	UG/KG	11 UJ	13 U	ND	ND		0/32
Chloroethane	UG/KG	11 U	13 U	ND	ND		0/32
Methylene chloride	UG/KG	11 U	13 U	ND	ND		0/32
Acetone	UG/KG	11 UJ	830 U	11 J	110 J	80-MW031W-03	4/32
Carbon Disulfide	UG/KG	11 U	13 U	13	13	80-SM-SB02-03	1/32
1,1-Dichloroethene	UG/KG	11 U	13 U	ND	ND		0/32
1,1-Dichloroethane	UG/KG	11 U	13 U	ND	ND		0/32
1,2-Dichloroethene(total)	UG/KG	11 U	13 U	ND	ND		0/32
Chloroform	UG/KG	11 U	13 U	ND	ND		0/32
1,2-Dichloroethane	UG/KG	11 U	13 U	ND	ND		0/32
2-Butanone	UG/KG	11 U	23 U	ND	ND		0/32
1,1,1-Trichloroethane	UG/KG	11 U	13 U	ND	ND		0/32
Carbon tetrachloride	UG/KG	11 U	13 U	ND	ND		0/32
Bromodichloromethane	UG/KG	11 U	13 U	ND	ND		0/32
1,2-Dichloropropane	UG/KG	11 U	13 U	ND	ND		0/32
cis-1,3-Dichloropropene	UG/KG	11 U	13 U	ND	ND		0/32
Trichloroethene	UG/KG	11 U	13 U	ND	ND		0/32
Dibromochloromethane	UG/KG	11 U	13 U	ND	ND		0/32
1,1,2-Trichloroethane	UG/KG	11 U	13 U	ND	ND		0/32
Benzene	UG/KG	11 U	13 U	ND	ND		0/32
trans-1,3-Dichloropropene	UG/KG	11 U	13 U	ND	ND		0/32
Bromoform	UG/KG	11 U	13 U	ND	ND		0/32
4-Methyl-2-pentanone	UG/KG	11 U	13 U	ND	ND		0/32
2-Hexanone	UG/KG	11 U	13 U	ND	ND		0/32
Tetrachloroethene	UG/KG	11 U	13 U	ND	ND		0/32
1,1,2,2-Tetrachloroethane	UG/KG	11 U	13 U	ND	ND		0/32
Toluene	UG/KG	11 U	13 U	ND	ND		0/32
Chlorobenzene	UG/KG	11 U	13 U	ND	ND		0/32
Ethylbenzene	UG/KG	11 U	13 U	ND	ND		0/32
Styrene	UG/KG	11 U	13 U	ND	ND		0/32
Xylenes (total)	UG/KG	11 U	13 U	ND	ND		0/32

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - 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
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	340 U	430 U	ND	ND		0/31
bis(2-Chloroethyl) ether	UG/KG	340 U	430 U	ND	ND		0/32
2-Chlorophenol	UG/KG	340 U	430 U	ND	ND		0/31
1,3-Dichlorobenzene	UG/KG	340 U	430 U	ND	ND		0/32
1,4-Dichlorobenzene	UG/KG	340 U	430 U	ND	ND		0/32
1,2-Dichlorobenzene	UG/KG	340 U	430 U	ND	ND		0/32
2-Methylphenol	UG/KG	340 U	430 U	ND	ND		0/31
2,2'-oxybis-(1-chloropropane)	UG/KG	340 U	430 U	ND	ND		0/32
4-Methylphenol	UG/KG	340 U	430 U	ND	ND		0/31
N-Nitroso-di-n-propylamine	UG/KG	340 U	430 U	ND	ND		0/32
Hexachloroethane	UG/KG	340 U	430 U	ND	ND		0/32
Nitrobenzene	UG/KG	340 U	430 U	ND	ND		0/32
Isophorone	UG/KG	340 U	430 U	ND	ND		0/32
2-Nitrophenol	UG/KG	340 U	430 U	ND	ND		0/31
2,4-Dimethylphenol	UG/KG	340 U	430 U	ND	ND		0/31
bis(2-Chloroethoxy) methane	UG/KG	340 U	430 U	ND	ND		0/32
2,4-Dichlorophenol	UG/KG	340 U	430 U	ND	ND		0/31
1,2,4-Trichlorobenzene	UG/KG	340 U	430 U	ND	ND		0/32
Naphthalene	UG/KG	340 U	430 U	ND	ND		0/32
4-Chloroaniline	UG/KG	340 UJ	430 U	ND	ND		0/32
Hexachlorobutadiene	UG/KG	340 U	430 U	ND	ND		0/32
4-Chloro-3-methylphenol	UG/KG	340 U	430 U	ND	ND		0/31
2-Methylnaphthalene	UG/KG	340 U	430 U	ND	ND		0/32
Hexachlorocyclopentadiene	UG/KG	340 U	430 U	ND	ND		0/32
2,4,6-Trichlorophenol	UG/KG	340 U	430 U	ND	ND		0/31
2,4,5-Trichlorophenol	UG/KG	830 UJ	1000 U	ND	ND		0/31
2-Chloronaphthalene	UG/KG	340 U	430 U	ND	ND		0/32
2-Nitroaniline	UG/KG	830 U	1000 U	ND	ND		0/32
Dimethyl phthalate	UG/KG	340 U	430 U	ND	ND		0/32
Acenaphthylene	UG/KG	340 U	430 U	ND	ND		0/32
2,6-Dinitrotoluene	UG/KG	340 U	430 U	ND	ND		0/32
3-Nitroaniline	UG/KG	830 U	1000 U	ND	ND		0/32
Acenaphthene	UG/KG	340 U	430 U	ND	ND		0/32

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	830 U	1000 U	ND	ND		0/31
4-Nitrophenol	UG/KG	830 U	1000 UJ	ND	ND		0/31
Dibenzofuran	UG/KG	340 U	430 U	ND	ND		0/32
2,4-Dinitrotoluene	UG/KG	340 UJ	430 U	ND	ND		0/32
Diethylphthalate	UG/KG	340 U	430 U	ND	ND		0/32
4-Chlorophenyl phenyl ether	UG/KG	340 U	430 U	ND	ND		0/32
Fluorene	UG/KG	340 U	430 U	ND	ND		0/32
4-Nitroaniline	UG/KG	830 U	1000 UJ	ND	ND		0/32
4,6-Dinitro-2-methylphenol	UG/KG	830 U	1000 U	ND	ND		0/31
N-nitrosodiphenylamine	UG/KG	340 U	430 U	ND	ND		0/32
4-Bromophenyl-phenylether	UG/KG	340 U	430 U	ND	ND		0/32
Hexachlorobenzene	UG/KG	340 U	430 U	ND	ND		0/32
Pentachlorophenol	UG/KG	830 U	1000 U	ND	ND		0/31
Phenanthrene	UG/KG	340 U	430 U	53 J	53 J	80-MW031W-03	1/32
Anthracene	UG/KG	340 U	430 U	ND	ND		0/32
Carbazole	UG/KG	340 U	430 U	ND	ND		0/32
di-n-Butylphthalate	UG/KG	350 U	520 U	56 J	3100	80-MW031W-03	17/32
Fluoranthene	UG/KG	340 U	430 U	ND	ND		0/32
Pyrene	UG/KG	340 U	430 U	ND	ND		0/32
Butyl benzyl phthalate	UG/KG	340 U	430 U	46 J	46 J	80-MW031W-03	1/32
3,3'-Dichlorobenzidine	UG/KG	340 UJ	430 U	ND	ND		0/32
Benzo[a]anthracene	UG/KG	340 U	430 U	ND	ND		0/32
Chrysene	UG/KG	340 U	430 U	ND	ND		0/32
bis(2-Ethylhexyl)phthalate	UG/KG	340 U	430 U	81 J	85 J	80-MW07-06	2/32
di-n-Octylphthalate	UG/KG	340 U	430 U	ND	ND		0/32
Benzo[b]fluoranthene	UG/KG	340 U	430 U	ND	ND		0/32
Benzo[k]fluoranthene	UG/KG	340 U	430 U	ND	ND		0/32
Benzo[a]pyrene	UG/KG	340 U	430 U	ND	ND		0/32
Indeno[1,2,3-cd]pyrene	UG/KG	340 U	430 U	ND	ND		0/32
Dibenz[a,h]anthracene	UG/KG	340 UJ	430 U	ND	ND		0/32
Benzo[g,h,i]perylene	UG/KG	340 U	430 U	ND	ND		0/32

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - 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
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	1.8 U	4.2 U	ND	ND		0/45
beta-BHC	UG/KG	1.8 U	4.2 U	ND	ND		0/45
delta-BHC	UG/KG	1.8 U	4.2 U	0.63 J	0.63 J	80-SM-SB06-03	1/45
Lindane (gamma-BHC)	UG/KG	1.8 U	4.2 U	ND	ND		0/45
Heptachlor	UG/KG	1.8 U	4.2 U	ND	ND		0/45
Aldrin	UG/KG	1.8 U	4.2 U	2.6	2.6	80-LA-SB04-06	1/45
Heptachlor epoxide	UG/KG	1.8 U	4.2 U	ND	ND		0/45
Endosulfan I	UG/KG	1.8 U	4.2 U	ND	ND		0/45
Dieldrin	UG/KG	3.4 U	8.1 U	0.73 J	1.4 J	80-OA-SB02-07	4/45
4,4'-DDE	UG/KG	3.4 U	4.5 U	1.4 J	35	80-OA-SB02-07	7/45
Endrin	UG/KG	3.4 U	8.1 U	ND	ND		0/45
Endosulfan II	UG/KG	3.4 U	8.1 U	ND	ND		0/45
4,4'-DDD	UG/KG	3.4 U	4.2 U	1.1 J	510 J	80-MW04-06	12/45
Endosulfan sulfate	UG/KG	3.4 U	8.1 U	ND	ND		0/45
4,4'-DDT	UG/KG	3.4 U	4.4 U	4.7	240	80-MW04-06	9/45
Methoxychlor	UG/KG	18 U	42 U	ND	ND		0/45
Endrin ketone	UG/KG	3.4 U	8.1 U	ND	ND		0/45
Endrin aldehyde	UG/KG	3.4 U	8.1 U	ND	ND		0/45
alpha-Chlordane	UG/KG	1.8 U	4.2 U	ND	ND		0/45
gamma-Chlordane	UG/KG	1.8 U	4.2 U	ND	ND		0/45
Toxaphene	UG/KG	180 U	420 U	ND	ND		0/45
Aroclor 1016	UG/KG	34 U	81 U	ND	ND		0/32
Aroclor 1221	UG/KG	70 U	170 U	ND	ND		0/32
Aroclor 1232	UG/KG	34 U	81 U	ND	ND		0/32
Aroclor 1242	UG/KG	34 U	81 U	ND	ND		0/32
Aroclor 1248	UG/KG	34 U	81 U	ND	ND		0/32
Aroclor 1254	UG/KG	34 U	81 U	ND	ND		0/32
Aroclor 1260	UG/KG	34 U	81 U	ND	ND		0/32

APPENDIX H.4
SUBSURFACE SOIL METALS

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:		80-LA-SB01-03	80-LA-SB01-06	80-LA-SB02-06	80-LA-SB03-06	80-LA-SB04-06	80-LA-SB05-06
Laboratory Sample ID:		AC7802	AC7804	AC6673	AC6682	AC6922	AC6687
Date Sampled:		11/05/94	11/05/94	11/01/94	11/01/94	11/02/94	11/01/94
	UNITS						
Aluminum	MG/KG	4750	1830	2190 J	1560 J	1530 J	2330 J
Antimony	MG/KG	11.2 U	12.2 U	11.7 U	11.5 U	11.7 UJ	10.9 U
Arsenic	MG/KG	3.6	3.2	2.3 U	2.3 U	2.3 UJ	2.2 U
Barium	MG/KG	8.4 J	4.8 J	4.9	4.8	2.6	6.2
Beryllium	MG/KG	0.24	0.24 U	0.23 U	0.23 U	0.23 U	0.22 U
Cadmium	MG/KG	1.1 U	1.2 U	1.2 U	1.1 U	1.2 U	1.1 U
Calcium	MG/KG	689	167	105 UJ	120 UJ	191 J	78.2 UJ
Chromium	MG/KG	7.1	6.4	7.3	5.5	4.6 J	5.3
Cobalt	MG/KG	2.2 U	2.4 U	2.3 U	2.3 U	2.3 U	2.2 U
Copper	MG/KG	2.2 U	2.4 U	2.3 U	2.3 U	2.3 U	2.2 U
Iron	MG/KG	7640	8230	11700	5700	33000 J	1350
Lead	MG/KG	5.4 J	4.5 J	4.7 U	3.4 U	3.2 J	5.3
Magnesium	MG/KG	251	114	99.4	116	11.7 U	110
Manganese	MG/KG	43.3	5.6 J	3.9	4.8	2.2 J	5.2
Mercury	MG/KG	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Nickel	MG/KG	4.5 U	4.9 U	4.7 U	4.6 U	4.7 U	4.3 U
Potassium	MG/KG	224 U	245 U	265 J	238	234 U	413
Selenium	MG/KG	1.2	1.2 U	1.2 U	1.1 U	2	1.1 U
Silver	MG/KG	1.1 U	1.2 U	1.2 U	1.1 U	1.2 U	1.1 U
Sodium	MG/KG	53	40.4	27.8	33.6	39.4	33.3
Thallium	MG/KG	2.2 UJ	2.4 UJ	2.3 U	2.3 U	2.3 U	2.2 U
Vanadium	MG/KG	13.7	7.1	9.5	6.4	7.7	4.2
Zinc	MG/KG	10.8 UJ	5.1 UJ	13.5 UJ	14.5 UJ	11.5 UJ	8.3 UJ
Moisture	%	14.22	19.91	19.5	18.42	16.13	13.06

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:		80-LA-SB06-06	80-LA-SB07-06	80-MA-SB01-06	80-MA-SB02-06	80-MA-SB03-06	80-MA-SB04-06
Laboratory Sample ID:		AC6932	Q41118002A	AC6910	AC6883	AC6916	AC6692
Date Sampled:		11/02/94	11/02/94	11/02/94	11/01/94	11/02/94	11/01/94
	UNITS						
Aluminum	MG/KG	4410 J	3890 J	6430 J	2440 J	4800 J	3060 J
Antimony	MG/KG	11.7 UJ	2.9 UJ	12.4 UJ	12.2 UJ	12.5 UJ	12.1 U
Arsenic	MG/KG	2.3 UJ	0.54 U	5.5 J	2.4 UJ	4.3 J	2.4 U
Barium	MG/KG	5.6	6.8	11.3	6.2	7.7	6.5
Beryllium	MG/KG	0.23 U	0.07	0.26	0.24 U	0.25	0.24 U
Cadmium	MG/KG	1.2 U	0.35 U	1.2 U	1.2 U	1.3 U	1.2 U
Calcium	MG/KG	171 J	85.3	264 J	45 J	52.2 J	90.4 UJ
Chromium	MG/KG	88.1 J	8.6 J	25.4 J	7.8 J	11.3 J	8.7
Cobalt	MG/KG	2.3 U	0.9 J	2.5 U	2.4 U	2.5 U	2.4 U
Copper	MG/KG	3.2	0.89 J	3.4	2.4 U	2.5 U	2.4 U
Iron	MG/KG	56100 J	11700 J	14400 J	5300 J	11000 J	5810
Lead	MG/KG	6.4 J	4.1 J	8.9 J	4.9 J	5.7 J	5.9
Magnesium	MG/KG	55.6	214	342	211	391	271
Manganese	MG/KG	5.6 J	4.6	5.3 J	9.5 J	9.6 J	5.9
Mercury	MG/KG	0.12 U	0.12 U	0.13 U	0.12 U	0.93	0.12 U
Nickel	MG/KG	4.7 U	1 U	5 U	4.9 U	5 U	4.8 U
Potassium	MG/KG	235 U	258	399 J	244 U	447 J	569
Selenium	MG/KG	3.3	0.61 U	1.3	1.2 U	1.3 U	1.2 U
Silver	MG/KG	1.2 U	0.47 U	1.2 U	1.2 U	1.3 U	1.2 U
Sodium	MG/KG	36.2	59.4	34	39.8	39.4	37.6
Thallium	MG/KG	2.3 U	0.94 U	2.5 U	2.4 U	2.5 U	2.4 U
Vanadium	MG/KG	14.1	4.8	15.8	6.2	17.8	6.3
Zinc	MG/KG	18.1 J	3.3 UJ	9.7 UJ	15.3 UJ	8.5 UJ	10.1 UJ
Moisture	%	18.07	N/A	22.57	18.05	20.16	19.7

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:		80-MW031W-03	80-MW03IW-06	80-MW04-06	80-MW05-04	80-MW05-06	80-MW06-03
Laboratory Sample ID:		Q41118708	AC7812	Q41118402	Q41118507	Q41118508	AC7808
Date Sampled:		11/05/94	11/07/94	11/03/94	11/04/94	11/04/94	11/05/94
	UNITS						
Aluminum	MG/KG	5650	1600	1240	9900	793	6240
Antimony	MG/KG	2.9 UJ	12.1 U	3 UJ	2.8 UJ	2.9 UJ	11.3 U
Arsenic	MG/KG	11.2	2.4 U	0.57 U	27.8	0.55 U	2.3 U
Barium	MG/KG	5.3	4.3 J	4.2	12.6	2.6	7.2 J
Beryllium	MG/KG	0.05	0.24 U	0.04	0.17	0.02 U	0.23
Cadmium	MG/KG	0.35 U	1.2 U	0.37 U	0.34 U	0.36 U	1.1 U
Calcium	MG/KG	821 J	211	51.9	44	33.6	181
Chromium	MG/KG	11	6.3	4.3	36.6	3.7	10.3
Cobalt	MG/KG	0.82 J	2.4 U	0.58	2.4 J	0.45 U	2.3 U
Copper	MG/KG	2.2	2.4 U	1.1 J	5.5	1	2.3 U
Iron	MG/KG	7330	5530	2520	33000	2990	5210
Lead	MG/KG	5.6	3 J	3.1	13.2	4.5	6 J
Magnesium	MG/KG	220	73.3	88.2	516	58	152
Manganese	MG/KG	9.1	4.2 J	5.4 J	4.7 J	4.6 J	3.2 J
Mercury	MG/KG	0.11 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Nickel	MG/KG	1 U	4.9 U	1.1 U	1.6 J	1 U	4.5 U
Potassium	MG/KG	472	243 U	268 J	696	192 J	324
Selenium	MG/KG	0.61 U	1.2 U	0.64 U	0.94	0.62 U	1.2
Silver	MG/KG	0.47 U	1.2 U	0.49 U	0.46 U	0.48 U	1.1 U
Sodium	MG/KG	28.5	42.5	73.9	42.7	72.4	27.1
Thallium	MG/KG	0.94 U	2.4 UJ	0.99 U	0.92 U	0.95 U	2.3 UJ
Vanadium	MG/KG	15.1	4.8	3.3 J	56.7 J	6.1 J	17.8
Zinc	MG/KG	3.6	7.3 UJ	2.3 U	7.1	4.5 U	11.1 UJ
Moisture	%	N/A	17.63	N/A	N/A	N/A	15.04

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:		80-MW06-06	80-MW07-04	80-MW07-06	80-OA-SB01-07	80-OA-SB02-07	80-OA-SB03-06
Laboratory Sample ID:		AC7810	Q41118605	Q41118606	Q41118116A	Q41118301A	Q41118303A
Date Sampled:		11/05/94	11/04/94	11/04/94	11/03/94	11/03/94	11/03/94
	UNITS						
Aluminum	MG/KG	1510	7950	2250	1270 J	913 J	2890 J
Antimony	MG/KG	10.7 U	3.1 J	2.7 UJ	2.6 UJ	2.7 UJ	2.7 UJ
Arsenic	MG/KG	2.1 U	3.8	0.5 U	0.49 U	0.51 U	0.5 U
Barium	MG/KG	29.8	10	4.3	4.9	7.2	4.6
Beryllium	MG/KG	0.21 U	0.11	0.03	0.02 U	0.02 U	0.02 U
Cadmium	MG/KG	1.1 U	0.37 U	0.33 U	0.32 U	0.33 U	0.33 U
Calcium	MG/KG	110	67.4 J	28.5 J	67.3 J	37.4	62.6
Chromium	MG/KG	5.2	12.7	4.2	4.2 J	2 J	4.7 J
Cobalt	MG/KG	2.1 U	1.2	0.42 U	0.4 U	0.42 U	0.42 U
Copper	MG/KG	2.1 U	2.3	0.67	0.43 J	0.31 U	0.66
Iron	MG/KG	2060	9670	665	786 J	269 J	661 J
Lead	MG/KG	6.6 J	7	2.5	3.8 J	3.3 J	3.5 J
Magnesium	MG/KG	69.1	337	99.4	58.1	30.7	114
Manganese	MG/KG	3.3 J	6.3	5.4	6.5	5.6	8.3
Mercury	MG/KG	0.11 U	0.13 U	0.11 U	0.11 U	0.11 U	0.11 U
Nickel	MG/KG	4.3 U	1.5 J	0.94 U	0.92 U	0.95 U	0.94 U
Potassium	MG/KG	215 U	415	226	82.4 J	83.8 U	127 J
Selenium	MG/KG	1.1 U	0.64 U	0.57 U	0.55 U	0.57 U	0.57 U
Silver	MG/KG	1.1 U	0.49 U	0.44 U	0.43 U	0.44 U	0.44 U
Sodium	MG/KG	25.6	83.6	70.9	19 U	63.8	19.3 U
Thallium	MG/KG	2.1 UJ	0.98 U	0.88 U	0.85 U	0.88 U	0.88 U
Vanadium	MG/KG	6.4	17.7	2.7	2.9	1.5	3.9
Zinc	MG/KG	7.8 UJ	4.6	2.5	8.7 J	12 J	5.7 UJ
Moisture	%	7.76	N/A	N/A	N/A	N/A	N/A

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:		80-OA-SB04-03	80-OA-SB04-06	80-OA-SB05-06	80-OA-SB06-03	80-OA-SB06-06	80-SM-SB02-03
Laboratory Sample ID:		Q41118510	Q41118511	Q41118502	Q41118504	Q41118505	AC6895
Date Sampled:		11/04/94	11/04/94	11/04/94	11/04/94	11/04/94	11/02/94
	UNITS						
Aluminum	MG/KG	6900	477	2100	4620	1620	2980 J
Antimony	MG/KG	2.8 UJ	2.5 UJ	2.7 UJ	2.7 UJ	2.5 UJ	11.8 UJ
Arsenic	MG/KG	0.78	0.47 U	0.51 U	0.53	0.47 U	2.4 UJ
Barium	MG/KG	8.5	2	7.2	6.8	5.2	5.9
Beryllium	MG/KG	0.04	0.02 U	0.02 U	0.04	0.02	0.24 U
Cadmium	MG/KG	0.35 U	0.31 U	0.33 U	0.33 U	0.31 U	1.2 U
Calcium	MG/KG	34.5	103	41.4	35.6	48.9	339 J
Chromium	MG/KG	10.7	2.2	4.7	7.8	3.7	4.8 J
Cobalt	MG/KG	0.55 J	0.39 U	0.42 U	0.61 J	0.47 J	2.4 U
Copper	MG/KG	1.9	0.7	0.69 J	1.7	0.66	2.4 U
Iron	MG/KG	2590	255	726	3250	1030	1870 J
Lead	MG/KG	6.6	2.5	4.8	7.7	3.5	4.7 J
Magnesium	MG/KG	241	21	123	185	100	119
Manganese	MG/KG	4.7 J	4.9 J	8.1 J	5.2 J	3.8 J	15.6 J
Mercury	MG/KG	0.12 U	0.1 U	0.11 U	0.11 U	0.11 U	0.12 U
Nickel	MG/KG	1 J	1.2 J	0.95 U	0.94 U	0.89 U	4.7 U
Potassium	MG/KG	387	78.6 U	215 J	311	179 J	235 U
Selenium	MG/KG	0.61 U	0.54 U	0.58 U	0.57 U	0.54 U	1.2 U
Silver	MG/KG	0.47 U	0.41 U	0.44 U	0.44 U	0.41 U	1.2 U
Sodium	MG/KG	81.4	17.5	67.4	24.1	67.5	37.1
Thallium	MG/KG	0.93 U	0.83 U	0.89 U	0.87 U	0.82 U	2.4 U
Vanadium	MG/KG	16.6 J	1.9 J	4.5 J	16.2 J	3.1 J	6.2
Zinc	MG/KG	3.4 U	1.6	2.2 U	3.6 U	2 U	15.4 UJ
Moisture	%	N/A	N/A	N/A	N/A	N/A	14.95

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:	80-SM-SB06-03	80-SM-SB09-03
Laboratory Sample ID:	Q41118104A	Q41118108A
Date Sampled:	11/03/94	11/03/94

	UNITS		
Aluminum	MG/KG	3040 J	3880 J
Antimony	MG/KG	2.9 UJ	3 UJ
Arsenic	MG/KG	1.4	0.93
Barium	MG/KG	6.3	7.8
Beryllium	MG/KG	0.04	0.05
Cadmium	MG/KG	0.35 U	0.37 U
Calcium	MG/KG	152	272
Chromium	MG/KG	4.7	5.1
Cobalt	MG/KG	0.71	0.88 J
Copper	MG/KG	0.68 J	0.96
Iron	MG/KG	1880 J	2160 J
Lead	MG/KG	3.9 J	4.5 J
Magnesium	MG/KG	135	193
Manganese	MG/KG	13.3	19.5
Mercury	MG/KG	0.12 U	0.13 U
Nickel	MG/KG	1 U	1.1 U
Potassium	MG/KG	135 J	201 J
Selenium	MG/KG	0.61 U	0.64 U
Silver	MG/KG	0.47 U	0.49 U
Sodium	MG/KG	26.9 U	26.6 U
Thallium	MG/KG	0.94 U	0.98 U
Vanadium	MG/KG	6.5	7.1
Zinc	MG/KG	5.9 UJ	9.5 J
Moisture	%	N/A	N/A

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	MG/KG	NA	NA	477	9900	80-MW05-04	32/32
Antimony	MG/KG	2.5 UJ	12.5 UJ	3.1 J	3.1 J	80-MW07-04	1/32
Arsenic	MG/KG	0.47 U	2.4 UJ	0.53	27.8	80-MW05-04	11/32
Barium	MG/KG	NA	NA	2	29.8	80-MW06-06	32/32
Beryllium	MG/KG	0.02 U	0.24 U	0.02	0.26	80-MA-SB01-06	15/32
Cadmium	MG/KG	0.31 U	1.3 U	ND	ND		0/32
Calcium	MG/KG	78.2 UJ	120 UJ	28.5 J	821 J	80-MW031W-03	28/32
Chromium	MG/KG	NA	NA	2 J	88.1 J	80-LA-SB06-06	32/32
Cobalt	MG/KG	0.39 U	2.5 U	0.47 J	2.4 J	80-MW05-04	10/32
Copper	MG/KG	0.31 U	2.5 U	0.43 J	5.5	80-MW05-04	18/32
Iron	MG/KG	NA	NA	255	56100 J	80-LA-SB06-06	32/32
Lead	MG/KG	3.4 U	4.7 U	2.5	13.2	80-MW05-04	30/32
Magnesium	MG/KG	11.7 U	11.7 U	21	516	80-MW05-04	31/32
Manganese	MG/KG	NA	NA	2.2 J	43.3	80-LA-SB01-03	32/32
Mercury	MG/KG	0.1 U	0.13 U	0.93	0.93	80-MA-SB03-06	1/32
Nickel	MG/KG	0.89 U	5 U	1 J	1.6 J	80-MW05-04	4/32
Potassium	MG/KG	78.6 U	245 U	82.4 J	696	80-MW05-04	22/32
Selenium	MG/KG	0.54 U	1.3 U	0.94	3.3	80-LA-SB06-06	6/32
Silver	MG/KG	0.41 U	1.3 U	ND	ND		0/32
Sodium	MG/KG	19 U	26.9 U	17.5	83.6	80-MW07-04	28/32
Thallium	MG/KG	0.82 U	2.5 U	ND	ND		0/32
Vanadium	MG/KG	NA	NA	1.5	56.7 J	80-MW05-04	32/32
Zinc	MG/KG	2 U	15.4 UJ	1.6	18.1 J	80-LA-SB06-06	9/32
Moisture	%						

APPENDIX H.5
GROUNDWATER ORGANICS

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW01-01	80-MW02-01	80-MW03-01	80-MW03IW-01	80-MW04-01	80-MW05-01
Laboratory Sample ID:		AD0580	AD0586	AD0577	AD2080	AD0600	AD0574
Date Sampled:		11/20/94	11/21/94	11/20/94	12/03/94	11/19/94	11/20/94
	UNITS						
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	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 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
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	4 J	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW01-01	80-MW02-01	80-MW03-01	80-MW03IW-01	80-MW04-01	80-MW05-01
Laboratory Sample ID:		AD0580	AD0586	AD0577	AD2080	AD0600	AD0574
Date Sampled:		11/20/94	11/21/94	11/20/94	12/03/94	11/19/94	11/20/94
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 U	25 U	25 U	25 U	25 U	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	2 J	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 U	10 U	10 U	10 UJ	10 U	10 U
Fluorene	UG/L	10 U	10 U	3 J	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 U	3 J	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	1 J	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	5 J	10 U	10 U	10 U	10 U	4 J
di-n-Octylphthalate	UG/L	10 U	1 J	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 UJ	10 UJ	10 UJ	10 UJ	10 UJ	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 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW01-01	80-MW02-01	80-MW03-01	80-MW03IW-01	80-MW04-01	80-MW05-01
Laboratory Sample ID:		AD0580	AD0586	AD0577	AD2080	AD0600	AD0574
Date Sampled:		11/20/94	11/21/94	11/20/94	12/03/94	11/19/94	11/20/94
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 U	0.05 UJ	0.05 U
beta-BHC	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 U	0.05 UJ	0.05 U
delta-BHC	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 U	0.05 UJ	0.05 U
Lindane (gamma-BHC)	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 U	0.05 UJ	0.05 U
Heptachlor	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 U	0.05 UJ	0.05 U
Aldrin	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 U	0.05 UJ	0.05 U
Heptachlor epoxide	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 U	0.05 UJ	0.05 U
Endosulfan I	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 U	0.05 UJ	0.05 U
Dieldrin	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U
4,4'-DDE	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U
Endrin	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U
Endosulfan II	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U
4,4'-DDD	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 U	2.2 J	0.1 U
Endosulfan sulfate	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U
4,4'-DDT	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.58 J	0.1 U
Methoxychlor	UG/L	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 UJ	0.5 U
Endrin ketone	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U
Endrin aldehyde	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U
alpha-Chlordane	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 U	0.05 UJ	0.05 U
gamma-Chlordane	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 U	0.05 UJ	0.05 U
Toxaphene	UG/L	5 U	5 UJ	5 UJ	5 U	5 UJ	5 U
Aroclor 1016	UG/L	1 U	1 UJ	1 UJ	1 U	1 UJ	1 U
Aroclor 1221	UG/L	2 U	2 UJ	2 UJ	2 U	2 UJ	2 U
Aroclor 1232	UG/L	1 U	1 UJ	1 UJ	1 U	1 UJ	1 U
Aroclor 1242	UG/L	1 U	1 UJ	1 UJ	1 U	1 UJ	1 U
Aroclor 1248	UG/L	1 U	1 UJ	1 UJ	1 U	1 UJ	1 U
Aroclor 1254	UG/L	1 U	1 UJ	1 UJ	1 U	1 UJ	1 U
Aroclor 1260	UG/L	1 U	1 UJ	1 UJ	1 U	1 UJ	1 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW06-01	80-MW07-01	80-MW08-01
Laboratory Sample ID:		AD0566	AD0603	AG0350
Date Sampled:		11/20/94	11/19/94	07/14/95
	UNITS			
VOLATILES				
Chloromethane	UG/L	10 U	10 U	NA
Bromomethane	UG/L	10 U	10 U	NA
Vinyl chloride	UG/L	10 U	10 U	NA
Chloroethane	UG/L	10 U	10 U	NA
Methylene chloride	UG/L	10 U	10 U	NA
Acetone	UG/L	10 U	10 U	NA
Carbon Disulfide	UG/L	10 U	10 U	NA
1,1-Dichloroethene	UG/L	10 U	10 U	NA
1,1-Dichloroethane	UG/L	10 U	10 U	NA
1,2-Dichloroethene(total)	UG/L	10 U	10 U	NA
Chloroform	UG/L	10 U	10 U	NA
1,2-Dichloroethane	UG/L	10 U	10 U	NA
2-Butanone	UG/L	10 U	10 U	NA
1,1,1-Trichloroethane	UG/L	10 U	10 U	NA
Carbon tetrachloride	UG/L	10 U	10 U	NA
Bromodichloromethane	UG/L	10 U	10 U	NA
1,2-Dichloropropane	UG/L	10 U	10 U	NA
cis-1,3-Dichloropropene	UG/L	10 U	10 U	NA
Trichloroethene	UG/L	10 U	10 U	NA
Dibromochloromethane	UG/L	10 U	10 U	NA
1,1,2-Trichloroethane	UG/L	10 U	10 U	NA
Benzene	UG/L	10 U	10 U	NA
trans-1,3-Dichloropropene	UG/L	10 U	10 U	NA
Bromoform	UG/L	10 U	10 U	NA
4-Methyl-2-pentanone	UG/L	10 U	10 U	NA
2-Hexanone	UG/L	10 U	10 U	NA
Tetrachloroethene	UG/L	10 U	10 U	NA
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	NA
Toluene	UG/L	10 U	10 U	NA
Chlorobenzene	UG/L	10 U	10 U	NA
Ethylbenzene	UG/L	10 U	10 U	NA
Styrene	UG/L	10 U	10 U	NA
Xylenes (total)	UG/L	10 U	10 U	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW06-01	80-MW07-01	80-MW08-01
Laboratory Sample ID:		AD0566	AD0603	AG0350
Date Sampled:		11/20/94	11/19/94	07/14/95
	UNITS			
SEMIVOLATILES				
Phenol	UG/L	10 U	10 U	NA
bis(2-Chloroethyl) ether	UG/L	10 U	10 U	NA
2-Chlorophenol	UG/L	10 U	10 U	NA
1,3-Dichlorobenzene	UG/L	10 U	10 U	NA
1,4-Dichlorobenzene	UG/L	10 U	10 U	NA
1,2-Dichlorobenzene	UG/L	10 U	10 U	NA
2-Methylphenol	UG/L	10 U	10 U	NA
2,2'-oxybis-(1-chloropropane)	UG/L	10 U	10 U	NA
4-Methylphenol	UG/L	10 U	10 U	NA
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	NA
Hexachloroethane	UG/L	10 U	10 U	NA
Nitrobenzene	UG/L	10 U	10 U	NA
Isophorone	UG/L	10 U	10 U	NA
2-Nitrophenol	UG/L	10 U	10 U	NA
2,4-Dimethylphenol	UG/L	10 U	10 U	NA
bis(2-Chloroethoxy) methane	UG/L	10 U	10 U	NA
2,4-Dichlorophenol	UG/L	10 U	10 U	NA
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	NA
Naphthalene	UG/L	10 U	10 U	NA
4-Chloroaniline	UG/L	10 U	10 U	NA
Hexachlorobutadiene	UG/L	10 U	10 U	NA
4-Chloro-3-methylphenol	UG/L	10 U	10 U	NA
2-Methylnaphthalene	UG/L	10 U	10 U	NA
Hexachlorocyclopentadiene	UG/L	10 U	10 U	NA
2,4,6-Trichlorophenol	UG/L	10 U	10 U	NA
2,4,5-Trichlorophenol	UG/L	25 U	25 U	NA
2-Chloronaphthalene	UG/L	10 U	10 U	NA
2-Nitroaniline	UG/L	25 U	25 U	NA
Dimethyl phthalate	UG/L	10 U	10 U	NA
Acenaphthylene	UG/L	10 U	10 U	NA
2,6-Dinitrotoluene	UG/L	10 U	10 U	NA
3-Nitroaniline	UG/L	25 U	25 U	NA
Acenaphthene	UG/L	10 U	10 U	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW06-01	80-MW07-01	80-MW08-01
Laboratory Sample ID:		AD0566	AD0603	AG0350
Date Sampled:		11/20/94	11/19/94	07/14/95
	UNITS			
SEMIVOLATILES Cont.				
2,4-Dinitrophenol	UG/L	25 U	25 U	NA
4-Nitrophenol	UG/L	25 U	25 U	NA
Dibenzofuran	UG/L	10 U	10 U	NA
2,4-Dinitrotoluene	UG/L	10 U	10 U	NA
Diethylphthalate	UG/L	10 U	10 U	NA
4-Chlorophenyl phenyl ether	UG/L	10 U	10 U	NA
Fluorene	UG/L	10 U	10 U	NA
4-Nitroaniline	UG/L	25 U	25 U	NA
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	NA
N-nitrosodiphenylamine	UG/L	10 U	10 U	NA
4-Bromophenyl-phenylether	UG/L	10 U	10 U	NA
Hexachlorobenzene	UG/L	10 U	10 U	NA
Pentachlorophenol	UG/L	25 U	25 U	NA
Phenanthrene	UG/L	10 U	10 U	NA
Anthracene	UG/L	10 U	10 U	NA
Carbazole	UG/L	10 U	10 U	NA
di-n-Butylphthalate	UG/L	10 U	10 U	NA
Fluoranthene	UG/L	10 U	10 U	NA
Pyrene	UG/L	10 U	10 U	NA
Butyl benzyl phthalate	UG/L	10 U	10 U	NA
3,3'-Dichlorobenzidine	UG/L	10 U	10 U	NA
Benzo[a]anthracene	UG/L	10 U	10 U	NA
Chrysene	UG/L	10 U	10 U	NA
bis(2-Ethylhexyl)phthalate	UG/L	2 J	4 J	NA
di-n-Octylphthalate	UG/L	10 U	10 U	NA
Benzo[b]fluoranthene	UG/L	10 U	10 U	NA
Benzo[k]fluoranthene	UG/L	10 UJ	10 U	NA
Benzo[a]pyrene	UG/L	10 U	10 U	NA
Indeno[1,2,3-cd]pyrene	UG/L	10 U	10 U	NA
Dibenz[a,h]anthracene	UG/L	10 U	10 U	NA
Benzo[g,h,i]perylene	UG/L	10 U	10 U	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW06-01	80-MW07-01	80-MW08-01
Laboratory Sample ID:		AD0566	AD0603	AG0350
Date Sampled:		11/20/94	11/19/94	07/14/95
	UNITS			
PESTICIDES/PCBs				
alpha-BHC	UG/L	0.05 U	0.05 U	0.056 UJ
beta-BHC	UG/L	0.05 U	0.05 U	0.056 U
delta-BHC	UG/L	0.05 U	0.05 U	0.056 U
Lindane (gamma-BHC)	UG/L	0.05 U	0.05 U	0.056 U
Heptachlor	UG/L	0.05 U	0.05 U	0.056 U
Aldrin	UG/L	0.05 U	0.05 U	0.056 U
Heptachlor epoxide	UG/L	0.05 U	0.05 U	0.056 U
Endosulfan I	UG/L	0.05 U	0.05 U	0.056 U
Dieldrin	UG/L	0.1 U	0.1 U	0.11 U
4,4'-DDE	UG/L	0.1 U	0.1 U	0.11 U
Endrin	UG/L	0.1 U	0.1 U	0.11 U
Endosulfan II	UG/L	0.1 U	0.1 U	0.11 U
4,4'-DDD	UG/L	0.1 U	0.1 U	0.11 U
Endosulfan sulfate	UG/L	0.1 U	0.1 U	0.11 U
4,4'-DDT	UG/L	0.1 U	0.1 U	0.11 U
Methoxychlor	UG/L	0.5 U	0.5 U	0.56 U
Endrin ketone	UG/L	0.1 U	0.1 U	0.11 U
Endrin aldehyde	UG/L	0.1 U	0.1 U	0.11 U
alpha-Chlordane	UG/L	0.05 U	0.05 U	0.056 U
gamma-Chlordane	UG/L	0.05 U	0.05 U	0.056 U
Toxaphene	UG/L	5 U	5 U	5.6 U
Aroclor 1016	UG/L	1 U	1 U	1.1 U
Aroclor 1221	UG/L	2 U	2 U	2.2 U
Aroclor 1232	UG/L	1 U	1 U	1.1 U
Aroclor 1242	UG/L	1 U	1 U	1.1 U
Aroclor 1248	UG/L	1 U	1 U	1.1 U
Aroclor 1254	UG/L	1 U	1 U	1.1 U
Aroclor 1260	UG/L	1 U	1 U	1.1 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - 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
	UNITS						
VOLATILES							
Chloromethane	UG/L	10 U	10 U	ND	ND		0/8
Bromomethane	UG/L	10 U	10 U	ND	ND		0/8
Vinyl chloride	UG/L	10 U	10 U	ND	ND		0/8
Chloroethane	UG/L	10 U	10 U	ND	ND		0/8
Methylene chloride	UG/L	10 U	10 U	ND	ND		0/8
Acetone	UG/L	10 U	10 U	ND	ND		0/8
Carbon Disulfide	UG/L	10 U	10 U	1 J	1 J	80-MW03-01	1/8
1,1-Dichloroethene	UG/L	10 U	10 U	ND	ND		0/8
1,1-Dichloroethane	UG/L	10 U	10 U	ND	ND		0/8
1,2-Dichloroethene(total)	UG/L	10 U	10 U	ND	ND		0/8
Chloroform	UG/L	10 U	10 U	ND	ND		0/8
1,2-Dichloroethane	UG/L	10 U	10 U	ND	ND		0/8
2-Butanone	UG/L	10 U	10 U	ND	ND		0/8
1,1,1-Trichloroethane	UG/L	10 U	10 U	ND	ND		0/8
Carbon tetrachloride	UG/L	10 U	10 U	ND	ND		0/8
Bromodichloromethane	UG/L	10 U	10 U	ND	ND		0/8
1,2-Dichloropropane	UG/L	10 U	10 U	ND	ND		0/8
cis-1,3-Dichloropropene	UG/L	10 U	10 U	ND	ND		0/8
Trichloroethene	UG/L	10 U	10 U	ND	ND		0/8
Dibromochloromethane	UG/L	10 U	10 U	ND	ND		0/8
1,1,2-Trichloroethane	UG/L	10 U	10 U	ND	ND		0/8
Benzene	UG/L	10 U	10 U	ND	ND		0/8
trans-1,3-Dichloropropene	UG/L	10 U	10 U	ND	ND		0/8
Bromoform	UG/L	10 U	10 U	ND	ND		0/8
4-Methyl-2-pentanone	UG/L	10 U	10 U	ND	ND		0/8
2-Hexanone	UG/L	10 U	10 U	ND	ND		0/8
Tetrachloroethene	UG/L	10 U	10 U	ND	ND		0/8
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	ND	ND		0/8
Toluene	UG/L	10 U	10 U	ND	ND		0/8
Chlorobenzene	UG/L	10 U	10 U	ND	ND		0/8
Ethylbenzene	UG/L	10 U	10 U	ND	ND		0/8
Styrene	UG/L	10 U	10 U	ND	ND		0/8
Xylenes (total)	UG/L	10 U	10 U	ND	ND		0/8

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - 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
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	10 U	10 U	ND	ND		0/8
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 U	10 U	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	ND	ND		0/8
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 U	10 U	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	4 J	4 J	80-MW03-01	1/8

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - 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
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 U	25 U	ND	ND		0/8
4-Nitrophenol	UG/L	25 U	25 U	ND	ND		0/8
Dibenzofuran	UG/L	10 U	10 U	2 J	2 J	80-MW03-01	1/8
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 U	10 U	ND	ND		0/8
Fluorene	UG/L	10 U	10 U	3 J	3 J	80-MW03-01	1/8
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 U	10 U	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	3 J	3 J	80-MW03-01	1/8
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	1 J	1 J	80-MW03-01	1/8
Butyl benzyl 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	10 U	2 J	5 J	80-MW01-01	4/8
di-n-Octylphthalate	UG/L	10 U	10 U	1 J	1 J	80-MW02-01	1/8
Benzo[b]fluoranthene	UG/L	10 U	10 U	ND	ND		0/8
Benzo[k]fluoranthene	UG/L	10 UJ	10 UJ	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 80 - 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
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/L	0.05 U	0.056 UJ	ND	ND		0/9
beta-BHC	UG/L	0.05 U	0.056 U	ND	ND		0/9
delta-BHC	UG/L	0.05 U	0.056 U	ND	ND		0/9
Lindane (gamma-BHC)	UG/L	0.05 U	0.056 U	ND	ND		0/9
Heptachlor	UG/L	0.05 U	0.056 U	ND	ND		0/9
Aldrin	UG/L	0.05 U	0.056 U	ND	ND		0/9
Heptachlor epoxide	UG/L	0.05 U	0.056 U	ND	ND		0/9
Endosulfan I	UG/L	0.05 U	0.056 U	ND	ND		0/9
Dieldrin	UG/L	0.1 U	0.11 U	ND	ND		0/9
4,4'-DDE	UG/L	0.1 U	0.11 U	ND	ND		0/9
Endrin	UG/L	0.1 U	0.11 U	ND	ND		0/9
Endosulfan II	UG/L	0.1 U	0.11 U	ND	ND		0/9
4,4'-DDD	UG/L	0.1 U	0.11 U	2.2 J	2.2 J	80-MW04-01	1/9
Endosulfan sulfate	UG/L	0.1 U	0.11 U	ND	ND		0/9
4,4'-DDT	UG/L	0.1 U	0.11 U	0.58 J	0.58 J	80-MW04-01	1/9
Methoxychlor	UG/L	0.5 U	0.56 U	ND	ND		0/9
Endrin ketone	UG/L	0.1 U	0.11 U	ND	ND		0/9
Endrin aldehyde	UG/L	0.1 U	0.11 U	ND	ND		0/9
alpha-Chlordane	UG/L	0.05 U	0.056 U	ND	ND		0/9
gamma-Chlordane	UG/L	0.05 U	0.056 U	ND	ND		0/9
Toxaphene	UG/L	5 U	5.6 U	ND	ND		0/9
Aroclor 1016	UG/L	1 U	1.1 U	ND	ND		0/9
Aroclor 1221	UG/L	2 U	2.2 U	ND	ND		0/9
Aroclor 1232	UG/L	1 U	1.1 U	ND	ND		0/9
Aroclor 1242	UG/L	1 U	1.1 U	ND	ND		0/9
Aroclor 1248	UG/L	1 U	1.1 U	ND	ND		0/9
Aroclor 1254	UG/L	1 U	1.1 U	ND	ND		0/9
Aroclor 1260	UG/L	1 U	1.1 U	ND	ND		0/9

APPENDIX H.6
GROUNDWATER TOTAL METALS

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:		80-MW01-01	80-MW02-01	80-MW03-01	80-MW03IW-01	80-MW04-01	80-MW05-01
Laboratory Sample ID:		AD0581	AD0587	AD0578	AD2081	AD0601	AD0575
Date Sampled:		11/20/94	11/21/94	11/20/94	12/03/94	11/19/94	11/20/94
	UNITS						
Aluminum	UG/L	743	43000	757	40 UJ	26900	274
Antimony	UG/L	50 U	50 U	50 U	50 UJ	50 U	50 U
Arsenic	UG/L	10 U	13.6	102	10 UJ	10 U	10 U
Barium	UG/L	49.5	229	19.6 J	2 UJ	252	67.1
Beryllium	UG/L	1 U	1.5	1 U	1 UJ	1.2	1 U
Cadmium	UG/L	5 U	5 U	5 U	5 UJ	5 U	5 U
Calcium	UG/L	2360	21700	64900	47.3 UJ	6810	9190
Chromium	UG/L	10 U	65	10 U	10 UJ	53.3	10 U
Cobalt	UG/L	10 U	10 U	10 U	10 UJ	10 U	10 U
Copper	UG/L	10 U	14.5	10 U	10 UJ	13.5	10 U
Iron	UG/L	39.8 U	21500	9460	10 UJ	23800	45.6 U
Lead	UG/L	3 U	30 J	3 U	3 UJ	28.2 J	3 U
Magnesium	UG/L	3330	21000	3590	50 UJ	7280	5820
Manganese	UG/L	2 U	103	369	2 UJ	43.9	47.7
Mercury	UG/L	0.2 U	0.42	0.2 U	0.2 UJ	0.2 U	0.2 U
Nickel	UG/L	20 U	20 U	20 U	20 UJ	24	20 U
Potassium	UG/L	1000 U	13800	14600	1000 UJ	4320	2170
Selenium	UG/L	5 U	5 U	5 U	5 UJ	5 U	5 U
Silver	UG/L	5 U	5 U	5 U	5 UJ	5 U	5 U
Sodium	UG/L	7470	8040	6910	100 UJ	6260	23100
Thallium	UG/L	10 U	10 U	10 U	10 UJ	10 U	10 U
Vanadium	UG/L	10 U	44.9	10 U	10 UJ	40.7	10 U
Zinc	UG/L	22.6 UJ	76.5 J	52.3 UJ	40.7 UJ	63 UJ	52.8 UJ

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:	80-MW06-01	80-MW07-01
Laboratory Sample ID:	AD0567	AD0604
Date Sampled:	11/20/94	11/19/94

	UNITS		
Aluminum	UG/L	840	663
Antimony	UG/L	50 U	50 U
Arsenic	UG/L	10 U	10 U
Barium	UG/L	80.1	70.2
Beryllium	UG/L	1 U	1 U
Cadmium	UG/L	5 U	5 U
Calcium	UG/L	15700	6460
Chromium	UG/L	10 U	10 U
Cobalt	UG/L	10 U	10 U
Copper	UG/L	10 U	10 U
Iron	UG/L	121 U	52.1 U
Lead	UG/L	5.7 J	3 U
Magnesium	UG/L	11400	3770
Manganese	UG/L	81.7	28.1 UJ
Mercury	UG/L	0.2 U	0.2 U
Nickel	UG/L	20 U	20 U
Potassium	UG/L	8720	1680
Selenium	UG/L	5 U	5 U
Silver	UG/L	5 U	5 U
Sodium	UG/L	8980	20300
Thallium	UG/L	10 U	10 U
Vanadium	UG/L	10 U	10 U
Zinc	UG/L	106	37.9 UJ

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	UG/L	40 UJ	40 UJ	274	43000	80-MW02-01	7/8
Antimony	UG/L	50 U	50 U	ND	ND		0/8
Arsenic	UG/L	10 U	10 U	13.6	102	80-MW03-01	2/8
Barium	UG/L	2 UJ	2 UJ	19.6 J	252	80-MW04-01	7/8
Beryllium	UG/L	1 U	1 U	1.2	1.5	80-MW02-01	2/8
Cadmium	UG/L	5 U	5 U	ND	ND		0/8
Calcium	UG/L	47.3 UJ	47.3 UJ	2360	64900	80-MW03-01	7/8
Chromium	UG/L	10 U	10 U	53.3	65	80-MW02-01	2/8
Cobalt	UG/L	10 U	10 U	ND	ND		0/8
Copper	UG/L	10 U	10 U	13.5	14.5	80-MW02-01	2/8
Iron	UG/L	10 UJ	121 U	9460	23800	80-MW04-01	3/8
Lead	UG/L	3 U	3 U	5.7 J	30 J	80-MW02-01	3/8
Magnesium	UG/L	50 UJ	50 UJ	3330	21000	80-MW02-01	7/8
Manganese	UG/L	2 U	28.1 UJ	43.9	369	80-MW03-01	5/8
Mercury	UG/L	0.2 U	0.2 U	0.42	0.42	80-MW02-01	1/8
Nickel	UG/L	20 U	20 U	24	24	80-MW04-01	1/8
Potassium	UG/L	1000 U	1000 U	1680	14600	80-MW03-01	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	100 UJ	100 UJ	6260	23100	80-MW05-01	7/8
Thallium	UG/L	10 U	10 U	ND	ND		0/8
Vanadium	UG/L	10 U	10 U	40.7	44.9	80-MW02-01	2/8
Zinc	UG/L	22.6 UJ	63 UJ	76.5 J	106	80-MW06-01	2/8

APPENDIX H.6.1
ROUND TWO GROUNDWATER TOTAL METALS

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - ROUND 2 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:	80-MW01-02	80-MW02-02	80-MW03-2	80-MW03IW-02	80-MW04-02	80-MW05-02
Laboratory Sample ID:	AH3924	AH3921	9511G321-001	AH3887	AH3922	AH3926
Date Sampled:	12/17/95	12/15/95	11/15/95	12/14/95	12/17/95	12/15/95
TOTAL ANALYTES (ug/L)						
Aluminum	672	4370	37.5	34.2 U	696	17100
Antimony	20.5 U	20.5 U	12.3 U	20.5 U	20.5 U	20.5 U
Arsenic	2.4 U	2.4 U	42	2.4 U	2.4 U	2.4 U
Barium	55.6	135	12.1	11.7	181	405
Beryllium	0.3 U	0.69 U	0.3 U	0.3 U	0.3 U	0.37 U
Cadmium	3.5 U	3.5 U	4.2 U	3.5 U	3.5 U	3.5 U
Calcium	1630	13100	29100	78700	6780	53800
Chromium	3.5 U	6.5 U	4.6 U	3.5 U	3.9 U	5.9 U
Cobalt	10.1 UJ	8.6 U	2.2 U	13.9 UJ	10.3 UJ	22.2 UJ
Copper	5.5 UJ	6.8 UJ	2.4	1.7 U	4.8 UJ	7.3 UJ
Iron	8.7 U	64.3 U	13900	251	25.2 U	16.8 U
Lead	4.6	2.4	0.8 U	2.3 U	2.3 U	2.3 U
Magnesium	3680	11300	3580	2580	7860	39000
Manganese	1.3 UJ	51.4	202	67	21.3	44.5
Mercury	0.2 U	0.2 U	0.1 U	0.2 U	0.2 U	0.54
Nickel	8.1 U	8.1 U	3.7 U	8.1 UJ	8.1 U	8.1 U
Potassium	1130	14300	18300	1140	3430	10200
Selenium	4 U	4 U	1.5 U	4 U	4 U	4 U
Silver	3.8 U	3.8 U	3.2 U	3.8 U	3.8 U	3.8
Sodium	10100	8210	6250	9590	6760	26100
Thallium	4.5 U	13.4	1.3 U	12 U	5.1	4.5 U
Vanadium	12.9 UJ	19.5 UJ	3.3	20.4 U	13.4 UJ	28.9 UJ
Zinc	12.4 UJ	23.7 U	45.1	21.5	13.8 UJ	21.6 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - ROUND 2 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:	80-MW06-02	80-MW07-02	80-MW08-02
Laboratory Sample ID:	AH3925	AH3888	AH3923
Date Sampled:	12/15/95	12/14/95	12/16/95
TOTAL ANALYTES (ug/L)			
Aluminum	898	1310	491
Antimony	20.5 U	20.5 U	20.5 U
Arsenic	2.4 U	2.4 U	2.4 U
Barium	94.9	80.9	63.1
Beryllium	0.52 U	0.3 U	0.3 U
Cadmium	3.5 U	3.5 U	3.5 U
Calcium	17500	4730	18700
Chromium	3.5 U	3.5 U	5.3 U
Cobalt	14.1 UJ	23.5 UJ	12 UJ
Copper	5.8 UJ	1.7 U	5 UJ
Iron	8.7 U	23.4 U	266
Lead	12.8	2.3 U	2.3 U
Magnesium	12800	3470	8220
Manganese	90.8	17.9 J	20.8
Mercury	0.2 U	0.2 U	0.2 U
Nickel	10.1	8.1 UJ	8.1 U
Potassium	11200	1460	3290
Selenium	4 U	4 U	4 U
Silver	3.8 U	3.8 U	3.8 U
Sodium	8950	14700	12100
Thallium	4.5 U	6.5 U	4.5 U
Vanadium	19.9 UJ	10.2 UJ	14.2 UJ
Zinc	42.2 U	26.4	11.8 UJ

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - ROUND 2 - GROUNDWATER
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
TOTAL ANALYTES (ug/L)						
Aluminum	34.2 U	34.2 U	37.5	17100	80-MW05-02	8/9
Antimony	12.3 U	20.5 U	ND	ND		0/9
Arsenic	2.4 U	2.4 U	42	42	80-MW03-2	1/9
Barium	NA	NA	11.7	405	80-MW05-02	9/9
Beryllium	0.3 U	0.69 U	ND	ND		0/9
Cadmium	3.5 U	4.2 U	ND	ND		0/9
Calcium	NA	NA	1630	78700	80-MW03IW-02	9/9
Chromium	3.5 U	6.5 U	ND	ND		0/9
Cobalt	2.2 U	23.5 UJ	ND	ND		0/9
Copper	1.7 U	7.3 UJ	2.4	2.4	80-MW03-2	1/9
Iron	8.7 U	64.3 U	251	13900	80-MW03-2	3/9
Lead	0.8 U	2.3 U	2.4	12.8	80-MW06-02	3/9
Magnesium	NA	NA	2580	39000	80-MW05-02	9/9
Manganese	1.3 UJ	1.3 UJ	17.9 J	202	80-MW03-2	8/9
Mercury	0.1 U	0.2 U	0.54	0.54	80-MW05-02	1/9
Nickel	3.7 U	8.1 U	10.1	10.1	80-MW06-02	1/9
Potassium	NA	NA	1130	18300	80-MW03-2	9/9
Selenium	1.5 U	4 U	ND	ND		0/9
Silver	3.2 U	3.8 U	3.8	3.8	80-MW05-02	1/9
Sodium	NA	NA	6250	26100	80-MW05-02	9/9
Thallium	1.3 U	12 U	5.1	13.4	80-MW02-02	2/9
Vanadium	10.2 UJ	28.9 UJ	3.3	3.3	80-MW03-2	1/9
Zinc	11.8 UJ	42.2 U	21.5	45.1	80-MW03-2	3/9

APPENDIX H.7
GROUNDWATER DISSOLVED METALS

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL DISSOLVED INORGANICS

Client Sample ID:		80-MW01D-01	80-MW02D-01	80-MW03D-01	80-MW03IWD-01	80-MW04D-01	80-MW05D-01
Laboratory Sample ID:		AD0613	AD0615	AD0611	AD2090	AD0617	AD0609
Date Sampled:		11/21/94	11/21/94	11/20/94	12/01/94	11/19/94	11/20/94
	UNITS						
Aluminum	UG/L	751	13400	40 U	40 U	231	177 U
Antimony	UG/L	50 U	51.1	50 U	50 U	50 U	50 U
Arsenic	UG/L	10 U	10 U	79.8	10 U	10 U	10 U
Barium	UG/L	50.4	122	11.8 J	22.5 J	127	58.4
Beryllium	UG/L	1 U	1.3	1 U	1 UJ	1 U	1 U
Cadmium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Calcium	UG/L	2610	26300	73600	72800	7420	8680
Chromium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Cobalt	UG/L	10 U	12.7	10 U	10 U	10 U	10 U
Copper	UG/L	10 U	10 U	10 U	10 U	12.4	17.4
Iron	UG/L	97.8 U	219 U	6780	66.6 U	36.8 U	76.8 U
Lead	UG/L	4.6 J	3 U	3 U	3 U	4.1 J	3 U
Magnesium	UG/L	3490	24800	4080	3120	6310	5410
Manganese	UG/L	5.9 UJ	121	414	51.3	33.9 UJ	45.3
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	1000 U	16000	17000	1030	2910	2140
Selenium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Silver	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Sodium	UG/L	7940	9690	7990	20300	7930	21400
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		21.3 UJ	52.6 UJ	24.8 UJ	40.4 UJ	48.3 UJ	93.7 J

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL DISSOLVED INORGANICS

Client Sample ID:	80-MW06D-01	80-MW07D-01
Laboratory Sample ID:	AD0607	AD0618
Date Sampled:	11/20/94	11/19/94

	UNITS		
Aluminum	UG/L	753	491
Antimony	UG/L	50 U	50 U
Arsenic	UG/L	10 U	10 U
Barium	UG/L	81.9	67.8
Beryllium	UG/L	1 U	1 U
Cadmium	UG/L	5 U	5 U
Calcium	UG/L	16500	6500
Chromium	UG/L	10 U	10 U
Cobalt	UG/L	10 U	10 U
Copper	UG/L	17.2	14.5
Iron	UG/L	90.9 U	46.8 U
Lead	UG/L	3 U	3 U
Magnesium	UG/L	11800	3760
Manganese	UG/L	85.5	28.1 UJ
Mercury	UG/L	0.2 U	0.2 U
Nickel	UG/L	20 U	20 U
Potassium	UG/L	8580	2320
Selenium	UG/L	5 U	5 U
Silver	UG/L	5 U	5 U
Sodium	UG/L	9260	20300
Thallium	UG/L	10 U	10 U
Vanadium	UG/L	10 U	10 U
Zinc		53.1 UJ	44.8 UJ

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL DISSOLVED 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	UG/L	40 U	177 U	231	13400	80-MW02D-01	5/8
Antimony	UG/L	50 U	50 U	51.1	51.1	80-MW02D-01	1/8
Arsenic	UG/L	10 U	10 U	79.8	79.8	80-MW03D-01	1/8
Barium	UG/L	NA	NA	11.8 J	127	80-MW04D-01	8/8
Beryllium	UG/L	1 U	1 U	1.3	1.3	80-MW02D-01	1/8
Cadmium	UG/L	5 U	5 U	ND	ND		0/8
Calcium	UG/L	NA	NA	2610	73600	80-MW03D-01	8/8
Chromium	UG/L	10 U	10 U	ND	ND		0/8
Cobalt	UG/L	10 U	10 U	12.7	12.7	80-MW02D-01	1/8
Copper	UG/L	10 U	10 U	12.4	17.4	80-MW05D-01	4/8
Iron	UG/L	36.8 U	219 U	6780	6780	80-MW03D-01	1/8
Lead	UG/L	3 U	3 U	4.1 J	4.6 J	80-MW01D-01	2/8
Magnesium	UG/L	NA	NA	3120	24800	80-MW02D-01	8/8
Manganese	UG/L	5.9 UJ	33.9 UJ	45.3	414	80-MW03D-01	5/8
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	1030	17000	80-MW03D-01	7/8
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	7930	21400	80-MW05D-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		21.3 UJ	53.1 UJ	93.7 J	93.7 J	80-MW05D-01	1/8

APPENDIX I
FIELD DUPLICATE SUMMARIES

APPENDIX I.1
SOIL ORGANICS

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-LA-SB04-00	80-LA-SB04-00D	80-LA-SB04-06	80-LA-SB04-06D	80-MA-SB01-00	80-MA-SB01-00D
Laboratory Sample ID:		AC6885	AC6889	AC6922	AC6928	AC6904	AC6918
Date Sampled:		11/02/94	11/02/94	11/02/94	11/02/94	11/02/94	11/02/94
	UNITS						
VOLATILES							
Chloromethane	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
Bromomethane	UG/KG	12 UJ	11 UJ	12 U	12 U	11 UJ	11 UJ
Vinyl chloride	UG/KG	12 UJ	11 UJ	12 U	12 U	11 U	11 U
Chloroethane	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
Methylene chloride	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
Acetone	UG/KG	12 U	18 U	830 U	240 U	11 U	11 U
Carbon Disulfide	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
1,1-Dichloroethene	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
1,1-Dichloroethane	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
1,2-Dichloroethene(total)	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
Chloroform	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
1,2-Dichloroethane	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
2-Butanone	UG/KG	14 U	15 U	19 U	21 U	14 U	12 U
1,1,1-Trichloroethane	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
Carbon tetrachloride	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
Bromodichloromethane	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
1,2-Dichloropropane	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
cis-1,3-Dichloropropene	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
Trichloroethene	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
Dibromochloromethane	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
1,1,2-Trichloroethane	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
Benzene	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
trans-1,3-Dichloropropene	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
Bromoform	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
4-Methyl-2-pentanone	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
2-Hexanone	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
Tetrachloroethene	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
1,1,2,2-Tetrachloroethane	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
Toluene	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
Chlorobenzene	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
Ethylbenzene	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
Styrene	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U
Xylenes (total)	UG/KG	12 U	11 U	12 U	12 U	11 U	11 U

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-LA-SB04-00	80-LA-SB04-00D	80-LA-SB04-06	80-LA-SB04-06D	80-MA-SB01-00	80-MA-SB01-00D
Laboratory Sample ID:		AC6885	AC6889	AC6922	AC6928	AC6904	AC6918
Date Sampled:		11/02/94	11/02/94	11/02/94	11/02/94	11/02/94	11/02/94
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
bis(2-Chloroethyl) ether	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
2-Chlorophenol	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
1,3-Dichlorobenzene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
1,4-Dichlorobenzene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
1,2-Dichlorobenzene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
2-Methylphenol	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
2,2'-oxybis-(1-chloropropane)	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
4-Methylphenol	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
N-Nitroso-di-n-propylamine	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Hexachloroethane	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Nitrobenzene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Isophorone	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
2-Nitrophenol	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
2,4-Dimethylphenol	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
bis(2-Chloroethoxy) methane	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
2,4-Dichlorophenol	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
1,2,4-Trichlorobenzene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Naphthalene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
4-Chloroaniline	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Hexachlorobutadiene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
4-Chloro-3-methylphenol	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
2-Methylnaphthalene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Hexachlorocyclopentadiene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
2,4,6-Trichlorophenol	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
2,4,5-Trichlorophenol	UG/KG	900 U	900 U	950 U	950 U	830 U	840 U
2-Chloronaphthalene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
2-Nitroaniline	UG/KG	900 U	900 U	950 U	950 U	830 U	840 U
Dimethyl phthalate	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Acenaphthylene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
2,6-Dinitrotoluene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
3-Nitroaniline	UG/KG	900 U	900 U	950 U	950 U	830 U	840 U
Acenaphthene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-LA-SB04-00	80-LA-SB04-00D	80-LA-SB04-06	80-LA-SB04-06D	80-MA-SB01-00	80-MA-SB01-00D
Laboratory Sample ID:		AC6885	AC6889	AC6922	AC6928	AC6904	AC6918
Date Sampled:		11/02/94	11/02/94	11/02/94	11/02/94	11/02/94	11/02/94
SEMIVOLATILES Cont.	UNITS						
2,4-Dinitrophenol	UG/KG	900 U	900 U	950 U	950 U	830 U	840 U
4-Nitrophenol	UG/KG	900 UJ	900 UJ	950 UJ	950 UJ	830 UJ	840 UJ
Dibenzofuran	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
2,4-Dinitrotoluene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Diethylphthalate	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
4-Chlorophenyl phenyl ether	UG/KG	370 U	370 UJ	390 UJ	390 UJ	340 UJ	350 UJ
Fluorene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
4-Nitroaniline	UG/KG	900 U	900 UJ	950 UJ	950 UJ	830 UJ	840 UJ
4,6-Dinitro-2-methylphenol	UG/KG	900 U	900 U	950 U	950 U	830 U	840 U
N-nitrosodiphenylamine	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
4-Bromophenyl-phenylether	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Hexachlorobenzene	UG/KG	370 U	41 J	390 U	390 U	340 U	350 U
Pentachlorophenol	UG/KG	900 UJ	900 U	950 U	950 U	830 U	840 U
Phenanthrene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Anthracene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Carbazole	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
di-n-Butylphthalate	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Fluoranthene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Pyrene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Butyl benzyl phthalate	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
3,3'-Dichlorobenzidine	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Benzo[a]anthracene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Chrysene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
bis(2-Ethylhexyl)phthalate	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
di-n-Octylphthalate	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Benzo[b]fluoranthene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Benzo[k]fluoranthene	UG/KG	370 UJ	370 U	390 U	390 U	340 U	350 U
Benzo[a]pyrene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Indeno[1,2,3-cd]pyrene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Dibenz[a,h]anthracene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U
Benzo[g,h,i]perylene	UG/KG	370 U	370 U	390 U	390 U	340 U	350 U

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-LA-SB04-00	80-LA-SB04-00D	80-LA-SB04-06	80-LA-SB04-06D	80-MA-SB01-00	80-MA-SB01-00D
Laboratory Sample ID:		AC6885	AC6889	AC6922	AC6928	AC6904	AC6918
Date Sampled:		11/02/94	11/02/94	11/02/94	11/02/94	11/02/94	11/02/94
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	3.9 U	3.8 U	2 U	2 U	1.8 U	1.8 U
beta-BHC	UG/KG	3.9 UJ	3.8 UJ	2 UJ	2 UJ	1.8 UJ	1.8 UJ
delta-BHC	UG/KG	3.9 U	3.8 U	2 U	2 U	1.8 U	1.8 U
Lindane (gamma-BHC)	UG/KG	3.9 U	3.8 U	2 U	2 U	1.8 U	1.8 U
Heptachlor	UG/KG	3.9 U	3.8 U	2 U	2 U	1.8 U	1.8 U
Aldrin	UG/KG	11	11	2.6	2.8	1.8 U	1.8 U
Heptachlor epoxide	UG/KG	3.9 U	3.8 U	2 U	2 U	1.8 U	1.8 U
Endosulfan I	UG/KG	3.9 U	3.8 U	2 U	2 U	1.8 U	1.8 U
Dieldrin	UG/KG	630 J	580	3.8 U	3.9 U	3.4 U	3.6 U
4,4'-DDE	UG/KG	130	130	3.8 U	3.9 U	89	110
Endrin	UG/KG	7.5 U	7.4 U	3.8 U	3.9 U	3.4 U	3.6 U
Endosulfan II	UG/KG	7.5 U	7.4 U	3.8 U	3.9 U	3.4 U	3.6 U
4,4'-DDD	UG/KG	24	28 J	3.8 U	3.9 U	3.4 U	3.6 U
Endosulfan sulfate	UG/KG	7.5 U	7.4 U	3.8 U	3.9 U	3.4 U	3.6 U
4,4'-DDT	UG/KG	29	29	3.8 U	3.9 U	68	81
Methoxychlor	UG/KG	39 U	38 U	20 U	20 U	18 U	18 U
Endrin ketone	UG/KG	7.5 U	7.4 U	3.8 U	3.9 U	3.4 U	3.6 U
Endrin aldehyde	UG/KG	7.5 U	7.4 U	3.8 U	3.9 U	3.4 U	3.6 U
alpha-Chlordane	UG/KG	92 J	84 J	2 U	2 U	1.8 U	1.8 U
gamma-Chlordane	UG/KG	91 J	86 J	2 U	2 U	1.8 U	1.8 U
Toxaphene	UG/KG	390 U	380 U	200 U	200 U	180 U	180 U
Aroclor 1016	UG/KG	75 U	74 U	38 U	39 U	34 U	36 U
Aroclor 1221	UG/KG	150 U	150 U	78 U	80 U	69 U	73 U
Aroclor 1232	UG/KG	75 U	74 U	38 U	39 U	34 U	36 U
Aroclor 1242	UG/KG	75 U	74 U	38 U	39 U	34 U	36 U
Aroclor 1248	UG/KG	75 U	74 U	38 U	39 U	34 U	36 U
Aroclor 1254	UG/KG	75 U	74 U	38 U	39 U	34 U	36 U
Aroclor 1260	UG/KG	75 U	74 U	38 U	39 U	34 U	36 U

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MA-SB01-06	80-MA-SB01-06D	80-MW031W-03	80-MW031W-03D	80-OA-SB01-00	80-OA-SB01-00D
Laboratory Sample ID:		AC6910	AC6920	Q41118708	Q41118711	Q41118112	Q41118115
Date Sampled:		11/02/94	11/02/94	11/05/94	11/05/94	11/03/94	11/03/94
	UNITS						
VOLATILES							
Chloromethane	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
Bromomethane	UG/KG	13 UJ	12 UJ	12 U	12 U	12 U	11 UJ
Vinyl chloride	UG/KG	13 U	12 U	12 UJ	12 U	12 U	11 UJ
Chloroethane	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
Methylene chloride	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
Acetone	UG/KG	25 U	38 U	110 J	25 J	12 U	11 UJ
Carbon Disulfide	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
1,1-Dichloroethene	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
1,1-Dichloroethane	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
1,2-Dichloroethene(total)	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
Chloroform	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
1,2-Dichloroethane	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
2-Butanone	UG/KG	11 U	10 U	12 U	12 U	12 U	11 U
1,1,1-Trichloroethane	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
Carbon tetrachloride	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
Bromodichloromethane	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
1,2-Dichloropropane	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
cis-1,3-Dichloropropene	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
Trichloroethene	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
Dibromochloromethane	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
1,1,2-Trichloroethane	UG/KG	13 U	12 U	12 U	12 U	12 UJ	11 U
Benzene	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
trans-1,3-Dichloropropene	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
Bromoform	UG/KG	13 U	12 U	12 U	12 U	12 UJ	11 U
4-Methyl-2-pentanone	UG/KG	13 U	12 U	12 U	12 U	12 UJ	11 U
2-Hexanone	UG/KG	13 U	12 U	12 U	12 U	12 UJ	11 U
Tetrachloroethene	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
1,1,2,2-Tetrachloroethane	UG/KG	13 U	12 U	12 U	12 U	12 UJ	11 U
Toluene	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
Chlorobenzene	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
Ethylbenzene	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
Styrene	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U
Xylenes (total)	UG/KG	13 U	12 U	12 U	12 U	12 U	11 U

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MA-SB01-06	80-MA-SB01-06D	80-MW031W-03	80-MW031W-03D	80-OA-SB01-00	80-OA-SB01-00D
Laboratory Sample ID:		AC6910	AC6920	Q41118708	Q41118711	Q41118112	Q41118115
Date Sampled:		11/02/94	11/02/94	11/05/94	11/05/94	11/03/94	11/03/94
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
bis(2-Chloroethyl) ether	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
2-Chlorophenol	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
1,3-Dichlorobenzene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
1,4-Dichlorobenzene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
1,2-Dichlorobenzene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 UJ
2-Methylphenol	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
2,2'-oxybis-(1-chloropropane)	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
4-Methylphenol	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
N-Nitroso-di-n-propylamine	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Hexachloroethane	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Nitrobenzene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Isophorone	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
2-Nitrophenol	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
2,4-Dimethylphenol	UG/KG	430 U	410 U	400 U	400 U	380 U	390 UJ
bis(2-Chloroethoxy) methane	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
2,4-Dichlorophenol	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
1,2,4-Trichlorobenzene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Naphthalene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
4-Chloroaniline	UG/KG	430 U	410 U	400 UJ	400 UJ	380 UJ	390 UJ
Hexachlorobutadiene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
4-Chloro-3-methylphenol	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
2-Methylnaphthalene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Hexachlorocyclopentadiene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
2,4,6-Trichlorophenol	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
2,4,5-Trichlorophenol	UG/KG	1000 U	980 U	960 U	980 U	930 U	940 UJ
2-Chloronaphthalene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
2-Nitroaniline	UG/KG	1000 U	980 U	960 U	980 U	930 U	940 U
Dimethyl phthalate	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Acenaphthylene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
2,6-Dinitrotoluene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
3-Nitroaniline	UG/KG	1000 U	980 U	960 U	980 U	930 U	940 U
Acenaphthene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MA-SB01-06	80-MA-SB01-06D	80-MW031W-03	80-MW031W-03D	80-OA-SB01-00	80-OA-SB01-00D
Laboratory Sample ID:		AC6910	AC6920	Q41118708	Q41118711	Q41118112	Q41118115
Date Sampled:		11/02/94	11/02/94	11/05/94	11/05/94	11/03/94	11/03/94
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	1000 U	980 UJ	960 U	980 U	930 UJ	940 U
4-Nitrophenol	UG/KG	1000 UJ	980 UJ	960 U	980 U	930 U	940 U
Dibenzofuran	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
2,4-Dinitrotoluene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Diethylphthalate	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
4-Chlorophenyl phenyl ether	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Fluorene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
4-Nitroaniline	UG/KG	1000 UJ	980 U	960 U	980 U	930 U	940 U
4,6-Dinitro-2-methylphenol	UG/KG	1000 U	980 U	960 U	980 U	930 U	940 U
N-nitrosodiphenylamine	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
4-Bromophenyl-phenylether	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Hexachlorobenzene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Pentachlorophenol	UG/KG	1000 U	980 UJ	960 U	980 U	930 UJ	940 U
Phenanthrene	UG/KG	430 U	410 U	53 J	400 U	380 U	390 U
Anthracene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Carbazole	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
di-n-Butylphthalate	UG/KG	430 U	410 U	3100	2200	130 J	120 J
Fluoranthene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Pyrene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Butyl benzyl phthalate	UG/KG	430 U	410 U	46 J	400 U	380 U	390 U
3,3'-Dichlorobenzidine	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Benzo[a]anthracene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Chrysene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
bis(2-Ethylhexyl)phthalate	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
di-n-Octylphthalate	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Benzo[b]fluoranthene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Benzo[k]fluoranthene	UG/KG	430 U	410 UJ	400 UJ	400 UJ	380 U	390 U
Benzo[a]pyrene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Indeno[1,2,3-cd]pyrene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Dibenz[a,h]anthracene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 U
Benzo[g,h,i]perylene	UG/KG	430 U	410 U	400 U	400 U	380 U	390 UJ

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MA-SB01-06	80-MA-SB01-06D	80-MW031W-03	80-MW031W-03D	80-OA-SB01-00	80-OA-SB01-00D
Laboratory Sample ID:		AC6910	AC6920	Q41118708	Q41118711	Q41118112	Q41118115
Date Sampled:		11/02/94	11/02/94	11/05/94	11/05/94	11/03/94	11/03/94
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	2.2 U	2.1 U	2 U	2.1 U	2 U	2 U
beta-BHC	UG/KG	2.2 UJ	2.1 UJ	2 U	2.1 U	2 U	2 U
delta-BHC	UG/KG	2.2 U	2.1 U	2 U	2.1 U	2 U	2 U
Lindane (gamma-BHC)	UG/KG	2.2 U	2.1 U	2 U	2.1 U	2 U	2 U
Heptachlor	UG/KG	2.2 U	2.1 U	2 U	2.1 U	2 U	2 U
Aldrin	UG/KG	2.2 U	2.1 U	2 U	2.1 U	2 U	2 U
Heptachlor epoxide	UG/KG	2.2 U	2.1 U	2 U	2.1 U	2 U	2 U
Endosulfan I	UG/KG	2.2 U	2.1 U	2 U	2.1 U	2 U	2 U
Dieldrin	UG/KG	4.2 U	4 U	4 U	4 U	6.3	6
4,4'-DDE	UG/KG	4.2 U	4 U	4 U	4 U	26	24
Endrin	UG/KG	4.2 U	4 U	4 U	4 U	3.8 U	3.9 U
Endosulfan II	UG/KG	4.2 U	4 U	4 U	4 U	3.8 U	3.9 U
4,4'-DDD	UG/KG	4.2 U	4 U	2.5 J	4 U	6.4	5.9
Endosulfan sulfate	UG/KG	4.2 U	4 U	4 U	4 U	3.8 U	3.9 U
4,4'-DDT	UG/KG	4.2 U	4 U	4 U	4 U	2.1 J	1.8 J
Methoxychlor	UG/KG	22 U	21 U	20 U	21 U	20 U	20 U
Endrin ketone	UG/KG	4.2 U	4 U	4 U	4 U	3.8 U	3.9 U
Endrin aldehyde	UG/KG	4.2 U	4 U	4 U	4 U	3.8 U	3.9 U
alpha-Chlordane	UG/KG	2.2 U	2.1 U	2 U	2.1 U	2.1	2.1
gamma-Chlordane	UG/KG	2.2 U	2.1 U	2 U	2.1 U	2 U	2 U
Toxaphene	UG/KG	220 U	210 U	200 U	210 U	200 U	200 U
Aroclor 1016	UG/KG	42 U	40 U	40 U	40 U	38 U	39 U
Aroclor 1221	UG/KG	85 U	82 U	81 U	82 U	78 U	79 U
Aroclor 1232	UG/KG	42 U	40 U	40 U	40 U	38 U	39 U
Aroclor 1242	UG/KG	42 U	40 U	40 U	40 U	38 U	39 U
Aroclor 1248	UG/KG	42 U	40 U	40 U	40 U	38 U	39 U
Aroclor 1254	UG/KG	42 U	40 U	40 U	40 U	38 U	39 U
Aroclor 1260	UG/KG	42 U	40 U	40 U	40 U	38 U	39 U

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-OA-SB01-07	80-OA-SB01-07D	80-SM-SB03-00	80-SM-SB03-00D	80-DPA-SB09-00	80-DPA-SB09-00D
Laboratory Sample ID:		Q41118116	Q41118117	AC6897	AC6901	AF7022	AF7024
Date Sampled:		11/03/94	11/03/94	11/02/94	11/02/94	06/14/95	06/14/95
	UNITS						
VOLATILES							
Chloromethane	UG/KG	11 U	11 U	11 U	11 U	NA	NA
Bromomethane	UG/KG	11 U	11 UJ	11 UJ	11 UJ	NA	NA
Vinyl chloride	UG/KG	11 U	11 UJ	11 UJ	11 U	NA	NA
Chloroethane	UG/KG	11 U	11 U	11 U	11 U	NA	NA
Methylene chloride	UG/KG	11 U	11 U	11 U	11 U	NA	NA
Acetone	UG/KG	45 U	11 UJ	26 U	11 U	NA	NA
Carbon Disulfide	UG/KG	11 U	11 U	11 U	11 U	NA	NA
1,1-Dichloroethene	UG/KG	11 U	11 U	11 U	11 U	NA	NA
1,1-Dichloroethane	UG/KG	11 U	11 U	11 U	11 U	NA	NA
1,2-Dichloroethene(total)	UG/KG	11 U	11 U	11 U	11 U	NA	NA
Chloroform	UG/KG	11 U	11 U	11 U	11 U	NA	NA
1,2-Dichloroethane	UG/KG	11 U	11 U	11 U	11 U	NA	NA
2-Butanone	UG/KG	11 U	11 U	11 U	11 U	NA	NA
1,1,1-Trichloroethane	UG/KG	11 U	11 U	11 U	11 U	NA	NA
Carbon tetrachloride	UG/KG	11 U	11 U	11 U	11 U	NA	NA
Bromodichloromethane	UG/KG	11 U	11 U	11 U	11 U	NA	NA
1,2-Dichloropropane	UG/KG	11 U	11 U	11 U	11 U	NA	NA
cis-1,3-Dichloropropene	UG/KG	11 U	11 U	11 U	11 U	NA	NA
Trichloroethene	UG/KG	11 U	11 U	11 U	11 U	NA	NA
Dibromochloromethane	UG/KG	11 U	11 U	11 U	11 U	NA	NA
1,1,2-Trichloroethane	UG/KG	11 UJ	11 U	11 U	11 U	NA	NA
Benzene	UG/KG	11 U	11 U	11 U	11 U	NA	NA
trans-1,3-Dichloropropene	UG/KG	11 U	11 U	11 U	11 U	NA	NA
Bromoform	UG/KG	11 UJ	11 U	11 U	11 U	NA	NA
4-Methyl-2-pentanone	UG/KG	11 UJ	11 U	11 U	11 U	NA	NA
2-Hexanone	UG/KG	11 UJ	11 U	11 U	11 U	NA	NA
Tetrachloroethene	UG/KG	11 U	11 U	11 U	11 U	NA	NA
1,1,2,2-Tetrachloroethane	UG/KG	11 UJ	11 U	11 U	11 U	NA	NA
Toluene	UG/KG	11 U	11 U	11 U	11 U	NA	NA
Chlorobenzene	UG/KG	11 U	11 U	11 U	11 U	NA	NA
Ethylbenzene	UG/KG	11 U	11 U	11 U	1 J	NA	NA
Styrene	UG/KG	11 U	11 U	11 U	11 U	NA	NA
Xylenes (total)	UG/KG	11 U	11 U	11 U	11 U	NA	NA

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-OA-SB01-07	80-OA-SB01-07D	80-SM-SB03-00	80-SM-SB03-00D	80-DPA-SB09-00	80-DPA-SB09-00D
Laboratory Sample ID:		Q41118116	Q41118117	AC6897	AC6901	AF7022	AF7024
Date Sampled:		11/03/94	11/03/94	11/02/94	11/02/94	06/14/95	06/14/95
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	350 U	350 U	340 U	340 U	NA	NA
bis(2-Chloroethyl) ether	UG/KG	350 U	350 U	340 U	340 U	NA	NA
2-Chlorophenol	UG/KG	350 U	350 U	340 U	340 U	NA	NA
1,3-Dichlorobenzene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
1,4-Dichlorobenzene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
1,2-Dichlorobenzene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
2-Methylphenol	UG/KG	350 U	350 U	340 U	340 U	NA	NA
2,2'-oxybis-(1-chloropropane)	UG/KG	350 U	350 U	340 U	340 U	NA	NA
4-Methylphenol	UG/KG	350 U	350 U	340 U	340 U	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Hexachloroethane	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Nitrobenzene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Isophorone	UG/KG	350 U	350 U	340 U	340 U	NA	NA
2-Nitrophenol	UG/KG	350 U	350 U	340 U	340 U	NA	NA
2,4-Dimethylphenol	UG/KG	350 U	350 U	340 U	340 U	NA	NA
bis(2-Chloroethoxy) methane	UG/KG	350 U	350 U	340 U	340 U	NA	NA
2,4-Dichlorophenol	UG/KG	350 U	350 U	340 U	340 U	NA	NA
1,2,4-Trichlorobenzene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Naphthalene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
4-Chloroaniline	UG/KG	350 U	350 UJ	340 U	340 U	NA	NA
Hexachlorobutadiene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
4-Chloro-3-methylphenol	UG/KG	350 U	350 U	340 U	340 U	NA	NA
2-Methylnaphthalene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Hexachlorocyclopentadiene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
2,4,6-Trichlorophenol	UG/KG	350 U	350 U	340 U	340 U	NA	NA
2,4,5-Trichlorophenol	UG/KG	860 U	850 U	830 U	830 U	NA	NA
2-Chloronaphthalene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
2-Nitroaniline	UG/KG	860 U	850 U	830 U	830 U	NA	NA
Dimethyl phthalate	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Acenaphthylene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
2,6-Dinitrotoluene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
3-Nitroaniline	UG/KG	860 U	850 U	830 U	830 U	NA	NA
Acenaphthene	UG/KG	350 U	350 U	340 U	340 U	NA	NA

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-OA-SB01-07	80-OA-SB01-07D	80-SM-SB03-00	80-SM-SB03-00D	80-DPA-SB09-00	80-DPA-SB09-00D
Laboratory Sample ID:		Q41118116	Q41118117	AC6897	AC6901	AF7022	AF7024
Date Sampled:		11/03/94	11/03/94	11/02/94	11/02/94	06/14/95	06/14/95
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	860 U	850 UJ	830 U	830 U	NA	NA
4-Nitrophenol	UG/KG	860 U	850 U	830 UJ	830 UJ	NA	NA
Dibenzofuran	UG/KG	350 U	350 U	340 U	340 U	NA	NA
2,4-Dinitrotoluene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Diethylphthalate	UG/KG	350 U	350 U	340 U	340 U	NA	NA
4-Chlorophenyl phenyl ether	UG/KG	350 U	350 U	340 UJ	340 UJ	NA	NA
Fluorene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
4-Nitroaniline	UG/KG	860 U	850 U	830 UJ	830 UJ	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	860 U	850 U	830 U	830 U	NA	NA
N-nitrosodiphenylamine	UG/KG	350 U	350 U	340 U	340 U	NA	NA
4-Bromophenyl-phenylether	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Hexachlorobenzene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Pentachlorophenol	UG/KG	860 U	850 UJ	830 U	830 U	NA	NA
Phenanthrene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Anthracene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Carbazole	UG/KG	350 U	350 U	340 U	340 U	NA	NA
di-n-Butylphthalate	UG/KG	70 J	68 J	340 U	370	NA	NA
Fluoranthene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Pyrene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Butyl benzyl phthalate	UG/KG	350 U	350 U	340 U	340 U	NA	NA
3,3'-Dichlorobenzidine	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Benzo[a]anthracene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Chrysene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	350 U	350 U	340 U	340 U	NA	NA
di-n-Octylphthalate	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Benzo[b]fluoranthene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Benzo[k]fluoranthene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Benzo[a]pyrene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Indeno[1,2,3-cd]pyrene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Dibenz[a,h]anthracene	UG/KG	350 U	350 U	340 U	340 U	NA	NA
Benzo[g,h,i]perylene	UG/KG	350 U	350 U	340 U	340 U	NA	NA

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-OA-SB01-07	80-OA-SB01-07D	80-SM-SB03-00	80-SM-SB03-00D	80-DPA-SB09-00	80-DPA-SB09-00D
Laboratory Sample ID:		Q41118116	Q41118117	AC6897	AC6901	AF7022	AF7024
Date Sampled:		11/03/94	11/03/94	11/02/94	11/02/94	06/14/95	06/14/95
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	9.9 U	10 U
beta-BHC	UG/KG	1.8 U	1.8 U	1.8 UJ	1.8 UJ	9.9 U	10 U
delta-BHC	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	9.9 U	10 U
Lindane (gamma-BHC)	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	9.9 U	10 U
Heptachlor	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	9.9 U	10 U
Aldrin	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	21	14 J
Heptachlor epoxide	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	9.9 U	10 U
Endosulfan I	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	9.9 U	10 U
Dieldrin	UG/KG	1 J	2 J	3.4 U	3.4 U	1000	1200
4,4'-DDE	UG/KG	1.4 J	2.1 J	3.4 U	3.4 U	200	230
Endrin	UG/KG	3.5 U	3.5 U	3.4 U	3.4 U	19 U	20 U
Endosulfan II	UG/KG	3.5 U	3.5 U	3.4 U	4.9 J	19 U	20 U
4,4'-DDD	UG/KG	1.1 J	1.8 J	3.4 U	3.4 U	160 J	120 J
Endosulfan sulfate	UG/KG	3.5 U	3.5 U	3.4 U	3.4 U	19 U	20 U
4,4'-DDT	UG/KG	3.5 U	3.5 U	3.4 U	5.8 J	130	130
Methoxychlor	UG/KG	18 U	18 U	18 U	18 U	99 U	100 U
Endrin ketone	UG/KG	3.5 U	3.5 U	3.4 U	3.4 U	19 U	20 U
Endrin aldehyde	UG/KG	3.5 U	3.5 U	3.4 U	3.4 U	19 U	20 U
alpha-Chlordane	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	300 J	340 J
gamma-Chlordane	UG/KG	1.8 U	1.8 U	1.8 U	1.8 U	240	300 J
Toxaphene	UG/KG	180 U	180 U	180 U	180 U	990 U	1000 U
Aroclor 1016	UG/KG	35 U	35 U	34 U	34 U	NA	NA
Aroclor 1221	UG/KG	72 U	71 U	70 U	70 U	NA	NA
Aroclor 1232	UG/KG	35 U	35 U	34 U	34 U	NA	NA
Aroclor 1242	UG/KG	35 U	35 U	34 U	34 U	NA	NA
Aroclor 1248	UG/KG	35 U	35 U	34 U	34 U	NA	NA
Aroclor 1254	UG/KG	35 U	35 U	34 U	34 U	NA	NA
Aroclor 1260	UG/KG	35 U	35 U	34 U	34 U	NA	NA

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB09-04	80-DPA-SB09-04D
Laboratory Sample ID:		AF7023	AF7025
Date Sampled:		06/14/95	06/14/95
	UNITS		
VOLATILES			
Chloromethane	UG/KG	NA	NA
Bromomethane	UG/KG	NA	NA
Vinyl chloride	UG/KG	NA	NA
Chloroethane	UG/KG	NA	NA
Methylene chloride	UG/KG	NA	NA
Acetone	UG/KG	NA	NA
Carbon Disulfide	UG/KG	NA	NA
1,1-Dichloroethene	UG/KG	NA	NA
1,1-Dichloroethane	UG/KG	NA	NA
1,2-Dichloroethene(total)	UG/KG	NA	NA
Chloroform	UG/KG	NA	NA
1,2-Dichloroethane	UG/KG	NA	NA
2-Butanone	UG/KG	NA	NA
1,1,1-Trichloroethane	UG/KG	NA	NA
Carbon tetrachloride	UG/KG	NA	NA
Bromodichloromethane	UG/KG	NA	NA
1,2-Dichloropropane	UG/KG	NA	NA
cis-1,3-Dichloropropene	UG/KG	NA	NA
Trichloroethene	UG/KG	NA	NA
Dibromochloromethane	UG/KG	NA	NA
1,1,2-Trichloroethane	UG/KG	NA	NA
Benzene	UG/KG	NA	NA
trans-1,3-Dichloropropene	UG/KG	NA	NA
Bromoform	UG/KG	NA	NA
4-Methyl-2-pentanone	UG/KG	NA	NA
2-Hexanone	UG/KG	NA	NA
Tetrachloroethene	UG/KG	NA	NA
1,1,2,2-Tetrachloroethane	UG/KG	NA	NA
Toluene	UG/KG	NA	NA
Chlorobenzene	UG/KG	NA	NA
Ethylbenzene	UG/KG	NA	NA
Styrene	UG/KG	NA	NA
Xylenes (total)	UG/KG	NA	NA

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB09-04	80-DPA-SB09-04D
Laboratory Sample ID:		AF7023	AF7025
Date Sampled:		06/14/95	06/14/95
	UNITS		
SEMIVOLATILES			
Phenol	UG/KG	NA	NA
bis(2-Chloroethyl) ether	UG/KG	NA	NA
2-Chlorophenol	UG/KG	NA	NA
1,3-Dichlorobenzene	UG/KG	NA	NA
1,4-Dichlorobenzene	UG/KG	NA	NA
1,2-Dichlorobenzene	UG/KG	NA	NA
2-Methylphenol	UG/KG	NA	NA
2,2'-oxybis-(1-chloropropane)	UG/KG	NA	NA
4-Methylphenol	UG/KG	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	NA	NA
Hexachloroethane	UG/KG	NA	NA
Nitrobenzene	UG/KG	NA	NA
Isophorone	UG/KG	NA	NA
2-Nitrophenol	UG/KG	NA	NA
2,4-Dimethylphenol	UG/KG	NA	NA
bis(2-Chloroethoxy) methane	UG/KG	NA	NA
2,4-Dichlorophenol	UG/KG	NA	NA
1,2,4-Trichlorobenzene	UG/KG	NA	NA
Naphthalene	UG/KG	NA	NA
4-Chloroaniline	UG/KG	NA	NA
Hexachlorobutadiene	UG/KG	NA	NA
4-Chloro-3-methylphenol	UG/KG	NA	NA
2-Methylnaphthalene	UG/KG	NA	NA
Hexachlorocyclopentadiene	UG/KG	NA	NA
2,4,6-Trichlorophenol	UG/KG	NA	NA
2,4,5-Trichlorophenol	UG/KG	NA	NA
2-Chloronaphthalene	UG/KG	NA	NA
2-Nitroaniline	UG/KG	NA	NA
Dimethyl phthalate	UG/KG	NA	NA
Acenaphthylene	UG/KG	NA	NA
2,6-Dinitrotoluene	UG/KG	NA	NA
3-Nitroaniline	UG/KG	NA	NA
Acenaphthene	UG/KG	NA	NA

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:	80-DPA-SB09-04	80-DPA-SB09-04D
Laboratory Sample ID:	AF7023	AF7025
Date Sampled:	06/14/95	06/14/95

	UNITS		
SEMIVOLATILES Cont.			
2,4-Dinitrophenol	UG/KG	NA	NA
4-Nitrophenol	UG/KG	NA	NA
Dibenzofuran	UG/KG	NA	NA
2,4-Dinitrotoluene	UG/KG	NA	NA
Diethylphthalate	UG/KG	NA	NA
4-Chlorophenyl phenyl ether	UG/KG	NA	NA
Fluorene	UG/KG	NA	NA
4-Nitroaniline	UG/KG	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	NA	NA
N-nitrosodiphenylamine	UG/KG	NA	NA
4-Bromophenyl-phenylether	UG/KG	NA	NA
Hexachlorobenzene	UG/KG	NA	NA
Pentachlorophenol	UG/KG	NA	NA
Phenanthrene	UG/KG	NA	NA
Anthracene	UG/KG	NA	NA
Carbazole	UG/KG	NA	NA
di-n-Butylphthalate	UG/KG	NA	NA
Fluoranthene	UG/KG	NA	NA
Pyrene	UG/KG	NA	NA
Butyl benzyl phthalate	UG/KG	NA	NA
3,3'-Dichlorobenzidine	UG/KG	NA	NA
Benzo[a]anthracene	UG/KG	NA	NA
Chrysene	UG/KG	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	NA	NA
di-n-Octylphthalate	UG/KG	NA	NA
Benzo[b]fluoranthene	UG/KG	NA	NA
Benzo[k]fluoranthene	UG/KG	NA	NA
Benzo[a]pyrene	UG/KG	NA	NA
Indeno[1,2,3-cd]pyrene	UG/KG	NA	NA
Dibenz[a,h]anthracene	UG/KG	NA	NA
Benzo[g,h,i]perylene	UG/KG	NA	NA

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-DPA-SB09-04	80-DPA-SB09-04D
Laboratory Sample ID:		AF7023	AF7025
Date Sampled:		06/14/95	06/14/95
	UNITS		
PESTICIDES/PCBs			
alpha-BHC	UG/KG	2 U	2 U
beta-BHC	UG/KG	2 U	2 U
delta-BHC	UG/KG	2 U	2 U
Lindane (gamma-BHC)	UG/KG	2 U	2 U
Heptachlor	UG/KG	2 U	2 U
Aldrin	UG/KG	2 U	2 U
Heptachlor epoxide	UG/KG	2 U	2 U
Endosulfan I	UG/KG	2 U	2 U
Dieldrin	UG/KG	4 U	3.9 U
4,4'-DDE	UG/KG	4 U	3.9 U
Endrin	UG/KG	4 U	3.9 U
Endosulfan II	UG/KG	4 U	3.9 U
4,4'-DDD	UG/KG	4 U	3.9 U
Endosulfan sulfate	UG/KG	4 U	3.9 U
4,4'-DDT	UG/KG	4 U	3.9 U
Methoxychlor	UG/KG	20 U	20 U
Endrin ketone	UG/KG	4 U	3.9 U
Endrin aldehyde	UG/KG	4 U	3.9 U
alpha-Chlordane	UG/KG	2 U	2 U
gamma-Chlordane	UG/KG	2 U	2 U
Toxaphene	UG/KG	200 U	200 U
Aroclor 1016	UG/KG	NA	NA
Aroclor 1221	UG/KG	NA	NA
Aroclor 1232	UG/KG	NA	NA
Aroclor 1242	UG/KG	NA	NA
Aroclor 1248	UG/KG	NA	NA
Aroclor 1254	UG/KG	NA	NA
Aroclor 1260	UG/KG	NA	NA

APPENDIX I.2
SOIL METALS

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:		80-LA-SB04-00	80-LA-SB04-00D	80-LA-SB04-06	80-LA-SB04-06D	80-MA-SB01-00	80-MA-SB01-00D
Laboratory Sample ID:		AC6885	AC6889	AC6922	AC6928	AC6904	AC6918
Date Sampled:		11/02/94	11/02/94	11/02/94	11/02/94	11/02/94	11/02/94
	UNITS						
Aluminum	MG/KG	12000 J	6250 J	1530 J	1610 J	3390 J	4040 J
Antimony	MG/KG	11.5 UJ	11 UJ	11.7 UJ	11.8 UJ	10.5 UJ	10.7 UJ
Arsenic	MG/KG	37.7 J	34.8 J	2.3 UJ	2.4 J	2.1 UJ	2.1 UJ
Barium	MG/KG	29.1	20.1	2.6	3.4	13.2	13.1
Beryllium	MG/KG	0.23 U	0.26	0.23 U	0.24 U	0.23	0.24
Cadmium	MG/KG	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U	1.1 U
Calcium	MG/KG	6310 J	18700 J	191 J	266 J	23800 J	16900 J
Chromium	MG/KG	19.8 J	13.8 J	4.6 J	5 J	5 J	4 J
Cobalt	MG/KG	2.3 U	2.2 U	2.3 U	2.4 U	2.1 U	2.1 U
Copper	MG/KG	6.7	6	2.3 U	2.4	3.2	2.7
Iron	MG/KG	5320 J	4060 J	33000 J	25100 J	1360 J	1410 J
Lead	MG/KG	63 J	60 J	3.2 J	3.2 J	6.9 J	7.1 J
Magnesium	MG/KG	785	646	11.7 U	11.8 U	528	416
Manganese	MG/KG	89.7 J	62.1 J	2.2 J	3 J	31.4 J	23.7 J
Mercury	MG/KG	1.8	1.8	0.12 U	0.12 U	0.11 U	0.11 U
Nickel	MG/KG	4.6 U	4.6	4.7 U	4.7 U	4.2 U	4.3 U
Potassium	MG/KG	561 J	224 J	234 U	236 U	211 U	214 U
Selenium	MG/KG	1.1 U	1.1 U	2	1.8	1.1 U	1.1 U
Silver	MG/KG	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U	1.1 U
Sodium	MG/KG	33 J	48.6 J	39.4	40	51.1	46
Thallium	MG/KG	2.3 U	2.2 U	2.3 U	2.4 U	2.1 U	2.1 U
Vanadium	MG/KG	14.9 J	9.5 J	7.7	7.4	5.5	4.9
Zinc	MG/KG	44.4 J	52.8 J	11.5 UJ	11.1 UJ	18.9 J	19 J
Moisture	%	13.58	13.16	16.13	16.13	6.02	7.62

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:		80-MA-SB01-06	80-MA-SB01-06D	80-MW031W-03	80-MW031W-03D	80-OA-SB01-00	80-OA-SB01-00D
Laboratory Sample ID:		AC6910	AC6920	Q41118708	Q41118711	Q41118112A	Q41118115A
Date Sampled:		11/02/94	11/02/94	11/05/94	11/05/94	11/03/94	11/03/94
	UNITS						
Aluminum	MG/KG	6430 J	5850 J	5650	6550	3150 J	2770 J
Antimony	MG/KG	12.4 UJ	12.3 UJ	2.9 UJ	2.9 UJ	2.7 UJ	2.8 UJ
Arsenic	MG/KG	5.5 J	3.1 J	11.2	22.5	1.4	1.7
Barium	MG/KG	11.3	9	5.3	5.8	7.6	7.8
Beryllium	MG/KG	0.26	0.27	0.05	0.08	0.04	0.05
Cadmium	MG/KG	1.2 U	1.2 U	0.35 U	0.35 U	0.33 U	0.34 U
Calcium	MG/KG	264 J	226 J	821 J	908 J	1260	1430
Chromium	MG/KG	25.4 J	13.4 J	11	31.1	4.1 J	3.7 J
Cobalt	MG/KG	2.5 U	2.5 U	0.82 J	1.3	0.55 J	0.52 J
Copper	MG/KG	3.4	3.1	2.2	3.3	1.3	1.4
Iron	MG/KG	14400 J	9060 J	7330	16900	1900 J	1920 J
Lead	MG/KG	8.9 J	7.6 J	5.6	6.3	7.4 J	7.1 J
Magnesium	MG/KG	342	281	220	237	431	404
Manganese	MG/KG	5.3 J	4.2 J	9.1	11.8	12.6	11.8
Mercury	MG/KG	0.13 U	0.12 U	0.11 U	0.1 U	0.12 U	0.12 U
Nickel	MG/KG	5 U	4.9 U	1 U	1.3	0.95 U	0.97 U
Potassium	MG/KG	399 J	340	472	513	132 J	102 J
Selenium	MG/KG	1.3	1.2 U	0.61 U	0.99	0.58 U	0.59 U
Silver	MG/KG	1.2 U	1.2 U	0.47 U	0.47 U	0.44 U	0.45 U
Sodium	MG/KG	34	41.8	28.5	30.8	21.2 UJ	70 J
Thallium	MG/KG	2.5 U	2.5 U	0.94 U	0.94	0.89 U	0.9 U
Vanadium	MG/KG	15.8	14.6	15.1	43.9	5.7	5.2
Zinc	MG/KG	9.7 UJ	9.5 UJ	3.6	5.2	13.9 J	30.5 J
Moisture	%	22.57	19.75	N/A	N/A	N/A	N/A

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:		80-OA-SB01-07	80-OA-SB01-07D	80-SM-SB03-00	80-SM-SB03-00D
Laboratory Sample ID:		Q41118116A	Q41118117A	AC6897	AC6901
Date Sampled:		11/03/94	11/03/94	11/02/94	11/02/94
	UNITS				
Aluminum	MG/KG	1270 J	974 J	2250 J	2530 J
Antimony	MG/KG	2.6 UJ	2.5 UJ	10.5 UJ	10.4 UJ
Arsenic	MG/KG	0.49 U	0.47 U	2.1 UJ	2.2 J
Barium	MG/KG	4.9	4.3	6.4	7.8
Beryllium	MG/KG	0.02 U	0.02 U	0.21 U	0.21 U
Cadmium	MG/KG	0.32 U	0.31 U	1.1 U	1 U
Calcium	MG/KG	67.3 J	101 J	45 J	60.4 J
Chromium	MG/KG	4.2 J	3.3 J	4.2 J	5.2 J
Cobalt	MG/KG	0.4 U	0.39 U	2.1 U	2.1 U
Copper	MG/KG	0.43 J	0.38	2.1 U	2.1 U
Iron	MG/KG	786 J	538 J	1700 J	2190 J
Lead	MG/KG	3.8 J	3.3 J	4.7 J	5.5 J
Magnesium	MG/KG	58.1	41.9	75.9	74
Manganese	MG/KG	6.5	5.9	3.3 J	3.4 J
Mercury	MG/KG	0.11 U	0.11 U	0.11 U	0.11 U
Nickel	MG/KG	0.92 U	0.88 U	4.2 U	4.1 U
Potassium	MG/KG	82.4 J	78.4 U	211 U	250 J
Selenium	MG/KG	0.55 U	0.53 U	1.1 U	1 U
Silver	MG/KG	0.43 U	0.41 U	1.1 U	1 U
Sodium	MG/KG	19 U	15.8 U	35.2 J	57.5 J
Thallium	MG/KG	0.85 U	0.82 U	2.1 U	2.1 U
Vanadium	MG/KG	2.9	2.4	6.1	7.3
Zinc	MG/KG	8.7 J	9.4 J	11.4 J	12.3 UJ
Moisture	%	N/A	N/A	5.22	5.44

APPENDIX I.3
GROUNDWATER ORGANICS

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW03IW-01	80-MW03IW-01D	80-MW06-01	80-MW06-01D
Laboratory Sample ID:		AD2080	AD2083	AD0566	AD0569
Date Sampled:		12/03/94	12/03/94	11/20/94	11/20/94
	UNITS				
VOLATILES					
Chloromethane	UG/L	10 U	10 U	10 U	10 U
Bromomethane	UG/L	10 U	10 U	10 U	10 U
Vinyl chloride	UG/L	10 U	10 U	10 U	10 U
Chloroethane	UG/L	10 UJ	10 UJ	10 U	10 U
Methylene chloride	UG/L	10 U	10 U	10 U	10 U
Acetone	UG/L	10 U	10 U	10 U	10 U
Carbon Disulfide	UG/L	10 U	10 U	10 U	10 U
1,1-Dichloroethene	UG/L	10 U	10 U	10 U	10 U
1,1-Dichloroethane	UG/L	10 U	10 U	10 U	10 U
1,2-Dichloroethene(total)	UG/L	10 U	10 U	10 U	10 U
Chloroform	UG/L	10 U	10 U	10 U	10 U
1,2-Dichloroethane	UG/L	10 U	10 U	10 U	10 U
2-Butanone	UG/L	10 U	12 U	10 U	10 U
1,1,1-Trichloroethane	UG/L	10 U	10 U	10 U	10 U
Carbon tetrachloride	UG/L	10 U	10 U	10 U	10 U
Bromodichloromethane	UG/L	10 U	10 U	10 U	10 U
1,2-Dichloropropane	UG/L	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U
Trichloroethene	UG/L	10 U	10 U	10 U	10 U
Dibromochloromethane	UG/L	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	UG/L	10 U	10 U	10 U	10 U
Benzene	UG/L	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U
Bromoform	UG/L	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	UG/L	10 U	10 U	10 U	10 U
2-Hexanone	UG/L	10 U	10 U	10 U	10 U
Tetrachloroethene	UG/L	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	10 U	10 U
Toluene	UG/L	10 U	10 U	10 U	10 U
Chlorobenzene	UG/L	10 U	10 U	10 U	10 U
Ethylbenzene	UG/L	10 U	10 U	10 U	10 U
Styrene	UG/L	10 U	10 U	10 U	10 U
Xylenes (total)	UG/L	10 U	10 U	10 U	10 U

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW03IW-01	80-MW03IW-01D	80-MW06-01	80-MW06-01D
Laboratory Sample ID:		AD2080	AD2083	AD0566	AD0569
Date Sampled:		12/03/94	12/03/94	11/20/94	11/20/94
	UNITS				
SEMIVOLATILES					
Phenol	UG/L	10 U	10 U	10 U	10 U
bis(2-Chloroethyl) ether	UG/L	10 U	10 U	10 U	10 U
2-Chlorophenol	UG/L	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U
2-Methylphenol	UG/L	10 U	10 U	10 U	10 U
2,2'-oxybis-(1-chloropropane)	UG/L	10 U	10 U	10 U	10 U
4-Methylphenol	UG/L	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	10 U	10 U
Hexachloroethane	UG/L	10 U	10 U	10 U	10 U
Nitrobenzene	UG/L	10 U	10 U	10 U	10 U
Isophorone	UG/L	10 U	10 U	10 U	10 U
2-Nitrophenol	UG/L	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	UG/L	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy) methane	UG/L	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	UG/L	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	10 U	10 U
Naphthalene	UG/L	10 U	10 U	10 U	10 U
4-Chloroaniline	UG/L	10 U	10 U	10 U	10 U
Hexachlorobutadiene	UG/L	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	UG/L	10 U	10 U	10 U	10 U
2-Methylnaphthalene	UG/L	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	UG/L	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	UG/L	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	UG/L	25 U	25 U	25 U	25 U
2-Chloronaphthalene	UG/L	10 U	10 U	10 U	10 U
2-Nitroaniline	UG/L	25 U	25 U	25 U	25 U
Dimethyl phthalate	UG/L	10 U	10 U	10 U	10 U
Acenaphthylene	UG/L	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U
3-Nitroaniline	UG/L	25 U	25 U	25 U	25 U
Acenaphthene	UG/L	10 U	10 U	10 U	10 U

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW03IW-01	80-MW03IW-01D	80-MW06-01	80-MW06-01D
Laboratory Sample ID:		AD2080	AD2083	AD0566	AD0569
Date Sampled:		12/03/94	12/03/94	11/20/94	11/20/94
	UNITS				
SEMIVOLATILES Cont.					
2,4-Dinitrophenol	UG/L	25 U	25 U	25 U	25 U
4-Nitrophenol	UG/L	25 U	25 U	25 U	25 U
Dibenzofuran	UG/L	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U
Diethylphthalate	UG/L	10 U	10 U	10 U	10 U
4-Chlorophenyl phenyl ether	UG/L	10 UJ	10 UJ	10 U	10 U
Fluorene	UG/L	10 U	10 U	10 U	10 U
4-Nitroaniline	UG/L	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	25 U	25 U
N-nitrosodiphenylamine	UG/L	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	UG/L	10 U	10 U	10 U	10 U
Hexachlorobenzene	UG/L	10 U	10 U	10 U	10 U
Pentachlorophenol	UG/L	25 U	25 U	25 U	25 U
Phenanthrene	UG/L	10 U	10 U	10 U	10 U
Anthracene	UG/L	10 U	10 U	10 U	10 U
Carbazole	UG/L	10 U	10 U	10 U	10 U
di-n-Butylphthalate	UG/L	10 U	10 U	10 U	10 U
Fluoranthene	UG/L	10 U	10 U	10 U	10 U
Pyrene	UG/L	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	UG/L	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	UG/L	10 U	10 U	10 U	10 U
Benzo[a]anthracene	UG/L	10 U	10 U	10 U	10 U
Chrysene	UG/L	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	10 U	10 U	2 J	6 J
di-n-Octylphthalate	UG/L	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	UG/L	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Benzo[a]pyrene	UG/L	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	UG/L	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	UG/L	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	UG/L	10 U	10 U	10 U	10 U

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-MW03IW-01	80-MW03IW-01D	80-MW06-01	80-MW06-01D
Laboratory Sample ID:		AD2080	AD2083	AD0566	AD0569
Date Sampled:		12/03/94	12/03/94	11/20/94	11/20/94
	UNITS				
PESTICIDES/PCBs					
alpha-BHC	UG/L	0.05 U	0.05 U	0.05 U	0.05 U
beta-BHC	UG/L	0.05 U	0.05 U	0.05 U	0.05 U
delta-BHC	UG/L	0.05 U	0.05 U	0.05 U	0.05 U
Lindane (gamma-BHC)	UG/L	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor	UG/L	0.05 U	0.05 U	0.05 U	0.05 U
Aldrin	UG/L	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor epoxide	UG/L	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan I	UG/L	0.05 U	0.05 U	0.05 U	0.05 U
Dieldrin	UG/L	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDE	UG/L	0.1 U	0.1 U	0.1 U	0.1 U
Endrin	UG/L	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan II	UG/L	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDD	UG/L	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan sulfate	UG/L	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDT	UG/L	0.1 U	0.1 U	0.1 U	0.1 U
Methoxychlor	UG/L	0.5 U	0.5 U	0.5 U	0.5 U
Endrin ketone	UG/L	0.1 U	0.1 U	0.1 U	0.1 U
Endrin aldehyde	UG/L	0.1 U	0.1 U	0.1 U	0.1 U
alpha-Chlordane	UG/L	0.05 U	0.05 U	0.05 U	0.05 U
gamma-Chlordane	UG/L	0.05 U	0.05 U	0.05 U	0.05 U
Toxaphene	UG/L	5 U	5 U	5 U	5 U
Aroclor 1016	UG/L	1 U	1 U	1 U	1 U
Aroclor 1221	UG/L	2 U	2 U	2 U	2 U
Aroclor 1232	UG/L	1 U	1 U	1 U	1 U
Aroclor 1242	UG/L	1 U	1 U	1 U	1 U
Aroclor 1248	UG/L	1 U	1 U	1 U	1 U
Aroclor 1254	UG/L	1 U	1 U	1 U	1 U
Aroclor 1260	UG/L	1 U	1 U	1 U	1 U

APPENDIX I.4
GROUNDWATER TOTAL AND DISSOLVED METALS

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL TOTAL & DISSOLVED INORGANICS

Client Sample ID:		80-MW03IW-01	80-MW03IW-01D	80-MW03IWD-01	80-MW03IWD-01D	80-MW06-01	80-MW06-01D
Laboratory Sample ID:		AD2081	AD2084	AD2090	AD2091	AD0567	AD0570
Date Sampled:		12/03/94	12/03/94	12/01/94	12/01/94	11/20/94	11/20/94
	UNITS						
Aluminum	UG/L	40 UJ	40 UJ	40 U	40 U	840	948
Antimony	UG/L	50 UJ	50 UJ	50 U	50 U	50 U	50 U
Arsenic	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 U
Barium	UG/L	2 UJ	19.4 J	22.5 J	19.4 J	80.1	93
Beryllium	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 U	1 U
Cadmium	UG/L	5 UJ	5 UJ	5 U	5 U	5 U	5 U
Calcium	UG/L	47.3 UJ	63500 J	72800	66000	15700	18300
Chromium	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 U
Cobalt	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 U
Copper	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 U
Iron	UG/L	10 UJ	38.1 UJ	66.6 U	70.5 U	121 U	117 U
Lead	UG/L	3 UJ	3 UJ	3 U	3 U	5.7 J	3 U
Magnesium	UG/L	50 UJ	2690 J	3120	2770	11400	13300
Manganese	UG/L	2 UJ	44.7 J	51.3	46.6	81.7	95
Mercury	UG/L	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	UG/L	20 UJ	20 UJ	20 U	20 U	20 U	20 U
Potassium	UG/L	1000 UJ	1210 J	1030	1020	8720	9750
Selenium	UG/L	5 UJ	5 UJ	5 U	5 U	5 U	5 U
Silver	UG/L	5 UJ	5 UJ	5 U	5 U	5 U	5 U
Sodium	UG/L	100 UJ	17600 J	20300	18800	8980	10300
Thallium	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 U
Vanadium	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 U
Zinc	UG/L	40.7 UJ	11.2 UJ	40.4 UJ	32.4 UJ	106	115 J

FIELD DUPLICATE SUMMARY
OPERABLE UNIT No. 11
SITE 80 - FIELD DUPLICATES - GROUNDWATE
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL TOTAL & DISSOLVED INORGANICS

Client Sample ID:		80-MW06D-01	80-MW06D-01D
Laboratory Sample ID:		AD0607	AD0608
Date Sampled:		11/20/94	11/20/94
	UNITS		
Aluminum	UG/L	753	852
Antimony	UG/L	50 U	50 U
Arsenic	UG/L	10 U	10 U
Barium	UG/L	81.9	90.2
Beryllium	UG/L	1 U	1 U
Cadmium	UG/L	5 U	5 U
Calcium	UG/L	16500	18500
Chromium	UG/L	10 U	10 U
Cobalt	UG/L	10 U	10 U
Copper	UG/L	17.2	16.1
Iron	UG/L	90.9 U	83.2 U
Lead	UG/L	3 U	3 U
Magnesium	UG/L	11800	13100
Manganese	UG/L	85.5	95 U
Mercury	UG/L	0.2 U	0.2 U
Nickel	UG/L	20 U	20 U
Potassium	UG/L	8580	9640
Selenium	UG/L	5 U	5 U
Silver	UG/L	5 U	5 U
Sodium	UG/L	9260	10200
Thallium	UG/L	10 U	10 U
Vanadium	UG/L	10 U	10 U
Zinc	UG/L	53.1 UJ	49.7 UJ

APPENDIX J
QA/QC SUMMARIES

APPENDIX J.1
SOIL ORGANICS

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-RS-01	80-RS-03	80-RS-05	80-TB-01	80-TB-02	80-TB-03
Laboratory Sample ID:		AC6658	Q41118801	Q41119001	AC6656	AC6933	Q41118802
Date Sampled:		11/01/94	11/03/94	11/05/94	11/01/94	11/02/94	11/03/94
	UNITS						
VOLATILES							
Chloromethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	UG/L	10 UJ	10 U	10 U	10 UJ	10 U	10 U
Vinyl chloride	UG/L	10 U	10 U	10 U	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	3 J	10 U	1 J	6 J	14	10 U
Acetone	UG/L	5 J	5 J	10 U	7 J	13	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	10 U	10 U
1,2-Dichloroethane	UG/L	2 J	1 J	1 J	2 J	2 J	10 U
2-Butanone	UG/L	10	10 U	3 J	10 U	7 J	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 U	10 U	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
Xylenes (total)	UG/L	10 U	10 U	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-RS-01	80-RS-03	80-RS-05	80-TB-01	80-TB-02	80-TB-03
Laboratory Sample ID:		AC6658	Q41118801	Q41119001	AC6656	AC6933	Q41118802
Date Sampled:		11/01/94	11/03/94	11/05/94	11/01/94	11/02/94	11/03/94
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
bis(2-Chloroethyl) ether	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
2-Chlorophenol	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
1,3-Dichlorobenzene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
1,4-Dichlorobenzene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
1,2-Dichlorobenzene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
2-Methylphenol	UG/L	10 UJ	N/A	10 U	N/A	N/A	N/A
2,2'-oxybis-(1-chloropropane)	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
4-Methylphenol	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
N-Nitroso-di-n-propylamine	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Hexachloroethane	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Nitrobenzene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Isophorone	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
2-Nitrophenol	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
2,4-Dimethylphenol	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
bis(2-Chloroethoxy) methane	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
2,4-Dichlorophenol	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
1,2,4-Trichlorobenzene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Naphthalene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
4-Chloroaniline	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Hexachlorobutadiene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
4-Chloro-3-methylphenol	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
2-Methylnaphthalene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Hexachlorocyclopentadiene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
2,4,6-Trichlorophenol	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
2,4,5-Trichlorophenol	UG/L	25 U	N/A	25 U	N/A	N/A	N/A
2-Chloronaphthalene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
2-Nitroaniline	UG/L	25 U	N/A	25 U	N/A	N/A	N/A
Dimethyl phthalate	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Acenaphthylene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
2,6-Dinitrotoluene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
3-Nitroaniline	UG/L	25 U	N/A	25 U	N/A	N/A	N/A
Acenaphthene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-RS-01	80-RS-03	80-RS-05	80-TB-01	80-TB-02	80-TB-03
Laboratory Sample ID:		AC6658	Q41118801	Q41119001	AC6656	AC6933	Q41118802
Date Sampled:		11/01/94	11/03/94	11/05/94	11/01/94	11/02/94	11/03/94
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 U	N/A	25 U	N/A	N/A	N/A
4-Nitrophenol	UG/L	25 U	N/A	25 U	N/A	N/A	N/A
Dibenzofuran	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
2,4-Dinitrotoluene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Diethylphthalate	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
4-Chlorophenyl phenyl ether	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Fluorene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
4-Nitroaniline	UG/L	25 U	N/A	25 U	N/A	N/A	N/A
4,6-Dinitro-2-methylphenol	UG/L	25 U	N/A	25 U	N/A	N/A	N/A
N-nitrosodiphenylamine	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
4-Bromophenyl-phenylether	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Hexachlorobenzene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Pentachlorophenol	UG/L	25 U	N/A	25 U	N/A	N/A	N/A
Phenanthrene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Anthracene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Carbazole	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
di-n-Butylphthalate	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Fluoranthene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Pyrene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Butyl benzyl phthalate	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
3,3'-Dichlorobenzidine	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Benzo[a]anthracene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Chrysene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
bis(2-Ethylhexyl)phthalate	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
di-n-Octylphthalate	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Benzo[b]fluoranthene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Benzo[k]fluoranthene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Benzo[a]pyrene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Indeno[1,2,3-cd]pyrene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Dibenz[a,h]anthracene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A
Benzo[g,h,i]perylene	UG/L	10 U	N/A	10 U	N/A	N/A	N/A

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-RS-01	80-RS-03	80-RS-05	80-TB-01	80-TB-02	80-TB-03
Laboratory Sample ID:		AC6658	Q41118801	Q41119001	AC6656	AC6933	Q41118802
Date Sampled:		11/01/94	11/03/94	11/05/94	11/01/94	11/02/94	11/03/94
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/L	0.05 U	N/A	0.05 U	N/A	N/A	N/A
beta-BHC	UG/L	0.05 U	N/A	0.05 U	N/A	N/A	N/A
delta-BHC	UG/L	0.05 U	N/A	0.05 U	N/A	N/A	N/A
Lindane (gamma-BHC)	UG/L	0.05 U	N/A	0.05 U	N/A	N/A	N/A
Heptachlor	UG/L	0.05 U	N/A	0.05 U	N/A	N/A	N/A
Aldrin	UG/L	0.05 U	N/A	0.05 U	N/A	N/A	N/A
Heptachlor epoxide	UG/L	0.05 U	N/A	0.05 U	N/A	N/A	N/A
Endosulfan I	UG/L	0.05 U	N/A	0.05 U	N/A	N/A	N/A
Dieldrin	UG/L	0.1 U	N/A	0.1 U	N/A	N/A	N/A
4,4'-DDE	UG/L	0.1 U	N/A	0.1 U	N/A	N/A	N/A
Endrin	UG/L	0.1 U	N/A	0.1 U	N/A	N/A	N/A
Endosulfan II	UG/L	0.1 U	N/A	0.1 U	N/A	N/A	N/A
4,4'-DDD	UG/L	0.1 U	N/A	0.1 U	N/A	N/A	N/A
Endosulfan sulfate	UG/L	0.1 U	N/A	0.1 U	N/A	N/A	N/A
4,4'-DDT	UG/L	0.1 U	N/A	0.1 U	N/A	N/A	N/A
Methoxychlor	UG/L	0.5 U	N/A	0.5 U	N/A	N/A	N/A
Endrin ketone	UG/L	0.1 U	N/A	0.1 U	N/A	N/A	N/A
Endrin aldehyde	UG/L	0.1 U	N/A	0.1 U	N/A	N/A	N/A
alpha-Chlordane	UG/L	0.05 U	N/A	0.05 U	N/A	N/A	N/A
gamma-Chlordane	UG/L	0.05 U	N/A	0.05 U	N/A	N/A	N/A
Toxaphene	UG/L	5 U	N/A	5 U	N/A	N/A	N/A
Aroclor 1016	UG/L	1 U	N/A	1 U	N/A	N/A	N/A
Aroclor 1221	UG/L	2 U	N/A	2 U	N/A	N/A	N/A
Aroclor 1232	UG/L	1 U	N/A	1 U	N/A	N/A	N/A
Aroclor 1242	UG/L	1 U	N/A	1 U	N/A	N/A	N/A
Aroclor 1248	UG/L	1 U	N/A	1 U	N/A	N/A	N/A
Aroclor 1254	UG/L	1 U	N/A	1 U	N/A	N/A	N/A
Aroclor 1260	UG/L	1 U	N/A	1 U	N/A	N/A	N/A

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-TB-04	80-TB-05	80-TB-06	80-TK-01	80-RB13
Laboratory Sample ID:		Q41118901	Q41119002	AC7818	AD2152	AF7037
Date Sampled:		11/04/94	11/05/94	11/06/94	12/03/94	06/14/95
	UNITS					
VOLATILES						
Chloromethane	UG/L	10 U	10 U	10 U	10 U	N/A
Bromomethane	UG/L	10 U	10 U	10 UJ	10 U	N/A
Vinyl chloride	UG/L	10 U	10 U	10 UJ	10 UJ	N/A
Chloroethane	UG/L	10 U	10 U	10 U	10 U	N/A
Methylene chloride	UG/L	10 U	10 U	3 J	10 U	N/A
Acetone	UG/L	10 U	10 U	10 U	780 J	N/A
Carbon Disulfide	UG/L	10 U	10 U	10 U	10 U	N/A
1,1-Dichloroethene	UG/L	10 U	10 U	10 U	10 U	N/A
1,1-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	N/A
1,2-Dichloroethene(total)	UG/L	10 U	10 U	10 U	10 U	N/A
Chloroform	UG/L	10 U	10 U	10 U	10 U	N/A
1,2-Dichloroethane	UG/L	2 J	2 J	10 U	10 U	N/A
2-Butanone	UG/L	10 U	10 U	10	10 U	N/A
1,1,1-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	N/A
Carbon tetrachloride	UG/L	10 U	10 U	10 U	10 U	N/A
Bromodichloromethane	UG/L	10 U	10 U	10 U	10 U	N/A
1,2-Dichloropropane	UG/L	10 U	10 U	10 U	10 U	N/A
cis-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	N/A
Trichloroethene	UG/L	10 U	10 U	10 U	10 U	N/A
Dibromochloromethane	UG/L	10 U	10 U	10 U	10 U	N/A
1,1,2-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	N/A
Benzene	UG/L	10 U	10 U	10 U	10 U	N/A
trans-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	N/A
Bromoform	UG/L	10 U	10 U	10 U	10 U	N/A
4-Methyl-2-pentanone	UG/L	10 U	10 U	10 U	10 U	N/A
2-Hexanone	UG/L	10 U	10 U	10 U	10 U	N/A
Tetrachloroethene	UG/L	10 U	10 U	3 J	10 U	N/A
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	10 U	10 U	N/A
Toluene	UG/L	10 U	10 U	10 U	10 U	N/A
Chlorobenzene	UG/L	10 U	10 U	10 U	10 U	N/A
Ethylbenzene	UG/L	10 U	10 U	10 U	10 U	N/A
Styrene	UG/L	10 U	10 U	10 U	10 U	N/A
Xylenes (total)	UG/L	10 U	10 U	10 U	10 U	N/A

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-TB-04	80-TB-05	80-TB-06	80-TK-01	80-RB13
Laboratory Sample ID:		Q41118901	Q41119002	AC7818	AD2152	AF7037
Date Sampled:		11/04/94	11/05/94	11/06/94	12/03/94	06/14/95
	UNITS					
SEMIVOLATILES						
Phenol	UG/L	N/A	N/A	N/A	10 U	N/A
bis(2-Chloroethyl) ether	UG/L	N/A	N/A	N/A	10 U	N/A
2-Chlorophenol	UG/L	N/A	N/A	N/A	10 U	N/A
1,3-Dichlorobenzene	UG/L	N/A	N/A	N/A	10 U	N/A
1,4-Dichlorobenzene	UG/L	N/A	N/A	N/A	10 U	N/A
1,2-Dichlorobenzene	UG/L	N/A	N/A	N/A	10 U	N/A
2-Methylphenol	UG/L	N/A	N/A	N/A	10 U	N/A
2,2'-oxybis-(1-chloropropane)	UG/L	N/A	N/A	N/A	10 U	N/A
4-Methylphenol	UG/L	N/A	N/A	N/A	10 U	N/A
N-Nitroso-di-n-propylamine	UG/L	N/A	N/A	N/A	10 U	N/A
Hexachloroethane	UG/L	N/A	N/A	N/A	10 U	N/A
Nitrobenzene	UG/L	N/A	N/A	N/A	10 U	N/A
Isophorone	UG/L	N/A	N/A	N/A	10 U	N/A
2-Nitrophenol	UG/L	N/A	N/A	N/A	10 U	N/A
2,4-Dimethylphenol	UG/L	N/A	N/A	N/A	10 U	N/A
bis(2-Chloroethoxy) methane	UG/L	N/A	N/A	N/A	10 U	N/A
2,4-Dichlorophenol	UG/L	N/A	N/A	N/A	10 U	N/A
1,2,4-Trichlorobenzene	UG/L	N/A	N/A	N/A	10 U	N/A
Naphthalene	UG/L	N/A	N/A	N/A	10 U	N/A
4-Chloroaniline	UG/L	N/A	N/A	N/A	10 U	N/A
Hexachlorobutadiene	UG/L	N/A	N/A	N/A	10 U	N/A
4-Chloro-3-methylphenol	UG/L	N/A	N/A	N/A	10 U	N/A
2-Methylnaphthalene	UG/L	N/A	N/A	N/A	10 U	N/A
Hexachlorocyclopentadiene	UG/L	N/A	N/A	N/A	10 U	N/A
2,4,6-Trichlorophenol	UG/L	N/A	N/A	N/A	10 U	N/A
2,4,5-Trichlorophenol	UG/L	N/A	N/A	N/A	25 U	N/A
2-Chloronaphthalene	UG/L	N/A	N/A	N/A	10 U	N/A
2-Nitroaniline	UG/L	N/A	N/A	N/A	25 U	N/A
Dimethyl phthalate	UG/L	N/A	N/A	N/A	10 U	N/A
Acenaphthylene	UG/L	N/A	N/A	N/A	10 U	N/A
2,6-Dinitrotoluene	UG/L	N/A	N/A	N/A	10 U	N/A
3-Nitroaniline	UG/L	N/A	N/A	N/A	25 U	N/A
Acenaphthene	UG/L	N/A	N/A	N/A	10 U	N/A

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-TB-04	80-TB-05	80-TB-06	80-TK-01	80-RB13
Laboratory Sample ID:		Q41118901	Q41119002	AC7818	AD2152	AF7037
Date Sampled:		11/04/94	11/05/94	11/06/94	12/03/94	06/14/95
	UNITS					
SEMIVOLATILES Cont.						
2,4-Dinitrophenol	UG/L	N/A	N/A	N/A	25 U	N/A
4-Nitrophenol	UG/L	N/A	N/A	N/A	25 U	N/A
Dibenzofuran	UG/L	N/A	N/A	N/A	10 U	N/A
2,4-Dinitrotoluene	UG/L	N/A	N/A	N/A	10 U	N/A
Diethylphthalate	UG/L	N/A	N/A	N/A	10 U	N/A
4-Chlorophenyl phenyl ether	UG/L	N/A	N/A	N/A	10 UJ	N/A
Fluorene	UG/L	N/A	N/A	N/A	10 U	N/A
4-Nitroaniline	UG/L	N/A	N/A	N/A	25 U	N/A
4,6-Dinitro-2-methylphenol	UG/L	N/A	N/A	N/A	25 U	N/A
N-nitrosodiphenylamine	UG/L	N/A	N/A	N/A	10 U	N/A
4-Bromophenyl-phenylether	UG/L	N/A	N/A	N/A	10 U	N/A
Hexachlorobenzene	UG/L	N/A	N/A	N/A	10 U	N/A
Pentachlorophenol	UG/L	N/A	N/A	N/A	25 U	N/A
Phenanthrene	UG/L	N/A	N/A	N/A	10 U	N/A
Anthracene	UG/L	N/A	N/A	N/A	10 U	N/A
Carbazole	UG/L	N/A	N/A	N/A	10 U	N/A
di-n-Butylphthalate	UG/L	N/A	N/A	N/A	10 U	N/A
Fluoranthene	UG/L	N/A	N/A	N/A	10 U	N/A
Pyrene	UG/L	N/A	N/A	N/A	10 U	N/A
Butyl benzyl phthalate	UG/L	N/A	N/A	N/A	10 U	N/A
3,3'-Dichlorobenzidine	UG/L	N/A	N/A	N/A	10 U	N/A
Benzo[a]anthracene	UG/L	N/A	N/A	N/A	10 U	N/A
Chrysene	UG/L	N/A	N/A	N/A	10 U	N/A
bis(2-Ethylhexyl)phthalate	UG/L	N/A	N/A	N/A	10 U	N/A
di-n-Octylphthalate	UG/L	N/A	N/A	N/A	10 U	N/A
Benzo[b]fluoranthene	UG/L	N/A	N/A	N/A	10 U	N/A
Benzo[k]fluoranthene	UG/L	N/A	N/A	N/A	10 UJ	N/A
Benzo[a]pyrene	UG/L	N/A	N/A	N/A	10 U	N/A
Indeno[1,2,3-cd]pyrene	UG/L	N/A	N/A	N/A	10 U	N/A
Dibenz[a,h]anthracene	UG/L	N/A	N/A	N/A	10 U	N/A
Benzo[g,h,i]perylene	UG/L	N/A	N/A	N/A	10 U	N/A

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-TB-04	80-TB-05	80-TB-06	80-TK-01	80-RB13
Laboratory Sample ID:		Q41118901	Q41119002	AC7818	AD2152	AF7037
Date Sampled:		11/04/94	11/05/94	11/06/94	12/03/94	06/14/95
	UNITS					
PESTICIDES/PCBs						
alpha-BHC	UG/L	N/A	N/A	N/A	0.05 UJ	0.05 U
beta-BHC	UG/L	N/A	N/A	N/A	0.05 UJ	0.05 U
delta-BHC	UG/L	N/A	N/A	N/A	0.05 UJ	0.05 U
Lindane (gamma-BHC)	UG/L	N/A	N/A	N/A	0.05 UJ	0.05 U
Heptachlor	UG/L	N/A	N/A	N/A	0.05 UJ	0.05 U
Aldrin	UG/L	N/A	N/A	N/A	0.05 UJ	0.05 U
Heptachlor epoxide	UG/L	N/A	N/A	N/A	0.05 UJ	0.05 U
Endosulfan I	UG/L	N/A	N/A	N/A	0.05 UJ	0.05 U
Dieldrin	UG/L	N/A	N/A	N/A	0.1 UJ	0.1 U
4,4'-DDE	UG/L	N/A	N/A	N/A	0.1 UJ	0.1 U
Endrin	UG/L	N/A	N/A	N/A	0.1 UJ	0.1 U
Endosulfan II	UG/L	N/A	N/A	N/A	0.1 UJ	0.1 U
4,4'-DDD	UG/L	N/A	N/A	N/A	0.1 UJ	0.1 U
Endosulfan sulfate	UG/L	N/A	N/A	N/A	0.1 UJ	0.1 U
4,4'-DDT	UG/L	N/A	N/A	N/A	0.1 UJ	0.1 U
Methoxychlor	UG/L	N/A	N/A	N/A	0.5 UJ	0.5 U
Endrin ketone	UG/L	N/A	N/A	N/A	0.1 UJ	0.1 U
Endrin aldehyde	UG/L	N/A	N/A	N/A	0.1 UJ	0.1 U
alpha-Chlordane	UG/L	N/A	N/A	N/A	0.05 UJ	0.05 U
gamma-Chlordane	UG/L	N/A	N/A	N/A	0.05 UJ	0.05 U
Toxaphene	UG/L	N/A	N/A	N/A	5 UJ	5 U
Aroclor 1016	UG/L	N/A	N/A	N/A	1 UJ	N/A
Aroclor 1221	UG/L	N/A	N/A	N/A	2 UJ	N/A
Aroclor 1232	UG/L	N/A	N/A	N/A	1 UJ	N/A
Aroclor 1242	UG/L	N/A	N/A	N/A	1 UJ	N/A
Aroclor 1248	UG/L	N/A	N/A	N/A	1 UJ	N/A
Aroclor 1254	UG/L	N/A	N/A	N/A	1 UJ	N/A
Aroclor 1260	UG/L	N/A	N/A	N/A	1 UJ	N/A

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - 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
	UNITS						
VOLATILES							
Chloromethane	UG/L	10 U	10 U	ND	ND		0/10
Bromomethane	UG/L	10 UJ	10 UJ	ND	ND		0/10
Vinyl chloride	UG/L	10 U	10 U	ND	ND		0/10
Chloroethane	UG/L	10 U	10 U	ND	ND		0/10
Methylene chloride	UG/L	10 U	10 U	1 J	14	80-TB-02	5/10
Acetone	UG/L	10 U	10 U	5 J	780 J	80-TK-01	5/10
Carbon Disulfide	UG/L	10 U	10 U	ND	ND		0/10
1,1-Dichloroethene	UG/L	10 U	10 U	ND	ND		0/10
1,1-Dichloroethane	UG/L	10 U	10 U	ND	ND		0/10
1,2-Dichloroethene(total)	UG/L	10 U	10 U	ND	ND		0/10
Chloroform	UG/L	10 U	10 U	ND	ND		0/10
1,2-Dichloroethane	UG/L	10 U	10 U	1 J	2 J	80-TB-05	7/10
2-Butanone	UG/L	10 U	10 U	3 J	10	80-TB-06	4/10
1,1,1-Trichloroethane	UG/L	10 U	10 U	ND	ND		0/10
Carbon tetrachloride	UG/L	10 U	10 U	ND	ND		0/10
Bromodichloromethane	UG/L	10 U	10 U	ND	ND		0/10
1,2-Dichloropropane	UG/L	10 U	10 U	ND	ND		0/10
cis-1,3-Dichloropropene	UG/L	10 U	10 U	ND	ND		0/10
Trichloroethene	UG/L	10 U	10 U	ND	ND		0/10
Dibromochloromethane	UG/L	10 U	10 U	ND	ND		0/10
1,1,2-Trichloroethane	UG/L	10 U	10 U	ND	ND		0/10
Benzene	UG/L	10 U	10 U	ND	ND		0/10
trans-1,3-Dichloropropene	UG/L	10 U	10 U	ND	ND		0/10
Bromoform	UG/L	10 U	10 U	ND	ND		0/10
4-Methyl-2-pentanone	UG/L	10 U	10 U	ND	ND		0/10
2-Hexanone	UG/L	10 U	10 U	ND	ND		0/10
Tetrachloroethene	UG/L	10 U	10 U	3 J	3 J	80-TB-06	1/10
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	ND	ND		0/10
Toluene	UG/L	10 U	10 U	ND	ND		0/10
Chlorobenzene	UG/L	10 U	10 U	ND	ND		0/10
Ethylbenzene	UG/L	10 U	10 U	ND	ND		0/10
Styrene	UG/L	10 U	10 U	ND	ND		0/10
Xylenes (total)	UG/L	10 U	10 U	ND	ND		0/10

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES							
Phenol	UG/L	10 U	10 U	ND	ND		0/3
bis(2-Chloroethyl) ether	UG/L	10 U	10 U	ND	ND		0/3
2-Chlorophenol	UG/L	10 U	10 U	ND	ND		0/3
1,3-Dichlorobenzene	UG/L	10 U	10 U	ND	ND		0/3
1,4-Dichlorobenzene	UG/L	10 U	10 U	ND	ND		0/3
1,2-Dichlorobenzene	UG/L	10 U	10 U	ND	ND		0/3
2-Methylphenol	UG/L	10 UJ	10 UJ	ND	ND		0/3
2,2'-oxybis-(1-chloropropane)	UG/L	10 U	10 U	ND	ND		0/3
4-Methylphenol	UG/L	10 U	10 U	ND	ND		0/3
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	ND	ND		0/3
Hexachloroethane	UG/L	10 U	10 U	ND	ND		0/3
Nitrobenzene	UG/L	10 U	10 U	ND	ND		0/3
Isophorone	UG/L	10 U	10 U	ND	ND		0/3
2-Nitrophenol	UG/L	10 U	10 U	ND	ND		0/3
2,4-Dimethylphenol	UG/L	10 U	10 U	ND	ND		0/3
bis(2-Chloroethoxy) methane	UG/L	10 U	10 U	ND	ND		0/3
2,4-Dichlorophenol	UG/L	10 U	10 U	ND	ND		0/3
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	ND	ND		0/3
Naphthalene	UG/L	10 U	10 U	ND	ND		0/3
4-Chloroaniline	UG/L	10 U	10 U	ND	ND		0/3
Hexachlorobutadiene	UG/L	10 U	10 U	ND	ND		0/3
4-Chloro-3-methylphenol	UG/L	10 U	10 U	ND	ND		0/3
2-Methylnaphthalene	UG/L	10 U	10 U	ND	ND		0/3
Hexachlorocyclopentadiene	UG/L	10 U	10 U	ND	ND		0/3
2,4,6-Trichlorophenol	UG/L	10 U	10 U	ND	ND		0/3
2,4,5-Trichlorophenol	UG/L	25 U	25 U	ND	ND		0/3
2-Chloronaphthalene	UG/L	10 U	10 U	ND	ND		0/3
2-Nitroaniline	UG/L	25 U	25 U	ND	ND		0/3
Dimethyl phthalate	UG/L	10 U	10 U	ND	ND		0/3
Acenaphthylene	UG/L	10 U	10 U	ND	ND		0/3
2,6-Dinitrotoluene	UG/L	10 U	10 U	ND	ND		0/3
3-Nitroaniline	UG/L	25 U	25 U	ND	ND		0/3
Acenaphthene	UG/L	10 U	10 U	ND	ND		0/3

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 U	25 U	ND	ND		0/3
4-Nitrophenol	UG/L	25 U	25 U	ND	ND		0/3
Dibenzofuran	UG/L	10 U	10 U	ND	ND		0/3
2,4-Dinitrotoluene	UG/L	10 U	10 U	ND	ND		0/3
Diethylphthalate	UG/L	10 U	10 U	ND	ND		0/3
4-Chlorophenyl phenyl ether	UG/L	10 U	10 U	ND	ND		0/3
Fluorene	UG/L	10 U	10 U	ND	ND		0/3
4-Nitroaniline	UG/L	25 U	25 U	ND	ND		0/3
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	ND	ND		0/3
N-nitrosodiphenylamine	UG/L	10 U	10 U	ND	ND		0/3
4-Bromophenyl-phenylether	UG/L	10 U	10 U	ND	ND		0/3
Hexachlorobenzene	UG/L	10 U	10 U	ND	ND		0/3
Pentachlorophenol	UG/L	25 U	25 U	ND	ND		0/3
Phenanthrene	UG/L	10 U	10 U	ND	ND		0/3
Anthracene	UG/L	10 U	10 U	ND	ND		0/3
Carbazole	UG/L	10 U	10 U	ND	ND		0/3
di-n-Butylphthalate	UG/L	10 U	10 U	ND	ND		0/3
Fluoranthene	UG/L	10 U	10 U	ND	ND		0/3
Pyrene	UG/L	10 U	10 U	ND	ND		0/3
Butyl benzyl phthalate	UG/L	10 U	10 U	ND	ND		0/3
3,3'-Dichlorobenzidine	UG/L	10 U	10 U	ND	ND		0/3
Benzo[a]anthracene	UG/L	10 U	10 U	ND	ND		0/3
Chrysene	UG/L	10 U	10 U	ND	ND		0/3
bis(2-Ethylhexyl)phthalate	UG/L	10 U	10 U	ND	ND		0/3
di-n-Octylphthalate	UG/L	10 U	10 U	ND	ND		0/3
Benzo[b]fluoranthene	UG/L	10 U	10 U	ND	ND		0/3
Benzo[k]fluoranthene	UG/L	10 U	10 U	ND	ND		0/3
Benzo[a]pyrene	UG/L	10 U	10 U	ND	ND		0/3
Indeno[1,2,3-cd]pyrene	UG/L	10 U	10 U	ND	ND		0/3
Dibenz[a,h]anthracene	UG/L	10 U	10 U	ND	ND		0/3
Benzo[g,h,i]perylene	UG/L	10 U	10 U	ND	ND		0/3

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - 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
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/L	0.05 U	0.05 U	ND	ND		0/4
beta-BHC	UG/L	0.05 U	0.05 U	ND	ND		0/4
delta-BHC	UG/L	0.05 U	0.05 U	ND	ND		0/4
Lindane (gamma-BHC)	UG/L	0.05 U	0.05 U	ND	ND		0/4
Heptachlor	UG/L	0.05 U	0.05 U	ND	ND		0/4
Aldrin	UG/L	0.05 U	0.05 U	ND	ND		0/4
Heptachlor epoxide	UG/L	0.05 U	0.05 U	ND	ND		0/4
Endosulfan I	UG/L	0.05 U	0.05 U	ND	ND		0/4
Dieldrin	UG/L	0.1 U	0.1 U	ND	ND		0/4
4,4'-DDE	UG/L	0.1 U	0.1 U	ND	ND		0/4
Endrin	UG/L	0.1 U	0.1 U	ND	ND		0/4
Endosulfan II	UG/L	0.1 U	0.1 U	ND	ND		0/4
4,4'-DDD	UG/L	0.1 U	0.1 U	ND	ND		0/4
Endosulfan sulfate	UG/L	0.1 U	0.1 U	ND	ND		0/4
4,4'-DDT	UG/L	0.1 U	0.1 U	ND	ND		0/4
Methoxychlor	UG/L	0.5 U	0.5 U	ND	ND		0/4
Endrin ketone	UG/L	0.1 U	0.1 U	ND	ND		0/4
Endrin aldehyde	UG/L	0.1 U	0.1 U	ND	ND		0/4
alpha-Chlordane	UG/L	0.05 U	0.05 U	ND	ND		0/4
gamma-Chlordane	UG/L	0.05 U	0.05 U	ND	ND		0/4
Toxaphene	UG/L	5 U	5 U	ND	ND		0/4
Aroclor 1016	UG/L	1 U	1 U	ND	ND		0/3
Aroclor 1221	UG/L	2 U	2 U	ND	ND		0/3
Aroclor 1232	UG/L	1 U	1 U	ND	ND		0/3
Aroclor 1242	UG/L	1 U	1 U	ND	ND		0/3
Aroclor 1248	UG/L	1 U	1 U	ND	ND		0/3
Aroclor 1254	UG/L	1 U	1 U	ND	ND		0/3
Aroclor 1260	UG/L	1 U	1 U	ND	ND		0/3

APPENDIX J.2
SOIL METALS

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:		80-RS-01	80-RS-03	80-RS-05	80-TK-01
Laboratory Sample ID:		AC6659	Q41118801	Q41119001	AD2153
Date Sampled:		11/01/94	11/03/94	11/05/94	12/03/94
	UNITS				
Aluminum	UG/L	40 U	11 U	11 U	422
Antimony	UG/L	50 U	12.2 U	12.2 U	50 U
Arsenic	UG/L	10 U	2.3 U	2.3 U	10 U
Barium	UG/L	2 U	0.5 U	0.5 U	27.7 J
Beryllium	UG/L	1 U	0.1 U	0.1 U	1 U
Cadmium	UG/L	5 U	1.5 U	1.5 U	5 U
Calcium	UG/L	113	23.7	17.8	44100
Chromium	UG/L	10 U	1.8 U	1.8 U	10 U
Cobalt	UG/L	10 U	1.9 U	1.9 U	10 U
Copper	UG/L	10 U	1.4 U	1.4 U	10 U
Iron	UG/L	76.2	5.5	5.2	344
Lead	UG/L	4.7	1.4 U	1.4 U	3 U
Magnesium	UG/L	50 U	11.1 U	11.1 U	3160
Manganese	UG/L	2 U	0.45	0.4 U	39
Mercury	UG/L	0.22	0.2 U	0.2 U	0.2 U
Nickel	UG/L	20 U	4.3 U	4.3 U	20 U
Potassium	UG/L	1000 U	381 U	381 U	1640
Selenium	UG/L	5 U	2.6 U	2.6 U	5 U
Silver	UG/L	5 U	2 U	2 U	5 U
Sodium	UG/L	100 U	30.1	42.2	22200
Thallium	UG/L	10 U	4 U	4 U	10 UJ
Vanadium	UG/L	10 U	1.4 U	1.4 U	10 U
Zinc	UG/L	68.1	6.8	7.3	31.9 UJ

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	UG/L	11 U	40 U	422	422	80-TK-01	1/4
Antimony	UG/L	12.2 U	50 U	ND	ND		0/4
Arsenic	UG/L	2.3 U	10 U	ND	ND		0/4
Barium	UG/L	0.5 U	2 U	27.7 J	27.7 J	80-TK-01	1/4
Beryllium	UG/L	0.1 U	1 U	ND	ND		0/4
Cadmium	UG/L	1.5 U	5 U	ND	ND		0/4
Calcium	UG/L	NA	NA	17.8	44100	80-TK-01	4/4
Chromium	UG/L	1.8 U	10 U	ND	ND		0/4
Cobalt	UG/L	1.9 U	10 U	ND	ND		0/4
Copper	UG/L	1.4 U	10 U	ND	ND		0/4
Iron	UG/L	NA	NA	5.2	344	80-TK-01	4/4
Lead	UG/L	1.4 U	3 U	4.7	4.7	80-RS-01	1/4
Magnesium	UG/L	11.1 U	50 U	3160	3160	80-TK-01	1/4
Manganese	UG/L	0.4 U	2 U	0.45	39	80-TK-01	2/4
Mercury	UG/L	0.2 U	0.2 U	0.22	0.22	80-RS-01	1/4
Nickel	UG/L	4.3 U	20 U	ND	ND		0/4
Potassium	UG/L	381 U	1000 U	1640	1640	80-TK-01	1/4
Selenium	UG/L	2.6 U	5 U	ND	ND		0/4
Silver	UG/L	2 U	5 U	ND	ND		0/4
Sodium	UG/L	100 U	100 U	30.1	22200	80-TK-01	3/4
Thallium	UG/L	4 U	10 U	ND	ND		0/4
Vanadium	UG/L	1.4 U	10 U	ND	ND		0/4
Zinc	UG/L	31.9 UJ	31.9 UJ	6.8	68.1	80-RS-01	3/4

APPENDIX J.3
GROUNDWATER ORGANICS

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-RS-07	80-TB-07	80-RB22
Laboratory Sample ID:		AD0596	AD0619	AG0349
Date Sampled:		11/20/94	11/21/94	07/14/95
	UNITS			
VOLATILES				
Chloromethane	UG/L	10 U	10 U	NA
Bromomethane	UG/L	10 U	10 U	NA
Vinyl chloride	UG/L	10 U	10 U	NA
Chloroethane	UG/L	10 U	10 U	NA
Methylene chloride	UG/L	10 U	1 J	NA
Acetone	UG/L	12	6 J	NA
Carbon Disulfide	UG/L	10 U	10 U	NA
1,1-Dichloroethene	UG/L	10 U	10 U	NA
1,1-Dichloroethane	UG/L	10 U	10 U	NA
1,2-Dichloroethene(total)	UG/L	10 U	10 U	NA
Chloroform	UG/L	10 U	10 U	NA
1,2-Dichloroethane	UG/L	10 U	2 J	NA
2-Butanone	UG/L	8 J	7 J	NA
1,1,1-Trichloroethane	UG/L	10 U	10 U	NA
Carbon tetrachloride	UG/L	10 U	10 U	NA
Bromodichloromethane	UG/L	10 U	10 U	NA
1,2-Dichloropropane	UG/L	10 U	10 U	NA
cis-1,3-Dichloropropene	UG/L	10 U	10 U	NA
Trichloroethene	UG/L	10 U	10 U	NA
Dibromochloromethane	UG/L	10 U	10 U	NA
1,1,2-Trichloroethane	UG/L	10 U	10 U	NA
Benzene	UG/L	10 U	10 U	NA
trans-1,3-Dichloropropene	UG/L	10 U	10 U	NA
Bromoform	UG/L	10 U	10 U	NA
4-Methyl-2-pentanone	UG/L	10 U	10 U	NA
2-Hexanone	UG/L	10 U	10 U	NA
Tetrachloroethene	UG/L	10 U	10 U	NA
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	NA
Toluene	UG/L	10 U	10 U	NA
Chlorobenzene	UG/L	10 U	10 U	NA
Ethylbenzene	UG/L	10 U	10 U	NA
Styrene	UG/L	10 U	10 U	NA
Xylenes (total)	UG/L	10 U	10 U	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-RS-07	80-TB-07	80-RB22
Laboratory Sample ID:		AD0596	AD0619	AG0349
Date Sampled:		11/20/94	11/21/94	07/14/95
	UNITS			
SEMIVOLATILES				
Phenol	UG/L	10 U	NA	NA
bis(2-Chloroethyl) ether	UG/L	10 U	NA	NA
2-Chlorophenol	UG/L	10 U	NA	NA
1,3-Dichlorobenzene	UG/L	10 U	NA	NA
1,4-Dichlorobenzene	UG/L	10 U	NA	NA
1,2-Dichlorobenzene	UG/L	10 U	NA	NA
2-Methylphenol	UG/L	10 U	NA	NA
2,2'-oxybis-(1-chloropropane)	UG/L	10 U	NA	NA
4-Methylphenol	UG/L	10 U	NA	NA
N-Nitroso-di-n-propylamine	UG/L	10 U	NA	NA
Hexachloroethane	UG/L	10 U	NA	NA
Nitrobenzene	UG/L	10 U	NA	NA
Isophorone	UG/L	10 U	NA	NA
2-Nitrophenol	UG/L	10 U	NA	NA
2,4-Dimethylphenol	UG/L	10 U	NA	NA
bis(2-Chloroethoxy) methane	UG/L	10 U	NA	NA
2,4-Dichlorophenol	UG/L	10 U	NA	NA
1,2,4-Trichlorobenzene	UG/L	10 U	NA	NA
Naphthalene	UG/L	10 U	NA	NA
4-Chloroaniline	UG/L	10 U	NA	NA
Hexachlorobutadiene	UG/L	10 U	NA	NA
4-Chloro-3-methylphenol	UG/L	10 U	NA	NA
2-Methylnaphthalene	UG/L	10 U	NA	NA
Hexachlorocyclopentadiene	UG/L	10 U	NA	NA
2,4,6-Trichlorophenol	UG/L	10 U	NA	NA
2,4,5-Trichlorophenol	UG/L	25 U	NA	NA
2-Chloronaphthalene	UG/L	10 U	NA	NA
2-Nitroaniline	UG/L	25 U	NA	NA
Dimethyl phthalate	UG/L	10 U	NA	NA
Acenaphthylene	UG/L	10 U	NA	NA
2,6-Dinitrotoluene	UG/L	10 U	NA	NA
3-Nitroaniline	UG/L	25 U	NA	NA
Acenaphthene	UG/L	10 U	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-RS-07	80-TB-07	80-RB22
Laboratory Sample ID:		AD0596	AD0619	AG0349
Date Sampled:		11/20/94	11/21/94	07/14/95
	UNITS			
SEMIVOLATILES Cont.				
2,4-Dinitrophenol	UG/L	25 U	NA	NA
4-Nitrophenol	UG/L	25 U	NA	NA
Dibenzofuran	UG/L	10 U	NA	NA
2,4-Dinitrotoluene	UG/L	10 U	NA	NA
Diethylphthalate	UG/L	10 U	NA	NA
4-Chlorophenyl phenyl ether	UG/L	10 U	NA	NA
Fluorene	UG/L	10 U	NA	NA
4-Nitroaniline	UG/L	25 U	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	25 U	NA	NA
N-nitrosodiphenylamine	UG/L	10 U	NA	NA
4-Bromophenyl-phenylether	UG/L	10 U	NA	NA
Hexachlorobenzene	UG/L	10 U	NA	NA
Pentachlorophenol	UG/L	25 U	NA	NA
Phenanthrene	UG/L	10 U	NA	NA
Anthracene	UG/L	10 U	NA	NA
Carbazole	UG/L	10 U	NA	NA
di-n-Butylphthalate	UG/L	10 U	NA	NA
Fluoranthene	UG/L	10 U	NA	NA
Pyrene	UG/L	10 U	NA	NA
Butyl benzyl phthalate	UG/L	10 U	NA	NA
3,3'-Dichlorobenzidine	UG/L	10 U	NA	NA
Benzo[a]anthracene	UG/L	10 U	NA	NA
Chrysene	UG/L	10 U	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	10 U	NA	NA
di-n-Octylphthalate	UG/L	10 U	NA	NA
Benzo[b]fluoranthene	UG/L	10 U	NA	NA
Benzo[k]fluoranthene	UG/L	10 UJ	NA	NA
Benzo[a]pyrene	UG/L	10 U	NA	NA
Indeno[1,2,3-cd]pyrene	UG/L	10 U	NA	NA
Dibenz[a,h]anthracene	UG/L	10 U	NA	NA
Benzo[g,h,i]perylene	UG/L	10 U	NA	NA

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID:		80-RS-07	80-TB-07	80-RB22
Laboratory Sample ID:		AD0596	AD0619	AG0349
Date Sampled:		11/20/94	11/21/94	07/14/95
	UNITS			
PESTICIDES/PCBs				
alpha-BHC	UG/L	0.05 U	NA	0.05 UJ
beta-BHC	UG/L	0.05 U	NA	0.05 U
delta-BHC	UG/L	0.05 U	NA	0.05 U
Lindane (gamma-BHC)	UG/L	0.05 U	NA	0.05 U
Heptachlor	UG/L	0.05 U	NA	0.05 U
Aldrin	UG/L	0.05 U	NA	0.05 U
Heptachlor epoxide	UG/L	0.05 U	NA	0.05 U
Endosulfan I	UG/L	0.05 U	NA	0.05 U
Dieldrin	UG/L	0.1 U	NA	0.099 U
4,4'-DDE	UG/L	0.1 U	NA	0.099 U
Endrin	UG/L	0.1 U	NA	0.099 U
Endosulfan II	UG/L	0.1 U	NA	0.099 U
4,4'-DDD	UG/L	0.1 U	NA	0.099 U
Endosulfan sulfate	UG/L	0.1 U	NA	0.099 U
4,4'-DDT	UG/L	0.1 U	NA	0.099 U
Methoxychlor	UG/L	0.5 U	NA	0.5 U
Endrin ketone	UG/L	0.1 U	NA	0.099 U
Endrin aldehyde	UG/L	0.1 U	NA	0.099 U
alpha-Chlordane	UG/L	0.05 U	NA	0.05 U
gamma-Chlordane	UG/L	0.05 U	NA	0.05 U
Toxaphene	UG/L	5 U	NA	5 U
Aroclor 1016	UG/L	1 U	NA	0.99 U
Aroclor 1221	UG/L	2 U	NA	2 U
Aroclor 1232	UG/L	1 U	NA	0.99 U
Aroclor 1242	UG/L	1 U	NA	0.99 U
Aroclor 1248	UG/L	1 U	NA	0.99 U
Aroclor 1254	UG/L	1 U	NA	0.99 U
Aroclor 1260	UG/L	1 U	NA	0.99 U

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
VOLATILES							
Chloromethane	UG/L	10 U	10 U	ND	ND		0/2
Bromomethane	UG/L	10 U	10 U	ND	ND		0/2
Vinyl chloride	UG/L	10 U	10 U	ND	ND		0/2
Chloroethane	UG/L	10 U	10 U	ND	ND		0/2
Methylene chloride	UG/L	10 U	10 U	1 J	1 J	80-TB-07	1/2
Acetone	UG/L	NA	NA	6 J	12	80-RS-07	2/2
Carbon Disulfide	UG/L	10 U	10 U	ND	ND		0/2
1,1-Dichloroethene	UG/L	10 U	10 U	ND	ND		0/2
1,1-Dichloroethane	UG/L	10 U	10 U	ND	ND		0/2
1,2-Dichloroethene(total)	UG/L	10 U	10 U	ND	ND		0/2
Chloroform	UG/L	10 U	10 U	ND	ND		0/2
1,2-Dichloroethane	UG/L	10 U	10 U	2 J	2 J	80-TB-07	1/2
2-Butanone	UG/L	NA	NA	7 J	8 J	80-RS-07	2/2
1,1,1-Trichloroethane	UG/L	10 U	10 U	ND	ND		0/2
Carbon tetrachloride	UG/L	10 U	10 U	ND	ND		0/2
Bromodichloromethane	UG/L	10 U	10 U	ND	ND		0/2
1,2-Dichloropropane	UG/L	10 U	10 U	ND	ND		0/2
cis-1,3-Dichloropropene	UG/L	10 U	10 U	ND	ND		0/2
Trichloroethene	UG/L	10 U	10 U	ND	ND		0/2
Dibromochloromethane	UG/L	10 U	10 U	ND	ND		0/2
1,1,2-Trichloroethane	UG/L	10 U	10 U	ND	ND		0/2
Benzene	UG/L	10 U	10 U	ND	ND		0/2
trans-1,3-Dichloropropene	UG/L	10 U	10 U	ND	ND		0/2
Bromoform	UG/L	10 U	10 U	ND	ND		0/2
4-Methyl-2-pentanone	UG/L	10 U	10 U	ND	ND		0/2
2-Hexanone	UG/L	10 U	10 U	ND	ND		0/2
Tetrachloroethene	UG/L	10 U	10 U	ND	ND		0/2
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	ND	ND		0/2
Toluene	UG/L	10 U	10 U	ND	ND		0/2
Chlorobenzene	UG/L	10 U	10 U	ND	ND		0/2
Ethylbenzene	UG/L	10 U	10 U	ND	ND		0/2
Styrene	UG/L	10 U	10 U	ND	ND		0/2
Xylenes (total)	UG/L	10 U	10 U	ND	ND		0/2

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES							
Phenol	UG/L	10 U	10 U	ND	ND		0/1
bis(2-Chloroethyl) ether	UG/L	10 U	10 U	ND	ND		0/1
2-Chlorophenol	UG/L	10 U	10 U	ND	ND		0/1
1,3-Dichlorobenzene	UG/L	10 U	10 U	ND	ND		0/1
1,4-Dichlorobenzene	UG/L	10 U	10 U	ND	ND		0/1
1,2-Dichlorobenzene	UG/L	10 U	10 U	ND	ND		0/1
2-Methylphenol	UG/L	10 U	10 U	ND	ND		0/1
2,2'-oxybis-(1-chloropropane)	UG/L	10 U	10 U	ND	ND		0/1
4-Methylphenol	UG/L	10 U	10 U	ND	ND		0/1
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	ND	ND		0/1
Hexachloroethane	UG/L	10 U	10 U	ND	ND		0/1
Nitrobenzene	UG/L	10 U	10 U	ND	ND		0/1
Isophorone	UG/L	10 U	10 U	ND	ND		0/1
2-Nitrophenol	UG/L	10 U	10 U	ND	ND		0/1
2,4-Dimethylphenol	UG/L	10 U	10 U	ND	ND		0/1
bis(2-Chloroethoxy) methane	UG/L	10 U	10 U	ND	ND		0/1
2,4-Dichlorophenol	UG/L	10 U	10 U	ND	ND		0/1
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	ND	ND		0/1
Naphthalene	UG/L	10 U	10 U	ND	ND		0/1
4-Chloroaniline	UG/L	10 U	10 U	ND	ND		0/1
Hexachlorobutadiene	UG/L	10 U	10 U	ND	ND		0/1
4-Chloro-3-methylphenol	UG/L	10 U	10 U	ND	ND		0/1
2-Methylnaphthalene	UG/L	10 U	10 U	ND	ND		0/1
Hexachlorocyclopentadiene	UG/L	10 U	10 U	ND	ND		0/1
2,4,6-Trichlorophenol	UG/L	10 U	10 U	ND	ND		0/1
2,4,5-Trichlorophenol	UG/L	25 U	25 U	ND	ND		0/1
2-Chloronaphthalene	UG/L	10 U	10 U	ND	ND		0/1
2-Nitroaniline	UG/L	25 U	25 U	ND	ND		0/1
Dimethyl phthalate	UG/L	10 U	10 U	ND	ND		0/1
Acenaphthylene	UG/L	10 U	10 U	ND	ND		0/1
2,6-Dinitrotoluene	UG/L	10 U	10 U	ND	ND		0/1
3-Nitroaniline	UG/L	25 U	25 U	ND	ND		0/1
Acenaphthene	UG/L	10 U	10 U	ND	ND		0/1

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 U	25 U	ND	ND		0/1
4-Nitrophenol	UG/L	25 U	25 U	ND	ND		0/1
Dibenzofuran	UG/L	10 U	10 U	ND	ND		0/1
2,4-Dinitrotoluene	UG/L	10 U	10 U	ND	ND		0/1
Diethylphthalate	UG/L	10 U	10 U	ND	ND		0/1
4-Chlorophenyl phenyl ether	UG/L	10 U	10 U	ND	ND		0/1
Fluorene	UG/L	10 U	10 U	ND	ND		0/1
4-Nitroaniline	UG/L	25 U	25 U	ND	ND		0/1
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	ND	ND		0/1
N-nitrosodiphenylamine	UG/L	10 U	10 U	ND	ND		0/1
4-Bromophenyl-phenylether	UG/L	10 U	10 U	ND	ND		0/1
Hexachlorobenzene	UG/L	10 U	10 U	ND	ND		0/1
Pentachlorophenol	UG/L	25 U	25 U	ND	ND		0/1
Phenanthrene	UG/L	10 U	10 U	ND	ND		0/1
Anthracene	UG/L	10 U	10 U	ND	ND		0/1
Carbazole	UG/L	10 U	10 U	ND	ND		0/1
di-n-Butylphthalate	UG/L	10 U	10 U	ND	ND		0/1
Fluoranthene	UG/L	10 U	10 U	ND	ND		0/1
Pyrene	UG/L	10 U	10 U	ND	ND		0/1
Butyl benzyl phthalate	UG/L	10 U	10 U	ND	ND		0/1
3,3'-Dichlorobenzidine	UG/L	10 U	10 U	ND	ND		0/1
Benzo[a]anthracene	UG/L	10 U	10 U	ND	ND		0/1
Chrysene	UG/L	10 U	10 U	ND	ND		0/1
bis(2-Ethylhexyl)phthalate	UG/L	10 U	10 U	ND	ND		0/1
di-n-Octylphthalate	UG/L	10 U	10 U	ND	ND		0/1
Benzo[b]fluoranthene	UG/L	10 U	10 U	ND	ND		0/1
Benzo[k]fluoranthene	UG/L	10 UJ	10 UJ	ND	ND		0/1
Benzo[a]pyrene	UG/L	10 U	10 U	ND	ND		0/1
Indeno[1,2,3-cd]pyrene	UG/L	10 U	10 U	ND	ND		0/1
Dibenz[a,h]anthracene	UG/L	10 U	10 U	ND	ND		0/1
Benzo[g,h,i]perylene	UG/L	10 U	10 U	ND	ND		0/1

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - 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
	UNITS						
PESTICIDES/PCBs							
alpha-BHC	UG/L	0.05 U	0.05 U	ND	ND		0/2
beta-BHC	UG/L	0.05 U	0.05 U	ND	ND		0/2
delta-BHC	UG/L	0.05 U	0.05 U	ND	ND		0/2
Lindane (gamma-BHC)	UG/L	0.05 U	0.05 U	ND	ND		0/2
Heptachlor	UG/L	0.05 U	0.05 U	ND	ND		0/2
Aldrin	UG/L	0.05 U	0.05 U	ND	ND		0/2
Heptachlor epoxide	UG/L	0.05 U	0.05 U	ND	ND		0/2
Endosulfan I	UG/L	0.05 U	0.05 U	ND	ND		0/2
Dieldrin	UG/L	0.099 U	0.1 U	ND	ND		0/2
4,4'-DDE	UG/L	0.099 U	0.1 U	ND	ND		0/2
Endrin	UG/L	0.099 U	0.1 U	ND	ND		0/2
Endosulfan II	UG/L	0.099 U	0.1 U	ND	ND		0/2
4,4'-DDD	UG/L	0.099 U	0.1 U	ND	ND		0/2
Endosulfan sulfate	UG/L	0.099 U	0.1 U	ND	ND		0/2
4,4'-DDT	UG/L	0.099 U	0.1 U	ND	ND		0/2
Methoxychlor	UG/L	0.5 U	0.5 U	ND	ND		0/2
Endrin ketone	UG/L	0.099 U	0.1 U	ND	ND		0/2
Endrin aldehyde	UG/L	0.099 U	0.1 U	ND	ND		0/2
alpha-Chlordane	UG/L	0.05 U	0.05 U	ND	ND		0/2
gamma-Chlordane	UG/L	0.05 U	0.05 U	ND	ND		0/2
Toxaphene	UG/L	5 U	5 U	ND	ND		0/2
Aroclor 1016	UG/L	0.99 U	1 U	ND	ND		0/2
Aroclor 1221	UG/L	2 U	2 U	ND	ND		0/2
Aroclor 1232	UG/L	0.99 U	1 U	ND	ND		0/2
Aroclor 1242	UG/L	0.99 U	1 U	ND	ND		0/2
Aroclor 1248	UG/L	0.99 U	1 U	ND	ND		0/2
Aroclor 1254	UG/L	0.99 U	1 U	ND	ND		0/2
Aroclor 1260	UG/L	0.99 U	1 U	ND	ND		0/2

APPENDIX J.4
GROUNDWATER TOTAL AND DISSOLVED METALS

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID:	80-RS-07	80-RSD-07
Laboratory Sample ID:	AD0597	AD0616
Date Sampled:	11/20/94	11/20/94

	UNITS		
Aluminum	UG/L	49.5	41.6
Antimony	UG/L	50 U	50 U
Arsenic	UG/L	10 U	10 U
Barium	UG/L	2 U	2 U
Beryllium	UG/L	1 U	1 U
Cadmium	UG/L	5 U	5 U
Calcium	UG/L	20 U	26.4
Chromium	UG/L	10 U	10 U
Cobalt	UG/L	10 U	10 U
Copper	UG/L	10 U	1 U
Iron	UG/L	22.2	31.1
Lead	UG/L	3 U	3 U
Magnesium	UG/L	50 U	50 U
Manganese	UG/L	2.5 J	2 U
Mercury	UG/L	0.2 U	0.2 U
Nickel	UG/L	20 U	20 U
Potassium	UG/L	1000 U	1000 U
Selenium	UG/L	5 U	5 U
Silver	UG/L	5 U	5 U
Sodium	UG/L	100 U	135
Thallium	UG/L	10 U	10 U
Vanadium	UG/L	10 U	10 U
Zinc	UG/L	12.7 J	16.8 J

FREQUENCY OF DETECTION SUMMARY
OPERABLE UNIT No. 11
SITE 80 - QA/QC - GROUNDWATER
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	UG/L	NA	NA	41.6	49.5	80-RS-07	2/2
Antimony	UG/L	50 U	50 U	ND	ND		0/2
Arsenic	UG/L	10 U	10 U	ND	ND		0/2
Barium	UG/L	2 U	2 U	ND	ND		0/2
Beryllium	UG/L	1 U	1 U	ND	ND		0/2
Cadmium	UG/L	5 U	5 U	ND	ND		0/2
Calcium	UG/L	20 U	20 U	26.4	26.4	80-RSD-07	1/2
Chromium	UG/L	10 U	10 U	ND	ND		0/2
Cobalt	UG/L	10 U	10 U	ND	ND		0/2
Copper	UG/L	1 U	10 U	ND	ND		0/2
Iron	UG/L	NA	NA	22.2	31.1	80-RSD-07	2/2
Lead	UG/L	3 U	3 U	ND	ND		0/2
Magnesium	UG/L	50 U	50 U	ND	ND		0/2
Manganese	UG/L	2 U	2 U	2.5 J	2.5 J	80-RS-07	1/2
Mercury	UG/L	0.2 U	0.2 U	ND	ND		0/2
Nickel	UG/L	20 U	20 U	ND	ND		0/2
Potassium	UG/L	1000 U	1000 U	ND	ND		0/2
Selenium	UG/L	5 U	5 U	ND	ND		0/2
Silver	UG/L	5 U	5 U	ND	ND		0/2
Sodium	UG/L	100 U	100 U	135	135	80-RSD-07	1/2
Thallium	UG/L	10 U	10 U	ND	ND		0/2
Vanadium	UG/L	10 U	10 U	ND	ND		0/2
Zinc	UG/L	NA	NA	12.7 J	16.8 J	80-RSD-07	2/2

APPENDIX K
COPC WORKSHEETS

Site 80 Groundwater

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK (mg/L)	~~BACKGROUND~~ Tap Water RBC (µg/L)	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC	RFD/CSF
Carbon Disulfide	1J	8.4	1/8	ND	21 ✓								
Acenaphthene	4J	5.2	1/8		2200 ✓								
Dibenzofuran	2J	6.2	1/8		150 ✓								
Fluorene	3J	5.4	1/8		1500 ✓								
Carbazole	3J	5.4	1/8		3.4 ✓								
Pyrene	1J	8.4	1/8		1100 ✓								
bis(2-ethylhexyl) phthalate	2J-5J	5.8	4/8		4.8				N,C			X	2E-02/1.4E-0
di-n-Octylphthalate	1J	8.4	1/8		730 ✓								
4,4'-DDD	~~2.2J~~	2.3	1/8		0.28							X	NE/2.4E-01
4,4'-DDT	0.58J	~~0.3~~	1/8	↓	0.2							X	5E-04/3.4E-0
~~Aluminum~~ Aluminum	274-43,000	—	7/8	49.5	~~37000~~					3700		X	
~~Arsenic~~	13.6-102	79.8	2/8	ND	~~0.038~~				N	0.038		X	3E-04/ 1.75 NE
Barium	19.6J-252	139.8	7/8		~~2600~~ ✓					✓260			
Beryllium	1.2-1.5	1.1	2/8	↓	0.016				N,C	0.016		X	5E-03/4.30
nutrient Calcium	2360-64,900	—	7/8	26.4	NA			✓		NA			
Chromium	53.3-96.5	107.4	2/8	ND	~~180~~ ✓					18		X	
Copper	13.5-14.5	16.1	2/8	ND	~~1400~~ ✓					140✓			
nutrient Iron	9460-23800	—	8/8	31.1				✓		NA			
Lead	~~5.7J~~-30J	110.5	3/8	ND	~~15~~ 7				N	NA		X	1E-~~03~~/NE
nutrient Magnesium	3330-21,000	—	7/8	ND				✓		NA			
Manganese	43.9-369	131380.6	5/8	2.5J	~~180~~				N	18		X	5E-03/NE
Mercury	0.42	0.2	1/8	ND	~~4.4~~ ✓					1.1✓			
Nickel	24	~~15.2~~	1/8	↓	✓ ~~730~~				N	73✓		~~X~~	2E-02/NE
nutrient Potassium	1680-14,600	—	6/8	↓				✓		NA			
nutrient Sodium	6260-23,100	—	7/8	135				✓		NA			
Vanadium	40.7-44.9	52.1	2/8	ND	260 ✓					26		X	
Zinc	76.5J-106	93.0	2/8	16.8	~~11,000~~ ✓					✓100			

Site 80 Groundwater - Round II

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
Carbon Disulfide	1J	8.4	1/8							√2.1		
Acenaphthene	4J	5.2	1/8							√220		
Dibenzofuran	2J	6.2	1/8							√15		
Fluorene	3J	5.4	1/8							√150		
Carbazole	3J	5.4	1/8							√3.4		
Pyrene	1J	8.4	1/8							√110		
bis(2-Ethylhexyl)phthalate	2J-5J	5.8	4/8							4.8		X
di-n-Octylphthalate	1J	8.4	1/8							√73		
4,4'-DDD	2.2J	1.3	1/9							0.28		X
4,4'-DDT	0.58J	0.2	1/9							0.2		X

Site 80 Surface Soil Checked vs newest RBC table

Round I

CONTAMINANT	RANGE	Log Normal 95% UCL	FREQUENCY	2. BLANK	1. 2X average BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	3. RBC	ARAR	COPC	RFD₀ / CSF₀ (mg/kg/day) (mg/kg/day) RBC
Acetone	28	9.4	1/34	✓780 J	NA					~~7,800,000~~	~~20,000,000~~		✓780,000
Phenanthrene	100J	368.5	✓ 1/34	ND	NA				—	NA			NA
di-n-Butylphthalate	60J-4400	526.3	20/34	ND	NA					~~✓7,800,000~~	~~20,000,000~~		✓780,000
Fluoranthene	100J	368.5	1/34	ND	NA					~~✓3,100,000~~	~~8,200,000~~		✓310,000
Pyrene	60J-92J	374.9	2/34	ND	NA					~~✓2,300,000~~	~~6,100,000~~		✓230,000
Butylbenzylphthalate	96J	368.0	1/34	ND	NA					~~✓16,000,000~~	~~41,000,000~~		✓1,600,000
Benzo(a)anthracene	47J	380.2	1/34	ND	NA					~~✓880~~	~~7800~~		✓880
Chrysene	40J-53J	385.3	2/34	ND	NA					~~✓88,000~~	~~780,000~~		✓88,000
bis(2-ethylhexyl)phthalate	38J-66J	393.6	4/34	ND	NA					~~✓46,000~~	~~40,000~~		✓46,000
Benzo(b)fluoranthene	40J-48J	386.7	2/34	ND	NA					✓880	~~7800~~		✓880
Benzo(k)fluoranthene	38J	383.9	1/34	ND	NA					~~✓8800~~	~~78,000~~		✓8800
Benzo(a)pyrene	43J	381.7	1/34	ND	NA					✓88	~~780~~		✓88
Benzo(g,h,i)perylene	180J	369.0	✓ 1/34	ND	NA				—	~~NA~~	~~8,200,000~~		310,000
delta-BHC	1.2J	5.2	✓ 1/34	ND	NA				—	NA			
Aldrin	5.5J-18	9.7	4/34	ND	NA					✓38			
Heptachlor epoxide	2.7J	5.3	1/34	ND	NA					✓70			
Dieldrin	1.1J-630J	626.8	20/34	ND	NA				C	40		X	5.00E-05/1.60E+0
4,4'-DDE	0.6J-1500J	1700.3	26/34	ND	NA					✓1900			
4,4'-DDD	1.5J-87,000	2572.9	20/34	ND	NA				C ✓	2700		X	—/2.40E-01
4,4'-DDT	1.3J-40,000	1201.3	23/34	ND	NA				C ✓	1900		X	5.00E-04/3.40E-01
Endrin ketone(1)	7.7J	10.6	1/34	ND	NA					✓23,000			
alpha-Chlordane(2)	0.82J-130J	62.8	14/34	ND	NA					✓490			
gamma-Chlordane(2)	1.2J-100J	42.7	13/34	ND	NA					✓490			
~~Round II Addition~~ → ~~Heptachlor epoxide~~	~~2.7J-9.9~~		~~2/55~~										

Use Round II Data

Site 80 Surface Soil
Round I

CONTAMINANT	RANGE	95% UCL	FREQUENCY	2. BLANK	1. BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	3. RBC	ARAR	COPC	RfD₀ / CSF₀ (mg/kg/day)(mg/kg/day)
Aluminum	1740-12,000 J	4428.1	34/34	422	4159.010					~~78,000~~	7800	X	
Arsenic(3)	0.84J-63.3	14.2	28/34	ND	1.3*				C	0.37		X	3.00E-04/1.75E+0
Barium	5.1-71.3	17.0	34/34	27.7J	14.192					~~5500~~	✓550		
Beryllium	0.03-0.25	0.1	20/34	ND	0.22*				C	0.15		X	5.00E-03/4.30E+0
Cadmium	0.39-2.8J	0.6	6/34	ND	0.611					~~39~~	✓3.9		
nutrient Calcium	29.8-91,200J	416,202.2	33/34	44,100	1068.920			✓		NA	NA		
Chromium(4)	1.5J-22.7	9.8	34/34	ND	4.765					~~390~~	✓390		
Cobalt	0.4-1.4	1.0	6/34	ND	✓2.348					~~4700~~	✓470		
Copper	0.44J-30.2	5.7	27/34	ND	9.016					~~2900~~	✓290		
nutrient Iron	565-7420J	3111.8	34/34	344	2514.673			✓		NA			
Lead	3.1-211J	35.8	33/34	4.7	24.117					~~400~~(5)			
nutrient Magnesium	65.1-2030	872.7	34/34	✓3160	169.397			✓		NA			
Manganese	2.7-133	43.6	34/34	39	14.088					~~390~~	39	X	
Mercury	0.13-2.7	0.9	16/34	0.22	0.078					~~23~~	2.3	X	
Nickel	1.1J-5.2J	2.4	10/34	ND	3.092					~~1600~~	✓160		
nutrient Potassium	90.7J-1110	275.4	24/34	✓1640	159.363			✓		NA			
Selenium	1.2-1.7	0.5	2/34	ND	0.739					~~390~~	✓39		
Silver	1.1-6.6	0.6	2/34	ND	0.960					~~390~~	✓39		
nutrient Sodium	21.6-176	69.0	28/34	✓22200	68.263			✓		NA			
Thallium(6)	0.9	0.9	✓1/34	ND	0.806					~~6.3~~	NA		
Vanadium	2.1-39	9.8	34/34	ND	6.541					~~550~~	✓55		
Zinc	4.4-210J	53.6	20/34	68.1	19.839					~~23,000~~	✓2300		
~~[illegible]~~										~~[illegible]~~			

fill in lines

(1) USEPA Region III RBC for endrin used as a surrogate.
(2) USEPA Region III RBC for chlordane used as a surrogate
(3) Arsenic was evaluated as a carcinogen.
(4) Chromium was evaluated as the hexavalent state.
(5) Lead action level for residential soils.
(6) USEPA Region III RBC for thallium carbonate, thallium chloride and thallium sulfate.
ND - Nondetect

* new BK values

Site 80 - surface soil - Round II (changes/additions) (Pest/PCBs)

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
delta - BHC	1.2J-2.1J		2/55							100		
Aldrin	5.4-49	24.7	7/55						(1/55)	38		X
Heptachlor epoxide	2.7J-9.9		2/55							70		
Dieldrin	1.1J-560J	2424.4	38/55						(22/55)	40		X
4,4'-DDE	0.6J-1500J		45/55							1900		
4,4'-DDD	1.5J-260,000	43,591.0	41/55						(5/55)	2700		X
4,4'-DDT	1.3J-49000	9770.1	44/55						(5/55)	1900		X
Endrin ketone	7.7J		1/55							~~33000~~ 2300		
Endrin aldehyde	5.2J		1/55							~~73,000~~ 2300		
alpha-Chlordane	0.82J-670J	276.4	39/55						(1/55)	490		X
gamma-Chlordane	1.2J-640J	170.3	22/55						(1/55)	490		X

Site 80 Subsurface Soil Checked vs. newest RBC table

Round I

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC	RfDo / CSFo (mg/Kg/day)⁻¹ (mg/Kg/day)
Acetone	11J-110J	46.2	4/32	780J	NA					~~7,800,000~~	~~50,000,000~~		
Carbon Disulfide	13	6.4	1/32	ND	NA					~~7,800,000~~	~~50,000,000~~		
Phenanthrene	53J	206.4	1/32	ND	NA				—	NA	freq		— / —
di-n-Butylphthalate	56J-3100	298.6	12/32	ND	NA					~~7,800,000~~	~~50,000,000~~		
Butylbenzylphthalate	46J	208.4	1/32	ND	NA					~~16,000,000~~	~~41,000,000~~		
bis(2-ethylhexyl)phthalate	81J-85J	201.9	2/32	ND	NA					~~46,000~~	~~410,000~~		
delta-BHC	0.68J	1.1	1/32	ND	NA				—	NA	freq		— / —
Aldrin	2.6	1.2	1/32	ND	NA					38			
Dieldrin	0.73J-1.4J	2.1	4/32	ND	NA					40			
4,4'-DDE	1.4J-35	3.6	5/32	ND	NA					1900			
4,4'-DDD	1.1J-510J	6.8	7/32	ND	NA					2700			
4,4'-DDT	4.7-240	5.5	3/32	ND	NA					1900			
Aluminum	477-9900	4617.9	32/32	422	7126.505					~~78,000~~	~~100,000~~		
Antimony	3.1J	4.9	1/32	ND	6.634					~~31,000~~	82		
Arsenic(1)	0.53-27.8	4.0	11/32	ND	2.3*				C	~~0.37~~	3.3	X	3.00E-04/1.75E+0
Barium	2-29.8	8.2	32/32	27.7J	11.295					~~5500~~	14,000		
~~Beryllium~~	0.02-0.26	0.2	15/32	ND	0.21*				C	~~0.15~~	1.3	~~X~~	5.00E-03/4.30E+0
Calcium	28.5-821J	205.3	28/32	44100	553.524			✓		NA	100		
Chromium(2)	2J-88.1J	12.7	32/32	ND	8.371					~~390~~	1000		
Cobalt	0.47J-2.4J	1.3	10/32	ND	1.117					~~4700~~	12,000		
Copper	0.43J-5.5	1.8	18/32	ND	2,152					~~2900~~	7600		
Iron	265-56100J	19606.1	32/32	344	2132.543			✓		NA	NA		
Lead	2.5-13.2	5.8	30/32	4.7	7.273(5)=36.5					~~400~~(3)	NA		
Magnesium	21-516	269.5	31/32	3160	211.925			✓		NA	NA		
Manganese	2.2J-43.3	9.1	32/32	39	7,073					~~390~~	1000		

(1) 3 Rounds of Data

(2) not a COPC

nutrient

nutrient

nutrient

fill in blanks

* new BK value

Site 80 Subsurface Soil
Round I

Continue last column on previous page here.

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
Mercury	0.93	0.1	1/32	0.22	0.150					~~J23~~	✓61	
Nickel	1-1.6J	2.1	4/32	ND	✓2.610					~~1600~~	✓1100	
nutrient Potassium	82.4J-6%	337.1	22/32	1640	238,252			✓		NA	NA	
Selenium	0.94-3.3	0.8	6/32	ND	0.792					~~J390~~	✓1000	
nutrient Sodium	17.5-836	54.0	28/32	22200	45,533			✓		NA	NA	
Vanadium	1.5-56.7J	13.4	32/32	ND	9.530					~~J550~~	✓1400	
Zinc	1.6-18.1J	6.8	9/32	68.1	4.323					~~J3,800~~	✓61,000	
~~Thallium - ND~~										NA		
~~Silver - NA~~										~~1000~~		

(1) Arsenic was evaluated as a carcinogen.
(2) Chromium was evaluated as the hexavalent state
(3) Lead action level for residential soils.
ND = Nondetect
NA = Not Available,

Site 80 Subsurface Soil
Round II
(Pest/PCBs)

(no COPCs)

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
delta-BHC	0.63J		✓ 1/45							~~100~~	910	
Aldrin	2.6		✓ 1/45							~~38~~	340	
Dieldrin	0.73J-1.4J		4/45							~~40~~	360	
4,4'-DDE	1.4J-35		7/45							~~1900~~	17,000	
4,4'-DDD	1.1J-510J		12/45							~~2700~~	24,000	
4,4'-DDT	4.7-240		9/45							~~1900~~	17,000	

Site 80 Round 2 Groundwater

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	F/S ARAR	COPC	
Aluminum	37.5 ~~-17,100~~	1353695	8/9							3700	NA	X	RfD = 1E+00
Arsenic	42	~~18.43~~	1/9							0.0445	50	X	CSF = 1.5E+00
Barium	11.7 ~~-405~~	689.41	9/9							260	2000	X	RfD = 7E-02
Calcium	1630-78,700	161071.96	9/9							NA	NA		
Copper	2.4	4.06	1/9							150	1300/1000		
Iron	251 ~~-18,100~~		3/9							1100	NA/300	X	RfD = 3E-02
Lead	2.4-12.8	11.15	3/9							NA	15		
Magnesium	2580-39,000	26055	9/9							NA	NA		
Manganese	17.9 ~~-302~~	2138	8/9							87.5	NA/50	X	RfD = 1.4E-01
Mercury	0.54	0.25	1/9							1.1	2/1.1		
Nickel	10.1	6.36	1/9							73	100/100		
Potassium	1130-18300	38727	9/9							NA	NA		
Silver	3.8	2.5	1/9							18	NA/18		
Sodium	6250-26,100	16272	9/9							NA	NA		
Thallium	5.1-13.4	10.83	2/9							NA	2/NA		
Vanadium	3.3	11.77	1/9							26	NA/NA		
Zinc	21.5-45.1	36.74	3/9							1100	NA/2100		

Site 80 TCRA Surface Soil

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC	
Phenanthrene	100	194	1/22							23000 ✓			
di-n-butyl phthalate	160-150	154	15/22							780000 ✓			
Fluoranthene	100	194	1/22							310000 ✓			
Pyrene	92	195	1/22							230000 ✓			
Benzo(a)anthracene	47	208	1/22							880 ✓			
Chrysene	53	205	1/22							88000 ✓			
bis(2-ethylhexyl)phthalate	38-66	218	3/22							46000 ✓			
Benzo(b) fluoranthene	40	212	1/22							880 ✓			
Benzo (k) fluoranthene	38	213	1/22							8800 ✓			
Benzo(a) pyrene	43	210	1/22							88 ✓			
Benzo(g,h,i) Perylene	180	191	1/22							230000 ✓			
Aldrin	18	1.8	1/23							38 ✓			
Dieldrin	1.1-29	12.9	10/23							40 ✓			
4,4'-DDE	0.6-620	341.77	15/23							1900 ✓			
4,4'-DDD	1.5-62	14.79	9/23							2700 ✓			
4,4'-DDT	1.3-450	78.52	13/23							1900 ✓			
Endrin Ketone	7.7	2.3	1/23							2300 ✓			
alpha-Chlordane	0.82-32	4.88	6/23							490 ✓			
gamma-Chlordane	2.9-31	4.06	4/23							490 ✓			
Aluminum	1140-9370	13954	22/22		4159					7800		X	1.0E+00 = RFD
Arsenic	6.84-63.3	19.37	16/22		1.3					0.43		X	RFD = 3E-04 CSF = 1.5
Barium	5.1-35.7	12.02	22/22		14.192					550 ✓			
Beryllium	0.03-0.25	0.177	14/22		0.22					0.15		X	RFD: 5E-03 CSF = 4.3
Cadmium	0.39	0.40	1/22		0.611					3.9 ✓			
Calcium	29.8-99800	12196.9	21/22		1068.92					—			

Site 80 Surface Soil

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC	
Chromium	1.5 - 12.1	6.99	22/22		4.765					39 ✓			
Cobalt	0.4 - 1.4	0.96	5/22		2.348					470 ✓			
Copper	0.44 - 8.8	2.61	15/22		9.016					310 ✓			
Iron	565 - 6080	~~3035~~	22/22		2519.6					2300		X	RfD: 1.4E-01
Lead	3.1 - 31.1	10.36	22/22		24.117					400 ✓			
Magnesium	65.1 - 1310	535.33	22/22		169.347					–			
Manganese	2.7 - 133	29.64	22/22		19.08					187.7 ✓			
Mercury	0.13 - 2.3	0.26	5/22		0.078					2.3 ✓			
Nickel	1.1 - 3.4	2.1	5/22		3.092					160 ✓			
Potassium	102 - 455	225.41	15/22		159.363					–			
Sodium	21.6 - 87.9	65.81	17/22		6.8.263					–			
Thallium	0.9	0.82	1/22		0.806					–			
Vanadium	2.1 - 12.2	8.41	22/22		6.541					55 ✓			
Zinc	4.9 - 70.6	23.42	10/22		19.839					2300 ✓			

APPENDIX L
STATISTICAL SUMMARIES

APPENDIX L.1
SURFACE SOIL ORGANICS

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
VOLATILES						
Chloromethane	UG/KG	ND	NA	NA	NA	NA
Bromomethane	UG/KG	ND	NA	NA	NA	NA
Vinyl chloride	UG/KG	ND	NA	NA	NA	NA
Chloroethane	UG/KG	ND	NA	NA	NA	NA
Methylene chloride	UG/KG	ND	NA	NA	NA	NA
Acetone	UG/KG	28	8.3	6.2	10.1	9.4
Carbon Disulfide	UG/KG	ND	NA	NA	NA	NA
1,1-Dichloroethene	UG/KG	ND	NA	NA	NA	NA
1,1-Dichloroethane	UG/KG	ND	NA	NA	NA	NA
1,2-Dichloroethene(total)	UG/KG	ND	NA	NA	NA	NA
Chloroform	UG/KG	ND	NA	NA	NA	NA
1,2-Dichloroethane	UG/KG	ND	NA	NA	NA	NA
2-Butanone	UG/KG	ND	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/KG	ND	NA	NA	NA	NA
Carbon tetrachloride	UG/KG	ND	NA	NA	NA	NA
Bromodichloromethane	UG/KG	ND	NA	NA	NA	NA
1,2-Dichloropropane	UG/KG	ND	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/KG	ND	NA	NA	NA	NA
Trichloroethene	UG/KG	ND	NA	NA	NA	NA
Dibromochloromethane	UG/KG	ND	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/KG	ND	NA	NA	NA	NA
Benzene	UG/KG	ND	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/KG	ND	NA	NA	NA	NA
Bromoform	UG/KG	ND	NA	NA	NA	NA
4-Methyl-2-pentanone	UG/KG	ND	NA	NA	NA	NA
2-Hexanone	UG/KG	ND	NA	NA	NA	NA
Tetrachloroethene	UG/KG	ND	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/KG	ND	NA	NA	NA	NA
Toluene	UG/KG	ND	NA	NA	NA	NA
Chlorobenzene	UG/KG	ND	NA	NA	NA	NA
Ethylbenzene	UG/KG	ND	NA	NA	NA	NA
Styrene	UG/KG	ND	NA	NA	NA	NA
Xylenes (total)	UG/KG	ND	NA	NA	NA	NA

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
SEMIVOLATILES						
Phenol	UG/KG	ND	NA	NA	NA	NA
bis(2-Chloroethyl) ether	UG/KG	ND	NA	NA	NA	NA
2-Chlorophenol	UG/KG	ND	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/KG	ND	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/KG	ND	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/KG	ND	NA	NA	NA	NA
2-Methylphenol	UG/KG	ND	NA	NA	NA	NA
2,2'-oxybis-(1-chloropropane)	UG/KG	ND	NA	NA	NA	NA
4-Methylphenol	UG/KG	ND	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	ND	NA	NA	NA	NA
Hexachloroethane	UG/KG	ND	NA	NA	NA	NA
Nitrobenzene	UG/KG	ND	NA	NA	NA	NA
Isophorone	UG/KG	ND	NA	NA	NA	NA
2-Nitrophenol	UG/KG	ND	NA	NA	NA	NA
2,4-Dimethylphenol	UG/KG	ND	NA	NA	NA	NA
bis(2-Chloroethoxy) methane	UG/KG	ND	NA	NA	NA	NA
2,4-Dichlorophenol	UG/KG	ND	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	ND	NA	NA	NA	NA
Naphthalene	UG/KG	ND	NA	NA	NA	NA
4-Chloroaniline	UG/KG	ND	NA	NA	NA	NA
Hexachlorobutadiene	UG/KG	ND	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/KG	ND	NA	NA	NA	NA
2-Methylnaphthalene	UG/KG	ND	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/KG	ND	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/KG	ND	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	ND	NA	NA	NA	NA
2-Chloronaphthalene	UG/KG	ND	NA	NA	NA	NA
2-Nitroaniline	UG/KG	ND	NA	NA	NA	NA
Dimethyl phthalate	UG/KG	ND	NA	NA	NA	NA
Acenaphthylene	UG/KG	ND	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/KG	ND	NA	NA	NA	NA
3-Nitroaniline	UG/KG	ND	NA	NA	NA	NA
Acenaphthene	UG/KG	ND	NA	NA	NA	NA

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
SEMIVOLATILES Cont.						
2,4-Dinitrophenol	UG/KG	ND	NA	NA	NA	NA
4-Nitrophenol	UG/KG	ND	NA	NA	NA	NA
Dibenzofuran	UG/KG	ND	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/KG	ND	NA	NA	NA	NA
Diethylphthalate	UG/KG	ND	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	UG/KG	ND	NA	NA	NA	NA
Fluorene	UG/KG	ND	NA	NA	NA	NA
4-Nitroaniline	UG/KG	ND	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	ND	NA	NA	NA	NA
N-nitrosodiphenylamine	UG/KG	ND	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/KG	ND	NA	NA	NA	NA
Hexachlorobenzene	UG/KG	ND	NA	NA	NA	NA
Pentachlorophenol	UG/KG	ND	NA	NA	NA	NA
Phenanthrene	UG/KG	100 J	339.7	509.9	488.1	368.5
Anthracene	UG/KG	ND	NA	NA	NA	NA
Carbazole	UG/KG	ND	NA	NA	NA	NA
di-n-Butylphthalate	UG/KG	4400	430.9	876.1	685.9	526.3
Fluoranthene	UG/KG	100 J	339.7	509.9	488.1	368.5
Pyrene	UG/KG	92 J	335.5	511.7	484.4	374.9
Butyl benzyl phthalate	UG/KG	96 J	339.1	510.1	487.6	368.0
3,3'-Dichlorobenzidine	UG/KG	ND	NA	NA	NA	NA
Benzo[a]anthracene	UG/KG	47 J	338.1	510.7	486.8	380.2
Chrysene	UG/KG	53 J	333.8	512.6	482.9	385.3
bis(2-Ethylhexyl)phthalate	UG/KG	66 J	325.4	516.0	475.6	393.6
di-n-Octylphthalate	UG/KG	ND	NA	NA	NA	NA
Benzo[b]fluoranthene	UG/KG	48 J	333.6	512.7	482.8	386.7
Benzo[k]fluoranthene	UG/KG	38 J	337.9	510.9	486.6	383.9
Benzo[a]pyrene	UG/KG	43 J	338.0	510.8	486.7	381.7
Indeno[1,2,3-cd]pyrene	UG/KG	ND	NA	NA	NA	NA
Dibenz[a,h]anthracene	UG/KG	ND	NA	NA	NA	NA
Benzo[g,h,i]perylene	UG/KG	180 J	341.6	509.1	489.8	369.0

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
PESTICIDES/PCBs						
alpha-BHC	UG/KG	ND	NA	NA	NA	NA
beta-BHC	UG/KG	ND	NA	NA	NA	NA
delta-BHC	UG/KG	2.1 J	29.5	111.1	54.8	16.5
Lindane (gamma-BHC)	UG/KG	ND	NA	NA	NA	NA
Heptachlor	UG/KG	ND	NA	NA	NA	NA
Aldrin	UG/KG	49	31.2	110.9	56.4	24.7
Heptachlor epoxide	UG/KG	9.9	29.7	111.1	54.9	17.6
Endosulfan I	UG/KG	ND	NA	NA	NA	NA
Dieldrin	UG/KG	5600	321.8	824.0	508.9	2424.4
4,4'-DDE	UG/KG	1500 J	222.2	316.0	293.9	2142.1
Endrin	UG/KG	ND	NA	NA	NA	NA
Endosulfan II	UG/KG	ND	NA	NA	NA	NA
4,4'-DDD	UG/KG	260000	9128.9	40290.9	18277.8	43591.0
Endosulfan sulfate	UG/KG	ND	NA	NA	NA	NA
4,4'-DDT	UG/KG	40000	1673.6	6667.6	3187.6	9770.1
Methoxychlor	UG/KG	ND	NA	NA	NA	NA
Endrin ketone	UG/KG	7.7 J	58.0	218.0	107.6	32.7
Endrin aldehyde	UG/KG	5.2 J	58.0	218.0	107.5	32.5
alpha-Chlordane	UG/KG	670 J	65.0	143.7	97.6	276.4
gamma-Chlordane	UG/KG	640 J	55.1	139.3	86.8	170.3
Toxaphene	UG/KG	ND	NA	NA	NA	NA
Aroclor 1016	UG/KG	ND	NA	NA	NA	NA
Aroclor 1221	UG/KG	ND	NA	NA	NA	NA
Aroclor 1232	UG/KG	ND	NA	NA	NA	NA
Aroclor 1242	UG/KG	ND	NA	NA	NA	NA
Aroclor 1248	UG/KG	ND	NA	NA	NA	NA
Aroclor 1254	UG/KG	ND	NA	NA	NA	NA
Aroclor 1260	UG/KG	ND	NA	NA	NA	NA

APPENDIX L.1.1
TCRA SURFACE SOIL ORGANICS

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
SEMIVOLATILES (ug/kg)						
Phenanthrene	182.73	22.51	190.98	5.20	0.15	194.13
di-n-Butylphthalate	130.95	45.40	147.61	4.81	0.37	154.42
Fluoranthene	182.73	22.51	190.98	5.20	0.15	194.13
Pyrene	182.36	23.93	191.14	5.19	0.16	195.12
Benzo[a]anthracene	180.32	32.43	192.22	5.16	0.30	208.33
Chrysene	180.59	31.26	192.06	5.17	0.28	204.70
bis(2-Ethylhexyl)phthalate	167.55	50.28	185.99	5.04	0.49	217.75
Benzo[b]fluoranthene	180.00	33.81	192.40	5.16	0.33	212.07
Benzo[k]fluoranthene	179.91	34.20	192.46	5.15	0.35	213.33
Benzo[a]pyrene	180.14	33.22	192.32	5.16	0.32	210.35
Benzo[g,h,i]perylene	185.68	13.12	190.50	5.22	0.07	190.64
PESTICIDES/PCBs (ug/kg)						
Aldrin	1.75	3.55	3.02	0.11	0.63	1.83
Dieldrin	6.90	8.58	9.97	1.30	1.08	12.90
4,4'-DDE	56.72	135.25	105.15	2.11	1.98	341.77
4,4'-DDD	8.76	15.96	14.48	1.27	1.17	14.79
4,4'-DDT	35.29	97.30	70.12	1.58	1.69	78.25
Endrin ketone	2.11	1.23	2.55	0.68	0.31	2.33
alpha-Chlordane	3.67	7.83	6.47	0.43	1.02	4.88
gamma-Chlordane	3.36	7.22	5.95	0.38	0.98	4.06

APPENDIX L.2
SURFACE SOIL METALS

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:		MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
	UNITS					
Aluminum	MG/KG	12000 J	3808.5	2371.7	4498.8	4428.1
Antimony	MG/KG	ND	NA	NA	NA	NA
Arsenic	MG/KG	63.3	7.9	14.1	12.0	14.2
Barium	MG/KG	71.3	14.1	12.9	17.8	17.0
Beryllium	MG/KG	0.25	0.1	0.1	0.1	0.1
Cadmium	MG/KG	2.8 J	0.5	0.5	0.6	0.6
Calcium	MG/KG	91200 J	11204.0	22066.1	17626.0	416202.2
Chromium	MG/KG	22.7	7.4	5.5	9.0	9.8
Cobalt	MG/KG	1.4	0.7	0.5	0.8	1.0
Copper	MG/KG	30.2	3.4	5.6	5.0	5.7
Iron	MG/KG	7420 J	2441.6	1760.9	2954.1	3111.8
Lead	MG/KG	211 J	20.8	37.1	31.6	35.8
Magnesium	MG/KG	2030	504.8	580.4	673.8	872.7
Manganese	MG/KG	133	25.1	29.3	33.6	43.6
Mercury	MG/KG	2.7	0.5	0.7	0.6	0.9
Nickel	MG/KG	5.2 J	1.7	1.2	2.0	2.4
Potassium	MG/KG	1110	218.8	204.4	278.3	275.4
Selenium	MG/KG	1.7	0.5	0.3	0.5	0.5
Silver	MG/KG	6.6	0.6	1.1	0.9	0.6
Sodium	MG/KG	176	50.6	35.0	60.7	69.0
Thallium	MG/KG	0.9	0.7	0.3	0.8	0.9
Vanadium	MG/KG	39	7.9	6.4	9.8	9.8
Zinc	MG/KG	210 J	25.8	41.2	37.8	53.6
Moisture	%					

APPENDIX L.2.1
TCRA SURFACE SOIL METALS

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - TCRA SURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

ANALYTES (mg/kg)	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
Aluminum	3321.36	1730.41	3956.28	8.02	0.41	3954.18
Arsenic	4.83	13.41	9.75	0.50	1.09	6.37
Barium	9.96	6.78	12.45	2.17	0.46	12.02
Beryllium	0.09	0.08	0.12	-2.83	0.97	0.17
Cadmium	0.30	0.19	0.37	-1.37	0.58	0.40
Calcium	5021.53	12366.71	9559.10	5.69	2.46	121964.94
Chromium	4.96	2.57	5.90	1.47	0.53	6.49
Cobalt	0.61	0.44	0.77	-0.77	0.79	0.96
Copper	1.53	1.97	2.26	-0.04	0.94	2.61
Iron	2137.68	1411.81	2655.70	7.49	0.59	2835.92
Lead	7.94	7.37	10.64	1.84	0.62	10.36
Magnesium	319.00	411.35	469.94	5.20	0.99	535.33
Manganese	16.71	27.99	26.98	2.19	1.01	29.64
Mercury	0.21	0.49	0.39	-2.42	0.99	0.26
Nickel	1.35	0.92	1.69	0.04	0.77	2.10
Potassium	168.83	99.18	205.22	4.97	0.58	225.41
Sodium	42.90	24.63	51.93	3.55	0.71	65.81
Thallium	0.68	0.31	0.79	-0.49	0.44	0.82
Vanadium	6.65	2.61	7.61	1.80	0.47	8.41
Zinc	11.59	16.89	17.79	1.80	1.10	23.42

APPENDIX L.3
SUBSURFACE SOIL ORGANICS

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
VOLATILES						
Chloromethane	UG/KG	ND	NA	NA	NA	NA
Bromomethane	UG/KG	ND	NA	NA	NA	NA
Vinyl chloride	UG/KG	ND	NA	NA	NA	NA
Chloroethane	UG/KG	ND	NA	NA	NA	NA
Methylene chloride	UG/KG	ND	NA	NA	NA	NA
Acetone	UG/KG	110 J	33.4	74.0	55.6	46.2
Carbon Disulfide	UG/KG	13	6.1	1.3	6.5	6.4
1,1-Dichloroethene	UG/KG	ND	NA	NA	NA	NA
1,1-Dichloroethane	UG/KG	ND	NA	NA	NA	NA
1,2-Dichloroethene(total)	UG/KG	ND	NA	NA	NA	NA
Chloroform	UG/KG	ND	NA	NA	NA	NA
1,2-Dichloroethane	UG/KG	ND	NA	NA	NA	NA
2-Butanone	UG/KG	ND	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/KG	ND	NA	NA	NA	NA
Carbon tetrachloride	UG/KG	ND	NA	NA	NA	NA
Bromodichloromethane	UG/KG	ND	NA	NA	NA	NA
1,2-Dichloropropane	UG/KG	ND	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/KG	ND	NA	NA	NA	NA
Trichloroethene	UG/KG	ND	NA	NA	NA	NA
Dibromochloromethane	UG/KG	ND	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/KG	ND	NA	NA	NA	NA
Benzene	UG/KG	ND	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/KG	ND	NA	NA	NA	NA
Bromoform	UG/KG	ND	NA	NA	NA	NA
4-Methyl-2-pentanone	UG/KG	ND	NA	NA	NA	NA
2-Hexanone	UG/KG	ND	NA	NA	NA	NA
Tetrachloroethene	UG/KG	ND	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/KG	ND	NA	NA	NA	NA
Toluene	UG/KG	ND	NA	NA	NA	NA
Chlorobenzene	UG/KG	ND	NA	NA	NA	NA
Ethylbenzene	UG/KG	ND	NA	NA	NA	NA
Styrene	UG/KG	ND	NA	NA	NA	NA
Xylenes (total)	UG/KG	ND	NA	NA	NA	NA

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
SEMIVOLATILES						
Phenol	UG/KG	ND	NA	NA	NA	NA
bis(2-Chloroethyl) ether	UG/KG	ND	NA	NA	NA	NA
2-Chlorophenol	UG/KG	ND	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/KG	ND	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/KG	ND	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/KG	ND	NA	NA	NA	NA
2-Methylphenol	UG/KG	ND	NA	NA	NA	NA
2,2'-oxybis-(1-chloropropane)	UG/KG	ND	NA	NA	NA	NA
4-Methylphenol	UG/KG	ND	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	ND	NA	NA	NA	NA
Hexachloroethane	UG/KG	ND	NA	NA	NA	NA
Nitrobenzene	UG/KG	ND	NA	NA	NA	NA
Isophorone	UG/KG	ND	NA	NA	NA	NA
2-Nitrophenol	UG/KG	ND	NA	NA	NA	NA
2,4-Dimethylphenol	UG/KG	ND	NA	NA	NA	NA
bis(2-Chloroethoxy) methane	UG/KG	ND	NA	NA	NA	NA
2,4-Dichlorophenol	UG/KG	ND	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	ND	NA	NA	NA	NA
Naphthalene	UG/KG	ND	NA	NA	NA	NA
4-Chloroaniline	UG/KG	ND	NA	NA	NA	NA
Hexachlorobutadiene	UG/KG	ND	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/KG	ND	NA	NA	NA	NA
2-Methylnaphthalene	UG/KG	ND	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/KG	ND	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/KG	ND	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	ND	NA	NA	NA	NA
2-Chloronaphthalene	UG/KG	ND	NA	NA	NA	NA
2-Nitroaniline	UG/KG	ND	NA	NA	NA	NA
Dimethyl phthalate	UG/KG	ND	NA	NA	NA	NA
Acenaphthylene	UG/KG	ND	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/KG	ND	NA	NA	NA	NA
3-Nitroaniline	UG/KG	ND	NA	NA	NA	NA
Acenaphthene	UG/KG	ND	NA	NA	NA	NA

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:		MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
	UNITS					
SEMIVOLATILES Cont.						
2,4-Dinitrophenol	UG/KG	ND	NA	NA	NA	NA
4-Nitrophenol	UG/KG	ND	NA	NA	NA	NA
Dibenzofuran	UG/KG	ND	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/KG	ND	NA	NA	NA	NA
Diethylphthalate	UG/KG	ND	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	UG/KG	ND	NA	NA	NA	NA
Fluorene	UG/KG	ND	NA	NA	NA	NA
4-Nitroaniline	UG/KG	ND	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	ND	NA	NA	NA	NA
N-nitrosodiphenylamine	UG/KG	ND	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/KG	ND	NA	NA	NA	NA
Hexachlorobenzene	UG/KG	ND	NA	NA	NA	NA
Pentachlorophenol	UG/KG	ND	NA	NA	NA	NA
Phenanthrene	UG/KG	53 J	189.3	27.3	197.5	206.4
Anthracene	UG/KG	ND	NA	NA	NA	NA
Carbazole	UG/KG	ND	NA	NA	NA	NA
di-n-Butylphthalate	UG/KG	3100	275.7	518.6	431.3	298.6
Fluoranthene	UG/KG	ND	NA	NA	NA	NA
Pyrene	UG/KG	ND	NA	NA	NA	NA
Butyl benzyl phthalate	UG/KG	46 J	189.1	28.4	197.6	208.4
3,3'-Dichlorobenzidine	UG/KG	ND	NA	NA	NA	NA
Benzo[a]anthracene	UG/KG	ND	NA	NA	NA	NA
Chrysene	UG/KG	ND	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	85 J	187.1	29.5	195.9	201.9
di-n-Octylphthalate	UG/KG	ND	NA	NA	NA	NA
Benzo[b]fluoranthene	UG/KG	ND	NA	NA	NA	NA
Benzo[k]fluoranthene	UG/KG	ND	NA	NA	NA	NA
Benzo[a]pyrene	UG/KG	ND	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	UG/KG	ND	NA	NA	NA	NA
Dibenz[a,h]anthracene	UG/KG	ND	NA	NA	NA	NA
Benzo[g,h,i]perylene	UG/KG	ND	NA	NA	NA	NA

APPENDIX L.4
SUBSURFACE SOIL METALS

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - SUBSURFACE SOIL
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:		MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
	UNITS					
Aluminum	MG/KG	9900	3345.1	2282.2	4029.7	4617.9
Antimony	MG/KG	3.1 J	3.5	2.2	4.2	4.9
Arsenic	MG/KG	27.8	2.4	5.1	4.0	4.0
Barium	MG/KG	29.8	7.0	4.8	8.4	8.2
Beryllium	MG/KG	0.26	0.1	0.1	0.1	0.2
Cadmium	MG/KG	ND	NA	NA	NA	NA
Calcium	MG/KG	821 J	143.9	180.6	198.0	205.3
Chromium	MG/KG	88.1 J	10.5	15.7	15.2	12.7
Cobalt	MG/KG	2.4 J	0.9	0.5	1.0	1.3
Copper	MG/KG	5.5	1.4	1.0	1.7	1.8
Iron	MG/KG	56100 J	8011.9	11848.8	11566.4	19606.1
Lead	MG/KG	13.2	5.0	2.2	5.6	5.8
Magnesium	MG/KG	516	159.8	116.2	194.6	269.5
Manganese	MG/KG	43.3	7.7	7.5	10.0	9.1
Mercury	MG/KG	0.93	0.1	0.2	0.1	0.1
Nickel	MG/KG	1.6 J	1.5	0.9	1.7	2.1
Potassium	MG/KG	696	244.9	159.7	292.9	337.1
Selenium	MG/KG	3.3	0.6	0.6	0.8	0.8
Silver	MG/KG	ND	NA	NA	NA	NA
Sodium	MG/KG	83.6	42.1	21.3	48.5	54.0
Thallium	MG/KG	ND	NA	NA	NA	NA
Vanadium	MG/KG	56.7 J	9.8	10.1	12.9	13.4
Zinc	MG/KG	18.1 J	5.0	3.6	6.0	6.8
Moisture	%					

APPENDIX L.5
GROUNDWATER ORGANICS

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
VOLATILES						
Chloromethane	UG/L	ND	NA	NA	NA	NA
Bromomethane	UG/L	ND	NA	NA	NA	NA
Vinyl chloride	UG/L	ND	NA	NA	NA	NA
Chloroethane	UG/L	ND	NA	NA	NA	NA
Methylene chloride	UG/L	ND	NA	NA	NA	NA
Acetone	UG/L	ND	NA	NA	NA	NA
Carbon Disulfide	UG/L	1 J	4.5	1.4	5.4	8.4
1,1-Dichloroethene	UG/L	ND	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	ND	NA	NA	NA	NA
1,2-Dichloroethene(total)	UG/L	ND	NA	NA	NA	NA
Chloroform	UG/L	ND	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	ND	NA	NA	NA	NA
2-Butanone	UG/L	ND	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	ND	NA	NA	NA	NA
Carbon tetrachloride	UG/L	ND	NA	NA	NA	NA
Bromodichloromethane	UG/L	ND	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	ND	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	ND	NA	NA	NA	NA
Trichloroethene	UG/L	ND	NA	NA	NA	NA
Dibromochloromethane	UG/L	ND	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	ND	NA	NA	NA	NA
Benzene	UG/L	ND	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	ND	NA	NA	NA	NA
Bromoform	UG/L	ND	NA	NA	NA	NA
4-Methyl-2-pentanone	UG/L	ND	NA	NA	NA	NA
2-Hexanone	UG/L	ND	NA	NA	NA	NA
Tetrachloroethene	UG/L	ND	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	ND	NA	NA	NA	NA
Toluene	UG/L	ND	NA	NA	NA	NA
Chlorobenzene	UG/L	ND	NA	NA	NA	NA
Ethylbenzene	UG/L	ND	NA	NA	NA	NA
Styrene	UG/L	ND	NA	NA	NA	NA
Xylenes (total)	UG/L	ND	NA	NA	NA	NA

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
SEMIVOLATILES						
Phenol	UG/L	ND	NA	NA	NA	NA
bis(2-Chloroethyl) ether	UG/L	ND	NA	NA	NA	NA
2-Chlorophenol	UG/L	ND	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/L	ND	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/L	ND	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/L	ND	NA	NA	NA	NA
2-Methylphenol	UG/L	ND	NA	NA	NA	NA
2,2'-oxybis-(1-chloropropane)	UG/L	ND	NA	NA	NA	NA
4-Methylphenol	UG/L	ND	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/L	ND	NA	NA	NA	NA
Hexachloroethane	UG/L	ND	NA	NA	NA	NA
Nitrobenzene	UG/L	ND	NA	NA	NA	NA
Isophorone	UG/L	ND	NA	NA	NA	NA
2-Nitrophenol	UG/L	ND	NA	NA	NA	NA
2,4-Dimethylphenol	UG/L	ND	NA	NA	NA	NA
bis(2-Chloroethoxy) methane	UG/L	ND	NA	NA	NA	NA
2,4-Dichlorophenol	UG/L	ND	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/L	ND	NA	NA	NA	NA
Naphthalene	UG/L	ND	NA	NA	NA	NA
4-Chloroaniline	UG/L	ND	NA	NA	NA	NA
Hexachlorobutadiene	UG/L	ND	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/L	ND	NA	NA	NA	NA
2-Methylnaphthalene	UG/L	ND	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/L	ND	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/L	ND	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/L	ND	NA	NA	NA	NA
2-Chloronaphthalene	UG/L	ND	NA	NA	NA	NA
2-Nitroaniline	UG/L	ND	NA	NA	NA	NA
Dimethyl phthalate	UG/L	ND	NA	NA	NA	NA
Acenaphthylene	UG/L	ND	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/L	ND	NA	NA	NA	NA
3-Nitroaniline	UG/L	ND	NA	NA	NA	NA
Acenaphthene	UG/L	4 J	4.9	0.4	5.1	5.2

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
SEMIVOLATILES Cont.						
2,4-Dinitrophenol	UG/L	ND	NA	NA	NA	NA
4-Nitrophenol	UG/L	ND	NA	NA	NA	NA
Dibenzofuran	UG/L	2 J	4.6	1.1	5.3	6.2
2,4-Dinitrotoluene	UG/L	ND	NA	NA	NA	NA
Diethylphthalate	UG/L	ND	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	UG/L	ND	NA	NA	NA	NA
Fluorene	UG/L	3 J	4.8	0.7	5.2	5.4
4-Nitroaniline	UG/L	ND	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	ND	NA	NA	NA	NA
N-nitrosodiphenylamine	UG/L	ND	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/L	ND	NA	NA	NA	NA
Hexachlorobenzene	UG/L	ND	NA	NA	NA	NA
Pentachlorophenol	UG/L	ND	NA	NA	NA	NA
Phenanthrene	UG/L	ND	NA	NA	NA	NA
Anthracene	UG/L	ND	NA	NA	NA	NA
Carbazole	UG/L	3 J	4.8	0.7	5.2	5.4
di-n-Butylphthalate	UG/L	ND	NA	NA	NA	NA
Fluoranthene	UG/L	ND	NA	NA	NA	NA
Pyrene	UG/L	1 J	4.5	1.4	5.4	8.4
Butyl benzyl phthalate	UG/L	ND	NA	NA	NA	NA
3,3'-Dichlorobenzidine	UG/L	ND	NA	NA	NA	NA
Benzo[a]anthracene	UG/L	ND	NA	NA	NA	NA
Chrysene	UG/L	ND	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	5 J	4.4	1.1	5.1	5.8
di-n-Octylphthalate	UG/L	1 J	4.5	1.4	5.4	8.4
Benzo[b]fluoranthene	UG/L	ND	NA	NA	NA	NA
Benzo[k]fluoranthene	UG/L	ND	NA	NA	NA	NA
Benzo[a]pyrene	UG/L	ND	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	UG/L	ND	NA	NA	NA	NA
Dibenz[a,h]anthracene	UG/L	ND	NA	NA	NA	NA
Benzo[g,h,i]perylene	UG/L	ND	NA	NA	NA	NA

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TCL ORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
PESTICIDES/PCBs						
alpha-BHC	UG/L	ND	NA	NA	NA	NA
beta-BHC	UG/L	ND	NA	NA	NA	NA
delta-BHC	UG/L	ND	NA	NA	NA	NA
Lindane (gamma-BHC)	UG/L	ND	NA	NA	NA	NA
Heptachlor	UG/L	ND	NA	NA	NA	NA
Aldrin	UG/L	ND	NA	NA	NA	NA
Heptachlor epoxide	UG/L	ND	NA	NA	NA	NA
Endosulfan I	UG/L	ND	NA	NA	NA	NA
Dieldrin	UG/L	ND	NA	NA	NA	NA
4,4'-DDE	UG/L	ND	NA	NA	NA	NA
Endrin	UG/L	ND	NA	NA	NA	NA
Endosulfan II	UG/L	ND	NA	NA	NA	NA
4,4'-DDD	UG/L	2.2 J	0.3	0.7	0.7	1.3
Endosulfan sulfate	UG/L	ND	NA	NA	NA	NA
4,4'-DDT	UG/L	0.58 J	0.1	0.2	0.2	0.2
Methoxychlor	UG/L	ND	NA	NA	NA	NA
Endrin ketone	UG/L	ND	NA	NA	NA	NA
Endrin aldehyde	UG/L	ND	NA	NA	NA	NA
alpha-Chlordane	UG/L	ND	NA	NA	NA	NA
gamma-Chlordane	UG/L	ND	NA	NA	NA	NA
Toxaphene	UG/L	ND	NA	NA	NA	NA
Aroclor 1016	UG/L	ND	NA	NA	NA	NA
Aroclor 1221	UG/L	ND	NA	NA	NA	NA
Aroclor 1232	UG/L	ND	NA	NA	NA	NA
Aroclor 1242	UG/L	ND	NA	NA	NA	NA
Aroclor 1248	UG/L	ND	NA	NA	NA	NA
Aroclor 1254	UG/L	ND	NA	NA	NA	NA
Aroclor 1260	UG/L	ND	NA	NA	NA	NA

APPENDIX L.6
GROUNDWATER TOTAL METALS

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:		MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
	UNITS					
Aluminum	UG/L	43000	9149.6	16497.8	20202.8	30286971.3
Antimony	UG/L	ND	NA	NA	NA	NA
Arsenic	UG/L	102	18.2	34.0	41.0	79.8
Barium	UG/L	252	96.1	93.2	158.5	13904.8
Beryllium	UG/L	1.5	0.7	0.4	1.0	1.1
Cadmium	UG/L	ND	NA	NA	NA	NA
Calcium	UG/L	64900	15893.0	20999.4	29962.2	96767732.6
Chromium	UG/L	65	18.5	25.3	35.5	107.4
Cobalt	UG/L	ND	NA	NA	NA	NA
Copper	UG/L	14.5	7.3	4.2	10.0	11.1
Iron	UG/L	23800	6861.8	10292.3	13757.4	1943386815894.3
Lead	UG/L	30 J	8.9	12.5	17.3	110.5
Magnesium	UG/L	21000	7026.9	6557.5	11420.3	11476516.0
Manganese	UG/L	369	82.7	121.4	164.0	131380.6
Mercury	UG/L	0.42	0.1	0.1	0.2	0.2
Nickel	UG/L	24	11.8	4.9	15.1	15.2
Potassium	UG/L	14600	5786.3	5836.9	9696.9	92804.6
Selenium	UG/L	ND	NA	NA	NA	NA
Silver	UG/L	ND	NA	NA	NA	NA
Sodium	UG/L	23100	10138.8	7665.9	15274.8	3485906.0
Thallium	UG/L	ND	NA	NA	NA	NA
Vanadium	UG/L	44.9	14.5	17.5	26.2	52.1
Zinc	UG/L	106	39.6	33.4	62.0	93.0

APPENDIX L.6.1
ROUND TWO GROUNDWATER TOTAL METALS

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - ROUND 2 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
TOTAL ANALYTES (ug/L)						
Aluminum	2843.51	5504.98	6256.60	6.42	2.13	1353694.69
Arsenic	5.73	13.60	14.17	0.58	1.19	18.43
Barium	115.48	121.40	190.75	4.24	1.17	684.41
Calcium	24893.33	25632.95	40785.76	9.58	1.21	161071.46
Copper	2.41	0.98	3.02	0.77	0.55	4.06
Iron	1610.06	4609.97	4468.24	3.80	2.65	4584277.67
Lead	2.88	3.92	5.31	0.53	1.00	11.15
Magnesium	10276.67	11382.25	17333.66	8.86	0.86	26054.94
Manganese	57.37	60.97	95.18	3.37	1.63	2138.88
Mercury	0.14	0.15	0.24	-2.19	0.63	0.25
Nickel	4.48	2.23	5.86	1.41	0.43	6.36
Potassium	7161.11	6467.45	11170.93	8.39	1.12	38726.97
Silver	2.08	0.65	2.48	0.70	0.24	2.47
Sodium	11417.78	6089.58	15193.32	9.25	0.44	16271.56
Thallium	4.16	3.83	6.53	1.11	0.84	10.83
Vanadium	8.11	3.33	10.17	2.01	0.44	11.77
Zinc	17.31	12.85	25.27	2.62	0.72	36.74

APPENDIX L.7
GROUNDWATER DISSOLVED METALS

STATISTICAL SUMMARY
OPERABLE UNIT No. 11
SITE 80 - GROUNDWATER
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL DISSOLVED INORGANICS

Client Sample ID: Laboratory Sample ID: Date Sampled:		MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
	UNITS					
Aluminum	UG/L	13400	1969.3	4628.6	5070.4	1555213.9
Antimony	UG/L	51.1	28.3	9.2	34.4	34.4
Arsenic	UG/L	79.8	14.4	26.4	32.1	41.7
Barium	UG/L	127	67.7	41.8	95.7	205.0
Beryllium	UG/L	1.3	0.6	0.3	0.8	0.8
Cadmium	UG/L	ND	NA	NA	NA	NA
Calcium	UG/L	73600	26801.3	29553.2	46601.4	197531.2
Chromium	UG/L	ND	NA	NA	NA	NA
Cobalt	UG/L	12.7	6.0	2.7	7.8	7.8
Copper	UG/L	17.4	10.2	5.8	14.0	19.8
Iron	UG/L	6780	887.2	2381.2	2482.6	41664.8
Lead	UG/L	4.6 J	2.2	1.3	3.1	3.4
Magnesium	UG/L	24800	7846.3	7402.3	12805.6	17427.3
Manganese	UG/L	414	93.9	135.2	184.5	3036.4
Mercury	UG/L	ND	NA	NA	NA	NA
Nickel	UG/L	ND	NA	NA	NA	NA
Potassium	UG/L	17000	6310.0	6759.4	10838.7	78723.7
Selenium	UG/L	ND	NA	NA	NA	NA
Silver	UG/L	ND	NA	NA	NA	NA
Sodium	UG/L	21400	13101.3	6306.6	17326.6	20103.9
Thallium	UG/L	ND	NA	NA	NA	NA
Vanadium	UG/L	ND	NA	NA	NA	NA
Zinc	UG/L	93.7 J	29.5	26.6	47.4	58.1

GROUNDWATER INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULT

Intake from drinking water is calculated as follows:

Intake (mg/kg-day) = C * IRw * EF * ED/BW * AT or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in water (mg/l)	Specific
IRw = daily water ingestion rate (L/Day)	2
EF = exposure frequency (days/yr)	350
ED = exposure duration (yr)	30
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	30
DY = days per year (day/year)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant(1)	Concentration Carcinogen (mg/l)	Ingestion Rate (L/day)	Exposure Frequency (day/year)	Exposure Duration (year)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/yr)	Carc Dose (mg/kg-day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.005	2	350	30	70	70	365	5.87E-05	1.40E-02	8.22E-07	0.048
4,4'-DDD	0.0013	2	350	30	70	70	365	1.53E-05	0.24	3.66E-06	0.215
4,4'-DDT	0.0002	2	350	30	70	70	365	2.35E-06	0.34	7.98E-07	0.047
Arsenic	0.0798	2	350	30	70	70	365	9.37E-04	1.75	1.64E-03	96.423
Beryllium	0.0011	2	350	30	70	70	365	1.29E-05	4.30E+00	5.55E-05	3.268
TOTAL										1.70E-03	100.00

Contaminant	Concentration Noncarcinogen (mg/l)	Ingestion Rate (L/day)	Exposure Frequency (day/year)	Exposure Duration (year)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/yr)	Noncarc Dose (mg/kg-day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.0050	2	350	30	70	30	365	1.37E-04	2.00E-02	0.01	0.06
4,4'-DDT	0.0002	2	350	30	70	30	365	5.48E-06	5.00E-04	0.01	0.10
Aluminum	43	2	350	30	70	30	365	1.18E+00	1.00E+00	1.18	10.67
Arsenic	0.0798	2	350	30	70	30	365	2.19E-03	3.00E-04	7.29	65.99
Beryllium	0.0011	2	350	30	70	30	365	3.01E-05	5.00E-03	0.01	0.05
Chromium	0.065	2	350	30	70	30	365	1.78E-03	5.00E-03	0.36	3.23
Vanadium	0.0449	2	350	30	70	30	365	1.23E-03	7.00E-03	0.18	1.59
Manganese	0.389	2	350	30	70	30	365	1.01E-02	5.00E-03	2.02	18.31
TOTAL										11.04	100.00

(1) Lead was not evaluated due to the lack of a published toxicity value
File Name: GWI.WQ2

Computed by: :LHJ Checked by: MDB Date: 9/95

EXAMPLE DERMAL CONTACT WITH GROUNDWATER CALCULATIONS
OPERABLE UNIT NO. 11 (SITE 80)
CONTRACT TASK ORDER 0274

Purpose: Estimate intake/risk from dermal contact with groundwater

$$Intake\ (mg/kg{\cdot}day) = \frac{C \times SA \times PC \times ET \times EF \times ED \times CF}{BW \times AT}$$

Where:	C	=	Contaminant concentration in groundwater (mg/L)
	SA	=	Exposed skin surface available for contact (cm^2)
	PC	=	Permeability constant (cm/hr)
	ET	=	Exposure time (hr/day)
	EF	=	Exposure frequency (days/year)
	ED	=	Exposure duration (years)
	CF	=	Conversion factor (1 L/1,000 cm^3)
	BW	=	Body weight (kg)
	AT_c	=	Averaging time carcinogen (days)
	AT_{nc}	=	Averaging time noncarcinogen (days)

Risks:

Carcinogens = Intake (mg/kg·day) x CSF $(mg/kg{\cdot}day)^{-1}$
Noncarcinogens = Intake (mg/kg·day)/RfD (mg/kg·day)

Example Carcinogen: Bis(2-ethylhexyl)phthalate

$$Intake\ (mg/kg{\cdot}day) = \frac{0.005\ mg/L \times 23{,}000\ cm^2 \times 1.50E{-}03\ cm/hr \times 0.25\ hr/day \times 350\ days/yr \times 30\ yrs \times 1\ L/1{,}000\ cm^3}{70\ kg \times 25{,}550\ days}$$

$$= 2.53E\text{-}07$$

Risk = 2.53E-07 mg/kg·day x 1.40E-02 $mg/kg{\cdot}day^{-1}$ = 3.54E-09

Example Noncarcinogen: Bis(2-ethylhexyl)phthalate

$$Intake\ (mg/kg{\cdot}day) = \frac{0.005\ mg/L \times 23{,}000\ cm^2/hr \times 1.50E{-}03\ cm/hr \times 0.25\ hr/day \times 350\ days/yr \times 30\ yrs \times 1\ L/1{,}000\ cm^3}{70\ kg \times 10{,}950\ days}$$

$$= 5.91E\text{-}07$$

$$Risk = \frac{5.91E{-}07\ mg/kg{\cdot}day}{2.00E{-}02\ mg/kg{\cdot}day} = 0.00003$$

Re: Site 80 Future Residential Adult

GROUNDWATER DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL CHILD

Dermal Contact from groundwater is calcuated as follows:

Intake (mg/kg-day) = CW * SA * PC * ET * EF * ED * CF/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
CW = contaminant concentration in water (mg/l)	Specific
SA = skin surface available for contact (cm2)	10000
PC = contaminant specific dermal permability (cm/hr)	Specific
ET = exposure time (hours/day)	0.25
EF = exposure frequency (days/yr)	350
ED = exposure duration (years)	6
CF = volumetric conversion factor for water (1liter/1000 cm3)	0.001
BW = body weight (kg)	15
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	6
DY = days per year (days)	365

Note: Inputs are site and scenario specific

Contaminant(1)	Concentration Carcinogen (mg/l)	Surface Area (cm2)	Dermal Permeability (cm/hr)	Exposure Time (hours/day)	Exposure Frequency (days/yr)	Exposure Duration (years)	Volumetric Conversion (L/m3)	Body Weight (kg)	Averaging Carc Time (years)	Days per Year (days)	Carc Dose (mg/kg-day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.005	10000	1.50E-03	0.25	350	6	0.001	15	70	365	1.03E-07	1.40E-02	1.44E-09	0.04
4,4'-DDD	0.0013	10000	2.80E-01	0.25	350	6	0.001	15	70	365	4.99E-06	2.40E-01	1.20E-06	33.46
4,4'-DDT	0.0002	10000	4.30E-01	0.25	350	6	0.001	15	70	365	1.18E-06	3.40E-01	4.01E-07	11.20
Arsenic	0.0798	10000	1.00E-03	0.25	350	6	0.001	15	70	365	1.09E-06	1.75E+00	1.91E-06	53.49
Beryllium	0.0011	10000	1.00E-03	0.25	350	6	0.001	15	70	365	1.51E-08	4.30E+00	6.48E-08	1.81
TOTAL													3.58E-06	100.00

Contaminant	Concentration Noncarcinogen (mg/l)	Surface Area (cm2)	Dermal Permeability (cm/hr)	Exposure Time (hours/day)	Exposure Frequency (days/yr)	Exposure Duration (years)	Volumetric Conversion (L/m3)	Body Weight (kg)	Average Noncarc Time (years)	Days per Year (days)	Noncarc Dose (mg/kg-day)	Reference Dose (mg/kg-day)	Noncarc Risk	Percent Noncarcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.005	10000	1.50E-03	0.25	350	6	0.001	15	6	365	1.20E-06	2.00E-02	0.00006	0.07
4,4'-DDT	0.0002	10000	4.30E-01	0.25	350	6	0.001	15	6	365	1.37E-05	5.00E-04	0.02749	29.92
Aluminum	43	10000	1.00E-03	0.25	350	6	0.001	15	6	365	6.87E-03	1.00E+00	0.00687	7.48
Arsenic	0.0798	10000	1.00E-03	0.25	350	6	0.001	15	6	365	1.28E-05	3.00E-04	0.04251	46.26
Beryllium	0.0011	10000	1.00E-03	0.25	350	6	0.001	15	6	365	1.76E-07	5.00E-03	0.00004	0.04
Chromium	0.065	10000	1.00E-03	0.25	350	6	0.001	15	6	365	1.04E-05	5.00E-03	0.00208	2.26
Vanadium	0.0449	10000	1.00E-03	0.25	350	6	0.001	15	6	365	7.18E-06	7.00E-03	0.00103	1.12
Manganese	0.369	10000	1.00E-03	0.25	350	6	0.001	15	6	365	5.90E-05	5.00E-03	0.01179	12.84
TOTAL													0.09186	100.00

(1) Lead was not evaluated due to the lack of a published toxicity value
File Name: GWDC.WQ1

GROUNDWATER DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULT

Dermal Contact from groundwater is calcuated as follows:

Intake (mg/kg-day) = CW * SA * PC * ET * EF * ED * CF/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
CW = contaminant concentration in water (mg/l)	Specific
SA = skin surface available for contact (cm2)	23000
PC = contaminant specific dermal permability (cm/hr)	Specific
ET = exposure time (hours/day)	0.25
EF = exposure frequency (days/yr)	350
ED = exposure duration (years)	30
CF = volumetric conversion factor for water (1liter/1000 cm3)	0.001
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	30
DY = days per year (days)	365

Note: Inputs are site and scenario specific

Contaminant(1)	Concentration Carcinogen (mg/l)	Surface Area (cm2)	Dermal Permeability (cm/hr)	Exposure Time (hours/day)	Exposure Frequency (days/yr)	Exposure Duration (years)	Volumetric Conversion (L/m3)	Body Weight (kg)	Averaging Carc Time (years)	Days per Year (days)	Carc Dose (mg/kg-day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.005	23000	1.50E-03	0.25	350	30	0.001	70	70	365	2.53E-07	1.40E-02	3.54E-09	0.04
4,4'-DDD	0.0013	23000	2.80E-01	0.25	350	30	0.001	70	70	365	1.23E-05	2.40E-01	2.95E-06	33.46
4,4'-DDT	0.0002	23000	4.30E-01	0.25	350	30	0.001	70	70	365	2.90E-06	3.40E-01	9.87E-07	11.20
Arsenic	0.0798	23000	1.00E-03	0.25	350	30	0.001	70	70	365	2.69E-06	1.75E+00	4.71E-06	53.49
Beryllium	0.0011	23000	1.00E-03	0.25	350	30	0.001	70	70	365	3.71E-08	4.30E+00	1.60E-07	1.81
TOTAL													8.81E-06	100.00

Contaminant	Concentration Noncarcinoge (mg/l)	Surface Area (cm2)	Dermal Permeability (cm/hr)	Exposure Time (hours/day)	Exposure Frequency (days/yr)	Exposure Duration (years)	Volumetric Conversion (L/m3)	Body Weight (kg)	Average Noncarc Time (years)	Days per Year (days)	Noncarc Dose (mg/kg-day)	Reference Dose (mg/kg-day)	Noncarc Risk	Percent Noncarcinogeni Risk
Bis(2-ethylhexyl)phthalate	0.005	23000	1.50E-03	0.25	350	30	0.001	70	30	365	5.91E-07	2.00E-02	0.00003	0.07
4,4'-DDT	0.0002	23000	4.30E-01	0.25	350	30	0.001	70	30	365	6.77E-06	5.00E-04	0.01355	29.92
Aluminum	43	23000	1.00E-03	0.25	350	30	0.001	70	30	365	3.39E-03	1.00E+00	0.00339	7.48
Arsenic	0.0798	23000	1.00E-03	0.25	350	30	0.001	70	30	365	6.29E-06	3.00E-04	0.02095	46.28
Beryllium	0.0011	23000	1.00E-03	0.25	350	30	0.001	70	30	365	8.66E-08	5.00E-03	0.00002	0.04
Chromium	0.065	23000	1.00E-03	0.25	350	30	0.001	70	30	365	5.12E-06	5.00E-03	0.00102	2.26
Vanadium	0.0449	23000	1.00E-03	0.25	350	30	0.001	70	30	365	3.54E-06	7.00E-03	0.00051	1.12
Manganese	0.369	23000	1.00E-03	0.25	350	30	0.001	70	30	365	2.91E-05	5.00E-03	0.00581	12.84
TOTAL													0.04528	100.00

(1) Lead was not evaluated due to the lack of a published toxicity value
File Name: GWDC.WQ2

APPENDIX M
CDI CALCULATIONS AND SPREADSHEETS

Computed by: :LHJ | Checked by: MDB | Date: 9/95

EXAMPLE SOIL INGESTION CALCULATIONS
OPERABLE UNIT NO. 11 (SITE 80)
CONTRACT TASK ORDER 0274

Purpose: Estimate intake/risk from ingestion of soil

$$Intake\ (mg/kg{\cdot}day) = \frac{C \times CF \times EF \times ED \times IR}{BW \times AT}$$

Where:

C	=	Contaminant concentration in soil (mg/kg)
CF	=	Conversion factor (kg/mg)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (years)
IR	=	Ingestion rate (mg/day)
BW	=	Body weight (kg)
AT_c	=	Averaging time carcinogen (days)
AT_{nc}	=	Averaging time noncarcinogen (days)

Risks:

Carcinogens = Intake (mg/kg·day) x CSF $(mg/kg{\cdot}day)^{-1}$
Noncarcinogens = Intake (mg/kg·day)/RfD (mg/kg·day)

Example Carcinogen: Arsenic

$$Intake\ (mg/kg{\cdot}day) = \frac{14.2\ mg/kg \times 100\ mg/day \times 350\ days/yr \times 24\ yrs \times 1.0E{-}6\ kg/mg}{70\ kg \times 25{,}550\ days}$$

$$= 6.65E\text{-}06$$

Risk = 6.65E-06 mg/kg·day x 1.75E+00 $mg/kg{\cdot}day^{-1}$ = 1.16E-05

Example Noncarcinogen: Arsenic

$$Intake\ (mg/kg{\cdot}day) = \frac{14.2\ mg/kg \times 100\ mg/day \times 350\ days/yr \times 24\ yrs \times 1.0E{-}6\ kg/mg}{70\ kg \times 8{,}760\ days}$$

$$= 1.94E\text{-}05$$

$$\text{Risk} = \frac{1.94E{-}05\ mg/kg{\cdot}day}{3.00E{-}04\ mg/kg{\cdot}day} = 0.065$$

SURFACE SOIL INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL CHILD

Intake from ingestion of soil is calculated as follows:

Intake (mg/kg-day) = C * CF * EF * ED * IR/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CF = conversion for kg to mg	1E-06
EF = exposure frequency (days/yr)	350
ED = exposure duration (yr)	6
IR = soil ingestion rate (mg/day)	200
BW = body weight (kg)	15
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	6
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Conversion Factor (kg/mg)	Ingestion Rate (mg/day)	Body Weight (kg)	Average Carc Time (years)	Days per year (days/yr)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg/day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Aldrin	0.0247	350	6	1E-06	200	15	70	365	2.71E-08	1.70E+01	4.60E-07	0.56
Dieldrin	2.4244	350	6	1E-06	200	15	70	365	2.66E-06	1.60E+01	4.25E-05	51.51
4,4'-DDD	43.591	350	6	1E-06	200	15	70	365	4.78E-05	2.40E-01	1.15E-05	13.89
4,4'-DDT	9.7701	350	6	1E-06	200	15	70	365	1.07E-05	3.40E-01	3.64E-06	4.41
alpha-Chlordane	0.2764	350	6	1E-06	200	15	70	365	3.03E-07	1.30E+00	3.94E-07	0.48
gamma-Chlordane	0.1703	350	6	1E-06	200	15	70	365	1.87E-07	1.30E+00	2.43E-07	0.29
Arsenic	14.2	350	6	1E-06	200	15	70	365	1.56E-05	1.50E+00	2.33E-05	28.29
Beryllium	0.1	350	6	1E-06	200	15	70	365	1.10E-07	4.30E+00	4.71E-07	0.57
TOTAL											8.25E-05	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Conversion Factor (kg/mg)	Ingestion Rate (mg/day)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg/day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aldrin	0.0247	350	6	1E-06	200	15	6	365	3.16E-07	3.00E-05	0.0105	0.63
Dieldrin	2.4244	350	6	1E-06	200	15	6	365	3.10E-05	5.00E-05	0.6199	36.90
4,4'-DDT	9.7701	350	6	1E-06	200	15	6	365	1.25E-04	5.00E-04	0.2498	14.87
alpha-Chlordane	0.2764	350	6	1E-06	200	15	6	365	3.53E-06	6.00E-05	0.0589	3.51
gamma-Chlordane	0.1703	350	6	1E-06	200	15	6	365	2.18E-06	6.00E-05	0.0363	2.16
Aluminum	4428.1	350	6	1E-06	200	15	6	365	5.66E-02	1.00E+00	0.0566	3.37
Arsenic	14.2	350	6	1E-06	200	15	6	365	1.82E-04	3.00E-04	0.6052	36.03
Manganese	43.6	350	6	1E-06	200	15	6	365	5.57E-04	1.40E-01	0.0040	0.24
Mercury	0.9	350	6	1E-06	200	15	6	365	1.15E-05	3.00E-04	0.0384	2.28
Beryllium	0.1	350	6	1E-06	200	15	6	365	1.28E-06	5.00E-03	0.0003	0.02
TOTAL											1.6799	100.00

File Name: SI.WQ1

SURFACE SOIL INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 60)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULT

Intake from ingestion of soil is calculated as follows:

Intake (mg/kg-day) = C * CF * EF * ED * IR/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CF = conversion for kg to mg	1E-06
EF = exposure frequency (days/yr)	350
ED = exposure duration (yr)	24
IR = soil ingestion rate (mg/day)	100
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	24
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Conversion Factor (kg/mg)	Ingestion Rate (mg/day)	Body Weight (kg)	Average Carc Time (years)	Days per year (days/yr)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg/day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Aldrin	0.0247	350	24	1E-06	100	70	70	365	1.16E-08	1.70E+01	1.97E-07	0.56
Dieldrin	2.4244	350	24	1E-06	100	70	70	365	1.14E-06	1.60E+01	1.82E-05	51.51
4,4'-DDD	43.591	350	24	1E-06	100	70	70	365	2.05E-05	2.40E-01	4.91E-06	13.89
4,4'-DDT	9.7701	350	24	1E-06	100	70	70	365	4.59E-06	3.40E-01	1.56E-06	4.41
alpha-Chlordane	0.2764	350	24	1E-06	100	70	70	365	1.30E-07	1.30E+00	1.69E-07	0.48
gamma-Chlordane	0.1703	350	24	1E-06	100	70	70	365	8.00E-08	1.30E+00	1.04E-07	0.29
Arsenic	14.2	350	24	1E-06	100	70	70	365	6.67E-06	1.50E+00	1.00E-05	28.29
Beryllium	0.1	350	24	1E-06	100	70	70	365	4.70E-08	4.30E+00	2.02E-07	0.57
TOTAL											3.54E-05	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Conversion Factor (kg/mg)	Ingestion Rate (mg/day)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg/day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aldrin	0.0247	350	24	1E-06	100	70	24	365	3.38E-08	3.00E-05	0.0011	0.63
Dieldrin	2.4244	350	24	1E-06	100	70	24	365	3.32E-06	5.00E-05	0.0664	36.90
4,4'-DDT	9.7701	350	24	1E-06	100	70	24	365	1.34E-05	5.00E-04	0.0268	14.87
alpha-Chlordane	0.2764	350	24	1E-06	100	70	24	365	3.79E-07	6.00E-05	0.0063	3.51
gamma-Chlordane	0.1703	350	24	1E-06	100	70	24	365	2.33E-07	6.00E-05	0.0039	2.16
Aluminum	4428.1	350	24	1E-06	100	70	24	365	6.07E-03	1.00E+00	0.0061	3.37
Arsenic	14.2	350	24	1E-06	100	70	24	365	1.95E-05	3.00E-04	0.0648	36.03
Manganese	43.6	350	24	1E-06	100	70	24	365	5.97E-05	1.40E-01	0.0004	0.24
Mercury	0.9	350	24	1E-06	100	70	24	365	1.23E-06	3.00E-04	0.0041	2.28
Beryllium	0.1	350	24	1E-06	100	70	24	365	1.37E-07	5.00E-03	0.0000	0.02
TOTAL											0.1800	100.00

File Name: SI.WQ2

SURFACE SOIL INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
ADULT CIVILIAN BASE PERSONNEL

Intake from ingestion of soil is calculated as follows:

Intake (mg/kg-day) = C * CF * EF * ED * IR/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CF = conversion for kg to mg	1E-06
EF = exposure frequency (days/yr)	250
ED = exposure duration (yr)	25
IR = soil ingestion rate (mg/day)	480
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	25
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Conversion Factor (kg/mg)	Ingestion Rate (mg/day)	Body Weight (kg)	Average Carc Time (years)	Days per year (days/yr)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg/day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Aldrin	0.0247	250	25	1E-06	480	70	70	365	4.14E-08	1.70E+01	7.04E-07	0.46
Dieldrin	2.4244	350	25	1E-06	480	70	70	365	5.69E-06	1.60E+01	9.11E-05	59.80
4,4'-DDD	43.591	250	25	1E-06	480	70	70	365	7.31E-05	2.40E-01	1.75E-05	11.52
4,4'-DDT	9.7701	250	25	1E-06	480	70	70	365	1.64E-05	3.40E-01	5.57E-06	3.66
alpha-Chlordane	0.2764	250	25	1E-06	480	70	70	365	4.64E-07	1.30E+00	6.03E-07	0.40
gamma-Chlordane	0.1703	250	25	1E-06	480	70	70	365	2.86E-07	1.30E+00	3.71E-07	0.24
Arsenic	14.2	250	25	1E-06	480	70	70	365	2.38E-05	1.50E+00	3.57E-05	23.45
Beryllium	0.1	250	25	1E-06	480	70	70	365	1.68E-07	4.30E+00	7.21E-07	0.47
TOTAL											1.52E-04	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Conversion Factor (kg/mg)	Ingestion Rate (mg/day)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg/day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aldrin	0.0247	250	25	1E-06	480	70	25	365	1.16E-07	3.00E-05	0.0039	0.63
Dieldrin	2.4244	250	25	1E-06	480	70	25	365	1.14E-05	5.00E-05	0.2277	36.90
4,4'-DDT	9.7701	250	25	1E-06	480	70	25	365	4.59E-05	5.00E-04	0.0918	14.87
alpha-Chlordane	0.2764	250	25	1E-06	480	70	25	365	1.30E-06	6.00E-05	0.0216	3.51
gamma-Chlordane	0.1703	250	25	1E-06	480	70	25	365	8.00E-07	6.00E-05	0.0133	2.16
Aluminum	4426.1	250	25	1E-06	480	70	25	365	2.08E-02	1.00E+00	0.0208	3.37
Arsenic	14.2	250	25	1E-06	480	70	25	365	6.67E-05	3.00E-04	0.2223	36.03
Manganese	43.6	250	25	1E-06	480	70	25	365	2.05E-04	1.40E-01	0.0015	0.24
Mercury	0.9	250	25	1E-06	480	70	25	365	4.23E-06	3.00E-04	0.0141	2.28
Beryllium	0.1	250	25	1E-06	480	70	25	365	4.70E-07	5.00E-03	0.0001	0.02
TOTAL											0.6171	100.00

File Name: SI.WQ3

SUBSURFACE SOIL INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE ADULT CONSTRUCTION WORKER

Intake from ingestion of soil is calculated as follows:

Intake (mg/kg-day) = C * CF * EF * ED * IR/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CF = conversion for kg to mg	1E-06
EF = exposure frequency (days/yr)	90
ED = exposure duration (yr)	1
IR = soil ingestion rate (mg/day)	480
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	1
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Conversion Factor (kg/mg)	Ingestion Rate (mg/day)	Body Weight (kg)	Average Carc Time (years)	Days per year (days/yr)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg/day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Arsenic	4	90	1	1E-06	480	70	70	365	9.66E-08	1.50E+00	1.45E-07	100.00
TOTAL											1.45E-07	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Conversion Factor (kg/mg)	Ingestion Rate (mg/day)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg/day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Arsenic	4	90	1	1E-06	480	70	1	365	6.76E-06	3.00E-04	0.02254	100.00
TOTAL											0.02254	100.00

File Name: SI.WQ4

SURFACE SOIL INGESTION EXPOSURE ASSESSMENT AFTER TCRA SOIL REMOVAL
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL CHILD

Intake from ingestion of soil is calculated as follows:

Intake (mg/kg-day) = C * CF * EF * ED * IR/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CF = conversion for kg to mg	1E-06
EF = exposure frequency (days/yr)	350
ED = exposure duration (yr)	6
IR = soil ingestion rate (mg/day)	200
BW = body weight (kg)	15
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	6
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Conversion Factor (kg/mg)	Ingestion Rate (mg/day)	Body Weight (kg)	Average Carc Time (years)	Days per year (days/yr)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg/day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Arsenic	6.37	350	6	1E-06	200	15	70	365	6.98E-06	1.50E+00	1.05E-05	92.89
Beryllium	0.17	350	6	1E-06	200	15	70	365	1.86E-07	4.30E+00	8.01E-07	7.11
TOTAL											1.13E-05	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Conversion Factor (kg/mg)	Ingestion Rate (mg/day)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg/day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aluminum	3954	350	6	1E-06	200	15	6	365	5.06E-02	1.00E+00	0.0506	8.70
Arsenic	6.37	350	6	1E-06	200	15	6	365	8.14E-05	3.00E-04	0.2715	46.70
Iron	2835	350	6	1E-06	200	15	6	365	3.62E-02	1.40E-01	0.2589	44.53
Beryllium	0.17	350	6	1E-06	200	15	6	365	2.17E-06	5.00E-03	0.0004	0.07
TOTAL											0.5814	100.00

File Name: SITC.WQ1

SURFACE SOIL INGESTION EXPOSURE ASSESSMENT AFTER TCRA SOIL REMOVAL
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULT

Intake from ingestion of soil is calculated as follows:

Intake (mg/kg-day) = C * CF * EF * ED * IR/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CF = conversion for kg to mg	1E-06
EF = exposure frequency (days/yr)	350
ED = exposure duration (yr)	24
IR = soil ingestion rate (mg/day)	100
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	24
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Conversion Factor (kg/mg)	Ingestion Rate (mg/day)	Body Weight (kg)	Average Carc Time (years)	Days per year (days/yr)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg/day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Arsenic	6.37	350	24	1E-06	100	70	70	365	2.99E-06	1.50E+00	4.49E-06	92.89
Beryllium	0.17	350	24	1E-06	100	70	70	365	7.98E-08	4.30E+00	3.43E-07	7.11
TOTAL											4.83E-06	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Conversion Factor (kg/mg)	Ingestion Rate (mg/day)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg/day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aluminum	3954	350	24	1E-06	100	70	24	365	5.42E-03	1.00E+00	0.0054	8.70
Arsenic	6.37	350	24	1E-06	100	70	24	365	8.73E-06	3.00E-04	0.0291	46.70
Iron	2835	350	24	1E-06	100	70	24	365	3.88E-03	1.40E-01	0.0277	44.53
Beryllium	0.17	350	24	1E-06	100	70	24	365	2.33E-07	5.00E-03	0.0000	0.07
TOTAL											0.0623	100.00

File Name: SITC.WQ2

SURFACE SOIL INGESTION EXPOSURE ASSESSMENT AFTER TCRA SOIL REMOVAL
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT CIVILIAN BASE PERSONNEL

Intake from ingestion of soil is calculated as follows:

Intake (mg/kg-day) = C * CF * EF * ED * IR/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CF = conversion for kg to mg	1E-06
EF = exposure frequency (days/yr)	250
ED = exposure duration (yr)	25
IR = soil ingestion rate (mg/day)	480
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	25
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Conversion Factor (kg/mg)	Ingestion Rate (mg/day)	Body Weight (kg)	Average Carc Time (years)	Days per year (days/yr)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg/day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Arsenic	6.37	250	25	1E-06	480	70	70	365	1.07E-05	1.50E+00	1.60E-05	92.89
Beryllium	0.17	250	25	1E-06	480	70	70	365	2.85E-07	4.30E+00	1.23E-06	7.11
TOTAL											1.73E-05	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Conversion Factor (kg/mg)	Ingestion Rate (mg/day)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg/day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aluminum	3954	250	25	1E-06	480	70	25	365	1.86E-02	1.00E+00	0.0186	8.70
Arsenic	6.37	250	25	1E-06	480	70	25	365	2.99E-05	3.00E-04	0.0997	46.70
Iron	2835	250	25	1E-06	480	70	25	365	1.33E-02	1.40E-01	0.0951	44.53
Beryllium	0.17	250	25	1E-06	480	70	25	365	7.98E-07	5.00E-03	0.0002	0.07
TOTAL											0.2136	100.00

File Name: SITC.WQ3

Computed by: :LHJ Checked by: MDB Date: 9/95

EXAMPLE DERMAL CONTACT WITH SOIL CALCULATIONS
OPERABLE UNIT NO. 11 (SITE 80)
CONTRACT TASK ORDER 0274

Purpose: Estimate intake/risk from dermal contact with soil

$$Intake\ (mg/kg{\cdot}day) = \frac{C \times CF \times SA \times AF \times Abs \times EF \times ED}{BW \times AT}$$

Where:	C	=	Contaminant concentration in soil (mg/kg)
	CF	=	Conversion factor (kg/mg)
	SA	=	Surface available for contact (cm^2/event)
	AF	=	Soil to skin adherence factor (mg/cm^2)
	Abs	=	Fraction absorbed (percent)
	EF	=	Exposure frequency (days/year)
	ED	=	Exposure duration (years)
	BW	=	Body weight (kg)
	AT_c	=	Averaging time carcinogen (days)
	AT_{nc}	=	Averaging time noncarcinogen (days)

Risks:

Carcinogens = Intake (mg/kg·day) x CSF $(mg/kg{\cdot}day)^{-1}$
Noncarcinogens = Intake (mg/kg·day)/RfD (mg/kg·day)

Example Carcinogen: Dieldrin

$$ake\ (mg/kg{\cdot}day) = \frac{2.4244\ mg/kg \times 1.0E{-}06\ kg/mg \times 5{,}800\ cm^2/event \times 1\% \times 1\ mg/cm^2 \times 350\ event/yr \times 24}{70\ kg \times 25{,}550\ days}$$

= 6.60E-07

Risk = 6.60E-07 mg/kg·day x 1.60E+01 $mg/kg{\cdot}day^{-1}$ = 1.06E-05

Example Noncarcinogen: Dieldrin

$$ake\ (mg/kg{\cdot}day) = \frac{2.4244\ mg/kg \times 1.0E{-}06\ kg/mg \times 5{,}800\ cm^2/event \times 1\ mg/cm^2 \times 1\% \times 350\ event/yr \times 24}{70\ kg \times 8{,}760\ days}$$

= 1.93E-06

$$Risk = \frac{1.93E{-}06\ mg/kg{\cdot}day}{5.00E{-}05\ mg/kg{\cdot}day} = 0.039$$

Re: Site 80 Future Residential Adult

SURFACE SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULT

Dermal contact with soil is calculated as follows:

Intake (mg/kg-day) = C * CF * SA * AF * Abs * EF * ED/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CF = conversion factor (kg/mg)	1E-06
SA = exposed skin surface area (cm2)	2300
AF = soil to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless)	Specific
EF = exposure frequency (events/yr)	350
ED = exposure duration (years)	6
BW = body weight (kg)	15
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	6
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	Fraction Absorbed	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Aldrin	0.0247	1E-06	2300	1	0.01	350	6	15	70	365	3.11E-09	1.70E+01	5.29E-08	0.75
Dieldrin	2.4244	1E-06	2300	1	0.01	350	6	15	70	365	3.06E-07	1.60E+01	4.89E-06	69.58
4,4'-DDD	43.591	1E-06	2300	1	0.01	350	6	15	70	365	5.49E-06	2.40E-01	1.32E-06	18.77
4,4'-DDT	9.7701	1E-06	2300	1	0.01	350	6	15	70	365	1.23E-06	3.40E-01	4.19E-07	5.96
alpha-Chlordane	0.2764	1E-06	2300	1	0.01	350	6	15	70	365	3.48E-08	1.30E+00	4.53E-08	0.64
gamma-Chlordane	0.1703	1E-06	2300	1	0.01	350	6	15	70	365	2.15E-08	1.30E+00	2.79E-08	0.40
Arsenic	14.2	1E-06	2300	1	0.001	350	6	15	70	365	1.79E-07	1.50E+00	2.68E-07	3.82
Beryllium	0.1	1E-06	2300	1	0.001	350	6	15	70	365	1.26E-09	4.30E+00	5.42E-09	0.08
TOTAL													7.03E-06	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	Fraction Absorbed	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aldrin	0.0247	1E-06	2300	1	0.01	350	6	15	6	365	3.63E-08	3.00E-05	0.001211	1.01
Dieldrin	2.4244	1E-06	2300	1	0.01	350	6	15	6	365	3.56E-06	5.00E-05	0.071293	59.27
4,4'-DDT	9.7701	1E-06	2300	1	0.01	350	6	15	6	365	1.44E-05	5.00E-04	0.028730	23.89
alpha-Chlordane	0.2764	1E-06	2300	1	0.01	350	6	15	6	365	4.06E-07	6.00E-05	0.006773	5.63
gamma-Chlordane	0.1703	1E-06	2300	1	0.01	350	6	15	6	365	2.50E-07	6.00E-05	0.004173	3.47
Aluminum	4428.1	1E-06	2300	1	0.001	350	6	15	6	365	6.51E-04	1.00E+00	0.000651	0.54
Arsenic	14.2	1E-06	2300	1	0.001	350	6	15	6	365	2.09E-06	3.00E-04	0.006960	5.79
Manganese	43.6	1E-06	2300	1	0.001	350	6	15	6	365	6.41E-06	1.40E-01	0.000046	0.04
Mercury	0.9	1E-06	2300	1	0.001	350	6	15	6	365	1.32E-07	3.00E-04	0.000441	0.37
Beryllium	0.1	1E-06	2300	1	0.001	350	6	15	6	365	1.47E-08	5.00E-03	0.000003	0.00
TOTAL													0.120251	100.00

File Name: SDC.WQ1

SURFACE SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULT

Dermal contact with soil is calculated as follows:

Intake (mg/kg-day) = C * CF * SA * AF * Abs * EF * ED/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CF = conversion factor (kg/mg)	1E-06
SA = exposed skin surface area (cm2)	5800
AF = soil to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless)	Specific
EF = exposure frequency (events/yr)	350
ED = exposure duration (years)	24
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	24
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	Fraction Absorbed	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Aldrin	0.0247	1E-06	5800	1	0.01	350	24	70	70	365	6.73E-09	1.70E+01	1.14E-07	0.75
Dieldrin	2.4244	1E-06	5800	1	0.01	350	24	70	70	365	6.60E-07	1.60E+01	1.06E-05	69.58
4,4'-DDD	43.591	1E-06	5800	1	0.01	350	24	70	70	365	1.19E-05	2.40E-01	2.85E-06	18.77
4,4'-DDT	9.7701	1E-06	5800	1	0.01	350	24	70	70	365	2.66E-06	3.40E-01	9.05E-07	5.96
alpha-Chlordane	0.2764	1E-06	5800	1	0.01	350	24	70	70	365	7.53E-08	1.30E+00	9.79E-08	0.64
gamma-Chlordane	0.1703	1E-06	5800	1	0.01	350	24	70	70	365	4.64E-08	1.30E+00	6.03E-08	0.40
Arsenic	14.2	1E-06	5800	1	0.001	350	24	70	70	365	3.87E-07	1.50E+00	5.80E-07	3.82
Beryllium	0.1	1E-06	5800	1	0.001	350	24	70	70	365	2.72E-09	4.30E+00	1.17E-08	0.08
TOTAL													1.52E-05	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	Fraction Absorbed	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aldrin	0.0247	1E-06	5800	1	0.01	350	24	70	24	365	1.96E-08	3.00E-05	0.000654	1.01
Dieldrin	2.4244	1E-06	5800	1	0.01	350	24	70	24	365	1.93E-06	5.00E-05	0.038525	59.27
4,4'-DDT	9.7701	1E-06	5800	1	0.01	350	24	70	24	365	7.76E-06	5.00E-04	0.015525	23.89
alpha-Chlordane	0.2764	1E-06	5800	1	0.01	350	24	70	24	365	2.20E-07	6.00E-05	0.003660	5.63
gamma-Chlordane	0.1703	1E-06	5800	1	0.01	350	24	70	24	365	1.35E-07	6.00E-05	0.002255	3.47
Aluminum	4428.1	1E-06	5800	1	0.001	350	24	70	24	365	3.52E-04	1.00E+00	0.000352	0.54
Arsenic	14.2	1E-06	5800	1	0.001	350	24	70	24	365	1.13E-06	3.00E-04	0.003761	5.79
Manganese	43.6	1E-06	5800	1	0.001	350	24	70	24	365	3.46E-06	1.40E-01	0.000025	0.04
Mercury	0.9	1E-06	5800	1	0.001	350	24	70	24	365	7.15E-08	3.00E-04	0.000238	0.37
Beryllium	0.1	1E-06	5800	1	0.001	350	24	70	24	365	7.95E-09	5.00E-03	0.000002	0.00
TOTAL													0.064996	100.00

File Name: SDC.WQ2

SURFACE SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
ADULT CIVILIAN BASE PERSONNEL

Dermal contact with soil is calculated as follows:

Intake (mg/kg-day) = C * CF * SA * AF * Abs * EF * ED/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CF = conversion factor (kg/mg)	1E-06
SA = exposed skin surface area (cm2)	4300
AF = soil to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless)	Specific
EF = exposure frequency (events/yr)	250
ED = exposure duration (years)	25
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	25
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	Fraction Absorbed	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Aldrin	0.0247	1E-06	4300	1	0.01	250	25	70	70	365	3.71E-09	1.70E+01	6.31E-08	0.75
Dieldrin	2.4244	1E-06	4300	1	0.01	250	25	70	70	365	3.64E-07	1.60E+01	5.83E-06	69.58
4,4'-DDD	43.591	1E-06	4300	1	0.01	250	25	70	70	365	6.55E-06	2.40E-01	1.57E-06	18.77
4,4'-DDT	9.7701	1E-06	4300	1	0.01	250	25	70	70	365	1.47E-06	3.40E-01	4.99E-07	5.96
alpha-Chlordane	0.2764	1E-06	4300	1	0.01	250	25	70	70	365	4.15E-08	1.30E+00	5.40E-08	0.64
gamma-Chlordane	0.1703	1E-06	4300	1	0.01	250	25	70	70	365	2.56E-08	1.30E+00	3.33E-08	0.40
Arsenic	14.2	1E-06	4300	1	0.001	250	25	70	70	365	2.13E-07	1.50E+00	3.20E-07	3.82
Beryllium	0.1	1E-06	4300	1	0.001	250	25	70	70	365	1.50E-09	4.30E+00	6.46E-09	0.08
TOTAL													8.38E-06	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	Fraction Absorbed	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aldrin	0.0247	1E-06	4300	1	0.01	250	25	70	25	365	1.04E-08	3.00E-05	0.000348	1.01
Dieldrin	2.4244	1E-06	4300	1	0.01	250	25	70	25	365	1.02E-06	5.00E-05	0.020401	59.27
4,4'-DDT	9.7701	1E-06	4300	1	0.01	250	25	70	25	365	4.11E-06	5.00E-04	0.008221	23.89
alpha-Chlordane	0.2764	1E-06	4300	1	0.01	250	25	70	25	365	1.16E-07	6.00E-05	0.001938	5.63
gamma-Chlordane	0.1703	1E-06	4300	1	0.01	250	25	70	25	365	7.17E-08	6.00E-05	0.001194	3.47
Aluminum	4428.1	1E-06	4300	1	0.001	250	25	70	25	365	1.86E-04	1.00E+00	0.000186	0.54
Arsenic	14.2	1E-06	4300	1	0.001	250	25	70	25	365	5.97E-07	3.00E-04	0.001992	5.79
Manganese	43.6	1E-06	4300	1	0.001	250	25	70	25	365	1.83E-06	1.40E-01	0.000013	0.04
Mercury	0.9	1E-06	4300	1	0.001	250	25	70	25	365	3.79E-08	3.00E-04	0.000126	0.37
Beryllium	0.1	1E-06	4300	1	0.001	250	25	70	25	365	4.21E-09	5.00E-03	0.000001	0.00
TOTAL													0.034419	100.00

File Name: SDC.WQ3

SUBSURFACE SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE ADULT CONSTRUCTION WORKER

Dermal contact with soil is calculated as follows:

Intake (mg/kg-day) = C * CF * SA * AF * Abs * EF * ED/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CF = conversion factor (kg/mg)	1E-06
SA = exposed skin surface area (cm2)	4300
AF = soil to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless)	Specific
EF = exposure frequency (events/yr)	90
ED = exposure duration (years)	1
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	1
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	Fraction Absorbed	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Arsenic	4	1E-06	4300	1	0.001	90	1	70	70	365	8.66E-10	1.75E+00	1.51E-09	100.00
TOTAL													1.51E-09	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	Fraction Absorbed	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Arsenic	4	1E-06	4300	1	0.001	90	1	70	1	365	6.06E-08	3.00E-04	0.000202	100.00
TOTAL													0.000202	100.00

File Name: SDC.WQ4

SURFACE SOIL DERMAL CONTACT EXPOSURE ASSESSMENT AFTER TCRA
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL CHILD

Dermal contact with soil is calculated as follows:

Intake (mg/kg-day) = C * CF * SA * AF * Abs * EF * ED/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CF = conversion factor (kg/mg)	1E-06
SA = exposed skin surface area (cm2)	2300
AF = soil to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless)	Specific
EF = exposure frequency (events/yr)	350
ED = exposure duration (years)	6
BW = body weight (kg)	15
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	6
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	Fraction Absorbed	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Arsenic	6.37	1E-06	2300	1	0.001	350	6	15	70	365	8.03E-08	1.50E+00	1.20E-07	92.89
Beryllium	0.17	1E-06	2300	1	0.001	350	6	15	70	365	2.14E-09	4.30E+00	9.21E-09	7.11
TOTAL													1.30E-07	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	Fraction Absorbed	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aluminum	3954	1E-06	2300	1	0.001	350	6	15	6	365	5.81E-04	1.00E+00	0.000581	0.67
Arsenic	6.37	1E-06	2300	1	0.001	350	6	15	6	365	9.37E-07	3.00E-04	0.003122	3.59
Iron	2835	1E-06	2300	1	0.001	350	6	15	6	365	4.17E-04	5.00E-03	0.083367	95.74
Beryllium	0.17	1E-06	2300	1	0.001	350	6	15	6	365	2.50E-08	5.00E-03	0.000005	0.01
TOTAL													0.087075	100.00

File Name: SDCTC.WQ1

SURFACE SOIL DERMAL CONTACT EXPOSURE ASSESSMENT AFTER TCRA
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULT

Dermal contact with soil is calculated as follows:

Intake (mg/kg-day) = C * CF * SA * AF * Abs * EF * ED/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CF = conversion factor (kg/mg)	1E-06
SA = exposed skin surface area (cm2)	5800
AF = soil to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless)	Specific
EF = exposure frequency (events/yr)	350
ED = exposure duration (years)	24
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	24
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	Fraction Absorbed	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Arsenic	6.37	1E-06	5800	1	0.001	350	24	70	70	365	1.74E-07	1.50E+00	2.60E-07	92.89
Beryllium	0.17	1E-06	5800	1	0.001	350	24	70	70	365	4.63E-09	4.30E+00	1.99E-08	7.11
TOTAL													2.80E-07	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	Fraction Absorbed	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aluminum	3954	1E-06	5800	1	0.001	350	24	70	24	365	3.14E-04	1.00E+00	0.000314	0.67
Arsenic	6.37	1E-06	5800	1	0.001	350	24	70	24	365	5.06E-07	3.00E-04	0.001687	3.59
Iron	2835	1E-06	5800	1	0.001	350	24	70	24	365	2.25E-04	5.00E-03	0.045049	95.74
Beryllium	0.17	1E-06	5800	1	0.001	350	24	70	24	365	1.35E-08	5.00E-03	0.000003	0.01
TOTAL													0.047053	100.00

File Name: SDCTC.WQ2

SURFACE SOIL DERMAL CONTACT EXPOSURE ASSESSMENT AFTER TCRA
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
CUURENT CIVILIAN BASE PERSONNEL

Dermal contact with soil is calculated as follows:

Intake (mg/kg-day) = C * CF * SA * AF * Abs * EF * ED/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CF = conversion factor (kg/mg)	1E-06
SA = exposed skin surface area (cm2)	4300
AF = soil to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless)	Specific
EF = exposure frequency (events/yr)	250
ED = exposure duration (years)	25
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	25
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	Fraction Absorbed	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Arsenic	6.37	1E-06	4300	1	0.001	250	25	70	70	365	9.57E-08	1.50E+00	1.44E-07	92.89
Beryllium	0.17	1E-06	4300	1	0.001	250	25	70	70	365	2.55E-09	4.30E+00	1.10E-08	7.11
TOTAL													1.55E-07	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	Fraction Absorbed	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aluminum	3954	1E-06	4300	1	0.001	250	25	70	25	365	1.66E-04	1.00E+00	0.000166	0.67
Arsenic	6.37	1E-06	4300	1	0.001	250	25	70	25	365	2.68E-07	3.00E-04	0.000893	3.59
Iron	2835	1E-06	4300	1	0.001	250	25	70	25	365	1.19E-04	5.00E-03	0.023856	95.74
Beryllium	0.17	1E-06	4300	1	0.001	250	25	70	25	365	7.15E-09	5.00E-03	0.000001	0.01
TOTAL													0.024917	100.00

File Name: SDCTC.WQ3

Computed by: :LHJ Checked by: MDB Date: 9/95

EXAMPLE INHALATION OF PARTICULATES CALCULATIONS
OPERABLE UNIT NO. 11 (SITE 80)
CONTRACT TASK ORDER 0274

Purpose: Estimate intake/risk from the inhalation of soil particulates

$$Intake\ (mg/kg{\cdot}day) = \frac{C \times IR \times EF \times ED \times 1/PEF}{BW \times AT}$$

Where:

C	=	Contaminant concentration in soil (mg/kg)
IR	=	Inhalation rate (m^3/day)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (years)
PEF	=	Particulate Emission Factor (m^3/kg)
BW	=	Body weight (kg)
AT_c	=	Averaging time carcinogen (days)
AT_{nc}	=	Averaging time noncarcinogen (days)

Risks:

Carcinogens = Intake (mg/kg·day) x CSF $(mg/kg{\cdot}day)^{-1}$
Noncarcinogens = Intake (mg/kg·day)/RfD (mg/kg·day)

Example Carcinogen: Beryllium

$$Intake\ (mg/kg{\cdot}day) = \frac{0.1\ mg/kg \times 20\ m^3/day \times 350\ days/yr \times 24\ yrs \times 1/4.6E{+}09\ m^3/kg}{70\ kg \times 25{,}550\ days}$$

$$= 2.014E\text{-}12$$

Risk = 2.01E-12 mg/kg·day x 8.40E+00 $mg/kg{\cdot}day^{-1}$ = 1.69E-11

Example Noncarcinogen: Manganese

$$Intake\ (mg/kg{\cdot}day) = \frac{43.6\ mg/kg \times 20\ m^3/day \times 350\ days/yr \times 24\ yrs \times 1/4.6E{+}09\ m^3/kg}{70\ kg \times 8{,}760\ days}$$

$$= 2.58E\text{-}09$$

Risk = 2.58E-09 mg/kg·day x 1.43E-05 $mg/kg{\cdot}day^{-1}$ = 3.7E-14

PARTICULATE INHALATION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL CHILD

Intake from the inhalation of particulates is calculated as follows:

Intake (mg/kg-day) = (C * EF * ED * IR * 1/PEF)/(BW * ATc or ATnc * DY)

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CSF = carcinogenic slope factor	Specific
RfD = reference dose for noncarcinogen	Specific
IR = inhalation rate (m3)	12
EF = exposure frequency (days)	350
ED = exposure duration (years)	6
BW = body weight (kg)	15
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	6
DY = day per year (day/yr)	365
PEF = particulate emission factor (m3/kg)	6.79E+08

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Conrtribution to Risk
Aldrin	0.0247	6.8E+08	350	12	6	15	70	365	2.39E-12	1.71E+01	4.09E-11	0.16
Dieldrin	2.4244	6.8E+08	350	12	6	15	70	365	2.35E-10	1.61E+01	3.78E-09	15.09
4,4'-DDD	43.5910	6.8E+08	350	12	6	15	70	365	4.22E-09		0.00E+00	0.00
4,4'-DDT	9.7701	6.8E+08	350	12	6	15	70	365	9.46E-10	3.40E-01	3.22E-10	1.28
alpha-Chlordane	0.2764	6.8E+08	350	12	6	15	70	365	2.68E-11	1.29E+00	3.45E-11	0.14
gamma-Chlordane	0.1703	6.8E+08	350	12	6	15	70	365	1.65E-11	1.29E+00	2.13E-11	0.08
Arsenic	14.2	6.8E+08	350	12	6	15	70	365	1.38E-09	1.51E+01	2.08E-08	82.91
Beryllium	0.1	6.8E+08	350	12	6	15	70	365	9.68E-12	8.40E+00	8.13E-11	0.32
TOTAL											2.50E-08	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aldrin	0.0247	6.8E+08	350	12	6	15	6	365	2.79E-11		0.00E+00	0.00
Dieldrin	2.4244	6.8E+08	350	12	6	15	6	365	2.74E-09		0.00E+00	0.00
4,4'-DDT	9.7701	6.8E+08	350	12	6	15	6	365	1.10E-08		0.00E+00	0.00
alpha-Chlordane	0.2764	6.8E+08	350	12	6	15	6	365	3.12E-10		0.00E+00	0.00
gamma-Chlordane	0.1703	6.8E+08	350	12	6	15	6	365	1.92E-10		0.00E+00	0.00
Aluminum	4428.1	6.8E+08	350	12	6	15	6	365	5.00E-06		0.00E+00	0.00
Arsenic	14.2	6.8E+08	350	12	6	15	6	365	1.60E-08		0.00E+00	0.00
Manganese	43.6	6.8E+08	350	12	6	15	6	365	4.93E-08	1.43E-05	7.04E-13	88.99
Mercury	0.9	6.8E+08	350	12	6	15	6	365	1.02E-09	8.57E-05	8.71E-14	11.01
Beryllium	0.1	6.8E+08	350	12	6	15	6	365	1.13E-10		0.00E+00	0.00
TOTAL											7.92E-13	100.00

DDD and DDT do not have inhalation slope factors.
Manganese and mercury are the only noncarcinogenic COPCs with inhalation reference doses.
File Name: PI.WQ1

PARTICULATE INHALATION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULT

Intake from the inhalation of particulates is calculated as follows:

Intake (mg/kg-day) = (C * EF * ED * IR * 1/PEF)/(BW * ATc or ATnc * DY)

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CSF = carcinogenic slope factor	Specific
RfD = reference dose for noncarcinogen	Specific
IR = inhalation rate (m3)	20
EF = exposure frequency (days)	350
ED = exposure duration (years)	24
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	24
DY = day per year (day/yr)	365
PEF = particulate emission factor (m3/kg)	6.79E+08

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk
Aldrin	0.0247	6.8E+08	350	20	24	70	70	365	3.42E-12	1.71E+01	5.84E-11	0.16
Dieldrin	2.4244	6.8E+08	350	20	24	70	70	365	3.35E-10	1.61E+01	5.40E-09	15.09
4,4'-DDD	43.5910	6.8E+08	350	20	24	70	70	365	6.03E-09		0.00E+00	0.00
4,4'-DDT	9.7701	6.8E+08	350	20	24	70	70	365	1.35E-09	3.40E-01	4.60E-10	1.28
alpha-Chlordane	0.2764	6.8E+08	350	20	24	70	70	365	3.82E-11	1.29E+00	4.93E-11	0.14
gamma-Chlordane	0.1703	6.8E+08	350	20	24	70	70	365	2.36E-11	1.29E+00	3.04E-11	0.08
Arsenic	14.2	6.8E+08	350	20	24	70	70	365	1.96E-09	1.51E+01	2.97E-08	82.91
Beryllium	0.1	6.8E+08	350	20	24	70	70	365	1.38E-11	8.40E+00	1.16E-10	0.32
TOTAL											3.58E-08	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aldrin	0.0247	6.8E+08	350	20	24	70	24	365	9.97E-12		0.00E+00	0.00
Dieldrin	2.4244	6.8E+08	350	20	24	70	24	365	9.78E-10		0.00E+00	0.00
4,4'-DDT	9.7701	6.8E+08	350	20	24	70	24	365	3.94E-09		0.00E+00	0.00
alpha-Chlordane	0.2764	6.8E+08	350	20	24	70	24	365	1.12E-10		0.00E+00	0.00
gamma-Chlordane	0.1703	6.8E+08	350	20	24	70	24	365	6.87E-11		0.00E+00	0.00
Aluminum	4428.1	6.8E+08	350	20	24	70	24	365	1.79E-06		0.00E+00	0.00
Arsenic	14.2	6.8E+08	350	20	24	70	24	365	5.73E-09		0.00E+00	0.00
Manganese	43.6	6.8E+08	350	20	24	70	24	365	1.76E-08	1.43E-05	2.52E-13	88.99
Mercury	0.9	6.8E+08	350	20	24	70	24	365	3.63E-10	8.57E-05	3.11E-14	11.01
Beryllium	0.1	6.8E+08	350	20	24	70	24	365	4.03E-11		0.00E+00	0.00
TOTAL											2.83E-13	100.00

DDD and DDT do not have inhalation slope factors.
Manganese and mercury are the only noncarcinogenic COPCs with inhalation reference doses.
File Name: PI.WQ2

PARTICULATE INHALATION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT ADULT CIVILIAN BASE PERSONNEL

Intake from the inhalation of particulates is calculated as follows:

Intake (mg/kg-day) = (C * EF * ED * IR * 1/PEF)/(BW * ATc or ATnc * DY)

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CSF = carcinogenic slope factor	Specific
RfD = reference dose for noncarcinogen	Specific
IR = inhalation rate (m3)	20
EF = exposure frequency (days)	350
ED = exposure duration (years)	25
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	25
DY = day per year (day/yr)	365
PEF = particulate emission factor (m3/kg)	6.79E+08

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk
Aldrin	0.0247	6.8E+08	350	20	25	70	70	365	3.56E-12	1.71E+01	6.09E-11	0.16
Dieldrin	2.4244	6.8E+08	350	20	25	70	70	365	3.49E-10	1.61E+01	5.62E-09	15.09
4,4'-DDD	43.5910	6.8E+08	350	20	25	70	70	365	6.28E-09		0.00E+00	0.00
4,4'-DDT	9.7701	6.8E+08	350	20	25	70	70	365	1.41E-09	3.40E-01	4.79E-10	1.28
alpha-Chlordane	0.2764	6.8E+08	350	20	25	70	70	365	3.98E-11	1.29E+00	5.14E-11	0.14
gamma-Chlordane	0.1703	6.8E+08	350	20	25	70	70	365	2.45E-11	1.29E+00	3.17E-11	0.08
Arsenic	14.2	6.8E+08	350	20	25	70	70	365	2.05E-09	1.51E+01	3.09E-08	82.91
Beryllium	0.1	6.8E+08	350	20	25	70	70	365	1.44E-11	8.40E+00	1.21E-10	0.32
TOTAL											3.73E-08	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aldrin	0.0247	6.8E+08	350	20	25	70	25	365	9.97E-12		0.00E+00	0.00
Dieldrin	2.4244	6.8E+08	350	20	25	70	25	365	9.78E-10		0.00E+00	0.00
4,4'-DDT	9.7701	6.8E+08	350	20	25	70	25	365	3.94E-09		0.00E+00	0.00
alpha-Chlordane	0.2764	6.8E+08	350	20	25	70	25	365	1.12E-10		0.00E+00	0.00
gamma-Chlordane	0.1703	6.8E+08	350	20	25	70	25	365	6.87E-11		0.00E+00	0.00
Aluminum	4428.1	6.8E+08	350	20	25	70	25	365	1.79E-06		0.00E+00	0.00
Arsenic	14.2	6.8E+08	350	20	25	70	25	365	5.73E-09		0.00E+00	0.00
Manganese	43.6	6.8E+08	350	20	25	70	25	365	1.76E-08	1.43E-05	2.52E-13	88.99
Mercury	0.9	6.8E+08	350	20	25	70	25	365	3.63E-10	8.57E-05	3.11E-14	11.01
Beryllium	0.1	6.8E+08	350	20	25	70	25	365	4.03E-11		0.00E+00	0.00
TOTAL											2.83E-13	100.00

DDD and DDT do not have inhalation slope factors.
Manganese and mercury are the only noncarcinogenic COPCs with inhalation reference doses.
File Name: PI.WQ3

PARTICULATE INHALATION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE CONSTRUCTION WORKER

Intake from the inhalation of particulates is calculated as follows:

Intake (mg/kg-day) = (C * EF * ED * IR * 1/PEF)/(BW * ATc or ATnc * DY)

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CSF = carcinogenic slope factor	Specific
RfD = reference dose for noncarcinogen	Specific
IR = inhalation rate (m3)	20
EF = exposure frequency (days)	350
ED = exposure duration (years)	1
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	1
DY = day per year (day/yr)	365
PEF = particulate emission factor (m3/kg)	6.79E+08

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk
Arsenic	14.2	6.8E+08	350	20	1	70	70	365	8.19E-11	1.51E+01	1.24E-09	100.00
TOTAL											1.24E-09	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Arsenic	14.2	6.8E+08	350	20	1	70	1	365	5.73E-09		0.00E+00	ERR
TOTAL											0.00E+00	ERR

Arsenic does not have an inhalation reference dose.

File Name: PI.WQ4

PARTICULATE INHALATION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL CHILD

Intake from the inhalation of particulates is calculated as follows:

Intake (mg/kg-day) = (C * EF * ED * IR * 1/PEF)/(BW * ATc or ATnc * DY)

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CSF = carcinogenic slope factor	Specific
RfD = reference dose for noncarcinogen	Specific
IR = inhalation rate (m3)	12
EF = exposure frequency (days)	350
ED = exposure duration (years)	6
BW = body weight (kg)	15
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	6
DY = day per year (day/yr)	365
PEF = particulate emission factor (m3/kg)	6.79E+08

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk
Arsenic	6.37	6.8E+08	350	12	6	15	70	365	6.17E-10	1.51E+01	9.31E-09	98.54
Beryllium	0.17	6.8E+08	350	12	6	15	70	365	1.65E-11	8.40E+00	1.38E-10	1.46
TOTAL											9.45E-09	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aluminum	4428.1	6.8E+08	350	12	6	15	6	365	5.00E-06		0.00E+00	ERR
Iron	0.1	6.8E+08	350	12	6	15	6	365	1.13E-10		0.00E+00	ERR
TOTAL											ERR	ERR

File Name: PITC.WQ1

PARTICULATE INHALATION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULT

Intake from the inhalation of particulates is calculated as follows:

Intake (mg/kg-day) = (C * EF * ED * IR * 1/PEF)/(BW * ATc or ATnc * DY)

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CSF = carcinogenic slope factor	Specific
RfD = reference dose for noncarcinogen	Specific
IR = inhalation rate (m3)	20
EF = exposure frequency (days)	350
ED = exposure duration (years)	24
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	24
DY = day per year (day/yr)	365
PEF = particulate emission factor (m3/kg)	6.79E+08

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk
Arsenic	6.37	6.8E+08	350	20	24	70	70	365	8.81E-10	1.51E+01	1.33E-08	98.54
Beryllium	0.17	6.8E+08	350	20	24	70	70	365	2.35E-11	8.40E+00	1.98E-10	1.46
TOTAL											1.35E-08	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aluminum	4428.1	6.8E+08	350	20	24	70	24	365	1.79E-06		0.00E+00	ERR
Iron	0.1	6.8E+08	350	20	24	70	24	365	4.03E-11		0.00E+00	ERR
TOTAL											ERR	ERR

File Name: PITC.WQ2

PARTICULATE INHALATION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT CIVILIAN BASE EMPLOYEE

Intake from the inhalation of particulates is calculated as follows:

Intake (mg/kg-day) = (C * EF * ED * IR * 1/PEF)/(BW * ATc or ATnc * DY)

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in soil (mg/kg)	Specific
CSF = carcinogenic slope factor	Specific
RfD = reference dose for noncarcinogen	Specific
IR = inhalation rate (m3)	20
EF = exposure frequency (days)	250
ED = exposure duration (years)	25
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	25
DY = day per year (day/yr)	365
PEF = particulate emission factor (m3/kg)	6.79E+08

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk
Arsenic	6.37	6.8E+08	250	20	25	70	70	365	6.56E-10	1.51E+01	9.90E-09	98.54
Beryllium	0.17	6.8E+08	250	20	25	70	70	365	1.75E-11	8.40E+00	1.47E-10	1.46
TOTAL											1.00E-08	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aluminum	4428.1	6.8E+08	250	20	25	70	25	365	1.28E-06		0.00E+00	ERR
Iron	0.1	6.8E+08	250	20	25	70	25	365	2.88E-11		0.00E+00	ERR
TOTAL											ERR	ERR

File Name: PITC.WQ3

Computed by: :LHJ Checked by: MDB Date: 9/95

EXAMPLE GROUNDWATER INGESTION CALCULATIONS
OPERABLE UNIT NO. 11 (SITE 80)
CONTRACT TASK ORDER 0274

Purpose: Estimate intake/risk from ingestion of groundwater

$$Intake\ (mg/kg{\cdot}day) = \frac{C \times IR \times EF \times ED}{BW \times AT}$$

Where:	C	=	Contaminant concentration in groundwater (mg/L)
	IR	=	Daily intake ingestion rate (L/day)
	EF	=	Exposure frequency (days/year)
	ED	=	Exposure duration (years)
	BW	=	Body weight (kg)
	AT_c	=	Averaging time carcinogen (days)
	AT_{nc}	=	Averaging time noncarcinogen (days)

Risks:

Carcinogens = Intake (mg/kg·day) x CSF (mg/kg·day)$^{-1}$
Noncarcinogens = Intake (mg/kg·day)/RfD (mg/kg·day)

Example Carcinogen: 4,4'-DDT

$$Intake\ (mg/kg{\cdot}day) = \frac{0.0002\ mg/L \times 2\ L/day \times 350\ days/yr \times 30\ yrs}{70\ kg \times 25{,}550\ days}$$

$$= 2.30E\text{-}06$$

Risk = 2.30E-06 mg/kg·day x 0.34 mg/kg·day^{-1} = 8.0E-07

Example Noncarcinogen: 4,4'-DDT

$$Intake\ (mg/kg{\cdot}day) = \frac{0.0002\ mg/L \times 2\ L/day \times 350\ days/yr \times 30\ yrs}{70\ kg \times 10{,}950\ days}$$

$$= 5.50E\text{-}06$$

$$Risk = \frac{5.50E{-}06\ mg/kg{\cdot}day}{5.00E{-}04\ mg/kg{\cdot}day} = 0.01$$

GROUNDWATER INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 90)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL CHILD

Intake from drinking water is calculated as follows:

Intake (mg/kg-day) = C * IRw * EF * ED/BW * AT or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in water (mg/l)	Specific
IRw = daily water ingestion rate (L/Day)	1
EF = exposure frequency (days/yr)	350
ED = exposure duration (yr)	6
BW = body weight (kg)	15
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	6
DY = days per year (day/year)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant(1)	Concentration Carcinogen (mg/l)	Ingestion Rate (L/day)	Exposure Frequency (day/year)	Exposure Duration (year)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/yr)	Carc Dose (mg/kg-day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.005	1	350	6	15	70	365	2.74E-05	1.40E-02	3.84E-07	0.056
4,4'-DDD	0.0013	1	350	6	15	70	365	7.12E-06	2.40E-01	1.71E-06	0.250
4,4'-DDT	0.0002	1	350	6	15	70	365	1.10E-06	3.40E-01	3.73E-07	0.054
Arsenic	0.0798	1	350	6	15	70	365	4.37E-04	1.50E+00	6.56E-04	95.852
Beryllium	0.0011	1	350	6	15	70	365	6.03E-06	4.30E+00	2.59E-05	3.788
TOTAL										6.84E-04	100.00

Contaminant	Concentration Noncarcinogen (mg/l)	Ingestion Rate (L/day)	Exposure Frequency (day/year)	Exposure Duration (year)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/yr)	Noncarc Dose (mg/kg-day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.0050	1	350	6	15	6	365	3.20E-04	2.00E-02	0.02	0.08
4,4'-DDT	0.0002	1	350	6	15	6	365	1.28E-05	5.00E-04	0.03	0.12
Aluminum	43	1	350	6	15	6	365	2.75E+00	1.00E+00	2.75	12.95
Arsenic	0.0798	1	350	6	15	6	365	5.10E-03	3.00E-04	17.00	80.14
Beryllium	0.0011	1	350	6	15	6	365	7.03E-05	5.00E-03	0.01	0.07
Chromium	0.065	1	350	6	15	6	365	4.16E-03	5.00E-03	0.83	3.92
Vanadium	0.0449	1	350	6	15	6	365	2.87E-03	7.00E-03	0.41	1.93
Manganese	0.369	1	350	6	15	6	365	2.36E-02	1.40E-01	0.17	0.79
TOTAL										21.22	100.00

(1) Lead was not evaluated due to the lack of a published toxicity value
File Name: GWI.WQ1

GROUNDWATER INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULT

Intake from drinking water is calculated as follows:

Intake (mg/kg-day) = C * IRw * EF * ED/BW * AT or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in water (mg/l)	Specific
IRw = daily water ingestion rate (L/Day)	2
EF = exposure frequency (days/yr)	350
ED = exposure duration (yr)	30
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	30
DY = days per year (day/year)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant(1)	Concentration Carcinogen (mg/l)	Ingestion Rate (L/day)	Exposure Frequency (day/year)	Exposure Duration (year)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/yr)	Carc Dose (mg/kg-day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.005	2	350	30	70	70	365	5.87E-05	1.40E-02	8.22E-07	0.056
4,4'-DDD	0.0013	2	350	30	70	70	365	1.53E-05	2.40E-01	3.66E-06	0.250
4,4'-DDT	0.0002	2	350	30	70	70	365	2.35E-06	3.40E-01	7.98E-07	0.054
Arsenic	0.0798	2	350	30	70	70	365	9.37E-04	1.50E+00	1.41E-03	95.852
Beryllium	0.0011	2	350	30	70	70	365	1.29E-05	4.30E+00	5.55E-05	3.788
TOTAL										1.47E-03	100.00

Contaminant	Concentration Noncarcinogen (mg/l)	Ingestion Rate (L/day)	Exposure Frequency (day/year)	Exposure Duration (year)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/yr)	Noncarc Dose (mg/kg-day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.0050	2	350	30	70	30	365	1.37E-04	2.00E-02	0.01	0.06
4,4'-DDT	0.0002	2	350	30	70	30	365	5.48E-06	5.00E-04	0.01	0.12
Aluminum	43	2	350	30	70	30	365	1.18E+00	1.00E+00	1.18	12.95
Arsenic	0.0798	2	350	30	70	30	365	2.19E-03	3.00E-04	7.29	80.14
Beryllium	0.0011	2	350	30	70	30	365	3.01E-05	5.00E-03	0.01	0.07
Chromium	0.065	2	350	30	70	30	365	1.78E-03	5.00E-03	0.36	3.92
Vanadium	0.0449	2	350	30	70	30	365	1.23E-03	7.00E-03	0.18	1.93
Manganese	0.369	2	350	30	70	30	365	1.01E-02	1.40E-01	0.07	0.79
TOTAL										9.09	100.00

(1) Lead was not evaluated due to the lack of a published toxicity value
File Name: GWI.WQ2

GROUNDWATER INGESTION EXPOSURE ASSESSMENT (ROUND 2)
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL CHILD

Intake from drinking water is calculated as follows:

Intake (mg/kg-day) = C * IRw * EF * ED/BW * AT or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in water (mg/l)	Specific
IRw = daily water ingestion rate (L/Day)	1
EF = exposure frequency (days/yr)	350
ED = exposure duration (yr)	6
BW = body weight (kg)	15
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	6
DY = days per year (day/year)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant(1)	Concentration Carcinogen (mg/l)	Ingestion Rate (L/day)	Exposure Frequency (day/year)	Exposure Duration (year)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/yr)	Carc Dose (mg/kg-day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.005	1	350	6	15	70	365	2.74E-05	1.40E-02	3.84E-07	0.058
4,4'-DDD	0.0013	1	350	6	15	70	365	7.12E-06	2.40E-01	1.71E-06	0.260
4,4'-DDT	0.0002	1	350	6	15	70	365	1.10E-06	3.40E-01	3.73E-07	0.057
Arsenic	0.0798	1	350	6	15	70	365	4.37E-04	1.50E+00	6.56E-04	99.625
TOTAL										6.58E-04	100.00

Contaminant	Concentration Noncarcinogen (mg/l)	Ingestion Rate (L/day)	Exposure Frequency (day/year)	Exposure Duration (year)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/yr)	Noncarc Dose (mg/kg-day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.0050	1	350	6	15	6	365	3.20E-04	2.00E-02	0.02	0.31
4,4'-DDT	0.0002	1	350	6	15	6	365	1.28E-05	5.00E-04	0.03	0.50
Aluminum	17.1	1	350	6	15	6	365	1.09E+00	1.00E+00	1.09	21.21
Arsenic	0.0184	1	350	6	15	6	365	1.18E-03	3.00E-04	3.93	76.20
Manganese	0.202	1	350	6	15	6	365	1.29E-02	1.40E-01	0.09	1.79
TOTAL										5.15	100.00

(1) Lead was not evaluated due to the lack of a published toxicity value
File Name: GWIRD2.WQ1

GROUNDWATER INGESTION EXPOSURE ASSESSMENT (ROUND 2)
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULT

Intake from drinking water is calculated as follows:

Intake (mg/kg-day) = C * IRw * EF * ED/BW * AT or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in water (mg/l)	Specific
IRw = daily water ingestion rate (L/Day)	2
EF = exposure frequency (days/yr)	350
ED = exposure duration (yr)	30
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	30
DY = days per year (day/year)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are scenario and site specific

Contaminant(1)	Concentration Carcinogen (mg/l)	Ingestion Rate (L/day)	Exposure Frequency (day/year)	Exposure Duration (year)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/yr)	Carc Dose (mg/kg-day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.005	2	350	30	70	70	365	5.87E-05	1.40E-02	8.22E-07	0.058
4,4'-DDD	0.0013	2	350	30	70	70	365	1.53E-05	2.40E-01	3.66E-06	0.260
4,4'-DDT	0.0002	2	350	30	70	70	365	2.35E-06	3.40E-01	7.98E-07	0.057
Arsenic	0.0798	2	350	30	70	70	365	9.37E-04	1.50E+00	1.41E-03	99.625
TOTAL										1.41E-03	100.00

Contaminant	Concentration Noncarcinogen (mg/l)	Ingestion Rate (L/day)	Exposure Frequency (day/year)	Exposure Duration (year)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/yr)	Noncarc Dose (mg/kg-day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.0050	2	350	30	70	30	365	1.37E-04	2.00E-02	0.01	0.31
4,4'-DDT	0.0002	2	350	30	70	30	365	5.48E-06	5.00E-04	0.01	0.50
Aluminum	17.1	2	350	30	70	30	365	4.68E-01	1.00E+00	0.47	21.21
Arsenic	0.0184	2	350	30	70	30	365	5.05E-04	3.00E-04	1.68	76.20
Manganese	0.202	2	350	30	70	30	365	5.53E-03	1.40E-01	0.04	1.79
TOTAL										2.21	100.00

(1) Lead was not evaluated due to the lack of a published toxicity value
File Name: GWIRD2WQ2

Computed by: :LHJ Checked by: MDB Date: 9/95

EXAMPLE DERMAL CONTACT WITH GROUNDWATER CALCULATIONS
OPERABLE UNIT NO. 11 (SITE 80)
CONTRACT TASK ORDER 0274

Purpose: Estimate intake/risk from dermal contact with groundwater

$$Intake\ (mg/kg{\cdot}day) = \frac{C \times SA \times PC \times ET \times EF \times ED \times CF}{BW \times AT}$$

Where:

C	=	Contaminant concentration in groundwater (mg/L)
SA	=	Exposed skin surface available for contact (cm^2)
PC	=	Permeability constant (cm/hr)
ET	=	Exposure time (hr/day)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (years)
CF	=	Conversion factor (1 L/1,000 cm^3)
BW	=	Body weight (kg)
AT_c	=	Averaging time carcinogen (days)
AT_{nc}	=	Averaging time noncarcinogen (days)

Risks:

Carcinogens = Intake (mg/kg·day) x CSF $(mg/kg{\cdot}day)^{-1}$
Noncarcinogens = Intake (mg/kg·day)/RfD (mg/kg·day)

Example Carcinogen: Bis(2-ethylhexyl)phthalate

$$Intake\ (mg/kg{\cdot}day) = \frac{0.005\ mg/L \times 23{,}000\ cm^2 \times 1.50E{-}03\ cm/hr \times 0.25\ hr/day \times 350\ days/yr \times 30\ yrs \times 1\ L/1{,}000\ cm^3}{70\ kg \times 25{,}550\ days}$$

$$= 2.53E{-}07$$

Risk = 2.53E-07 mg/kg·day x 1.40E-02 $mg/kg{\cdot}day^{-1}$ = 3.54E-09

Example Noncarcinogen: Bis(2-ethylhexyl)phthalate

$$Intake\ (mg/kg{\cdot}day) = \frac{0.005\ mg/L \times 23{,}000\ cm^2/hr \times 1.50E{-}03\ cm/hr \times 0.25\ hr/day \times 350\ days/yr \times 30\ yrs \times 1\ L/1{,}000\ cm^3}{70\ kg \times 10{,}950\ days}$$

$$= 5.91E{-}07$$

$$Risk = \frac{5.91E{-}07\ mg/kg{\cdot}day}{2.00E{-}02\ mg/kg{\cdot}day} = 0.00003$$

Re: Site 80 Future Residential Adult

GROUNDWATER DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL CHILD

Dermal Contact from groundwater is calcuated as follows:

Intake (mg/kg-day) = CW * SA * PC * ET * EF * ED * CF/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
CW = contaminant concentration in water (mg/l)	Specific
SA = skin surface available for contact (cm2)	10000
PC = contaminant specific dermal permability (cm/hr)	Specific
ET = exposure time (hours/day)	0.25
EF = exposure frequency (days/yr)	350
ED = exposure duration (years)	6
CF = volumetric conversion factor for water (1liter/1000 cm3)	0.001
BW = body weight (kg)	15
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	6
DY = days per year (days)	365

Note: Inputs are site and scenario specific

Contaminant(1)	Concentration Carcinogen (mg/l)	Surface Area (cm2)	Dermal Permeability (cm/hr)	Exposure Time (hours/day)	Exposure Frequency (days/yr)	Exposure Duration (years)	Volumetric Conversion (L/m3)	Body Weight (kg)	Averaging Carc Time (years)	Days per Year (days)	Carc Dose (mg/kg-day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.005	10000	1.50E-03	0.25	350	6	0.001	15	70	365	1.03E-07	1.40E-02	1.44E-09	0.04
4,4'-DDD	0.0013	10000	2.80E-01	0.25	350	6	0.001	15	70	365	4.99E-06	2.40E-01	1.20E-06	36.23
4,4'-DDT	0.0002	10000	4.30E-01	0.25	350	6	0.001	15	70	365	1.18E-06	3.40E-01	4.01E-07	12.13
Arsenic	0.0798	10000	1.00E-03	0.25	350	6	0.001	15	70	365	1.09E-06	1.50E+00	1.64E-06	49.64
Beryllium	0.0011	10000	1.00E-03	0.25	350	6	0.001	15	70	365	1.51E-08	4.30E+00	6.48E-08	1.96
TOTAL													3.30E-06	100.00

Contaminant	Concentration Noncarcinogen (mg/l)	Surface Area (cm2)	Dermal Permeability (cm/hr)	Exposure Time (hours/day)	Exposure Frequency (days/yr)	Exposure Duration (years)	Volumetric Conversion (L/m3)	Body Weight (kg)	Average Noncarc Time (years)	Days per Year (days)	Noncarc Dose (mg/kg-day)	Reference Dose (mg/kg-day)	Noncarc Risk	Percent Noncarcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.005	10000	1.50E-03	0.25	350	6	0.001	15	6	365	1.20E-06	2.00E-02	0.00006	0.07
4,4'-DDT	0.0002	10000	4.30E-01	0.25	350	6	0.001	15	6	365	1.37E-05	5.00E-04	0.02749	34.15
Aluminum	43	10000	1.00E-03	0.25	350	6	0.001	15	6	365	6.87E-03	1.00E+00	0.00687	8.54
Arsenic	0.0798	10000	1.00E-03	0.25	350	6	0.001	15	6	365	1.28E-05	3.00E-04	0.04251	52.81
Beryllium	0.0011	10000	1.00E-03	0.25	350	6	0.001	15	6	365	1.76E-07	5.00E-03	0.00004	0.04
Chromium	0.065	10000	1.00E-03	0.25	350	6	0.001	15	6	365	1.04E-05	5.00E-03	0.00208	2.58
Vanadium	0.0449	10000	1.00E-03	0.25	350	6	0.001	15	6	365	7.18E-06	7.00E-03	0.00103	1.27
Manganese	0.369	10000	1.00E-03	0.25	350	6	0.001	15	6	365	5.90E-05	1.40E-01	0.00042	0.52
TOTAL													0.08049	100.00

(1) Lead was not evaluated due to the lack of a published toxicity value
File Name: GWDC.WQ1

GROUNDWATER DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULT

Dermal Contact from groundwater is calcuated as follows:

Intake (mg/kg-day) = CW * SA * PC * ET * EF * ED * CF/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
CW = contaminant concentration in water (mg/l)	Specific
SA = skin surface available for contact (cm2)	23000
PC = contaminant specific dermal permability (cm/hr)	Specific
ET = exposure time (hours/day)	0.25
EF = exposure frequency (days/yr)	350
ED = exposure duration (years)	30
CF = volumetric conversion factor for water (1liter/1000 cm3)	0.001
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	30
DY = days per year (days)	365

Note: Inputs are site and scenario specific

Contaminant(1)	Concentration Carcinogen (mg/l)	Surface Area (cm2)	Dermal Permeability (cm/hr)	Exposure Time (hours/day)	Exposure Frequency (days/yr)	Exposure Duration (years)	Volumetric Conversion (L/m3)	Body Weight (kg)	Averaging Carc Time (years)	Days per Year (days)	Carc Dose (mg/kg-day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.005	23000	1.50E-03	0.25	350	30	0.001	70	70	365	2.53E-07	1.40E-02	3.54E-09	0.04
4,4'-DDD	0.0013	23000	2.80E-01	0.25	350	30	0.001	70	70	365	1.23E-05	2.40E-01	2.95E-06	36.23
4,4'-DDT	0.0002	23000	4.30E-01	0.25	350	30	0.001	70	70	365	2.90E-06	3.40E-01	9.87E-07	12.13
Arsenic	0.0798	23000	1.00E-03	0.25	350	30	0.001	70	70	365	2.69E-06	1.50E+00	4.04E-06	49.64
Beryllium	0.0011	23000	1.00E-03	0.25	350	30	0.001	70	70	365	3.71E-08	4.30E+00	1.60E-07	1.96
TOTAL													8.14E-06	100.00

Contaminant	Concentration Noncarcinoge (mg/l)	Surface Area (cm2)	Dermal Permeability (cm/hr)	Exposure Time (hours/day)	Exposure Frequency (days/yr)	Exposure Duration (years)	Volumetric Conversion (L/m3)	Body Weight (kg)	Average Noncarc Time (years)	Days per Year (days)	Noncarc Dose (mg/kg-day)	Reference Dose (mg/kg-day)	Noncarc Risk	Percent Noncarcinogeni Risk
Bis(2-ethylhexyl)phthalate	0.005	23000	1.50E-03	0.25	350	30	0.001	70	30	365	5.91E-07	2.00E-02	0.00003	0.07
4,4'-DDT	0.0002	23000	4.30E-01	0.25	350	30	0.001	70	30	365	6.77E-06	5.00E-04	0.01355	34.15
Aluminum	43	23000	1.00E-03	0.25	350	30	0.001	70	30	365	3.39E-03	1.00E+00	0.00339	8.54
Arsenic	0.0798	23000	1.00E-03	0.25	350	30	0.001	70	30	365	6.29E-06	3.00E-04	0.02095	52.81
Beryllium	0.0011	23000	1.00E-03	0.25	350	30	0.001	70	30	365	8.66E-08	5.00E-03	0.00002	0.04
Chromium	0.065	23000	1.00E-03	0.25	350	30	0.001	70	30	365	5.12E-06	5.00E-03	0.00102	2.58
Vanadium	0.0449	23000	1.00E-03	0.25	350	30	0.001	70	30	365	3.54E-06	7.00E-03	0.00051	1.27
Manganese	0.369	23000	1.00E-03	0.25	350	30	0.001	70	30	365	2.91E-05	1.40E-01	0.00021	0.52
TOTAL													0.03967	100.00

(1) Lead was not evaluated due to the lack of a published toxicity value
File Name: GWDC.WQ2

GROUNDWATER DERMAL CONTACT EXPOSURE ASSESSMENT (ROUND 2)
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL CHILD

Dermal Contact from groundwater is calcuated as follows:

Intake (mg/kg-day) = CW * SA * PC * ET * EF * ED * CF/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
CW = contaminant concentration in water (mg/l)	Specific
SA = skin surface available for contact (cm2)	10000
PC = contaminant specific dermal permability (cm/hr)	Specific
ET = exposure time (hours/day)	0.25
EF = exposure frequency (days/yr)	350
ED = exposure duration (years)	6
CF = volumetric conversion factor for water (1liter/1000 cm3)	0.001
BW = body weight (kg)	15
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	6
DY = days per year (days)	365

Note: Inputs are site and scenario specific

Contaminant(1)	Concentration Carcinogen (mg/l)	Surface Area (cm2)	Dermal Permeability (cm/hr)	Exposure Time (hours/day)	Exposure Frequency (days/yr)	Exposure Duration (years)	Volumetric Conversion (L/m3)	Body Weight (kg)	Averaging Carc Time (years)	Days per Year (days)	Carc Dose (mg/kg-day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.005	10000	1.50E-03	0.25	350	6	0.001	15	70	365	1.03E-07	1.40E-02	1.44E-09	0.04
4,4'-DDD	0.0013	10000	2.60E-01	0.25	350	6	0.001	15	70	365	4.99E-06	2.40E-01	1.20E-06	36.95
4,4'-DDT	0.0002	10000	4.30E-01	0.25	350	6	0.001	15	70	365	1.18E-06	3.40E-01	4.01E-07	12.37
Arsenic	0.0798	10000	1.00E-03	0.25	350	6	0.001	15	70	365	1.09E-06	1.50E+00	1.64E-06	50.63
TOTAL													3.24E-06	100.00

Contaminant	Concentration Noncarcinogen (mg/l)	Surface Area (cm2)	Dermal Permeability (cm/hr)	Exposure Time (hours/day)	Exposure Frequency (days/yr)	Exposure Duration (years)	Volumetric Conversion (L/m3)	Body Weight (kg)	Average Noncarc Time (years)	Days per Year (days)	Noncarc Dose (mg/kg-day)	Reference Dose (mg/kg-day)	Noncarc Risk	Percent Noncarcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.005	10000	1.50E-03	0.25	350	6	0.001	15	6	365	1.20E-06	2.00E-02	0.00006	0.15
4,4'-DDT	0.0002	10000	4.30E-01	0.25	350	6	0.001	15	6	365	1.37E-05	5.00E-04	0.02749	68.16
Aluminum	17.1	10000	1.00E-03	0.25	350	6	0.001	15	6	365	2.73E-03	1.00E+00	0.00273	6.78
Arsenic	0.01843	10000	1.00E-03	0.25	350	6	0.001	15	6	365	2.95E-06	3.00E-04	0.00982	24.34
Manganese	0.202	10000	1.00E-03	0.25	350	6	0.001	15	6	365	3.23E-05	1.40E-01	0.00023	0.57
TOTAL													0.04033	100.00

(1) Lead was not evaluated due to the lack of a published toxicity value
File Name: GWDCRD2.WQ1

GROUNDWATER DERMAL CONTACT EXPOSURE ASSESSMENT (ROUND 2)
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULT

Dermal Contact from groundwater is calcuated as follows:

Intake (mg/kg-day) = CW * SA * PC * ET * EF * ED * CF/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
CW = contaminant concentration in water (mg/l)	Specific
SA = skin surface available for contact (cm2)	23000
PC = contaminant specific dermal permability (cm/hr)	Specific
ET = exposure time (hours/day)	0.25
EF = exposure frequency (days/yr)	350
ED = exposure duration (years)	30
CF = volumetric conversion factor for water (1liter/1000 cm3)	0.001
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	30
DY = days per year (days)	365

Note: Inputs are site and scenario specific

Contaminant(1)	Concentration Carcinogen (mg/l)	Surface Area (cm2)	Dermal Permeability (cm/hr)	Exposure Time (hours/day)	Exposure Frequency (days/yr)	Exposure Duration (years)	Volumetric Conversion (L/m3)	Body Weight (kg)	Averaging Carc Time (years)	Days per Year (days)	Carc Dose (mg/kg-day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.005	23000	1.50E-03	0.25	350	30	0.001	70	70	365	2.53E-07	1.40E-02	3.54E-09	0.04
4,4'-DDD	0.0013	23000	2.80E-01	0.25	350	30	0.001	70	70	365	1.23E-05	2.40E-01	2.95E-06	36.95
4,4'-DDT	0.0002	23000	4.30E-01	0.25	350	30	0.001	70	70	365	2.90E-06	3.40E-01	9.87E-07	12.37
Arsenic	0.0798	23000	1.00E-03	0.25	350	30	0.001	70	70	365	2.69E-06	1.50E+00	4.04E-06	50.63
TOTAL													7.98E-06	100.00

Contaminant	Concentration Noncarcinogen (mg/l)	Surface Area (cm2)	Dermal Permeability (cm/hr)	Exposure Time (hours/day)	Exposure Frequency (days/yr)	Exposure Duration (years)	Volumetric Conversion (L/m3)	Body Weight (kg)	Average Noncarc Time (years)	Days per Year (days)	Noncarc Dose (mg/kg-day)	Reference Dose (mg/kg-day)	Noncarc Risk	Percent Noncarcinogenic Risk
Bis(2-ethylhexyl)phthalate	0.005	23000	1.50E-03	0.25	350	30	0.001	70	30	365	5.91E-07	2.00E-02	0.00003	0.15
4,4'-DDT	0.0002	23000	4.30E-01	0.25	350	30	0.001	70	30	365	6.77E-06	5.00E-04	0.01355	68.16
Aluminum	17.1	23000	1.00E-03	0.25	350	30	0.001	70	30	365	1.35E-03	1.00E+00	0.00135	6.78
Arsenic	0.01843	23000	1.00E-03	0.25	350	30	0.001	70	30	365	1.45E-06	3.00E-04	0.00484	24.34
Manganese	0.202	23000	1.00E-03	0.25	350	30	0.001	70	30	365	1.59E-05	1.40E-01	0.00011	0.57
TOTAL													0.01988	100.00

(1) Lead was not evaluated due to the lack of a published toxicity value
File Name: GWDCRD2.WQ2

APPENDIX N
FIELD DATA SHEETS

ECOLOGICAL EVALUATION
FIELD DATA SHEET - TERRESTRIAL

Project Name: Habitat Evaluation

Location: MCB Camp Lejeune,

Date: 12/6/94

Sampling Location: Golf Course Maintenance Area

Data Collected By: LSS, CDC

Habitat Type: Deciduous Forest

Vegetation:

Trees:

Dominant Species:

1. _____
2. none dominant
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Secondary Species:

1. Water Oak - Quercus nigra
2. Southern Red Oak - Q falcata
3. Loblolly - Pinus taeda
4. Sweetgum - Liquidambar Styraciflua
5. Redbay - Persea borbonia
6. Swamp Chestnut Oak - Q. michauxii
7. _____
8. _____
9. _____
10. _____

Saplings/Shrubs:

Dominant Species:

1. ~~Sweetbay~~
2. Sweetbay - Magnolia
3. virginiana -
4. dom. in some areas
5.
6.
7.
8.
9.
10.

Secondary Species:

1. Sp Dogwood - Cornus Florida
2. Holly - Ilex opaca
3. Sweet Myrtle - Myrica cerifera
4.
5.
6.
7.
8.
9.
10.

Woody Vines:

Dominant Species:

1.
2. Japanese honeysuckle -
3. Lonicera japonica
4.
5.
6.
7.
8.
9.
10.

Secondary Species:

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Herbs:

Dominant Species:

1. _____ 6. _____
2. _____ 7. _____
3. _____ 8. _____
4. _____ 9. _____
5. _____ 10. _____

Secondary Species:

1. Partridgeberry - Mitchella repens 6. _____
2. _____ 7. _____
3. _____ 8. _____
4. _____ 9. _____
5. _____ 10. _____

Birds: _____

Time: _____

Weather Conditions:

Species	Sex	Feeding	Nesting	Approx. No.
1. Chickadee - Parus carolinensis				
2. Carolina wren - Thyrothorus ludovicianus				
3. Flicker - Colaptes auratus				
4. Towhee - Pipilo erythrophthalmus				
5. Robin - Turdus migratorius				
6. Cardinal - & Richmondena cardinalis				
7. Mourning Dove - Zenaida macroura				
8.				
9.				

10. _____

Mammals: _____

Time: _____

Weather Conditions:

Species	Observed	Sign	Adult/Juvenile	Sex
1. Raccoon- Procyon lotor				
2. White-tailed Deer - Odocoileus virginianus				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

Reptiles and Amphibians: _____

Time: _____

Weather Conditions:

Species	Observed	Sign	Adult/Juvenile	Sex
1.				
2.				
3.				
4. none observed				
5.				
6.				

7. _____

8. _____

9. _____

10. _____

Miscellaneous Notes:

ECOLOGICAL EVALUATION
FIELD DATA SHEET - TERRESTRIAL

Project Name: Habitat Evaluation

Location: MCB Camp Lejeune, Jacksonville, NC

Date: 12/6/94

Sampling Location: Golf Course Maintenance Area

Data Collected By: KBS, CDC

Habitat Type: Mixed Forest

Vegetation:

Trees:

Dominant Species:

1. _____
2. none dominant
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Secondary Species:

1. Loblolly pine - Pinus taeda
2. Sweetgum - Liquidambar Styraciflua
3. Southern Red Oak - Quercus Falcata
4. Water oak - Quercus nigra
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Saplings/Shrubs:

Dominant Species:

1. _____ 6. _____
2. _____ 7. _____
3. _____ 8. _____
4. _____ 9. _____
5. _____ 10. _____

Secondary Species:

1. Sweet Myrtle - Myrica cerifera 6. _____
2. _____ 7. _____
3. _____ 8. _____
4. _____ 9. _____
5. _____ 10. _____

Woody Vines:

Dominant Species:

1. _____ 6. _____
2. _____ 7. _____
3. none 8. _____
4. _____ 9. _____
5. _____ 10. _____

Secondary Species:

1. _____ 6. _____
2. _____ 7. _____
3. none 8. _____
4. _____ 9. _____
5. _____ 10. _____

Herbs:

Dominant Species:

1. _____ 6. _____
2. _____ 7. _____
3. none 8. _____
4. _____ 9. _____
5. _____ 10. _____

Secondary Species:

1. _____ 6. _____
2. _____ 7. _____
3. none 8. _____
4. _____ 9. _____
5. _____ 10. _____

Birds: _____

Time: _____

Weather Conditions:

Species	Sex	Feeding	Nesting	Approx. No.
1.				
2.				
3.				
4.		listed w. deciduous forest		
5.				
6.				
7.				
8.				
9.				

10. _____

Mammals: _____

Time: _____

Weather Conditions:

Species	Observed	Sign	Adult/Juvenile	Sex
1.				
2.				
3.				
4.				
5.				
6.	listed with deciduous forest			
7.				
8.				
9.				
10.				

Reptiles and Amphibians: _____

Time: _____

Weather Conditions:

Species	Observed	Sign	Adult/Juvenile	Sex
1.				
2.				
3.				
4.	listed with deciduous forest			
5.				
6.				

7. _____

8. _____

9. _____

10. _____

Miscellaneous Notes:

This forest is almost parklike in spots - grades & mixes with eastern areas

ECOLOGICAL EVALUATION
FIELD DATA SHEET - TERRESTRIAL

Project Name: Habitat Evaluation

Location: MCB Camp Lejeune

Date: 12/6/94

Sampling Location: Golf Course Maintenance Area

Data Collected By: ZSS, CDC

Habitat Type: Open Area

Vegetation:

Trees:

Dominant Species:

1. _____ 6. _____
2. _____ 7. _____
3. none 8. _____
4. _____ 9. _____
5. _____ 10. _____

Secondary Species:

1. _____ 6. _____
2. _____ 7. _____
3. none 8. _____
4. _____ 9. _____
5. _____ 10. _____

Saplings/Shrubs:

Dominant Species:

1. _____ 6. _____
2. _____ 7. _____
3. none 8. _____
4. _____ 9. _____
5. _____ 10. _____

Secondary Species:

1. _____ 6. _____
2. _____ 7. _____
3. none 8. _____
4. _____ 9. _____
5. _____ 10. _____

Woody Vines:

Dominant Species:

1. _____ 6. _____
2. _____ 7. _____
3. none 8. _____
4. _____ 9. _____
5. _____ 10. _____

Secondary Species:

1. _____ 6. _____
2. _____ 7. _____
3. none 8. _____
4. _____ 9. _____
5. _____ 10. _____

Herbs:

Dominant Species:

1. _____
2. grass - lawn
3. grasses - kept mowed
4. _____
5. unidentified mint
   dominant in some areas
6. _____
7. _____
8. _____
9. _____
10. _____

Secondary Species:

1. narrow-leaved plantain - Plantago lanceolata
2. curly dock - Rumex crispus
3. wild onion - Allium vineale
4. chickweed - Stellaria media
5. dandelion - Taraxacum officinalis
6. cranesbill - Geranium sp.
7. buttercup - Ranunculus parviflorus
8. wood sorrel - Oxalis acetosella
9. barren strawberry - Duchesnea
10. fleabane - Erigeron sp.

hydrocotyl - Hydrocotyl americana - in damp areas

Birds: _____

Time: _____

Weather Conditions:

Species	Sex	Feeding	Nesting	Approx. No.
1.				
2.				
3.				
4.		listed w. deciduous forest		
5.				
6.				
7.				
8.				
9.				

10. _____

Mammals: _____

Time: _____

Weather Conditions:

Species	Observed	Sign	Adult/Juvenile	Sex
1.				
2.				
3.				
4.				
5.		listed w. deciduous forest		
6.				
7.				
8.				
9.				
10.				

Reptiles and Amphibians: _____

Time: _____

Weather Conditions:

Species	Observed	Sign	Adult/Juvenile	Sex
1.				
2.				
3.		listed w. deciduous forest		
4.				
5.				
6.				

7. _____

8. _____

9. _____

10. _____

Miscellaneous Notes:

ECOLOGICAL EVALUATION
FIELD DATA SHEET - TERRESTRIAL

Project Name: Habitat Evaluation

Location: MCB Camp Lejeune, Jacksonville, NC

Date: 12/6/94

Sampling Location: Golf Course ~~Sta~~ Maintenance Area

Data Collected By: JSS, CDC

Habitat Type: Ecotone between Mixed Forest & Open Areas

Vegetation:

Trees:

Dominant Species:

1. _____ 6. _____
2. _____ 7. _____
3. _____ 8. _____
4. _____ 9. _____
5. _____ 10. _____

Secondary Species:

1. Sycamore - Platanus occidentalis 6. _____
2. _____ 7. _____
3. _____ 8. _____
4. _____ 9. _____
5. _____ 10. _____

Saplings/Shrubs:

Dominant Species:

1. _____ 6. _____
2. _____ 7. _____
3. _____ 8. _____
4. _____ 9. _____
5. _____ 10. _____

Secondary Species:

1. Smooth Sumac - _____ 6. _____
2. Juniper - Juniperus virginianus 7. _____
3. Hercules Club - Aralia Spinosa 8. _____
4. _____ 9. _____
5. _____ 10. _____

Woody Vines: as above of veg. - dominant in some areas of ecotone - species well mixed

Dominant Species:

1. _____ 6. _____
2. _____ 7. _____
3. none dominant 8. _____
4. _____ 9. _____
5. _____ 10. _____

Secondary Species:

1. Trumpet creeper - Campsis radicans 6. _____
2. Japanese honeysuckle - Lonicera Japonica 7. _____
3. Jasmine - Gelsemium Sempervirens 8. _____
4. Greenbrier - smilax rotundifolia 9. _____
5. Bullbrier - Smilax bona-nox 10. _____

Herbs:

Dominant Species:

1. _____ 6. _____
2. _____ 7. _____
3. none dominant 8. _____
4. _____ 9. _____
5. _____ 10. _____

Secondary Species:

1. Dog fennel - Eupatorium capillifolium 6. _____
2. Goldenrod - Solidago sp. 7. _____
3. White clover - Trifolium sp. 8. _____
4. Hyssop-leaved Skullcap 9. _____
5. Scutellaria integrifolia 10. _____

Birds: _____

Time: _____

Weather Conditions:

Species	Sex	Feeding	Nesting	Approx. No.
1.				
2.				
3.				
4.		listed with deciduous forest		
5.				
6.				
7.				
8.				
9.				

10. _____

Mammals: _____

Time: _____

Weather Conditions:

Species	Observed	Sign	Adult/Juvenile	Sex
1.				
2.				
3.				
4.				
5.		listed with deciduous forest		
6.				
7.				
8.				
9.				
10.				

Reptiles and Amphibians: _____

Time: _____

Weather Conditions:

Species	Observed	Sign	Adult/Juvenile	Sex
1.				
2.				
3.				
4.		listed with deciduous forest		
5.				
6.				

7. _____

8. _____

9. _____

10. _____

Miscellaneous Notes:

APPENDIX O
ENDANGERED SPECIES SURVEY

Critical species list - Camp Lejeune endangered species and special-interest communities survey

Principal investigator: Richard LeBlond, 326-1440.

List current as of 9-30-91.
Replaces list of 6-30-91.

"?" = Species names followed by a "?" are less than confidently identified. They are nonetheless caught in this biological safety net, the mesh size of which errs on the side of diversity. Until identification is confirmed (most of these are represented by a specimen), these site records should be regarded as tentative.

Species sites are listed chronologically under the species name; with the 1990 month and day of discovery listed first, followed by the site's sector site number, community type and UTM grid number. Sites documented prior to the start of the current survey are indicated by the parenthetical date of discovery following the site name (see Rhexia aristosa at FD-1). Prior sites not yet relocated during the current survey are indicated by "---" in the date column (see Rhynchospora tracyi at FD-1).

Status codes. Federal status is listed first, and separated from the state status by a comma; e.g., Rhexia aristosa FC2,T (Federal Candidate level 2, state Threatened). Species with state status only are indicated by a single code without comma; e.g., Rhynchospora tracyi SR (Significantly Rare).

FE = Federal Endangered
FT = Federal Threatened
FC1 = Federal Candidate level 1. At risk. Listing warrented but precluded by higher priorities.
FC2 = Federal Candidate level 2. Vulmerable. Listing warrented but precluded by higher priorities.
F3C = Federal Candidate level 3C. More abundant and/or less threatened than previously known.
E = State Endangered
T = State Threatened
SC = State Special Concern
C = State Candidate
SR = State Significantly Rare
W = State Watch List (W1)
W3 = " " " , undocumented state occurrence prior to Lejeune site.

proposed = proposed for listing as State Candidate, Significantly Rare or Watch List based on current evidence

(FB-3 cont.)			
	Xyris difformis var. curtissii	W	
	Xyris elliottii	SR	
FB-4	Wet Pine Flatwoods		939426
	Lysimachia loomisii	W	
	Rhynchospora harveyi	W	
	Rhynchospora pusilla	W	
	Scleria minor	SR	
FC-2	**Flatwood/Swamp Ecotone**		922413
	Anthaenantia rufa	W	
	Helianthus heterophyllus	W	
	Lysimachia loomisii	W	
	Oxypolis ternata	FC2,T	
FC-3	**Depression Meadow**		918318
	Aristida palustris	SR	
	Bartonia verna	W	
	Burmannia biflora	W	
	Dichanthelium erectifolium	SR	
	Litsea aestivalis	FC2,C	
	Muhlenbergia torreyana	F3C,E	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora cephalantha f. antrorsa	unusual/rare	
	Rhynchospora tracyi	SR	
FC-4	**Pocosin Ecotone**		919376
	Andropogon capillipes	W	
	Gentiana autumnalis	W	
FD-1	Cypress Savanna		904377
	Agalinis linifolia	SR	
	Anthaenantia rufa	W	
	Aristida palustris	SR	
	Bartonia verna	W	
	Burmannia biflora	W	
	Carex verrucosa	SR	
	Coelorachis rugosa	W	
	Dichanthelium sp. 1 =Panicum hirstii	FC2,C	
	Dichanthelium erectifolium	SR	
	Lobelia boykinii	FC2,C	
	Lysimachia loomisii	W	
	Muhlenbergia torreyana	F3C,E	
	Panicum tenerum	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora cephalantha f. antrorsa	unusual/rare	
	Rhynchospora harperi	C	
	Rhynchospora tracyi (1984)	SR	
	Rhynchospora wrightiana	W	
	Scleria georgiana	C	
	Xyris laciniata	C	

GA-4	Savanna		899349
	Asclepias pedicellata	C	
	Dichanthelium erectifolium	SR	
	Dionaea muscipula	FC2,C-SC	
	Lysimachia loomisii	W	
	Oxypolis ternata	FC2,C	
	Pleea tenuifolia	W	
	Polygala brevifolia	W	
	Polygala hookeri	C	
	Rhynchospora pallida	SR	
	Sarracenia rubra ssp. rubra	W	
	Solidago pulchra	FC2,C	
	Tofieldia glabra	FC2,C	
	Xyris baldwiniana	W	
GA-5	Depression Meadow		901361
	Agalinis linifolia	SR	
	Anthaenantia rufa	W	
	Aristida palustris	SR	
	Burmannia biflora	W	
	Carex verrucosa	SR	
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Panicum tenerum	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora inundata	W	
	Rhynchospora tracyi	SR	
	Xyris smalliana	W	
GB-1	Wet Pine Flatwoods/Small Stream Pocosin		908376
	Rhynchospora elliottii	W	
GB-2	Road Meadow		907376
	Agalinis virgata	C	
GB-3	Road Meadow		929368
	Calopogon barbatus	W	
	Dionaea muscipula	FC2,C-SC	
	Solidago pulchra	FC2,C	
GB-4	Road Meadow		931365
	Dionaea muscipula	FC2,C-SC	
	Rhynchospora pallida	SR	
	Solidago pulcra	FC2,C	
GB-5	Wet Pine Flatwoods		932364
	Dionaea muscipula	FC2,C-SC	
	Solidago pulchra	FC2,C	
	Tofieldia glabra	FC2,C	

GC-6	Depression Meadow		942358
	Agalinis linifolia	SR	
	Aristida palustris	SR	
	Burmannia biflora	W	
	Coelorachis rugosa	W	
	Dichanthelium erectifolium	SR	
	Litsea aestivalis	FC2,C	
	Panicum tenerum	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora wrightiana	W	
	Scleria georgiana	C	
GC-7	Depression Meadow		942359
	Aristida palustris	SR	
	Litsea aestivalis	FC2,C	
	Panicum tenerum	SR	
	Rhexia aristosa	FC2,T	
	Rhexia cubensis	SR	
	Sarracenia rubra ssp. rubra	W	
GC-8	Small Depression Pond		947356
	Rhexia aristosa	FC2,T	
	Rhexia aristosa X cubensis	undescribed taxon	
	Rhexia cubensis	SR	
GC-9	Depression Meadow		949356
	Aristida palustris	SR	
	Coelorachis rugosa	W	
	Rhexia aristosa	FC2,T	
GC-10	Depression Meadow		948356
	Agalinis linifolia	SR	
	Aristida palustris	SR	
	Coelorachis rugosa	W	
	Eleocharis tricostata	W	
	Panicum tenerum	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora tracyi	SR	
	Scleria georgiana	C	
GC-11	Flatwoods Road Meadow		949364
	Andropogon capillipes	W	
GC-12	Streamhead Pocosin		944348
	Amphicarpum purshii	SR	
	Dionaea muscipula	FC2,C-SC	
	Peltandra sagittifolia	SR	
	Rhynchospora pallida	SR	
	Solidago pulchra	FC2,C	
	Tofieldia glabra	FC2,C	

GE-3.	**Road Depression Meadow**		907330
	Amphicarpum purshii	SR	
	Calamovilfa brevipilis	FC3C,E	
	Dionaea muscipula	FC2,C-SC	
	Pleea tenuifolia	W	
GE-4	**Small Depression Pond**		907328
	Rhexia aristosa	FC2,T	
	Rhynchospora inundata	W	
GF-1	**Wet Pine Flatwoods**		949331
	Agalinis fasciculata	W	
	Agalinis virgata	C	
	Calopogon barbatus	W	
	Gentiana autumnalis	W	
	Tofieldia glabra	FC2,C	
GF-1	**Road Meadow**		949331
	Andropogon capillipes	W	
GF-3	**Depression Meadow**		906327
	Rhexia aristosa	FC2,T	
GF-5	**Road Meadow**		944326
	Agalinis linifolia	SR	
	Ludwigia microcarpa	W	
	Rhexia aristosa	FC2,T	
	Xyris baldwiniana	W	
GG-1	**Depression Meadow**		934317
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Panicum tenerum	SR	
	Rhexia aristosa	FC2,T	
	Rhexia cubensis	SR	
	Rhynchospora inundata	W	
	Rhynchospora tracyi	SR	
	Rhynchospora wrightiana	W	
GG-2	**Road Meadow**		943325
	Eleocharis tricostata	W	
	Ludwigia microcarpa	W	
GH-1	**Coastal Fringe Sandhill**		?
	Cladina evansii	W	
GI-1	**Coastal Fringe Sandhill**		?
	Cladina evansii	W	

SECTOR H

			876311
HB-1	**Flatwoods/Pocosin Ecotone**		
	Carex elliottii	W	
	Dionaea muscipula	FC2,C-SC	
	Polygala brevifolia	W	
			875317
HB-2	**Flatwoods/Pocosin Ecotone**		
	Amphicarpum purshii	SR	
	Lysimachia asperulifolia (P. Robinson)	FE,E	
	Polygala brevifolia	W	
	Solidago pulchra	FC2,C	
			878328
HB-3	**Small Depression Pond**		
	Agalinis linifolia	SR	
	Aristida palustris	SR	
	Burmannia biflora	W	
	Dichanthelium erectifolium	SR	
	Dionaea muscipula	FC2,C-SC	
	Ludwigia linifolia	SR	
	Oxypolis ternata	FC2,C	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora harperi	C	
	Solidago pulchra	FC2,C	
			870320
HB-5	**Wet Pine Flatwoods, Pocosin**		
	Asclepias pedicellata	C	
	Calopogon barbatus	W	
	Solidago pulchra	FC2,C	
	Sporopolus species 1	FC2,T	
			878337
HD-1	**Small Depression Pond/Black Gum Swamp**		
	Dichanthelium erectifolium	SR	
	Rhexia aristosa	FC2,T ,	
			876339
HD-2	**Depression Meadow/Small Depression Pond**		
	Aristida palustris	SR	
	Burmannia biflora	W	
	Rhexia aristosa	FC2,T	
			871341
HD-3	**Depression Meadow/Small Depression Pond**		
	Aristida palustris	SR	
	Burmannia biflora	W	
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Eleocharis robbinsii	C	
	Myriophyllum laxum	FC2,T	
	Panicum tenerum	SR	
	Rhexia aristosa	FC2,T	
	Rhynchospora harperi	C	
	Rhynchospora inundata	W	
	Rhynchospora nitens	W	
	Rhynchospora pleiantha	SR	
	Rhynchospora tracyi	SR	
	Sabatia georgiana	C	

HE-7	**Road Meadow**		880330
	Agalinis fasciculata	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora pusilla	W	
	Rhynchospora nitens	W	
HE-8	**Pocosin Ecotone**		883329
	Dionaea muscipula	FC2,C-SC	
HE-8	**Road Depression Meadow**		882328
	Paspalum praecox	W	
HF-1	**Small Depression Pond/Depression Meadow**		900316
	Agalinis linifolia	SR	
	Aristida palustris	SR	
	Coelorachis rugosa	W	
	Dichanthelium erectifolium	SR	
	Eleocharis tricostata	W	
	Ludwigia linifolia	SR	
	Panicum tenerum	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora tracyi	SR	
	Rhynchospora wrightiana	W	
	Scleria georgiana	C	
	Spiranthes laciniata	C	
	Xyris smalliana	W	
HF-2	**Road Meadow**		899316
	Aristida palustris	SR	
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Rhexia aristosa	FC2,T	
	Rhynchospora inundata	W	
	Rhynchospora nitens	W	
	Rhynchospora pallida	SR	
	Rhynchospora wrightiana	W	
	Sagittaria graminea var. chapmanii	C	
HF-3	**Small Depression Pond**		898318
	Aristida palustris	SR	
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Sagittaria graminea var. chapmanii	C	
HF-3	**Road Meadow**		898318
	Amphicarpum purshii	SR	
HF-4	**Road Meadow**		898319
	Agalinis linifolia	SR	
	Rhexia aristosa	FC2,T	
	Rhexia cubensis	SR	

HF-13 Small Depression Pond		895309
Carex verrucosa	SR	
Panicum tenerum	SR	
Rhexia aristosa	FC2,T	
Rhynchospora inundata	W	
Rhynchospora tracyi	SR	
HF-14 Pocosin Ecotone		894312
Amphicarpum purshii	SR	
Rhexia aristosa	FC2,T	
HF-15 Small Depression Pond		894310
Eleocharis equisetoides	SR	
Litsea aestivalis	FC2,C	
Scirpus etuberculatus	SR	
HF-15 Pond/Flatwoods Ecotone		894310
Asclepias pedicellata	C	
HF-16 Small Depression Pond		892308
Eleocharis robbinsii? (too deep to wade)	C	
Panicum tenerum	SR	
Rhexia aristosa	FC2,T	
Rhexia cubensis	SR	
Rhynchospora inundata	W	
Rhynchospora scirpoides	C	
HF-17 Small Depression Pond		891306
Aristida palustris	SR	
Burmannia biflora	W	
Dichanthelium erectifolium	SR	
Eleocharis equisetoides	SR	
Eleocharis robbinsii	C	
Panicum tenerum	SR	
Rhexia aristosa	FC2,T	
Rhynchospora scirpoides	C	
Rhynchospora tracyi	SR	
Rhynchospora wrightiana	W	
Utricularia olivacea	T	
Xyris smalliana	W	
HF-18 Depression Meadow		898308
Agalinis linifolia	SR	
Coelorachis rugosa	W	
Paspalum praecox	W	
Rhexia aristosa	FC2,T	
HF-19 Small Depression Pocosin		897307
Amphicarpum purshii (into HF-20)	SR	
HF-20 Flatwoods/Pocosin Ecotone		897308
Amphicarpum purshii	SR	
Solidago pulchra	FC2,C	
Sporobolus species 1	FC2,T	

IC-4	**Small Depression Pond**		870280
	Eleocharis equisetoides	SR	
	Rhynchospora inundata	W	
	Sagittaria engelmanniana	W	
IC-6	**Coastal Fringe Sandhill**		859270
	Cladina evansii	W	
IC-7	**Small Depression Pond**		862270
	Eleocharis equisetoides	SR	
IC-8	**Coastal Fringe Sandhill**		?
	Cladina evansii	W	
IC-9	**Maritime Forest**		853258
	Cynanchum angustifolium	W	
	Iresine rhizomatosa	W	
	Sageretia minutiflora	C	
IC-10	**Coastal Fringe Evergreen Forest**		856262
	Asplenium platyneuron var. bacculum-rubrum	W	
	Cornus asperifolia	C	
	Rhynchospora miliacea	W	
IC-11	**Seepage Meadow**		867259
	Eleocharis montevidensis	proposed	
IE-2	**Pocosin Ecotone**		873291
	Dionaea muscipula	FC2,C-SC	

SECTOR J

JB-1	**Small Stream Swamp**		819305
	Carex chapmanii	FC2,T	
	Carex floridana	W	
JC-1	**Small Depression Pond**		844290
	Eleocharis melanocarpa	C	

SECTOR K

KA-1	**Small Stream Swamp**		797390
	Carex floridana	W	
KC-1	**Wet Pine Flatwoods**		772377
	Buchnera floridana	W	
	Calamovilfa brevipilis	FC3C,E	
	Dionaea muscipula	FC2,C-SC	
	Pleea tenuifolia	W	
	Rhynchospora pallida	SR	
	Solidago pulchra	FC2,C	

LC-2	**Powerline Depression Meadow**		747287-764282
	Andropogon capillipes	W	
	Carex elliottii	W	
	Dionaea muscipula	FC2,C-SC	
	Rhexia aristosa	FC2,T	
	Rhynchospora oligantha	C	

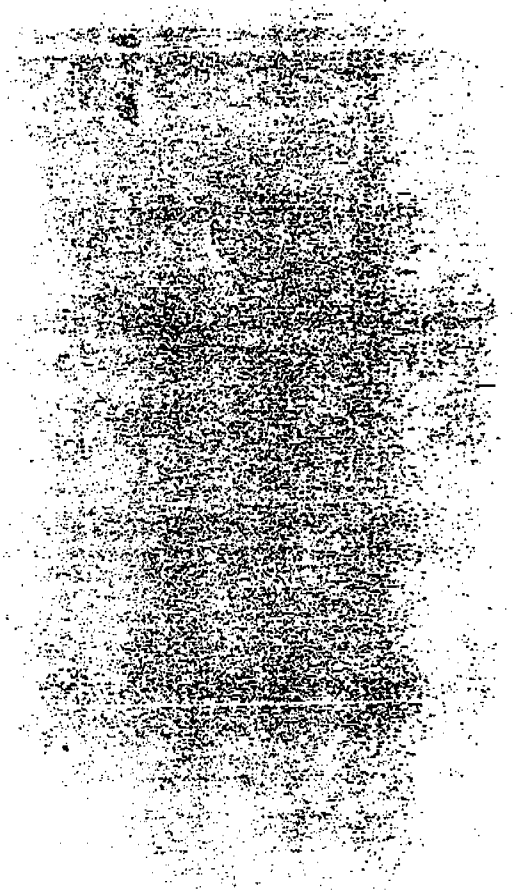
SECTOR M

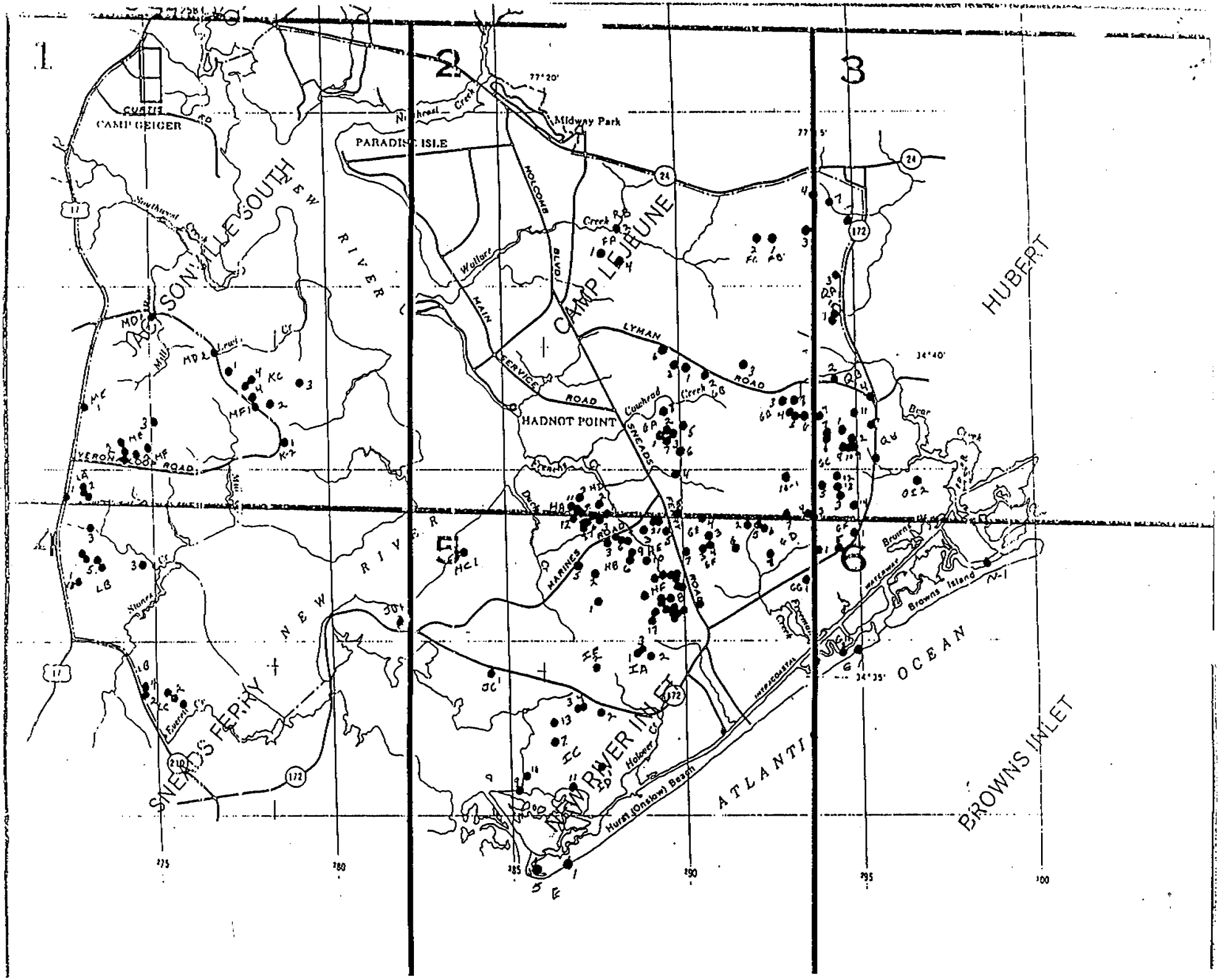
MB-1	**Mesic Pine Flatwoods**		770398
	Carex floridana	W	
MD-1	**Small Stream Swamp**		752393-752372
	Carex chapmanii	FC2,T	
	Carex floridana	W	
	Scirpus lineatus	C	
	Senecio glabellus	W	
ME-1	**Road Meadow (US 17)**		728353-735387
	Oxypolis ternata	FC2,C	
MF-1	**Wet Pine Flatwoods, Pocosin Ecotone**		776370
	Andropogon capillipes	C	
	Calamovilfa brevipilis	F3C,E	
	Calopogon barbatus	W	
	Carex elliottii	W	
	Dionaea muscipula	FC2,C-SC	
	Polygala brevifolia	W	
	Solidago pulchra	FC2,C	

SECTOR Q

QA-1	**Small Depression Pocosin**		943390
	Litsea aestivalis (1984)	FC2,C	
QA-2	**Small Depression Pond**		941391
QA-3	**Depression Meadow**		946402
	Anthaenantia rufa	W	
	Aristida palustris	SR	
	Burmannia biflora	W	
	Coelorachis rugosa	W	
	Dichanthelium erectifolium	SR	
	Dichanthelium sp. 1 =Panicum hirstii	FC2,C	
	Eleocharis equisetoides	SR	
	Lobelia boykinii	FC2,C	
	Muhlenbergia torreyana	F3C,E	
	Panicum tenerum	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora elliottii	W	
	Rhynchospora harperi	C	

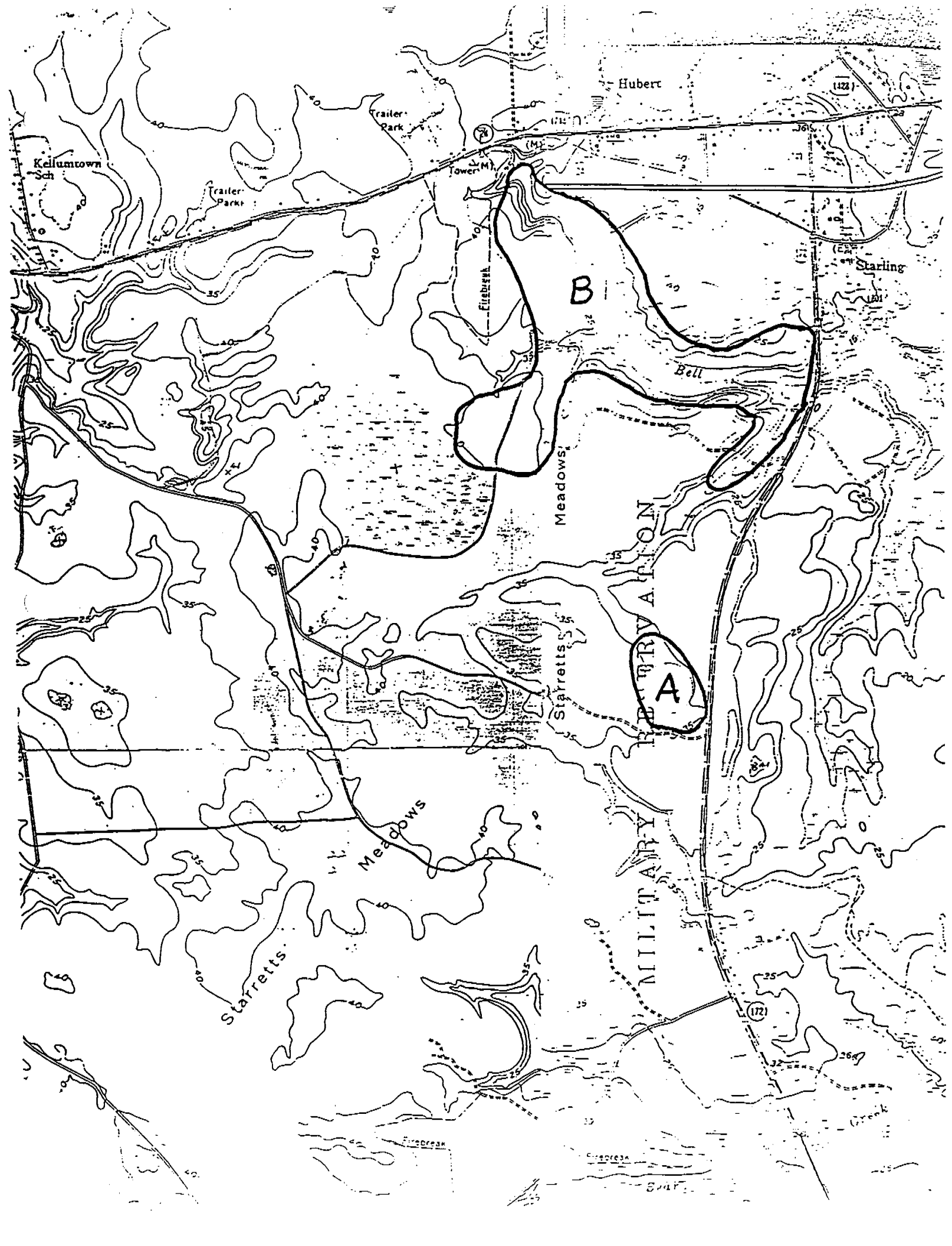
QB-3.	**Small Depression Pond**		954361
	Eleocharis tricostata	W	
	Rhexia cubensis	SR	
	Rhynchospora wrightiana	W	
RB-1	Road Meadow		888434
	Ludwigia microcarpa	W	



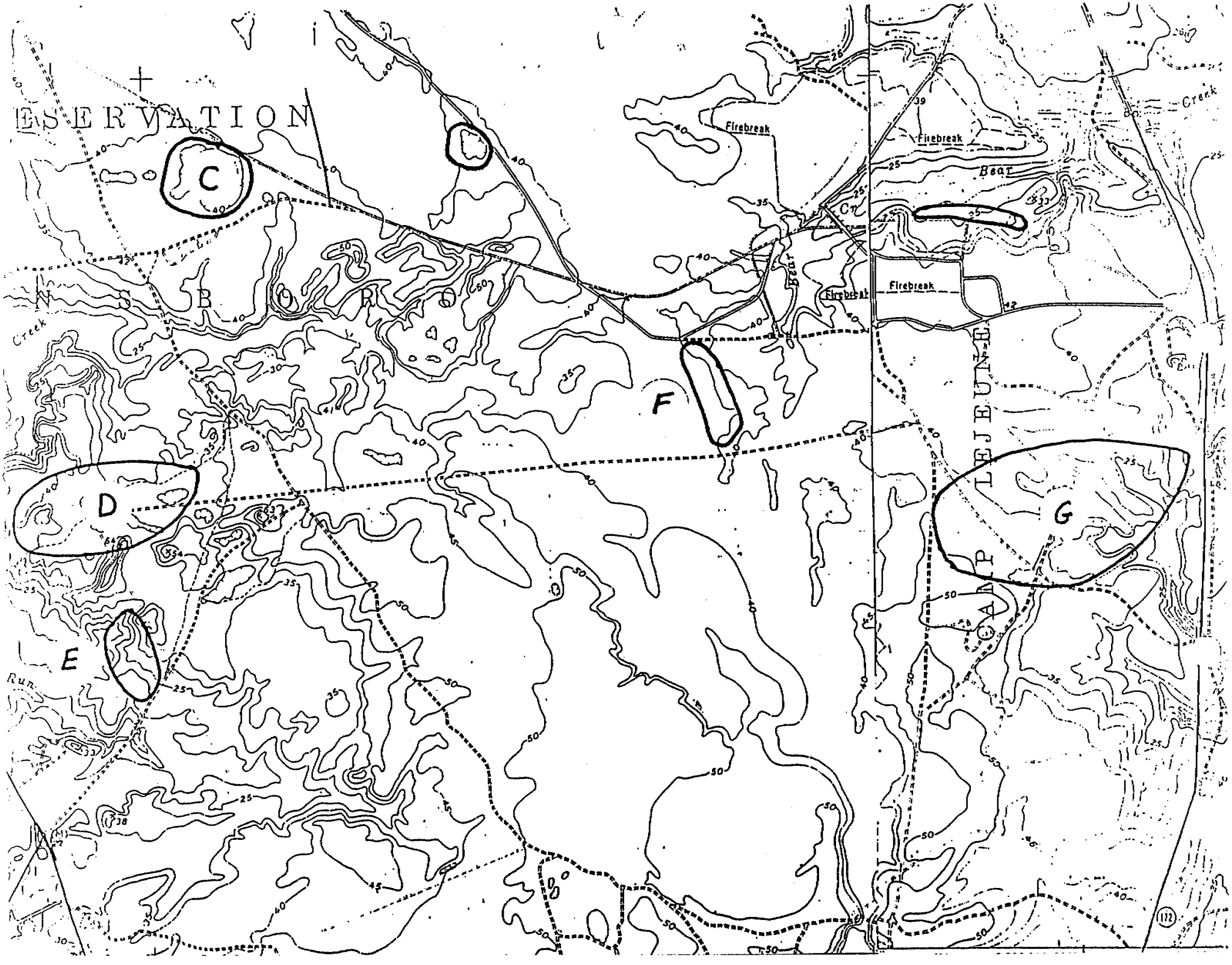

1
2
3
5
6
CAMP GEIGER
CURTIS RD
PARADISE ISLE
Midway Park
Northeast Creek
HOLCOMB BLVD
MAIN SERVICE ROAD
CAMP LEJEUNE
HADNOT POINT
LYMAN ROAD
SNEADS FERRY ROAD
MARINES ROAD
VERONA LOOP ROAD
NEW RIVER
JACKSONVILLE SOUTH
SNEADS FERRY
NEW RIVER INLET
HUBERT
BROWNS INLET
ATLANTIC OCEAN
Browns Island
Hurst (Onslow) Beach
Holcomb Creek
Wallace Creek
Cowhead Creek
Bear Creek
Brownes Creek
Freeman Creek
Stones Cr
Everett Cr
Lewis Cr
Mill Cr
Southwest Creek
Duck Cr
Frenchs Cr
77°20'
77°15'
34°40'
34°35'
275
280
285
290
295
300

AREAS OF SIGNIFICANT NATURAL VALUE

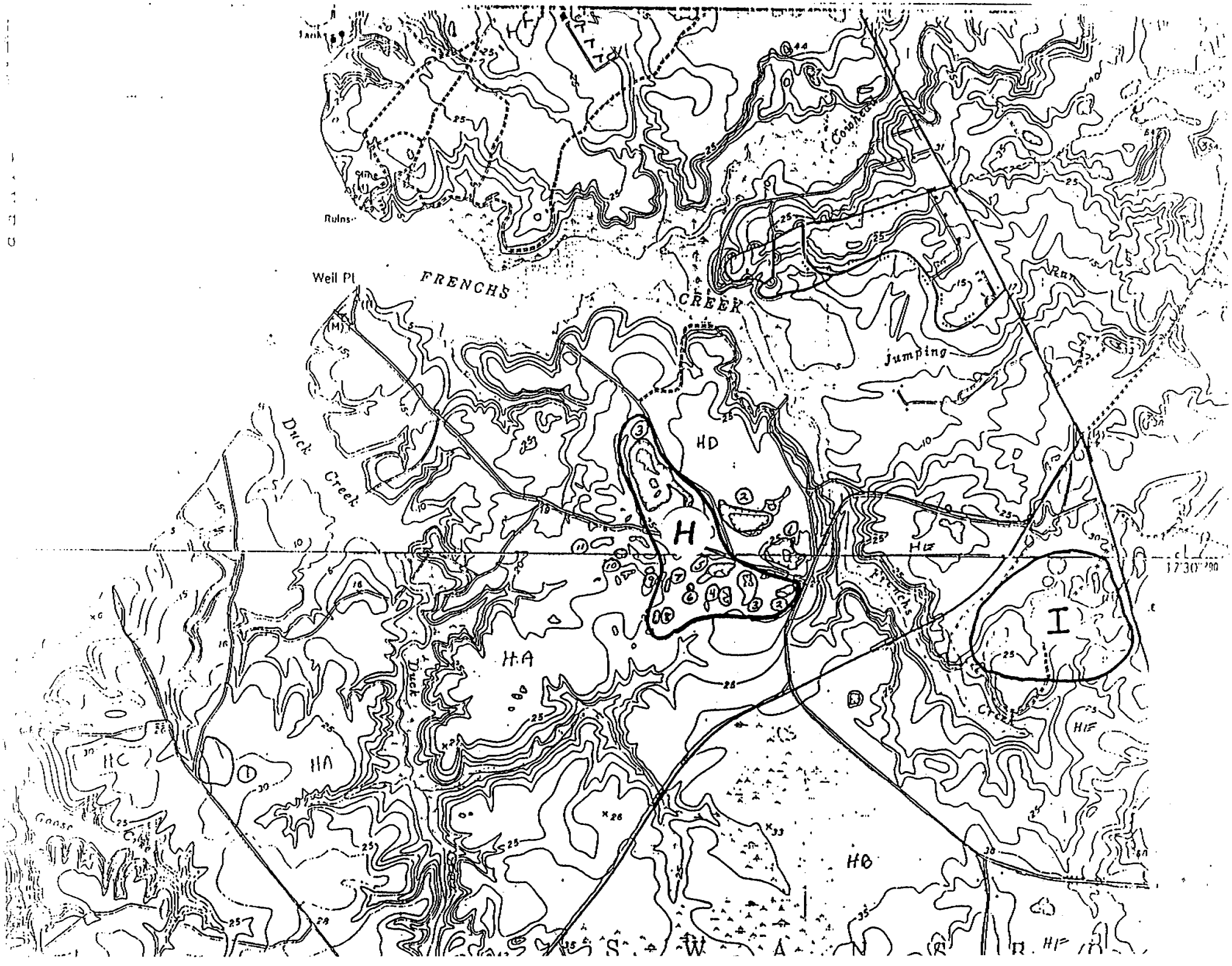
Site	Name	UTM Grid
A	**Starretts Meadow**	
	QA-3 Depression Meadow	946402
B	**Pocosin Road Flatwoods and Bell Swamp**	
	FB-3 Wet Pine Flatwoods	937416
	FB-4 Wet Pine Flatwoods	939426
	QA-7 Small Stream Swamp	944424
C	**Lyman Road Cypress Savanna**	
	FD-1 Cypress Savanna	904377
D	**Cowhead Creek Limesinks**	
	GA-1 depression meadow	894359
	GA-2 depression meadow	896360
	GA-3 cypress savanna	897359
	GA-5 depression meadow	901361
E	**Jumping Run Savanna**	
	GA-4 savanna/flatwoods/pocosin	899349
F	**OP-3 Flatwoods and Pocosin**	
	GB-3 road depression meadow	929368
	GB-4 road depression meadow	931365
	GB-5 wet pine flatwoods	932364
G	**Spring Branch Limesinks**	
	GC-1 small depression pond	946360
	GC-2 small depression pond	949357
	GC-6 depression meadow	942358
	GC-7 depression meadow	942359
	GC-8 small depression pond	947356
	GC-9 depression meadow	949356
H	**Weil Point Road Limesinks**	
	HA-2 depression meadow	878335
	HA-3 depression meadow	876335
	HA-4 depression meadow	875334
	HA-5 depression meadow	874336
	HA-6 small depression pond	873334
	HA-7 small depression pond	872334
	HA-8 small depression pond	872333
	HD-3 depression meadow	871341
I	**Alligator Meadow Limesinks**	
	HE-1 depression meadow	893334
	HE-2 depression meadow	892334
	HE-3 depression meadow	889332
	HE-4 small stream pocosin	895331
	HE-5 depression meadow	896332



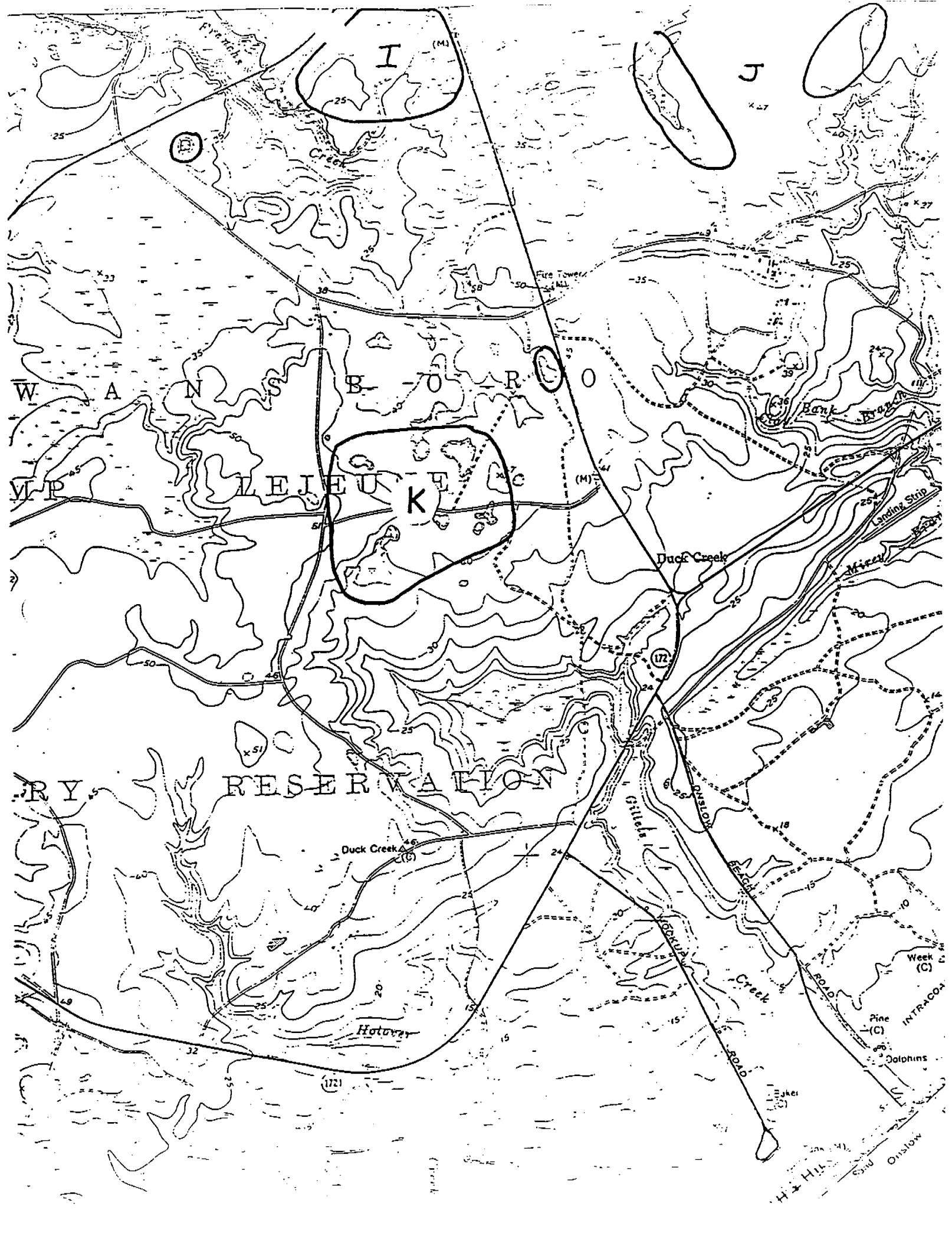
Hubert
Trailer Park
Kellumtown Sch
Trailer Park
Tower
Firebreak
B
Starling
Bell
Meadows
Starretts
A
MILITARY RESERVATION
Meadows
Starretts
Firebreak
Firebreak
Creek



ESERVATION
C
D
E
F
G
Firebreak
Firebreak
Firebreak
Firebreak
Bear
Bear
Creek
Creek
Run
CAMP LEJEUNE
172



Ruins
Well Pt
FRENCHS
CREEK
Jumping
Run
Duck
Creek
HD
H
HE
I
HA
HC
HB
Goose
Creek
17'30"



I
J
K
Fire Tower
Creek
W A N S B O R O
LEJEUNE
RESERVATION
Duck Creek
Landing Strip
Bank Branch
Gillets
Creek
ONSLOW BEACH ROAD
WOCKUP ROAD
Holover
Week (C)
Pine (C)
Dolphins
INTRACOA
Onslow

CAMP TEJEUNE
MILITARY RESERVATION
STUMP SOUND
L
M
Verona
Creek

Muddy
Creek
Millstone
N
Creek
Creek
Stones Landing
ROAD
Tower (M)
O
CAMP LEJEUNE
MILITARY RESERVATION
Stone
Tank (M)
(M)
210
Dixon
LINE
COAST
SEABOARD
BM 67
BM 66
Run
Creek

APPENDIX P
TERRESTRIAL REFERENCE VALUES AND CDI SPREADSHEETS

APPENDIX P.1
DERIVATION OF TERRESTRIAL REFERENCE VALUES
OPERABLE UNIT NO 11 (SITE 80)
REMEDIAL INVESTIGATION, CTO-0274
MCB, CAMP LEJEUNE, NORTH CAROLINA

For the bobwhite quail TRVs derived from the poultry MTLs, a consumption rate of 0.41 kg food/kg body weight was calculated based on an average poultry weighing 0.5 kg, and the following allometric model (Nagy, 1987):

CR (birds) = 0.648 (bw)^0.651

Where:

CR (birds) = consumption rate for birds (kg food/kg body weight-day)

bw = body weight for an average bird (0.5 kg)

The TRV for poultry then was adjusted to a TRV for a bobwhite quail to account for differences in the body size using the same equation that was used to adjust the cow to the deer. The body weight used for the bobwhite quail was 0.174 kg.

For the cottontail rabbit TRVs derived from the rabbit MTLs, a consumption rate of 0.081 was calculated using the following equation:

CR (rabbit) = FR/bw

Where:

CR (rabbit) = consumption rate for rabbits (kg food/kg body weight-day)

FR = feeding rate of a cottontail rabbit (0.237 kg/day)

bw = body weight of a cottontail rabbit (1.229 kg)

The TRV (rabbit) was not adjusted for body size since a rabbit was used in the TRV calculation.

The following procedures were used for deriving TRV for the whitetailed deer, bobwhite quail, and cottontail rabbit when MTLs were not available, and for species that did not have MTLs. Their TRVs were determined using No Observed Adverse Effects Levels (NOAELs) or Lowest Observed Effects Levels (LOAELs). When available, the NOAEL or LOAEL from the Integrated Risk Information System (IRIS) was used in the TRV development. However, if a toxicity value was not available from IRIS, then one was obtained from various literature sources including Agency for Toxic Substances Registry Toxicological Profiles, Toxicological Benchmarks for Wildlife (Opresko *et.al.*, 1994) and published articles. Chemicals that only had diet concentration (as opposed to NOAELS) were converted to TRVs using the above equation and the appropriate consumption rates and body weights. The attached table contains the respective body weights used in the TRV adjustments.

As is presented in the attached table, toxicity data from many species were used to develop the TRVs. The attached table presents which animal was used to develop a particular TRV in parentheses. When possible, the chronic reproductive or developmental NOAEL value was used in the development of the TRV. However, in some instances, only a subchronic NOAEL or a chronic or sub-chronic LOAEL

for some chemicals were found in the literature. If a LOAEL was used, the number was divided by 10 as an uncertainty factor. If a subchronic value was used it also was divided by 10 as an uncertainty factor. Finally, toxicity values were not found for all the chemicals. Where possible, the toxicity or a similar chemical was used for these chemicals (i.e., using endrin for endrin aldehyde). The attached table identifies, in parentheses, which chemicals were used as surrogates.

TOXICITY DATA USED TO CALCULATE TERRESTRIAL REFERENCE VALUES

Chemical	Substitute Chemical Used	Cattle (mg/kg/day)		Poultry (mg/kg/day)		Rabbit (mg/kg/day)		Dog (mg/kg/day)		Rat (mg/kg/day)		Mouse (mg/kg/day)		Guinea Pig (mg/kg/day)		Mink (mg/kg/day)	
Aluminum		5	(1)	10	(1)	11.61	(1)	15	(1)	NA		1.93	(60)	NA		NA	
Antimony		NA		NA		4.06	(1)	NA		0.035	(12)	NA		NA		NA	
Arsenic		0.25	(1)	5.135	(61) Mallard	2.90	(1)	NA		NA		0.1261	(13)	NA		NA	
Barium		0.1	(1)	1	(1)	1.16	(1)	NA		0.25	(4)	NA		NA		NA	
Beryllium		NA		NA		NA		NA		0.54	(4)	NA		NA		NA	
Cadmium		0.0025	(1)	1.45	(63) Mallard	0.03	(1)	0.075	(14)	0.004	(15)	NA		NA		NA	
Chromium		5	(1)	50	(1)	58.03	(1)	NA		2.41	(5)	NA		NA		NA	
Cobalt		0.05	(1)	0.5	(1)	0.58	(1)	NA		NA		NA		NA		NA	
Copper		0.5	(1)	15	(1)	11.61	(1)	NA		NA		NA		NA		12.9	(17)
Iron		5	(1)	50	(1)	29.02	(1)	NA		NA		NA		NA		NA	
Lead		0.15	(1)	3.65	(65) A. kestral	1.74	(1)	NA		8	(6)	NA		NA		NA	
Manganese		1	(24)	100	(1)	23.21	(1)	NA		8.8	(66)	NA		NA		NA	
Mercury		0.01	(1)	0.1	(1)	0.12	(1)	NA		0.32	(18)	NA		NA		NA	
Molybdenum		NA		NA		NA		NA		0.02	(82)	NA		NA		NA	
Nickel		0.25	(1)	15	(1)	2.90	(1)	25	(2)	5	(2)	NA		NA		NA	
Selenium		0.01	(1)	0.5	(67) Mallard	0.12	(1)	NA		0.04	(19)	NA		NA		NA	
Silver		NA		5	(1)	NA		NA		NA		0.161	(20)	NA		NA	
Thallium		NA		NA		NA		NA		0.023	(54)	NA		NA		NA	
Vanadium		0.25	(1)	11.38	(68) Mallard	0.05	(1)	NA		0.65	(58)	NA		NA		NA	
Zinc		2.5	(1)	50	(1)	29.02	(1)	1	(3)	160	(69)	NA		NA		NA	
Cyanide		NA		4.5	(21)	NA		0.375	(22)	10.8	(23)	NA		NA		NA	
Acenaphthene		NA		NA		NA		NA		17.5	(56)	NA		NA		NA	
Acenaphthylene		NA		NA		NA		NA		17.5	Acen.	NA		NA		NA	
Anthracene		NA		NA		NA		NA		NA		100	(33)	NA		NA	
Benzo(a)anthracene	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		1		NA		NA	
Benzo(b)fluoranthene	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		1		NA		NA	
Benzo(k)fluoranthene	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		1		NA		NA	
Benzo(ghi)perylene	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		1		NA		NA	
Benzo(g,h,i)perylene	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		1		NA		NA	
Benzo(a)pyrene		NA		NA		NA		NA		NA		1	(7)	NA		NA	
beta-BHC		NA		NA		NA		NA		5	(51)	NA		NA		NA	
gamma-BHC	(beta-BHC)	NA		NA		NA		NA		5	(51)	NA		NA		NA	
Bis(2-ethylhexyl)phthalate		NA		1.11	(16) Ringed D	NA		NA		NA		NA		0.1833	(11)	NA	
Butylbenzylphthalate		NA		NA		NA		NA		15.9	(52)	NA		NA		NA	
Carbazole	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		1		NA		NA	
Chrysene	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		1		NA		NA	
Dibenzofuran	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		1		NA		NA	
Dibenzo(a,h)anthracene	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		1		NA		NA	
Dibenz(a,h)anthracene	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		1		NA		NA	
Diethylphthalate		NA		NA		NA		NA		NA		4583	(53)	NA		NA	
2,4-Dimethylphenol		NA		NA		NA		NA		NA		5	(85)	NA		NA	
Di-n-butylphthalate		NA		0.11	(16) Ringed D	NA		NA		125	(63)	NA		NA		NA	
Di-n-octylphthalate		NA		NA		NA		NA		17.5	(79)	NA		NA		NA	
2,6-Dinitrotoluene		NA		NA		NA		0.4	(84)	NA		NA		NA		NA	
Fluoranthene		NA		NA		NA		NA		NA		12.5	(8)	NA		NA	
Fluorene		NA		NA		NA		NA		12.5	(56)	NA		NA		NA	
Indeno(1,2,3-cd)pyrene	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		1		NA		NA	
2-Methylnaphthalene	(Naphthalene)	NA		NA		NA		NA		41		NA		NA		NA	
Naphthalene		NA		NA		NA		NA		41	(9)	NA		NA		NA	
Nitrobenzene		NA		NA		NA		NA		0.25	(80)	NA		NA		NA	
n-Nitrosodiphenylamine		NA		NA		NA		NA		50	(81)	NA		NA		NA	
Phenanthrene	(Naphthalene)	NA		NA		NA		NA		41		NA		NA		NA	
Phenol		NA		NA		NA		NA		6	(57)	NA		NA		NA	
Pyrene		NA		NA		NA		NA		NA		7.5	(10)	NA		NA	

TOXICITY DATA USED TO CALCULATE TERRESTRIAL REFERENCE VALUES

Chemical	Substitute Chemical Used	Cattle (mg/kg/day)		Poultry (mg/kg/day)		Rabbit (mg/kg/day)		Dog (mg/kg/day)		Rat (mg/kg/day)		Mouse (mg/kg/day)	Guinea Pig (mg/kg/day)	Mink (mg/kg/day)	
Aldrin		0.5	(24)	NA		NA		0.025	(77)	0.025	(77)	NA	NA	NA	
Alpha-chlordane	(Chlordane)	1	(24)	2.14	(70) Blackbird	NA		0.075	(48)	0.055	(49)	NA	NA	NA	
Gamma-chlordane	(Chlordane)	1	(24)	2.14	(70) Blackbird	NA		0.075	(48)	0.055	(49)	NA	NA	NA	
Dieldrin		0.5	(24)	0.03	(71) Mallard	NA		0.005	(25)	0.005	(25)	NA	NA	NA	
4,4'-DDD	(DDT)	NA		0.088	(DDT)	NA		NA		0.8	DDT	NA	NA	NA	
4,4'-DDE		NA		0.088	(24) Quail	NA		NA		0.8	(47)	NA	NA	NA	
4,4'-DDT		NA		0.088	(24) Quail	NA		NA		0.8	(47)	NA	NA	NA	
Endosulfan I		NA		10	(72) Partridge	NA		0.57	(26)	0.6	(26)	NA	NA	NA	
Endosulfan II	(Endosulfan)	NA		10	(72) Partridge	NA		0.57	(26)	0.6	(26)	NA	NA	NA	
Endosulfan sulfate	(Endosulfan)	NA		10	(72) Partridge	NA		0.57	(26)	0.6	(26)	NA	NA	NA	
Endrin		NA		0.3	(73) Mallard	NA		0.025	(27)	0.25	(28)	NA	NA	NA	
Endrin aldehyde	(Endrin)	NA		0.3	(73) Mallard	NA		0.025	(27)	0.25	(28)	NA	NA	NA	
Endrin ketone	(Endrin)	NA		0.3	(73) Mallard	NA		0.025	(27)	0.25	(28)	NA	NA	NA	
Heptachlor		NA		NA		NA		NA		0.15	(45)	NA	NA	0.057	(29)
Heptachlor Epoxide		NA		NA		NA		0.000125	(24)	NA		NA	NA	NA	
Aroclor-1221		NA		NA		NA		NA		3.5	(30)	NA	NA	NA	
Aroclor-1232	(Aroclor-1242)	NA		0.41	(78) Owl	NA		NA		0.15	(31)	NA	NA	NA	
Aroclor-1260		NA		NA		NA		NA		0.005	(32)	NA	NA	NA	
Aroclor-1254		NA		0.18	(76) Pheasant	1	(75)	NA		NA		NA	NA	0.1	(50)
Aroclor-1248		NA		NA		0.28	(77)	NA		NA		0.13	(62) NA	NA	
Methylene chloride		NA		NA		NA		NA		5.85	(34)	NA	NA	NA	
Carbon disulfide		NA		NA		1.1	(35)	NA		NA		NA	NA	NA	
1,1-Dichloroethene		NA		NA		NA		NA		28	(59)	NA	NA	NA	
1,2-Dichloroethene (total)		NA		NA		NA		NA		5	(44)	NA	NA	NA	
Chloroform		NA		NA		NA		30	(38)	38	(37)	NA	NA	NA	
2-Butanone		NA		NA		NA		NA		NA		NA	NA	NA	
1,1,1-Trichloroethane		NA		NA		NA		NA		NA		1000	(38) NA	NA	
Trichloroethene		NA		NA		NA		NA		100	(39)	NA	NA	NA	
1,1,2-Trichloroethane		NA		NA		NA		NA		NA		0.39	(40) NA	NA	
Benzene		NA		NA		NA		NA		0.1	(41)	NA	NA	NA	
1,1,2,2-Tetrachloroethane		NA		NA		NA		NA		76	(65)	NA	NA	NA	
Tetrachloroethene		NA		NA		NA		NA		1.4	(42)	NA	NA	NA	
Toluene		NA		NA		NA		NA		22.3	(36)	NA	NA	NA	
Ethylbenzene		NA		NA		NA		NA		9.71	(41)	NA	NA	NA	
Xylenes		NA		NA		NA		NA		179	(43)	NA	NA	NA	
Xylenes (total)		NA		NA		NA		NA		179	(43)	NA	NA	NA	
Vinyl chloride		NA		NA		NA		NA		0.17	(83)	NA	NA	NA	
Acetone		NA		NA		NA		NA		10	(46)	NA	NA	NA	

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(51) Ito et.al., 1975
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(62) Thomas and Hinsdill, 1980
(63) White and Finely, 1978
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(76) Dahlgren, et.al., 1972
(77) FAO/WHO, 1978
(78) McLane and Hughes, 1980
(79) Piekacz, 1971
(80) CIIT, 1984
(81) NCI, 1979
(82) Jeter et.al., 1954
(83) Til et.al., 1983
(84) Lee et.al., 1976
(85) USEPA, 1989c

BODY WEIGHTS FOR TERRESTRIAL REFERENCE VALUE CALCULATION

Body Weight (kg)		
Cattle	100	(IT Corp, 1992)
Whitetailed Deer	45.4	(Dee, 1991)
Bobwhite Quail	0.0174	(USEPA, 1993b)
Eastern Cottontail	1.2285	(USEPA, 1993b)
Lab Rat	0.35	(USEPA, 1988)
Lab Dog	10	(USEPA, 1988)
Poultry	0.5	(IT Corp, 1992)
Red Fox	4.535	(Storm et.al., 1976)
Racoon	5.12	(USEPA, 1993b)
Lab Mouse	0.03	(USEPA, 1988)
Guinea pig	0.86	(USEPA, 1988)
Mink	1	(USEPA, 1993b)
Mallard Duck	1	(Heinze et.al., 1989)
Short-tailed Shrew	0.017	(Schlesinger and Potter, 1974)
Americal Kestral	0.13	(Pattee, 1984)
Blackbird	0.064	(Stickel, 1983)
Pheasant	1	(USEPA, 1993b)
Ringed Dove	0.155	(Terres, 1980)
Screech Owl	0.181	(Dunning, 1984)
Partridge	0.4	(Abiola, 1992)

REGION IV TERRESTRIAL REFERENCE VALUES

Chemical	Whitetailed Deer (mg/kg/day)		Bobwhite Quail (mg/kg/day)		Eastern Cottontail (mg/kg/day)		Red Fox (mg/kg/day)		Racoon (mg/kg/day)	
Aldrin	6.51E-01	(ct)	6.80E-02	(rt)	1.65E-02	(rt)	3.25E-02	(dg)	1.02E-02	(rt)
Alpha-chlordane	1.30E+00	(ct)	3.30E+00	(bi)	3.62E-02	(rt)	9.76E-02	(dg)	2.25E-02	(rt)
Gamma-chlordane	1.30E+00	(ct)	3.30E+00	(bi)	3.62E-02	(rt)	9.76E-02	(dg)	2.25E-02	(rt)
Dieldrin	6.51E-01	(ct)	1.16E-01	(bi)	3.29E-03	(rt)	6.51E-03	(dg)	2.04E-03	(rt)
4,4'-DDD	1.58E-01	(rt)	8.80E-02	(bi)	5.26E-01	(rt)	3.41E-01	(rt)	3.27E-01	(rt)
4,4'-DDE	1.58E-01	(rt)	8.80E-02	(bi)	5.26E-01	(rt)	3.41E-01	(rt)	3.27E-01	(rt)
4,4'-DDT	1.58E-01	(rt)	8.80E-02	(bi)	5.26E-01	(rt)	3.41E-01	(rt)	3.27E-01	(rt)
Endosulfan	1.19E-01	(rt)	2.84E+01	(bi)	3.95E-01	(rt)	7.42E-01	(dg)	2.45E-01	(rt)
Endosulfan II	1.19E-01	(rt)	2.84E+01	(bi)	3.95E-01	(rt)	7.42E-01	(dg)	2.45E-01	(rt)
Endosulfan sulfate	1.19E-01	(rt)	2.84E+01	(bi)	3.95E-01	(rt)	7.42E-01	(dg)	2.45E-01	(rt)
Endrin	4.94E-02	(rt)	1.16E+00	(bi)	1.65E-01	(rt)	3.25E-02	(dg)	1.02E-01	(rt)
Endrin aldehyde	4.94E-02	(rt)	1.16E+00	(bi)	1.65E-01	(rt)	3.25E-02	(dg)	1.02E-01	(rt)
Endrin ketone	4.94E-02	(rt)	1.16E+00	(bi)	1.65E-01	(rt)	3.25E-02	(dg)	1.02E-01	(rt)
Heptachlor	2.96E-02	(rt)	4.08E-01	(rt)	9.87E-02	(rt)	6.39E-02	(rt)	6.13E-02	(rt)
Heptachlor epoxide	7.55E-05	(dg)	1.04E-03	(dg)	2.51E-04	(dg)	1.63E-04	(dg)	1.56E-04	(dg)
Aroclor-1221	6.91E-01	(rt)	9.52E+00	(rt)	2.30E+00	(rt)	1.49E+00	(rt)	1.43E+00	(rt)
Aroclor-1232	2.96E-02	(rt)	8.95E-01	(bi)	9.87E-02	(rt)	6.39E-02	(rt)	6.13E-02	(rt)
Aroclor-1260	9.88E-04	(rt)	1.36E-02	(rt)	3.29E-03	(rt)	2.13E-03	(rt)	2.04E-03	(rt)
Aroclor-1254	2.80E-02	(mk)	6.95E-01	(bi)	1.00E+00	(rb)	6.47E-01	(rb)	6.21E-01	(rb)
Aroclor-1248	1.13E-02	(mo)	1.56E-01	(mo)	2.80E-01	(rb)	1.81E-01	(rb)	2.34E-02	(mo)
Methylene chloride	1.16E+00	(rt)	1.59E+01	(rt)	3.85E+00	(rt)	2.49E+00	(rt)	2.39E+00	(rt)
Carbon disulfide	3.30E-01	(rb)	4.55E+00	(rb)	1.10E+00	(rb)	7.12E-01	(rb)	6.84E-01	(rb)
1,1-Dichloroethene	5.53E+00	(rt)	7.61E+01	(rt)	1.84E+01	(rt)	1.19E+01	(rt)	1.14E+01	(rt)
1,2-Dichloroethene	9.88E-01	(rt)	1.36E+01	(rt)	3.29E+00	(rt)	2.13E+00	(rt)	2.04E+00	(rt)
Chloroform	7.51E+00	(rt)	1.03E+02	(rt)	2.50E+01	(rt)	3.90E+01	(dg)	1.55E+01	(rt)
2-Butanone	NA		NA		NA		NA		NA	
1,1,1-Trichloroethan	8.71E+01	(rt)	1.20E+03	(rt)	2.90E+02	(rt)	1.88E+02	(rt)	1.80E+02	(rt)
Trichloroethene	1.98E+01	(rt)	2.72E+02	(rt)	6.58E+01	(rt)	4.26E+01	(rt)	4.09E+01	(rt)
1,1,2-Trichloroethan	3.40E-02	(mo)	4.68E-01	(mo)	1.13E-01	(mo)	7.32E-02	(mo)	7.03E-02	(mo)
Benzene	1.98E-02	(rt)	2.72E-01	(rt)	6.58E-02	(rt)	4.26E-02	(rt)	4.09E-02	(rt)
1,1,2,2-Tetrachloroe	1.50E+01	(rt)	2.07E+02	(rt)	5.00E+01	(rt)	3.24E+01	(rt)	3.11E+01	(rt)
Tetrachloroethene	2.77E-01	(rt)	3.81E+00	(rt)	9.21E-01	(rt)	5.96E-01	(rt)	5.72E-01	(rt)
Toluene	4.41E+00	(rt)	6.06E+01	(rt)	1.47E+01	(rt)	9.49E+00	(rt)	9.12E+00	(rt)
Ethylbenzene	1.92E+00	(rt)	2.64E+01	(rt)	6.39E+00	(rt)	4.13E+00	(rt)	3.97E+00	(rt)
Xylenes	3.54E+01	(rt)	4.87E+02	(rt)	1.18E+02	(rt)	7.62E+01	(rt)	7.32E+01	(rt)
Xylenes (total)	3.54E+01	(rt)	4.87E+02	(rt)	1.18E+02	(rt)	7.62E+01	(rt)	7.32E+01	(rt)
Vinyl chloride	3.36E-02	(rt)	4.62E-01	(rt)	1.12E-01	(rt)	7.24E-02	(rt)	6.95E-02	(rt)
Acetone	1.98E+00	(rt)	2.72E+01	(rt)	6.58E+00	(rt)	4.26E+00	(rt)	4.09E+00	(rt)
2-Hexanone	NA		NA		NA		NA		NA	

Note: The following abbreviations indicate which species was used to develope the TRV

(ct) = cattle (rb) = rabbit
(rt) = rat (dg) = dog
(bi) = bird (mo) = mouse
(gp) = guinea pig (mk) = mink

NA - No Data Available

REGION IV TERRESTRIAL REFERENCE VALUES

Chemical	Whitetailed Deer (mg/kg/day)		Bobwhite Quail (mg/kg/day)		Eastern Cottontail (mg/kg/day)		Red Fox (mg/kg/day)		Racoon (mg/kg/day)		Short-Tailed Shrew (mg/kg/day)	
Aluminum	6.51E+00	(ct)	3.06E+01	(bi)	1.16E+01	(rb)	1.95E+01	(dg)	3.48E-01	(mo)	2.33E+00	(mo)
Antimony	6.91E-03	(rt)	9.52E-02	(rt)	4.06E+00	(rb)	1.49E-02	(rt)	1.43E-02	(rt)	9.59E-02	(rt)
Arsenic	3.25E-01	(ct)	1.98E+01	(bi)	2.90E+00	(rb)	2.37E-02	(mo)	2.27E-02	(mo)	1.52E-01	(mo)
Barium	1.30E-01	(ct)	3.06E+00	(bi)	1.16E+00	(rb)	1.07E-01	(rt)	1.02E-01	(rt)	6.85E-01	(rt)
Beryllium	1.07E-01	(rt)	1.47E+00	(rt)	3.55E-01	(rt)	2.30E-01	(rt)	2.21E-01	(rt)	1.48E+00	(rt)
Cadmium	3.25E-03	(ct)	5.59E+00	(bi)	2.90E-02	(rb)	9.76E-02	(dg)	1.64E-03	(rt)	1.10E-02	(rt)
Chromium	6.51E+00	(ct)	1.53E+02	(bi)	5.80E+01	(rb)	1.03E+00	(rt)	9.86E-01	(rt)	6.60E+00	(rt)
Cobalt	6.51E-02	(ct)	1.53E+00	(bi)	5.80E-01	(rb)	3.75E-01	(rb)	3.61E-01	(rb)	2.41E+00	(rb)
Copper	6.51E-01	(ct)	4.59E+01	(bi)	1.16E+01	(rb)	7.80E+00	(mk)	7.49E+00	(mk)	5.01E+01	(mk)
Iron	6.51E+00	(ct)	1.53E+02	(bi)	2.90E+01	(rb)	1.88E+01	(rb)	1.80E+01	(rb)	1.21E+02	(rb)
Lead	1.95E-01	(ct)	7.52E+00	(bi)	1.74E+00	(rb)	3.41E+00	(rt)	3.27E+00	(rt)	2.19E+01	(rt)
Manganese	1.30E+00	(ct)	3.06E+02	(bi)	2.32E+01	(rb)	3.75E+00	(rt)	3.60E+00	(rt)	2.41E+01	(rt)
Mercury	1.30E-02	(ct)	3.06E-01	(bi)	1.20E-01	(rb)	1.36E-01	(rt)	1.31E-01	(rt)	8.77E-01	(rt)
Molybdenum	3.95E-03	(rt)	5.44E-02	(rt)	1.32E-02	(rt)	8.52E-03	(rt)	8.18E-03	(rt)	5.48E-02	(rt)
Nickel	3.25E-01	(ct)	4.59E+01	(bi)	2.90E+00	(rb)	3.25E+01	(dg)	2.05E+00	(rt)	1.37E+01	(rt)
Selenium	1.30E-02	(ct)	1.93E+00	(bi)	1.20E-01	(rb)	1.70E-02	(rt)	1.64E-02	(rt)	1.10E-01	(rt)
Silver	1.58E-02	(mo)	1.53E+01	(bi)	5.25E-02	(mo)	3.40E-02	(mo)	3.26E-02	(mo)	2.19E-01	(mo)
Thallium	4.54E-03	(rt)	6.26E-02	(rt)	1.51E-02	(rt)	9.79E-03	(rt)	9.40E-03	(rt)	6.30E-02	(rt)
Vanadium	3.25E-01	(ct)	4.39E+01	(bi)	5.80E-02	(rb)	2.77E-01	(rt)	2.66E-01	(rt)	1.78E+00	(rt)
Zinc	3.25E+00	(ct)	1.53E+02	(bi)	2.90E+01	(rb)	1.30E+00	(dg)	6.54E+01	(rt)	4.39E+02	(rt)
Cyanide	2.13E+00	(rt)	1.38E+01	(bi)	7.11E+00	(rt)	4.88E-01	(dg)	4.42E+00	(rt)	2.96E+01	(rt)
Acenaphthene	3.46E+00	(rt)	4.76E+01	(rt)	1.15E+01	(rt)	7.45E+00	(rt)	7.16E+00	(rt)	4.80E+01	(rt)
Acenaphthylene	3.46E+00	(rt)	4.76E+01	(rt)	1.15E+01	(rt)	7.45E+00	(rt)	7.16E+00	(rt)	4.80E+01	(rt)
Anthracene	8.71E+00	(mo)	1.20E+02	(mo)	2.90E+01	(mo)	1.88E+01	(mo)	1.80E+01	(mo)	1.21E+02	(mo)
Benzo(a)anthracen	8.71E-02	(mo)	1.20E+00	(mo)	2.90E-01	(mo)	1.88E-01	(mo)	1.80E-01	(mo)	1.21E+02	(mo)
Benzo(b)fluoranthe	8.71E-02	(mo)	1.20E+00	(mo)	2.90E-01	(mo)	1.88E-01	(mo)	1.80E-01	(mo)	1.21E+02	(mo)
Benzo(k)fluoranthe	8.71E-02	(mo)	1.20E+00	(mo)	2.90E-01	(mo)	1.88E-01	(mo)	1.80E-01	(mo)	1.21E+02	(mo)
Benzo(ghi)perylene	8.71E-02	(mo)	1.20E+00	(mo)	2.90E-01	(mo)	1.88E-01	(mo)	1.80E-01	(mo)	1.21E+02	(mo)
Benzo(g,h,i)perylen	8.71E-02	(mo)	1.20E+00	(mo)	2.90E-01	(mo)	1.88E-01	(mo)	1.80E-01	(mo)	1.21E+02	(mo)
Benzo(a)pyrene	8.71E-02	(mo)	1.20E+00	(mo)	2.90E-01	(mo)	1.88E-01	(mo)	1.80E-01	(mo)	1.21E+02	(mo)
beta-BHC	9.88E-01	(rt)	1.36E+01	(rt)	3.29E+00	(rt)	2.13E+00	(rt)	2.04E+00	(rt)	1.37E+01	(rt)
gamma-BHC	9.88E-01	(rt)	1.36E+01	(rt)	3.29E+00	(rt)	2.13E+00	(rt)	2.04E+00	(rt)	1.37E+01	(rt)
Bis(2-ethylhexyl)pht	4.89E-02	(gp)	2.30E+00	(bi)	1.63E-01	(gp)	1.05E-01	(gp)	1.01E-01	(gp)	6.78E-01	(gp)
Bis(2-chloroethyl)et	NA		NA		NA		NA		NA		NA	
Butylbenzylphthalat	3.14E+00	(rt)	4.32E+01	(rt)	1.05E+01	(rt)	6.77E+00	(rt)	6.50E+00	(rt)	4.36E+01	(rt)
Carbazole	8.71E-02	(mo)	1.20E+00	(mo)	2.90E-01	(mo)	1.88E-01	(mo)	1.80E-01	(mo)	1.21E+02	(mo)
Chrysene	8.71E-02	(mo)	1.20E+00	(mo)	2.90E-01	(mo)	1.88E-01	(mo)	1.80E-01	(mo)	1.21E+02	(mo)
Dibenzofuran	8.71E-02	(mo)	1.20E+00	(mo)	2.90E-01	(mo)	1.88E-01	(mo)	1.80E-01	(mo)	1.21E+02	(mo)
Dibenzo(a,h)anthra	8.71E-02	(mo)	1.20E+00	(mo)	2.90E-01	(mo)	1.88E-01	(mo)	1.80E-01	(mo)	1.21E+02	(mo)
Dibenz(a,h)anthrac	8.71E-02	(mo)	1.20E+00	(mo)	2.90E-01	(mo)	1.88E-01	(mo)	1.80E-01	(mo)	1.21E+02	(mo)
Diethylphthalate	3.99E+02	(mo)	5.50E+03	(mo)	1.33E+03	(mo)	8.60E+02	(mo)	8.26E+02	(mo)	5.54E+03	(mo)
2,4-Dimethylphenol	4.36E-01	(mo)	6.00E+00	(mo)	1.45E+00	(mo)	9.39E-01	(mo)	9.01E-01	(mo)	6.04E+00	(mo)
Di-n-butylphthalate	2.47E+01	(rt)	2.28E-01	(bi)	8.23E+01	(rt)	5.32E+01	(rt)	5.11E+01	(rt)	3.43E+02	(rt)
Di-n-octylphthalate	3.46E+00	(rt)	4.76E+01	(bi)	1.15E+01	(rt)	7.45E+00	(rt)	7.16E+00	(rt)	4.80E+01	(rt)
2,6-Dinitrotoluene	2.42E-01	(dg)	3.33E+00	(dg)	8.05E-01	(dg)	5.20E-01	(dg)	5.00E-01	(dg)	3.35E+00	(dg)
Fluoranthene	1.09E+00	(mo)	1.50E+01	(mo)	3.63E+00	(mo)	2.35E+00	(mo)	2.25E+00	(mo)	1.51E+01	(mo)
Fluorene	2.47E+00	(rt)	3.40E+01	(rt)	8.23E+00	(rt)	5.32E+00	(rt)	5.11E+00	(rt)	3.43E+01	(rt)
Indeno(1,2,3-cd)pyr	8.71E-02	(mo)	1.20E+00	(mo)	2.90E-01	(mo)	1.88E-01	(mo)	1.80E-01	(mo)	1.21E+02	(mo)
2-Methylnaphthalen	8.10E+00	(rt)	1.12E+02	(rt)	2.70E+01	(rt)	1.75E+01	(rt)	1.68E+01	(rt)	1.12E+02	(rt)
Naphthalene	8.10E+00	(rt)	1.12E+02	(rt)	2.70E+01	(rt)	1.75E+01	(rt)	1.68E+01	(rt)	1.12E+02	(rt)
Nitrobenzene	4.94E-02	(rt)	6.80E-01	(rt)	1.65E-01	(rt)	1.06E-01	(rt)	1.02E-01	(rt)	6.85E-01	(rt)
N-Nitrosodiphenyla	9.88E+00	(rt)	1.36E+02	(rt)	3.29E+01	(rt)	2.13E+01	(rt)	2.04E+01	(rt)	1.37E+02	(rt)
Phenanthrene	8.10E+00	(rt)	1.12E+02	(rt)	2.70E+01	(rt)	1.75E+01	(rt)	1.68E+01	(rt)	1.12E+02	(rt)
Phenol	1.19E+00	(rt)	1.63E+01	(rt)	3.95E+00	(rt)	2.55E+00	(rt)	2.45E+00	(rt)	1.64E+01	(rt)
Pyrene	6.53E-01	(mo)	8.99E+00	(mo)	2.18E+00	(mo)	1.41E+00	(mo)	1.35E+00	(mo)	9.06E+00	(mo)

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NOTE: Some of the references in this list are not specifically referenced in the proceeding table. This reference list also includes other toxicity values not used in the development of the terrestrial reference values.

APPENDIX P.1
TRVs

EQUATIONS USED TO CALCULATE CHRONIC DAILY INTAKE FOR THE RED FOX
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION, CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA

Food Source Ingestion of: fv= vegetation fi=fish im=mammals fwo=worms ffr=fruit	Feeding Rate (I in kg/d)	Incidental Soil Ingestion (Is in kg/d)	Rate of Drinking Water Ingestion (Iw in l/d)	Rate of Worm Ingestion (Iwo in kg/d)	Rate of Fruit Ingestion (Ifr in kg/d)	Rate of Mammal Ingestion (Im in kg/d)	Rate of Vegetation Ingestion (Iv in kg/d)	Body Weight (BW) (kg)	Home Range Size (acres)	Contaminated Area (acres)	H Ratio	Equation Used to Calculate Total Exposure E=total exposure Cw=constituent conc. in water Cs=constituent conc. in soil Cwo=constituent conc. in worms Cfr=constituent conc. in fruit H=ratio of home range area to site area
Small Mammals im=80%	0.601	0.017	0.365	NA	NA	0.481	0.12018	4.535	1245.4	1	0.001	$E=\frac{(Cw)(Iw)+[(Cm)(Im)+(Cs)(Bv)(Iv)+(Cs)(Is)](H)}{BW}$
Vegetation iv=20%	0.112 Small Mammal	0.00268 Small Mammal	0.0852 Small Mammal	NA	NA	NA	0.112 Small Mammal	0.3725 Small Mammal				$Cm=\frac{[(Cw)(Iw)+((Cs)(Bv)(Iv)+(Cs)(Is))(H)](Bb)}{BW}$
								Small Mammal	0.032	1	All AOCs	

Contaminant of Concern	Soil to Plant Transfer Coefficient (Bv)	Constituent Concentration in Water (mg/l) (Cw)	Constituent Concentration in Soil (mg/kg) (Cs)	Constituent Concentration in Worms (mg/kg) (Cwo)	Ingestion-to-tissue Biotransfer Factor (Bb)	Constituent Concentration in Mammals (mg/kg) (Cm)	Total Exposure (mg/kg/d)	TRV	RATIO
Aluminum	0.004	NA	4428.00	NA	1.50E-03	5.60E-02	1.36E-02	1.95E+01	6.95E-04
Arsenic	0.040	NA	14.20	NA	2.00E-03	5.47E-04	5.44E-05	2.37E-02	2.30E-03
Barium	0.150	NA	17.00	NA	1.50E-04	1.33E-04	1.05E-04	1.07E-01	9.85E-04
Beryllium	0.010	NA	0.10	NA	1.00E-03	1.02E-06	3.19E-07	2.30E-01	1.39E-06
Cadmium	0.550	NA	0.60	NA	5.40E-04	5.59E-05	6.81E-05	9.76E-02	9.03E-05
Chromium	0.008	NA	9.80	NA	5.50E-03	5.11E-04	3.08E-05	1.03E+00	3.00E-05
Copper	0.400	NA	5.70	NA	1.00E-02	7.27E-03	6.61E-05	7.80E+00	8.48E-06
Iron	0.004	NA	3111.80	NA	2.00E-02	5.24E-01	9.59E-03	1.88E+01	5.10E-04
Lead	0.045	NA	35.80	NA	3.00E-04	2.23E-04	1.41E-04	3.41E+00	4.13E-05
Manganese	0.250	NA	43.80	NA	4.00E-04	1.44E-03	3.62E-04	3.75E+00	9.65E-05
Mercury	0.900	NA	0.80	NA	2.50E-01	6.25E-02	2.52E-05	1.36E-01	1.85E-04
Nickel	0.060	NA	2.40	NA	6.00E-03	3.64E-04	1.02E-05	3.25E+01	3.15E-07
Selenium	0.025	NA	0.50	NA	1.50E-02	1.11E-04	1.78E-06	1.70E-02	1.04E-04
Silver	0.400	NA	0.60	NA	3.00E-03	2.29E-04	6.91E-06	3.40E-02	2.03E-04
Vanadium	0.006	NA	9.80	NA	2.50E-03	2.17E-04	3.04E-05	2.77E-01	1.10E-04
Zinc	1.500	NA	53.60	NA	1.00E-01	2.46E+00	2.08E-03	1.30E+00	1.60E-03
Aldrin	0.714	NA	0.02	NA	2.51E-05	1.39E-07	4.49E-07	3.25E-02	1.38E-05
Alpha-chlordane	0.026	NA	0.28	NA	7.94E-03	3.29E-05	9.77E-07	9.76E-02	1.00E-05
Gamma-chlordane	0.026	NA	0.17	NA	7.94E-03	2.02E-05	6.02E-07	9.76E-02	6.17E-06
4,4'-DDD	0.013	NA	43.59	NA	2.51E-02	1.22E-02	1.43E-04	3.41E-01	4.20E-04
4,4'-DDE	0.020	NA	1.50	NA	1.26E-02	2.48E-04	5.12E-06	3.41E-01	1.50E-05
4,4'-DDT	0.008	NA	9.77	NA	6.31E-02	5.89E-03	3.12E-05	3.41E-01	9.16E-05
Dieldrin	0.085	NA	2.42	NA	1.00E-03	7.94E-05	1.16E-05	6.51E-03	1.78E-03
Benzo(b)fluoranthene	0.006	NA	0.05	NA	1.00E-01	4.32E-05	1.53E-07	1.89E-01	8.14E-07
Bis(2-ethylhexyl)phthalate	0.044	NA	0.07	NA	3.16E-03	4.25E-06	2.58E-07	1.05E-01	2.45E-06
Chrysene	0.020	NA	0.05	NA	1.26E-02	8.76E-06	1.81E-07	1.89E-01	9.63E-07
Di-n-butylphthalate	0.038	NA	0.53	NA	3.98E-03	3.92E-05	2.00E-06	5.32E+01	3.76E-08
Pyrene	0.033	NA	0.09	NA	5.01E-03	7.97E-06	3.40E-07	1.41E+00	2.42E-07
								SUM	9.30E-03

ND - Not Detected
NA - Not Applicable

EQUATIONS USED TO CALCULATE CHRONIC DAILY INTAKE FOR THE BOBWHITE QUAIL
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION, CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA

Food Source ingestion of: Iv=vegetation If=fish Im=mammals Iwo=worms Ifr=fruit	Feeding Rate (I in kg/d)	Incidental Soil Ingestion (Is in kg/d)	Rate of Drinking Water Ingestion (Iw in l/d)	Rate of Worm Ingestion (Iwo in kg/d)	Rate of Fruit Ingestion (Ifr in kg/d)	Rate of Mammal Ingestion (Im in kg/d)	Rate of Vegetation Ingestion (Iv in kg/d)	Body Weight (BW) (kg)	Home Range Size (acres)	Contaminated Area (acres)	H Ratio	Equation Used to Calculate Total Exposure E=total exposure Cw=constituent conc. in water Cs=constituent conc. in soil Cwo=constituent conc. in worms Cfr=constituent conc. in fruit H=ratio of home range area to site area
Vegetation (Iv) 100%	0.013	0.001	0.019	NA	NA	NA	0.013	0.174	26.242	1	0.038	$E=\frac{(Cw)(Iw)+[(Cs)(Bv)(Iv)+(Cs)(Is)]](H)}{BW}$

Contaminant of Concern	Soil to Plant Transfer Coefficient (Bv)	Constituent Concentration in Water (mg/l) (Cw)	Constituent Concentration in Soil (mg/kg) (Cs)	Constituent Concentration in Worms (mg/kg) (Cwo)	Constituent Concentration in Fruit (mg/kg) (Cfr)	Constituent Concentration in Mammals (mg/kg) (Cm)	Total Exposure (mg/kg/d)	TRV	RATIO
Aluminum	0.004	NA	4428.00	NA	NA	NA	1.128	3.06E+01	3.69E-02
Arsenic	0.040	NA	14.20	NA	NA	NA	0.005	1.98E+01	2.59E-04
Barium	0.150	NA	17.00	NA	NA	NA	0.012	3.06E+00	3.82E-03
Beryllium	0.010	NA	0.10	NA	NA	NA	0.000	1.47E+00	1.86E-05
Cadmium	0.550	NA	0.60	NA	NA	NA	0.001	5.59E+00	2.01E-04
Chromium	0.008	NA	9.80	NA	NA	NA	0.003	1.53E+02	1.70E-05
Copper	0.400	NA	5.70	NA	NA	NA	0.008	4.59E+01	1.77E-04
Iron	0.004	NA	3111.80	NA	NA	NA	0.793	1.53E+02	5.18E-03
Lead	0.045	NA	35.80	NA	NA	NA	0.013	7.52E+00	1.79E-03
Manganese	0.250	NA	43.80	NA	NA	NA	0.043	3.06E+02	1.40E-04
Mercury	0.900	NA	0.90	NA	NA	NA	0.003	3.06E-01	8.58E-03
Nickel	0.060	NA	2.40	NA	NA	NA	0.001	4.59E+01	2.20E-05
Selenium	0.025	NA	0.50	NA	NA	NA	0.000	1.83E+00	8.23E-05
Silver	0.400	NA	0.80	NA	NA	NA	0.001	1.53E+01	5.60E-05
Vanadium	0.006	NA	9.80	NA	NA	NA	0.003	4.38E+01	5.79E-05
Zinc	1.500	NA	53.60	NA	NA	NA	0.251	1.53E+02	1.64E-03
Aldrin	0.714	NA	0.02	NA	NA	NA	0.000	6.80E-02	8.57E-04
Alpha-chlordane	0.026	NA	0.28	NA	NA	NA	0.000	3.30E+00	2.67E-05
Gamma-chlordane	0.026	NA	0.17	NA	NA	NA	0.000	3.30E+00	1.64E-05
4,4'-DDD	0.013	NA	43.58	NA	NA	NA	0.012	8.80E-02	1.40E-01
4,4'-DDE	0.020	NA	1.50	NA	NA	NA	0.000	8.80E-02	5.13E-03
4,4'-DDT	0.008	NA	9.77	NA	NA	NA	0.003	8.80E-02	2.93E-02
Dieldrin	0.085	NA	2.42	NA	NA	NA	0.001	1.16E-01	1.04E-02
Benzo(b)fluoranthene	0.006	NA	0.05	NA	NA	NA	0.000	1.20E+00	1.04E-05
Bis(2-ethylhexyl)phthalate	0.044	NA	0.07	NA	NA	NA	0.000	2.30E+00	1.07E-05
Chrysene	0.020	NA	0.05	NA	NA	NA	0.000	1.20E+00	1.33E-05
Di-n-butylphthalate	0.038	NA	0.53	NA	NA	NA	0.000	2.28E-01	8.22E-04
Pyrene	0.033	NA	0.09	NA	NA	NA	0.000	6.99E+00	3.50E-06
								SUM	2.45E-01

ND - Not Detected
NA - Not Applicable

EQUATIONS USED TO CALCULATE EXPOSURE FOR THE EASTERN COTTONTAIL RABBIT
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION, CTO-274
MCB CAMP LEJEUNE, NORTH CAROLINA

Food Source ingestion of: Iv=vegetation If=fish Im=mammals Iwo=worms Ifr=fruit	Feeding Rate (I in kg/d)	Incidental Soil Ingestion (Is in kg/d)	Rate of Drinking Water Ingestion (Iw in l/d)	Rate of Worm Ingestion (Iwo in kg/d)	Rate of Fruit Ingestion (Ifr in kg/d)	Rate of Mammal Ingestion (Im in kg/d)	Rate of Vegetation Ingestion (Iv in kg/d)	Body Weight (BW) (kg)	Home Range Size (acres)	Contaminated Area (acres)	H Ratio	Equation Used to Calculate Total Exposure E=total exposure Cw=constituent conc. in water Cs=constituent conc. in soil Cwo=constituent conc. in worms Cfr=constituent conc. in fruit H=ratio of home range area to site area
Vegetation (Iv) 100 percent	0.237	0.006	0.119	NA	NA	NA	0.237	1.229	9.297	1	0.108	$E=\frac{(Cw)(Iw)+[(Cs)(Bv)(Iv)+(Cs)(Is)]\,[H]}{BW}$

Contaminant of Concern	Soil to Plant Transfer Coefficient (Bv)	Constituent Concentration in Water (mg/l) (Cw)	Constituent Concentration in Soil (mg/kg) (Cs)	Constituent Concentration in Worms (mg/kg) (Cwo)	Constituent Concentration in Fruit (mg/kg) (Cfr)	Constituent Concentration in Mammals (mg/kg) (Cm)	Total Exposure (mg/kg/d)	TRV	RATIO
Aluminum	0.004	NA	4428.00	NA	NA	NA	2.57E+00	1.16E+01	2.22E-01
Arsenic	0.040	NA	14.20	NA	NA	NA	1.88E-02	2.90E+00	6.50E-03
Barium	0.150	NA	17.00	NA	NA	NA	6.14E-02	1.16E+00	5.29E-02
Beryllium	0.010	NA	0.10	NA	NA	NA	7.08E-05	3.55E-01	1.99E-04
Cadmium	0.550	NA	0.60	NA	NA	NA	7.15E-03	2.90E-02	2.46E-01
Chromium	0.008	NA	9.80	NA	NA	NA	6.41E-03	5.80E+01	1.10E-04
Copper	0.400	NA	5.70	NA	NA	NA	5.01E-02	1.16E+01	4.32E-03
Iron	0.004	NA	3111.80	NA	NA	NA	1.61E+00	2.90E+01	5.23E-02
Lead	0.045	NA	35.80	NA	NA	NA	5.13E-02	1.74E+00	2.95E-02
Manganese	0.250	NA	43.60	NA	NA	NA	2.48E-01	2.32E+01	1.07E-02
Mercury	0.900	NA	0.90	NA	NA	NA	1.73E-02	1.20E-01	1.44E-01
Nickel	0.060	NA	2.40	NA	NA	NA	4.16E-03	2.90E+00	1.44E-03
Selenium	0.025	NA	0.50	NA	NA	NA	5.08E-04	1.20E-01	4.24E-03
Silver	0.400	NA	0.60	NA	NA	NA	5.28E-03	5.25E-02	1.01E-01
Vanadium	0.006	NA	9.80	NA	NA	NA	6.00E-03	5.80E-02	1.03E-01
Zinc	1.500	NA	53.80	NA	NA	NA	1.70E+00	2.90E+01	5.84E-02
Aldrin	0.714	NA	0.02	NA	NA	NA	3.79E-04	1.65E-02	2.30E-02
Alpha-chlordane	0.026	NA	0.28	NA	NA	NA	2.85E-04	3.62E-02	7.87E-03
Gamma-chlordane	0.026	NA	0.17	NA	NA	NA	1.75E-04	3.62E-02	4.85E-03
4,4'-DDD	0.013	NA	43.59	NA	NA	NA	3.36E-02	5.26E-01	6.39E-02
4,4'-DDE	0.020	NA	1.50	NA	NA	NA	1.36E-03	5.26E-01	2.58E-03
4,4'-DDT	0.008	NA	9.77	NA	NA	NA	6.43E-03	5.26E-01	1.22E-02
Dieldrin	0.085	NA	2.42	NA	NA	NA	5.48E-03	3.29E-03	1.67E+00
Benzo(b)fluoranthene	0.008	NA	0.05	NA	NA	NA	2.98E-05	2.90E-01	1.03E-04
Bis(2-ethylhexyl)phthalate	0.044	NA	0.07	NA	NA	NA	9.27E-05	1.63E-01	5.69E-04
Chrysene	0.020	NA	0.05	NA	NA	NA	4.80E-05	2.90E-01	1.65E-04
Di-n-butylphthalate	0.038	NA	0.53	NA	NA	NA	6.80E-04	8.23E+01	8.26E-06
Pyrene	0.033	NA	0.09	NA	NA	NA	1.10E-04	2.18E+00	5.04E-05
								SUM	2.83E+00

ND - Not Detected
NA - Not Applicable

EQUATIONS USED TO CALCULATE CHRONIC DAILY INTAKE FOR THE WHITETAILED DEER
OPERABLE UNIT NO. 11 (SITE 80)
REMEDIAL INVESTIGATION, CTO-0274
MCB CAMP LEJEUNE, NORTH CAROLINA

Food Source ingestion of: Iv=vegetation If=fish Im=mammals Iw=water Iwo-worms Ifr=fruit	Feeding Rate (I in kg/d)	Incidental Soil Ingestion (Is in kg/d)	Rate of Drinking Water Ingestion (Iw in l/d)	Rate of Worm Ingestion (Iwo in kg/d)	Rate of Fruit Ingestion (Ifr in kg/d)	Rate of Mammal Ingestion (Im in kg/d)	Rate of Vegetation Ingestion (Iv in kg/d)	Body Weight (BW) (kg)	Home Range Size (acres)	Contaminated Area (acres)	H Ratio	Equation Used to Calculate Total Exposure E=total exposure Cw=constituent conc. in water Cs=constituent conc. in soil Cwo=constituent conc. in worms Cfr=constituent conc. in fruit H=ratio of home range area to site area
Vegetation(Iv) 100 percent	1.600	0.019	1.100	NA	NA	NA	1.600	45.400	454.000	1	0.002	$E=\frac{(Cw)(Iw) + [(Cs)(Bv)(Iv) + (Cs)(Is)]\ [H]}{BW}$

Contaminant of Concern	Soil to Plant Transfer Coefficient (Bv)	Constituent Concentration in Water (mg/l) (Cw)	Constituent Concentration in Soil (mg/kg) (Cs)	Constituent Concentration in Worms (mg/kg) (Cwo)	Constituent Concentration in Fruit (mg/kg) (Cfr)	Constituent Concentration in Mammals (mg/kg) (Cm)	Total Exposure (mg/kg/d)	TRV	RATIO
Aluminum	0.004	NA	4428.00	NA	NA	NA	5.35E-03	6.51E+00	8.22E-04
Arsenic	0.040	NA	14.20	NA	NA	NA	5.68E-05	3.25E-01	1.75E-04
Barium	0.150	NA	17.00	NA	NA	NA	2.13E-04	1.30E-01	1.64E-03
Beryllium	0.010	NA	0.10	NA	NA	NA	1.67E-07	1.07E-01	1.57E-06
Cadmium	0.550	NA	0.60	NA	NA	NA	2.62E-05	3.25E-03	8.04E-03
Chromium	0.008	NA	9.80	NA	NA	NA	1.45E-05	6.51E+00	2.23E-06
Copper	0.400	NA	5.70	NA	NA	NA	1.82E-04	6.51E-01	2.80E-04
Iron	0.004	NA	3111.80	NA	NA	NA	3.76E-03	6.51E+00	5.78E-04
Lead	0.045	NA	35.80	NA	NA	NA	1.57E-04	1.95E-01	8.05E-04
Manganese	0.250	NA	43.60	NA	NA	NA	8.85E-04	1.30E+00	6.80E-04
Mercury	0.900	NA	0.90	NA	NA	NA	6.37E-05	1.30E-02	4.89E-03
Nickel	0.060	NA	2.40	NA	NA	NA	1.33E-05	3.25E-01	4.10E-05
Selenium	0.025	NA	0.50	NA	NA	NA	1.42E-06	1.30E-02	1.09E-04
Silver	0.400	NA	0.60	NA	NA	NA	1.92E-05	1.58E-02	1.22E-03
Vanadium	0.008	NA	9.80	NA	NA	NA	1.30E-05	3.25E-01	3.99E-05
Zinc	1.500	NA	53.60	NA	NA	NA	6.29E-03	3.25E+00	1.93E-03
Aldrin	0.714	NA	0.02	NA	NA	NA	1.39E-06	6.51E-01	2.14E-06
Alpha-chlordane	0.026	NA	0.28	NA	NA	NA	7.98E-07	1.30E+00	6.14E-07
Gamma-chlordane	0.026	NA	0.17	NA	NA	NA	4.92E-07	1.30E+00	3.78E-07
4,4'-DDD	0.013	NA	43.59	NA	NA	NA	8.37E-05	1.58E-01	5.30E-04
4,4'-DDE	0.020	NA	1.50	NA	NA	NA	3.63E-06	1.58E-01	2.30E-05
4,4'-DDT	0.008	NA	9.77	NA	NA	NA	1.46E-05	1.58E-01	9.26E-05
Dieldrin	0.085	NA	2.42	NA	NA	NA	1.82E-05	6.51E-01	2.79E-05
Benzo(b)fluoranthene	0.006	NA	0.05	NA	NA	NA	6.52E-06	8.71E-02	7.48E-07
Bis(2-ethylhexyl)phthalate	0.044	NA	0.07	NA	NA	NA	2.83E-07	4.89E-02	5.79E-06
Chrysene	0.020	NA	0.05	NA	NA	NA	1.28E-07	8.71E-02	1.47E-06
Di-n-butylphthalate	0.038	NA	0.53	NA	NA	NA	2.03E-06	2.47E+01	8.24E-08
Pyrene	0.033	NA	0.09	NA	NA	NA	3.22E-07	6.53E-01	4.92E-07
								SUM	2.19E-02

ND - Not Detected
NA - Not Applicable