FINAL

REMEDIAL INVESTIGATION REPORT
OPERABLE UNIT NO. 13 (SITE 63)

APPENDICES A-R

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

CONTRACT TASK ORDER 0340

OCTOBER 18, 1996

Prepared for:

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

Under the:

LANTDIV CLEAN Program
Contract N62470-89-D-4814

Prepared by:

BAKER ENVIRONMENTAL, INC.
Coraopolis, Pennsylvania

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APPENDIX A
TEST BORING RECORDS

Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB01
COORDINATES: EAST: 2466310.1144 NORTH: 339415.7157
ELEVATION: SURFACE: 42.70

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/11/95	0.0 - 13.0	Cloudy; mild	8.8	1003
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG: point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 - 1.0	-	-	00	1.0/0.8	FINE SAND, trace silt; light brown; damp	41.40
1.3						
2 - 3 - 3.0	D-1	2.0 100%		0.8/0.8	FINE SAND, some silt, trace clay; brown; damp	
4 - 5 - 5.0	D-2	1.5 75%		0.8/0.6		
6 - 7 - 7.0	D-3	1.8 90%		0.8/0.8		
6.2						36.50
7.0					FINE SAND, some silt; clay; red; brown; damp	35.70
8 - 9 - 9.0	D-4	2.0 100%	04	0.8/0.8	CLAY, some silt, little fine sand; red; brown-mottled; damp	
10	D-5	2.0 100%		0.8/0.8	moist @ 10.5 ft	

Match to Sheet 2

GEOPROBE CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carlon BORING NO.: 63-SB01 SHEET 1 OF 2

Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB01

SAMPLE TYPE		DEFINITIONS
S = Split Spoon	A = Auger	PID = Photoionization Meter
T = Shelby Tube	W = Wash	ppm = parts per million
R = Air Rotary	C = Core	PS/BG = point source / background
D = Direct Push	P = Piston	
N = No Sample		

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
11					Continued from Sheet 1	
11.0						
12	D-6	1.8 90%		1.0/1.0	wet @ 11.0ft	
13					13.0	29.70
13.0					BoH @ 13.0ft	
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

GEOPROBE CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carlon BORING NO.: 63-SB01 SHEET 2 OF 2

Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB02
COORDINATES: EAST: 2466410.7400 NORTH: 339516.6757
ELEVATION: SURFACE: 41.54

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/11/95	0.0 - 13.0	Cloudy; mid	12.0;	0903
LENGTH	2.0'	4.0'						rising	
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	-	-	00	0.8/0.6	FINE SAND, little silt; brown; damp	
2 – 3.0	D-1	2.0 100%		0.8/0.6	some silt, trace clay; light brown; damp	
4 – 5.0	D-2	1.5 75%		0.6/0.6		
6 – 7.0	D-3	1.9 95%		0.6/0.6	some silt, little clay; gray & brown-mottled; damp	
					7.0	34.54
8 – 9.0	D-4	1.4 70%	04	0.8/0.6	CLAY, some silt, trace fine sand; gray & brown-mottled; damp	
10	D-5	1.9 95%		0.6/0.6	moist	

Match to Sheet 2

GEOPROBE CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carlon BORING NO.: 63-SB02 SHEET 1 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB02

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

DEFINITIONS

PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
11 11.0					Continued from Sheet 1	
12	D-6	1.8 90%		0.6/0.6	wet @ 11.0 ft water in hole @ 12.0 ft and rising	
13 13.0					13.0	28.54
14					BOH @ 13.0 ft	
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

GEOPROBE CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carion BORING NO.: 63-SB02 SHEET 2 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB03
COORDINATES: EAST: 2466413.2600 NORTH: 339417.0774
ELEVATION: SURFACE: 44.64

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/11/93	0.0-15.0	Cloudy & mild	–	–
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	–	–	00	–	FINE SAND, trace silt; gray; damp	
2 – 3.0	D-1	2.0 100%		1.0/0.8		
					2.8	41.84
3 – 5.0	D-2	1.8 90%		1.0/0.8	FINE SAND, some silt, trace clay; brown; damp 4.1	40.54
					SILT; CLAY, little fine sand; gray - slight mottling; damp 5.0	39.64
6 – 7.0	D-3	1.8 90%		0.8/0.6	FINE SAND, some silt, little clay; gray & brown - mottled; damp	
8 – 9.0	D-4	1.8 90%		0.6/0.6	some clay; brown - mottled	
					9.0	35.64
10	D-5	1.8 90%		0.8/0.6	Match to Sheet 2	

GEOPROBE CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carlon BORING NO.: 63-SB03 SHEET 1 OF 2

Baker Environmental, Inc

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB03

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

DEFINITIONS

PID = Photoionization Meter
ppm = parts per million
PS/BG = point source/background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
11					Continued from Sheet 1	
11.0					CLAY, some silt, trace fine sand; brown & gray-mottled; damp	
12	D-6	2.0 100%	06 06D	0.8/0.6		
13.0						
14	D-7	2.0 100%		0.6/0.6		
14.1						30.54
15.0					CLAY, some silt; dark gray; damp	29.64
15.0					BoH @ 15.0 ft	
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

GEOPROBE CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carion BORING NO.: 63-SB03 SHEET 2 OF 2

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Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB04
COORDINATES: EAST: 2466509.6807 NORTH: 339620.4420
ELEVATION: SURFACE: 39.79

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/6/95	0.0 - 9.0	Sunny; cool	—	—
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	–	–	00	–	FINE SAND; light gray; damp — 1.0	38.79
2 – 3.0	D-1	2.0 100%		0.3/0.1	SILT, trace fine sand; yellowish-orange-mottled; damp	
4 – 5.0	D-2	2.0 100%		0.5/0.1	trace clay; light gray & orange-mottled; damp	
6 – 7.0	D-3	2.0 100%	03	0.4/0.1	moist	
8 – 9.0	D-4	2.0 100%		–	wet @ 8.0 ft — 9.0	30.79
10					BOH @ 9 ft	

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB04 SHEET 1 OF 1

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Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB05
COORDINATES: EAST: 2466510.3466 NORTH: 339518.4763
ELEVATION: SURFACE: 41.29

RIG: Geoprobe 5400

	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/11/95	0.0 - 15.0	Rainy & mild	-	-
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS: (1) H-No was not used due to rainy conditions.

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm)	Visual Description	Elevation
1	-	-	00	(1)	SILT, little fine sand; brown; damp	
1.0						
2	D-1	1.8 90%		(1)		
2.3						38.99
3					CLAY, some silt, little fine sand; brown; damp	
3.0						
4	D-2	2.0 100%		(1)	some fine sand; brown & gray-mottled; damp	
5						
5.0						36.29
6	D-3	2.0 100%	03	(1)	SILT, little clay; brown & gray-mottled; damp	
7						
7.0						34.29
8	D-4	2.0 100%		(1)	SILT & CLAY; brown & gray-mottled; moist - wet @ 8 ft & 9 ft	
9						
9.0						
10	D-5	2.0 100%		(1)	damp	

Match to Sheet 2

GEOPROBE CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carion BORING NO.: 63-SB05

Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB05

SAMPLE TYPE		DEFINITIONS
S = Split Spoon	A = Auger	PID = Photoionization Meter
T = Shelby Tube	W = Wash	ppm = parts per million
R = Air Rotary	C = Core	
D = Direct Push	P = Piston	
N = No Sample		

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm)	Visual Description	Elevation
11					Continued from Sheet 1	
11.0						
12	D-6	1.8 90%		(1)		
13					13.0	28.29
13.0					CLAY, some silt; dark gray; damp	
14	D-7	1.7 85%		(1)		
15					15.0	26.29
15.0					BOH @ 15.0 ft.	
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

GEOPROBE CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carlon BORING NO.: 63-SB05 SHEET 2 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB06
COORDINATES: EAST: 2466609.8687 NORTH: 339719.4914
ELEVATION: SURFACE: 40.80

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/10/95	0.0 - 11.0	Sunny & cool	-	-
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	-	-	00	1.6/1.6	FINE SAND, trace silt; brown; moist to wet	
1.5						39.30
2	D-1	2.0 100%	01	1.6/1.6	CLAY, some silt, little fine sand; brown; damp	
3 – 3.0						37.80
4	D-2	1.8 90%		1.6/1.6	FINE SAND, some silt, trace clay; brown & gray-mottled; damp	
5 – 5.0						
6	D-3	1.7 85%		1.6/1.6		
7 – 7.0						33.80
8	D-4	1.8 90%		1.6/1.6	CLAY, some silt, trace fine sand; brown & gray-mottled; damp	
9 – 9.0						
10	D-5	1.8 90%		1.2/1.2		

Match to Sheet 2

GEOPROBE CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carion BORING NO.: 63-SB06 SHEET 1 OF 2

Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB06

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

DEFINITIONS

PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
11	11.0				Continued from Sheet 1 — 11.0	29.80
12					BOH @ 11.0 ft	
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

GEOPROBE CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carlon BORING NO.: 63-SB06 SHEET 2 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB07
COORDINATES: EAST: 2466610.4225 NORTH: 339619.1019
ELEVATION: SURFACE: 41.02

RIG: Geoprobe 5400					DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL					
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/11/95	0.0 - 11.0	Cloudy & mild	–	–
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	–	–	00	1.8/0.8	FINE SAND, trace silt; brown; damp	
2	D-1	0.9 45%		0.8/0.8	some silt	
3 – 3.0					3.0	38.02
4	D-2	2.0 100%		0.8/0.8	FINE SAND, some silt & clay; brown & gray-mottled; damp	
5 – 5.0						
6	D-3	1.9 95%		0.8/0.8		
7 – 7.0					7.0	34.02
8	D-4	1.9 95%	04	0.8/0.8	SILT & CLAY, trace fine sand; brown & gray-mottled; moist	
9 – 9.0					wet @ 9.0 ft	
10	D-5	1.9 95%		0.8/0.8		

Match to Sheet 2

GEOPROBE CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carlon BORING NO.: 63-SB07 SHEET 1 OF 2

Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB07

SAMPLE TYPE		DEFINITIONS
S = Split Spoon	A = Auger	PID = Photoionization Meter
T = Shelby Tube	W = Wash	ppm = parts per million
R = Air Rotary	C = Core	
D = Direct Push	P = Piston	
N = No Sample		

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm)	Visual Description	Elevation
11					Continued from Sheet 1 — 11.0	30.02
12					BOH @ 11.0ft	
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
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27						
28						
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30						

GEOPROBE CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carion BORING NO.: 63-SB07 SHEET 2 OF 2

Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB08
COORDINATES: EAST: 2466611.5398 NORTH: 339519.6942
ELEVATION: SURFACE: 43.73

RIG: Geo Probe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/10/95	0.0 - 19.5	Sunny & Cool	10.5 (Visual)	1413
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	–	–	00	2.2/1.2	FINE SAND, little silt; brown; damp	42.73
2 – 3.0	D-1	2.0 100%		2.0/1.0	CLAY & FINE SAND, some silt; brown; damp	40.73
4 – 5.0	D-2	1.6 80%		1.6/1.0	FINE SAND, some silt, trace clay; brown & gray-mottled; damp	
6 – 7.0	D-3	1.8 90%		1.4/1.0	little clay	36.73
8 – 9.0	D-4	1.8 90%		1.6/1.0	CLAY & FINE SAND, some silt; brown & gray-mottled; damp	34.73
10	D-5	1.8 90%	05	2.4/1.0	CLAY, some fine sand & silt; brown & gray-mottled; damp	

Match to Sheet 2

GEOPROBE CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carion BORING NO.: 63-SB08

Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB08

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

DEFINITIONS

PID = Photoionization Meter
ppm = parts per million

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm)	Visual Description	Elevation
11					Continued from Sheet 1	
11.0						
12	D-6	2.0 100%		2.0/1.2		
13						
13.0						
14	D-7	2.0 100%	07	2.0/1.2		
14.0						29.73
15					CLAY, some silt, trace fine sand; dark gray; damp	
15.0						
16	D-8	1.7 85%		1.6/1.2		
17					wet @ 17.0 ft	
17.0						
18	D-9	-		-		
19						
19.5						24.23
20					BoH @ 19.5 ft	
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

GEOPROBE CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carlon BORING NO.: 63-SB08 SHEET 2 OF 2

Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB09
COORDINATES: EAST: 2466613.0020 NORTH: 339420.5900
ELEVATION: SURFACE: 46.34

RIG: GeoProbe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/10/95	0.0 - 26.5	Sunny; cool	–	–
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon **A** = Auger
T = Shelby Tube **W** = Wash
R = Air Rotary **C** = Core
D = Direct Push **P** = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	–	–	00	1.2/1.0	FINE SAND little silt; brown; damp – 1.0	45.34
2 – 3.0	D-1	2.0 100%		2.1/1.4	FINE SAND, some silt, little to some clay; brown & gray-mottled; damp	
4 – 5.0	D-2	1.9 95%	02 (MS/MSD)	6.4/1.4	– 5.0	41.34
6 – 7.0	D-3	2.0 100%	03	4.2/1.4	FINE SAND, little silt, trace clay; brown & gray-mottled; damp	
8 – 9.0	D-4	2.0 100%		4.0/1.0	some silt, little clay	
10	D-5	2.0 100%		2.2/1.0	Match to Sheet 2	

GEOPROBE CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carion BORING NO.: 63-SB09 SHEET 1 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB09

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

DEFINITIONS

PID = Photoionization Meter
ppm = parts per million

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm)	Visual Description	Elevation
11 / 11.0					Continued from Sheet 1 — 11.0	35.34
12	D-6	2.0 100%	06	1.8/1.0	CLAY, some silt, trace fine sand; gray & brown-mottled; damp	
13 / 13.0					13.0	33.34
14	D-7	2.0 100%		1.6/1.0	SILT & CLAY, trace fine sand; dark gray; moist	
15 / 15.0						
16	D-8	2.0 100%		1.6/1.2	greenish-gray	
17 / 17.0						
18	D-9	3.5 100%		1.8/1.2	damp	
19						
20 / 20.5						
21	D-10	3.0 100%		1.2/1.2		
22						
23 / 23.5						
24	D-11	3.0 100%		-		
25						
26 / 26.5					26.5	19.84
27					BoH @ 26.5 ft	
28						
29						
30						

GEOPROBE CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carion BORING NO.: 63-SB09 SHEET 2 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB10
COORDINATES: EAST: 2466711.1166 NORTH: 339619.7432
ELEVATION: SURFACE: 39.59

RIG: Geoprobe 5400					DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL					
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/9/95	0.0-7.0	Sunny & cool	—	—
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS

PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	–	–	00	0.4/0.0	SILT & FINE SAND; dark brown; damp	
2 – 3.0	D-1	2.0 100%		1.8/0.1	trace clay; orange & gray - mottled	
4 – 5.0	D-2	2.0 100%	02	1.5/0.1	damp to moist	
6 – 7.0	D-3	2.0 100%		1.8/0.1	wet @ 5.0 ft.	
7					7.0	32.59
8					BOH @ 7.0 ft	
9						
10						

GEOPROBE CO.: Microseeps BAKER REP.: Jim Culp
DRILLER: Art Carion BORING NO.: 63-SB10 SHEET 1 OF 1

Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB11
COORDINATES: EAST: 2466711.9681 NORTH: 339521.4630
ELEVATION: SURFACE: 45.37

RIG: Geoprobe 5400					DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL					
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/9/95	0.0 - 11.0	Sunny & cool	-	-
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									
REMARKS:									

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1	-	-	00 OOD MS/MSD	0.1/0.1	FINE SAND, trace silt; light brown; dry	
2	D-1	2.0 100%		1.4/0.1	light gray; damp	
3 (3.0)						42.37
4	D-2	2.0 100%		1.2/0.1	SILT, little fine sand; light brown; damp	
5 (5.0)						
6	D-3	1.8 90%		1.0/0.1	trace fine sand	
7 (7.0)						
8	D-4	2.0 100%		0.2/0.0	moist	
9 (9.0)						
10	D-5	1.9 95%	05	0.3/0.0	moist to wet	

Match to Sheet 2

GEOPROBE CO.: Microseeps BAKER REP.: Jim Culp
DRILLER: Art Carion BORING NO.: 63-SB11 SHEET 1 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB11

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

DEFINITIONS

PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
11	11.0				Continued from Sheet 1 — 11.0	34.37
12					BOH @ 11.0	
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

GEOPROBE CO.: Microseeps BAKER REP.: Jim Culp
DRILLER: Art Carlon BORING NO.: 63-SB11 SHEET 2 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB12
COORDINATES: EAST: 2466714.3516 NORTH: 339419.4928
ELEVATION: SURFACE: 52.09

RIG: Geoprobe 5400									
	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/7/95	0.0 - 11.0	Cloudy & cool	-	-
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 1.0	-	-	00	-	FINE SAND; light brown; damp	
2 3.0	D-1	2.0 100%		0.4/0.4		
4 5.0	D-2	1.6 80%		0.4/0.4	trace silt; damp to moist	
					5.0	47.09
6 7.0	D-3	2.0 100%		0.2/0.2	FINE SAND & SILT; light brown; damp to moist 6.0	46.09
					CLAY, little to some fine sand; gray & orange-mottled; damp to moist 7.0	45.09
8 9.0	D-4	2.0 100%	04	0.1/0.1	SILT, little clay, trace v. fine sand; light brown & orange-mottled; moist to wet	
10	D-5	2.0 100%		0.1/0.1	wet @ 9.0 ft	
					Match to Sheet 2	

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB12 SHEET 1 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB12

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

DEFINITIONS

PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
11	11.0				Continued from Sheet 1 — 11.0	
12					BOHe 11.0ft	
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carlon BORING NO.: 63-SB12 SHEET 2 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB13
COORDINATES: EAST: 2466712.4890 NORTH: 339322.0016
ELEVATION: SURFACE: 48.36

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/6/95	0.0-15.0	Sunny; cool	-	-
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 1.0	-	-	00	-	FINE SAND; light brown; damp	
2	D-1	2.0 100%		0.1/0.1	light gray; moist	
3 3.0						
4	D-2	2.0 100%		0.3/0.1	moist to wet 4.0	44.36
5 5.0					CLAY, trace sand; light gray; moist to wet	
6	D-3	2.0 100%	03	0.3/0.1	6.0	42.36
7 7.0					FINE SAND, little to some silt; lt. gray; orange-mottled; moist	
8	D-4	1.8 90%		0.5/0.1		
9 9.0					9.0	39.36
10	D-5	2.0 100%	05	0.4/0.1	SILT, some fine sand; light gray; orange-mottled; moist to wet Match to Sheet 2	

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB13 SHEET 1 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB13

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

DEFINITIONS

PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
11 — 11.0					Continued from Sheet 1	
12	D-6	2.0 100%		0.3 / 0.1	wet @ 12 ft	
13 — 13.0						
14	D-7	0.6 30%	-	-	trace to little clay; wet	
15 — 15.0					15.0	33.36
16					BOH @ 15.0 ft	
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carlon BORING NO.: 63-SB13 SHEET 2 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB14
COORDINATES: EAST: 2466806.6936 NORTH: 339821.8606
ELEVATION: SURFACE: 47.75

RIG: Geoprobe 5400					DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL					
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/8/95	0.0 - 9.0	Sunny & cool	—	—
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	—	—	00		FINE SAND; light brown; damp	
2	D-1	1.9 95%		0.9/0.1		45.75
3 – 3.0					SILT, little fine sand; light brown; damp	
4	D-2	2.0 100%		0.3/0.1	trace v. fine sand; light brown & gray-mottled; damp	
5 – 5.0						
6	D-3	1.7 85%		0.3/0.1	moist	
7 – 7.0						
8	D-4	1.8 90%	04	0.1/0.1	wet @ 9.0 ft	
9 – 9.0						38.75
10					BOH @ 9.0 ft	

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB14 SHEET 1 OF 1

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB15
COORDINATES: EAST: 2466810.8584 NORTH: 339720.5379
ELEVATION: SURFACE: 47.14

RIG: Geoprobe 5400					DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL					
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/6/95	0.0 - 11.0	Sunny & mild	—	—
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 — 1.0	—	—	00	0.6/0.0	FINE SAND, trace silt; light gray; dry	
2 — 3.0	D-1	2.0 100%		—		45.14
3					FINE SAND, little silt; light brown; dry	
4 — 5.0	D-2	2.0 100%		0.1/0.1	trace clay	
5						
6 — 7.0	D-3	1.5 75%		0.0/0.0		
7					7.0	40.14
8 — 9.0	D-4	1.7 85%	04	0.0/0.0	SILT, trace fine sand; light brown & gray; moist	
9					wet @ 9.0 ft	
10	D-5	1.8 90%		—	Match to Sheet 2	

GEOPROBE CO.: Microseeps BAKER REP.: Jim Culp
DRILLER: Art Carion BORING NO.: 63-SB15 SHEET 1 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB15

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

DEFINITIONS

PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
11	11.0				Continued from Sheet 1 — 11.0	46.14
12					BOHE 11.0ft	
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

GEOPROBE CO.: Microseeps BAKER REP.: Jim Culp
DRILLER: Art Carlon BORING NO.: 63-SB15 SHEET 2 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB16
COORDINATES: EAST: 2466811.5469 NORTH: 339620.6429
ELEVATION: SURFACE: 45.09

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/8/95	0.0 - 7.0	Sunny; cool	–	–
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	–	–	00	–	FINE SAND; light brown; damp	
2	D-1	1.1 55%		0.9/0.1		
3 – 3.0					3.0	42.09
4	D-2	2.0 100%	02	1.1/0.1	SILT, trace fine sand; light gray; damp 4.0	41.09
5 – 5.0					FINE SAND, little silt; light gray; moist 5.0	40.09
6	D-3	2.0 100%		1.2/0.1	SILT; light brown, gray & orange-mottled; moist wet @ 7.0 ft	
7 – 7.0					7.0	38.09
8					BOH @ 7.0 Ft	
9						
10						

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB16 SHEET 1 OF 1

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB17
COORDINATES: EAST: 2466812.6030 NORTH: 339522.1559
ELEVATION: SURFACE: 46.87

RIG: Geoprobe 5400

	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID		
LENGTH	2.0'	4.0'		
TYPE	Piston	Plastic		
HAMMER WT.	NA			
FALL	NA			
STICK UP				

DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
11/8/95	0.0-9.0	Sunny & cool	—	—

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = pointsource / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	—	—	00	1.5/0.1	FINE SAND; light brown to gray; dry to damp	
2 – 3.0	D-1	2.0 100%		3.0/0.1	2.0	44.87
3 – 3.0					SILT, trace to little fine sand; light gray & orange-mottled; damp to moist	
4 – 5.0	D-2	1.8 90%		1.0/0.1		
5 – 5.0						
6 – 7.0	D-3	1.8 90%	03	0.9/0.1	moist	
7 – 7.0						
8 – 9.0	D-4	2.0 100%		—	trace clay; wet @ 8.0 ft	
9 – 9.0					9.0	37.87
10					BOH @ 9.0 ft	

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB17 SHEET 1 OF 1

Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB18
COORDINATES: EAST: 2466812.1599 NORTH: 339323.5604
ELEVATION: SURFACE: 47.85

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/7/95	0.0 - 17.0	Cloudy & cool	—	—
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 — 1.0	—	—	00	—	FINE SAND; brown; damp — 1.0	46.85
2 — 3.0	D-1	2.0 100%		0.2/0.2	SILT, some fine sand; light brown; damp — 3.0	44.85
4 — 5.0	D-2	1.9 95%		0.2/0.2	SILT, little fine sand; yellowish-orange mottled; damp	
6 — 7.0	D-3	2.0 100%		0.3/0.1	trace v. fine sand	
8 — 9.0	D-4	2.0 100%		0.1/0.1		
10	D-5	1.7 85%	05	0.1/0.1		

Match to Sheet 2

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB18 SHEET 1 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB18

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

DEFINITIONS

PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
11 11.0					Continued from Sheet 1 — 11.0	36.85
12	D-6	2.0 100%		0.2/0.1	SILT; olive gray; damp to moist	
13 13.0						
14	D-7	2.0 100%		0.1/0.1		
15 15.0						
16	D-8	2.0 100%		0.1/0.1		
17 17.0					17.0	30.85
18					BOH @ 17.0 ft	
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carlon BORING NO.: 63-SB18 SHEET 2 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB19
COORDINATES: EAST: 2466905.2754 NORTH: 339822.0339
ELEVATION: SURFACE: 51.11

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/6/95	0.0 - 9.0	Sunny & Mild	—	—
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 — 1.0	-	-	00	-	FINE SAND, trace silt; light gray; dry — 1.0	50.11
2 — 3.0	D-1	2.0 100%		0.5/0.0	FINE SAND, little silt; light brown; dry to damp	
4 — 5.0	D-2	1.4 70%		0.4/0.0	— 4.0	47.11
					FINE SAND & SILT; orange; damp — 5.0	46.11
6 — 7.0	D-3	2.0 100%	03	0.4/0.0	FINE SAND, some silt; light brown; damp wet @ 7.0 ft.	
8 — 9.0	D-4	2.0 100%		-	— 9.0	42.11
10					BOH @ 9.0 ft	

GEOPROBE CO.: Microseeps BAKER REP.: Jim Culp
DRILLER: Art Carion BORING NO.: 63-SB19 SHEET 1 OF 1

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340
COORDINATES: EAST: 2466911.3749 NORTH: 339721.8028
ELEVATION: SURFACE: 49.10
BORING NO.: 63-SB20

RIG: Geoprobe 5400

	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID		
LENGTH	2.0'	4.0'		
TYPE	Piston	Plastic		
HAMMER WT.	NA			
FALL	NA			
STICK UP				

DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
11/9/95	0.0-5.0	Sunny & cool	-	-

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1	-	-	00		FINE SAND, trace silt; dark gray & brown; damp	
1.0						
2	D-1	1.8 90%	01	0.1/0.1	light gray	
3						
3.0					wet @ 3.0 ft	
4	D-2	2.0 100%		0.4/0.1		
4.8						44.30
5					SILT, little clay; red & brown-mottled; moist	
5.0						44.10
6					BOH @ 5.0 ft	
7						
8						
9						
10						

GEOPROBE CO.: Microseeps BAKER REP.: Jim Culp
DRILLER: Art Carion BORING NO.: 63-SB20 SHEET 1 OF 1

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB21
COORDINATES: EAST: 2466909.2618 NORTH: 339620.8077
ELEVATION: SURFACE: 48.92

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/8/95	0.0 - 9.0	P. Cloudy; cool	-	-
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS: (1) Due to metal; concrete debris, the boring was moved seven times before it could be advanced.

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

DEFINITIONS

PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 - 1.0	-	-	00	-		
2 - 3.0	D-1(1)	0.9 45%		0.1/0.1	FINE SAND, trace silt; light brown; orange-slightly mottled; damp	
4 - 5.0	D-2	2.0 100%		0.1/0.1	w/ pieces of wood; silty laminae	
6 - 7.0	D-3	1.7 85%	03	0.1/0.1	6.5	42.42
8 - 9.0	D-4	1.8 90%		0.1/0.1	SILT, trace clay; light gray; orange-mottled; damp to moist wet @ 8.0 ft	
10					9.0 BOH @ 9.0 ft	39.92

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB21 SHEET 1 OF 1

Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB22
COORDINATES: EAST: 2466911.5165 NORTH: 339524.2628
ELEVATION: SURFACE: 47.18

RIG:	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/7/95	0.0-9.0	Cloudy & mild	—	—
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS: (1) Boring location was moved twice to obtain a sufficient amount of soil to collect a sample.

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	-	-	00	-	FINE SAND; brown; damp	
2 – 3.0	D-1	2.0 100%		1.0/1.0	tan & orange - sl. mottled	
4 – 5.0	D-2	1.9 95%		0.1/0.1	w/ charred wood	
6 – 7.0	D-3	0.2 10%	03(1)		more wood	
8 – 9.0	D-4	0.0 0%		-	(wet wood)	
9.0						38.18
10					BOH @ 9.0 ft	

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB22 SHEET 1 OF 1

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB23
COORDINATES: EAST: 2466914.3774 NORTH: 339415.5609
ELEVATION: SURFACE: 44.53

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/7/95	0.0-9.0	Cloudy; cool	-	-
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	-	-	00	-	FINE SAND; light brown to brown; dry to damp	
2 – 3.0	D-1	1.3 65%		3.0/0.1	damp	
4 – 5.0	D-2	1.4 70%		0.0/0.0	damp	
6 – 7.0	D-3	0.5 25%	03	00/0.0	w/ rusted metal debris; damp	
8 – 9.0	D-4	0.0 0%		-	no recovery - wet @ 7.0 ft	
9					9.0	35.53
10					BOH @ 9.0 ft	

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB23 SHEET 1 OF 1

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB24
COORDINATES: EAST: 2466914.5352 NORTH: 339323.2019
ELEVATION: SURFACE: 43.74

RIG: Geoprobe 5400					DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL					
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/7/95	0.0-9.0	Cloudy & cool	-	-
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 - 1.0	-	-	00 00D	-	FINE SAND; light brown; damp	
2 - 3.0	D-1	2.0 100%		7.0/1.0		
4 - 5.0	D-2	1.9 95%		0.8/0.8	trace silt; moist	
6 - 7.0	D-3	1.9 95%	03	0.6/0.6	moist to wet	
8 - 9.0	D-4	2.0 100%		0.5/0.5	wet @ 7.0 ft	
9	-				9.0	34.74
10					BOH @ 9.0 ft	

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB24 SHEET 1 OF 1

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB25
COORDINATES: EAST: 2466913.7249 NORTH: 339222.9994
ELEVATION: SURFACE: 42.82

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/6/95	0.0-9.0	Sunny; cool	-	-
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 - 1.0	-	-	00	-	FINE SAND; light brown & brown; damp	
2 - 3.0	D-1	2.0 100%		0.1/0.1	moist	
4 - 5.0	D-2	2.0 100%		5.5/0.1	trace silt	
6 - 7.0	D-3	1.9 95%	03	2.0/0.1	wet @ 6.0 ft	
					7.3	35.52
8 - 9.0	D-4	2.0 100%		-	FINE SAND, little silt, trace clay; gray; wet	
					9.0	33.82
10					BOH @ 9.0 ft	

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB25 SHEET 1 OF 1

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340
COORDINATES: EAST: 2467006.6330 NORTH: 339822.8948
ELEVATION: SURFACE: 52.26
BORING NO.: 63-SB26

RIG: Geoprobe 5400									
	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/6/95	0.0-9.0	Sunny; mild	-	-
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 — 1.0	-	-	00	-	FINE SAND, trace silt; light gray; dry — 1.0	51.26
2 — 3.0	D-1	2.0 100%		1.5/0.0	FINE SAND, trace silt; light brown; dry	
4 — 5.0	D-2	2.0 100%		0.3/0.0	little silt; damp — 4.5	47.76
6 — 7.0	D-3	1.8 90%	04	0.2/0.0	SILT, trace fine sand & clay; orange & gray-mottled; damp 2" thick clay layer @ 6.5 ft	
8 — 9.0	D-4	2.0 100%		0.2/0.0	varying amt of sand & clay — 9.0	43.26
10					BOH @ 9.0 ft	

GEOPROBE CO.: Microseeps
DRILLER: Art Carion
BAKER REP.: Jim Culp
BORING NO.: 63-SB26
SHEET 1 OF 1

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB27
COORDINATES: EAST: 246700.8937 NORTH: 339724.7461
ELEVATION: SURFACE: 47.93

RIG: Geoprobe 5400					DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL					
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/6/95	0.0-7.0	Sunny & m. hd	-	-
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG: point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	-	-	00	0.1/0.0		
2 – 3.0	S-1	2.0 100%		0.1/0.0	FINE SAND & SILT; gray; dry	
4 – 5.0	S-2	2.0 100%	02	2.0/0.0	4.0	43.93
6 – 7.0	S-3	2.0 100%		0.1/0.0	FINE SAND, some silt; gray; moist	
8					6.0	41.93
					SILT, some Fine sand; gray & brown; wet	
					7.0	40.93
					BOH @ 7.0 ft	
9						
10						

GEOPROBE CO.: Microseeps BAKER REP.: Jim Culp
DRILLER: Art Carion BORING NO.: 63-SB27 SHEET 1 OF 1

Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB28
COORDINATES: EAST: 2467009.2179 NORTH: 339523.6332
ELEVATION: SURFACE: 45.18

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/7/95	0.0-7.5	Cloudy; M. ld	-	-
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS: (1) Metal was encountered in orginal D-2; had a low recovery. Boring was relocated slightly.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS

PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 1.0	-	-	00	-	FINE SAND, trace silt; light brown; orange-mottled; damp	
2	D-1	2.0 100%		0.1/0.1		
3 3.0					3.0	42.18
4	D-2(1)	2.0 80%	02	-	SILT, trace fine sand; light brown; orange-mottled; damp to moist	
5 5.5					5.5	39.68
6	D-3(1)	2.0 100%		-	FINE SAND, trace silt; light gray; wet	
7 7.5					7.5	37.68
8					BOH @ 7.5 ft	
9						
10						

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB28 SHEET 1 OF 1

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB29
COORDINATES: EAST: 2467010.9475 NORTH: 339425.3054
ELEVATION: SURFACE: 42.82

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/7/95	0.0 - 9.0	Cloudy; cool	–	–
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	–	–	00	–	FINE SAND; light brown; damp	
2 – 3.0	D-1	1.6 80%		0.2/0.1	trace rusted metal debris	
4 – 5.0	D-2	0.9 45%		0.1/0.1	w/rusted metal debris & slight odor	
					5.0	37.82
6 – 7.0	D-3	1.4 70%	03	0.9/0.9	SILT, trace to little clay; yellow-brown-mottled; moist	
8 – 9.0	D-4	2.0 100%		0.1/0.1	wet @ 7.0 ft	
					7.0	35.82
10					BOH @ 7.0 ft	

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB29 SHEET 1 OF 1

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340
COORDINATES: EAST: 2467000.9530 NORTH: 339.322.9135
ELEVATION: SURFACE: 42.00
BORING NO.: 63-SB30

RIG: Geoprobe 5400

	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID		
LENGTH	2.0'	4.0'		
TYPE	Piston	Plastic		
HAMMER WT.	NA			
FALL	NA			
STICK UP				

DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
11/9/95	0.0 - 9.0	Sunny & cool	-	-

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 - 1.0	-	-	00	0.1/0.1	FINE SAND, trace to little silt; brown; dry	
2 - 3.0	D-1	2.0 100%		0.2/0.1	damp	
4 - 5.0	D-2	1.5 75%		0.3/0.1	iron stained streaks	
6 - 7.0	D-3	1.7 85%	03	1.5/0.0	light gray 6.0	36.00
8 - 9.0	D-4	2.0 100%		1.4/0.0	SILT, fine sand, trace clay; light gray; moist to wet (@ 8 ft) trace sand; orange & gray-mottled 9.0	33.00
10					BOH @ 9.0 ft	

GEOPROBE CO.: Microseeps
DRILLER: Art Carion
BAKER REP.: Jim Culp
BORING NO.: 63-SB30

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB31
COORDINATES: EAST: 2467109.3882 NORTH: 339827.3351
ELEVATION: SURFACE: 53.07

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/8/95	0.0-11.0	Sunny & cool	-	-
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 - 1.0	-	-	00	-	FINE SAND; light gray; damp	
2 - 3.0	D-1	2.0 100%		1.5/0.1	light brown	
4 - 5.0	D-2	1.1 55%		0.1/0.1	trace silt; light brown	
					5.0	48.07
6 - 7.0	D-3	2.0 100%		0.1/0.1	SILT, trace fine sand; light brown, gray, & orange-mottled; damp	
					7.0	46.07
8 - 9.0	D-4	2.0 100%	04	0.1/0.1	FINE SAND, some silt; light brown, gray, & orange-mottled; moist	
					9.0	44.07
10	D-5	-		-	SILT, trace fine sand; light brown, gray, & orange-mottled; wet @ 9.0ft	

Match to Sheet 2

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB31 SHEET 1 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB31

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

DEFINITIONS

PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
11	11.0				Continued from Sheet 1 — 11.0	42.07
12					BOH @ 11.0 ft	
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carlon BORING NO.: 63-SB31 SHEET 2 OF 2

Baker
Baker Environmental, Inc

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB32
COORDINATES: EAST: 2467109.3229 NORTH: 339727.5245
ELEVATION: SURFACE: 45.96

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/9/95	0.0-7.0	Sunny & cool	-	-
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	-	-	00	-		
2 – 3.0	D-1	0.5 25%		0.4/0.1	HUMUS, some fine sand & silt; dark brown; dry	
3					3.0	42.96
4 – 5.0	D-2	2.0 100%	02	1.0/0.0	FINE SAND, little silt; light brown; moist to wet	
5					5.0	40.96
6 – 7.0	D-3	1.5 75%		0.0/0.0	SILT, trace fine sand; gray & orange-mottled; moist to wet perched water @ 5.0 ft	
7					7.0	38.96
8					BOH @ 7.0 ft	
9						
10						

GEOPROBE CO.: Microseeps BAKER REP.: Jim Cutp
DRILLER: Art Carion BORING NO.: 63-SB32 SHEET 1 OF 1

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB33
COORDINATES: EAST: 2467112.1920 NORTH: 339623.5313
ELEVATION: SURFACE: 45.02

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/8/95	0.0-7.0	P. Cloudy/cool	–	–
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	–	–	00	–	FINE SAND; light brown to brown; damp	
2 – 3.0	D-1	2.0 100%		0.1/0.1		
4 – 5.0	D-2	2.0 100%	02	0.1/0.1	moist to wet	
6 – 7.0	D-3	1.5 75%		–	wet @ 5.0 ft	
					7.0	38.02
8					BOH @ 7.0 ft	
9						
10						

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB33 SHEET 1 OF 1

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB34
COORDINATES: EAST: 2467103.2326 NORTH: 339526.7347
ELEVATION: SURFACE: 43.64

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/7/95	0.0-13.0	Cloudy & mild	–	–
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	–	–	00	–	FINE SAND; light brown; damp	
2 – 3.0	D-1	1.7 85%		0.2/0.2	little silt	
3					3.0	40.64
4 – 5.0	D-2	2.0 100%		0.1/0.1	SILT, trace fine sand; orange & gray-mottled; damp	
6 – 7.0	D-3	1.8 90%		0.1/0.1		
8 – 9.0	D-4	1.7 85%		0.2/0.2	trace clay; damp to moist	
10	D-5	2.0 100%	05	0.2/0.2	moist	

Match to Sheet 2

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB34 SHEET 1 OF 2

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB34

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

DEFINITIONS

PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
11					Continued from Sheet 1	
11.0						
12	D-6	2.0 100%		-	moist to wet	
13						
13.0					13.0	30.64
14					Bottom @ 13.0 ft	
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carlon BORING NO.: 63-SB34

Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB35
COORDINATES: EAST: 2467111.8279 NORTH: 339325.4678
ELEVATION: SURFACE: 30.67

RIG: Geoprobe 5400					DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL					
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/9/95	0.0 - 1.0	Sunny & cool	–	–
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS

PID = Photoionization Meter
ppm = parts per million
PS/BG = Point source / background

Depth (ft.)		Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1	1.0	–	–	00	0.9/0.0	FINE SAND, trace silt; dark brown; damp - wet @ 1.0 ft 1.0	29.67
2						BOH @ 1.0 ft	
3							
4							
5							
6							
7							
8							
9							
10							

GEOPROBE CO.: Microseeps BAKER REP.: Jim Culp
DRILLER: Art Carion BORING NO.: 63-SB35 SHEET 1 OF 1

Baker
Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB36
COORDINATES: EAST: 2467210.6158 NORTH: 339726.6798
ELEVATION: SURFACE: 49.34

RIG: Geoprobe 5400					DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL					
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/9/95	0.0 - 7.0	Sunny; cool	–	–
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	–	–	00	0.1/0.1	FINE SAND, trace silt; brown; dry	
2 – 3.0	D-1	2.0 100%		0.3/0.1	little silt	
4 – 5.0	D-2	1.9 95%	02	0.1/0.1	light gray; damp to moist	
6 – 7.0	D-3	2.0 100%		0.1/0.1	wet @ 6.0 ft	
					7.0	42.34
8					BOH @ 6.0 ft	
9						
10						

GEOPROBE CO.: Microseeps BAKER REP.: Jim Culp
DRILLER: Art Carion BORING NO.: 63-SB36 SHEET 1 OF 1

Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB37
COORDINATES: EAST: 2467208.7984 NORTH: 339627.6783
ELEVATION: SURFACE: 43.62

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/8/95	0.0 - 13.0	P. Cloudy; cool	-	-
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 - 1.0	-	-	∞	-	FINE SAND, trace silt; light brown; damp	
2 - 3.0	D-1	1.9 95%		0.1/0.1	light gray	
4 - 5.0	D-2	1.9 95%		0.3/0.1	moist	
					5.0	38.62
6 - 7.0	D-3	1.6 80%		0.6/0.1	SILT, trace fine sand; light brown, yellow; orange-mottled; damp to moist	
8 - 9.0	D-4	1.8 90%	04	0.4/0.4	moist	
10	D-5	2.0 100%		0.2/0.1	moist to wet	

Match to Sheet 2

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB37 SHEET 1 OF 2

Baker
Baker Environmental, Inc

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB37

SAMPLE TYPE		DEFINITIONS
S = Split Spoon	A = Auger	PID = Photoionization Meter
T = Shelby Tube	W = Wash	ppm = parts per million
R = Air Rotary	C = Core	PS/BG = point source / background
D = Direct Push	P = Piston	
N = No Sample		

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
11 11.0					Continued from Sheet 1	
12	D-6	2.0 100%		0.2/0.2	SILT; olive gray; moist to wet 12.5	31.12
13 13.0					13.0	30.62
14					BOH @ 13.0 ft	
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepoic
DRILLER: Art Carlon BORING NO.: 63-SB37 SHEET 2 OF 2

Baker Environmental, Inc.

TEST BORING RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-SB38
COORDINATES: EAST: 2467210.8444 NORTH: 339528.9608
ELEVATION: SURFACE: 33.62

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8" ID	1-1/8" ID			11/8/95	0.0-5.0	P.Cloudy & cool	–	–
LENGTH	2.0'	4.0'							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

DEFINITIONS
PID = Photoionization Meter
ppm = parts per million
PS/BG = point source / background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Elevation
1 – 1.0	–	–	00	–	FINE SAND; light brown; dry to damp – 1.0	32.62
2 – 3.0	D-1	2.0 100%		1.0/0.1	SILT, little clay; light brown, orange; gray; damp	
4 – 5.0	D-2	2.0 100%	02	0.4/0.1	w/gray sandy laminae; wet @ 4.0 ft – 5.0	28.62
6					BOH @ 5.0 ft	
7						
8						
9						
10						

GEOPROBE CO.: Microseeps BAKER REP.: Jeff Tepsic
DRILLER: Art Carion BORING NO.: 63-SB38 SHEET 1 OF 1

APPENDIX B
TEST BORING AND WELL CONSTRUCTION RECORDS

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RI/FS at OU NO. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340
COORDINATES: EAST: 2466308.4613 NORTH: 339.559.9463
ELEVATION: SURFACE: 38.44 TOP OF PVC CASING: 40.62
BORING NO.: 63-TW01

RIG: Geoprobe 5400

	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL
SIZE (DIAM.)	1-3/8"	1-1/8"		
LENGTH	2.0	4.0		
TYPE	Piston	Plastic		
HAMMER WT.	NA			
FALL	NA			
STICK UP				

DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
11/12/95	0.0-11.0	Sunny & cool	8.0 & rising	0900

REMARKS:

SAMPLE TYPE
S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Riser	1.0"	Schedule 40 PVC	0.0	1.0
Screen	1.0"	Schedule 40 0.02 Slot	1.0	11.0

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Well Installation Detail	Elevation (ft. MSL)
1 — 1.0	-	-	00	0.6/0.6	FINE SAND, trace silt; brown & gray-mottled; damp	1.0	37.44
2 — 3.0	D-1	2.0 100%	01	0.6/0.6	little silt; gray		
4 — 5.0	D-2	2.0 100%		0.6/0.6	moist to wet 4.0		34.44
6 — 7.0	D-3	2.0 100%		0.6/0.6	CLAY, some silt, trace fine sand; brown & gray-mottled; damp		
8 — 9.0	D-4	2.0 100%		0.6/0.6			
10	D-5	2.0 100%		0.6/0.6	Match to Sheet 2		

DRILLING CO.: Microseeps
DRILLER: Art Carion
BAKER REP.: Mark DeJohn
BORING NO.: 63-TW01

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-TW01

SAMPLE TYPE		DEFINITIONS
S = Split Spoon	A = Auger	SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
T = Shelby Tube	W = Wash	RQD = Rock Quality Designation (%)
R = Air Rotary	C = Core	PID = Photoionization Detector
D = Direct Push	P = Piston	ppm = parts per million
N = No Sample		PS/BG = point source/background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Well Installation Detail	Elevation (ft. MSL)
11	11.0				Continued from Sheet 1 11.0	11.0	27.44
12					BOH @ 11.0 ft		
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

DRILLING CO.: Microseeps BAKER REP.: Mark DeJohn

DRILLER: Art Carion BORING NO.: 63-TW01 SHEET 2 OF 2

Baker
Baker Environmental, Inc

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RI/FS at OU NO. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-TW02
COORDINATES: EAST: 2466511.8322 NORTH: 339421.1888
ELEVATION: SURFACE: 44.13 TOP OF PVC CASING: 46.38

RIG: Geoprobe 5400

	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL
SIZE (DIAM.)	1-3/8"	1-1/8"		
LENGTH	2.0	4.0		
TYPE	Piston	Plastic		
HAMMER WT.	NA			
FALL	NA			
STICK UP				

DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
11/11/95	0.0-16.0	Rainy & mild	-	-

REMARKS: (1) H-No was not used due to rainy conditions.

SAMPLE TYPE
S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Riser	1.0"	Schedule 40 PVC	0.0	6.0
Screen	1.0"	Schedule 40 0.02 Slot	6.0	16.0

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Well Installation Detail	Elevation (ft. MSL)
1 – 1.0	-	-	00	(1)	FINE SAND, trace silt; gray; damp		
2 – 3.0	D-1	2.0 100%		(1)			
4 – 5.0	D-2	1.8 90%		(1)			
					4.5		39.63
6 – 7.0	D-3	2.0 100%		(1)	SILT & CLAY, little to some fine sand; brown & gray-mottled; damp	6.0	38.13
8 – 9.0	D-4	1.8 90%	04	(1)	moist		
10	D-5	1.3 65%		(1)	wet @ 9.0 ft		

Match to Sheet 2

DRILLING CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carion BORING NO.: 63-TW02 SHEET 1 OF 2

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-TW02

SAMPLE TYPE		DEFINITIONS
S = Split Spoon	A = Auger	SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
T = Shelby Tube	W = Wash	RQD = Rock Quality Designation (%)
R = Air Rotary	C = Core	PID = Photoionization Detector
D = Direct Push	P = Piston	ppm = parts per million
N = No Sample		PS/BG = point source/background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Well Installation Detail	Elevation (ft. MSL)
11					Continued from Sheet 1		
11.0							
12							
13	D-6	-	-	(1)			
14							
14.5							
15	D-N	-	-	-			
16					16.0	16.0	28.13
16.0					BOH @ 16.0 ft		
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

DRILLING CO.: Microseeps BAKER REP.: Mark DeJohn

DRILLER: Art Carion BORING NO.: 63-TW02 SHEET 2 OF 2

Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RI/FS at OU NO. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340
COORDINATES: EAST: 2466710.0943 NORTH: 339719.5539
ELEVATION: SURFACE: 43.20 TOP OF PVC CASING: 45.77
BORING NO.: 63-TW03

RIG: Geoprobe 5400

	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL
SIZE (DIAM.)	1-3/8"	1-1/8		
LENGTH	2.0	4.0		
TYPE	Piston	Plastic		
HAMMER WT.	NA			
FALL	NA			
STICK UP				

DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
11/12/95	0.0-15.5	Sunny & cool	8.5 & rising	0815

REMARKS:

SAMPLE TYPE
S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Riser	1.0"	Schedule 40 PVC	0.0	5.5
Screen	1.0"	Schedule 40 0.02 Slot	5.5	15.5

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Well Installation Detail	Elevation (ft. MSL)
1	–	–	00	1.0/1.0	FINE SAND, trace silt; brown; damp		
1.0							
2	D-1	0.7 35%		1.2/0.6			
3							
3.0							
4	D-2	2.0 100%		0.4/0.4	some silt, trace clay; reddish-brown		
5					5.0		38.20
5.0							
6	D-3	1.7 85%	03	0.4/0.4	CLAY, some Fine sand & silt; brown & gray-mottled; damp	5.5	37.70
7					7.0		36.20
7.0							
8	D-4	1.9 95%		0.4/0.4	CLAY, some silt, trace Fine sand; brown & gray-mottled; damp		
9							
9.0							
10	D-5	1.9 95%		0.4/0.4	Match to Sheet 2		

DRILLING CO.: Microseeps
DRILLER: Art Carion
BAKER REP.: Mark DeJohn
BORING NO.: 63-TW03

Baker
Baker Environmental, Inc

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-TW03

SAMPLE TYPE

S = Split Spoon	**A** = Auger
T = Shelby Tube	**W** = Wash
R = Air Rotary	**C** = Core
D = Direct Push	**P** = Piston
N = No Sample	

DEFINITIONS

SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
PID = Photoionization Detector
ppm = parts per million
PS/BG = point source/background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Well Installation Detail	Elevation (ft. MSL)
11					Continued from Sheet 1		
11.0							
12	D-6	2.0 100%		0.6/0.4	12.0		31.20
13					CLAY, some silt; dark gray; damp		
13.0							
14	D-7	1.9 95%		-			
15					15.5	15.5	27.70
15.5							
16					BOH @ 15.5		
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

DRILLING CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carion BORING NO.: 63-TW03 SHEET 2 OF 2

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RI/FS at OU NO. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-TW04
COORDINATES: EAST: 2466813.8283 NORTH: 339422.6195
ELEVATION: SURFACE: 48.48 TOP OF PVC CASING: 50.92

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8"	1-1/8			11/10/95	0.0 - 14.0	Sunny; cool	-	-
LENGTH	2.0	4.0							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Riser	1.0"	Schedule 40 PVC	0.0	3.0
Screen	1.0"	Schedule 40 0.02 Slot	3.0	13.0

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Well Installation Detail	Elevation (ft. MSL)
1	-	-	00	0.8/0.8	FINE SAND, trace silt; brown; damp		
2	D-1	2.0 100%		>20/0.8	high PID due to root aroma		
3						3.0	45.48
4	D-2	1.4 70%		0.8/0.8			
5							
6	D-3	1.7 85%	03	1.0/0.8	6.0		42.48
7					FINE SAND, little silt; dark brown; moist wet @ 7.0 ft		
8	D-4	1.7 85%		1.0/0.8			
9					9.0		39.48
10	D-5	2.0 100%		0.8/0.8	FINE SAND, some silt; clay; dark gray; damp Match to Sheet 2		

DRILLING CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carion BORING NO.: 63-TW04 SHEET 1 OF 2

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-TW04

SAMPLE TYPE

S = Split Spoon	**A** = Auger
T = Shelby Tube	**W** = Wash
R = Air Rotary	**C** = Core
D = Direct Push	**P** = Piston
N = No Sample	

DEFINITIONS

SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
PID = Photoionization Detector
ppm = parts per million
PS/BG = point source/background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Well Installation Detail	Elevation (ft. MSL)
					Continued from Sheet 1		
11.0					11.0		37.48
	D-6	3.0 100%		1.0/1.0	CLAY, little fine sand & silt; dark gray; damp	13.0	35.48
14.0					14.0	14.0	34.48
					BOH @ 14.0 ft		

DRILLING CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carion BORING NO.: 63-TW04 SHEET 2 OF 2

TEST BORING AND WELL CONSTRUCTION RECORD

Baker Environmental, Inc.

PROJECT: RI/FS at OU NO. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340
COORDINATES: EAST: 2467012.7607 NORTH: 339622.7051
ELEVATION: SURFACE: 47.52 TOP OF PVC CASING: 50.80
BORING NO.: 63-TW05

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8"	1-1/8			11/10/95	0.0-12.0	Sunny; cool	–	–
LENGTH	2.0	4.0							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS:

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Riser	1.0"	Schedule 40 PVC	0.0	7.0
Screen	1.0"	Schedule 40 0.02 Slot	7.0	12.0

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Well Installation Detail	Elevation (ft. MSL)
1 – 1.0	–	–	00	0.6/0.6	FINE SAND, trace silt; brown; damp		
2 – 3.0	D-1	2.0 100%		0.6/0.6	trace gravel		
4 – 5.0	D-2	1.3 65%	02	0.6/0.6	wet @ 5.0 ft		
6 – 7.0	D-3	1.5 75%		0.6/0.6	trace wood	7.0	40.52
8 – 9.0	D-4	1.0 50%		0.6/0.6	trace metal debris		
10	D-5	0.5 17%		0.6/0.6	Match to Sheet 2		

DRILLING CO.: Microseeps
DRILLER: Art Carion
BAKER REP.: Mark DeJohn
BORING NO.: 63-TW05

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-TW05

SAMPLE TYPE		DEFINITIONS
S = Split Spoon	A = Auger	SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
T = Shelby Tube	W = Wash	RQD = Rock Quality Designation (%)
R = Air Rotary	C = Core	PID = Photoionization Detector
D = Direct Push	P = Piston	ppm = parts per million
N = No Sample		PS/BG = point source/background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Well Installation Detail	Elevation (ft. MSL)
11					Continued from Sheet 1		
12	12.0				12.0	12.0	35.52
13					BOHe 12.0		
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

DRILLING CO.: Microseeps BAKER REP.: Mark DeJohn

DRILLER: Art Carion BORING NO.: 63-TW05 SHEET 2 OF 2

Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RI/FS at OU NO. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-TW06
COORDINATES: EAST: 2467014.2839 NORTH: 339224.4375
ELEVATION: SURFACE: 31.90 TOP OF PVC CASING: 33.07

RIG: Geoprobe 5400

	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL
SIZE (DIAM.)	1-3/8"	1-1/8		
LENGTH	2.0	4.0		
TYPE	Piston	Plastic		
HAMMER WT.	NA			
FALL	NA			
STICK UP				

DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
11/10/95	0.0 - 13.0	Sunny; cool	-	-

REMARKS:

SAMPLE TYPE
S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Riser	1.0"	Schedule 40 PVC	0.0	7.0
Screen	1.0"	Schedule 40 0.02 Slot	7.0	12.0

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Well Installation Detail	Elevation (ft. MSL)
1 - 1.0	-	-	00	1.0/0.8	FINE SAND, trace to little silt; gray; damp		
2 - 3.0	D-1	1.0 50%		0.8/0.8	trace clay; dark gray		
4 - 5.0	D-2	1.7 85%	02 020	0.8/0.8	some silt; clay; taupe; moist		
6 - 7.0	D-3	1.8 90%		0.6/0.6	mottled	7.0	24.90
8 - 9.0	D-4	2.0 100%		0.6/0.6	8.0 CLAY, some silt, little fine sand; brown; gray-mottled; moist		23.90
10	D-5	2.0 100%		0.6/0.6	Match to Sheet 2		

DRILLING CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carion BORING NO.: 63-TW06 SHEET 1 OF 2

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-TW06

SAMPLE TYPE		DEFINITIONS
S = Split Spoon	A = Auger	SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
T = Shelby Tube	W = Wash	RQD = Rock Quality Designation (%)
R = Air Rotary	C = Core	PID = Photoionization Detector
D = Direct Push	P = Piston	ppm = parts per million
N = No Sample		PS/BG = point source/background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Well Installation Detail	Elevation (ft. MSL)
11					Continued from Sheet 1		
11.0					11.0		20.90
12	D-6	2.0 100%		0.6/0.6	CLAY, some silt, little fine sand; dark gray; damp		19.90
13					13.0	13.0	18.90
13.0					BOH @ 13.0 ft		
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

DRILLING CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carion BORING NO.: 63-TW06 SHEET 2 OF 2

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RI/FS at OU NO. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-TW07
COORDINATES: EAST: 2467109.4207 NORTH: 339424.2905
ELEVATION: SURFACE: 38.00 TOP OF PVC CASING: 41.53

RIG: Advanced by hand	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	1-3/8"	1-1/8"			11/11/95	0.0-12.0	Heavy rain	-	-
LENGTH	2.0	4.0							
TYPE	Piston	Plastic							
HAMMER WT.	NA								
FALL	NA								
STICK UP									

REMARKS: (1) 4-No was not used due to rainy conditions.

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Riser	1.0"	Schedule 40 PVC	0.0	2.0
Screen	1.0"	Schedule 40 0.02 Slot	2.0	12.0

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Well Installation Detail	Elevation (ft. MSL)
1	-	-	00	(1)	FINE SAND, trace silt; brown; damp		
1.0							
2	D-1	-	01	(1)		2.0	36.00
3					wet @ 3.0 ft		
3.0							
4							
5							
6	D-N	-	-	-			
7							
8							
9							
10					metal debris		

Match to Sheet 2

DRILLING CO.: Microseeps BAKER REP.: Mark DeJohn
DRILLER: Art Carion BORING NO.: 63-TW07 SHEET 1 OF 2

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RI/FS at OU No. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-TW07

SAMPLE TYPE		DEFINITIONS
S = Split Spoon	A = Auger	SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
T = Shelby Tube	W = Wash	RQD = Rock Quality Designation (%)
R = Air Rotary	C = Core	PID = Photoionization Detector
D = Direct Push	P = Piston	ppm = parts per million
N = No Sample		PS/BG = point source/background

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Well Installation Detail	Elevation (ft. MSL)
11					Continued from Sheet 1		
12	12.0				12.0	12.0	26.00
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

DRILLING CO.: Microseeps BAKER REP.: Mark DeJohn

DRILLER: Art Carion BORING NO.: 63-TW07 SHEET 2 OF 2

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: RI/FS at OU NO. 13 - Site 63 - MCB, Camp Lejeune, North Carolina
CTO NO.: 62470-340 BORING NO.: 63-TW08
COORDINATES: EAST: 2467308.1873 NORTH: 339632.4205
ELEVATION: SURFACE: 36.76 TOP OF PVC CASING: 38.85

RIG: Geoprobe 5400	LARGE BORE SAMPLER	LINER	AUGERS	CORE BARREL
SIZE (DIAM.)	1-3/8"	1-1/8"		
LENGTH	2.0	4.0		
TYPE	Piston	Plastic		
HAMMER WT.	NA			
FALL	NA			
STICK UP				

DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
11/9/95	0.0 - 9.0	Sunny & cool	3.5	-

REMARKS:

SAMPLE TYPE
S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Direct Push
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Riser	1.0"	Schedule 40 PVC	0.0	2.5
Screen	1.0"	Schedule 40 0.02 Slot	2.5	7.5

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	Lab ID No.	PID (ppm) PS/BG	Visual Description	Well Installation Detail	Elevation (ft. MSL)
1	-	-	00	-	FINE SAND, trace silt; gray; damp		
2	D-1	2.0 100%		3.0/0.1		2.5	34.26
3							
4	D-2	0.6 30%		0.1/0.1	humus material; light brown; damp to moist		
5					4.5 SILT, trace clay; orange & gray-mottled; moist		
6	D-3	2.0 100%	03	0.4/0.1	little clay		
7							
8	D-4	0.5 25%		0.1/0.1	wet @ 7.0 Ft	7.5	29.26
9					9.0	9.0	27.76
10					BOH @ 9.0 Ft		

DRILLING CO.: Microseeps BAKER REP.: Jim Culp
DRILLER: Art Carion BORING NO.: 63-TW08 SHEET 1 OF 1

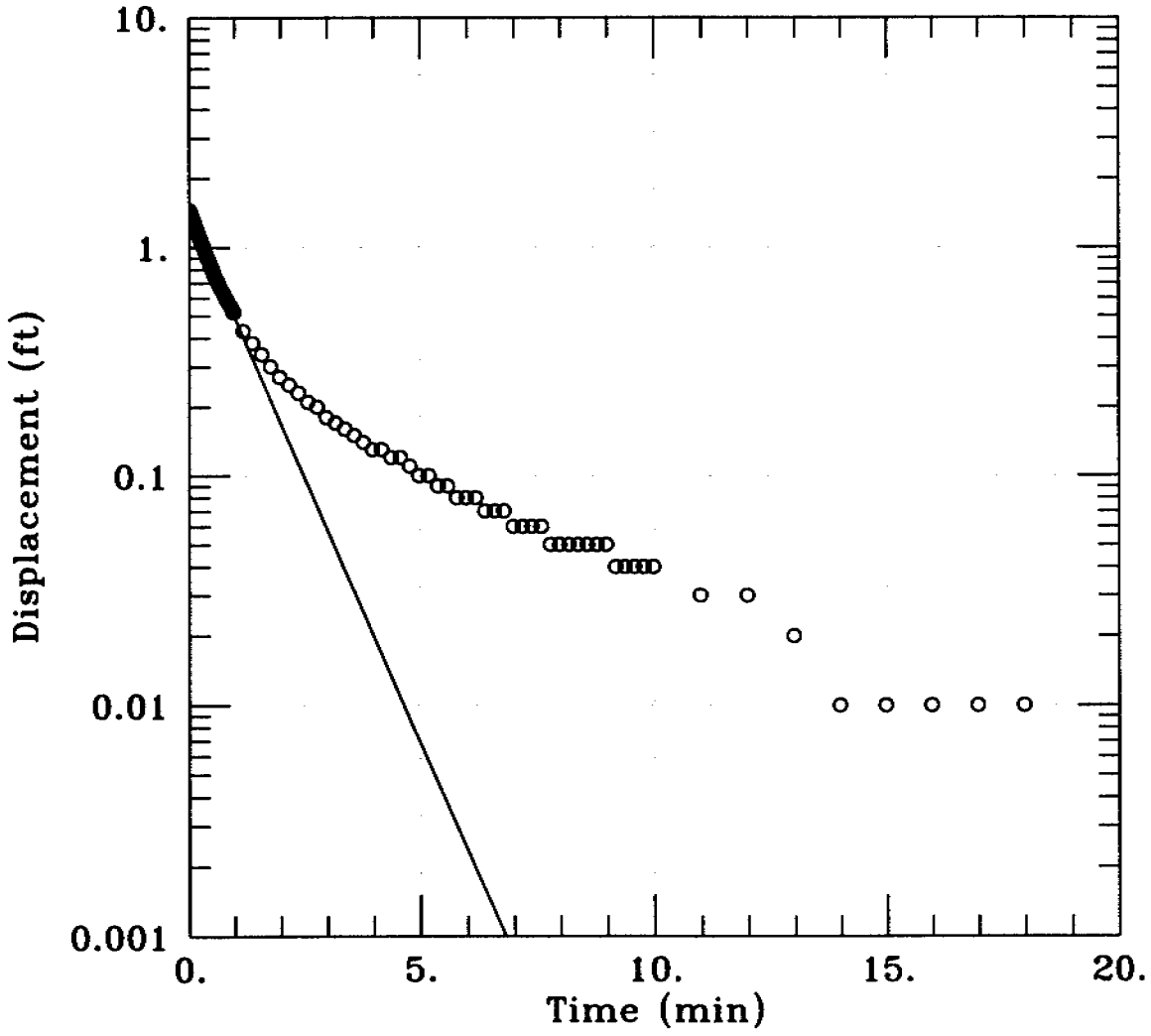
APPENDIX C
BOWER AND RICE SLUG TEST SOLUTION CURVES

Discussion of Slug Test Results

This appendix provides the Aqtesolv[tm] 2.0 solution printouts. Some explanation of the curves and match lines is helpful. The circles represent the test data. The solid straight line is the match line, where the hydraulic conductivity (K) is determined from the slope of the line. Slug test data from wells screened in a formation with a consistent hydraulic conductivity will plot on a fairly straight line (using log-normal axes). Data from formations with varying hydraulic conductivity will plot on a curved line (eg., well 63-GW01). Additionally, the data will plot on a curve if the hydraulic conductivity of the sand pack is significantly greater than the surrounding formation. Such an effect is illustrated by the data from well 63-GW02. Here, the data within the first few seconds of the test form a relatively steep line. These data are ignored in this instance. If a relatively steep line persists for more than the first few seconds of a test, it is likely indicative of formation hydraulic conductivity. This is the case with the data from well 63-GW01.

Client: **LANTDIV**	Company: **BAKER ENVIRONMENTAL, INC.**
Location: **SITE 63 - MCB CAMP LEJEUNE**	Project: **62470-340**

63-GW01 RISING HEAD TEST



DATA SET:
63GW01R.DAT
03/04/96

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

PROJECT DATA:
test date: NOV. 16, 1995

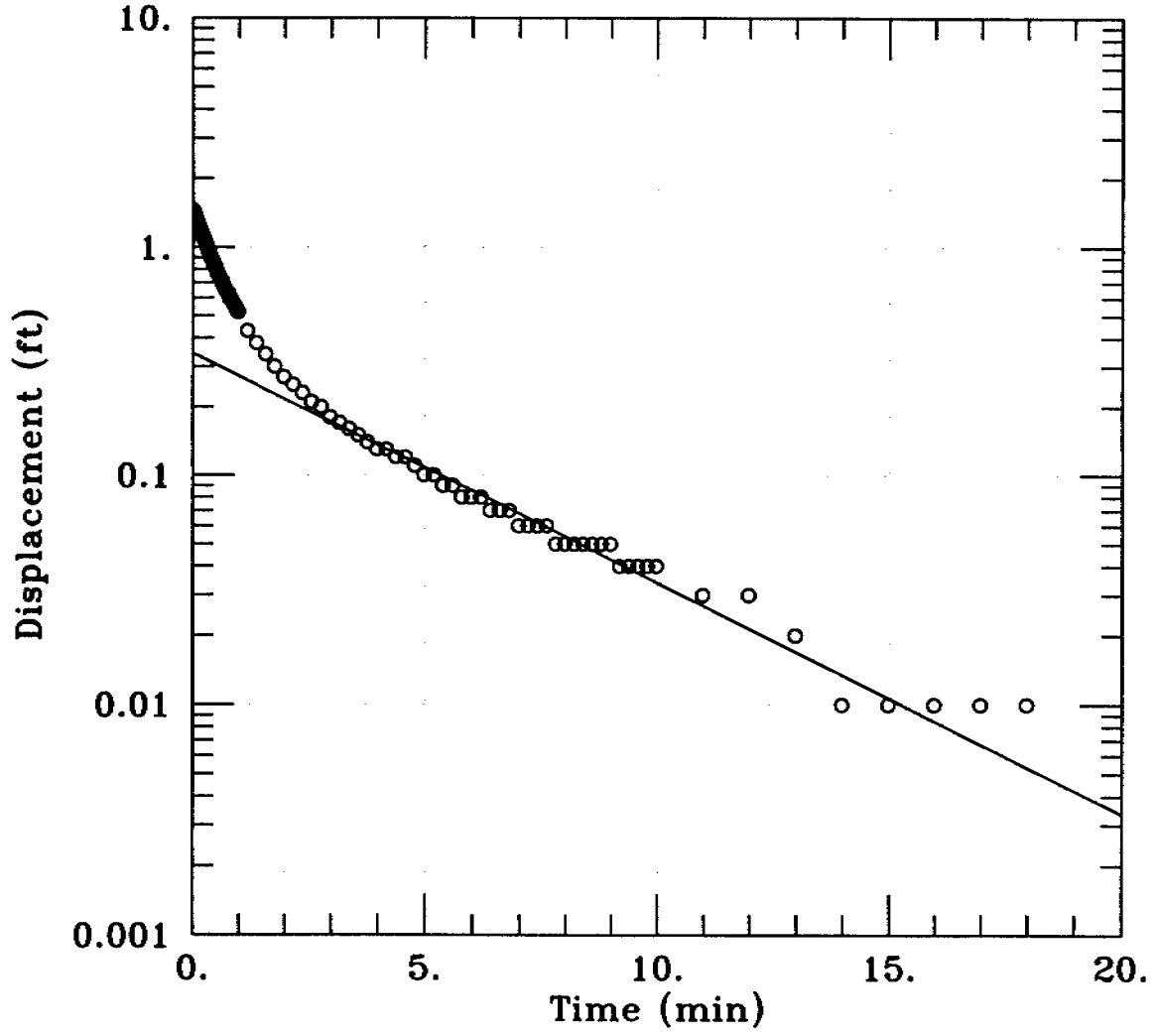
TEST DATA:
H0 = 1.45 ft
rc = 0.083 ft
rw = 0.333 ft
L = 10. ft
b = 10. ft
H = 7.84 ft

PARAMETER ESTIMATES:
K = 6.43 ft/day
y0 = 1.413 ft

AQTESOLV

Client: **LANTDIV**	Company: **BAKER ENVIRONMENTAL, INC.**
Location: **SITE 63 – MCB CAMP LEJEUNE**	Project: **62470-340**

63-GW01 RISING HEAD TEST



DATA SET:
63GW01R.DAT
03/04/96

AQUIFER MODEL:
Unconfined
SOLUTION METHOD:
Bouwer-Rice

PROJECT DATA:
test date: NOV. 16, 1995

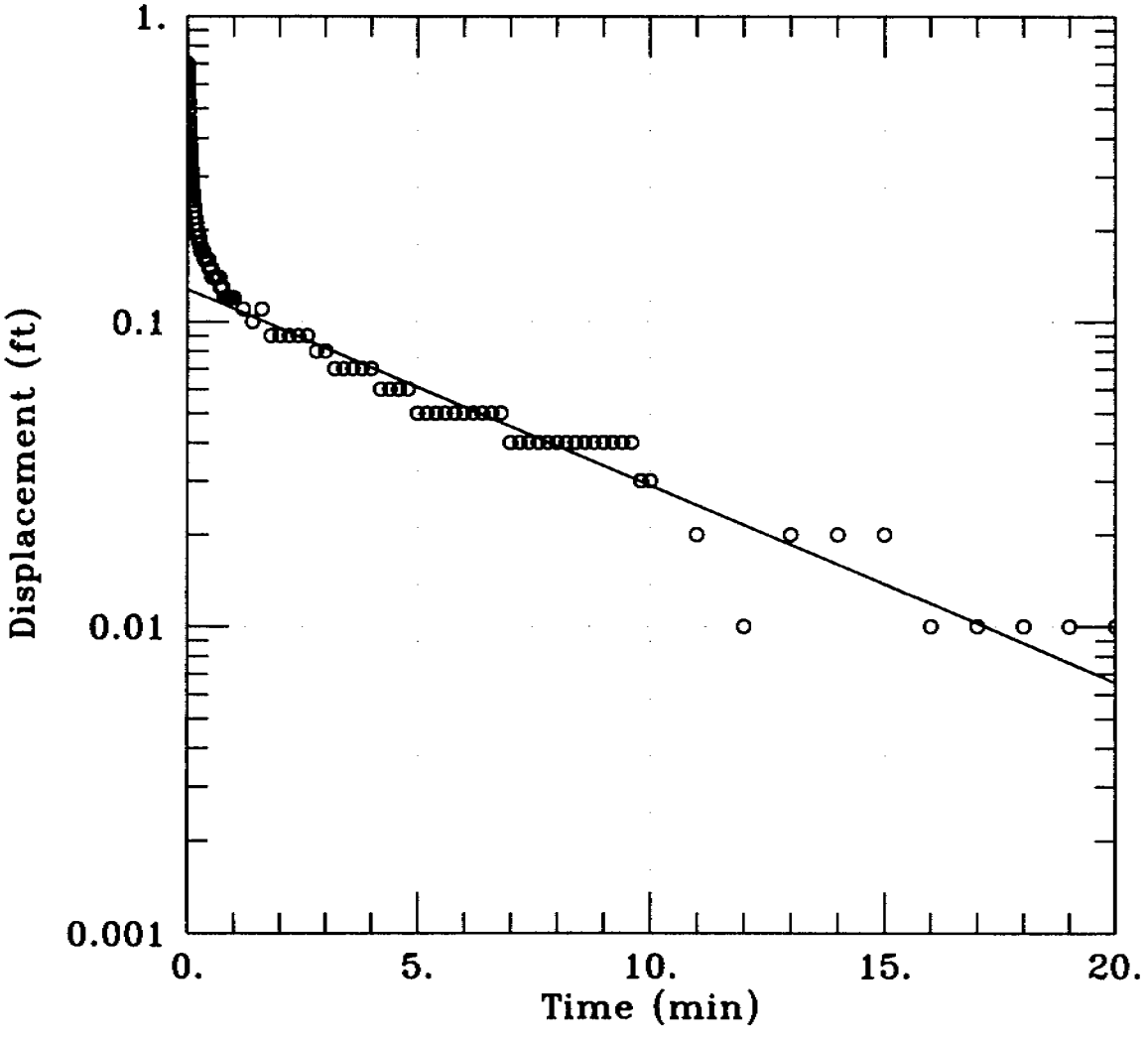
TEST DATA:
H0 = 1.45 ft
rc = 0.083 ft
rw = 0.333 ft
L = 10. ft
b = 10. ft
H = 7.84 ft

PARAMETER ESTIMATES:
K = 1.397 ft/day
y0 = 0.3427 ft

AQTESOLV

Client: **LANTDIV**	Company: **BAKER ENVIRONMENTAL, INC.**
Location: **SITE 63 - MCB CAMP LEJEUNE**	Project: **62470-340**

63-GW02 RISING HEAD TEST



DATA SET:
63GW02R.DAT
03/04/96

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

PROJECT DATA:
test date: NOV. 16, 1995

TEST DATA:
H0 = 0.7 ft
rc = 0.083 ft
rw = 0.333 ft
L = 10. ft
b = 10. ft
H = 7.84 ft

PARAMETER ESTIMATES:
K = 0.8964 ft/day
y0 = 0.1279 ft

AQTESOLV

APPENDIX D
GROUNDWATER FLOW VELOCITY CALCULATIONS

S.O. No. 62470-340

Subject: GROUNDWATER FLOW VELOCITY CALCULATIONS
SITE 63

Sheet No. ____ of ____

Drawing No. ____

Computed by ____ Checked By ____ Date ____

Baker

EQUATION: $V = Ki/n_e$

WHERE V = VELOCITY
K = HYDRAULIC CONDUCTIVITY
i = GRADIENT (FROM CONTOUR MAP)
n_e = EFFECTIVE POROSITY
(ASSUME 30%)

63GW01

$K = 0.9\ ft^2/day$
$i = 0.026\ ft/ft$
$n_e = 0.30$

$V = (0.9\ ft^2/day) \times (0.026\ ft/ft) / 0.30$
$\simeq 0.08\ ft/day$

63GW02

$K = 3.9\ ft^2/day$
$i = 0.056\ ft/ft$
$n_e = 0.30$

$V = (3.9\ ft^2/day) \times (0.056\ ft/ft) / 0.30$
$\simeq 0.73\ ft/day$

APPENDIX E
CHAIN-OF-CUSTODY FORMS

WESTON Analytics Use Only

COC# 340001

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 2

Client: Baker Environmental
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L Johnson/412-269-2049
AD Project Manager: D Woltman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #:
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives:
ANALYSES REQUESTED →

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	INORG Metal	CN	# Bottles	Turn Around
	63-SB25-00	*		S	11/6	0840	X	X	X		X		2	QT
	63-SB25-00D	*		S	11/6	0840	X	X	X		X		2	QT
	63-SB25-03	*		S	11/6	0910	X	X	X		X		2	QT
	63-SB13-00	*		S	11/6	0945	X	X	X		X		2	QT
	63-SB13-03	*		S	11/6	1010	X	X	X		X		2	QT
	63-SB13-05			S	11/6	1025	X	X	X		X		2	QT
	63-SB04-00			S	11/6	1135	X	X	X		X		2	QT
	63-SB04-03			S	11/6	1200	X	X	X		X		2	QT
	63-SB15-00			S	11/6	1350	X	X	X		X		2	QT
	63-SB15-04			S	11/6	1425	X	X	X		X		2	QT

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
- see last column for turn around times
QT = Quick Turn (7 days)
Airbill # 2124804802

DATE/REVISIONS:
* 1. Bottles mislabled go by COC
2. lables on 8oz. should read
3. TCL SVOA, Pest/PCB & TAL Metals
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
777	FedEx	11/6/95	1800				

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# 1 381-596a

COC # 340001

WEST... Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS CONSULTANTS

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L Johnson/412-269-2049
AD Project Manager: D Woltman
QC: ____ Del: ____ TAT: ____
Date Rec'd: ____ Date Due: ____
Account #:

Refrigerator #																					
#/Type Container	Liquid																				
	Solid																				
Volume	Liquid																				
	Solid																				
Preservatives																					
ANALYSES REQUESTED →		ORGANIC										INORG									
		VOA	BNA	Pest/PCB	Herb							Metal	CN						# Bottles		Turn Around

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	VOA	BNA	Pest/PCB	Herb				Metal	CN				# Bottles		Turn Around
	63-SB27-00			S	11/6	1453	X	X	X					X					2		QT
	63-SB27-02			S	11/6	1507	X	X	X					X					2		QT
	340-TB-01			W	11/6	1700	X												2		Routin.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
340-TB-01 = Weston Trip Blank
Airbill # 2124804802
QT = Quick Turn

DATE/REVISIONS:
1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

Relinquished by	Received by	Date	Time
7.7.7.	FedEx	11/6/95	1800

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# 1 381-596a

WEST Analytics Use Only

COC # 340002

Custody Transfer Record/Lab Work Request

WESTON

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L Johnson / 412-269-2049
AD Project Manager: D Weitman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN; # Bottles; Turn Around

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	VOA	BNA	Pest/PCB	Herb	Metal	CN	# Bottles	Turn Around
	340-TB-02			W	11/6	1500	X						2	R
	63-SB26-00			S	11/6	1545	X	X	X		X		2	R
	63-SB26-03			S	11/6	1604	X	X	X		X		2	R
	63-SB19-00			S	11/6	1630	X	X	X		X		2	R
	63-SB19-03			S	11/6	1655	X	X	X		X		2	R
	63-SIER-01			W	11/7	0800	X	X	X		X		5	R
	63-SB24-00	X	X	S	11/7	0733	X	X	X		X		4	R
	63-SB24-00D			S	11/7	0735	X	X	X		X		2	R
	63-SB24-03			S	11/7	0750	X	X	X		X		2	R
	63-SB24-03D			S	11/7	0750	X	X	X		X		2	R

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- See last column for sample turn around
- Airbill # 162660668Z
- 340-TB-02 = Weston Trip Blank

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
777	FedEx	11/7/95	1900

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91

___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# 1

381-596a

WEST Analytics Use Only

COC # 340002

Custody Transfer Record/Lab Work Request

WESTON MANAGERS ENGINEERS CONSULTANTS

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L Johnson 1412-269-2049
AD Project Manager: D Woltman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #

#/Type Container	Liquid																	
	Solid																	
Volume	Liquid																	
	Solid																	
Preservatives																		

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN; # Bottles; Turn Around

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	VOA	BNA	Pest/PCB	Herb	Metal	CN	# Bottles	Turn Around
	63-SB12-00			S	11/7	0830	X	X	X		X		2	R
	63-SB12-04			S	11/7	0849	X	X	X		X		2	R
	63-SB18-00			S	11/7	0926	X	X	X		X		2	R
	63-SB18-05			S	11/7	1002	X	X	X		X		2	R
	63-SB23-00	X	X	S	11/7	1058	X	X	X		X		4	R
	63-SB23-000			S	11/7	1058	X	X	X		X		2	R
	63-SB23-03			S	11/7	1118	X	X	X		X		2	R
	63-SB29-00			S	11/7	1302	X	X	X		X		2	R
	63-SB29-03			S	11/7	1315	X	X	X		X		2	R
	63-SIER-02			W	11/7	1730	X						2	*

WESTON Analytics Use Only

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine * = Hold
- See last column for sample turn around
- Airbill # 162660668 2

DATE/REVISIONS:
1. 2. 3. 4. 5. 6.

WESTON Analytics Use Only

Samples were: 1) Shipped ___ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was: 1) Present on Outer Package Y or N; 2) Unbroken on Outer Package Y or N; 3) Present on Sample Y or N; 4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
7.7.	Fed Ex	11/7/95	1900

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ 381-596a

COC # 340003

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnson/412-269-2049
AD Project Manager: D. Woltman
QC ____ Del ____ TAT ____
Date Rec'd ____ Date Due ____
Account #

Refrigerator #
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN; CEC; TOC; # Bottles; Turn Around

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	VOA	BNA	Pest/PCB	Herb	Metal	CN	CEC	TOC	# Bottles	Turn Around
	340-TB-03			W	11/7	1400	X								2	R
	63-SB12			S	11/7	0850							X	X	2	R
	63-SB22			S	11/7	1430							X	X	2	R
	63-SB22-00			S	11/7	1340	X	X	X		X				2	R
	63-SB22-03			S	11/7	1403	X	X	X		X				2	R
	63-SB34-00			S	11/7	1515	X	X	X		X				2	R
	63-SB34-05			S	11/7	1545	X	X	X		X				2	R
	63-SB28-00			S	11/7	1610	X	X	X		X				2	R
	63-SB28-02			S	11/7	1647	X	X	X		X				2	R
	63-SIER-02			W	11/7	1730		X	X		X				3	H

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine H = Hold
- See last column for sample turn around
- 340-TB-03 = Weston Trip Blank
- Airbill # 162660590

DATE/REVISIONS:
1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
T.T.T.	FedEx	11/8/95	1800

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# 1 381-596a

WESTON Analytics Use Only

COC # 340003

Custody Transfer Record/Lab Work Request

WESTON

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnsen | 412-269-2049
AD Project Manager: D Woltman
QC ____ Del ____ TAT ____
Date Rec'd ____ Date Due ____
Account #

Refrigerator #

#/Type Container	Liquid	
	Solid	
Volume	Liquid	
	Solid	
Preservatives		

ANALYSES REQUESTED →

ORGANIC: VOA | BNA | Pest/PCB | Herb
INORG: Metal | CN

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	VOA	BNA	Pest/PCB	Herb	Metal	CN	WESTON Analytics Use Only
	63-SIER-03			W	11/8	0730	X	X	X		X		5 R
	63-SB21-00			S	11/8	0745	X	X	X		X		2 R
	63-SB21-03			S	11/8	0833	X	X	X		X		2 R
	63-SB33-00			S	11/8	0908	X	X	X		X		2 R
	63-SB33-02			S	11/8	0917	X	X	X		X		2 R
	63-SB37-00			S	11/8	0940	X	X	X		X		2 R
	63-SB37-04			S	11/8	1010	X	X	X		X		2 R

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- See last column for sample turn
- Airbill # 1626606590

DATE/REVISIONS:
1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
T.T.	Fed Ex	11/9 AM	1800

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91

____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# 1

381-596a

COC # 340004

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS CONSULTANTS

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnson/412-269-2049
AD Project Manager: D. Woltman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives

ANALYSES REQUESTED →

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	INORG Metal	CN	# Bottles	Turn Around
		63-SB38-00			S	11/8	1250	X	X	X		X		2	R
		63-SB38-02			S	11/8	1307	X	X	X		X		2	R
		63-SB17-00			S	11/8	1405	X	X	X		X		2	R
		63-SB17-03			S	11/8	1425	X	X	X		X		2	R
		63-SB16-00			S	11/8	1454	X	X	X		X		2	R
		63-SB16-02			S	11/8	1507	X	X	X		X		2	R
		63-SB14-00			S	11/8	1535	X	X	X		X		2	R
		63-SB14-04			S	11/8	1559	X	X	X		X		2	R
		63-SB31-00			S	11/8	1615	X	X	X		X		2	R
		63-SB31-00D			S	11/8	1615	X	X	X		X		2	R

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

WESTON Analytics Use Only

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- See last column for sample turn around
- Airbill # 162660660 1

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were: 1) Shipped ___ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was: 1) Present on Outer Package Y or N; 2) Unbroken on Outer Package Y or N; 3) Present on Sample Y or N; 4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
T.T.	Fed Ex	11/9/95	1500

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# 1 381-596a

COC # 340004

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L Johnson / 412-269-2049
AD Project Manager: D. Woltman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #:
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives:
ANALYSES REQUESTED →

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

TFT 11-9

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	INORG Metal	CN						
	63-SB31-04			S	11/8	1642	X	X	X		X					2		R
	6 340-TB-04			W	11/8	1700	X									2		R
	63-SB36-00			S	11/9	0800	X	X	X		X					2		R
	63-SB36-02			S	11/9	0823	X	X	X		X					2		R
	63-TW08-00			S	11/9	0914	X	X	X		X					2		R
	63-TW08-03			S	11/9	0934	X	X	X		X					2		R
	63-SB32-00			S	11/9	1020	X	X	X		X					2		R
	63-SB32-02			S	11/9	1024	X	X	X		X					2		R
	63-SB30-00			S	11/9	1330	X	X	X		X					2		R
	63-SB30-03			S	11/9	1356	X	X	X		X					2		R

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- See last column for sample turn around
- 340-TB-04 = Weston Trip Blank
- Airbill # 1626606601

DATE/REVISIONS:
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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
7.7.7	FedEx	11/9/95	1800

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# 1 381-596a

COC # 340004

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON MANAGERS OF ECONOMIC CONSULTANTS

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnson 1412-269-2049
AD Project Manager: D. Waltman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #

#/Type Container	Liquid / Solid
Volume	Liquid / Solid
Preservatives	

ANALYSES REQUESTED →

ORGANIC: VOA | BNA | Pest/PCB | Herb
INORG: Metal | CN

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	VOA	BNA	Pest/PCB	Herb	Metal	CN	WESTON Analytics Use Only
	63-SIER-04			W	11/9	1450	X	X	X		X	5	H
	63-SIER-05			W	11/9	1545	X	X	X		X	5	R

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: H = Hold
- See last column for sample turn
- Airbill # 162660660 1

DATE/REVISIONS:
1.
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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
T.T	FedEx	11/9/95	1800

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# 1 381-596a

WESTON Analytics Use Only

COC # 340005

Custody Transfer Record/Lab Work Request

WESTON

Client Baker

Est. Final Proj. Sampling Date 11-16-95

Work Order #

Project Contact/Phone # L. Johnson 1412-269-2049

AD Project Manager D. Woltman

QC Del TAT

Date Rec'd Date Due

Account #

Refrigerator #

#/Type Container: Liquid / Solid

Volume: Liquid / Solid

Preservatives

ANALYSES REQUESTED →

ORGANIC: VOA, BNA, Pest/PCB, Herb

INORG: Metal, CN

#Bot

Turn

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	VOA	BNA	Pest/PCB	Herb	Metal	CN	#Bot	Turn
	340-TB-05			W	11/9	1400	X						2	R
	63-SB35-00			S	11/9	1423	X	X	X		X		2	R
	63-SB20-00			S	11/9	1445	X	X	X		X		2	R
	63-SB20-01			S	11/9	1503	X	X	X		X		2	R
	63-SB10-00			S	11/9	1540	X	X	X		X		2	R
	63-SB10-02			S	11/9	1600	X	X	X		X		2	R
	63-SB11-00	X	X	S	11/9	1635	X	X	X		X		4	R
	63-SB11-00			S	11/9	1635	X	X	X		X		2	R
	63-SB11-05			S	11/9	1716	X	X	X		X		2	R
	63-TW06-00			S	11/10	0750	X	X	X		X		2	R

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- Last column has turn around times
- 340-TB-05 = Weston Trip Blank
- Airbill # 162660673C

DATE/REVISIONS:
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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
777	FedEx	11/day	1800

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91

___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# ___

381-596a

WESTON Analytics Use Only

COC # 340005

Custody Transfer Record/Lab Work Request

WESTON

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L Johnson 412-269-2049
AD Project Manager: D. Weitman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN; Grain Size; Bot; Turn

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	VOA	BNA	Pest/PCB	Herb	Metal	CN	Grain Size	Bot	Turn
	63-TW06-02			S	11/10	0811	X	X	X		X			2	R
	63-TW06-02D			S	11/10	0811	X	X	X		X			2	R
	63-TW05-00			S	11/10	0925	X	X	X		X			2	R
	63-TW05-02			S	11/10	0938	X	X	X		X			2	R
	63-TW04-00			S	11/10	1030	X	X	X		X			2	R
	63-TW04-03			S	11/10	1049	X	X	X		X			2	R
	63-TW05			S	11/10	0956							X	1	R
	63-SW05			W	11/10	1215	X	X	X		X			7	R
	63-SW04			W	11/10	1235	X							3	R
	63-SW03	X	X	W	11/10	1310	X							5	R

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
-See last column for turn around
-Airbill # 162660673 0

DATE/REVISIONS:
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WESTON Analytics Use Only TFT 11-10-95

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
TFT	FedEx	11/10/95	1500

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# 1 381-596a

WESTON Analytics Use Only

COC # 340005

Custody Transfer Record/Lab Work Request

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnson/412-269-2049
AD Project Manager: D. Woltman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #

#/Type Container	Liquid
	Solid
Volume	Liquid
	Solid
Preservatives	

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN; #Bt; Turn

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb	Metal	CN	#Bt	Turn
	63-SW03D			W	11/10/1995	1310	X						2	R
	63-SW02			W	11/10	1350	X						2	R
	63-SW01			W	11/10	1420	X						2	R

WESTON Analytics Use Only

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- See last column for sample turn
- Airbill # 162660673O

DATE/REVISIONS:
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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
T.T.	FedEx	11/10/95	1900

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# 1 381-596a

WESTON Analytics Use Only

COC # 340006

Custody Transfer Record/Lab Work Request

Page 1 of 1

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L Johnson / 412-269-2049
AD Project Manager: D. Woltman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #

#/Type Container	Liquid																	
	Solid																	
Volume	Liquid																	
	Solid																	
Preservatives																		

ANALYSES REQUESTED →

ORGANIC								INORG							
VOA	BNA	Pest/PCB	Herb					Metal	CN						

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	WESTON Analytics Use Only												
	63-SW04			W	11/10	1235		X	X				X					4		R
	63-SW03	X	X	W	11/10	1310		X	X				X					7		R
	63-SW03D			W	11/10	1310		X	X				X					3		R
	63-SW02			W	11/10	1350		X	X				X					4		R
	63-SW01			W	11/10	1420		X	X				X					4		R

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- Airbill # 1626606730

DATE/REVISIONS:
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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
7.7.7.	FedEx	11/10/95	1800

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91

___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# _____ Cooler# 2

381-596a

WEST[redacted]nalytics Use Only

COC # 340007

Custody Transfer Record/Lab Work Request

WESTON MANAGERS ENGINEERING CONSULTANTS

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnson/412-269-2049
AD Project Manager: D. Weitman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #

#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives

ANALYSES REQUESTED →

ORGANIC: VOA, BNA, Pest/PCB, Herb
INORG: Metal, CN
#Bot
Turn

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	VOA	BNA	Pest/PCB	Herb	Metal	CN	#Bot	Turn
	340-TB-06			W	1230	11/10	X						2	R
	63-SB08-00			S	11/10	1250	X	X	X		X		2	R
	63-SB08-05			S	11/10	1324	X	X	X		X		2	R
	63-SB08-07			S	11/10	1345	X	X	X		X		2	R
	63-SB09-00			S	11/10	1438	X	X	X		X		2	R
	63-SB09-03	X	X	S	11/10	1453	X	X	X		X		4	R
	63-SB09-03D			S	11/10	1453	X	X	X		X		2	R
	63-SB09-06			S	11/10	1511	X	X	X		X		2	R
	63-SB06-00			S	11/10	1633	X	X	X		X		2	R
	63-SB06-00D			S	11/10	1633	X	X	X		X		2	R

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- See last column for sample turn
- 340-TB-06 = Weston Trip Blank
- Airbill # 162660674 1

DATE/REVISIONS:
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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
7.7.	FedEx	11/14/95	1300

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91

____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# 1

381-596a

COC # 340007

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnson 1412-269-2049
AD Project Manager: D. Waltman
QC ____ Del ____ TAT ____
Date Rec'd ____ Date Due ____
Account #:

Refrigerator #
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN; TOC; #Bot; Turn

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	VOA	BNA	Pest/PCB	Herb	Metal	CN	TOC	#Bot	Turn
	63-SB06-01			S	11/10	1642	X	X	X		X			2	R
	63-SB07-00			S	11/10	0740	X	X	X		X			2	R
	63-SB07-04			S	11/11	0800	X	X	X		X			2	R
	63-SDER-01			W	11/11	0730	X	X	X		X			5	R
	63-SB02-00			S	11/11	0823	X	X	X		X			2	R
	63-SB02-04			S	11/11	0848	X	X	X		X			2	R
	63-SB01-00			S	11/11	0925	X	X	X		X			2	R
	63-SB01-04			S	11/11	0948	X	X	X		X			2	R
	63-SD05-01			S	11/11	0810	X	X	X		X		X	3	R
	63-SD04-01			S	11/11	0835	X	X	X		X		X	3	R

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- See last column for turn around
- Airbill # 162606741

DATE/REVISIONS:
1. ____
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5. ____
6. ____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
777	FedEx	11/11/95	1300

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91

____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# 1

381-596a

WEST[illegible]nalytics Use Only

COC#340007

Custody Transfer Record/Lab Work Request

WESTON

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L Johnson /412-269-2049
AD Project Manager: D. Woltman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #:
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives:

ANALYSES REQUESTED →

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	INORG Metal	CN	TOC	# Bot	Turn
	63-SD03-01	X	X	S	11/11	0850	X	X	X		X		X	5	R
	63-SD03-01D			S	11/11	0850	X	X	X		X			2	R
	63-SD02-01			S	11/11	0905	X	X	X		X		X	3	R
	63-SD01-01			S	11/11	0935	X	X	X		X		X	3	R

WESTON Analytics Use Only

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- See last column for sample turn
- Airbill # 1626606741

DATE/REVISIONS:
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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
7.7.7.	Fed Ex	11/11/95	1300

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# 1 381-596a

WEST[illegible] Analytics Use Only

COC# 340008

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 3

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnson/412-269-2049
AD Project Manager: D. Woltman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #:
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives:

ANALYSES REQUESTED →

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	INORG Metal	CN				# Bot		Turn
	340-TB-07			W	11/11	1000	X									2		R
	63-SB03-00			S	11/11	1020	X	X	X		X					2		R
*	63-SB03-0~~6~~5	X	X	S	11/11	1054	X	X	X		X		TET 11-13-95		2	~~4~~		R
	63-SB03-06D			S	11/11	1103	X	X	X		X					2		R
	63-SB03-06			S	11/11	1103	X	X	X		X					2		R
	63-SB05-00			S	11/11	1136	X	X	X		X					2		R
	63-SB05-03			S	11/11	1155	X	X	X		X					2		R
	63-SB05-06			S	11/11	1216	X	X	X		X					2		R
	63-TW07-00			S	11/11	1420	X	X	X		X					2		R
	63-TW07-01			S	11/11	1436	X	X	X		X					2		R

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine Analysis
- See last column for sample turn
- Airbill # 1626606586
- 340-TB-07 = weston Trip Blank

DATE/REVISIONS:
* 1. Sample 63-SB03-05 (2 bottles)
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
777	Fed Ex	11/13/95	1800				

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# 1 381-596a

WEST[illegible] Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page 2 of 3

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnson / 412-269-2049
AD Project Manager: D. Woltman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #:
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives:
ANALYSES REQUESTED →

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	INORG Metal	CN				# Bot		Turn
	63-TW02-00			S	11/11	1530	X	X	X		X					2		R
	63-TW02-04			S	11/11	1552	X	X	X		X					2		R
	63-TW03-00			S	11/12	0727	X	X	X		X					2		R
	63-TW03-03			S	11/12	0742	X	X	X		X					2		R
	63-TW01-00			S	11/12	0838	X	X	X		X					2		R
	63-TW01-01			S	11/12	0845	X	X	X		X					2		R
	63-GWER-01			W	11/12	1110	X				X				3	~~2~~		
	63-GWER-02			W	11/13	0750	X	X	X		X		TFT 11-13-95			5		R
	63-TW01-01			W	~~11/13~~ ①	1445	X				X				4	~~3~~		R
	63-TW02-01			W	11/13	0905	X									3		R

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- See last column for sample turn
- Airbill # 1626606586

DATE/REVISIONS:
7.7.7. 1. 63-TW01-01 (water) collected
2. 11/12/95 not 11/13/95
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
7.7.7.	FedEx	11/13/95	1800

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# ___ / ___ 381-596a

WEST Analytics Use Only

COC # 3400618

Custody Transfer Record/Lab Work Request

WESTON

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnson (412-269-2049
AD Project Manager: D. Weltman
QC: ____ Dol: ____ TAT: ____
Date Rec'd: ____ Date Due: ____
Account #:

Refrigerator #

#/Type Container	Liquid																	
	Solid																	
Volume	Liquid																	
	Solid																	
Preservatives																		

ANALYSES REQUESTED →

	ORGANIC							INORG							
	VOA	BNA	Pest/PCB	Herb				Metal	CN				# Bot		Turn
MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish															
Lab ID / Client ID/Description / Matrix QC Chosen (✓) MS MSD / Matrix / Date Collected 1995 / Time Collected	WESTON Analytics Use Only														
63-TW03-01 MS MSD W 11/13 1050	X									TFT		3	2		R
63-TW04-01 MS MSD W 11/13 1300	X									11-13-95		3	2		R
63-TW04-01D MS MSD W 11/13 1300	X												2		

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- See last column for sample turn
- Airbill # 162660658 6

DATE/REVISIONS:
1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
T.T.	Fed Ex	11/13/95	1800

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ___/___ 381-596a

COC # 340007

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnson / 412-269-2049
AD Project Manager: D. Woltman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #:
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives:

ANALYSES REQUESTED →

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb				INORG Metal	CN	TSS/TDS	Grain		# Bot		Turn
	63-GWER-01			W	11/12	1110		X	X										2		R
	63-TW01-01			W	11/12	1445		X	X							X			3		R ①
	63-TW02-01			W	11/13	0905		X	X					X		X			5		R
	63-TW03-01			W	11/13	1050		X	X					X		X			5		R
	63-TW04-01			W	11/13	1300		X	X					X		X			5		R
	63-TW04-01D			W	11/13	1300		X	X					X		X			4		R
	63-SD05-01			S	11/11	0810											X		1		R

WESTON Analytics Use Only

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
① Low volume analyze SVOA, Pest & PCB first then TSS/TDS with remaining volume
- Airbill # 1626606586

DATE/REVISIONS:
① 1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
7.77.	Fed Ex	11/13/95	1800				

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# 2 381-596a

WEST Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnson / 412-269-2049
AD Project Manager: D. Waltman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #

#/Type Container	Liquid																	
	Solid																	
Volume	Liquid																	
	Solid																	
Preservatives																		

ANALYSES REQUESTED →

	ORGANIC							INORG							
	VOA	BNA	Pest/PCB	Herb				Metal	CN	TSS/TDS			H Bot		Turn
WESTON Analytics Use Only															

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
					1995	1530													
	63-TW05-01			W	11/13	~~1730~~	X	X	X				X		X			8		R
	63-TW06-01			W	11/13	1730	X	X	X				X		X			8		R
	340-FB-01			W	11/14	1630	X	X	X				X					5		R
	63-TB-08			W	11/14	1700	X											2		R

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- Turn [illegible] turn
- Airbill # 6266065641
- 63-TB-08 = Trip Blank

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
TJL	FedEx	11/14/95	1:00

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____/____ 381-596a

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnson/412-269-2049
AD Project Manager: D. Woltman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																						
#/Type Container	Liquid																					
	Solid																					
Volume	Liquid																					
	Solid																					
Preservatives																						
ANALYSES REQUESTED →		ORGANIC							INORG													
		VOA	BNA	Pest/PCB	Herb				Metal	CN	Grain						# Bot			Turn		

WESTON Analytics Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	VOA	BNA	Pest/PCB	Herb	Metal	CN	Grain	# Bot	Turn
	63-SD04-01			SE	11/11	0835							X	1	R
	63-SD03-01				11/11	0850									
	63-SD02-01				11/11	0905									
	63-SD01-01				11/11	0935									
	63-TW03			S	11/12	0824									
	63-TW01			S	11/12	0911									

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- See last column for sample turn
- Airbill # 162660654
6

DATE/REVISIONS:
1.
2.
3.
4.
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6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11/14/95	1800				

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# 2 381-596a

WEST Analytics Use Only

COC #340012

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnson (412-269-2049
AD Project Manager: D. Woltman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #:
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives:

ANALYSES REQUESTED →

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	INORG Metal	CN	TSS & TDS		# Bot		Turn
	340-TB-09			W	11/14	1500	X								2		R
	63-TW08-01	X	X	W	11/14	1515	X	X	X		X		X		13		R
	63-GWER-03			W	11/15	0800	X	X	X		X				5		R
	63-GW02-01			W	11/15	0915	X				X		X	5	~~3~~	TFT	R
	63-TW07-01			W	11/15	1045	X								3	11-15	R
	63-GW03-01			W	11/15	1325	X								3		R
	63-GW01-01			W	11/15	1500	X								3		R
	63-GW01-01D			W	11/15	1500	X								2		R

WESTON Analytics Use Only

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- See last column for sample turn
340-TB-09 = Weston Blank
Invoice # 1626606575

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
7.7.7.	FedEx	11/15/95	1800

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

RFW 21-21-001/A-7/91

___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# 1

381-596a

WESTON Analytics Use Only

COC # 340013

Custody Transfer Record/Lab Work Request

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnson/412-269-2049
AD Project Manager: D. Woltman
QC ____ Del ____ TAT ____
Date Rec'd ____ Date Due ____
Account #:

Refrigerator #
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN; TSS+TDS; # Bot; Turn

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	WESTON Analytics Use Only													
					1995															
	63-GW02-01			W	11/15	0915		X	X									3		R
	63-TW07-01			W	11/15	1045		X	X					X		X		5		R
	63-GW03-0			W	11/15	1325		X	X					X		X		5		R

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- See last column for sample turn
- Airbill # 1626606575

DATE/REVISIONS:
1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
T.T.	Fed Ex	11/15/95	1800

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# 2 381-596a

COC # 340014

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS CONSULTANTS

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnson 1412-269-2049
AD Project Manager: D. Woltman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #

#/Type Container	Liquid / Solid
Volume	Liquid / Solid
Preservatives	

ANALYSES REQUESTED →

ORGANIC: VOA | BNA | Pest/PCB | Herb
INORG: Metal | CN | TSS & TDS | # But | Turn

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	WESTON Analytics Use Only: VOA	BNA	Pest/PCB	Herb	Metal	CN	TSS & TDS	# But	Turn
	63-GW01-01			W	11/15	1500		X	X		X		X	5	R
	63-GW01-01D			W	11/15	1500		X	X		X		X	4 3	R

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- see last column for sample turn
- Airbill # 162660655 3

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
T.T.	Fed Ex	11/16/95	1400

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91

____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# 1

381-596a

COC #340015

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

Page 1 of 1

Client: Baker
Est. Final Proj. Sampling Date: 11-16-95
Work Order #:
Project Contact/Phone #: L. Johnson 1412-269-2049
AD Project Manager: D. Waltman
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives

ANALYSES REQUESTED →

ORGANIC				INORG							
VOA	BNA	Pest/PCB	Herb	Metal	CN	React CN	React Sulfide	Ignite	# Bot		Turn

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected 1995	Time Collected	WESTON Analytics Use Only												
	340-TB-10			W	11/16	0900	X											2	R
	63-DRM			W	11/16	0930	X	X	X					X		X	X	X	8	R

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions: R = Routine
- See last column for sample turn
- Airbill # 162-6606553

340-TB-10 = Weston Trip Blank

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
T.T.	Fed Ex	11/16/95	1400

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# 2 381-596a

APPENDIX F
INVESTIGATION DERIVED WASTE SUMMARY AND RECOMMENDATIONS

Baker.

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

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

January 31, 1996

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

Attn: Mr. Lance Laughmiller
Navy Technical Representative
Code 18236

Re: Contract N62470-D-4814
Navy CLEAN, District III
Contract Task Order (CTO) 0340
Disposal of Investigation Derived Waste
Operable Unit No. 13 (Site 63)
MCB, Camp Lejeune, North Carolina

Dear Mr. Laughmiller:

The purpose of this letter is to solicit approval for the disposal of investigation derived waste (IDW) generated during the CTO-0340 field investigation. Approximately 110 gallons of liquid (purge water, development water, and decontamination fluids) were generated during the field investigation at Site 63. Upon completion of the sampling program, a composite liquid sample was obtained from two 55-gallon steel drums to determine the proper IDW disposal alternative. The liquid sample was analyzed for full target compound list (TCL) organics (i.e., volatiles, semivolatiles, PCBs, and pesticides), target analyte list (TAL) metals, and RCRA hazardous waste characteristics (i.e., reactive cyanide, reactive sulfide, and flash point).

Analytical results (attached) indicate that the liquid sample is non-hazardous based upon the criteria outlined in 40 CFR 261, Subpart C - Characteristics of Hazardous Waste. In light of these results, Baker proposes to empty the two 55-gallon drums onto the ground surface at Site 63. The proposed disposal alternative is consistent with LANTDIV IDW Management Plans and with the USEPA's Guide to Management of IDW. Pending LANTDIV's concurrence, Baker will discuss the proposed disposal alternative with personnel from the Environmental Management Department at MCB, Camp Lejeune.

Concurrence

Please indicate your concurrence with the proposed IDW disposal alternative by signing below and faxing a copy to my attention at (412) 269-2002.

_____

Lance Laughmiller
Navy Technical Representative

Baker appreciates the opportunity to serve LANTDIV on this important project. If you have any questions, please do not hesitate to contact me at (412) 269-2051 or Mr. Matthew Bartman (Activity Coordinator) at (412) 269-2053.

Sincerely,

BAKER ENVIRONMENTAL, INC.

Thomas F. Trebilcock
Project Manager

TFT/lq

Attachment: IDW Analytical Results

cc: Ms. Karen Wilson, Code 183 (Letter only)
Ms. Beth Collier, Code 02115 (Letter only)
Mr. Neal Paul, MCB Camp Lejeune

IDW Analytical Results

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

63-DRM

Lab Name: Roy F. Weston, Inc. Contract: 6629-09-0

Lab Code: WESTON Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9511G322-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: EXTF01

Level: (low/med) LOW Date Received: 11/17/95

% Moisture: not dec. _____ Date Analyzed: 11/21/95

GC Column: CAPILLARY ID: 0.53(mm) Dilution Factor: 1

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	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	10	U
67-64-1	Acetone	810	E
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)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

63-DRM

Lab Name: Roy F. Weston, Inc. Contract: 6629-09-0

Lab Code: WESTON Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9511G322-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: EXTF01

Level: (low/med) LOW Date Received: 11/17/95

% Moisture: not dec. _____ Date Analyzed: 11/21/95

GC Column: CAPILLARY ID: 0.53(mm) Dilution Factor: 1

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. 67630	ISOPROPYL ALCOHOL C3H8O	13.03	10000	NJ

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

63-DRM

Lab Name: Roy F. Weston, Inc. Contract: 6629-09-0

Lab Code: WESTON Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9511G322-001

Sample wt/vol: 1000 (g/mL) ML Lab File ID: GCTA04

Level: (low/med) LOW Date Received: 11/17/95

% Moisture: _____ decanted: (Y/N)__ Date Extracted: 11/18/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/28/95

Injection Volume: 2.0(uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH: 6

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	2	J
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.

63-DRM

Lab Name: Roy F. Weston, Inc. Contract: 6629-09-0

Lab Code: WESTON Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9511G322-001

Sample wt/vol: 1000 (g/mL) ML Lab File ID: GCTA04

Level: (low/med) LOW Date Received: 11/17/95

% Moisture: _____ decanted: (Y/N)__ Date Extracted: 11/18/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/28/95

Injection Volume: 2.0(uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH: 6

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	9	J
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	4	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	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

63-DRM

Lab Name: Roy F. Weston, Inc. Contract: 6629-09-0

Lab Code: WESTON Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9511G322-001

Sample wt/vol: 1000 (g/mL) ML Lab File ID: GCTA04

Level: (low/med) LOW Date Received: 11/17/95

% Moisture: _____ decanted: (Y/N)__ Date Extracted: 11/18/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/28/95

Injection Volume: 2.0(uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH: 6

Number TICs found: 20 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		HYDROCARBON C14H30	14.92	30	JB
2.		HYDROCARBON C15H32	16.18	20	JB
3.		UNKNOWN ALKYLBENZENE	18.59	6	J
4.		UNKNOWN	18.89	7	J
5.		UNKNOWN	19.24	10	J
6.		UNKNOWN ACID	19.28	20	J
7.		UNKNOWN	21.12	10	J
8.		UNKNOWN ACID	21.29	10	J
9.		UNKNOWN	21.39	7	J
10.		UNKNOWN	21.91	80	J
11.		UNKNOWN KETONE	23.12	20	J
12.		UNKNOWN ESTER	23.37	50	J
13.		UNKNOWN	23.78	40	J
14.		UNKNOWN	24.03	6	J
15.		UNKNOWN	24.94	20	J
16.		UNKNOWN	25.17	20	J
17.		UNKNOWN	25.55	60	J
18.		UNKNOWN	26.81	8	J
19.		UNKNOWN	28.15	6	J
20.		UNKNOWN	28.25	10	J

1D
PESTICIDE ANALYSIS DATA SHEET

EPA SAMPLE NO.

63-DRM

Lab Name: Roy F. Weston, Inc. Contract: 06629-009-004-0001-00

Lab Code: WESTON Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9511G322-001

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 12049516.52

% Moisture: decanted: (Y/N) _ Date Received: 11/17/95

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 11/20/95

Concentrated Extract Volume: 10000(uL) Date Analyzed: 12/06/95

Injection Volume: 1.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
319-84-6	alpha-BHC	0.049	U
319-85-7	beta-BHC	0.049	U
319-86-8	delta-BHC	0.049	U
58-89-9	gamma-BHC (Lindane)	0.049	U
76-44-8	Heptachlor	0.049	U
309-00-2	Aldrin	0.049	U
1024-57-3	Heptachlor epoxide	0.049	U
959-98-8	Endosulfan I	0.049	U
60-57-1	Dieldrin	0.098	U
72-55-9	4,4'-DDE	0.098	U
72-20-8	Endrin	0.098	U
33213-65-9	Endosulfan II	0.098	U
72-54-8	4,4'-DDD	0.098	U
1031-07-8	Endosulfan sulfate	0.098	U
50-29-3	4,4'-DDT	0.098	U
72-43-5	Methoxychlor	0.49	U
53494-70-5	Endrin ketone	0.098	U
7421-93-4	Endrin aldehyde	0.098	U
5103-71-9	alpha-Chlordane	0.049	U
5103-74-2	gamma-Chlordane	0.049	U
8001-35-2	Toxaphene	4.9	U
12674-11-2	Aroclor-1016	0.98	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	0.98	U
53469-21-9	Aroclor-1242	0.98	U
12672-29-6	Aroclor-1248	0.98	U
11097-69-1	Aroclor-1254	0.98	U
11096-82-5	Aroclor-1260	0.98	U

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

63-DRM

Lab Name: WESTON_EMI Contract:

Lab Code: WESEMI Case No.: SAS No.: SDG No.: 63-DRM

Matrix (soil/water): WATER Lab Sample ID: 9511G322-001

Level (low/med): LOW Date Received: 11/17/95

% 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	33300			P
7440-36-0	Antimony	23.5	U		P
7440-38-2	Arsenic	6.0	B	N	F
7440-39-3	Barium	336			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.1	U		P
7440-70-2	Calcium	7280			P
7440-47-3	Chromium	44.7			P
7440-48-4	Cobalt	7.4	B		P
7440-50-8	Copper	27.2			P
7439-89-6	Iron	37700			P
7439-92-1	Lead	53.6		N	F
7439-95-4	Magnesium	3010	B		P
7439-96-5	Manganese	219			P
7439-97-6	Mercury	0.11	B		CV
7440-02-0	Nickel	135			P
7440-09-7	Potassium	7570			P
7782-49-2	Selenium	1.5	U	W	F
7440-22-4	Silver	2.9	U		P
7440-23-5	Sodium	11400			P
7440-28-0	Thallium	0.60	U		F
7440-62-2	Vanadium	48.7	B		P
7440-66-6	Zinc	579			P
	Cyanide				NR

Color Before: BROWN Clarity Before: OPAQUE Texture:

Color After: YELLOW Clarity After: CLOUDY Artifacts:

Comments:

Weston Environmental Metrics, Inc.
2417 Bond Street
University Park, Illinois 60466-3182
Phones: (708) 534-5200 (219) 885-7077 (815) 723-7533
Fax: (708) 534-5211

To: Baker Env.-Camp Lejeune
Airport Office Park, Bldg. 3
420 Rouser Road
Coraopolis, PA 15108

Attn: Ms. Linnea Johnson

Date: Tuesday December 12th, 1995

RE: 63-DRM
Project # 06629-009-004-0001
Lab ID: 9511G322-001
Sample Date: 11/16/95
Date Received: 11/17/95

Inorganic Data Report

Parameters	Result		Units	Reporting Limit
Cyanide, Reactive	0.025	u	mg/L	0.025
Flash Point, Closed Cup	>200		DEG F	
Sulfide Reactive	1.0	u	mg/L	1.0

Baker

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

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

January 31, 1996

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 2

To TOM TREBILCOCK	From BETH COLLIER
Co. BAKER	Co. LANTDIV
Dept.	Phone # 804-322-4151
Fax #	Fax # 804-322-4166

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

Attn: Mr. Lance Laughmiller
Navy Technical Representative
Code 18236

Re: Contract N62470-D-4814
Navy CLEAN, District III
Contract Task Order (CTO) 0340
Disposal of Investigation Derived Waste
Operable Unit No. 13 (Site 63)
MCB, Camp Lejeune, North Carolina

Dear Mr. Laughmiller:

The purpose of this letter is to solicit approval for the disposal of investigation derived waste (IDW) generated during the CTO-0340 field investigation. Approximately 110 gallons of liquid (purge water, development water, and decontamination fluids) were generated during the field investigation at Site 63. Upon completion of the sampling program, a composite liquid sample was obtained from two 55-gallon steel drums to determine the proper IDW disposal alternative. The liquid sample was analyzed for full target compound list (TCL) organics (i.e., volatiles, semivolatiles, PCBs, and pesticides), target analyte list (TAL) metals, and RCRA hazardous waste characteristics (i.e., reactive cyanide, reactive sulfide, and flash point).

Analytical results (attached) indicate that the liquid sample is non-hazardous based upon the criteria outlined in 40 CFR 261, Subpart C - Characteristics of Hazardous Waste. In light of these results, Baker proposes to empty the two 55-gallon drums onto the ground surface at Site 63. The proposed disposal alternative is consistent with LANTDIV IDW Management Plans and with the USEPA's Guide to Management of IDW. Pending LANTDIV's concurrence, Baker will discuss the proposed disposal alternative with personnel from the Environmental Management Department at MCB, Camp Lejeune.

A Total Quality Corporation

Concurrence

Please indicate your concurrence with the proposed IDW disposal alternative by signing below and faxing a copy to my attention at (412) 269-2002.

Lance Laughmiller
Navy Technical Representative

M. B. Collier 2-12-96
Contracting Officer

Baker appreciates the opportunity to serve LANTDIV on this important project. If you have any questions, please do not hesitate to contact me at (412) 269-2051 or Mr. Matthew Bartman (Activity Coordinator) at (412) 269-2053.

Sincerely,

BAKER ENVIRONMENTAL, INC.

Thomas F. Trebilcock
Project Manager

TFT/lq

Attachment: IDW Analytical Results

cc: Ms. Karen Wilson, Code 183 (Letter only)
Ms. Beth Collier, Code 02115 (Letter only)
Mr. Neal Paul, MCB Camp Lejeune

APPENDIX G
SAMPLING SUMMARIES

SOIL SAMPLING SUMMARY
SITE 63, VERONA LOOP DUMP
REMEDIAL INVESTIGATION, CTO-340

		Analysis Requested							Analysis Received										
DATE SHIPPED TO LAB	SAMPLE ID/ COC #	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	CEC	TOC	GRAIN SIZE	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	CEC	TOC	GRAIN SIZE	DATE EXPECTED	DATE REC'D	TURNAROUND	SDG NO.
11/6/95	**COC#340001**																		
11/6/95	63-SB25-00	X	X	X	X				X	X	X	X				11/14/95	12/8/95	32	111
11/6/95	63-SB25-00D	X	X	X	X				X	X	X	X				11/14/95	12/8/95	32	111
11/6/95	63-SB25-03	X	X	X	X				X	X	X	X				11/14/95	12/8/95	32	111
11/6/95	63-SB13-00	X	X	X	X				X	X	X	X				11/14/95	12/8/95	32	111
11/6/95	63-SB13-03	X	X	X	X				X	X	X	X				11/14/95	12/8/95	32	111
11/6/95	63-SB13-05	X	X	X	X				X	X	X	X				11/14/95	12/8/95	32	111
11/6/95	63-SB04-00	X	X	X	X				X	X	X	X				11/14/95	12/8/95	32	111
11/6/95	63-SB04-03	X	X	X	X				X	X	X	X				11/14/95	12/8/95	32	111
11/6/95	63-SB15-00	X	X	X	X				X	X	X	X				11/14/95	12/8/95	32	111
11/6/95	63-SB15-04	X	X	X	X				X	X	X	X				11/14/95	12/8/95	32	111
11/6/95	63-SB27-00	X	X	X	X				X	X	X	X				11/14/95	12/8/95	32	111
11/6/95	63-SB27-02	X	X	X	X				X	X	X	X				11/14/95	12/8/95	32	111
11/6/95	340-TB-01	X														12/12/95	12/8/95	32	112
11/7/95	**COC#340002**																		
11/7/95	340-TB-02	X							X							12/13/95	12/14/95	37	143
11/7/95	63-SB26-00	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SB26-03	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SB19-00	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SB19-03	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SIER-01	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SB24-00	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SB24-00D	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SB24-03	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SB24-03D	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SB12-00	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SB12-04	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SB18-00	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SB18-05	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SB23-00	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SB23-00D	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SB23-03	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SB29-00	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SB29-03	X	X	X	X				X	X	X	X				12/13/95	12/14/95	37	143
11/7/95	63-SIER-02	X							X							12/13/95	12/12/95	35	154
11/8/95	**COC#340003**																		
11/8/95	340-TB-03	X							X							12/14/95	12/13/95	35	153
11/8/95	63-SB12					X	X						X	X		12/14/95	12/13/95	35	153
11/8/95	63-SB22					X	X						X	X		12/14/95	12/13/95	35	153
11/8/95	63-SB22-00	X	X	X	X				X	X	X	X				12/14/95	12/13/95	35	153
11/8/95	63-SB22-03	X	X	X	X				X	X	X	X				12/14/95	12/13/95	35	153
11/8/95	63-SB34-00	X	X	X	X				X	X	X	X				12/14/95	12/13/95	35	153
11/8/95	63-SB34-05	X	X	X	X				X	X	X	X				12/14/95	12/13/95	35	153
11/8/95	63-SB28-00	X	X	X	X				X	X	X	X				12/14/95	12/13/95	35	153
11/8/95	63-SB28-02	X	X	X	X				X	X	X	X				12/14/95	12/13/95	35	153
11/8/95	63-SIER-02		X	X	X					X	X	X				12/14/95	12/13/95	35	153
11/8/95	63-SIER-03	X	X	X	X				X	X	X	X				12/14/95	12/13/95	35	153
11/8/95	63-SB21-00	X	X	X	X				X	X	X	X				12/14/95	12/13/95	35	153
11/8/95	63-SB21-03	X	X	X	X				X	X	X	X				12/14/95	12/13/95	35	153

SOIL SAMPLING SUMMARY
SITE 63, VERONA LOOP DUMP
REMEDIAL INVESTIGATION, CTO-340

		Analysis Requested							Analysis Received										
DATE SHIPPED TO LAB	SAMPLE ID/ COC #	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	CEC	TOC	GRAIN SIZE	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	CEC	TOC	GRAIN SIZE	DATE EXPECTED	DATE REC'D	TURNAROUND	SDG NO.
11/8/95	63-SB33-00	X	X	X	X				X	X	X	X				12/14/95	12/13/95	35	153
11/8/95	63-SB33-02	X	X	X	X				X	X	X	X				12/14/95	12/13/95	35	153
11/8/95	63-SB37-00	X	X	X	X				X	X	X	X				12/14/95	12/13/95	35	153
11/8/95	63-SB37-04	X	X	X	X				X	X	X	X				12/14/95	12/13/95	35	153
11/9/95	**COC#340004**																		
11/9/95	63-SB38-00	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-SB38-02	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-SB17-00	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-SB17-03	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-SB16-00	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-SB16-02	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-SB14-00	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-SB14-04	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-SB31-00	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-SB31-00D	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-SB31-04	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	340-TB-04	X							X							12/15/95	12/12/95	33	186
11/9/95	63-SB36-00	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-SB36-02	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-TW08-00	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-TW08-03	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-SB32-00	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-SB32-02	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-SB30-00	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-SB30-03	X	X	X	X				X	X	X	X				12/15/95	12/16/95	37	185
11/9/95	63-SIER-04	X	X	X	X				X	X	X	X				12/15/95	12/12/95	33	154
11/9/95	63-SIER-05	X	X	X	X				X	X	X	X				12/15/95	12/12/95	33	186
11/10/95	**COC#340005**																		
11/10/95	340-TB-05	X							X							12/16/95	12/20/95	40	214
11/10/95	63-SB35-00	X	X	X	X				X	X	X	X				12/16/95	12/28/95	48	213
11/10/95	63-SB20-00	X	X	X	X				X	X	X	X				12/16/95	12/28/95	48	213
11/10/95	63-SB20-01	X	X	X	X				X	X	X	X				12/16/95	12/28/95	48	213
11/10/95	63-SB10-00	X	X	X	X				X	X	X	X				12/16/95	12/28/95	48	213
11/10/95	63-SB10-02	X	X	X	X				X	X	X	X				12/16/95	12/28/95	48	213
11/10/95	63-SB11-00	X	X	X	X				X	X	X	X				12/16/95	12/28/95	48	213
11/10/95	63-SB11-05	X	X	X	X				X	X	X	X				12/16/95	12/28/95	48	213
11/10/95	63-TW06-00	X	X	X	X				X	X	X	X				12/16/95	12/28/95	48	213
11/10/95	63-TW06-02	X	X	X	X				X	X	X	X				12/16/95	12/28/95	48	213
11/10/95	63-TW06-02D	X	X	X	X				X	X	X	X				12/16/95	12/28/95	48	213
11/10/95	63-TW05-00	X	X	X	X				X	X	X	X				12/16/95	12/28/95	48	213
11/10/95	63-TW05-02	X	X	X	X				X	X	X	X				12/16/95	12/28/95	48	213
11/10/95	63-TW04-00	X	X	X	X				X	X	X	X				12/16/95	12/28/95	48	213
11/10/95	63-TW04-03	X	X	X	X				X	X	X	X				12/16/95	12/28/95	48	213
11/10/95	63-TW05							X							X	12/16/95	12/20/95	40	215
11/11/95	**COC#340007**																		
11/11/95	340-TB-06	X							X							12/17/95	12/20/95	39	220
11/11/95	63-SB08-00	X	X	X	X				X	X	X	X				12/17/95	12/20/95	39	220
11/11/95	63-SB08-05	X	X	X	X				X	X	X	X				12/17/95	12/20/95	39	220
11/11/95	63-SB08-07	X	X	X	X				X	X	X	X				12/17/95	12/20/95	39	220
11/11/95	63-SB09-00	X	X	X	X				X	X	X	X				12/17/95	12/20/95	39	220

SOIL SAMPLING SUMMARY
SITE 63, VERONA LOOP DUMP
REMEDIAL INVESTIGATION, CTO-340

		Analysis Requested							Analysis Received										
DATE SHIPPED TO LAB	SAMPLE ID/ COC #	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	CEC	TOC	GRAIN SIZE	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	CEC	TOC	GRAIN SIZE	DATE EXPECTED	DATE REC'D	TURNAROUND	SDG NO.
11/11/95	63-SB09-03	X	X	X	X				X	X	X	X				12/17/95	12/20/95	39	220
11/11/95	63-SB09-03D	X	X	X	X				X	X	X	X				12/17/95	12/20/95	39	220
11/11/95	63-SB09-06	X	X	X	X				X	X	X	X				12/17/95	12/20/95	39	220
11/11/95	63-SB06-00	X	X	X	X				X	X	X	X				12/17/95	12/20/95	39	220
11/11/95	63-SB06-00D	X	X	X	X				X	X	X	X				12/17/95	12/20/95	39	220
11/11/95	63-SB06-01	X	X	X	X				X	X	X	X				12/17/95	12/20/95	39	220
11/11/95	63-SB07-00	X	X	X	X				X	X	X	X				12/17/95	12/20/95	39	220
11/11/95	63-SB07-04	X	X	X	X				X	X	X	X				12/17/95	12/20/95	39	220
11/11/95	63-SB02-00	X	X	X	X				X	X	X	X				12/17/95	12/20/95	39	220
11/11/95	63-SB02-04	X	X	X	X				X	X	X	X				12/17/95	12/20/95	39	220
11/11/95	63-SB01-00	X	X	X	X				X	X	X	X				12/17/95	12/20/95	39	220
11/11/95	63-SB01-04	X	X	X	X				X	X	X	X				12/17/95	12/20/95	39	220
11/13/95	**COC#340008**																		
11/13/95	340-TB-07	X							X							12/19/95	12/20/95	37	214
11/13/95	63-SB03-00	X	X	X	X				X	X	X	X				12/19/95	12/29/95	46	221
11/13/95	63-SB03-05	X	X	X	X				X	X	X	X				12/19/95	12/29/95	46	221
11/13/95	63-SB03-06D	X	X	X	X				X	X	X	X				12/19/95	12/29/95	46	221
11/13/95	63-SB03-06	X	X	X	X				X	X	X	X				12/19/95	12/29/95	46	221
11/13/95	63-SB05-00	X	X	X	X				X	X	X	X				12/19/95	12/29/95	46	221
11/13/95	63-SB05-03	X	X	X	X				X	X	X	X				12/19/95	12/29/95	46	221
11/13/95	63-SB05-06	X	X	X	X				X	X	X	X				12/19/95	12/29/95	46	221
11/13/95	63-TW07-00	X	X	X	X				X	X	X	X				12/19/95	12/29/95	46	221
11/13/95	63-TW07-01	X	X	X	X				X	X	X	X				12/19/95	12/29/95	46	221
11/13/95	63-TW02-00	X	X	X	X				X	X	X	X				12/19/95	12/29/95	46	221
11/13/95	63-TW02-04	X	X	X	X				X	X	X	X				12/19/95	12/29/95	46	221
11/13/95	63-TW03-00	X	X	X	X				X	X	X	X				12/19/95	12/29/95	46	221
11/13/95	63-TW03-03	X	X	X	X				X	X	X	X				12/19/95	12/29/95	46	221
11/13/95	63-TW01-00	X	X	X	X				X	X	X	X				12/19/95	12/29/95	46	221
11/13/95	63-TW01-01	X	X	X	X				X	X	X	X				12/19/95	12/29/95	46	221
11/14/95	**COC#340011**																		
11/14/95	63-TW03							X							X	12/20/95	12/20/95	36	215
11/14/95	63-TW01							X							X	12/20/95	12/20/95	36	215
COUNT		117	110	110	110	2	2	3	116	110	110	110	2	2	3				

GROUNDWATER SAMPLING SUMMARY
SITE 63, VERONA LOOP DUMP
REMEDIAL INVESTIGATION, CTO-340

		Analysis Requested						Analysis Received									
DATE SHIPPED TO LAB	SAMPLE ID/ COC #	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TSS	TDS	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TSS	TDS	DATE EXPECTE	DATE REC'D	TURNAROUND	SDG NO.
11/13/95	**COC#340008**																
11/13/95	63-GWER-01	X			X			X			X			12/19/95	12/20/95	37	214
11/13/95	63-GWER-02	X	X	X	X			X	X	X	X			12/19/95	12/20/95	37	214
11/13/95	63-TW01-01	X			X			X			X			12/19/95	12/20/95	37	214
11/13/95	63-TW02-01	X						X						12/19/95	12/20/95	37	214
11/13/95	63-TW03-01	X						X						12/19/95	12/20/95	37	214
11/13/95	63-TW04-01	X						X						12/19/95	12/20/95	37	214
11/13/95	63-TW04-01D	X						X						12/19/95	12/20/95	37	214
11/13/95	**COC#340009**																
11/13/95	63-GWER-01		X	X					X	X				12/19/95	12/20/95	37	214
11/13/95	63-TW01-01		X	X		X	X		X	X		X	X	12/19/95	12/20/95	37	214
11/13/95	63-TW02-01		X	X	X	X	X		X	X	X	X	X	12/19/95	12/20/95	37	214
11/13/95	63-TW03-01		X	X	X	X	X		X	X	X	X	X	12/19/95	12/20/95	37	214
11/13/95	63-TW04-01		X	X	X	X	X		X	X	X	X	X	12/19/95	12/20/95	37	214
11/13/95	63-TW04-01D		X	X	X	X	X		X	X	X	X	X	12/19/95	12/20/95	37	214
11/14/95	**COC#340010**																
11/14/95	63-TW05-01	X	X	X	X	X	X	X	X	X	X	X	X	12/20/95	12/27/95	43	264
11/14/95	63-TW06-01	X	X	X	X	X	X	X	X	X	X	X	X	12/20/95	12/27/95	43	264
11/14/95	340-FB-01	X	X	X	X			X	X	X	X			12/20/95	12/27/95	43	264
11/14/95	63-TB-08	X						X						12/20/95	12/27/95	43	264
11/15/95	**COC#340012**																
11/15/95	340-TB-09	X						X						12/21/95	12/27/95	42	264
11/15/95	63-TW08-01	X	X	X	X	X	X	X	X	X	X	X	X	12/21/95	12/27/95	42	264
11/15/95	63-GWER-03	X	X	X	X			X	X	X	X			12/21/95	12/27/95	42	264
11/15/95	63-GW02-01	X			X	X	X	X			X	X	X	12/21/95	12/27/95	42	264
11/15/95	63-TW07-01	X						X						12/21/95	12/27/95	42	264
11/15/95	63-GW03-01	X						X						12/21/95	12/27/95	42	264
11/15/95	63-GW01-01	X						X						12/21/95	12/27/95	42	264
11/15/95	63-GW01-01D	X						X						12/21/95	12/27/95	42	264
11/15/95	**COC#340013**																
11/15/95	63-GW02-01		X	X					X	X				12/21/95	12/27/95	42	264
11/15/95	63-TW07-01		X	X	X	X	X		X	X	X	X	X	12/21/95	12/27/95	42	264
11/15/95	63-GW03-01		X	X	X	X	X		X	X	X	X	X	12/21/95	12/27/95	42	264
11/16/95	**COC#340014**																
11/16/95	63-GW01-01		X	X	X	X	X		X	X	X	X	X	12/22/95	12/27/95	41	264
11/16/95	63-GW01-01D		X	X	X	X	X		X	X	X	X	X	12/22/95	12/27/95	41	264
11/16/95	**COC#340015**																
11/16/95	340-TB-10	X						X						12/22/95	12/27/95	41	264
COUNT		20	17	17	17	13	13	20	17	17	17	13	13				

SURFACE WATER SAMPLING SUMMARY
SITE 63, VERONA LOOP DUMP
REMEDIAL INVESTIGATION, CTO-340

		Analysis Requested				Analysis Received							
DATE SHIPPED TO VAL	SAMPLE ID	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	DATE EXPECTED	DATE REC'D	TURNAROUND TIME	SDG NO.
11/10/95	**COC#340005**												
11/10/95	63-SW05	X	X	X	X	X	X	X	X	12/16/95	12/20/95	40	214
11/10/95	63-SW04	X				X				12/16/95	12/20/95	40	214
11/10/95	63-SW03	X				X				12/16/95	12/20/95	40	214
11/10/95	63-SW03D	X				X				12/16/95	12/20/95	40	214
11/10/95	63-SW02	X				X				12/16/95	12/20/95	40	214
11/10/95	63-SW01	X				X				12/16/95	12/20/95	40	214
11/10/95	**COC#340006**												
11/10/95	63-SW04		X	X	X		X	X	X	12/16/95	12/20/95	40	214
11/10/95	63-SW03		X	X	X		X	X	X	12/16/95	12/20/95	40	214
11/10/95	63-SW03D		X	X	X		X	X	X	12/16/95	12/20/95	40	214
11/10/95	63-SW02		X	X	X		X	X	X	12/16/95	12/20/95	40	214
11/10/95	63-SW01		X	X	X		X	X	X	12/16/95	12/20/95	40	214
COUNT		6	6	6	6	6	6	6	6				

SEDIMENT SAMPLING SUMMARY
SITE 63, VERONA LOOP DUMP
REMEDIAL INVESTIGATION, CTO-340

		Analysis Requested						Analysis Received									
DATE SHIPPED TO VAL	SAMPLE ID	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TOC	GRAIN SIZE	TCL VOA	TCL SVOA	TCL PEST/PCB	TAL METALS	TOC	GRAIN SIZE	DATE EXPECTED	DATE REC'D	TURNAROUND TIME	SDG NO.
11/11/95	**COC#340007**																
11/11/95	63-SDER-01	X	X	X	X			X	X	X	X			12/17/95	12/20/95	39	220
11/11/95	63-SD05-01	X	X	X	X	X		X	X	X	X	X		12/17/95	12/29/95	48	221
11/11/95	63-SD04-01	X	X	X	X	X		X	X	X	X	X		12/17/95	12/29/95	48	221
11/11/95	63-SD03-01	X	X	X	X	X		X	X	X	X	X		12/17/95	12/29/95	48	221
11/11/95	63-SD03-01D	X	X	X	X	X		X	X	X	X	X		12/17/95	12/20/95	39	220
11/11/95	63-SD02-01	X	X	X	X	X		X	X	X	X	X		12/17/95	12/29/95	48	221
11/11/95	63-SD01-01	X	X	X	X	X		X	X	X	X	X		12/17/95	12/29/95	48	221
11/13/95	**COC#340009**																
11/13/95	63-SD05-01						X						X	12/19/95	12/20/95	37	215
11/13/95	**COC#340011**																
11/14/95	63-SD04-01						X						X	12/20/95	12/20/95	36	215
11/14/95	63-SD03-01						X						X	12/20/95	12/20/95	36	215
11/14/95	63-SD02-01						X						X	12/20/95	12/20/95	36	215
11/14/95	63-SD01-01						X						X	12/20/95	12/20/95	36	215
COUNT		7	7	7	7	6	5	7	7	7	7	6	5				

APPENDIX H
FREQUENCY OF DETECTION SUMMARIES

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB01-00	63-SB02-00	63-SB03-00	63-SB04-00	63-SB05-00	63-SB06-00
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/06/95	11/11/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)						
CHLOROMETHANE	11 U	12 U	11 U	12 U	13 U	11 U
BROMOMETHANE	11 U	12 U	11 U	12 U	13 U	11 U
VINYL CHLORIDE	11 U	12 U	11 U	12 U	13 U	11 U
CHLOROETHANE	11 U	12 U	11 U	12 U	13 U	11 U
METHYLENE CHLORIDE	11 U	12 U	11 U	12 U	13 U	11 U
ACETONE	11 U	12 U	11 U	12 U	13 U	11 U
CARBON DISULFIDE	11 U	12 U	11 U	12 U	13 U	11 U
1,1-DICHLOROETHENE	11 U	12 U	11 U	12 U	13 U	11 U
1,1-DICHLOROETHANE	11 U	12 U	11 U	12 U	13 U	11 U
1,2-DICHLOROETHENE (TOTAL)	11 U	12 U	11 U	12 U	13 U	11 U
CHLOROFORM	11 U	12 U	11 U	12 U	13 U	11 U
1,2-DICHLOROETHANE	11 U	12 U	11 U	12 U	13 U	11 U
2-BUTANONE	11 U	12 U	11 U	12 U	13 U	11 U
1,1,1-TRICHLOROETHANE	11 U	12 U	11 U	12 U	13 U	11 U
CARBON TETRACHLORIDE	11 U	12 U	11 U	12 U	13 U	11 U
BROMODICHLOROMETHANE	11 U	12 U	11 U	12 U	13 U	11 U
1,2-DICHLOROPROPANE	11 U	12 U	11 U	12 U	13 U	11 U
CIS-1,3-DICHLOROPROPENE	11 U	12 U	11 U	12 U	13 U	11 U
TRICHLOROETHENE	11 U	12 U	11 U	12 U	13 U	11 U
DIBROMOCHLOROMETHANE	11 U	12 U	11 U	12 U	13 U	11 U
1,1,2-TRICHLOROETHANE	11 U	12 U	11 U	12 U	13 U	11 U
BENZENE	11 U	12 U	11 U	12 U	13 U	11 U
TRANS-1,3-DICHLOROPROPENE	11 U	12 U	11 U	12 U	13 U	11 U
BROMOFORM	11 U	12 U	11 U	12 U	13 UJ	11 U
4-METHYL-2-PENTANONE	11 U	12 U	11 U	12 U	13 UJ	11 U
2-HEXANONE	11 U	12 U	11 U	12 U	13 UJ	11 U
TETRACHLOROETHENE	11 U	12 U	11 U	12 U	13 UJ	11 U
1,1,2,2-TETRACHLOROETHANE	11 U	12 U	11 U	12 U	13 UJ	11 U
TOLUENE	11 U	12 U	11 U	12 U	13 UJ	11 U
CHLOROBENZENE	11 U	12 U	11 U	12 U	13 UJ	11 U
ETHYLBENZENE	11 U	12 U	11 U	12 U	13 UJ	11 U
STYRENE	11 U	12 U	11 U	12 U	13 UJ	11 U
XYLENE (TOTAL)	11 U	12 U	11 U	12 U	13 UJ	11 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB01-00	63-SB02-00	63-SB03-00	63-SB04-00	63-SB05-00	63-SB06-00
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/06/95	11/11/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)						
PHENOL	370 U	400 U	360 U	400 U	430 U	370 U
BIS(2-CHLOROETHYL)ETHER	370 U	400 U	360 U	400 U	430 U	370 U
2-CHLOROPHENOL	370 U	400 U	360 U	400 U	430 U	370 U
1,3-DICHLOROBENZENE	370 U	400 U	360 U	400 U	430 U	370 U
1,4-DICHLOROBENZENE	370 U	400 U	360 U	400 U	430 U	370 U
1,2-DICHLOROBENZENE	370 U	400 U	360 U	400 U	430 U	370 U
2-METHYLPHENOL	370 U	400 U	360 U	400 U	430 U	370 U
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	400 U	360 U	400 U	430 U	370 U
4-METHYLPHENOL	370 U	400 U	360 U	400 U	430 U	370 U
N-NITROSO-DI-N-PROPYLAMINE	370 U	400 U	360 U	400 U	430 U	370 U
HEXACHLOROETHANE	370 U	400 U	360 U	400 U	430 U	370 U
NITROBENZENE	370 U	400 U	360 U	400 U	430 U	370 U
ISOPHORONE	370 U	400 U	360 U	400 U	430 U	370 U
2-NITROPHENOL	370 U	400 U	360 U	400 U	430 U	370 U
2,4-DIMETHYLPHENOL	370 U	400 U	360 U	400 U	430 U	370 U
BIS(2-CHLOROETHOXY)METHANE	370 U	400 U	360 U	400 U	430 U	370 U
2,4-DICHLOROPHENOL	370 U	400 U	360 U	400 U	430 U	370 U
1,2,4-TRICHLOROBENZENE	370 U	400 U	360 U	400 U	430 U	370 U
NAPHTHALENE	370 U	400 U	360 U	400 U	430 U	370 U
4-CHLOROANILINE	370 U	400 U	360 U	400 U	430 U	370 U
HEXACHLOROBUTADIENE	370 U	400 U	360 U	400 U	430 U	370 U
4-CHLORO-3-METHYLPHENOL	370 U	400 U	360 U	400 U	430 U	370 U
2-METHYLNAPHTHALENE	370 U	400 U	360 U	400 U	430 U	370 U
HEXACHLOROCYCLOPENTADIENE	370 U	400 U	360 U	400 U	430 U	370 U
2,4,6-TRICHLOROPHENOL	920 U	990 U	900 U	1000 U	1100 U	940 U
2,4,5-TRICHLOROPHENOL	370 U	400 U	360 U	400 U	430 U	370 U
2-CHLORONAPHTHALENE	920 U	990 U	900 U	1000 U	1100 U	940 U
2-NITROANILINE	370 U	400 U	360 U	400 U	430 U	370 U
DIMETHYLPHTHALATE	370 U	400 U	360 U	400 U	430 U	370 U
ACENAPHTHYLENE	370 U	400 U	360 U	400 U	430 U	370 U
2,6-DINITROTOLUENE	920 U	990 U	900 U	1000 U	1100 U	940 U
3-NITROANILINE	370 U	400 U	360 U	400 U	430 U	370 U
ACENAPHTHENE	920 U	990 U	900 U	1000 U	1100 UJ	940 U
2,4-DINITROPHENOL	920 U	990 U	900 U	1000 U	1100 U	940 U
4-NITROPHENOL						

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB01-00	63-SB02-00	63-SB03-00	63-SB04-00	63-SB05-00	63-SB06-00
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/06/95	11/11/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)						
DIBENZOFURAN	370 U	400 U	360 U	400 U	430 U	370 U
2,4-DINITROTOLUENE	370 U	400 U	360 U	400 U	430 U	370 U
DIETHYLPHTHALATE	370 U	400 U	360 U	400 U	430 U	370 U
4-CHLOROPHENYL-PHENYLETHER	370 U	400 U	360 U	400 U	430 U	370 U
FLUORENE	370 U	400 U	360 U	400 U	430 U	370 U
4-NITROANILINE	920 U	990 U	900 U	1000 U	1100 U	940 U
4,6-DINITRO-2-METHYLPHENOL	920 U	990 U	900 U	1000 U	1100 U	940 U
N-NITROSODIPHENYLAMINE (1)	370 U	400 U	360 U	400 U	430 U	370 U
4-BROMOPHENYL-PHENYLETHER	370 U	400 U	360 U	400 U	430 U	370 U
HEXACHLOROBENZENE	370 U	400 U	360 U	400 U	430 U	370 U
PENTACHLOROPHENOL	920 U	990 U	900 U	1000 U	1100 U	940 U
PHENANTHRENE	370 U	400 U	360 U	400 U	430 U	370 U
ANTHRACENE	370 U	400 U	360 U	400 U	430 U	370 U
CARBAZOLE	370 U	400 U	360 U	400 U	430 U	370 U
DI-N-BUTYLPHTHALATE	370 U	400 U	360 U	1200 U	430 U	370 U
FLUORANTHENE	370 U	400 U	360 U	400 U	430 U	370 U
PYRENE	370 U	400 U	360 U	400 U	430 U	370 U
BUTYLBENZYLPHTHALATE	370 U	400 U	360 U	400 U	430 U	370 U
3,3'-DICHLOROBENZIDINE	370 U	400 U	360 U	400 U	430 U	370 U
BENZO(A)ANTHRACENE	370 U	400 U	360 U	400 U	430 U	370 U
CHRYSENE	370 U	400 U	360 U	400 U	430 U	370 U
BIS(2-ETHYLHEXYL)PHTHALATE	370 U	400 U	360 U	63 J	430 U	370 U
DI-N-OCTYL PHTHALATE	370 U	400 U	360 UJ	400 U	430 U	370 U
BENZO(B)FLUORANTHENE	370 U	400 U	360 U	400 U	430 U	370 U
BENZO(K)FLUORANTHENE	370 U	400 U	360 U	400 U	430 U	370 U
BENZO(A)PYRENE	370 U	400 U	360 U	400 U	430 U	370 U
INDENO(1,2,3-CD)PYRENE	370 U	400 U	360 U	400 U	430 U	370 U
DIBENZO(A,H)ANTHRACENE	370 U	400 U	360 U	400 U	430 U	370 U
BENZO(G,H,I)PERYLENE	370 U	400 U	360 U	400 U	430 U	370 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB01-00	63-SB02-00	63-SB03-00	63-SB04-00	63-SB05-00	63-SB06-00
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/06/95	11/11/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)						
ALPHA-BHC	1.8 UJ	2 U	1.8 UJ	2 U	2.1 U	1.9 UJ
BETA-BHC	1.8 UJ	2 U	1.8 UJ	2 U	2.1 U	1.9 UJ
DELTA-BHC	1.8 UJ	2 U	1.8 UJ	2 UJ	2.1 U	1.9 UJ
HEPTACHLOR	1.8 UJ	2 U	1.8 UJ	2 UJ	2.1 U	1.9 UJ
ALDRIN	1.8 UJ	2 U	1.8 UJ	2 U	2.1 U	1.9 UJ
HEPTACHLOR EPOXIDE	1.8 UJ	2 U	1.8 UJ	2 U	2.1 U	1.9 UJ
ENDOSULFAN I	1.8 UJ	2 U	1.8 UJ	2 U	2.1 U	1.9 UJ
DIELDRIN	3.7 UJ	4 U	3.6 UJ	4.1 U	4.3 U	3.7 UJ
4,4'-DDE	3.7 UJ	4 U	3.6 UJ	4.1 UJ	4.3 U	3.7 UJ
ENDRIN	3.7 UJ	4 U	3.6 UJ	4.1 U	4.3 U	3.7 UJ
4,4'-DDD	3.7 UJ	4 U	3.6 UJ	4.1 U	4.3 U	3.7 UJ
ENDOSULFAN SULFATE	3.7 UJ	4 U	3.6 UJ	4.1 U	4.3 U	3.7 UJ
4,4'-DDT	3.7 UJ	4 U	3.6 UJ	4.1 U	4.3 U	3.7 UJ
METHOXYCHLOR	18 UJ	20 U	18 UJ	20 U	21 U	19 UJ
ENDRIN KETONE	3.7 UJ	4 U	3.6 UJ	4.1 U	4.3 U	3.7 UJ
ENDRIN ALDEHYDE	3.7 UJ	4 U	3.6 UJ	4.1 U	4.3 U	3.7 UJ
ALPHA-CHLORDANE	1.8 UJ	2 U	1.8 UJ	2 U	2.1 U	1.9 UJ
GAMMA-CHLORDANE	1.8 UJ	2 U	1.8 UJ	2 U	2.1 U	1.9 UJ
TOXAPHENE	180 UJ	200 U	180 UJ	200 U	210 U	190 UJ
AROCLOR-1016	37 UJ	40 U	36 UJ	41 U	43 U	37 UJ
AROCLOR-1221	74 UJ	80 U	72 UJ	82 U	85 U	74 UJ
AROCLOR-1232	37 UJ	40 U	36 UJ	41 U	43 U	37 UJ
AROCLOR-1242	37 UJ	40 U	36 UJ	41 U	43 U	37 UJ
AROCLOR-1248	37 UJ	40 U	36 UJ	41 U	43 U	37 UJ
AROCLOR-1254	37 UJ	40 U	36 UJ	41 U	43 U	37 UJ
AROCLOR-1260	37 UJ	40 U	36 UJ	41 U	43 U	37 UJ

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB07-00	63-SB08-00	63-SB09-00	63-SB10-00	63-SB11-00	63-SB12-00
DATE SAMPLED	11/11/95	11/10/95	11/10/95	11/09/95	11/09/95	11/07/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)						
CHLOROMETHANE	12 U	12 U	12 U	13 U	12 U	11 U
BROMOMETHANE	12 U	12 U	12 U	13 U	12 U	11 U
VINYL CHLORIDE	12 U	12 U	12 U	13 U	12 U	11 U
CHLOROETHANE	12 U	12 U	12 U	13 U	12 U	11 U
METHYLENE CHLORIDE	12 U	12 U	12 U	13 U	12 U	11 U
ACETONE	12 U	12 UJ	12 U	13 U	12 U	11 U
CARBON DISULFIDE	12 U	12 U	12 U	13 U	12 U	11 U
1,1-DICHLOROETHENE	12 U	12 U	12 U	13 U	12 U	11 U
1,1-DICHLOROETHANE	12 U	12 U	12 U	13 U	12 U	11 U
1,2-DICHLOROETHENE (TOTAL)	12 U	12 U	12 U	13 U	12 U	11 U
CHLOROFORM	12 U	12 U	12 U	13 U	12 U	11 U
1,2-DICHLOROETHANE	12 U	12 U	12 U	13 U	12 U	11 U
2-BUTANONE	12 U	12 U	12 U	13 U	12 U	11 U
1,1,1-TRICHLOROETHANE	12 U	12 U	12 U	13 U	12 U	11 U
CARBON TETRACHLORIDE	12 U	12 U	12 U	13 U	12 U	11 U
BROMODICHLOROMETHANE	12 U	12 U	12 U	13 U	12 U	11 U
1,2-DICHLOROPROPANE	12 U	12 U	12 U	13 U	12 U	11 U
CIS-1,3-DICHLOROPROPENE	12 U	12 U	12 U	13 U	12 U	11 U
TRICHLOROETHENE	12 U	12 U	12 U	13 U	12 U	11 U
DIBROMOCHLOROMETHANE	12 U	12 U	12 U	13 U	12 U	11 U
1,1,2-TRICHLOROETHANE	12 U	12 U	12 U	13 U	12 U	11 U
BENZENE	12 U	12 U	12 U	13 U	12 U	11 U
TRANS-1,3-DICHLOROPROPENE	12 U	12 U	12 U	13 U	12 U	11 U
BROMOFORM	12 U	12 U	12 UJ	13 U	12 U	11 U
4-METHYL-2-PENTANONE	12 U	12 U	12 UJ	13 U	12 U	11 U
2-HEXANONE	12 U	12 U	12 UJ	13 U	12 U	11 U
TETRACHLOROETHENE	12 U	12 U	12 UJ	13 U	12 U	11 U
1,1,2,2-TETRACHLOROETHANE	12 U	12 U	12 UJ	13 U	12 U	11 U
TOLUENE	12 U	12 U	12 UJ	13 U	12 U	11 U
CHLOROBENZENE	12 U	12 U	12 UJ	13 U	12 U	11 U
ETHYLBENZENE	12 U	12 U	12 UJ	13 U	12 U	11 U
STYRENE	12 U	12 U	12 UJ	13 U	12 U	11 U
XYLENE (TOTAL)	12 U	12 U	12 UJ	13 U	12 U	11 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB07-00	63-SB08-00	63-SB09-00	63-SB10-00	63-SB11-00	63-SB12-00
DATE SAMPLED	11/11/95	11/10/95	11/10/95	11/09/95	11/09/95	11/07/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)						
PHENOL	380 U	380 U	380 U	420 U	410 U	350 U
BIS(2-CHLOROETHYL)ETHER	380 U	380 U	380 U	420 U	410 U	350 U
2-CHLOROPHENOL	380 U	380 U	380 U	420 U	410 U	350 U
1,3-DICHLOROBENZENE	380 U	380 U	380 U	420 U	410 U	350 U
1,4-DICHLOROBENZENE	380 U	380 U	380 U	420 U	410 U	350 U
1,2-DICHLOROBENZENE	380 U	380 U	380 U	420 U	410 U	350 U
2-METHYLPHENOL	380 U	380 U	380 U	420 U	410 U	350 U
2,2'-OXYBIS(1-CHLOROPROPANE)	380 U	380 U	380 U	420 U	410 U	350 U
4-METHYLPHENOL	380 U	380 U	380 U	420 U	410 U	350 U
N-NITROSO-DI-N-PROPYLAMINE	380 U	380 U	380 U	420 U	410 U	350 U
HEXACHLOROETHANE	380 U	380 U	380 U	420 U	410 U	350 U
NITROBENZENE	380 U	380 U	380 U	420 U	410 U	350 U
ISOPHORONE	380 U	380 U	380 U	420 U	410 U	350 U
2-NITROPHENOL	380 U	380 U	380 U	420 U	410 U	350 U
2,4-DIMETHYLPHENOL	380 U	380 U	380 U	420 U	410 U	350 U
BIS(2-CHLOROETHOXY)METHANE	380 U	380 U	380 U	420 U	410 U	350 U
2,4-DICHLOROPHENOL	380 U	380 U	380 U	420 U	410 U	350 U
1,2,4-TRICHLOROBENZENE	380 U	380 U	380 U	420 U	410 U	350 U
NAPHTHALENE	380 U	380 U	380 U	420 U	410 U	350 U
4-CHLOROANILINE	380 U	380 U	380 U	420 U	410 U	350 U
HEXACHLOROBUTADIENE	380 U	380 U	380 U	420 U	410 U	350 U
4-CHLORO-3-METHYLPHENOL	380 U	380 U	380 U	420 U	410 U	350 U
2-METHYLNAPHTHALENE	380 U	380 U	380 U	420 U	410 U	350 U
HEXACHLOROCYCLOPENTADIENE	380 U	380 U	380 U	420 U	410 U	350 U
2,4,6-TRICHLOROPHENOL	380 U	380 U	380 U	420 U	410 U	350 U
2,4,5-TRICHLOROPHENOL	950 U	950 U	950 U	1100 U	1000 U	880 U
2-CHLORONAPHTHALENE	380 U	380 U	380 U	420 U	410 U	350 U
2-NITROANILINE	950 U	950 U	950 U	1100 U	1000 U	880 U
DIMETHYLPHTHALATE	380 U	380 U	380 U	420 U	410 U	350 U
ACENAPHTHYLENE	380 U	380 U	380 U	420 U	410 U	350 U
2,6-DINITROTOLUENE	380 U	380 U	380 U	420 U	410 U	350 U
3-NITROANILINE	950 U	950 U	950 U	1100 U	1000 U	880 U
ACENAPHTHENE	380 U	380 U	380 U	420 U	410 U	350 U
2,4-DINITROPHENOL	950 U	950 U	950 U	1100 U	1000 U	880 U
4-NITROPHENOL	950 U	950 U	950 U	1100 U	1000 U	880 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB07-00	63-SB08-00	63-SB09-00	63-SB10-00	63-SB11-00	63-SB12-00
DATE SAMPLED	11/11/95	11/10/95	11/10/95	11/09/95	11/09/95	11/07/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)						
DIBENZOFURAN	380 U	380 U	380 U	420 U	410 U	350 U
2,4-DINITROTOLUENE	380 U	380 U	380 U	420 U	410 U	350 U
DIETHYLPHTHALATE	380 U	380 U	380 U	420 U	410 U	350 U
4-CHLOROPHENYL-PHENYLETHER	380 U	380 U	380 U	420 U	410 U	350 U
FLUORENE	380 U	380 U	380 U	420 U	410 U	350 U
4-NITROANILINE	950 U	950 U	950 U	1100 U	1000 U	880 U
4,6-DINITRO-2-METHYLPHENOL	950 U	950 U	950 U	1100 U	1000 U	880 U
N-NITROSODIPHENYLAMINE (1)	380 U	380 U	380 U	420 U	410 U	51 J
4-BROMOPHENYL-PHENYLETHER	380 U	380 U	380 U	420 U	410 U	350 U
HEXACHLOROBENZENE	380 U	380 U	380 U	420 U	410 U	350 U
PENTACHLOROPHENOL	950 U	950 U	950 U	1100 U	1000 U	880 U
PHENANTHRENE	380 U	380 U	380 U	420 U	410 U	350 U
ANTHRACENE	380 U	380 U	380 U	420 U	410 U	350 U
CARBAZOLE	380 U	380 U	380 U	420 U	410 U	350 U
DI-N-BUTYLPHTHALATE	510 U	1100 U	1100 U	420 U	410 U	350 U
FLUORANTHENE	380 U	380 U	380 U	420 U	410 U	350 U
PYRENE	380 U	380 U	380 U	420 U	410 U	350 U
BUTYLBENZYLPHTHALATE	380 U	380 U	380 U	420 U	410 U	350 U
3,3'-DICHLOROBENZIDINE	380 U	380 U	380 U	420 U	410 U	350 U
BENZO(A)ANTHRACENE	380 U	380 U	380 U	420 U	410 U	350 U
CHRYSENE	380 U	380 U	380 U	420 U	410 U	4400
BIS(2-ETHYLHEXYL)PHTHALATE	380 U	380 U	380 U	420 U	410 U	350 U
DI-N-OCTYL PHTHALATE	380 U	380 U	380 U	420 U	410 U	350 U
BENZO(B)FLUORANTHENE	380 U	380 U	380 U	420 U	410 U	350 U
BENZO(K)FLUORANTHENE	380 U	380 U	380 U	420 U	410 U	350 U
BENZO(A)PYRENE	380 U	380 U	380 U	420 U	410 U	350 U
INDENO(1,2,3-CD)PYRENE	380 U	380 U	380 U	420 U	410 U	350 U
DIBENZO(A,H)ANTHRACENE	380 U	380 U	380 U	420 U	410 U	350 U
BENZO(G,H,I)PERYLENE	380 U	380 U	380 U	420 U	410 U	350 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB07-00	63-SB08-00	63-SB09-00	63-SB10-00	63-SB11-00	63-SB12-00
DATE SAMPLED	11/11/95	11/10/95	11/10/95	11/09/95	11/09/95	11/07/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)						
ALPHA-BHC	1.9 UJ	1.9 UJ	1.9 UJ	2.1 U	2 R	1.8 U
BETA-BHC	1.9 UJ	1.9 UJ	1.9 UJ	2.1 U	2 R	1.8 U
DELTA-BHC	1.9 UJ	1.9 UJ	1.9 UJ	2.1 UJ	2 R	1.8 UJ
HEPTACHLOR	1.9 UJ	1.9 UJ	1.9 UJ	2.1 U	2 R	1.8 U
ALDRIN	1.9 UJ	1.9 UJ	1.9 UJ	2.1 U	2 R	1.8 U
HEPTACHLOR EPOXIDE	1.9 UJ	1.9 UJ	1.9 UJ	2.1 U	2 R	1.8 U
ENDOSULFAN I	1.9 UJ	1.9 UJ	1.9 UJ	2.1 U	2 R	1.8 U
DIELDRIN	3.8 UJ	3.8 UJ	3.8 UJ	4.2 U	3.7 J	3.5 U
4,4'-DDE	3.8 UJ	3.8 UJ	3.8 UJ	4.2 UJ	4.1 R	3.5 U
ENDRIN	3.8 UJ	3.8 UJ	3.8 UJ	4.2 U	4.1 R	3.5 UJ
4,4'-DDD	3.8 UJ	3.8 UJ	3.8 UJ	4.2 U	4.1 R	3.5 U
ENDOSULFAN SULFATE	3.8 UJ	3.8 UJ	3.8 UJ	4.2 U	4.1 R	3.5 U
4,4'-DDT	3.8 UJ	3.8 UJ	3.8 UJ	2.1 J	4.1 R	3.5 U
METHOXYCHLOR	19 UJ	19 UJ	19 UJ	21 U	20 R	18 U
ENDRIN KETONE	3.8 UJ	3.8 UJ	3.8 UJ	4.2 U	4.1 R	3.5 U
ENDRIN ALDEHYDE	3.8 UJ	3.8 UJ	3.8 UJ	4.2 U	4.1 R	3.5 U
ALPHA-CHLORDANE	1.9 UJ	1.9 UJ	1.9 UJ	2.1 U	2 R	1.8 U
GAMMA-CHLORDANE	1.9 UJ	1.9 UJ	1.9 UJ	2.1 U	2 R	1.8 U
TOXAPHENE	190 UJ	190 UJ	190 UJ	210 U	200 R	180 U
AROCLOR-1016	38 UJ	38 UJ	38 UJ	42 U	41 R	35 U
AROCLOR-1221	76 UJ	76 UJ	76 UJ	84 U	81 R	71 U
AROCLOR-1232	38 UJ	38 UJ	38 UJ	42 U	41 R	35 U
AROCLOR-1242	38 UJ	38 UJ	38 UJ	42 U	41 R	35 U
AROCLOR-1248	38 UJ	38 UJ	38 UJ	42 U	41 R	35 U
AROCLOR-1254	38 UJ	38 UJ	38 UJ	42 U	41 R	35 U
AROCLOR-1260	38 UJ	38 UJ	38 UJ	42 U	41 R	35 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB13-00	63-SB14-00	63-SB15-00	63-SB16-00	63-SB17-00	63-SB18-00
DATE SAMPLED	11/06/95	11/08/95	11/06/95	11/08/95	11/08/95	11/07/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)						
CHLOROMETHANE	11 U	11 U	11 U	12 U	12 U	12 UJ
BROMOMETHANE	11 U	11 U	11 U	12 U	12 U	12 UJ
VINYL CHLORIDE	11 U	11 U	11 U	12 U	12 U	12 UJ
CHLOROETHANE	11 U	11 U	11 U	12 U	12 U	12 UJ
METHYLENE CHLORIDE	11 U	11 U	14	12 U	12 U	12 UJ
ACETONE	11 U	11 U	11 U	12 U	12 U	12 UJ
CARBON DISULFIDE	11 U	11 U	11 U	12 U	12 U	12 UJ
1,1-DICHLOROETHENE	11 U	11 U	11 U	12 U	12 U	12 UJ
1,1-DICHLOROETHANE	11 U	11 U	11 U	12 U	12 U	12 UJ
1,2-DICHLOROETHENE (TOTAL)	11 U	11 U	11 U	12 U	12 U	12 UJ
CHLOROFORM	11 U	11 U	11 U	12 U	12 U	12 UJ
1,2-DICHLOROETHANE	11 U	11 U	11 U	12 U	12 U	12 UJ
2-BUTANONE	11 U	11 U	11 U	12 U	12 U	12 UJ
1,1,1-TRICHLOROETHANE	11 U	11 U	11 U	12 U	12 U	12 UJ
CARBON TETRACHLORIDE	11 U	11 U	11 U	12 U	12 U	12 UJ
BROMODICHLOROMETHANE	11 U	11 U	11 U	12 U	12 U	12 UJ
1,2-DICHLOROPROPANE	11 U	11 U	11 U	12 U	12 U	12 UJ
CIS-1,3-DICHLOROPROPENE	11 U	11 U	11 U	12 U	12 U	12 UJ
TRICHLOROETHENE	11 U	11 U	11 U	12 U	12 U	12 UJ
DIBROMOCHLOROMETHANE	11 U	11 U	11 U	12 U	12 U	12 UJ
1,1,2-TRICHLOROETHANE	11 U	11 U	11 U	12 U	12 U	12 UJ
BENZENE	11 U	11 U	11 U	12 U	12 U	12 UJ
TRANS-1,3-DICHLOROPROPENE	11 U	11 U	11 U	12 U	12 U	12 UJ
BROMOFORM	11 U	11 U	11 U	12 U	12 U	12 UJ
4-METHYL-2-PENTANONE	11 U	11 U	11 U	12 U	12 U	12 UJ
2-HEXANONE	11 U	11 U	11 U	12 U	12 U	12 UJ
TETRACHLOROETHENE	11 U	11 U	11 U	12 U	12 U	12 UJ
1,1,2,2-TETRACHLOROETHANE	11 U	11 U	11 U	12 U	12 U	12 UJ
TOLUENE	11 U	11 U	11 U	12 U	12 U	12 UJ
CHLOROBENZENE	11 U	11 U	11 U	12 U	12 U	12 UJ
ETHYLBENZENE	11 U	11 U	11 U	12 U	12 U	12 UJ
STYRENE	11 U	11 U	11 U	12 U	12 U	12 UJ
XYLENE (TOTAL)	11 U	11 U	11 U	12 U	12 U	12 UJ

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB13-00	63-SB14-00	63-SB15-00	63-SB16-00	63-SB17-00	63-SB18-00
DATE SAMPLED	11/06/95	11/08/95	11/06/95	11/08/95	11/08/95	11/07/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)						
PHENOL	350 U	380 U	380 U	390 U	380 U	410 U
BIS(2-CHLOROETHYL)ETHER	350 U	380 U	380 U	390 U	380 U	410 U
2-CHLOROPHENOL	350 U	380 U	380 U	390 U	380 U	410 U
1,3-DICHLOROBENZENE	350 U	380 U	380 U	390 U	380 U	410 U
1,4-DICHLOROBENZENE	350 U	380 U	380 U	390 U	380 U	410 U
1,2-DICHLOROBENZENE	350 U	380 U	380 U	390 U	380 U	410 U
2-METHYLPHENOL	350 U	380 U	380 U	390 U	380 U	410 U
2,2'-OXYBIS(1-CHLOROPROPANE)	350 U	380 U	380 U	390 U	380 U	410 U
4-METHYLPHENOL	350 U	380 U	380 U	390 U	380 U	410 U
N-NITROSO-DI-N-PROPYLAMINE	350 U	380 U	380 U	390 U	380 U	410 U
HEXACHLOROETHANE	350 U	380 U	380 U	390 U	380 U	410 U
NITROBENZENE	350 U	380 U	380 U	390 U	380 U	410 U
ISOPHORONE	350 U	380 U	380 U	390 U	380 U	410 U
2-NITROPHENOL	350 U	380 U	380 U	390 U	380 U	410 U
2,4-DIMETHYLPHENOL	350 U	380 U	380 U	390 U	380 U	410 U
BIS(2-CHLOROETHOXY)METHANE	350 U	380 U	380 U	390 U	380 U	410 U
2,4-DICHLOROPHENOL	350 U	380 U	380 U	390 U	380 U	410 U
1,2,4-TRICHLOROBENZENE	350 U	380 U	380 U	390 U	380 U	410 U
NAPHTHALENE	350 U	380 U	380 U	390 U	380 U	410 U
4-CHLOROANILINE	350 U	380 U	380 U	390 U	380 U	410 U
HEXACHLOROBUTADIENE	350 U	380 U	380 U	390 U	380 U	410 U
4-CHLORO-3-METHYLPHENOL	350 U	380 U	380 U	390 U	380 U	410 U
2-METHYLNAPHTHALENE	350 U	380 U	380 U	390 U	380 U	410 U
HEXACHLOROCYCLOPENTADIENE	350 U	380 U	380 U	390 U	380 U	410 U
2,4,6-TRICHLOROPHENOL	880 U	940 U	940 U	960 U	950 U	1000 U
2,4,5-TRICHLOROPHENOL	350 U	380 U	380 U	390 U	380 U	410 U
2-CHLORONAPHTHALENE	880 U	940 U	940 U	960 U	950 U	1000 U
2-NITROANILINE	350 U	380 U	380 U	390 U	380 U	410 U
DIMETHYLPHTHALATE	350 U	380 U	380 U	390 U	380 U	410 U
ACENAPHTHYLENE	350 U	380 U	380 U	390 U	380 U	410 U
2,6-DINITROTOLUENE	880 U	940 U	940 U	960 U	950 U	1000 U
3-NITROANILINE	350 U	380 U	380 U	390 U	380 U	410 U
ACENAPHTHENE	880 U	940 U	940 U	960 U	950 U	1000 U
2,4-DINITROPHENOL	880 U	940 U	940 U	960 U	950 U	1000 U
4-NITROPHENOL						

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB13-00	63-SB14-00	63-SB15-00	63-SB16-00	63-SB17-00	63-SB18-00
DATE SAMPLED	11/06/95	11/08/95	11/06/95	11/08/95	11/08/95	11/07/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)						
DIBENZOFURAN	350 U	380 U	380 U	390 U	380 U	410 U
2,4-DINITROTOLUENE	350 U	380 U	380 U	390 U	380 U	410 U
DIETHYLPHTHALATE	350 U	380 U	380 U	390 U	380 U	410 U
4-CHLOROPHENYL-PHENYLETHER	350 U	380 U	380 U	390 U	380 U	410 U
FLUORENE	350 U	380 U	380 U	390 U	380 U	410 U
4-NITROANILINE	880 U	940 U	940 U	960 U	950 U	1000 U
4,6-DINITRO-2-METHYLPHENOL	880 U	940 U	940 U	960 U	950 U	1000 U
N-NITROSODIPHENYLAMINE (1)	350 U	380 U	380 U	390 U	380 U	410 U
4-BROMOPHENYL-PHENYLETHER	350 U	380 U	380 U	390 U	380 U	410 U
HEXACHLOROBENZENE	350 U	380 U	380 U	390 U	380 U	410 U
PENTACHLOROPHENOL	880 U	940 U	940 U	960 U	950 U	1000 U
PHENANTHRENE	350 U	380 U	380 U	390 U	380 U	410 U
ANTHRACENE	350 U	380 U	380 U	390 U	380 U	410 U
CARBAZOLE	350 U	380 U	380 U	390 U	380 U	410 U
DI-N-BUTYLPHTHALATE	940 U	380 U	1000 U	390 U	1700 U	410 U
FLUORANTHENE	350 U	380 U	380 U	390 U	380 U	410 U
PYRENE	350 U	380 U	380 U	390 U	380 U	410 U
BUTYLBENZYLPHTHALATE	350 U	380 U	380 U	390 U	380 U	410 U
3,3'-DICHLOROBENZIDINE	350 U	380 U	380 U	390 U	380 U	410 U
BENZO(A)ANTHRACENE	350 U	380 U	380 U	390 U	380 U	410 U
CHRYSENE	350 U	380 U	380 U	390 U	380 U	53 J
BIS(2-ETHYLHEXYL)PHTHALATE	350 U	380 U	380 U	390 U	380 U	410 U
DI-N-OCTYL PHTHALATE	350 U	380 U	380 U	390 U	380 U	410 U
BENZO(B)FLUORANTHENE	350 U	380 U	380 U	390 U	380 U	410 U
BENZO(K)FLUORANTHENE	350 U	380 U	380 U	390 U	380 U	410 U
BENZO(A)PYRENE	350 U	380 U	380 U	390 U	380 U	410 U
INDENO(1,2,3-CD)PYRENE	350 U	380 U	380 U	390 U	380 U	410 U
DIBENZO(A,H)ANTHRACENE	350 U	380 U	380 U	390 U	380 U	410 U
BENZO(G,H,I)PERYLENE	350 U	380 U	380 U	390 U	380 U	410 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB13-00	63-SB14-00	63-SB15-00	63-SB16-00	63-SB17-00	63-SB18-00
DATE SAMPLED	11/06/95	11/08/95	11/06/95	11/08/95	11/08/95	11/07/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)						
ALPHA-BHC	1.7 U	1.9 UJ	1.9 U	1.9 UJ	1.9 UJ	2 UJ
BETA-BHC	1.7 U	1.9 UJ	1.9 U	1.9 UJ	1.9 UJ	2 UJ
DELTA-BHC	1.7 UJ	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	2 UJ
HEPTACHLOR	1.7 UJ	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	2 UJ
ALDRIN	1.7 U	1.9 UJ	1.9 U	1.9 UJ	1.9 UJ	2 UJ
HEPTACHLOR EPOXIDE	1.7 U	1.9 UJ	1.9 U	1.9 UJ	1.9 UJ	2 UJ
ENDOSULFAN I	1.7 U	1.9 UJ	1.9 U	1.9 UJ	1.9 UJ	2 UJ
DIELDRIN	3.5 U	3.8 UJ	3.8 U	3.9 UJ	3.9 UJ	4.1 UJ
4,4'-DDE	3.5 UJ	3.8 UJ	3.8 UJ	3.9 UJ	3.9 UJ	4.1 UJ
ENDRIN	3.5 U	3.8 UJ	3.8 U	3.9 UJ	3.9 UJ	4.1 UJ
4,4'-DDD	3.5 U	3.8 UJ	3.8 U	3.9 UJ	3.9 UJ	4.1 UJ
ENDOSULFAN SULFATE	3.5 U	3.8 UJ	3.8 U	3.9 UJ	3.9 UJ	2.8 J
4,4'-DDT	3.5 U	3.8 UJ	3.8 U	3.9 UJ	3.9 UJ	4.1 UJ
METHOXYCHLOR	17 U	19 UJ	19 U	19 UJ	19 UJ	20 UJ
ENDRIN KETONE	3.5 U	3.8 UJ	3.8 U	3.9 UJ	3.9 UJ	4.1 UJ
ENDRIN ALDEHYDE	3.5 U	3.8 UJ	3.8 U	3.9 UJ	3.9 UJ	4.1 UJ
ALPHA-CHLORDANE	1.7 U	1.9 UJ	1.9 U	1.9 UJ	1.9 UJ	2 UJ
GAMMA-CHLORDANE	1.7 U	1.9 UJ	1.9 U	1.9 UJ	1.9 UJ	2 UJ
TOXAPHENE	170 U	190 UJ	190 U	190 UJ	190 UJ	200 UJ
AROCLOR-1016	35 U	38 UJ	38 U	39 UJ	39 UJ	41 UJ
AROCLOR-1221	70 U	76 UJ	75 U	77 UJ	77 UJ	81 UJ
AROCLOR-1232	35 U	38 UJ	38 U	39 UJ	39 UJ	41 UJ
AROCLOR-1242	35 U	38 UJ	38 U	39 UJ	39 UJ	41 UJ
AROCLOR-1248	35 U	38 UJ	38 U	39 UJ	39 UJ	41 UJ
AROCLOR-1254	35 U	38 UJ	38 U	39 UJ	39 UJ	41 UJ
AROCLOR-1260	35 U	38 UJ	38 U	39 UJ	39 UJ	41 UJ

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB19-00	63-SB20-00	63-SB21-00	63-SB22-00	63-SB23-00	63-SB24-00
DATE SAMPLED	11/06/95	11/09/95	11/08/95	11/07/95	11/07/95	11/07/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)						
CHLOROMETHANE	11 U	13 U	12 U	11 U	11 U	11 U
BROMOMETHANE	11 U	13 U	12 U	11 U	11 U	11 U
VINYL CHLORIDE	11 U	13 U	12 U	11 U	11 U	11 U
CHLOROETHANE	11 U	13 U	12 U	11 U	11 U	11 U
METHYLENE CHLORIDE	11 U	13 U	12 U	11 U	11 U	11 U
ACETONE	11 U	13 U	12 U	11 U	11 U	11 U
CARBON DISULFIDE	11 U	13 U	12 U	11 U	11 U	11 U
1,1-DICHLOROETHENE	11 U	13 U	12 U	11 U	11 U	11 U
1,1-DICHLOROETHANE	11 U	13 U	12 U	11 U	11 U	11 U
1,2-DICHLOROETHENE (TOTAL)	11 U	13 U	12 U	11 U	11 U	11 U
CHLOROFORM	11 U	13 U	12 U	11 U	11 U	11 U
1,2-DICHLOROETHANE	11 U	13 U	12 U	11 U	11 U	11 U
2-BUTANONE	11 U	13 U	12 U	11 U	11 U	11 U
1,1,1-TRICHLOROETHANE	11 U	13 U	12 U	11 U	11 U	11 U
CARBON TETRACHLORIDE	11 U	13 U	12 U	11 U	11 U	11 U
BROMODICHLOROMETHANE	11 U	13 U	12 U	11 U	11 U	11 U
1,2-DICHLOROPROPANE	11 U	13 U	12 U	11 U	11 U	11 U
CIS-1,3-DICHLOROPROPENE	11 U	13 U	12 U	11 U	11 U	11 U
TRICHLOROETHENE	11 U	13 U	12 U	11 U	11 U	11 U
DIBROMOCHLOROMETHANE	11 U	13 U	12 U	11 U	11 U	11 U
1,1,2-TRICHLOROETHANE	11 U	13 U	12 U	11 U	11 U	11 U
BENZENE	11 U	13 U	12 U	11 U	11 U	11 U
TRANS-1,3-DICHLOROPROPENE	11 U	13 U	12 U	11 U	11 U	11 U
BROMOFORM	11 UJ	13 U	12 U	11 U	11 U	11 U
4-METHYL-2-PENTANONE	11 UJ	13 U	12 U	11 U	11 U	11 U
2-HEXANONE	11 UJ	13 U	12 U	11 U	11 U	11 U
TETRACHLOROETHENE	11 UJ	13 U	12 U	11 U	11 U	11 U
1,1,2,2-TETRACHLOROETHANE	11 UJ	13 U	12 U	11 U	11 U	11 U
TOLUENE	11 UJ	13 U	12 U	11 U	11 U	11 U
CHLOROBENZENE	11 UJ	13 U	12 U	11 U	11 U	11 U
ETHYLBENZENE	11 UJ	13 U	12 U	11 U	11 U	11 U
STYRENE	11 UJ	13 U	12 U	11 U	11 U	11 U
XYLENE (TOTAL)	11 UJ	13 U	12 U	11 U	11 U	11 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB19-00	63-SB20-00	63-SB21-00	63-SB22-00	63-SB23-00	63-SB24-00
DATE SAMPLED	11/06/95	11/09/95	11/08/95	11/07/95	11/07/95	11/07/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)						
PHENOL	350 U	2100 U	390 U	380 U	350 U	350 U
BIS(2-CHLOROETHYL)ETHER	350 U	2100 U	390 U	380 U	350 U	350 U
2-CHLOROPHENOL	350 U	2100 U	390 U	380 U	350 U	350 U
1,3-DICHLOROBENZENE	350 U	2100 U	390 U	380 U	350 U	350 U
1,4-DICHLOROBENZENE	350 U	2100 U	390 U	380 U	350 U	350 U
1,2-DICHLOROBENZENE	350 U	2100 U	390 U	380 U	350 U	350 U
2-METHYLPHENOL	350 U	2100 U	390 U	380 U	350 U	350 U
2,2'-OXYBIS(1-CHLOROPROPANE)	350 U	2100 U	390 U	380 U	350 U	350 U
4-METHYLPHENOL	350 U	2100 U	390 U	380 U	350 U	350 U
N-NITROSO-DI-N-PROPYLAMINE	350 U	2100 U	390 U	380 U	350 U	350 U
HEXACHLOROETHANE	350 U	2100 U	390 U	380 U	350 U	350 U
NITROBENZENE	350 U	2100 U	390 U	380 U	350 U	350 U
ISOPHORONE	350 U	2100 U	390 U	380 U	350 U	350 U
2-NITROPHENOL	350 U	2100 U	390 U	380 U	350 U	350 U
2,4-DIMETHYLPHENOL	350 U	2100 U	390 U	380 U	350 U	350 U
BIS(2-CHLOROETHOXY)METHANE	350 U	2100 U	390 U	380 U	350 U	350 U
2,4-DICHLOROPHENOL	350 U	2100 U	390 U	380 U	350 U	350 U
1,2,4-TRICHLOROBENZENE	350 U	2100 U	390 U	380 U	350 U	350 U
NAPHTHALENE	350 U	2100 U	390 U	380 U	350 U	350 U
4-CHLOROANILINE	350 U	2100 U	390 U	380 U	350 U	350 U
HEXACHLOROBUTADIENE	350 U	2100 U	390 U	380 U	350 U	350 U
4-CHLORO-3-METHYLPHENOL	350 U	2100 U	390 U	380 U	350 U	350 U
2-METHYLNAPHTHALENE	350 U	2100 U	390 U	380 U	350 U	350 U
HEXACHLOROCYCLOPENTADIENE	350 U	2100 U	390 U	380 U	350 U	350 U
2,4,6-TRICHLOROPHENOL	880 U	5300 U	980 U	950 U	880 U	880 U
2,4,5-TRICHLOROPHENOL	350 U	2100 U	390 U	380 U	350 U	350 U
2-CHLORONAPHTHALENE	880 U	5300 U	980 U	950 U	880 U	880 U
2-NITROANILINE	350 U	2100 U	390 U	380 U	350 U	350 U
DIMETHYLPHTHALATE	350 U	2100 U	390 U	380 U	350 U	350 U
ACENAPHTHYLENE	350 U	2100 U	390 U	380 U	350 U	350 U
2,6-DINITROTOLUENE	880 U	5300 U	980 U	950 U	880 U	880 U
3-NITROANILINE	350 U	2100 U	390 U	380 U	350 U	350 U
ACENAPHTHENE	880 U	5300 U	980 U	950 U	880 U	880 U
2,4-DINITROPHENOL	880 U	5300 U	980 U	950 U	880 U	880 U
4-NITROPHENOL						

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB19-00	63-SB20-00	63-SB21-00	63-SB22-00	63-SB23-00	63-SB24-00
DATE SAMPLED	11/06/95	11/09/95	11/08/95	11/07/95	11/07/95	11/07/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)						
DIBENZOFURAN	350 U	2100 U	390 U	380 U	350 U	350 U
2,4-DINITROTOLUENE	350 U	2100 U	390 U	380 U	350 U	350 U
DIETHYLPHTHALATE	350 U	2100 U	390 U	380 U	350 U	350 U
4-CHLOROPHENYL-PHENYLETHER	350 U	2100 U	390 U	380 U	350 U	350 U
FLUORENE	350 U	2100 U	390 U	380 U	350 U	350 U
4-NITROANILINE	880 U	5300 U	980 U	950 U	880 U	880 U
4,6-DINITRO-2-METHYLPHENOL	880 U	5300 U	980 U	950 U	880 U	880 U
N-NITROSODIPHENYLAMINE (1)	350 U	2100 U	390 U	380 U	350 U	350 U
4-BROMOPHENYL-PHENYLETHER	350 U	2100 U	390 U	380 U	350 U	350 U
HEXACHLOROBENZENE	350 U	2100 U	390 U	380 U	350 U	350 U
PENTACHLOROPHENOL	880 U	5300 U	980 U	950 U	880 U	880 U
PHENANTHRENE	350 U	2100 U	390 U	380 U	350 U	350 U
ANTHRACENE	350 U	2100 U	390 U	380 U	350 U	350 U
CARBAZOLE	350 U	2100 U	390 U	380 U	350 U	350 U
DI-N-BUTYLPHTHALATE	350 U	2100 U	630 U	1500 U	350 U	350 U
FLUORANTHENE	350 U	2100 U	390 U	380 U	350 U	350 U
PYRENE	350 U	2100 U	390 U	380 U	350 U	350 U
BUTYLBENZYLPHTHALATE	350 U	2100 U	390 U	380 U	350 U	350 U
3,3'-DICHLOROBENZIDINE	350 U	2100 U	390 U	380 U	350 U	350 U
BENZO(A)ANTHRACENE	350 U	2100 U	390 U	380 U	350 U	350 U
CHRYSENE	350 U	2100 U	390 U	380 U	140 J	41 J
BIS(2-ETHYLHEXYL)PHTHALATE	350 U	2100 U	390 U	380 U	350 U	350 U
DI-N-OCTYL PHTHALATE	350 U	2100 U	390 U	380 U	350 U	350 U
BENZO(B)FLUORANTHENE	350 U	2100 U	390 U	380 U	350 U	350 U
BENZO(K)FLUORANTHENE	350 U	2100 U	390 U	380 U	350 U	350 U
BENZO(A)PYRENE	350 U	2100 U	390 U	380 U	350 U	350 U
INDENO(1,2,3-CD)PYRENE	350 U	2100 U	390 U	380 U	350 U	350 U
DIBENZO(A,H)ANTHRACENE	350 U	2100 U	390 U	380 U	350 U	350 U
BENZO(G,H,I)PERYLENE	350 U	2100 U	390 U	380 U	350 U	350 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB19-00	63-SB20-00	63-SB21-00	63-SB22-00	63-SB23-00	63-SB24-00
DATE SAMPLED	11/06/95	11/09/95	11/08/95	11/07/95	11/07/95	11/07/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)						
ALPHA-BHC	1.8 U	2.1 U	1.9 U	1.9 U	1.8 UJ	1.8 U
BETA-BHC	1.8 U	2.1 U	1.9 U	1.9 U	1.8 UJ	1.8 U
DELTA-BHC	1.8 UJ	2.1 UJ	1.9 UJ	1.9 UJ	1.8 UJ	1.8 UJ
HEPTACHLOR	1.8 U	2.1 U	1.9 U	1.9 U	1.8 UJ	1.8 U
ALDRIN	1.8 U	2.1 U	1.9 U	1.9 U	1.8 UJ	1.8 U
HEPTACHLOR EPOXIDE	1.8 U	2.1 U	1.9 U	1.9 U	1.8 UJ	1.8 U
ENDOSULFAN I	1.8 U	2.1 U	1.9 U	1.9 U	1.8 UJ	1.8 U
DIELDRIN	3.6 U	3 J	3.8 U	3.8 U	3.6 UJ	3.5 U
4,4'-DDE	3.6 U	3 J	3.8 U	3.8 U	8.2 J	3.5 U
ENDRIN	3.6 UJ	4.3 U	3.8 UJ	3.8 UJ	3.6 UJ	3.5 UJ
4,4'-DDD	3.6 U	4.3 U	3.8 U	3.8 U	3.6 UJ	3.5 U
ENDOSULFAN SULFATE	3.6 U	4.3 U	3.8 U	3.8 U	3.6 UJ	3.5 U
4,4'-DDT	3.6 U	4.3 U	3.8 J	2.7 J	10 J	2.5 J
METHOXYCHLOR	18 U	21 U	19 U	19 U	18 UJ	18 U
ENDRIN KETONE	3.6 U	4.3 U	3.8 U	3.8 U	3.6 UJ	3.5 U
ENDRIN ALDEHYDE	3.6 U	4.3 U	3.8 U	3.8 U	3.6 UJ	3.5 U
ALPHA-CHLORDANE	1.8 U	2.1 U	1.9 U	1.9 U	1.8 UJ	1.8 U
GAMMA-CHLORDANE	1.8 U	2.1 U	1.9 U	1.9 U	1.8 UJ	1.8 U
TOXAPHENE	180 U	210 U	190 U	190 U	180 UJ	180 U
AROCLOR-1016	36 U	43 U	38 U	38 U	36 UJ	35 U
AROCLOR-1221	71 U	86 U	76 U	76 U	72 UJ	71 U
AROCLOR-1232	36 U	43 U	38 U	38 U	36 UJ	35 U
AROCLOR-1242	36 U	43 U	38 U	38 U	36 UJ	35 U
AROCLOR-1248	36 U	43 U	38 U	38 U	36 UJ	35 U
AROCLOR-1254	36 U	43 U	38 U	38 U	36 UJ	35 U
AROCLOR-1260			28 J			

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB25-00	63-SB26-00	63-SB27-00	63-SB28-00	63-SB29-00	63-SB30-00
DATE SAMPLED	11/06/95	11/06/95	11/06/95	11/07/95	11/07/95	11/09/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)						
CHLOROMETHANE	10 U	11 U	11 U	12 U	12 U	12 U
BROMOMETHANE	10 U	11 U	11 U	12 U	12 U	12 U
VINYL CHLORIDE	10 U	11 U	11 U	12 U	12 U	12 U
CHLOROETHANE	10 U	11 U	11 U	12 U	12 U	12 U
METHYLENE CHLORIDE	34 J	11 U	20	12 U	12 U	12 U
ACETONE	10 U	11 U	11 U	12 U	12 U	12 U
CARBON DISULFIDE	10 U	11 U	11 U	12 U	12 U	12 U
1,1-DICHLOROETHENE	10 U	11 U	11 U	12 U	12 U	12 U
1,1-DICHLOROETHANE	10 U	11 U	11 U	12 U	12 U	12 U
1,2-DICHLOROETHENE (TOTAL)	10 U	11 U	11 U	12 U	12 U	12 U
CHLOROFORM	10 U	11 U	11 U	12 U	12 U	12 U
1,2-DICHLOROETHANE	10 U	11 U	11 U	12 U	12 U	12 U
2-BUTANONE	10 U	11 U	11 U	12 UJ	12 U	12 U
1,1,1-TRICHLOROETHANE	10 U	11 U	11 U	12 UJ	12 U	12 U
CARBON TETRACHLORIDE	10 U	11 U	11 U	12 UJ	12 U	12 U
BROMODICHLOROMETHANE	10 U	11 U	11 U	12 UJ	12 U	12 U
1,2-DICHLOROPROPANE	10 U	11 U	11 U	12 UJ	12 U	12 U
CIS-1,3-DICHLOROPROPENE	10 U	11 U	11 U	12 UJ	12 U	12 U
TRICHLOROETHENE	10 U	11 U	11 U	12 UJ	12 U	12 U
DIBROMOCHLOROMETHANE	10 U	11 U	11 U	12 UJ	12 U	12 U
1,1,2-TRICHLOROETHANE	10 U	11 U	11 U	12 UJ	12 U	12 U
BENZENE	10 U	11 U	11 U	12 UJ	12 U	12 U
TRANS-1,3-DICHLOROPROPENE	10 U	11 U	11 U	12 UJ	12 U	12 U
BROMOFORM	10 U	11 U	11 U	12 UJ	12 U	12 U
4-METHYL-2-PENTANONE	10 U	11 U	11 U	12 UJ	12 U	12 U
2-HEXANONE	10 U	11 U	11 U	12 UJ	12 U	12 U
TETRACHLOROETHENE	10 U	11 U	11 U	12 UJ	12 U	12 U
1,1,2,2-TETRACHLOROETHANE	10 U	11 U	11 U	12 UJ	12 U	12 U
TOLUENE	10 U	11 U	11 U	12 UJ	12 U	12 U
CHLOROBENZENE	10 U	11 U	11 U	12 UJ	12 U	12 U
ETHYLBENZENE	10 U	11 U	11 U	12 UJ	12 U	12 U
STYRENE	10 U	11 U	11 U	12 UJ	12 U	12 U
XYLENE (TOTAL)	10 U	11 U	11 U	12 UJ	12 U	12 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB25-00	63-SB26-00	63-SB27-00	63-SB28-00	63-SB29-00	63-SB30-00
DATE SAMPLED	11/06/95	11/06/95	11/06/95	11/07/95	11/07/95	11/09/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)						
PHENOL	340 U	360 U	370 U	400 U	390 U	380 U
BIS(2-CHLOROETHYL)ETHER	340 U	360 U	370 U	400 U	390 U	380 U
2-CHLOROPHENOL	340 U	360 U	370 U	400 U	390 U	380 U
1,3-DICHLOROBENZENE	340 U	360 U	370 U	400 U	390 U	380 U
1,4-DICHLOROBENZENE	340 U	360 U	370 U	400 U	390 U	380 U
1,2-DICHLOROBENZENE	340 U	360 U	370 U	400 U	390 U	380 U
2-METHYLPHENOL	340 U	360 U	370 U	400 U	390 U	380 U
2,2'-OXYBIS(1-CHLOROPROPANE)	340 U	360 U	370 U	400 U	390 U	380 U
4-METHYLPHENOL	340 U	360 U	370 U	400 U	390 U	380 U
N-NITROSO-DI-N-PROPYLAMINE	340 U	360 U	370 U	400 U	390 U	380 U
HEXACHLOROETHANE	340 U	360 U	370 U	400 U	390 U	380 U
NITROBENZENE	340 U	360 U	370 U	400 U	390 U	380 U
ISOPHORONE	340 U	360 U	370 U	400 U	390 U	380 U
2-NITROPHENOL	340 U	360 U	370 U	400 U	390 U	380 U
2,4-DIMETHYLPHENOL	340 U	360 U	370 U	400 U	390 U	380 U
BIS(2-CHLOROETHOXY)METHANE	340 U	360 U	370 U	400 U	390 U	380 U
2,4-DICHLOROPHENOL	340 U	360 U	370 U	400 U	390 U	380 U
1,2,4-TRICHLOROBENZENE	340 U	360 U	370 U	400 U	390 U	380 U
NAPHTHALENE	340 U	360 U	370 U	400 U	390 U	380 U
4-CHLOROANILINE	340 U	360 U	370 U	400 U	390 U	380 U
HEXACHLOROBUTADIENE	340 U	360 U	370 U	400 U	390 U	380 U
4-CHLORO-3-METHYLPHENOL	340 U	360 U	370 U	400 U	390 U	380 U
2-METHYLNAPHTHALENE	340 U	360 U	370 U	400 U	390 U	380 U
HEXACHLOROCYCLOPENTADIENE	340 U	360 U	370 U	400 U	390 U	380 U
2,4,6-TRICHLOROPHENOL	340 U	360 U	370 U	400 U	390 U	380 U
2,4,5-TRICHLOROPHENOL	860 U	900 U	920 U	990 U	980 U	950 U
2-CHLORONAPHTHALENE	340 U	360 U	370 U	400 U	390 U	380 U
2-NITROANILINE	860 U	900 U	920 U	990 U	980 U	950 U
DIMETHYLPHTHALATE	340 U	360 U	370 U	400 U	390 U	380 U
ACENAPHTHYLENE	340 U	360 U	370 U	400 U	390 U	380 U
2,6-DINITROTOLUENE	340 U	360 U	370 U	400 U	390 U	380 U
3-NITROANILINE	860 U	900 U	920 U	990 U	980 U	950 U
ACENAPHTHENE	340 U	360 U	370 U	400 U	390 U	380 U
2,4-DINITROPHENOL	860 U	900 U	920 U	990 U	980 U	950 U
4-NITROPHENOL	860 U	900 U	920 U	990 U	980 U	950 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB25-00	63-SB26-00	63-SB27-00	63-SB28-00	63-SB29-00	63-SB30-00
DATE SAMPLED	11/06/95	11/06/95	11/06/95	11/07/95	11/07/95	11/09/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)						
DIBENZOFURAN	340 U	360 U	370 U	400 U	390 U	380 U
2,4-DINITROTOLUENE	340 U	360 U	370 U	400 U	390 U	380 U
DIETHYLPHTHALATE	340 U	360 U	370 U	400 U	390 U	380 U
4-CHLOROPHENYL-PHENYLETHER	340 U	360 U	370 U	400 U	390 U	380 U
FLUORENE	340 U	360 U	370 U	400 U	390 U	380 U
4-NITROANILINE	860 U	900 U	920 U	990 U	980 U	950 U
4,6-DINITRO-2-METHYLPHENOL	860 U	900 U	920 U	990 U	980 U	950 U
N-NITROSODIPHENYLAMINE (1)	340 U	360 U	370 U	400 U	390 U	380 U
4-BROMOPHENYL-PHENYLETHER	340 U	360 U	370 U	400 U	390 U	380 U
HEXACHLOROBENZENE	340 U	360 U	370 U	400 U	390 U	380 U
PENTACHLOROPHENOL	860 U	900 U	920 U	990 U	980 U	950 U
PHENANTHRENE	340 U	360 U	370 U	400 U	390 U	380 U
ANTHRACENE	340 U	360 U	370 U	400 U	390 U	380 U
CARBAZOLE	340 U	360 U	370 U	400 U	390 U	380 U
DI-N-BUTYLPHTHALATE	940 U	360 U	920 U	1100 U	390 U	380 U
FLUORANTHENE	340 U	360 U	370 U	400 U	390 U	380 U
PYRENE	340 U	360 U	370 U	400 U	390 U	380 U
BUTYLBENZYLPHTHALATE	340 U	360 U	370 U	400 U	390 U	380 U
3,3'-DICHLOROBENZIDINE	340 U	360 U	370 U	400 U	390 U	380 U
BENZO(A)ANTHRACENE	340 U	360 U	370 U	400 U	390 U	380 U
CHRYSENE	340 U	360 U	370 U	400 U	65 J	380 U
BIS(2-ETHYLHEXYL)PHTHALATE	340 U	120 J	370 U	400 U	390 U	380 U
DI-N-OCTYL PHTHALATE	340 U	360 U	370 U	400 U	390 U	380 U
BENZO(B)FLUORANTHENE	340 U	360 U	370 U	400 U	390 U	380 U
BENZO(K)FLUORANTHENE	340 U	360 U	370 U	400 U	390 U	380 U
BENZO(A)PYRENE	340 U	360 U	370 U	400 U	390 U	380 U
INDENO(1,2,3-CD)PYRENE	340 U	360 U	370 U	400 U	390 U	380 U
DIBENZO(A,H)ANTHRACENE	340 U	360 U	370 U	400 U	390 U	380 U
BENZO(G,H,I)PERYLENE	340 U	360 U	370 U	400 U	390 U	380 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB25-00	63-SB26-00	63-SB27-00	63-SB28-00	63-SB29-00	63-SB30-00
DATE SAMPLED	11/06/95	11/06/95	11/06/95	11/07/95	11/07/95	11/09/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)						
ALPHA-BHC	1.7 U	1.8 U	1.8 U	2 U	2 U	1.9 U
BETA-BHC	1.7 U	1.8 U	1.8 U	2 U	2 U	1.9 U
DELTA-BHC	1.7 UJ	1.8 UJ	1.8 UJ	2 UJ	2 UJ	1.9 UJ
HEPTACHLOR	1.7 UJ	1.8 U	1.8 UJ	2 U	2 U	1.9 U
ALDRIN	1.7 U	1.8 U	1.8 U	2 U	2 U	1.9 U
HEPTACHLOR EPOXIDE	1.7 U	1.8 U	1.8 U	2 U	2 U	1.9 U
ENDOSULFAN I	1.7 U	1.8 U	1.8 U	2 U	2 U	1.9 U
DIELDRIN	3.5 U	3.6 U	3.7 U	4 U	3.9 U	3.8 U
4,4'-DDE	3.5 UJ	3.6 U	3.7 UJ	4 U	44	3.8 U
ENDRIN	3.5 U	3.6 UJ	3.7 U	4 UJ	3.9 UJ	3.8 U
4,4'-DDD	3.5 U	3.6 U	3.7 U	4 U	12	3.8 U
ENDOSULFAN SULFATE	3.5 U	2.5 J	3.7 U	4 U	2 J	3.8 U
4,4'-DDT	3.5 U	3.6 U	3.7 U	2 J	50 J	3.8 U
METHOXYCHLOR	17 U	18 U	18 U	20 U	20 U	19 U
ENDRIN KETONE	3.5 U	3.6 U	3.7 U	4 U	3.9 U	3.8 U
ENDRIN ALDEHYDE	3.5 U	3.6 U	3.7 U	4 U	3.9 U	3.8 U
ALPHA-CHLORDANE	1.7 U	1.8 U	1.8 U	2 U	3.5	1.9 U
GAMMA-CHLORDANE	1.7 U	1.8 U	1.8 U	2 U	2.7 J	1.9 U
TOXAPHENE	170 U	180 U	180 U	200 U	200 U	190 U
AROCLOR-1016	35 U	36 U	37 U	40 U	39 U	38 U
AROCLOR-1221	70 U	72 U	74 U	79 U	78 U	76 U
AROCLOR-1232	35 U	36 U	37 U	40 U	39 U	38 U
AROCLOR-1242	35 U	36 U	37 U	40 U	39 U	38 U
AROCLOR-1248	35 U	36 U	37 U	40 U	39 U	38 U
AROCLOR-1254	35 U	36 U	37 U	40 U	39 U	38 U
AROCLOR-1260	35 U	36 U	37 U	40 U	39 U	97

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB31-00	63-SB32-00	63-SB33-00	63-SB34-00	63-SB35-00	63-SB36-00
DATE SAMPLED	11/08/95	11/09/95	11/08/95	11/07/95	11/09/95	11/09/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)						
CHLOROMETHANE	12 U	12 U	12 U	11 U	13 U	11 U
BROMOMETHANE	12 U	12 U	12 U	11 U	13 U	11 U
VINYL CHLORIDE	12 U	12 U	12 U	11 U	13 U	11 U
CHLOROETHANE	12 U	12 U	12 U	11 U	13 U	11 U
METHYLENE CHLORIDE	12 U	12 U	12 U	11 U	13 U	11 U
ACETONE	12 U	12 U	12 U	11 U	13 U	11 J
CARBON DISULFIDE	12 U	12 U	12 U	11 U	13 U	11 U
1,1-DICHLOROETHENE	12 U	12 U	12 U	11 U	13 U	11 U
1,1-DICHLOROETHANE	12 U	12 U	12 U	11 U	13 U	11 U
1,2-DICHLOROETHENE (TOTAL)	12 U	12 U	12 U	11 U	13 U	11 U
CHLOROFORM	12 U	12 U	12 U	11 U	13 U	11 U
1,2-DICHLOROETHANE	12 U	12 U	12 U	11 U	13 U	11 U
2-BUTANONE	12 U	12 U	12 U	11 U	13 U	11 U
1,1,1-TRICHLOROETHANE	12 U	12 U	12 U	11 U	13 U	11 U
CARBON TETRACHLORIDE	12 U	12 U	12 U	11 U	13 U	11 U
BROMODICHLOROMETHANE	12 U	12 U	12 U	11 U	13 U	11 U
1,2-DICHLOROPROPANE	12 U	12 U	12 U	11 U	13 U	11 U
CIS-1,3-DICHLOROPROPENE	12 U	12 U	12 U	11 U	13 U	11 U
TRICHLOROETHENE	12 U	12 U	12 U	11 U	13 U	11 U
DIBROMOCHLOROMETHANE	12 U	12 U	12 U	11 U	13 U	11 U
1,1,2-TRICHLOROETHANE	12 U	12 U	12 U	11 U	13 U	11 U
BENZENE	12 U	12 U	12 U	11 U	13 U	11 U
TRANS-1,3-DICHLOROPROPENE	12 U	12 U	12 U	11 U	13 U	11 U
BROMOFORM	12 U	12 U	12 U	11 U	13 U	11 U
4-METHYL-2-PENTANONE	12 UJ	12 UJ	12 U	11 U	13 U	11 U
2-HEXANONE	12 UJ	12 UJ	12 U	11 U	13 U	11 U
TETRACHLOROETHENE	12 UJ	12 UJ	12 U	11 U	13 U	11 U
1,1,2,2-TETRACHLOROETHANE	12 UJ	12 UJ	12 U	11 U	13 U	11 U
TOLUENE	12 UJ	12 UJ	12 U	11 U	13 U	11 U
CHLOROBENZENE	12 UJ	12 UJ	12 U	11 U	13 U	11 U
ETHYLBENZENE	12 UJ	12 UJ	12 U	11 U	13 U	11 U
STYRENE	12 UJ	12 UJ	12 U	11 U	13 U	11 U
XYLENE (TOTAL)	12 UJ	12 UJ	12 U	11 U	13 U	11 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB31-00	63-SB32-00	63-SB33-00	63-SB34-00	63-SB35-00	63-SB36-00
DATE SAMPLED	11/08/95	11/09/95	11/08/95	11/07/95	11/09/95	11/09/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)						
PHENOL	380 U	420 U	390 U	370 U	430 U	370 U
BIS(2-CHLOROETHYL)ETHER	380 U	420 R	390 U	370 U	430 U	370 U
2-CHLOROPHENOL	380 U	420 U	390 U	370 U	430 U	370 U
1,3-DICHLOROBENZENE	380 U	420 R	390 U	370 U	430 U	370 U
1,4-DICHLOROBENZENE	380 U	420 R	390 U	370 U	430 U	370 U
1,2-DICHLOROBENZENE	380 U	420 R	390 U	370 U	430 U	370 U
2-METHYLPHENOL	380 U	420 U	390 U	370 U	430 U	370 U
2,2'-OXYBIS(1-CHLOROPROPANE)	380 U	420 R	390 U	370 U	430 U	370 U
4-METHYLPHENOL	380 U	420 U	390 U	370 U	430 U	370 U
N-NITROSO-DI-N-PROPYLAMINE	380 U	420 R	390 U	370 U	430 U	370 U
HEXACHLOROETHANE	380 U	420 R	390 U	370 U	430 U	370 U
NITROBENZENE	380 U	420 R	390 U	370 U	430 U	370 U
ISOPHORONE	380 U	420 R	390 U	370 U	430 U	370 U
2-NITROPHENOL	380 U	420 U	390 U	370 U	430 U	370 U
2,4-DIMETHYLPHENOL	380 U	420 U	390 U	370 U	430 U	370 U
BIS(2-CHLOROETHOXY)METHANE	380 U	420 R	390 U	370 U	430 U	370 U
2,4-DICHLOROPHENOL	380 U	420 U	390 U	370 U	430 U	370 U
1,2,4-TRICHLOROBENZENE	380 U	420 R	390 U	370 U	430 U	370 U
NAPHTHALENE	380 U	420 R	390 U	370 U	430 U	370 U
4-CHLOROANILINE	380 U	420 R	390 U	370 U	430 U	370 U
HEXACHLOROBUTADIENE	380 U	420 R	390 U	370 U	430 U	370 U
4-CHLORO-3-METHYLPHENOL	380 U	420 U	390 U	370 U	430 U	370 U
2-METHYLNAPHTHALENE	380 U	420 R	390 U	370 U	430 U	370 U
HEXACHLOROCYCLOPENTADIENE	380 U	420 R	390 U	370 U	430 U	370 U
2,4,6-TRICHLOROPHENOL	380 U	420 U	390 U	370 U	430 U	370 U
2,4,5-TRICHLOROPHENOL	960 U	1000 U	960 U	940 U	1100 U	920 U
2-CHLORONAPHTHALENE	380 U	420 R	390 U	370 U	430 U	370 U
2-NITROANILINE	960 U	1000 R	960 U	940 U	1100 U	920 U
DIMETHYLPHTHALATE	380 U	420 R	390 U	370 U	430 U	370 U
ACENAPHTHYLENE	380 U	420 R	390 U	370 U	430 U	370 U
2,6-DINITROTOLUENE	380 U	420 R	390 U	370 U	430 U	370 U
3-NITROANILINE	960 U	1000 R	960 U	940 U	1100 U	920 U
ACENAPHTHENE	380 U	420 R	390 U	370 U	430 U	370 U
2,4-DINITROPHENOL	960 U	1000 U	960 U	940 U	1100 U	920 U
4-NITROPHENOL	960 U	1000 U	960 U	940 U	1100 U	920 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB31-00	63-SB32-00	63-SB33-00	63-SB34-00	63-SB35-00	63-SB36-00
DATE SAMPLED	11/08/95	11/09/95	11/08/95	11/07/95	11/09/95	11/09/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)						
DIBENZOFURAN	380 U	420 R	390 U	370 U	430 U	370 U
2,4-DINITROTOLUENE	380 U	420 R	390 U	370 U	430 U	370 U
DIETHYLPHTHALATE	380 U	420 R	390 U	370 U	430 U	370 U
4-CHLOROPHENYL-PHENYLETHER	380 U	420 R	390 U	370 U	430 U	370 U
FLUORENE	380 U	420 R	390 U	370 U	430 U	370 U
4-NITROANILINE	960 U	1000 R	960 U	940 U	1100 U	920 U
4,6-DINITRO-2-METHYLPHENOL	960 U	1000 U	960 U	940 U	1100 U	920 U
N-NITROSODIPHENYLAMINE (1)	380 U	420 R	390 U	370 U	430 U	370 U
4-BROMOPHENYL-PHENYLETHER	380 U	420 R	390 U	370 U	430 U	370 U
HEXACHLOROBENZENE	380 U	420 R	390 U	370 U	430 U	370 U
PENTACHLOROPHENOL	960 U	1000 U	960 U	940 U	1100 U	920 U
PHENANTHRENE	380 U	420 R	390 U	370 U	430 U	370 U
ANTHRACENE	380 U	420 R	390 U	370 U	430 U	370 U
CARBAZOLE	380 U	420 R	390 U	370 U	430 U	370 U
DI-N-BUTYLPHTHALATE	380 U	120 R	870 U	960 U	430 U	870 U
FLUORANTHENE	380 U	420 R	390 U	370 U	430 U	370 U
PYRENE	380 U	420 R	390 U	370 U	430 U	370 U
BUTYLBENZYLPHTHALATE	380 U	420 R	390 U	370 U	430 U	370 U
3,3'-DICHLOROBENZIDINE	380 U	420 R	390 U	370 U	430 U	370 U
BENZO(A)ANTHRACENE	380 U	420 R	390 U	370 U	430 U	370 U
CHRYSENE	380 U	420 R	390 U	370 U	430 U	370 U
BIS(2-ETHYLHEXYL)PHTHALATE	380 U	420 R	390 U	370 U	430 U	370 U
DI-N-OCTYL PHTHALATE	380 U	420 R	390 U	370 U	430 U	370 U
BENZO(B)FLUORANTHENE	380 U	420 R	390 U	370 U	430 U	370 U
BENZO(K)FLUORANTHENE	380 U	420 R	390 U	370 U	430 U	370 U
BENZO(A)PYRENE	380 U	420 R	390 U	370 U	430 U	370 U
INDENO(1,2,3-CD)PYRENE	380 U	420 R	390 U	370 U	430 U	370 U
DIBENZO(A,H)ANTHRACENE	380 U	420 R	390 U	370 U	430 U	370 U
BENZO(G,H,I)PERYLENE	380 U	420 R	390 U	370 U	430 U	370 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB31-00	63-SB32-00	63-SB33-00	63-SB34-00	63-SB35-00	63-SB36-00
DATE SAMPLED	11/08/95	11/09/95	11/08/95	11/07/95	11/09/95	11/09/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)						
ALPHA-BHC	1.9 UJ	2.1 U	1.9 U	1.9 U	2.2 U	1.9 U
BETA-BHC	1.9 UJ	2.1 U	1.9 U	1.9 U	2.2 U	1.9 U
DELTA-BHC	1.9 UJ	2.1 UJ	1.9 UJ	1.9 UJ	2.2 UJ	1.9 UJ
HEPTACHLOR	1.9 UJ	2.1 U	1.9 U	1.9 U	2.2 U	1.9 U
ALDRIN	1.9 UJ	2.1 U	1.9 U	1.9 U	2.2 U	1.9 U
HEPTACHLOR EPOXIDE	1.9 UJ	2.1 U	1.9 U	1.9 U	2.2 U	1.9 U
ENDOSULFAN I	1.9 UJ	2.1 U	1.9 U	1.9 U	2.2 U	1.9 U
DIELDRIN	3.8 UJ	4.1 J	3.8 U	3.7 U	4.3 U	3.7 U
4,4'-DDE	3.8 UJ	4.1 U	3.8 U	3.7 U	55 J	3.7 U
ENDRIN	3.8 UJ	4.1 U	3.8 UJ	3.7 UJ	4.3 U	3.7 U
4,4'-DDD	3.8 UJ	4.1 U	3.8 U	3.7 U	26 J	3.7 U
ENDOSULFAN SULFATE	3.8 UJ	4.1 U	3.8 U	1.9 J	4.3 U	3.7 U
4,4'-DDT	3.8 UJ	4.1 U	3.8 U	3.7 U	24	3.7 U
METHOXYCHLOR	19 UJ	21 U	19 U	19 U	22 U	19 U
ENDRIN KETONE	3.8 UJ	4.1 U	3.8 U	3.7 U	4.3 U	3.7 U
ENDRIN ALDEHYDE	3.8 UJ	4.1 U	3.8 U	3.7 U	4.3 U	3.7 U
ALPHA-CHLORDANE	1.9 UJ	2.1 U	1.9 U	1.9 U	16	1.9 U
GAMMA-CHLORDANE	1.9 UJ	2.1 U	1.9 U	1.9 U	9	1.9 U
TOXAPHENE	190 UJ	210 U	190 U	190 U	220 U	190 U
AROCLOR-1016	38 UJ	41 U	38 U	37 U	43 U	37 U
AROCLOR-1221	76 UJ	83 U	77 U	74 U	86 U	74 U
AROCLOR-1232	38 UJ	41 U	38 U	37 U	43 U	37 U
AROCLOR-1242	38 UJ	41 U	38 U	37 U	43 U	37 U
AROCLOR-1248	38 UJ	41 U	38 U	37 U	43 U	37 U
AROCLOR-1254	38 UJ	41 U	38 U	37 U	43 U	37 U
AROCLOR-1260	38 UJ	41 U	38 U	37 U	43 U	37 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB37-00	63-SB38-00	63-TW01-00	63-TW02-00	63-TW03-00	63-TW04-00
DATE SAMPLED	11/08/95	11/08/95	11/12/95	11/11/95	11/12/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)						
CHLOROMETHANE	11 U	14 U	11 U	11 U	12 U	11 U
BROMOMETHANE	11 U	14 U	11 U	11 U	12 U	11 U
VINYL CHLORIDE	11 U	14 U	11 U	11 U	12 U	11 U
CHLOROETHANE	11 U	14 U	11 U	11 U	12 U	11 U
METHYLENE CHLORIDE	11 U	14 U	11 U	11 U	12 U	11 U
ACETONE	11 U	14 U	11 U	11 U	12 U	11 U
CARBON DISULFIDE	11 U	14 U	11 U	11 U	12 U	11 U
1,1-DICHLOROETHENE	11 U	14 U	11 U	11 U	12 U	11 U
1,1-DICHLOROETHANE	11 U	14 U	11 U	11 U	12 U	11 U
1,2-DICHLOROETHENE (TOTAL)	11 U	14 U	11 U	11 U	12 U	11 U
CHLOROFORM	11 U	14 U	11 U	11 U	12 U	11 UJ
1,2-DICHLOROETHANE	11 U	14 U	11 U	11 U	12 U	11 U
2-BUTANONE	11 U	14 U	11 U	11 U	12 U	11 U
1,1,1-TRICHLOROETHANE	11 U	14 U	11 U	11 U	12 U	11 U
CARBON TETRACHLORIDE	11 U	14 U	11 U	11 U	12 U	11 U
BROMODICHLOROMETHANE	11 U	14 U	11 U	11 U	12 U	11 U
1,2-DICHLOROPROPANE	11 U	14 U	11 U	11 U	12 U	11 U
CIS-1,3-DICHLOROPROPENE	11 U	14 U	11 U	11 U	12 U	11 U
TRICHLOROETHENE	11 U	14 U	11 U	11 U	12 U	11 U
DIBROMOCHLOROMETHANE	11 U	14 U	11 U	11 U	12 U	11 U
1,1,2-TRICHLOROETHANE	11 U	14 U	11 U	11 U	12 U	11 U
BENZENE	11 U	14 U	11 U	11 U	12 U	11 U
TRANS-1,3-DICHLOROPROPENE	11 U	14 U	11 U	11 U	12 U	11 UJ
BROMOFORM	11 U	14 U	11 U	11 U	12 U	11 UJ
4-METHYL-2-PENTANONE	11 U	14 U	11 U	11 U	12 U	11 U
2-HEXANONE	11 U	14 U	11 U	11 U	12 U	11 U
TETRACHLOROETHENE	11 U	14 U	11 U	11 U	12 U	11 U
1,1,2,2-TETRACHLOROETHANE	11 U	14 U	11 U	11 U	12 U	11 U
TOLUENE	11 U	14 U	11 U	11 U	12 U	11 U
CHLOROBENZENE	11 U	14 U	11 U	11 U	12 U	11 U
ETHYLBENZENE	11 U	14 U	11 U	11 U	12 U	11 U
STYRENE	11 U	14 U	11 U	11 U	12 U	11 U
XYLENE (TOTAL)						

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB37-00	63-SB38-00	63-TW01-00	63-TW02-00	63-TW03-00	63-TW04-00
DATE SAMPLED	11/08/95	11/08/95	11/12/95	11/11/95	11/12/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)						
PHENOL	370 U	450 U	370 U	380 U	390 U	370 U
BIS(2-CHLOROETHYL)ETHER	370 U	450 U	370 U	380 U	390 U	370 U
2-CHLOROPHENOL	370 U	450 U	370 U	380 U	390 U	370 U
1,3-DICHLOROBENZENE	370 U	450 U	370 U	380 U	390 U	370 U
1,4-DICHLOROBENZENE	370 U	450 U	370 U	380 U	390 U	370 U
1,2-DICHLOROBENZENE	370 U	450 U	370 U	380 U	390 U	370 U
2-METHYLPHENOL	370 U	450 U	370 U	380 U	390 U	370 U
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	450 U	370 U	380 U	390 U	370 U
4-METHYLPHENOL	370 U	450 U	370 U	380 U	390 U	370 U
N-NITROSO-DI-N-PROPYLAMINE	370 U	450 U	370 U	380 U	390 U	370 U
HEXACHLOROETHANE	370 U	450 U	370 U	380 U	390 U	370 U
NITROBENZENE	370 U	450 U	370 U	380 U	390 U	370 U
ISOPHORONE	370 U	450 U	370 U	380 U	390 U	370 U
2-NITROPHENOL	370 U	450 U	370 U	380 U	390 U	370 U
2,4-DIMETHYLPHENOL	370 U	450 U	370 U	380 U	390 U	370 U
BIS(2-CHLOROETHOXY)METHANE	370 U	450 U	370 U	380 U	390 U	370 U
2,4-DICHLOROPHENOL	370 U	450 U	370 U	380 U	390 U	370 U
1,2,4-TRICHLOROBENZENE	370 U	450 U	370 U	380 U	390 U	370 U
NAPHTHALENE	370 U	450 U	370 U	380 U	390 U	370 U
4-CHLOROANILINE	370 U	450 U	370 U	380 U	390 U	370 U
HEXACHLOROBUTADIENE	370 U	450 U	370 U	380 U	390 U	370 U
4-CHLORO-3-METHYLPHENOL	370 U	450 U	370 U	380 U	390 U	370 U
2-METHYLNAPHTHALENE	370 U	450 U	370 U	380 U	390 U	370 U
HEXACHLOROCYCLOPENTADIENE	370 U	450 U	370 U	380 U	390 U	370 U
2,4,6-TRICHLOROPHENOL	370 U	450 U	370 U	380 U	390 U	370 U
2,4,5-TRICHLOROPHENOL	920 U	1100 U	920 U	940 U	980 U	920 U
2-CHLORONAPHTHALENE	370 U	450 U	370 U	380 U	390 U	370 U
2-NITROANILINE	920 U	1100 U	920 U	940 U	980 U	920 U
DIMETHYLPHTHALATE	370 U	450 U	370 U	380 U	390 U	370 U
ACENAPHTHYLENE	370 U	450 U	370 U	380 U	390 U	370 U
2,6-DINITROTOLUENE	370 U	450 U	370 U	380 U	390 U	370 U
3-NITROANILINE	920 U	1100 U	920 U	940 U	980 U	920 U
ACENAPHTHENE	370 U	450 U	370 U	380 U	390 U	370 U
2,4-DINITROPHENOL	920 U	1100 U	920 U	940 U	980 U	920 U
4-NITROPHENOL	920 U	1100 U	920 U	940 U	980 U	920 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB37-00	63-SB38-00	63-TW01-00	63-TW02-00	63-TW03-00	63-TW04-00
DATE SAMPLED	11/08/95	11/08/95	11/12/95	11/11/95	11/12/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)						
DIBENZOFURAN	370 U	450 U	370 U	380 U	390 U	370 U
2,4-DINITROTOLUENE	370 U	450 U	370 U	380 U	390 U	370 U
DIETHYLPHTHALATE	370 U	450 U	370 U	380 U	390 U	370 U
4-CHLOROPHENYL-PHENYLETHER	370 U	450 U	370 U	380 U	390 U	370 U
FLUORENE	370 U	450 U	370 U	380 U	390 U	370 U
4-NITROANILINE	920 U	1100 U	920 U	940 U	980 U	920 U
4,6-DINITRO-2-METHYLPHENOL	920 U	1100 U	920 U	940 U	980 U	920 U
N-NITROSODIPHENYLAMINE (1)	370 U	450 U	370 U	380 U	390 U	370 U
4-BROMOPHENYL-PHENYLETHER	370 U	450 U	370 U	380 U	390 U	370 U
HEXACHLOROBENZENE	370 U	450 U	370 U	380 U	390 U	370 U
PENTACHLOROPHENOL	920 U	1100 U	920 U	940 U	980 U	920 U
PHENANTHRENE	370 U	450 U	370 U	380 U	390 U	370 U
ANTHRACENE	370 U	450 U	370 U	380 U	390 U	370 U
CARBAZOLE	370 U	450 U	370 U	380 U	390 U	370 U
DI-N-BUTYLPHTHALATE	460 U	730 U	430 U	380 U	670 U	370 U
FLUORANTHENE	370 U	450 U	370 U	380 U	390 U	370 U
PYRENE	370 U	450 U	370 U	380 U	390 U	370 U
BUTYLBENZYLPHTHALATE	370 U	450 U	370 U	380 U	390 U	370 U
3,3'-DICHLOROBENZIDINE	370 U	450 U	370 U	380 U	390 U	370 U
BENZO(A)ANTHRACENE	370 U	450 U	370 U	380 U	390 U	370 U
CHRYSENE	370 U	450 U	370 U	380 U	390 U	370 U
BIS(2-ETHYLHEXYL)PHTHALATE	370 U	450 U	370 U	380 UJ	390 UJ	370 U
DI-N-OCTYL PHTHALATE	370 U	450 U	370 U	380 U	390 U	370 U
BENZO(B)FLUORANTHENE	370 U	450 U	370 U	380 U	390 U	370 U
BENZO(K)FLUORANTHENE	370 U	450 U	370 U	380 U	390 U	370 U
BENZO(A)PYRENE	370 U	450 U	370 U	380 U	390 U	370 U
INDENO(1,2,3-CD)PYRENE	370 U	450 U	370 U	380 U	390 U	370 U
DIBENZO(A,H)ANTHRACENE	370 U	450 U	370 U	380 U	390 U	370 U
BENZO(G,H,I)PERYLENE	370 U	450 U	370 U	380 U	390 U	370 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB37-00	63-SB38-00	63-TW01-00	63-TW02-00	63-TW03-00	63-TW04-00
DATE SAMPLED	11/08/95	11/08/95	11/12/95	11/11/95	11/12/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)						
ALPHA-BHC	1.8 U	2.2 UJ	1.8 U	1.9 UJ	1.9 UJ	1.8 U
BETA-BHC	1.8 U	2.2 UJ	1.8 U	1.9 UJ	1.9 UJ	1.8 U
DELTA-BHC	1.8 UJ	2.2 UJ	1.8 U	1.9 UJ	1.9 UJ	1.8 UJ
HEPTACHLOR	1.8 U	2.2 UJ	1.8 U	1.9 UJ	1.9 UJ	1.8 U
ALDRIN	1.8 U	2.2 UJ	1.8 U	1.9 UJ	1.9 UJ	1.8 U
HEPTACHLOR EPOXIDE	1.8 U	2.2 UJ	1.8 U	1.9 UJ	1.9 UJ	1.8 U
ENDOSULFAN I	1.8 U	2.2 UJ	1.8 U	1.9 UJ	1.9 UJ	1.8 U
DIELDRIN	3.7 U	4.4 UJ	3.7 U	3.8 UJ	3.9 UJ	3.6 U
4,4'-DDE	3.7 U	4.4 UJ	3.7 U	3.8 UJ	2.7 J	3.3 J
ENDRIN	3.7 UJ	4.4 UJ	3.7 U	3.8 UJ	3.9 UJ	3.6 U
4,4'-DDD	3.7 U	4.4 UJ	3.7 U	3.8 UJ	3.9 UJ	3.6 U
ENDOSULFAN SULFATE	3.7 U	4.4 UJ	3.7 U	3.8 UJ	3.9 UJ	3.6 U
4,4'-DDT	3.7 U	4.4 UJ	3.7 U	3.8 UJ	4.3 J	3.3 J
METHOXYCHLOR	18 U	22 UJ	18 U	19 UJ	19 UJ	18 U
ENDRIN KETONE	3.7 U	4.4 UJ	3.7 U	3.8 UJ	3.9 UJ	3.6 U
ENDRIN ALDEHYDE	3.7 U	4.4 UJ	3.7 U	3.8 UJ	3.9 UJ	3.6 U
ALPHA-CHLORDANE	1.8 U	2.2 UJ	1.8 U	1.9 UJ	1.9 UJ	1.8 U
GAMMA-CHLORDANE	1.8 U	2.2 UJ	1.8 U	1.9 UJ	1.9 UJ	1.8 U
TOXAPHENE	180 U	220 UJ	180 U	190 UJ	190 UJ	180 U
AROCLOR-1016	37 U	44 UJ	37 U	38 UJ	39 UJ	36 U
AROCLOR-1221	74 U	89 UJ	74 U	75 UJ	78 UJ	73 U
AROCLOR-1232	37 U	44 UJ	37 U	38 UJ	39 UJ	36 U
AROCLOR-1242	37 U	44 UJ	37 U	38 UJ	39 UJ	36 U
AROCLOR-1248	37 U	44 UJ	37 U	38 UJ	39 UJ	36 U
AROCLOR-1254	37 U	44 UJ	37 U	38 UJ	39 UJ	36 U
AROCLOR-1260	37 U	44 UJ	37 U	38 UJ	39 UJ	36 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW05-00	63-TW06-00	63-TW07-00	63-TW08-00
DATE SAMPLED	11/10/95	11/10/95	11/11/95	11/09/95
DEPTH	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)				
CHLOROMETHANE	12 U	11 U	12 U	12 U
BROMOMETHANE	12 U	11 U	12 U	12 U
VINYL CHLORIDE	12 U	11 U	12 U	12 U
CHLOROETHANE	12 U	11 U	12 U	12 U
METHYLENE CHLORIDE	12 U	11 U	12 U	12 U
ACETONE	12 U	11 U	12 U	12 U
CARBON DISULFIDE	12 U	11 U	12 U	12 U
1,1-DICHLOROETHENE	12 U	11 U	12 U	12 U
1,1-DICHLOROETHANE	12 U	11 U	12 U	12 U
1,2-DICHLOROETHENE (TOTAL)	12 U	11 U	12 U	12 U
CHLOROFORM	12 U	11 U	12 U	12 U
1,2-DICHLOROETHANE	12 U	11 U	12 U	12 U
2-BUTANONE	12 UJ	11 UJ	12 U	12 U
1,1,1-TRICHLOROETHANE	12 U	11 U	12 U	12 U
CARBON TETRACHLORIDE	12 U	11 U	12 U	12 U
BROMODICHLOROMETHANE	12 U	11 U	12 U	12 U
1,2-DICHLOROPROPANE	12 U	11 U	12 U	12 U
CIS-1,3-DICHLOROPROPENE	12 U	11 U	12 U	12 U
TRICHLOROETHENE	12 U	11 U	12 U	12 U
DIBROMOCHLOROMETHANE	12 U	11 U	12 U	12 U
1,1,2-TRICHLOROETHANE	12 U	11 U	12 U	12 U
BENZENE	12 U	11 U	12 U	12 U
TRANS-1,3-DICHLOROPROPENE	12 U	11 U	12 U	12 U
BROMOFORM	12 UJ	11 UJ	12 U	12 U
4-METHYL-2-PENTANONE	12 UJ	11 UJ	12 U	12 U
2-HEXANONE	12 U	11 U	12 U	12 U
TETRACHLOROETHENE	12 U	11 U	12 U	12 U
1,1,2,2-TETRACHLOROETHANE	12 U	11 U	12 U	12 U
TOLUENE	12 U	11 U	12 U	12 U
CHLOROBENZENE	12 U	11 U	12 U	12 U
ETHYLBENZENE	12 U	11 U	12 U	12 U
STYRENE	12 U	11 U	12 U	12 U
XYLENE (TOTAL)	12 U	11 U	12 U	12 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW05-00	63-TW06-00	63-TW07-00	63-TW08-00
DATE SAMPLED	11/10/95	11/10/95	11/11/95	11/09/95
DEPTH	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)				
PHENOL	390 U	370 U	400 U	400 U
BIS(2-CHLOROETHYL)ETHER	390 U	370 U	400 U	400 U
2-CHLOROPHENOL	390 U	370 U	400 U	400 U
1,3-DICHLOROBENZENE	390 U	370 U	400 U	400 U
1,4-DICHLOROBENZENE	390 U	370 U	400 U	400 U
1,2-DICHLOROBENZENE	390 U	370 U	400 U	400 U
2-METHYLPHENOL	390 U	370 U	400 U	400 U
2,2'-OXYBIS(1-CHLOROPROPANE)	390 U	370 U	400 U	400 U
4-METHYLPHENOL	390 U	370 U	400 U	400 U
N-NITROSO-DI-N-PROPYLAMINE	390 U	370 U	400 U	400 U
HEXACHLOROETHANE	390 U	370 U	400 U	400 U
NITROBENZENE	390 U	370 U	400 U	400 U
ISOPHORONE	390 U	370 U	400 U	400 U
2-NITROPHENOL	390 U	370 U	400 U	400 U
2,4-DIMETHYLPHENOL	390 U	370 U	400 U	400 U
BIS(2-CHLOROETHOXY)METHANE	390 U	370 U	400 U	400 U
2,4-DICHLOROPHENOL	390 U	370 U	400 U	400 U
1,2,4-TRICHLOROBENZENE	390 U	370 U	400 U	400 U
NAPHTHALENE	390 U	370 U	400 U	400 U
4-CHLOROANILINE	390 U	370 U	400 U	400 U
HEXACHLOROBUTADIENE	390 U	370 U	400 U	400 U
4-CHLORO-3-METHYLPHENOL	390 U	370 U	400 U	400 U
2-METHYLNAPHTHALENE	390 U	370 U	400 U	400 U
HEXACHLOROCYCLOPENTADIENE	390 U	370 U	400 U	400 U
2,4,6-TRICHLOROPHENOL	390 U	370 U	400 U	400 U
2,4,5-TRICHLOROPHENOL	980 U	920 U	1000 U	1000 U
2-CHLORONAPHTHALENE	390 U	370 U	400 U	400 U
2-NITROANILINE	980 U	920 U	1000 U	1000 U
DIMETHYLPHTHALATE	390 U	370 U	400 U	400 U
ACENAPHTHYLENE	390 U	370 U	400 U	400 U
2,6-DINITROTOLUENE	390 U	370 U	400 U	400 U
3-NITROANILINE	980 U	920 U	1000 U	1000 U
ACENAPHTHENE	390 U	370 U	400 U	400 U
2,4-DINITROPHENOL	980 U	920 U	1000 UJ	1000 U
4-NITROPHENOL	980 U	920 U	1000 U	1000 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW05-00	63-TW06-00	63-TW07-00	63-TW08-00
DATE SAMPLED	11/10/95	11/10/95	11/11/95	11/09/95
DEPTH	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)				
DIBENZOFURAN	390 U	370 U	400 U	400 U
2,4-DINITROTOLUENE	390 U	370 U	400 U	400 U
DIETHYLPHTHALATE	390 U	370 U	400 U	400 U
4-CHLOROPHENYL-PHENYLETHER	390 U	370 U	400 U	400 U
FLUORENE	390 U	370 U	400 U	400 U
4-NITROANILINE	980 U	920 U	1000 U	1000 U
4,6-DINITRO-2-METHYLPHENOL	980 U	920 U	1000 U	1000 U
N-NITROSODIPHENYLAMINE (1)	390 U	370 U	400 U	400 U
4-BROMOPHENYL-PHENYLETHER	390 U	370 U	400 U	400 U
HEXACHLOROBENZENE	390 U	370 U	400 U	400 U
PENTACHLOROPHENOL	980 U	920 U	1000 U	1000 U
PHENANTHRENE	390 U	370 U	400 U	400 U
ANTHRACENE	390 U	370 U	400 U	400 U
CARBAZOLE	390 U	370 U	400 U	400 U
DI-N-BUTYLPHTHALATE	390 U	78 J	400 U	1100 U
FLUORANTHENE	390 U	370 U	400 U	400 U
PYRENE	390 U	370 U	400 U	400 U
BUTYLBENZYLPHTHALATE	390 U	370 U	400 U	400 U
3,3'-DICHLOROBENZIDINE	390 U	370 U	400 U	400 U
BENZO(A)ANTHRACENE	390 U	370 U	400 U	400 U
CHRYSENE	390 U	370 U	400 U	400 U
BIS(2-ETHYLHEXYL)PHTHALATE	390 U	370 U	400 U	400 U
DI-N-OCTYL PHTHALATE	390 U	370 U	400 U	400 U
BENZO(B)FLUORANTHENE	390 U	370 U	400 U	400 U
BENZO(K)FLUORANTHENE	390 U	370 U	400 U	400 U
BENZO(A)PYRENE	390 U	370 U	400 U	400 U
INDENO(1,2,3-CD)PYRENE	390 U	370 U	400 U	400 U
DIBENZO(A,H)ANTHRACENE	390 U	370 U	400 U	400 U
BENZO(G,H,I)PERYLENE	390 U	370 U	400 U	400 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW05-00	63-TW06-00	63-TW07-00	63-TW08-00
DATE SAMPLED	11/10/95	11/10/95	11/11/95	11/09/95
DEPTH	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)				
ALPHA-BHC	1.9 U	1.8 U	2 U	2.1 U
BETA-BHC	1.9 U	1.8 U	2 U	2.1 U
DELTA-BHC	1.9 UJ	1.8 UJ	2 U	2.1 UJ
HEPTACHLOR	1.9 U	1.8 U	2 U	2.1 U
ALDRIN	1.9 U	1.8 U	2 U	2.1 U
HEPTACHLOR EPOXIDE	1.9 U	1.8 U	2 U	2.1 U
ENDOSULFAN I	1.9 U	1.8 U	2 U	2.1 U
DIELDRIN	3.9 U	3.7 U	4 U	4.1 U
4,4'-DDE	3.9 UJ	3.7 UJ	3.6 J	4.1 U
ENDRIN	3.9 U	3.7 U	4 U	4.1 U
4,4'-DDD	3.9 U	3.7 U	4 U	4.1 U
ENDOSULFAN SULFATE	3.9 U	3.7 U	4 U	4.1 U
4,4'-DDT	3.9 U	3.7 U	12	4.1 U
METHOXYCHLOR	19 U	18 U	20 U	21 U
ENDRIN KETONE	3.9 U	3.7 U	4 U	4.1 U
ENDRIN ALDEHYDE	3.9 U	3.7 U	4 U	4.1 U
ALPHA-CHLORDANE	1.9 U	1.8 U	2 U	2.1 U
GAMMA-CHLORDANE	1.9 U	1.8 U	2 U	2.1 U
TOXAPHENE	190 U	180 U	200 U	210 U
AROCLOR-1016	39 U	37 U	40 U	41 U
AROCLOR-1221	78 U	73 U	81 U	82 U
AROCLOR-1232	39 U	37 U	40 U	41 U
AROCLOR-1242	39 U	37 U	40 U	41 U
AROCLOR-1248	39 U	37 U	40 U	41 U
AROCLOR-1254	39 U	37 U	40 U	41 U
AROCLOR-1260	39 U	37 U	40 U	41 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
VOLATILES (ug/kg)								
CHLOROMETHANE	10 U	14 U	ND	ND		0/46	NA	NA
BROMOMETHANE	10 U	14 U	ND	ND		0/46	NA	NA
VINYL CHLORIDE	10 U	14 U	ND	ND		0/46	NA	NA
CHLOROETHANE	10 U	14 U	ND	ND		0/46	NA	NA
METHYLENE CHLORIDE	11 U	14 U	14	34 J	63-SB25-00	3/46	22.67	20.00
ACETONE	10 U	14 U	11 J	11 J	63-SB36-00	1/46	11.00	11.00
CARBON DISULFIDE	10 U	14 U	ND	ND		0/46	NA	NA
1,1-DICHLOROETHENE	10 U	14 U	ND	ND		0/46	NA	NA
1,1-DICHLOROETHANE	10 U	14 U	ND	ND		0/46	NA	NA
1,2-DICHLOROETHENE (TOTAL)	10 U	14 U	ND	ND		0/46	NA	NA
CHLOROFORM	10 U	14 U	ND	ND		0/46	NA	NA
1,2-DICHLOROETHANE	10 U	14 U	ND	ND		0/46	NA	NA
2-BUTANONE	10 U	14 U	ND	ND		0/46	NA	NA
1,1,1-TRICHLOROETHANE	10 U	14 U	ND	ND		0/46	NA	NA
CARBON TETRACHLORIDE	10 U	14 U	ND	ND		0/46	NA	NA
BROMODICHLOROMETHANE	10 U	14 U	ND	ND		0/46	NA	NA
1,2-DICHLOROPROPANE	10 U	14 U	ND	ND		0/46	NA	NA
CIS-1,3-DICHLOROPROPENE	10 U	14 U	ND	ND		0/46	NA	NA
TRICHLOROETHENE	10 U	14 U	ND	ND		0/46	NA	NA
DIBROMOCHLOROMETHANE	10 U	14 U	ND	ND		0/46	NA	NA
1,1,2-TRICHLOROETHANE	10 U	14 U	ND	ND		0/46	NA	NA
BENZENE	10 U	14 U	ND	ND		0/46	NA	NA
TRANS-1,3-DICHLOROPROPENE	10 U	14 U	ND	ND		0/46	NA	NA
BROMOFORM	10 U	14 U	ND	ND		0/46	NA	NA
4-METHYL-2-PENTANONE	10 U	14 U	ND	ND		0/46	NA	NA
2-HEXANONE	10 U	14 U	ND	ND		0/46	NA	NA
TETRACHLOROETHENE	10 U	14 U	ND	ND		0/46	NA	NA
1,1,2,2-TETRACHLOROETHANE	10 U	14 U	ND	ND		0/46	NA	NA
TOLUENE	10 U	14 U	ND	ND		0/46	NA	NA
CHLOROBENZENE	10 U	14 U	ND	ND		0/46	NA	NA
ETHYLBENZENE	10 U	14 U	ND	ND		0/46	NA	NA
STYRENE	10 U	14 U	ND	ND		0/46	NA	NA
XYLENE (TOTAL)	10 U	14 U	ND	ND		0/46	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/kg)								
PHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
BIS(2-CHLOROETHYL)ETHER	340 U	2100 U	ND	ND		0/45	NA	NA
2-CHLOROPHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
1,3-DICHLOROBENZENE	340 U	2100 U	ND	ND		0/45	NA	NA
1,4-DICHLOROBENZENE	340 U	2100 U	ND	ND		0/45	NA	NA
1,2-DICHLOROBENZENE	340 U	2100 U	ND	ND		0/45	NA	NA
2-METHYLPHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	340 U	2100 U	ND	ND		0/45	NA	NA
4-METHYLPHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	340 U	2100 U	ND	ND		0/45	NA	NA
HEXACHLOROETHANE	340 U	2100 U	ND	ND		0/45	NA	NA
NITROBENZENE	340 U	2100 U	ND	ND		0/45	NA	NA
ISOPHORONE	340 U	2100 U	ND	ND		0/45	NA	NA
2-NITROPHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
2,4-DIMETHYLPHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
BIS(2-CHLOROETHOXY)METHANE	340 U	2100 U	ND	ND		0/45	NA	NA
2,4-DICHLOROPHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
1,2,4-TRICHLOROBENZENE	340 U	2100 U	ND	ND		0/45	NA	NA
NAPHTHALENE	340 U	2100 U	ND	ND		0/45	NA	NA
4-CHLOROANILINE	340 U	2100 U	ND	ND		0/45	NA	NA
HEXACHLOROBUTADIENE	340 U	2100 U	ND	ND		0/45	NA	NA
4-CHLORO-3-METHYLPHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
2-METHYLNAPHTHALENE	340 U	2100 U	ND	ND		0/45	NA	NA
HEXACHLOROCYCLOPENTADIENE	340 U	2100 U	ND	ND		0/45	NA	NA
2,4,6-TRICHLOROPHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
2,4,5-TRICHLOROPHENOL	860 U	5300 U	ND	ND		0/46	NA	NA
2-CHLORONAPHTHALENE	340 U	2100 U	ND	ND		0/45	NA	NA
2-NITROANILINE	860 U	5300 U	ND	ND		0/45	NA	NA
DIMETHYLPHTHALATE	340 U	2100 U	ND	ND		0/45	NA	NA
ACENAPHTHYLENE	340 U	2100 U	ND	ND		0/45	NA	NA
2,6-DINITROTOLUENE	340 U	2100 U	ND	ND		0/45	NA	NA
3-NITROANILINE	860 U	5300 U	ND	ND		0/45	NA	NA
ACENAPHTHENE	340 U	2100 U	ND	ND		0/45	NA	NA
2,4-DINITROPHENOL	860 U	5300 U	ND	ND		0/46	NA	NA
4-NITROPHENOL	860 U	5300 U	ND	ND		0/46	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/kg) (cont)								
DIBENZOFURAN	340 U	2100 U	ND	ND		0/45	NA	NA
2,4-DINITROTOLUENE	340 U	2100 U	ND	ND		0/45	NA	NA
DIETHYLPHTHALATE	340 U	2100 U	ND	ND		0/45	NA	NA
4-CHLOROPHENYL-PHENYLETHER	340 U	2100 U	ND	ND		0/45	NA	NA
FLUORENE	340 U	2100 U	ND	ND		0/45	NA	NA
4-NITROANILINE	860 U	5300 U	ND	ND		0/45	NA	NA
4,6-DINITRO-2-METHYLPHENOL	860 U	5300 U	ND	ND		0/46	NA	NA
N-NITROSODIPHENYLAMINE (1)	340 U	2100 U	51 J	51 J	63-SB12-00	1/45	51.00	51.00
4-BROMOPHENYL-PHENYLETHER	340 U	2100 U	ND	ND		0/45	NA	NA
HEXACHLOROBENZENE	340 U	2100 U	ND	ND		0/45	NA	NA
PENTACHLOROPHENOL	860 U	5300 U	ND	ND		0/46	NA	NA
PHENANTHRENE	340 U	2100 U	ND	ND		0/45	NA	NA
ANTHRACENE	340 U	2100 U	ND	ND		0/45	NA	NA
CARBAZOLE	340 U	2100 U	ND	ND		0/45	NA	NA
DI-N-BUTYLPHTHALATE	350 U	2100 U	78 J	78 J	63-TW06-00	1/45	78.00	78.00
FLUORANTHENE	340 U	2100 U	ND	ND		0/45	NA	NA
PYRENE	340 U	2100 U	ND	ND		0/45	NA	NA
BUTYLBENZYLPHTHALATE	340 U	2100 U	ND	ND		0/45	NA	NA
3,3'-DICHLOROBENZIDINE	340 U	2100 U	ND	ND		0/45	NA	NA
BENZO(A)ANTHRACENE	340 U	2100 U	ND	ND		0/45	NA	NA
CHRYSENE	340 U	2100 U	ND	ND		0/45	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	340 U	2100 U	41 J	4400	63-SB12-00	7/45	697.43	65.00
DI-N-OCTYL PHTHALATE	340 U	2100 U	ND	ND		0/45	NA	NA
BENZO(B)FLUORANTHENE	340 U	2100 U	ND	ND		0/45	NA	NA
BENZO(K)FLUORANTHENE	340 U	2100 U	ND	ND		0/45	NA	NA
BENZO(A)PYRENE	340 U	2100 U	ND	ND		0/45	NA	NA
INDENO(1,2,3-CD)PYRENE	340 U	2100 U	ND	ND		0/45	NA	NA
DIBENZO(A,H)ANTHRACENE	340 U	2100 U	ND	ND		0/45	NA	NA
BENZO(G,H,I)PERYLENE	340 U	2100 U	ND	ND		0/45	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
PESTICIDE/PCBS (ug/kg)								
ALPHA-BHC	1.7 U	2.2 U	ND	ND		0/45	NA	NA
BETA-BHC	1.7 U	2.2 U	ND	ND		0/45	NA	NA
DELTA-BHC	1.7 UJ	2.2 UJ	ND	ND		0/45	NA	NA
HEPTACHLOR	1.7 UJ	2.2 U	ND	ND		0/45	NA	NA
ALDRIN	1.7 U	2.2 U	ND	ND		0/45	NA	NA
HEPTACHLOR EPOXIDE	1.7 U	2.2 U	ND	ND		0/45	NA	NA
ENDOSULFAN I	1.7 U	2.2 U	ND	ND		0/45	NA	NA
DIELDRIN	3.5 U	4.4 UJ	3 J	4.1 J	63-SB32-00	3/46	3.60	3.70
4,4'-DDE	3.5 U	4.4 UJ	2.7 J	55 J	63-SB35-00	7/45	17.11	3.60
ENDRIN	3.5 UJ	4.4 UJ	ND	ND		0/45	NA	NA
4,4'-DDD	3.5 U	4.4 UJ	12	26 J	63-SB35-00	2/45	19.00	19.00
ENDOSULFAN SULFATE	3.5 U	4.4 UJ	1.9 J	2.8 J	63-SB18-00	4/45	2.30	2.25
4,4'-DDT	3.5 U	4.4 UJ	2 J	50 J	63-SB29-00	11/45	10.61	3.80
METHOXYCHLOR	17 U	22 U	ND	ND		0/45	NA	NA
ENDRIN KETONE	3.5 U	4.4 UJ	ND	ND		0/45	NA	NA
ENDRIN ALDEHYDE	3.5 U	4.4 UJ	ND	ND		0/45	NA	NA
ALPHA-CHLORDANE	1.7 U	2.2 UJ	3.5	16	63-SB35-00	2/45	9.75	9.75
GAMMA-CHLORDANE	1.7 U	2.2 UJ	2.7 J	9	63-SB35-00	2/45	5.85	5.85
TOXAPHENE	170 U	220 U	ND	ND		0/45	NA	NA
AROCLOR-1016	35 U	44 UJ	ND	ND		0/45	NA	NA
AROCLOR-1221	70 U	89 UJ	ND	ND		0/45	NA	NA
AROCLOR-1232	35 U	44 UJ	ND	ND		0/45	NA	NA
AROCLOR-1242	35 U	44 UJ	ND	ND		0/45	NA	NA
AROCLOR-1248	35 U	44 UJ	ND	ND		0/45	NA	NA
AROCLOR-1254	35 U	44 UJ	ND	ND		0/45	NA	NA
AROCLOR-1260	35 U	44 UJ	28 J	97	63-SB30-00	2/45	62.50	62.50

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
VOLATILES (ug/kg)								
CHLOROMETHANE	10 U	14 U	ND	ND		0/46	NA	NA
BROMOMETHANE	10 U	14 U	ND	ND		0/46	NA	NA
VINYL CHLORIDE	10 U	14 U	ND	ND		0/46	NA	NA
CHLOROETHANE	10 U	14 U	ND	ND		0/46	NA	NA
METHYLENE CHLORIDE	11 U	14 U	14	34 J	63-SB25-00	3/46	22.67	20.00
ACETONE	10 U	14 U	11 J	11 J	63-SB36-00	1/46	11.00	11.00
CARBON DISULFIDE	10 U	14 U	ND	ND		0/46	NA	NA
1,1-DICHLOROETHENE	10 U	14 U	ND	ND		0/46	NA	NA
1,1-DICHLOROETHANE	10 U	14 U	ND	ND		0/46	NA	NA
1,2-DICHLOROETHENE (TOTAL)	10 U	14 U	ND	ND		0/46	NA	NA
CHLOROFORM	10 U	14 U	ND	ND		0/46	NA	NA
1,2-DICHLOROETHANE	10 U	14 U	ND	ND		0/46	NA	NA
2-BUTANONE	10 U	14 U	ND	ND		0/46	NA	NA
1,1,1-TRICHLOROETHANE	10 U	14 U	ND	ND		0/46	NA	NA
CARBON TETRACHLORIDE	10 U	14 U	ND	ND		0/46	NA	NA
BROMODICHLOROMETHANE	10 U	14 U	ND	ND		0/46	NA	NA
1,2-DICHLOROPROPANE	10 U	14 U	ND	ND		0/46	NA	NA
CIS-1,3-DICHLOROPROPENE	10 U	14 U	ND	ND		0/46	NA	NA
TRICHLOROETHENE	10 U	14 U	ND	ND		0/46	NA	NA
DIBROMOCHLOROMETHANE	10 U	14 U	ND	ND		0/46	NA	NA
1,1,2-TRICHLOROETHANE	10 U	14 U	ND	ND		0/46	NA	NA
BENZENE	10 U	14 U	ND	ND		0/46	NA	NA
TRANS-1,3-DICHLOROPROPENE	10 U	14 U	ND	ND		0/46	NA	NA
BROMOFORM	10 U	14 U	ND	ND		0/46	NA	NA
4-METHYL-2-PENTANONE	10 U	14 U	ND	ND		0/46	NA	NA
2-HEXANONE	10 U	14 U	ND	ND		0/46	NA	NA
TETRACHLOROETHENE	10 U	14 U	ND	ND		0/46	NA	NA
1,1,2,2-TETRACHLOROETHANE	10 U	14 U	ND	ND		0/46	NA	NA
TOLUENE	10 U	14 U	ND	ND		0/46	NA	NA
CHLOROBENZENE	10 U	14 U	ND	ND		0/46	NA	NA
ETHYLBENZENE	10 U	14 U	ND	ND		0/46	NA	NA
STYRENE	10 U	14 U	ND	ND		0/46	NA	NA
XYLENE (TOTAL)	10 U	14 U	ND	ND		0/46	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/kg)								
PHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
BIS(2-CHLOROETHYL)ETHER	340 U	2100 U	ND	ND		0/45	NA	NA
2-CHLOROPHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
1,3-DICHLOROBENZENE	340 U	2100 U	ND	ND		0/45	NA	NA
1,4-DICHLOROBENZENE	340 U	2100 U	ND	ND		0/45	NA	NA
1,2-DICHLOROBENZENE	340 U	2100 U	ND	ND		0/45	NA	NA
2-METHYLPHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	340 U	2100 U	ND	ND		0/45	NA	NA
4-METHYLPHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	340 U	2100 U	ND	ND		0/45	NA	NA
HEXACHLOROETHANE	340 U	2100 U	ND	ND		0/45	NA	NA
NITROBENZENE	340 U	2100 U	ND	ND		0/45	NA	NA
ISOPHORONE	340 U	2100 U	ND	ND		0/45	NA	NA
2-NITROPHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
2,4-DIMETHYLPHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
BIS(2-CHLOROETHOXY)METHANE	340 U	2100 U	ND	ND		0/45	NA	NA
2,4-DICHLOROPHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
1,2,4-TRICHLOROBENZENE	340 U	2100 U	ND	ND		0/45	NA	NA
NAPHTHALENE	340 U	2100 U	ND	ND		0/45	NA	NA
4-CHLOROANILINE	340 U	2100 U	ND	ND		0/45	NA	NA
HEXACHLOROBUTADIENE	340 U	2100 U	ND	ND		0/45	NA	NA
4-CHLORO-3-METHYLPHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
2-METHYLNAPHTHALENE	340 U	2100 U	ND	ND		0/45	NA	NA
HEXACHLOROCYCLOPENTADIENE	340 U	2100 U	ND	ND		0/45	NA	NA
2,4,6-TRICHLOROPHENOL	340 U	2100 U	ND	ND		0/46	NA	NA
2,4,5-TRICHLOROPHENOL	860 U	5300 U	ND	ND		0/46	NA	NA
2-CHLORONAPHTHALENE	340 U	2100 U	ND	ND		0/45	NA	NA
2-NITROANILINE	860 U	5300 U	ND	ND		0/45	NA	NA
DIMETHYLPHTHALATE	340 U	2100 U	ND	ND		0/45	NA	NA
ACENAPHTHYLENE	340 U	2100 U	ND	ND		0/45	NA	NA
2,6-DINITROTOLUENE	340 U	2100 U	ND	ND		0/45	NA	NA
3-NITROANILINE	860 U	5300 U	ND	ND		0/45	NA	NA
ACENAPHTHENE	340 U	2100 U	ND	ND		0/45	NA	NA
2,4-DINITROPHENOL	860 U	5300 U	ND	ND		0/46	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (cont)								
4-NITROPHENOL	860 U	5300 U	ND	ND		0/46	NA	NA
DIBENZOFURAN	340 U	2100 U	ND	ND		0/45	NA	NA
2,4-DINITROTOLUENE	340 U	2100 U	ND	ND		0/45	NA	NA
DIETHYLPHTHALATE	340 U	2100 U	ND	ND		0/45	NA	NA
4-CHLOROPHENYL-PHENYLETHER	340 U	2100 U	ND	ND		0/45	NA	NA
FLUORENE	340 U	2100 U	ND	ND		0/45	NA	NA
4-NITROANILINE	860 U	5300 U	ND	ND		0/45	NA	NA
4,6-DINITRO-2-METHYLPHENOL	860 U	5300 U	ND	ND		0/46	NA	NA
N-NITROSODIPHENYLAMINE (1)	340 U	2100 U	51 J	51 J	63-SB12-00	1/45	51.00	51.00
4-BROMOPHENYL-PHENYLETHER	340 U	2100 U	ND	ND		0/45	NA	NA
HEXACHLOROBENZENE	340 U	2100 U	ND	ND		0/45	NA	NA
PENTACHLOROPHENOL	860 U	5300 U	ND	ND		0/46	NA	NA
PHENANTHRENE	340 U	2100 U	ND	ND		0/45	NA	NA
ANTHRACENE	340 U	2100 U	ND	ND		0/45	NA	NA
CARBAZOLE	340 U	2100 U	ND	ND		0/45	NA	NA
DI-N-BUTYLPHTHALATE	350 U	2100 U	78 J	78 J	63-TW06-00	1/45	78.00	78.00
FLUORANTHENE	340 U	2100 U	ND	ND		0/45	NA	NA
PYRENE	340 U	2100 U	ND	ND		0/45	NA	NA
BUTYLBENZYLPHTHALATE	340 U	2100 U	ND	ND		0/45	NA	NA
3,3'-DICHLOROBENZIDINE	340 U	2100 U	ND	ND		0/45	NA	NA
BENZO(A)ANTHRACENE	340 U	2100 U	ND	ND		0/45	NA	NA
CHRYSENE	340 U	2100 U	ND	ND		0/45	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	340 U	2100 U	41 J	4400	63-SB12-00	7/45	697.43	65.00
DI-N-OCTYL PHTHALATE	340 U	2100 U	ND	ND		0/45	NA	NA
BENZO(B)FLUORANTHENE	340 U	2100 U	ND	ND		0/45	NA	NA
BENZO(K)FLUORANTHENE	340 U	2100 U	ND	ND		0/45	NA	NA
BENZO(A)PYRENE	340 U	2100 U	ND	ND		0/45	NA	NA
INDENO(1,2,3-CD)PYRENE	340 U	2100 U	ND	ND		0/45	NA	NA
DIBENZO(A,H)ANTHRACENE	340 U	2100 U	ND	ND		0/45	NA	NA
BENZO(G,H,I)PERYLENE	340 U	2100 U	ND	ND		0/45	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
PESTICIDE/PCBS (ug/kg)								
ALPHA-BHC	1.7 U	2.2 U	ND	ND		0/45	NA	NA
BETA-BHC	1.7 U	2.2 U	ND	ND		0/45	NA	NA
DELTA-BHC	1.7 UJ	2.2 UJ	ND	ND		0/45	NA	NA
HEPTACHLOR	1.7 UJ	2.2 U	ND	ND		0/45	NA	NA
ALDRIN	1.7 U	2.2 U	ND	ND		0/45	NA	NA
HEPTACHLOR EPOXIDE	1.7 U	2.2 U	ND	ND		0/45	NA	NA
ENDOSULFAN I	1.7 U	2.2 U	ND	ND		0/45	NA	NA
DIELDRIN	3.5 U	4.4 UJ	3 J	4.1 J	63-SB32-00	3/46	3.60	3.70
4,4'-DDE	3.5 U	4.4 UJ	2.7 J	55 J	63-SB35-00	7/45	17.11	3.60
ENDRIN	3.5 UJ	4.4 UJ	ND	ND		0/45	NA	NA
4,4'-DDD	3.5 U	4.4 UJ	12	26 J	63-SB35-00	2/45	19.00	19.00
ENDOSULFAN SULFATE	3.5 U	4.4 UJ	1.9 J	2.8 J	63-SB18-00	4/45	2.30	2.25
4,4'-DDT	3.5 U	4.4 UJ	2 J	50 J	63-SB29-00	11/45	10.61	3.80
METHOXYCHLOR	17 U	22 U	ND	ND		0/45	NA	NA
ENDRIN KETONE	3.5 U	4.4 UJ	ND	ND		0/45	NA	NA
ENDRIN ALDEHYDE	3.5 U	4.4 UJ	ND	ND		0/45	NA	NA
ALPHA-CHLORDANE	1.7 U	2.2 UJ	3.5	16	63-SB35-00	2/45	9.75	9.75
GAMMA-CHLORDANE	1.7 U	2.2 UJ	2.7 J	9	63-SB35-00	2/45	5.85	5.85
TOXAPHENE	170 U	220 U	ND	ND		0/45	NA	NA
AROCLOR-1016	35 U	44 UJ	ND	ND		0/45	NA	NA
AROCLOR-1221	70 U	89 UJ	ND	ND		0/45	NA	NA
AROCLOR-1232	35 U	44 UJ	ND	ND		0/45	NA	NA
AROCLOR-1242	35 U	44 UJ	ND	ND		0/45	NA	NA
AROCLOR-1248	35 U	44 UJ	ND	ND		0/45	NA	NA
AROCLOR-1254	35 U	44 UJ	ND	ND		0/45	NA	NA
AROCLOR-1260	35 U	44 UJ	28 J	97	63-SB30-00	2/45	62.50	62.50

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB01-00	63-SB02-00	63-SB03-00	63-SB04-00	63-SB05-00	63-SB06-00
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/06/95	11/11/95	11/10/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	1510	2990	2400	4450 J	6080	1720
ANTIMONY, TOTAL	2.1 J	2.3 UJ	2.3 R	2.6 U	2.9 R	4.3 J
ARSENIC, TOTAL	0.29 UJ	0.53 J	0.32 UJ	1.2	1.1 J	0.46 J
BARIUM, TOTAL	7.3	8.4	14.8	17.1	23.8	6.2
BERYLLIUM, TOTAL	0.05 U	0.06 U	0.06 UJ	0.06 U	0.1 J	0.05 U
CADMIUM, TOTAL	0.68 U	0.79 U	0.79 U	0.88 U	0.98 U	0.77 U
CALCIUM, TOTAL	69.3	35.9	22.1 U	332	271	185
CHROMIUM, TOTAL	1.4	2.6	1.8 J	4.9	5.6 J	1.7
COBALT, TOTAL	0.36 U	0.42 U	0.42 U	0.55	0.51 U	0.4 U
COPPER, TOTAL	0.32 U	0.38 U	4.8	0.88 U	6.3	0.36 U
IRON, TOTAL	932	2380	1060 J	4470	5410 J	1740
LEAD, TOTAL	7.7	9	3.4 J	14.9 J	15.6 J	8.7
MAGNESIUM, TOTAL	38.2	79.7	54	178	200	71
MANGANESE, TOTAL	9	7	348 J	47.2	75.1 J	10
MERCURY, TOTAL	0.05 U	0.05 U	0.05 U	0.06 U	0.07	0.05 U
NICKEL, TOTAL	0.62 J	0.99 J	1.8	1.9	2.4	0.91 J
POTASSIUM, TOTAL	45.3	100	43.2	179	181	91.3
SELENIUM, TOTAL	0.27 UJ	0.3 UJ	0.3 U	0.31 U	0.33 U	0.32 UJ
SILVER, TOTAL	0.52 U	0.6 U	0.6 U	0.67 U	0.74 U	0.58 U
SODIUM, TOTAL	11.3 U	10.5 U	10.8	21.7 U	20.9	12.7 U
THALLIUM, TOTAL	0.11 U	0.12 U	0.12 U	0.12 UJ	0.13 U	0.13 U
VANADIUM, TOTAL	3.1	5.1	2.2 J	8.2	9 J	3.3
ZINC, TOTAL	1.2	2.1	2.9	5.6	7.7	2.9

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB07-00	63-SB08-00	63-SB09-00	63-SB10-00	63-SB11-00	63-SB12-00
DATE SAMPLED	11/11/95	11/10/95	11/10/95	11/09/95	11/09/95	11/07/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	2550	2570	2850	5950 J	1320 J	1670 J
ANTIMONY, TOTAL	2.4 UJ	2.1 UJ	2 UJ	5 U	5 U	2.3 UJ
ARSENIC, TOTAL	0.47 J	1.2 J	0.6 J	0.88 J	0.36	0.34 U
BARIUM, TOTAL	6.4	7.9	8.2	18.8	4.7	5.4
BERYLLIUM, TOTAL	0.06 U	0.051 U	0.05 U	0.21 U	0.21 U	0.06 U
CADMIUM, TOTAL	0.81 U	0.71 U	0.69 U	0.45 U	0.44 U	0.78 U
CALCIUM, TOTAL	51.4	127	103	154	42.2	42.6 U
CHROMIUM, TOTAL	1.5	2.2	2.4	5.2	1.2	1.7
COBALT, TOTAL	0.42 U	0.37 U	0.36 U	1.1	0.72 U	0.41 U
COPPER, TOTAL	0.39 U	0.55	0.33 U	1.1	0.47	0.89
IRON, TOTAL	1960	2410	2050	3200	973	1220 J
LEAD, TOTAL	2.6	7	6.9	13 J	5.1 J	3.9
MAGNESIUM, TOTAL	62.4	80.6	88.3	168	49.7	44.4
MANGANESE, TOTAL	14.2	21.9	6.7	29.6	6.7	18.6
MERCURY, TOTAL	0.06 U	0.05 U	0.06	0.06 U	0.06 U	0.05 U
NICKEL, TOTAL	0.71 U	0.62 U	1 J	3.4	2.3 U	0.87
POTASSIUM, TOTAL	71.5	77.5	84.2	167 U	166 U	40.8 J
SELENIUM, TOTAL	0.32 UJ	0.28 UJ	0.28 UJ	0.27	0.31 U	0.32 UJ
SILVER, TOTAL	0.62 U	0.54 U	0.52 U	0.62 U	0.61 U	0.72
SODIUM, TOTAL	10.1 U	11.5 U	15.5 U	17 U	10.2 U	10.8 U
THALLIUM, TOTAL	0.13 U	0.11 U	0.11 U	0.23 UJ	0.27 UJ	0.13 U
VANADIUM, TOTAL	3.1	4.7	4.5	8.6	2.5	2.1
ZINC, TOTAL	2	2.3	2.9	6.9	3.8 U	3.3 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB13-00	63-SB14-00	63-SB15-00	63-SB16-00	63-SB17-00	63-SB18-00
DATE SAMPLED	11/06/95	11/08/95	11/06/95	11/08/95	11/08/95	11/07/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	1040 J	1440	2110 J	3700	2670	7050 J
ANTIMONY, TOTAL	2.2 U	3.2 J	2.4 U	2.3 UJ	2.3 UJ	2.6 UJ
ARSENIC, TOTAL	0.51	0.36 U	0.43	1.7	0.82	1.4
BARIUM, TOTAL	3	3.5	4.6	8.5	5.9	27.3
BERYLLIUM, TOTAL	0.05 U	0.07 U	0.06 U	0.2	0.06 U	0.1
CADMIUM, TOTAL	0.76 U	0.95 U	0.82 U	0.77 U	0.78 U	0.87 U
CALCIUM, TOTAL	29.2	26.3	13.2	10.4	36.4	289 J
CHROMIUM, TOTAL	1.7	1.6	2.6	7.4	4	6.8
COBALT, TOTAL	0.4 U	0.5 UJ	0.43 U	0.4 UJ	0.41 UJ	0.46 U
COPPER, TOTAL	0.68 U	0.45 UJ	0.39 U	5.9 J	1.4 J	2.3
IRON, TOTAL	1220	2230	1290	3120	2590	4870 J
LEAD, TOTAL	9.8 J	6.7	7.2 J	7.6	5.6	15.9
MAGNESIUM, TOTAL	38.5	37.1	48.4	197	127	217
MANGANESE, TOTAL	4.1	5.9	6.4	7.3	10.4	14.2
MERCURY, TOTAL	0.04 U	0.05 U	0.05 U	0.05 U	0.05 U	0.06 U
NICKEL, TOTAL	0.67 U	0.84 U	0.72 U	0.74	0.94	2.2
POTASSIUM, TOTAL	58.1	55 U	55.4	341	218	164 J
SELENIUM, TOTAL	0.27 U	0.34 U	0.32 U	0.34 U	0.32 U	0.35 UJ
SILVER, TOTAL	0.58 U	0.72 U	0.63 U	0.59 U	0.6 U	0.66 U
SODIUM, TOTAL	5.8 U	5.2 U	13.2 U	5.8 U	8.6 U	34.7
THALLIUM, TOTAL	0.11 UJ	0.13 U	0.13 UJ	0.14 U	0.13 U	0.14 U
VANADIUM, TOTAL	2.5	3.4	4.6	8.9	6.2	11
ZINC, TOTAL	2.2 U	1.5	2.5 U	7.6	3.9	10.4

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB19-00	63-SB20-00	63-SB21-00	63-SB22-00	63-SB23-00	63-SB24-00
DATE SAMPLED	11/06/95	11/09/95	11/08/95	11/07/95	11/07/95	11/07/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	869 J	1840 J	4050	3250	1400 J	1300 J
ANTIMONY, TOTAL	2.4 J	3.8 U	2.2 UJ	3 J	2.5 UJ	2.6 J
ARSENIC, TOTAL	0.27 U	0.64	3.7	1.3	1.1	0.5
BARIUM, TOTAL	3.7	5.8	25.3	9.2	4.5	34.6
BERYLLIUM, TOTAL	0.06 U	0.16 U	0.05 U	0.07 U	0.06 U	0.05 U
CADMIUM, TOTAL	0.79 U	0.34 U	3.1	0.94 U	0.85 U	0.72 U
CALCIUM, TOTAL	34.3 U	1840	185	46.5 U	2780 J	89.8 U
CHROMIUM, TOTAL	1.1	4.2	11.1	5.5	2.9	1.8
COBALT, TOTAL	0.42 U	0.55 U	2.3 J	0.49 UJ	0.49	0.38 U
COPPER, TOTAL	0.38 U	10	31.2	7.9 J	10.3	11.2
IRON, TOTAL	1650 J	4180	22400 J	4010 J	1560 J	1510 J
LEAD, TOTAL	5.1	11.6 J	58.2	14.7	27.6	9.2
MAGNESIUM, TOTAL	28.4	199	129	139	47.8	42.2
MANGANESE, TOTAL	13.7	49.5	134 J	6.9 J	13.1	13.9
MERCURY, TOTAL	0.04 U	0.08	0.06 U	0.05 U	0.21 J	0.05 U
NICKEL, TOTAL	1.1	2.3	9.8	1.5	1.6	1.9
POTASSIUM, TOTAL	47.8 J	128 U	349	198 J	21.8 J	47.1 J
SELENIUM, TOTAL	0.26 UJ	0.26 U	0.31 U	0.27 U	0.24 UJ	0.32 UJ
SILVER, TOTAL	0.6 U	0.47 U	0.58 U	0.72 U	0.65 U	0.55 U
SODIUM, TOTAL	7.3 U	100	41.1	5.3	5.2 U	5.1 U
THALLIUM, TOTAL	0.1 U	0.23 UJ	0.13 UJ	0.11 U	0.1 U	0.13 U
VANADIUM, TOTAL	2.1	3.2	10	8	2.5	3
ZINC, TOTAL	0.98	182	1860	6.7	64.2	13.1

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB25-00	63-SB26-00	63-SB27-00	63-SB28-00	63-SB29-00	63-SB30-00
DATE SAMPLED	11/06/95	11/06/95	11/06/95	11/07/95	11/07/95	11/09/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	952 J	686 J	1210 J	4900	3420 J	2870
ANTIMONY, TOTAL	2.6 U	2.4 UJ	1.9 U	2 UJ	2.9 UJ	2.6 UJ
ARSENIC, TOTAL	0.3 U	0.43	0.27 U	0.71	1.1	0.59
BARIUM, TOTAL	6.2	3.6	5.4	7.5	25.6	10.4
BERYLLIUM, TOTAL	0.06 U	0.06 U	0.05 U	0.05 U	0.15	0.06 U
CADMIUM, TOTAL	0.89 U	0.8 U	0.63 U	0.68 U	0.98 U	0.87 U
CALCIUM, TOTAL	247	17.4 U	16.8	18.2 U	208 U	138
CHROMIUM, TOTAL	4.2	1.4	2.2	6.5	9.1	4.5
COBALT, TOTAL	0.65	0.42 U	0.33 U	0.36 UJ	4.3	0.46 UJ
COPPER, TOTAL	8.2	0.38 U	0.3 U	6.8 J	74.8	8.2 J
IRON, TOTAL	825	1320 J	1100	1350 J	20400 J	2460
LEAD, TOTAL	8.3 J	6.3	8.7 J	8	107	17.5
MAGNESIUM, TOTAL	45.4	33.1	44.3	124	223	119
MANGANESE, TOTAL	20.5	7.6	3.6	3.4 J	90.1	15
MERCURY, TOTAL	0.05 U	0.05 U	0.05 U	0.06 U	0.05 U	0.05 U
NICKEL, TOTAL	2.1	1.5	0.56 U	1.3	8.3	0.95
POTASSIUM, TOTAL	40.6	23 J	65.2	199 J	213 J	181
SELENIUM, TOTAL	0.28 U	0.27 UJ	0.25 U	0.27 U	0.31 UJ	0.33 U
SILVER, TOTAL	0.67 U	0.61 U	0.48 U	0.52 U	0.97	0.66 U
SODIUM, TOTAL	7.8 U	4.4 U	11.7 U	3.7 U	18.5 U	6.3 U
THALLIUM, TOTAL	0.11 UJ	0.11 U	0.1 UJ	0.11 U	0.12 U	0.13 U
VANADIUM, TOTAL	2.1	2.6	2.9	7.6	8.6	6
ZINC, TOTAL	9.5	1.8 U	2.1 U	4.9	48.5	7.3

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB31-00	63-SB32-00	63-SB33-00	63-SB34-00	63-SB35-00	63-SB36-00
DATE SAMPLED	11/08/95	11/09/95	11/08/95	11/07/95	11/09/95	11/09/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	577	6300	4040	3340	2110 J	2190
ANTIMONY, TOTAL	2.6 UJ	2.8 UJ	2.7 UJ	2.5 UJ	3.9 U	2.6 J
ARSENIC, TOTAL	0.36 U	0.57	0.84	0.34	0.94	0.51
BARIUM, TOTAL	7.4	34.8	10.3	6.2	53.1	7.4
BERYLLIUM, TOTAL	0.06 U	0.27	0.07 U	0.06 U	0.17 U	0.06 U
CADMIUM, TOTAL	0.89 U	0.94 U	0.92 U	0.84 U	0.35 U	0.84 U
CALCIUM, TOTAL	135	173	28.4 U	74.4	208	116
CHROMIUM, TOTAL	0.97 U	3.9	6.6	3.9	3.8	2
COBALT, TOTAL	0.46 UJ	0.49 UJ	0.48 UJ	0.44 UJ	0.62	0.44 UJ
COPPER, TOTAL	0.42 UJ	6.2 J	0.61 J	5.1 J	24.5	0.4 UJ
IRON, TOTAL	590	3500	3320 J	1620 J	5090	1350
LEAD, TOTAL	5.8	11.2	7.8	6.1	53 J	3.7 J
MAGNESIUM, TOTAL	30.1	124	114	106	89	48.4
MANGANESE, TOTAL	8	8	15.7 J	12.7 J	17	13.4
MERCURY, TOTAL	0.05 U	0.04 U	0.06 U	0.05 U	0.04 U	0.05 U
NICKEL, TOTAL	0.78 U	1.6	0.99	2.4	1.9	0.74 U
POTASSIUM, TOTAL	37.6 U	199	192 J	121 J	131 U	49.8 U
SELENIUM, TOTAL	0.34 U	0.33 U	0.3 U	0.26 U	0.3 U	0.33
SILVER, TOTAL	0.68 U	0.72 U	0.7 U	0.64 U	0.48 U	0.64 U
SODIUM, TOTAL	4.9 U	47 U	5 U	4.6 U	11.2 U	4.6 U
THALLIUM, TOTAL	0.13 U	0.13 U	0.12 U	0.1 U	0.26 UJ	0.13 U
VANADIUM, TOTAL	1.4 U	8.5	9.4	5.5	5.1	2.8
ZINC, TOTAL	2	7.9	4.2 U	12.1	38.5	1.5

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB37-00	63-SB38-00	63-TW01-00	63-TW02-00	63-TW03-00	63-TW04-00
DATE SAMPLED	11/08/95	11/08/95	11/12/95	11/11/95	11/12/95	11/10/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	1180	3630	2270	2730	1840	1370 J
ANTIMONY, TOTAL	2.5 UJ	3.1 UJ	2.7 R	2.3 R	2.4 R	4.2 U
ARSENIC, TOTAL	0.45	0.8	0.31 UJ	0.52 J	0.35 J	0.32
BARIUM, TOTAL	5.3	11.1	7.3	7.7	4.4	3.2
BERYLLIUM, TOTAL	0.06 U	0.07 U	0.07 UJ	0.06 UJ	0.06 UJ	0.18 U
CADMIUM, TOTAL	0.86 U	1 U	0.92 U	0.78 U	0.8 U	0.38 U
CALCIUM, TOTAL	89.3	431	173	50.5	76.4	33.2 U
CHROMIUM, TOTAL	1.1	3.6	1.9 J	2.3 J	2.5 J	1.7
COBALT, TOTAL	0.45 UJ	0.55 UJ	0.48 U	0.41 U	0.42 U	0.61 U
COPPER, TOTAL	0.41 UJ	0.5 UJ	6	3.6	4.1	0.64
IRON, TOTAL	732 J	2450	1740 J	2160 J	1480 J	1450
LEAD, TOTAL	5.8	13.5	7.5 J	7.7 J	6.5 J	7 J
MAGNESIUM, TOTAL	33.5	161	64.5	80	52.7 J	39.5
MANGANESE, TOTAL	9.7 J	11.5	33 J	60.3 J	13.9 J	4
MERCURY, TOTAL	0.05 U	0.06 U	0.04 U	0.04 U	0.04 U	0.04 U
NICKEL, TOTAL	1.4	1.3	0.81 U	0.85	0.71 U	2 U
POTASSIUM, TOTAL	18.9 J	227	73.1	77.2	64.5	142 U
SELENIUM, TOTAL	0.29 U	0.37 U	0.29 U	0.28 U	0.29 U	0.26 U
SILVER, TOTAL	0.65 U	0.79 U	0.7 U	0.59 U	0.61 U	0.52 U
SODIUM, TOTAL	4.7 U	34.1 U	5.1 U	4.3 U	4.4 U	10.5 U
THALLIUM, TOTAL	0.12 U	0.15 U	0.12 U	0.11 U	0.12 U	0.22 UJ
VANADIUM, TOTAL	2	7.6	3.4 J	3.3 J	4 J	2.5
ZINC, TOTAL	3.2 U	7.2	6.2	2.9	2.9	2.8 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-TW05-00	63-TW06-00	63-TW07-00	63-TW08-00
DATE SAMPLED	11/10/95	11/10/95	11/11/95	11/09/95
DEPTH	0-6"	0-6"	0-6"	0-6"
TOTAL METALS (mg/kg)				
ALUMINUM, TOTAL	3840 J	268 J	5040	4520
ANTIMONY, TOTAL	4.7 U	4.5 U	2.2 R	3.7 J
ARSENIC, TOTAL	1.9	0.33 U	1.4 J	0.63
BARIUM, TOTAL	5.2	5.6	16.8	9.2
BERYLLIUM, TOTAL	0.2 U	0.19 U	0.05 UJ	0.07 U
CADMIUM, TOTAL	0.42 U	0.4 U	0.74 U	1
CALCIUM, TOTAL	36.6	350	233	244
CHROMIUM, TOTAL	6.7	0.4 U	7.6 J	5
COBALT, TOTAL	0.67 U	0.65 U	0.39 U	0.52 UJ
COPPER, TOTAL	2.9	0.68	16	0.48 UJ
IRON, TOTAL	3440	621	4270 J	2120
LEAD, TOTAL	7.2 J	5 J	46.3 J	8.7
MAGNESIUM, TOTAL	127	37.3	223	124
MANGANESE, TOTAL	5.8	36.7	14.7 J	8.9
MERCURY, TOTAL	0.06 U	0.04 U	0.04 U	0.05 U
NICKEL, TOTAL	2.8	2.1 U	1.4	1.7
POTASSIUM, TOTAL	275	149 U	284	138 U
SELENIUM, TOTAL	0.26 U	0.31 U	0.32 U	0.34 U
SILVER, TOTAL	0.57 U	0.55 U	0.56 U	0.76 U
SODIUM, TOTAL	13.4 U	7.3 U	14.9	10.1 U
THALLIUM, TOTAL	0.22 UJ	0.27 UJ	0.13 U	0.14 U
VANADIUM, TOTAL	9.3	0.61 U	9.6 J	6.4
ZINC, TOTAL	4.3 U	337	27.6	3.4

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
TOTAL METALS (mg/kg)								
ALUMINUM, TOTAL	NA	NA	268 J	7050 J	63-SB18-00	46/46	2740.48	2475.00
ANTIMONY, TOTAL	1.9 U	5 U	2.1 J	4.3 J	63-SB06-00	8/40	2.99	2.80
ARSENIC, TOTAL	0.27 U	0.36 U	0.32	3.7	63-SB21-00	36/46	0.87	0.64
BARIUM, TOTAL	NA	NA	3	53.1	63-SB35-00	46/46	11.27	7.40
BERYLLIUM, TOTAL	0.05 U	0.21 U	0.1 J	0.27	63-SB32-00	5/46	0.16	0.15
CADMIUM, TOTAL	0.34 U	1 U	1	3.1	63-SB21-00	2/46	2.05	2.05
CALCIUM, TOTAL	17.4 U	208 U	10.4	2780 J	63-SB23-00	36/46	260.34	131.00
CHROMIUM, TOTAL	0.4 U	0.97 U	1.1	11.1	63-SB21-00	44/46	3.71	2.75
COBALT, TOTAL	0.33 U	0.72 U	0.49	4.3	63-SB29-00	7/46	1.43	0.65
COPPER, TOTAL	0.3 U	0.88 U	0.47	74.8	63-SB29-00	29/46	9.06	5.90
IRON, TOTAL	NA	NA	590	22400 J	63-SB21-00	46/46	3083.11	2005.00
LEAD, TOTAL	NA	NA	2.6	107	63-SB29-00	46/46	13.82	7.75
MAGNESIUM, TOTAL	NA	NA	28.4	223	63-TW07-00	46/46	95.82	79.85
MANGANESE, TOTAL	NA	NA	3.4 J	348 J	63-SB03-00	46/46	27.98	13.25
MERCURY, TOTAL	0.04 U	0.06 U	0.06	0.21 J	63-SB23-00	4/46	0.11	0.08
NICKEL, TOTAL	0.56 U	2.3 U	0.62 J	9.8	63-SB21-00	33/46	2.01	1.50
POTASSIUM, TOTAL	37.6 U	167 U	18.9 J	349	63-SB21-00	36/46	129.65	87.75
SELENIUM, TOTAL	0.24 UJ	0.37 U	0.27	0.33	63-SB36-00	2/46	0.30	0.30
SILVER, TOTAL	0.47 U	0.79 U	0.72	0.97	63-SB29-00	2/46	0.85	0.85
SODIUM, TOTAL	3.7 U	47 U	5.3	100	63-SB20-00	7/46	32.53	20.90
THALLIUM, TOTAL	0.1 U	0.27 UJ	ND	ND		0/46	NA	NA
VANADIUM, TOTAL	0.61 U	1.4 U	2	11	63-SB18-00	44/46	5.25	4.55
ZINC, TOTAL	1.8 U	4.3 U	0.98	1860	63-SB21-00	36/46	75.17	6.45

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
TOTAL METALS (mg/kg)								
ALUMINUM, TOTAL	NA	NA	268 J	7050 J	63-SB18-00	46/46	2740.48	2475.00
ANTIMONY, TOTAL	1.9 U	5 U	2.1 J	4.3 J	63-SB06-00	8/40	2.99	2.80
ARSENIC, TOTAL	0.27 U	0.36 U	0.32	3.7	63-SB21-00	36/46	0.87	0.64
BARIUM, TOTAL	NA	NA	3	53.1	63-SB35-00	46/46	11.27	7.40
BERYLLIUM, TOTAL	0.05 U	0.21 U	0.1 J	0.27	63-SB32-00	5/46	0.16	0.15
CADMIUM, TOTAL	0.34 U	1 U	1	3.1	63-SB21-00	2/46	2.05	2.05
CALCIUM, TOTAL	17.4 U	208 U	10.4	2780 J	63-SB23-00	36/46	260.34	131.00
CHROMIUM, TOTAL	0.4 U	0.97 U	1.1	11.1	63-SB21-00	44/46	3.71	2.75
COBALT, TOTAL	0.33 U	0.72 U	0.49	4.3	63-SB29-00	7/46	1.43	0.65
COPPER, TOTAL	0.3 U	0.88 U	0.47	74.8	63-SB29-00	29/46	9.06	5.90
IRON, TOTAL	NA	NA	590	22400 J	63-SB21-00	46/46	3083.11	2005.00
LEAD, TOTAL	NA	NA	2.6	107	63-SB29-00	46/46	13.82	7.75
MAGNESIUM, TOTAL	NA	NA	28.4	223	63-TW07-00	46/46	95.82	79.85
MANGANESE, TOTAL	NA	NA	3.4 J	348 J	63-SB03-00	46/46	27.98	13.25
MERCURY, TOTAL	0.04 U	0.06 U	0.06	0.21 J	63-SB23-00	4/46	0.11	0.08
NICKEL, TOTAL	0.56 U	2.3 U	0.62 J	9.8	63-SB21-00	33/46	2.01	1.50
POTASSIUM, TOTAL	37.6 U	167 U	18.9 J	349	63-SB21-00	36/46	129.65	87.75
SELENIUM, TOTAL	0.24 UJ	0.37 U	0.27	0.33	63-SB36-00	2/46	0.30	0.30
SILVER, TOTAL	0.47 U	0.79 U	0.72	0.97	63-SB29-00	2/46	0.85	0.85
SODIUM, TOTAL	3.7 U	47 U	5.3	100	63-SB20-00	7/46	32.53	20.90
THALLIUM, TOTAL	0.1 U	0.27 UJ	ND	ND		0/46	NA	NA
VANADIUM, TOTAL	0.61 U	1.4 U	2	11	63-SB18-00	44/46	5.25	4.55
ZINC, TOTAL	1.8 U	4.3 U	0.98	1860	63-SB21-00	36/46	75.17	6.45

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB01-04	63-SB02-04	63-SB03-05	63-SB03-06	63-SB04-03	63-SB05-03
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/11/95	11/06/95	11/11/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)						
CHLOROMETHANE	13 U	13 U	13 U	13 U	13 U	13 U
BROMOMETHANE	13 U	13 U	13 U	13 U	13 U	13 U
VINYL CHLORIDE	13 U	13 U	13 U	13 U	13 U	13 U
CHLOROETHANE	13 U	13 U	13 U	13 U	13 U	13 U
METHYLENE CHLORIDE	13 U	13 U	13 U	13 U	13 U	13 U
ACETONE	13 U	13 U	13 U	13 U	82 J	13 U
CARBON DISULFIDE	13 U	13 U	13 U	13 U	13 U	13 U
1,1-DICHLOROETHENE	13 U	13 U	13 U	13 U	13 U	13 U
1,1-DICHLOROETHANE	13 U	13 U	13 U	13 U	13 U	13 U
1,2-DICHLOROETHENE (TOTAL)	13 U	13 U	13 U	13 U	13 U	13 U
CHLOROFORM	13 U	13 U	13 U	13 U	13 U	13 U
1,2-DICHLOROETHANE	13 U	13 U	13 U	13 U	13 U	13 U
2-BUTANONE	13 U	13 U	13 U	13 U	13 U	13 U
1,1,1-TRICHLOROETHANE	13 U	13 U	13 U	13 U	13 U	13 U
CARBON TETRACHLORIDE	13 U	13 U	13 U	13 U	13 U	13 U
BROMODICHLOROMETHANE	13 U	13 U	13 U	13 U	13 U	13 U
1,2-DICHLOROPROPANE	13 U	13 U	13 U	13 U	13 U	13 U
CIS-1,3-DICHLOROPROPENE	13 U	13 U	13 U	13 U	13 U	13 U
TRICHLOROETHENE	13 U	13 U	13 U	13 U	13 U	13 U
DIBROMOCHLOROMETHANE	13 U	13 U	13 U	13 U	13 U	13 U
1,1,2-TRICHLOROETHANE	13 U	13 U	13 U	13 U	13 U	13 U
BENZENE	13 U	13 U	13 U	13 U	13 U	13 U
TRANS-1,3-DICHLOROPROPENE	13 U	13 U	13 U	13 U	13 U	13 U
BROMOFORM	13 U	13 U	13 U	13 U	13 U	13 U
4-METHYL-2-PENTANONE	13 U	13 U	13 U	13 U	13 U	13 U
2-HEXANONE	13 U	13 U	13 U	13 U	13 U	13 U
TETRACHLOROETHENE	13 U	13 U	13 U	13 U	13 U	13 U
1,1,2,2-TETRACHLOROETHANE	13 U	13 U	13 U	13 U	13 U	13 U
TOLUENE	13 U	13 U	13 U	13 U	13 U	13 U
CHLOROBENZENE	13 U	13 U	13 U	13 U	13 U	13 U
ETHYLBENZENE	13 U	13 U	13 U	13 U	13 U	13 U
STYRENE	13 U	13 U	13 U	13 U	13 U	13 U
XYLENE (TOTAL)	13 U	13 U	13 U	13 U	13 U	13 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB01-04	63-SB02-04	63-SB03-05	63-SB03-06	63-SB04-03	63-SB05-03
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/11/95	11/06/95	11/11/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)						
PHENOL	430 U	420 U	440 U	450 U	420 U	430 U
BIS(2-CHLOROETHYL)ETHER	430 U	420 U	440 U	450 U	420 U	430 U
2-CHLOROPHENOL	430 U	420 U	440 U	450 U	420 U	430 U
1,3-DICHLOROBENZENE	430 U	420 U	440 U	450 U	420 U	430 U
1,4-DICHLOROBENZENE	430 U	420 U	440 U	450 U	420 U	430 U
1,2-DICHLOROBENZENE	430 U	420 U	440 U	450 U	420 U	430 U
2-METHYLPHENOL	430 U	420 U	440 U	450 U	420 U	430 U
2,2'-OXYBIS(1-CHLOROPROPANE)	430 U	420 U	440 U	450 U	420 U	430 U
4-METHYLPHENOL	430 U	420 U	440 U	450 U	420 U	430 U
N-NITROSO-DI-N-PROPYLAMINE	430 U	420 U	440 U	450 U	420 U	430 U
HEXACHLOROETHANE	430 U	420 U	440 U	450 U	420 U	430 U
NITROBENZENE	430 U	420 U	440 U	450 U	420 U	430 U
ISOPHORONE	430 U	420 U	440 U	450 U	420 U	430 U
2-NITROPHENOL	430 U	420 U	440 U	450 U	420 U	430 U
2,4-DIMETHYLPHENOL	430 U	420 U	440 U	450 U	420 U	430 U
BIS(2-CHLOROETHOXY)METHANE	430 U	420 U	440 U	450 U	420 U	430 U
2,4-DICHLOROPHENOL	430 U	420 U	440 U	450 U	420 U	430 U
1,2,4-TRICHLOROBENZENE	430 U	420 U	440 U	450 U	420 U	430 U
NAPHTHALENE	430 U	420 U	440 U	450 U	420 U	430 U
4-CHLOROANILINE	430 U	420 U	440 U	450 U	420 U	430 U
HEXACHLOROBUTADIENE	430 U	420 U	440 U	450 U	420 U	430 U
4-CHLORO-3-METHYLPHENOL	430 U	420 U	440 U	450 U	420 U	430 U
2-METHYLNAPHTHALENE	430 U	420 U	440 U	450 U	420 U	430 U
HEXACHLOROCYCLOPENTADIENE	430 U	420 U	440 U	450 U	420 U	430 U
2,4,6-TRICHLOROPHENOL	430 U	420 U	440 U	450 U	420 U	430 U
2,4,5-TRICHLOROPHENOL	1100 U	1100 U	1100 U	1100 U	1100 U	1100 U
2-CHLORONAPHTHALENE	430 U	420 U	440 U	450 U	420 U	430 U
2-NITROANILINE	1100 U	1100 U	1100 U	1100 U	1100 U	1100 U
DIMETHYLPHTHALATE	430 U	420 U	440 U	450 U	420 U	430 U
ACENAPHTHYLENE	430 U	420 U	440 U	450 U	420 U	430 U
2,6-DINITROTOLUENE	430 U	420 U	440 U	450 U	420 U	430 U
3-NITROANILINE	1100 U	1100 U	1100 U	1100 U	1100 U	1100 U
ACENAPHTHENE	430 U	420 U	440 U	450 U	420 U	430 U
2,4-DINITROPHENOL	1100 U	1100 U	1100 UJ	1100 UJ	1100 U	1100 UJ

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB01-04	63-SB02-04	63-SB03-05	63-SB03-06	63-SB04-03	63-SB05-03
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/11/95	11/06/95	11/11/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)						
4-NITROPHENOL	1100 U	1100 U	1100 U	1100 U	1100 U	1100 U
DIBENZOFURAN	430 U	420 U	440 U	450 U	420 U	430 U
2,4-DINITROTOLUENE	430 U	420 U	440 U	450 U	420 U	430 U
DIETHYLPHTHALATE	430 U	420 U	440 U	450 U	420 U	430 U
4-CHLOROPHENYL-PHENYLETHER	430 U	420 U	440 U	450 U	420 U	430 U
FLUORENE	430 U	420 U	440 U	450 U	420 U	430 U
4-NITROANILINE	1100 U	1100 U	1100 U	1100 U	1100 U	1100 U
4,6-DINITRO-2-METHYLPHENOL	1100 U	1100 U	1100 U	1100 U	1100 U	1100 U
N-NITROSODIPHENYLAMINE (1)	430 U	420 U	440 U	450 U	420 U	430 U
4-BROMOPHENYL-PHENYLETHER	430 U	420 U	440 U	450 U	420 U	430 U
HEXACHLOROBENZENE	430 U	420 U	440 U	450 U	420 U	430 U
PENTACHLOROPHENOL	1100 U	1100 U	1100 R	1100 U	1100 U	1100 U
PHENANTHRENE	430 U	420 U	440 U	450 U	420 U	430 U
ANTHRACENE	430 U	420 U	440 U	450 U	420 U	430 U
CARBAZOLE	430 U	420 U	440 U	450 U	420 U	430 U
DI-N-BUTYLPHTHALATE	430 U	420 U	440 U	450 U	1200 U	430 U
FLUORANTHENE	430 U	420 U	440 U	450 U	420 U	430 U
PYRENE	430 U	420 U	440 U	450 U	420 U	430 U
BUTYLBENZYLPHTHALATE	430 U	420 U	440 U	450 U	420 U	430 U
3,3'-DICHLOROBENZIDINE	430 U	420 U	440 U	450 U	420 U	430 U
BENZO(A)ANTHRACENE	430 U	420 U	440 U	450 U	420 U	430 U
CHRYSENE	430 U	420 U	440 U	450 U	420 U	430 U
BIS(2-ETHYLHEXYL)PHTHALATE	430 U	420 U	440 U	450 U	420 U	430 U
DI-N-OCTYL PHTHALATE	430 U	420 U	440 U	450 U	420 U	430 U
BENZO(B)FLUORANTHENE	430 U	420 U	440 U	450 U	420 U	430 U
BENZO(K)FLUORANTHENE	430 U	420 U	440 U	450 U	420 U	430 U
BENZO(A)PYRENE	430 U	420 U	440 U	450 U	420 U	430 U
INDENO(1,2,3-CD)PYRENE	430 U	420 U	440 U	450 U	420 U	430 U
DIBENZO(A,H)ANTHRACENE	430 U	420 U	440 U	450 U	420 U	430 U
BENZO(G,H,I)PERYLENE	430 U	420 U	440 U	450 U	420 U	430 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB01-04	63-SB02-04	63-SB03-05	63-SB03-06	63-SB04-03	63-SB05-03
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/11/95	11/06/95	11/11/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)						
ALPHA-BHC	2.2 UJ	2.1 UJ	2.2 U	2.2 U	2.1 U	2.2 U
BETA-BHC	2.2 UJ	2.1 UJ	2.2 U	2.2 U	2.1 U	2.2 U
DELTA-BHC	2.2 UJ	2.1 UJ	2.2 U	2.2 U	2.1 UJ	2.2 U
HEPTACHLOR	2.2 UJ	2.1 UJ	2.2 U	2.2 U	2.1 UJ	2.2 U
ALDRIN	2.2 UJ	2.1 UJ	2.2 U	2.2 U	2.1 U	2.2 U
HEPTACHLOR EPOXIDE	2.2 UJ	2.1 UJ	2.2 U	2.2 U	2.1 U	2.2 U
ENDOSULFAN I	2.2 UJ	2.1 UJ	2.2 U	2.2 U	2.1 U	2.2 U
DIELDRIN	4.3 UJ	4.2 UJ	4.4 U	4.5 U	4.2 U	4.3 U
4,4'-DDE	4.3 UJ	4.2 UJ	4.4 U	4.5 U	4.2 UJ	4.3 U
ENDRIN	4.3 UJ	4.2 UJ	4.4 U	4.5 U	4.2 U	4.3 U
4,4'-DDD	4.3 UJ	4.2 UJ	4.4 U	4.5 U	4.2 U	4.3 U
ENDOSULFAN SULFATE	4.3 UJ	4.2 UJ	4.4 U	4.5 U	4.2 U	4.3 U
4,4'-DDT	4.3 UJ	4.2 UJ	4.4 U	4.5 U	4.2 U	4.3 U
METHOXYCHLOR	22 UJ	21 UJ	22 U	22 U	21 U	22 U
ENDRIN KETONE	4.3 UJ	4.2 UJ	4.4 U	4.5 U	4.2 U	4.3 U
ENDRIN ALDEHYDE	4.3 UJ	4.2 UJ	4.4 U	4.5 U	4.2 U	4.3 U
ALPHA-CHLORDANE	2.2 UJ	2.1 UJ	2.2 U	2.2 U	2.1 U	2.2 U
GAMMA-CHLORDANE	2.2 UJ	2.1 UJ	2.2 U	2.2 U	2.1 U	2.2 U
TOXAPHENE	220 UJ	210 UJ	220 U	220 U	210 U	220 U
AROCLOR-1016	43 UJ	42 UJ	44 U	45 U	42 U	43 U
AROCLOR-1221	87 UJ	84 UJ	87 U	90 U	84 U	87 U
AROCLOR-1232	43 UJ	42 UJ	44 U	45 U	42 U	43 U
AROCLOR-1242	43 UJ	42 UJ	44 U	45 U	42 U	43 U
AROCLOR-1248	43 UJ	42 UJ	44 U	45 U	42 U	43 U
AROCLOR-1254	43 UJ	42 UJ	44 U	45 U	42 U	43 U
AROCLOR-1260	43 UJ	42 UJ	44 U	45 U	42 U	43 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB05-06	63-SB06-01	63-SB07-04	63-SB08-05	63-SB08-07	63-SB09-03
DATE SAMPLED	11/11/95	11/10/95	11/11/95	11/10/95	11/10/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)						
CHLOROMETHANE	14 U	12 U	14 U	13 U	14 U	12 U
BROMOMETHANE	14 U	12 U	14 U	13 U	14 U	12 U
VINYL CHLORIDE	14 U	12 U	14 U	13 U	14 U	12 U
CHLOROETHANE	14 U	12 U	14 U	13 U	14 U	12 U
METHYLENE CHLORIDE	14 U	12 U	14 U	13 U	14 U	12 U
ACETONE	14 U	12 U	14 U	13 UJ	23 J	12 UJ
CARBON DISULFIDE	14 U	12 U	14 U	13 U	14 U	12 U
1,1-DICHLOROETHENE	14 U	12 U	14 U	13 U	14 U	12 U
1,1-DICHLOROETHANE	14 U	12 U	14 U	13 U	14 U	12 U
1,2-DICHLOROETHENE (TOTAL)	14 U	12 U	14 U	13 U	14 U	12 U
CHLOROFORM	14 U	12 U	14 U	13 U	14 U	12 U
1,2-DICHLOROETHANE	14 U	12 U	14 U	13 U	14 U	12 U
2-BUTANONE	14 U	12 U	14 U	13 U	14 U	12 U
1,1,1-TRICHLOROETHANE	14 U	12 U	14 U	13 U	14 U	12 U
CARBON TETRACHLORIDE	14 U	12 U	14 U	13 U	14 U	12 U
BROMODICHLOROMETHANE	14 U	12 U	14 U	13 U	14 U	12 U
1,2-DICHLOROPROPANE	14 U	12 U	14 U	13 U	14 U	12 U
CIS-1,3-DICHLOROPROPENE	14 U	12 U	14 U	13 U	14 U	12 U
TRICHLOROETHENE	14 U	12 U	14 U	13 U	14 U	12 U
DIBROMOCHLOROMETHANE	14 U	12 U	14 U	13 U	14 U	12 U
1,1,2-TRICHLOROETHANE	14 U	12 U	14 U	13 U	14 U	12 U
BENZENE	14 U	12 U	14 U	13 U	14 U	12 U
TRANS-1,3-DICHLOROPROPENE	14 U	12 U	14 U	13 U	14 U	12 U
BROMOFORM	14 U	12 U	14 U	13 U	14 U	12 U
4-METHYL-2-PENTANONE	14 U	12 U	14 U	13 U	14 U	12 U
2-HEXANONE	14 U	12 U	14 U	13 U	14 U	12 U
TETRACHLOROETHENE	14 U	12 U	14 U	13 U	14 U	12 U
1,1,2,2-TETRACHLOROETHANE	14 U	12 U	14 U	13 U	14 U	12 U
TOLUENE	14 U	12 U	14 U	13 U	14 U	12 U
CHLOROBENZENE	14 U	12 U	14 U	13 U	14 U	12 U
ETHYLBENZENE	14 U	12 U	14 U	13 U	14 U	12 U
STYRENE	14 U	12 U	14 U	13 U	14 U	12 U
XYLENE (TOTAL)	14 U	12 U	14 U	13 U	14 U	12 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB05-06	63-SB06-01	63-SB07-04	63-SB08-05	63-SB08-07	63-SB09-03
DATE SAMPLED	11/11/95	11/10/95	11/11/95	11/10/95	11/10/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)						
PHENOL	450 U	400 U	450 U	420 U	450 U	380 U
BIS(2-CHLOROETHYL)ETHER	450 U	400 U	450 U	420 U	450 U	380 U
2-CHLOROPHENOL	450 U	400 U	450 U	420 U	450 U	380 U
1,3-DICHLOROBENZENE	450 U	400 U	450 U	420 U	450 U	380 U
1,4-DICHLOROBENZENE	450 U	400 U	450 U	420 U	450 U	380 U
1,2-DICHLOROBENZENE	450 U	400 U	450 U	420 U	450 U	380 U
2-METHYLPHENOL	450 U	400 U	450 U	420 U	450 U	380 U
2,2'-OXYBIS(1-CHLOROPROPANE)	450 U	400 U	450 U	420 U	450 U	380 U
4-METHYLPHENOL	450 U	400 U	450 U	420 U	450 U	380 U
N-NITROSO-DI-N-PROPYLAMINE	450 U	400 U	450 U	420 U	450 U	380 U
HEXACHLOROETHANE	450 U	400 U	450 U	420 U	450 U	380 U
NITROBENZENE	450 U	400 U	450 U	420 U	450 U	380 U
ISOPHORONE	450 U	400 U	450 U	420 U	450 U	380 U
2-NITROPHENOL	450 U	400 U	450 U	420 U	450 U	380 U
2,4-DIMETHYLPHENOL	450 U	400 U	450 U	420 U	450 U	380 U
BIS(2-CHLOROETHOXY)METHANE	450 U	400 U	450 U	420 U	450 U	380 U
2,4-DICHLOROPHENOL	450 U	400 U	450 U	420 U	450 U	380 U
1,2,4-TRICHLOROBENZENE	450 U	400 U	450 U	420 U	450 U	380 U
NAPHTHALENE	450 U	400 U	450 U	420 U	450 U	380 U
4-CHLOROANILINE	450 U	400 U	450 U	420 U	450 U	380 U
HEXACHLOROBUTADIENE	450 U	400 U	450 U	420 U	450 U	380 U
4-CHLORO-3-METHYLPHENOL	450 U	400 U	450 U	420 U	450 U	380 U
2-METHYLNAPHTHALENE	450 U	400 U	450 U	420 U	450 U	380 U
HEXACHLOROCYCLOPENTADIENE	450 U	400 U	450 U	420 U	450 U	380 U
2,4,6-TRICHLOROPHENOL	450 U	400 U	450 U	420 U	450 U	380 U
2,4,5-TRICHLOROPHENOL	1100 U	1000 U	1100 U	1100 U	1100 U	960 U
2-CHLORONAPHTHALENE	450 U	400 U	450 U	420 U	450 U	380 U
2-NITROANILINE	1100 U	1000 U	1100 U	1100 U	1100 U	960 U
DIMETHYLPHTHALATE	450 U	400 U	450 U	420 U	450 U	380 U
ACENAPHTHYLENE	450 U	400 U	450 U	420 U	450 U	380 U
2,6-DINITROTOLUENE	450 U	400 U	450 U	420 U	450 U	380 U
3-NITROANILINE	1100 U	1000 U	1100 U	1100 U	1100 U	960 U
ACENAPHTHENE	450 U	400 U	450 U	420 U	450 U	380 U
2,4-DINITROPHENOL	1100 UJ	1000 U	1100 U	1100 U	1100 U	960 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB05-06	63-SB06-01	63-SB07-04	63-SB08-05	63-SB08-07	63-SB09-03
DATE SAMPLED	11/11/95	11/10/95	11/11/95	11/10/95	11/10/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)						
4-NITROPHENOL	1100 U	1000 U	1100 U	1100 U	1100 U	960 U
DIBENZOFURAN	450 U	400 U	450 U	420 U	450 U	380 U
2,4-DINITROTOLUENE	450 U	400 U	450 U	420 U	450 U	380 U
DIETHYLPHTHALATE	450 U	400 U	450 U	420 U	450 U	380 U
4-CHLOROPHENYL-PHENYLETHER	450 U	400 U	450 U	420 U	450 U	380 U
FLUORENE	450 U	400 U	450 U	420 U	450 U	380 U
4-NITROANILINE	1100 U	1000 U	1100 U	1100 U	1100 U	960 U
4,6-DINITRO-2-METHYLPHENOL	1100 U	1000 U	1100 U	1100 U	1100 U	960 U
N-NITROSODIPHENYLAMINE (1)	450 U	400 U	450 U	420 U	450 U	380 U
4-BROMOPHENYL-PHENYLETHER	450 U	400 U	450 U	420 U	450 U	380 U
HEXACHLOROBENZENE	450 U	400 U	450 U	420 U	450 U	380 U
PENTACHLOROPHENOL	1100 U	1000 U	1100 U	1100 U	1100 U	960 U
PHENANTHRENE	450 U	400 U	450 U	420 U	450 U	380 U
ANTHRACENE	450 U	400 U	450 U	420 U	450 U	380 U
CARBAZOLE	450 U	400 U	450 U	420 U	450 U	380 U
DI-N-BUTYLPHTHALATE	450 U	400 U	450 U	1100 U	450 U	1000 U
FLUORANTHENE	450 U	400 U	450 U	420 U	450 U	380 U
PYRENE	450 U	400 U	450 U	420 U	450 U	380 U
BUTYLBENZYLPHTHALATE	450 U	400 U	450 U	420 U	450 U	380 U
3,3'-DICHLOROBENZIDINE	450 U	400 U	450 U	420 U	450 U	380 U
BENZO(A)ANTHRACENE	450 U	400 U	450 U	420 U	450 U	380 U
CHRYSENE	450 U	400 U	450 U	420 U	450 U	380 U
BIS(2-ETHYLHEXYL)PHTHALATE	450 U	400 U	450 U	54 J	450 U	380 U
DI-N-OCTYL PHTHALATE	450 U	400 U	450 U	420 U	450 U	380 U
BENZO(B)FLUORANTHENE	450 U	400 U	450 U	420 U	450 U	380 U
BENZO(K)FLUORANTHENE	450 U	400 U	450 U	420 U	450 U	380 U
BENZO(A)PYRENE	450 U	400 U	450 U	420 U	450 U	380 U
INDENO(1,2,3-CD)PYRENE	450 U	400 U	450 U	420 U	450 U	380 U
DIBENZO(A,H)ANTHRACENE	450 U	400 U	450 U	420 U	450 U	380 U
BENZO(G,H,I)PERYLENE	450 U	400 U	450 U	420 U	450 U	380 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB05-06	63-SB06-01	63-SB07-04	63-SB08-05	63-SB08-07	63-SB09-03
DATE SAMPLED	11/11/95	11/10/95	11/11/95	11/10/95	11/10/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)						
ALPHA-BHC	2.3 U	2 UJ	2.2 UJ	2.1 U	2.3 UJ	1.9 UJ
BETA-BHC	2.3 U	2 UJ	2.2 UJ	2.1 U	2.3 UJ	1.9 UJ
DELTA-BHC	2.3 U	2 UJ	2.2 UJ	2.1 U	2.3 UJ	1.9 UJ
HEPTACHLOR	2.3 U	2 UJ	2.2 UJ	2.1 U	2.3 UJ	1.9 UJ
ALDRIN	2.3 U	2 UJ	2.2 UJ	2.1 U	2.3 UJ	1.9 UJ
HEPTACHLOR EPOXIDE	2.3 U	2 UJ	2.2 UJ	2.1 U	2.3 UJ	1.9 UJ
ENDOSULFAN I	2.3 U	2 UJ	2.2 UJ	2.1 U	2.3 UJ	1.9 UJ
DIELDRIN	4.5 U	4 UJ	4.5 UJ	4.2 U	4.5 UJ	3.8 UJ
4,4'-DDE	4.5 U	4 UJ	4.5 UJ	4.2 U	4.5 UJ	3.8 UJ
ENDRIN	4.5 U	4 UJ	4.5 UJ	4.2 U	4.5 UJ	3.8 UJ
4,4'-DDD	4.5 U	4 UJ	4.5 UJ	4.2 U	4.5 UJ	3.8 UJ
ENDOSULFAN SULFATE	4.5 U	4 UJ	4.5 UJ	4.2 U	4.5 UJ	3.8 UJ
4,4'-DDT	4.5 U	4 UJ	4.5 UJ	4.2 U	4.5 UJ	3.8 UJ
METHOXYCHLOR	23 U	20 UJ	22 UJ	21 U	23 UJ	19 UJ
ENDRIN KETONE	4.5 U	4 UJ	4.5 UJ	4.2 U	4.5 UJ	3.8 UJ
ENDRIN ALDEHYDE	4.5 U	4 UJ	4.5 UJ	4.2 U	4.5 UJ	3.8 UJ
ALPHA-CHLORDANE	2.3 U	2 UJ	2.2 UJ	2.1 U	2.3 UJ	1.9 UJ
GAMMA-CHLORDANE	2.3 U	2 UJ	2.2 UJ	2.1 U	2.3 UJ	1.9 UJ
TOXAPHENE	230 U	200 UJ	220 UJ	210 U	230 UJ	190 UJ
AROCLOR-1016	45 U	40 UJ	45 UJ	42 U	45 UJ	38 UJ
AROCLOR-1221	90 U	80 UJ	90 UJ	85 U	91 UJ	77 UJ
AROCLOR-1232	45 U	40 UJ	45 UJ	42 U	45 UJ	38 UJ
AROCLOR-1242	45 U	40 UJ	45 UJ	42 U	45 UJ	38 UJ
AROCLOR-1248	45 U	40 UJ	45 UJ	42 U	45 UJ	38 UJ
AROCLOR-1254	45 U	40 UJ	45 UJ	42 U	45 UJ	38 UJ
AROCLOR-1260	45 U	40 UJ	45 UJ	42 U	45 UJ	38 UJ

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB09-06	63-SB10-02	63-SB11-05	63-SB12-04	63-SB13-03	63-SB13-05
DATE SAMPLED	11/10/95	11/09/95	11/09/95	11/07/95	11/06/95	11/06/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)						
CHLOROMETHANE	13 U	13 U	13 U	13 U	12 U	13 U
BROMOMETHANE	13 U	13 U	13 U	13 U	12 U	13 U
VINYL CHLORIDE	13 U	13 U	13 U	13 U	12 U	13 U
CHLOROETHANE	13 U	13 U	13 U	13 U	12 U	13 U
METHYLENE CHLORIDE	13 U	13 U	13 U	13 U	20	47
ACETONE	13 UJ	13 U	13 U	13 U	48 J	47 J
CARBON DISULFIDE	13 U	13 U	13 U	13 U	12 U	13 U
1,1-DICHLOROETHENE	13 U	13 U	13 U	13 U	12 U	13 U
1,1-DICHLOROETHANE	13 U	13 U	13 U	13 U	12 U	13 U
1,2-DICHLOROETHENE (TOTAL)	13 U	13 U	13 U	13 U	12 U	13 U
CHLOROFORM	13 U	13 U	13 U	13 U	12 U	13 U
1,2-DICHLOROETHANE	13 U	13 U	13 U	13 U	12 U	13 U
2-BUTANONE	13 U	13 U	13 U	13 U	12 U	13 U
1,1,1-TRICHLOROETHANE	13 U	13 U	13 U	13 U	12 U	13 U
CARBON TETRACHLORIDE	13 U	13 U	13 U	13 U	12 U	13 U
BROMODICHLOROMETHANE	13 U	13 U	13 U	13 U	12 U	13 U
1,2-DICHLOROPROPANE	13 U	13 U	13 U	13 U	12 U	13 U
CIS-1,3-DICHLOROPROPENE	13 U	13 U	13 U	13 U	12 U	13 U
TRICHLOROETHENE	13 U	13 U	13 U	13 U	12 U	13 U
DIBROMOCHLOROMETHANE	13 U	13 U	13 U	13 U	12 U	13 U
1,1,2-TRICHLOROETHANE	13 U	13 U	13 U	13 U	12 U	13 U
BENZENE	13 U	13 U	13 U	13 U	12 U	13 U
TRANS-1,3-DICHLOROPROPENE	13 U	13 U	13 U	13 U	12 U	13 U
BROMOFORM	13 U	13 U	13 U	13 U	12 U	13 U
4-METHYL-2-PENTANONE	13 U	13 U	13 U	13 U	12 U	13 U
2-HEXANONE	13 U	13 U	13 U	13 U	12 U	13 U
TETRACHLOROETHENE	13 U	13 U	13 U	13 U	12 U	13 U
1,1,2,2-TETRACHLOROETHANE	13 U	13 U	13 U	13 U	12 U	13 U
TOLUENE	13 U	13 U	13 U	13 U	12 U	13 U
CHLOROBENZENE	13 U	13 U	13 U	13 U	12 U	13 U
ETHYLBENZENE	13 U	13 U	13 U	13 U	12 U	13 U
STYRENE	13 U	13 U	13 U	13 U	12 U	13 U
XYLENE (TOTAL)	13 U	13 U	13 U	13 U	12 U	13 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB09-06	63-SB10-02	63-SB11-05	63-SB12-04	63-SB13-03	63-SB13-05
DATE SAMPLED	11/10/95	11/09/95	11/09/95	11/07/95	11/06/95	11/06/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)						
PHENOL	440 U	420 U	430 U	420 U	400 U	420 U
BIS(2-CHLOROETHYL)ETHER	440 U	420 U	430 U	420 U	400 U	420 U
2-CHLOROPHENOL	440 U	420 U	430 U	420 U	400 U	420 U
1,3-DICHLOROBENZENE	440 U	420 U	430 U	420 U	400 U	420 U
1,4-DICHLOROBENZENE	440 U	420 U	430 U	420 U	400 U	420 U
1,2-DICHLOROBENZENE	440 U	420 U	430 U	420 U	400 U	420 U
2-METHYLPHENOL	440 U	420 U	430 U	420 U	400 U	420 U
2,2'-OXYBIS(1-CHLOROPROPANE)	440 U	420 U	430 U	420 U	400 U	420 U
4-METHYLPHENOL	440 U	420 U	430 U	420 U	400 U	420 U
N-NITROSO-DI-N-PROPYLAMINE	440 U	420 U	430 U	420 U	400 U	420 U
HEXACHLOROETHANE	440 U	420 U	430 U	420 U	400 U	420 U
NITROBENZENE	440 U	420 U	430 U	420 U	400 U	420 U
ISOPHORONE	440 U	420 U	430 U	420 U	400 U	420 U
2-NITROPHENOL	440 U	420 U	430 U	420 U	400 U	420 U
2,4-DIMETHYLPHENOL	440 U	420 U	430 U	420 U	400 U	420 U
BIS(2-CHLOROETHOXY)METHANE	440 U	420 U	430 U	420 U	400 U	420 U
2,4-DICHLOROPHENOL	440 U	420 U	430 U	420 U	400 U	420 U
1,2,4-TRICHLOROBENZENE	440 U	420 U	430 U	420 U	400 U	420 U
NAPHTHALENE	440 U	420 U	430 U	420 U	400 U	420 U
4-CHLOROANILINE	440 U	420 U	430 U	420 U	400 U	420 U
HEXACHLOROBUTADIENE	440 U	420 U	430 U	420 U	400 U	420 U
4-CHLORO-3-METHYLPHENOL	440 U	420 U	430 U	420 U	400 U	420 U
2-METHYLNAPHTHALENE	440 U	420 U	430 U	420 U	400 U	420 U
HEXACHLOROCYCLOPENTADIENE	440 U	420 U	430 U	420 U	400 U	420 U
2,4,6-TRICHLOROPHENOL	440 U	420 U	430 U	420 U	400 U	420 U
2,4,5-TRICHLOROPHENOL	1100 U	1100 U	1100 U	1000 U	1000 U	1000 U
2-CHLORONAPHTHALENE	440 U	420 U	430 U	420 U	400 U	420 U
2-NITROANILINE	1100 U	1100 U	1100 U	1000 U	1000 U	1000 U
DIMETHYLPHTHALATE	440 U	420 U	430 U	420 U	400 U	420 U
ACENAPHTHYLENE	440 U	420 U	430 U	420 U	400 U	420 U
2,6-DINITROTOLUENE	440 U	420 U	430 U	420 U	400 U	420 U
3-NITROANILINE	1100 U	1100 U	1100 U	1000 U	1000 U	1000 U
ACENAPHTHENE	440 U	420 U	430 U	420 U	400 U	420 U
2,4-DINITROPHENOL	1100 U	1100 U	1100 U	1000 U	1000 U	1000 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB09-06	63-SB10-02	63-SB11-05	63-SB12-04	63-SB13-03	63-SB13-05
DATE SAMPLED	11/10/95	11/09/95	11/09/95	11/07/95	11/06/95	11/06/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)						
4-NITROPHENOL	1100 U	1100 U	1100 U	1000 U	1000 U	1000 U
DIBENZOFURAN	440 U	420 U	430 U	420 U	400 U	420 U
2,4-DINITROTOLUENE	440 U	420 U	430 U	420 U	400 U	420 U
DIETHYLPHTHALATE	440 U	420 U	430 U	420 U	400 U	420 U
4-CHLOROPHENYL-PHENYLETHER	440 U	420 U	430 U	420 U	400 U	420 U
FLUORENE	440 U	420 U	430 U	420 U	400 U	420 U
4-NITROANILINE	1100 U	1100 U	1100 U	1000 U	1000 U	1000 U
4,6-DINITRO-2-METHYLPHENOL	1100 U	1100 U	1100 U	1000 U	1000 U	1000 U
N-NITROSODIPHENYLAMINE (1)	440 U	420 U	430 U	420 U	400 U	420 U
4-BROMOPHENYL-PHENYLETHER	440 U	420 U	430 U	420 U	400 U	420 U
HEXACHLOROBENZENE	440 U	420 U	430 U	420 U	400 U	420 U
PENTACHLOROPHENOL	1100 U	1100 U	1100 U	1000 U	1000 U	1000 U
PHENANTHRENE	440 U	420 U	430 U	420 U	400 U	420 U
ANTHRACENE	440 U	420 U	430 U	420 U	400 U	420 U
CARBAZOLE	440 U	420 U	430 U	420 U	400 U	420 U
DI-N-BUTYLPHTHALATE	440 U	420 U	430 U	420 U	1000 U	1200 U
FLUORANTHENE	440 U	420 U	430 U	420 U	400 U	420 U
PYRENE	440 U	420 U	430 U	420 U	400 U	420 U
BUTYLBENZYLPHTHALATE	440 U	420 U	430 U	420 U	400 U	420 U
3,3'-DICHLOROBENZIDINE	440 U	420 U	430 U	420 U	400 U	420 U
BENZO(A)ANTHRACENE	440 U	420 U	430 U	420 U	400 U	420 U
CHRYSENE	440 U	420 U	430 U	420 U	400 U	420 U
BIS(2-ETHYLHEXYL)PHTHALATE	440 U	420 U	430 U	97 J	41 J	980
DI-N-OCTYL PHTHALATE	440 U	420 U	430 U	420 U	400 U	420 U
BENZO(B)FLUORANTHENE	440 U	420 U	430 U	420 U	400 U	420 U
BENZO(K)FLUORANTHENE	440 U	420 U	430 U	420 U	400 U	420 U
BENZO(A)PYRENE	440 U	420 U	430 U	420 U	400 U	420 U
INDENO(1,2,3-CD)PYRENE	440 U	420 U	430 U	420 U	400 U	420 U
DIBENZO(A,H)ANTHRACENE	440 U	420 U	430 U	420 U	400 U	420 U
BENZO(G,H,I)PERYLENE	440 U	420 U	430 U	420 U	400 U	420 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB09-06	63-SB10-02	63-SB11-05	63-SB12-04	63-SB13-03	63-SB13-05
DATE SAMPLED	11/10/95	11/09/95	11/09/95	11/07/95	11/06/95	11/06/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)						
ALPHA-BHC	2.2 UJ	2.1 U	2.2 U	2.1 U	2 UJ	2.1 UJ
BETA-BHC	2.2 UJ	2.1 U	2.2 U	2.1 U	2 UJ	2.1 UJ
DELTA-BHC	2.2 UJ	2.1 UJ	2.2 UJ	2.1 UJ	2 UJ	2.1 UJ
HEPTACHLOR	2.2 UJ	2.1 U	2.2 U	2.1 U	2 UJ	2.1 UJ
ALDRIN	2.2 UJ	2.1 U	2.2 U	2.1 U	2 UJ	2.1 UJ
HEPTACHLOR EPOXIDE	2.2 UJ	2.1 U	2.2 U	2.1 U	2 UJ	2.1 UJ
ENDOSULFAN I	2.2 UJ	2.1 U	2.2 U	2.1 U	2 UJ	2.1 UJ
DIELDRIN	4.4 UJ	2.1 J	4.3 U	4.2 U	4 UJ	4.2 UJ
4,4'-DDE	4.4 UJ	4.3 UJ	4.3 UJ	4.2 U	4 UJ	4.2 UJ
ENDRIN	4.4 UJ	4.3 U	4.3 U	4.2 UJ	4 UJ	4.2 UJ
4,4'-DDD	4.4 UJ	4.3 U	4.3 U	4.2 U	4 UJ	4.2 UJ
ENDOSULFAN SULFATE	4.4 UJ	4.3 U	4.3 U	4.2 U	4 UJ	4.2 UJ
4,4'-DDT	4.4 UJ	4.3 U	4.3 U	4.2 U	4 UJ	4.2 UJ
METHOXYCHLOR	22 UJ	21 U	22 U	21 U	20 UJ	21 UJ
ENDRIN KETONE	4.4 UJ	4.3 U	4.3 U	4.2 U	4 UJ	4.2 UJ
ENDRIN ALDEHYDE	4.4 UJ	4.3 U	4.3 U	4.2 U	4 UJ	4.2 UJ
ALPHA-CHLORDANE	2.2 UJ	2.1 U	2.2 U	2.1 U	2 UJ	2.1 UJ
GAMMA-CHLORDANE	2.2 UJ	2.1 U	2.2 U	2.1 U	2 UJ	2.1 UJ
TOXAPHENE	220 UJ	210 U	220 U	210 U	200 UJ	210 UJ
AROCLOR-1016	44 UJ	43 U	43 U	42 U	40 UJ	42 UJ
AROCLOR-1221	88 UJ	85 U	86 U	83 U	81 UJ	83 UJ
AROCLOR-1232	44 UJ	43 U	43 U	42 U	40 UJ	42 UJ
AROCLOR-1242	44 UJ	43 U	43 U	42 U	40 UJ	42 UJ
AROCLOR-1248	44 UJ	43 U	43 U	42 U	40 UJ	42 UJ
AROCLOR-1254	44 UJ	43 U	43 U	42 U	40 UJ	42 UJ
AROCLOR-1260	44 UJ	43 U	43 U	42 U	40 UJ	42 UJ

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB14-04	63-SB15-04	63-SB16-02	63-SB17-03	63-SB18-05	63-SB19-03
DATE SAMPLED	11/08/95	11/06/95	11/08/95	11/08/95	11/07/95	11/06/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)						
CHLOROMETHANE	13 U	13 U	12 U	12 U	12 U	12 U
BROMOMETHANE	13 U	13 U	12 U	12 U	12 U	12 U
VINYL CHLORIDE	13 U	13 U	12 U	12 U	12 U	12 U
CHLOROETHANE	13 U	13 U	12 U	12 U	12 U	12 U
METHYLENE CHLORIDE	13 U	24	12 U	12 U	12 U	12 U
ACETONE	13 U	57 J	12 U	12 UJ	12 U	12 U
CARBON DISULFIDE	13 U	13 U	12 U	12 U	12 U	12 U
1,1-DICHLOROETHENE	13 U	13 U	12 U	12 U	12 U	12 U
1,1-DICHLOROETHANE	13 U	13 U	12 U	12 U	12 U	12 U
1,2-DICHLOROETHENE (TOTAL)	13 U	13 U	12 U	12 U	12 U	12 U
CHLOROFORM	13 U	13 U	12 U	12 U	12 U	12 U
1,2-DICHLOROETHANE	13 U	13 U	12 U	12 U	12 U	12 U
2-BUTANONE	13 U	13 U	12 U	12 U	12 U	12 U
1,1,1-TRICHLOROETHANE	13 U	13 U	12 U	12 U	12 U	12 U
CARBON TETRACHLORIDE	13 U	13 U	12 U	12 U	12 U	12 U
BROMODICHLOROMETHANE	13 U	13 U	12 U	12 U	12 U	12 U
1,2-DICHLOROPROPANE	13 U	13 U	12 U	12 U	12 U	12 U
CIS-1,3-DICHLOROPROPENE	13 U	13 U	12 U	12 U	12 U	12 U
TRICHLOROETHENE	13 U	13 U	12 U	12 U	12 U	12 U
DIBROMOCHLOROMETHANE	13 U	13 U	12 U	12 U	12 U	12 U
1,1,2-TRICHLOROETHANE	13 U	13 U	12 U	12 U	12 U	12 U
BENZENE	13 U	13 U	12 U	12 U	12 U	12 U
TRANS-1,3-DICHLOROPROPENE	13 U	13 U	12 U	12 U	12 U	12 U
BROMOFORM	13 U	13 U	12 U	12 U	12 U	12 U
4-METHYL-2-PENTANONE	13 U	13 U	12 U	12 U	12 UJ	12 U
2-HEXANONE	13 U	13 U	12 U	12 U	12 UJ	12 U
TETRACHLOROETHENE	13 U	13 U	12 U	12 U	12 UJ	12 U
1,1,2,2-TETRACHLOROETHANE	13 U	13 U	12 U	12 U	12 UJ	12 U
TOLUENE	13 U	13 U	12 U	12 U	12 UJ	12 U
CHLOROBENZENE	13 U	13 U	12 U	12 U	12 UJ	12 U
ETHYLBENZENE	13 U	13 U	12 U	12 U	12 UJ	12 U
STYRENE	13 U	41	12 U	12 U	12 UJ	12 U
XYLENE (TOTAL)	13 U	13 U	12 U	12 U	12 UJ	12 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB14-04	63-SB15-04	63-SB16-02	63-SB17-03	63-SB18-05	63-SB19-03
DATE SAMPLED	11/08/95	11/06/95	11/08/95	11/08/95	11/07/95	11/06/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)						
PHENOL	420 U	420 U	400 U	410 U	400 U	390 U
BIS(2-CHLOROETHYL)ETHER	420 U	420 U	400 U	410 U	400 U	390 U
2-CHLOROPHENOL	420 U	420 U	400 U	410 U	400 U	390 U
1,3-DICHLOROBENZENE	420 U	420 U	400 U	410 U	400 U	390 U
1,4-DICHLOROBENZENE	420 U	420 U	400 U	410 U	400 U	390 U
1,2-DICHLOROBENZENE	420 U	420 U	400 U	410 U	400 U	390 U
2-METHYLPHENOL	420 U	420 U	400 U	410 U	400 U	390 U
2,2'-OXYBIS(1-CHLOROPROPANE)	420 U	420 U	400 U	410 U	400 U	390 U
4-METHYLPHENOL	420 U	420 U	400 U	410 U	400 U	390 U
N-NITROSO-DI-N-PROPYLAMINE	420 U	420 U	400 U	410 U	400 U	390 U
HEXACHLOROETHANE	420 U	420 U	400 U	410 U	400 U	390 U
NITROBENZENE	420 U	420 U	400 U	410 U	400 U	390 U
ISOPHORONE	420 U	420 U	400 U	410 U	400 U	390 U
2-NITROPHENOL	420 U	420 U	400 U	410 U	400 U	390 U
2,4-DIMETHYLPHENOL	420 U	420 U	400 U	410 U	400 U	390 U
BIS(2-CHLOROETHOXY)METHANE	420 U	420 U	400 U	410 U	400 U	390 U
2,4-DICHLOROPHENOL	420 U	420 U	400 U	410 U	400 U	390 U
1,2,4-TRICHLOROBENZENE	420 U	420 U	400 U	410 U	400 U	390 U
NAPHTHALENE	420 U	420 U	400 U	410 U	400 U	390 U
4-CHLOROANILINE	420 U	420 U	400 U	410 U	400 U	390 U
HEXACHLOROBUTADIENE	420 U	420 U	400 U	410 U	400 U	390 U
4-CHLORO-3-METHYLPHENOL	420 U	420 U	400 U	410 U	400 U	390 U
2-METHYLNAPHTHALENE	420 U	420 U	400 U	410 U	400 U	390 U
HEXACHLOROCYCLOPENTADIENE	420 U	420 U	400 U	410 U	400 U	390 U
2,4,6-TRICHLOROPHENOL	420 U	420 U	400 U	410 U	400 U	390 U
2,4,5-TRICHLOROPHENOL	1000 U	1100 U	1000 U	1000 U	1000 U	980 U
2-CHLORONAPHTHALENE	420 U	420 U	400 U	410 U	400 U	390 U
2-NITROANILINE	1000 U	1100 U	1000 U	1000 U	1000 U	980 U
DIMETHYLPHTHALATE	420 U	420 U	400 U	410 U	400 U	390 U
ACENAPHTHYLENE	420 U	420 U	400 U	410 U	400 U	390 U
2,6-DINITROTOLUENE	420 U	420 U	400 U	410 U	400 U	390 U
3-NITROANILINE	1000 U	1100 U	1000 U	1000 U	1000 U	980 U
ACENAPHTHENE	420 U	420 U	400 U	410 U	400 U	390 U
2,4-DINITROPHENOL	1000 U	1100 U	1000 U	1000 U	1000 U	980 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB14-04	63-SB15-04	63-SB16-02	63-SB17-03	63-SB18-05	63-SB19-03
DATE SAMPLED	11/08/95	11/06/95	11/08/95	11/08/95	11/07/95	11/06/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)						
4-NITROPHENOL	1000 U	1100 U	1000 U	1000 U	1000 U	980 U
DIBENZOFURAN	420 U	420 U	400 U	410 U	400 U	390 U
2,4-DINITROTOLUENE	420 U	420 U	400 U	410 U	400 U	390 U
DIETHYLPHTHALATE	420 U	420 U	400 U	410 U	400 U	390 U
4-CHLOROPHENYL-PHENYLETHER	420 U	420 U	400 U	410 U	400 U	390 U
FLUORENE	420 U	420 U	400 U	410 U	400 U	390 U
4-NITROANILINE	1000 U	1100 U	1000 U	1000 U	1000 U	980 U
4,6-DINITRO-2-METHYLPHENOL	1000 U	1100 U	1000 U	1000 U	1000 U	980 U
N-NITROSODIPHENYLAMINE (1)	420 U	420 U	400 U	94 J	400 U	350 J
4-BROMOPHENYL-PHENYLETHER	420 U	420 U	400 U	410 U	400 U	390 U
HEXACHLOROBENZENE	420 U	420 U	400 U	410 U	400 U	390 U
PENTACHLOROPHENOL	1000 U	1100 U	1000 U	1000 U	1000 U	980 U
PHENANTHRENE	420 U	420 U	400 U	410 U	400 U	390 U
ANTHRACENE	420 U	420 U	400 U	410 U	400 U	390 U
CARBAZOLE	420 U	420 U	400 U	410 U	400 U	390 U
DI-N-BUTYLPHTHALATE	420 U	1000 U	400 U	1300 U	400 U	390 U
FLUORANTHENE	420 U	420 U	400 U	410 U	400 U	390 U
PYRENE	420 U	420 U	400 U	410 U	400 U	390 U
BUTYLBENZYLPHTHALATE	420 U	420 U	400 U	410 U	400 U	390 U
3,3'-DICHLOROBENZIDINE	420 U	420 U	400 U	410 U	400 U	390 U
BENZO(A)ANTHRACENE	420 U	420 U	400 U	410 U	400 U	390 U
CHRYSENE	420 U	420 U	400 U	410 U	400 U	390 U
BIS(2-ETHYLHEXYL)PHTHALATE	420 U	770	400 U	2200 U	400 U	4700
DI-N-OCTYL PHTHALATE	420 U	420 U	400 U	410 U	400 U	390 U
BENZO(B)FLUORANTHENE	420 U	420 U	400 U	410 U	400 U	390 U
BENZO(K)FLUORANTHENE	420 U	420 U	400 U	410 U	400 U	390 U
BENZO(A)PYRENE	420 U	420 U	400 U	410 U	400 U	390 U
INDENO(1,2,3-CD)PYRENE	420 U	420 U	400 U	410 U	400 U	390 U
DIBENZO(A,H)ANTHRACENE	420 U	420 U	400 U	410 U	400 U	390 U
BENZO(G,H,I)PERYLENE	420 U	420 U	400 U	410 U	400 U	390 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB14-04	63-SB15-04	63-SB16-02	63-SB17-03	63-SB18-05	63-SB19-03
DATE SAMPLED	11/08/95	11/06/95	11/08/95	11/08/95	11/07/95	11/06/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)						
ALPHA-BHC	2.1 UJ	2.1 U	2 UJ	2.1 UJ	2 U	2 U
BETA-BHC	2.1 UJ	2.1 U	2 UJ	2.1 UJ	2 U	2 U
DELTA-BHC	2.1 UJ	2.1 UJ	2 UJ	2.1 UJ	2 UJ	2 UJ
HEPTACHLOR	2.1 UJ	2.1 UJ	2 UJ	2.1 UJ	2 U	2 U
ALDRIN	2.1 UJ	2.1 U	2 UJ	2.1 UJ	2 U	2 U
HEPTACHLOR EPOXIDE	2.1 UJ	2.1 U	2 UJ	2.1 UJ	2 U	2 U
ENDOSULFAN I	2.1 UJ	2.1 U	2 UJ	2.1 UJ	2 U	2 U
DIELDRIN	4.2 UJ	4.2 U	4 UJ	4.2 UJ	4 U	4 U
4,4'-DDE	4.2 UJ	4.2 UJ	4 UJ	4.2 UJ	4 U	4 U
ENDRIN	4.2 UJ	4.2 U	4 UJ	4.2 UJ	4 UJ	4 UJ
4,4'-DDD	4.2 UJ	4.2 U	4 UJ	4.2 UJ	4 U	4 U
ENDOSULFAN SULFATE	4.2 UJ	4.2 U	4 UJ	4.2 UJ	4 U	4 U
4,4'-DDT	4.2 UJ	4.2 U	4 UJ	4.2 UJ	4 U	4 U
METHOXYCHLOR	21 UJ	21 U	20 UJ	21 UJ	20 U	20 U
ENDRIN KETONE	4.2 UJ	4.2 U	4 UJ	4.2 UJ	4 U	4 U
ENDRIN ALDEHYDE	4.2 UJ	4.2 U	4 UJ	4.2 UJ	4 U	4 U
ALPHA-CHLORDANE	2.1 UJ	2.1 U	2 UJ	2.1 UJ	2 U	2 U
GAMMA-CHLORDANE	2.1 UJ	2.1 U	2 UJ	2.1 UJ	2 U	2 U
TOXAPHENE	210 UJ	210 U	200 UJ	210 UJ	200 U	200 U
AROCLOR-1016	42 UJ	42 U	40 UJ	42 UJ	40 U	40 U
AROCLOR-1221	84 UJ	84 U	80 UJ	83 UJ	80 U	79 U
AROCLOR-1232	42 UJ	42 U	40 UJ	42 UJ	40 U	40 U
AROCLOR-1242	42 UJ	42 U	40 UJ	42 UJ	40 U	40 U
AROCLOR-1248	42 UJ	42 U	40 UJ	42 UJ	40 U	40 U
AROCLOR-1254	42 UJ	42 U	40 UJ	42 UJ	40 U	40 U
AROCLOR-1260	42 UJ	42 U	40 UJ	42 UJ	40 U	40 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB20-01	63-SB21-03	63-SB22-03	63-SB23-03	63-SB24-03	63-SB25-03
DATE SAMPLED	11/09/95	11/08/95	11/07/95	11/07/95	11/07/95	11/06/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)						
CHLOROMETHANE	11 U	12 U	12 U	12 U	12 U	12 U
BROMOMETHANE	11 U	12 U	12 U	12 U	12 U	12 U
VINYL CHLORIDE	11 U	12 U	12 U	12 U	12 U	12 U
CHLOROETHANE	11 U	12 U	12 U	12 U	12 U	12 U
METHYLENE CHLORIDE	11 U	12 U	12 U	12 U	12 U	100
ACETONE	11 U	12 U	12 U	12 U	12 U	150 J
CARBON DISULFIDE	11 U	12 U	12 U	12 U	12 U	12 U
1,1-DICHLOROETHENE	11 U	12 U	12 U	12 U	12 U	12 U
1,1-DICHLOROETHANE	11 U	12 U	12 U	12 U	12 U	12 U
1,2-DICHLOROETHENE (TOTAL)	11 U	12 U	12 U	12 U	12 U	12 U
CHLOROFORM	11 U	12 U	12 U	12 U	12 U	12 U
1,2-DICHLOROETHANE	11 U	12 U	12 U	12 U	12 U	12 U
2-BUTANONE	11 U	12 U	12 U	12 U	12 U	12 U
1,1,1-TRICHLOROETHANE	11 U	12 U	12 U	12 U	12 U	12 U
CARBON TETRACHLORIDE	11 U	12 U	12 U	12 U	12 U	12 U
BROMODICHLOROMETHANE	11 U	12 U	12 U	12 U	12 U	12 U
1,2-DICHLOROPROPANE	11 U	12 U	12 U	12 U	12 U	12 U
CIS-1,3-DICHLOROPROPENE	11 U	12 U	12 U	12 U	12 U	12 U
TRICHLOROETHENE	11 U	12 U	12 U	12 U	12 U	12 U
DIBROMOCHLOROMETHANE	11 U	12 U	12 U	12 U	12 U	12 U
1,1,2-TRICHLOROETHANE	11 U	12 U	12 U	12 U	12 U	12 U
BENZENE	11 U	12 U	12 U	12 U	12 U	12 U
TRANS-1,3-DICHLOROPROPENE	11 U	12 U	12 U	12 U	12 U	12 U
BROMOFORM	11 U	12 U	12 U	12 U	12 U	12 U
4-METHYL-2-PENTANONE	11 U	12 U	12 U	12 UJ	12 U	12 U
2-HEXANONE	11 U	12 U	12 U	12 UJ	12 U	12 U
TETRACHLOROETHENE	11 U	12 U	12 U	12 UJ	12 U	12 U
1,1,2,2-TETRACHLOROETHANE	11 U	12 U	12 U	12 UJ	12 U	12 U
TOLUENE	11 U	12 U	12 U	12 UJ	12 U	12 U
CHLOROBENZENE	11 U	12 U	12 U	12 UJ	12 U	12 U
ETHYLBENZENE	11 U	12 U	12 U	12 UJ	12 U	12 U
STYRENE	11 U	12 U	12 U	12 UJ	12 U	12 U
XYLENE (TOTAL)	11 U	12 U	12 U	12 UJ	12 U	12 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB20-01	63-SB21-03	63-SB22-03	63-SB23-03	63-SB24-03	63-SB25-03
DATE SAMPLED	11/09/95	11/08/95	11/07/95	11/07/95	11/07/95	11/06/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)						
PHENOL	370 U	400 U	400 U	390 U	390 U	390 U
BIS(2-CHLOROETHYL)ETHER	370 U	400 U	400 U	390 U	390 U	390 U
2-CHLOROPHENOL	370 U	400 U	400 U	390 U	390 U	390 U
1,3-DICHLOROBENZENE	370 U	400 U	400 U	390 U	390 U	390 U
1,4-DICHLOROBENZENE	370 U	400 U	400 U	390 U	390 U	390 U
1,2-DICHLOROBENZENE	370 U	400 U	400 U	390 U	390 U	390 U
2-METHYLPHENOL	370 U	400 U	400 U	390 U	390 U	390 U
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	400 U	400 U	390 U	390 U	390 U
4-METHYLPHENOL	370 U	400 U	400 U	390 U	390 U	390 U
N-NITROSO-DI-N-PROPYLAMINE	370 U	400 U	400 U	390 U	390 U	390 U
HEXACHLOROETHANE	370 U	400 U	400 U	390 U	390 U	390 U
NITROBENZENE	370 U	400 U	400 U	390 U	390 U	390 U
ISOPHORONE	370 U	400 U	400 U	390 U	390 U	390 U
2-NITROPHENOL	370 U	400 U	400 U	390 U	390 U	390 U
2,4-DIMETHYLPHENOL	370 U	400 U	400 U	390 U	390 U	390 U
BIS(2-CHLOROETHOXY)METHANE	370 U	400 U	400 U	390 U	390 U	390 U
2,4-DICHLOROPHENOL	370 U	400 U	400 U	390 U	390 U	390 U
1,2,4-TRICHLOROBENZENE	370 U	400 U	400 U	390 U	390 U	390 U
NAPHTHALENE	370 U	400 U	400 U	390 U	390 U	390 U
4-CHLOROANILINE	370 U	400 U	400 U	390 U	390 U	390 U
HEXACHLOROBUTADIENE	370 U	400 U	400 U	390 U	390 U	390 U
4-CHLORO-3-METHYLPHENOL	370 U	400 U	400 U	390 U	390 U	390 U
2-METHYLNAPHTHALENE	370 U	400 U	400 U	390 U	390 U	390 U
HEXACHLOROCYCLOPENTADIENE	370 U	400 U	400 U	390 U	390 U	390 U
2,4,6-TRICHLOROPHENOL	370 U	400 U	400 U	390 U	390 U	390 U
2,4,5-TRICHLOROPHENOL	920 U	1000 U	1000 U	970 U	970 U	980 U
2-CHLORONAPHTHALENE	370 U	400 U	400 U	390 U	390 U	390 U
2-NITROANILINE	920 U	1000 U	1000 U	970 U	970 U	980 U
DIMETHYLPHTHALATE	370 U	400 U	400 U	390 U	390 U	390 U
ACENAPHTHYLENE	370 U	400 U	400 U	390 U	390 U	390 U
2,6-DINITROTOLUENE	370 U	400 U	400 U	390 U	390 U	390 U
3-NITROANILINE	920 U	1000 U	1000 U	970 U	970 U	980 U
ACENAPHTHENE	370 U	400 U	400 U	390 U	390 U	390 U
2,4-DINITROPHENOL	920 U	1000 U	1000 U	970 U	970 U	980 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB20-01	63-SB21-03	63-SB22-03	63-SB23-03	63-SB24-03	63-SB25-03
DATE SAMPLED	11/09/95	11/08/95	11/07/95	11/07/95	11/07/95	11/06/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)						
4-NITROPHENOL	920 U	1000 U	1000 U	970 U	970 U	980 U
DIBENZOFURAN	370 U	400 U	400 U	390 U	390 U	390 U
2,4-DINITROTOLUENE	370 U	400 U	400 U	390 U	390 U	390 U
DIETHYLPHTHALATE	370 U	400 U	400 U	390 U	390 U	390 U
4-CHLOROPHENYL-PHENYLETHER	370 U	400 U	400 U	390 U	390 U	390 U
FLUORENE	370 U	400 U	400 U	390 U	390 U	390 U
4-NITROANILINE	920 U	1000 U	1000 U	970 U	970 U	980 U
4,6-DINITRO-2-METHYLPHENOL	920 U	1000 U	1000 U	970 U	970 U	980 U
N-NITROSODIPHENYLAMINE (1)	370 U	400 U	400 U	390 U	390 U	390 U
4-BROMOPHENYL-PHENYLETHER	370 U	400 U	400 U	390 U	390 U	390 U
HEXACHLOROBENZENE	370 U	400 U	400 U	390 U	390 U	390 U
PENTACHLOROPHENOL	920 U	1000 U	1000 U	970 U	970 U	980 U
PHENANTHRENE	370 U	400 U	400 U	390 U	390 U	390 U
ANTHRACENE	370 U	400 U	400 U	390 U	390 U	390 U
CARBAZOLE	370 U	400 U	400 U	390 U	390 U	390 U
DI-N-BUTYLPHTHALATE	370 U	740 U	1800 U	390 U	39 U	1200 U
FLUORANTHENE	370 U	400 U	400 U	390 U	390 U	390 U
PYRENE	370 U	400 U	400 U	390 U	390 U	390 U
BUTYLBENZYLPHTHALATE	370 U	400 U	400 U	390 U	390 U	390 U
3,3'-DICHLOROBENZIDINE	370 U	400 U	400 U	390 U	390 U	390 U
BENZO(A)ANTHRACENE	370 U	400 U	400 U	390 U	390 U	390 U
CHRYSENE	370 U	400 U	400 U	390 U	390 U	390 U
BIS(2-ETHYLHEXYL)PHTHALATE	210 J	400 U	400 U	120 J	390 U	390 U
DI-N-OCTYL PHTHALATE	370 U	400 U	400 U	390 U	390 U	390 U
BENZO(B)FLUORANTHENE	370 U	400 U	400 U	390 U	390 U	390 U
BENZO(K)FLUORANTHENE	370 U	400 U	400 U	390 U	390 U	390 U
BENZO(A)PYRENE	370 U	400 U	400 U	390 U	390 U	390 U
INDENO(1,2,3-CD)PYRENE	370 U	400 U	400 U	390 U	390 U	390 U
DIBENZO(A,H)ANTHRACENE	370 U	400 U	400 U	390 U	390 U	390 U
BENZO(G,H,I)PERYLENE	370 U	400 U	400 U	390 U	390 U	390 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB20-01	63-SB21-03	63-SB22-03	63-SB23-03	63-SB24-03	63-SB25-03
DATE SAMPLED	11/09/95	11/08/95	11/07/95	11/07/95	11/07/95	11/06/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)						
ALPHA-BHC	1.9 U	2 U	2 U	2 U	2 U	1.9 U
BETA-BHC	1.9 U	2 U	2 U	2 U	2 U	1.9 U
DELTA-BHC	1.9 UJ	2 UJ	2 UJ	2 UJ	2 UJ	1.9 UJ
HEPTACHLOR	1.9 U	2 U	2 U	2 U	2 U	1.9 UJ
ALDRIN	1.9 U	2 U	2 U	2 U	2 U	1.9 U
HEPTACHLOR EPOXIDE	1.9 U	2 U	2 U	2 U	2 U	1.9 U
ENDOSULFAN I	1.9 U	2 U	2 U	2 U	2 U	1.9 U
DIELDRIN	3.7 U	4 U	4 U	3.9 U	3.9 U	3.9 U
4,4'-DDE	2.6 J	4 U	2.8 J	3.9 U	3.9 U	3.9 UJ
ENDRIN	3.7 U	4 UJ	4 UJ	3.9 UJ	3.9 UJ	3.9 U
4,4'-DDD	3.7 U	4 U	5.6	3.9 U	3.9 U	3.9 U
ENDOSULFAN SULFATE	3.7 U	4 U	4 U	3.9 U	3.9 U	3.9 U
4,4'-DDT	7.8	4 U	4 U	3.9 U	3.9 U	3.9 U
METHOXYCHLOR	19 U	20 U	20 U	20 U	20 U	19 U
ENDRIN KETONE	3.7 U	4 U	4 U	3.9 U	3.9 U	3.9 U
ENDRIN ALDEHYDE	3.7 U	4 U	4 U	3.9 U	3.9 U	3.9 U
ALPHA-CHLORDANE	1.9 U	2 U	2 U	2 U	2 U	1.9 U
GAMMA-CHLORDANE	1.9 U	2 U	2 U	2 U	2 U	1.9 U
TOXAPHENE	190 U	200 U	200 U	200 U	200 U	190 U
AROCLOR-1016	37 U	40 U	40 U	39 U	39 U	39 U
AROCLOR-1221	74 U	81 U	81 U	78 U	78 U	77 U
AROCLOR-1232	37 U	40 U	40 U	39 U	39 U	39 U
AROCLOR-1242	37 U	40 U	40 U	39 U	39 U	39 U
AROCLOR-1248	37 U	40 U	40 U	39 U	39 U	39 U
AROCLOR-1254	37 U	40 U	40 U	39 U	39 U	39 U
AROCLOR-1260	37 U	40 U	40 U	39 U	39 U	39 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB26-03	63-SB27-02	63-SB28-02	63-SB29-03	63-SB30-03	63-SB31-04
DATE SAMPLED	11/06/95	11/06/95	11/07/95	11/07/95	11/09/95	11/08/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)						
CHLOROMETHANE	12 U	13 U	12 U	13 U	12 U	13 U
BROMOMETHANE	12 U	13 U	12 U	13 U	12 U	13 U
VINYL CHLORIDE	12 U	13 U	12 U	13 U	12 U	13 U
CHLOROETHANE	12 U	13 U	12 U	13 U	12 U	13 U
METHYLENE CHLORIDE	12 U	26	12 U	13 U	12 U	13 U
ACETONE	12 U	32	12 U	13 U	12 U	13 U
CARBON DISULFIDE	12 U	13 U	12 U	13 U	12 U	13 U
1,1-DICHLOROETHENE	12 U	13 U	12 U	13 U	12 U	13 U
1,1-DICHLOROETHANE	12 U	13 U	12 U	13 U	12 U	13 U
1,2-DICHLOROETHENE (TOTAL)	12 U	13 U	12 U	13 U	12 U	13 U
CHLOROFORM	12 U	13 U	12 U	13 U	12 U	13 U
1,2-DICHLOROETHANE	12 U	13 U	12 U	13 U	12 U	13 U
2-BUTANONE	12 U	13 U	12 U	13 U	12 U	13 U
1,1,1-TRICHLOROETHANE	12 U	13 U	12 U	13 U	12 U	13 U
CARBON TETRACHLORIDE	12 U	13 U	12 U	13 U	12 U	13 U
BROMODICHLOROMETHANE	12 U	13 U	12 U	13 U	12 U	13 U
1,2-DICHLOROPROPANE	12 U	13 U	12 U	13 U	12 U	13 U
CIS-1,3-DICHLOROPROPENE	12 U	13 U	12 U	13 U	12 U	13 U
TRICHLOROETHENE	12 U	13 U	12 U	13 U	12 U	13 U
DIBROMOCHLOROMETHANE	12 U	13 U	12 U	13 U	12 U	13 U
1,1,2-TRICHLOROETHANE	12 U	13 U	12 U	13 U	12 U	13 U
BENZENE	12 U	13 U	12 U	13 U	12 U	13 U
TRANS-1,3-DICHLOROPROPENE	12 U	13 U	12 U	13 U	12 U	13 U
BROMOFORM	12 U	13 U	12 U	13 U	12 U	13 U
4-METHYL-2-PENTANONE	12 U	13 U	12 U	13 U	12 U	13 U
2-HEXANONE	12 U	13 U	12 U	13 U	12 U	13 U
TETRACHLOROETHENE	12 U	13 U	12 U	13 U	12 U	13 U
1,1,2,2-TETRACHLOROETHANE	12 U	13 U	12 U	13 U	12 U	13 U
TOLUENE	12 U	13 U	12 U	13 U	12 U	13 U
CHLOROBENZENE	12 U	13 U	12 U	13 U	12 U	13 U
ETHYLBENZENE	12 U	13 U	12 U	13 U	12 U	13 U
STYRENE	12 U	13 U	12 U	13 U	12 U	13 U
XYLENE (TOTAL)	12 U	13 U	12 U	13 U	12 U	13 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB26-03	63-SB27-02	63-SB28-02	63-SB29-03	63-SB30-03	63-SB31-04
DATE SAMPLED	11/06/95	11/06/95	11/07/95	11/07/95	11/09/95	11/08/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)						
PHENOL	400 U	410 U	390 U	430 U	380 U	410 U
BIS(2-CHLOROETHYL)ETHER	400 U	410 U	390 U	430 U	380 R	410 U
2-CHLOROPHENOL	400 U	410 U	390 U	430 U	380 U	410 U
1,3-DICHLOROBENZENE	400 U	410 U	390 U	430 U	380 R	410 U
1,4-DICHLOROBENZENE	400 U	410 U	390 U	430 U	380 R	410 U
1,2-DICHLOROBENZENE	400 U	410 U	390 U	430 U	380 R	410 U
2-METHYLPHENOL	400 U	410 U	390 U	430 U	380 U	410 U
2,2'-OXYBIS(1-CHLOROPROPANE)	400 U	410 U	390 U	430 U	380 R	410 U
4-METHYLPHENOL	400 U	410 U	390 U	430 U	380 U	410 U
N-NITROSO-DI-N-PROPYLAMINE	400 U	410 U	390 U	430 U	380 R	410 U
HEXACHLOROETHANE	400 U	410 U	390 U	430 U	380 R	410 U
NITROBENZENE	400 U	410 U	390 U	430 U	380 R	410 U
ISOPHORONE	400 U	410 U	390 U	430 U	380 R	410 U
2-NITROPHENOL	400 U	410 U	390 U	430 U	380 U	410 U
2,4-DIMETHYLPHENOL	400 U	410 U	390 U	430 U	380 U	410 U
BIS(2-CHLOROETHOXY)METHANE	400 U	410 U	390 U	430 U	380 R	410 U
2,4-DICHLOROPHENOL	400 U	410 U	390 U	430 U	380 U	410 U
1,2,4-TRICHLOROBENZENE	400 U	410 U	390 U	430 U	380 R	410 U
NAPHTHALENE	400 U	410 U	390 U	430 U	380 R	410 U
4-CHLOROANILINE	400 U	410 U	390 U	430 U	380 R	410 U
HEXACHLOROBUTADIENE	400 U	410 U	390 U	430 U	380 R	410 U
4-CHLORO-3-METHYLPHENOL	400 U	410 U	390 U	430 U	380 U	410 U
2-METHYLNAPHTHALENE	400 U	410 U	390 U	430 U	380 R	410 U
HEXACHLOROCYCLOPENTADIENE	400 U	410 U	390 U	430 U	380 R	410 U
2,4,6-TRICHLOROPHENOL	400 U	410 U	390 U	430 U	380 U	410 U
2,4,5-TRICHLOROPHENOL	990 U	1000 U	970 U	1100 U	950 U	1000 U
2-CHLORONAPHTHALENE	400 U	410 U	390 U	430 U	380 R	410 U
2-NITROANILINE	990 U	1000 U	970 U	1100 U	950 R	1000 U
DIMETHYLPHTHALATE	400 U	410 U	390 U	430 U	380 R	410 U
ACENAPHTHYLENE	400 U	410 U	390 U	430 U	380 R	410 U
2,6-DINITROTOLUENE	400 U	410 U	390 U	430 U	380 R	410 U
3-NITROANILINE	990 U	1000 U	970 U	1100 U	950 R	1000 U
ACENAPHTHENE	400 U	410 U	390 U	430 U	380 R	410 U
2,4-DINITROPHENOL	990 U	1000 U	970 U	1100 U	950 U	1000 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB26-03	63-SB27-02	63-SB28-02	63-SB29-03	63-SB30-03	63-SB31-04
DATE SAMPLED	11/06/95	11/06/95	11/07/95	11/07/95	11/09/95	11/08/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)						
4-NITROPHENOL	990 U	1000 U	970 U	1100 U	950 U	1000 U
DIBENZOFURAN	400 U	410 U	390 U	430 U	380 R	410 U
2,4-DINITROTOLUENE	400 U	410 U	390 U	430 U	380 R	410 U
DIETHYLPHTHALATE	400 U	410 U	390 U	430 U	380 R	410 U
4-CHLOROPHENYL-PHENYLETHER	400 U	410 U	390 U	430 U	380 R	410 U
FLUORENE	400 U	410 U	390 U	430 U	380 R	410 U
4-NITROANILINE	990 U	1000 U	970 U	1100 U	950 R	1000 U
4,6-DINITRO-2-METHYLPHENOL	990 U	1000 U	970 U	1100 U	950 U	1000 U
N-NITROSODIPHENYLAMINE (1)	400 U	410 U	390 U	430 U	380 R	410 U
4-BROMOPHENYL-PHENYLETHER	400 U	410 U	390 U	430 U	380 R	410 U
HEXACHLOROBENZENE	400 U	410 U	390 U	430 U	380 R	410 U
PENTACHLOROPHENOL	990 U	1000 U	970 U	1100 U	950 U	1000 U
PHENANTHRENE	400 U	410 U	390 U	430 U	380 R	410 U
ANTHRACENE	400 U	410 U	390 U	430 U	380 R	410 U
CARBAZOLE	400 U	410 U	390 U	430 U	380 R	410 U
DI-N-BUTYLPHTHALATE	400 U	1000 U	520 U	430 U	110 R	410 U
FLUORANTHENE	400 U	410 U	390 U	430 U	380 R	410 U
PYRENE	400 U	410 U	390 U	430 U	380 R	410 U
BUTYLBENZYLPHTHALATE	400 U	410 U	390 U	430 U	380 R	410 U
3,3'-DICHLOROBENZIDINE	400 U	410 U	390 U	430 U	380 R	410 U
BENZO(A)ANTHRACENE	400 U	410 U	390 U	430 U	380 R	410 U
CHRYSENE	400 U	410 U	390 U	430 U	380 R	410 U
BIS(2-ETHYLHEXYL)PHTHALATE	230 J	410 U	390 U	54 J	380 R	410 U
DI-N-OCTYL PHTHALATE	400 U	410 U	390 U	430 U	380 R	410 U
BENZO(B)FLUORANTHENE	400 U	410 U	390 U	430 U	380 R	410 U
BENZO(K)FLUORANTHENE	400 U	410 U	390 U	430 U	380 R	410 U
BENZO(A)PYRENE	400 U	410 U	390 U	430 U	380 R	410 U
INDENO(1,2,3-CD)PYRENE	400 U	410 U	390 U	430 U	380 R	410 U
DIBENZO(A,H)ANTHRACENE	400 U	410 U	390 U	430 U	380 R	410 U
BENZO(G,H,I)PERYLENE	400 U	410 U	390 U	430 U	380 R	410 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB26-03	63-SB27-02	63-SB28-02	63-SB29-03	63-SB30-03	63-SB31-04
DATE SAMPLED	11/06/95	11/06/95	11/07/95	11/07/95	11/09/95	11/08/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)						
ALPHA-BHC	2 U	2.1 U	2 U	2.1 U	1.9 U	2 UJ
BETA-BHC	2 U	2.1 U	2 U	2.1 U	1.9 U	2 UJ
DELTA-BHC	2 UJ	2.1 UJ	2 UJ	2.1 UJ	1.9 UJ	2 UJ
HEPTACHLOR	2 U	2.1 UJ	2 U	2.1 U	1.9 U	2 UJ
ALDRIN	2 U	2.1 U	2 U	2.1 U	1.9 U	2 UJ
HEPTACHLOR EPOXIDE	2 U	2.1 U	2 U	2.1 U	1.9 U	2 UJ
ENDOSULFAN I	2 U	2.1 U	2 U	2.1 U	1.9 U	2 UJ
DIELDRIN	4 U	4.2 U	3.9 U	4.3 U	3.8 U	4.1 UJ
4,4'-DDE	4 U	4.2 UJ	3.9 U	4.3 U	3.8 U	4.1 UJ
ENDRIN	4 UJ	4.2 U	3.9 UJ	4.3 UJ	3.8 U	4.1 UJ
4,4'-DDD	4 U	4.2 U	3.9 U	4.3 U	3.8 U	4.1 UJ
ENDOSULFAN SULFATE	4 U	4.2 U	3.9 U	4.3 U	3.8 U	4.1 UJ
4,4'-DDT	4 U	4.2 U	3.9 U	4.3 U	3.8 U	4.1 UJ
METHOXYCHLOR	20 U	21 U	20 U	21 U	19 U	20 UJ
ENDRIN KETONE	4 U	4.2 U	3.9 U	4.3 U	3.8 U	4.1 UJ
ENDRIN ALDEHYDE	4 U	4.2 U	3.9 U	4.3 U	3.8 U	4.1 UJ
ALPHA-CHLORDANE	2 U	2.1 U	2 U	2.1 U	1.9 U	2 UJ
GAMMA-CHLORDANE	2 U	2.1 U	2 U	2.1 U	1.9 U	2 UJ
TOXAPHENE	200 U	210 U	200 U	210 U	190 U	200 UJ
AROCLOR-1016	40 U	42 U	39 U	43 U	38 U	41 UJ
AROCLOR-1221	79 U	84 U	78 U	86 U	76 U	82 UJ
AROCLOR-1232	40 U	42 U	39 U	43 U	38 U	41 UJ
AROCLOR-1242	40 U	42 U	39 U	43 U	38 U	41 UJ
AROCLOR-1248	40 U	42 U	39 U	43 U	38 U	41 UJ
AROCLOR-1254	40 U	42 U	39 U	43 U	38 U	41 UJ
AROCLOR-1260	40 U	42 U	39 U	43 U	38 U	41 UJ

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB32-02	63-SB33-02	63-SB34-05	63-SB36-02	63-SB37-04	63-SB38-02
DATE SAMPLED	11/09/95	11/08/95	11/07/95	11/09/95	11/08/95	11/08/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)						
CHLOROMETHANE	13 U	12 U	13 UJ	12 U	13 U	13 U
BROMOMETHANE	13 U	12 U	13 UJ	12 U	13 U	13 U
VINYL CHLORIDE	13 U	12 U	13 UJ	12 U	13 U	13 U
CHLOROETHANE	13 U	12 U	13 UJ	12 U	13 U	13 U
METHYLENE CHLORIDE	13 U	12 U	13 UJ	12 U	13 U	13 U
ACETONE	13 U	12 U	13 UJ	12 U	13 U	13 U
CARBON DISULFIDE	13 U	12 U	13 UJ	12 U	13 U	13 U
1,1-DICHLOROETHENE	13 U	12 U	13 UJ	12 U	13 U	13 U
1,1-DICHLOROETHANE	13 U	12 U	13 UJ	12 U	13 U	13 U
1,2-DICHLOROETHENE (TOTAL)	13 U	12 U	13 UJ	12 U	13 U	13 U
CHLOROFORM	13 U	12 U	13 UJ	12 U	13 U	13 U
1,2-DICHLOROETHANE	13 U	12 U	13 UJ	12 U	13 U	13 U
2-BUTANONE	13 U	12 U	13 UJ	12 U	13 U	13 U
1,1,1-TRICHLOROETHANE	13 U	12 U	13 UJ	12 U	13 U	13 U
CARBON TETRACHLORIDE	13 U	12 U	13 UJ	12 U	13 U	13 U
BROMODICHLOROMETHANE	13 U	12 U	13 UJ	12 U	13 U	13 U
1,2-DICHLOROPROPANE	13 U	12 U	13 UJ	12 U	13 U	13 U
CIS-1,3-DICHLOROPROPENE	13 U	12 U	13 UJ	12 U	13 U	13 U
TRICHLOROETHENE	13 U	12 U	13 UJ	12 U	13 U	13 U
DIBROMOCHLOROMETHANE	13 U	12 U	13 UJ	12 U	13 U	13 U
1,1,2-TRICHLOROETHANE	13 U	12 U	13 UJ	12 U	13 U	13 U
BENZENE	13 U	12 U	13 UJ	12 U	13 U	13 U
TRANS-1,3-DICHLOROPROPENE	13 U	12 U	13 UJ	12 U	13 U	13 U
BROMOFORM	13 U	12 U	13 UJ	12 U	13 U	13 U
4-METHYL-2-PENTANONE	13 U	12 U	13 UJ	12 U	13 U	13 U
2-HEXANONE	13 U	12 U	13 UJ	12 U	13 U	13 U
TETRACHLOROETHENE	13 U	12 U	13 UJ	12 U	13 U	13 U
1,1,2,2-TETRACHLOROETHANE	13 U	12 U	13 UJ	12 U	13 U	13 U
TOLUENE	13 U	12 U	13 UJ	12 U	13 U	13 U
CHLOROBENZENE	13 U	12 U	13 UJ	12 U	13 U	13 U
ETHYLBENZENE	13 U	12 U	13 UJ	12 U	13 U	13 U
STYRENE	13 U	12 U	13 UJ	12 U	13 U	13 U
XYLENE (TOTAL)	13 U	12 U	13 UJ	12 U	13 U	13 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB32-02	63-SB33-02	63-SB34-05	63-SB36-02	63-SB37-04	63-SB38-02
DATE SAMPLED	11/09/95	11/08/95	11/07/95	11/09/95	11/08/95	11/08/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)						
PHENOL	420 U	410 U	440 U	400 U	430 U	420 U
BIS(2-CHLOROETHYL)ETHER	420 U	410 U	440 U	400 U	430 U	420 U
2-CHLOROPHENOL	420 U	410 U	440 U	400 U	430 U	420 U
1,3-DICHLOROBENZENE	420 U	410 U	440 U	400 U	430 U	420 U
1,4-DICHLOROBENZENE	420 U	410 U	440 U	400 U	430 U	420 U
1,2-DICHLOROBENZENE	420 U	410 U	440 U	400 U	430 U	420 U
2-METHYLPHENOL	420 U	410 U	440 U	400 U	430 U	420 U
2,2'-OXYBIS(1-CHLOROPROPANE)	420 U	410 U	440 U	400 U	430 U	420 U
4-METHYLPHENOL	420 U	410 U	440 U	400 U	430 U	420 U
N-NITROSO-DI-N-PROPYLAMINE	420 U	410 U	440 U	400 U	430 U	420 U
HEXACHLOROETHANE	420 U	410 U	440 U	400 U	430 U	420 U
NITROBENZENE	420 U	410 U	440 U	400 U	430 U	420 U
ISOPHORONE	420 U	410 U	440 U	400 U	430 U	420 U
2-NITROPHENOL	420 U	410 U	440 U	400 U	430 U	420 U
2,4-DIMETHYLPHENOL	420 U	410 U	440 U	400 U	430 U	420 U
BIS(2-CHLOROETHOXY)METHANE	420 U	410 U	440 U	400 U	430 U	420 U
2,4-DICHLOROPHENOL	420 U	410 U	440 U	400 U	430 U	420 U
1,2,4-TRICHLOROBENZENE	420 U	410 U	440 U	400 U	430 U	420 U
NAPHTHALENE	420 U	410 U	440 U	400 U	430 U	420 U
4-CHLOROANILINE	420 U	410 U	440 U	400 U	430 U	420 U
HEXACHLOROBUTADIENE	420 U	410 U	440 U	400 U	430 U	420 U
4-CHLORO-3-METHYLPHENOL	420 U	410 U	440 U	400 U	430 U	420 U
2-METHYLNAPHTHALENE	420 U	410 U	440 U	400 U	430 U	420 U
HEXACHLOROCYCLOPENTADIENE	420 U	410 U	440 U	400 U	430 U	420 U
2,4,6-TRICHLOROPHENOL	420 U	410 U	440 U	400 U	430 U	420 U
2,4,5-TRICHLOROPHENOL	1000 U	1000 U	1100 U	1000 U	1100 U	1100 U
2-CHLORONAPHTHALENE	420 U	410 U	440 U	400 U	430 U	420 U
2-NITROANILINE	1000 U	1000 U	1100 U	1000 U	1100 U	1100 U
DIMETHYLPHTHALATE	420 U	410 U	440 U	400 U	430 U	420 U
ACENAPHTHYLENE	420 U	410 U	440 U	400 U	430 U	420 U
2,6-DINITROTOLUENE	420 U	410 U	440 U	400 U	430 U	420 U
3-NITROANILINE	1000 U	1000 U	1100 U	1000 U	1100 U	1100 U
ACENAPHTHENE	420 U	410 U	440 U	400 U	430 U	420 U
2,4-DINITROPHENOL	1000 U	1000 U	1100 U	1000 U	1100 U	1100 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB32-02	63-SB33-02	63-SB34-05	63-SB36-02	63-SB37-04	63-SB38-02
DATE SAMPLED	11/09/95	11/08/95	11/07/95	11/09/95	11/08/95	11/08/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)						
4-NITROPHENOL	1000 U	1000 U	1100 U	1000 U	1100 U	1100 U
DIBENZOFURAN	420 U	410 U	440 U	400 U	430 U	420 U
2,4-DINITROTOLUENE	420 U	410 U	440 U	400 U	430 U	420 U
DIETHYLPHTHALATE	420 U	410 U	440 U	400 U	430 U	420 U
4-CHLOROPHENYL-PHENYLETHER	420 U	410 U	440 U	400 U	430 U	420 U
FLUORENE	420 U	410 U	440 U	400 U	430 U	420 U
4-NITROANILINE	1000 U	1000 U	1100 U	1000 U	1100 U	1100 U
4,6-DINITRO-2-METHYLPHENOL	1000 U	1000 U	1100 U	1000 U	1100 U	1100 U
N-NITROSODIPHENYLAMINE (1)	420 U	410 U	440 U	400 U	430 U	420 U
4-BROMOPHENYL-PHENYLETHER	420 U	410 U	440 U	400 U	430 U	420 U
HEXACHLOROBENZENE	420 U	410 U	440 U	400 U	430 U	420 U
PENTACHLOROPHENOL	1000 U	1000 U	1100 U	1000 U	1100 U	1100 U
PHENANTHRENE	420 U	410 U	440 U	400 U	430 U	420 U
ANTHRACENE	420 U	410 U	440 U	400 U	430 U	420 U
CARBAZOLE	420 U	410 U	440 U	400 U	430 U	420 U
DI-N-BUTYLPHTHALATE	420 U	980 U	1600 U	1100 U	43 U	1800 U
FLUORANTHENE	420 U	410 U	440 U	400 U	430 U	420 U
PYRENE	420 U	410 U	440 U	400 U	430 U	420 U
BUTYLBENZYLPHTHALATE	420 U	410 U	440 U	400 U	430 U	420 U
3,3'-DICHLOROBENZIDINE	420 U	410 U	440 U	400 U	430 U	420 U
BENZO(A)ANTHRACENE	420 U	410 U	440 U	400 U	430 U	420 U
CHRYSENE	420 U	410 U	440 U	400 U	430 U	420 U
BIS(2-ETHYLHEXYL)PHTHALATE	420 U	410 U	440 U	400 U	360 NA	420 U
DI-N-OCTYL PHTHALATE	420 U	410 U	440 U	400 U	430 U	420 U
BENZO(B)FLUORANTHENE	420 U	410 U	440 U	400 U	430 U	420 U
BENZO(K)FLUORANTHENE	420 U	410 U	440 U	400 U	430 U	420 U
BENZO(A)PYRENE	420 U	410 U	440 U	400 U	430 U	420 U
INDENO(1,2,3-CD)PYRENE	420 U	410 U	440 U	400 U	430 U	420 U
DIBENZO(A,H)ANTHRACENE	420 U	410 U	440 U	400 U	430 U	420 U
BENZO(G,H,I)PERYLENE	420 U	410 U	440 U	400 U	430 U	420 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB32-02	63-SB33-02	63-SB34-05	63-SB36-02	63-SB37-04	63-SB38-02
DATE SAMPLED	11/09/95	11/08/95	11/07/95	11/09/95	11/08/95	11/08/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)						
ALPHA-BHC	2.1 U	2.1 U	2.2 U	2 U	2.1 U	2.1 UJ
BETA-BHC	2.1 U	2.1 U	2.2 U	2 U	2.1 U	2.1 UJ
DELTA-BHC	2.1 UJ	2.1 UJ	2.2 UJ	2 UJ	2.1 UJ	2.1 UJ
HEPTACHLOR	2.1 U	2.1 U	2.2 U	2 U	2.1 U	2.1 UJ
ALDRIN	2.1 U	2.1 U	2.2 U	2 U	2.1 U	2.1 UJ
HEPTACHLOR EPOXIDE	2.1 U	2.1 U	2.2 U	2 U	2.1 U	2.1 UJ
ENDOSULFAN I	2.1 U	2.1 U	2.2 U	2 U	2.1 U	2.1 UJ
DIELDRIN	5 J	4.1 U	4.4 U	3.9 U	4.2 U	4.1 UJ
4,4'-DDE	4.2 U	4.1 U	4.4 U	3.9 U	4.2 U	4.1 UJ
ENDRIN	4.2 U	4.1 UJ	4.4 UJ	3.9 U	4.2 UJ	4.1 UJ
4,4'-DDD	4.2 U	4.1 U	4.4 U	3.9 U	4.2 U	4.1 UJ
ENDOSULFAN SULFATE	4.2 U	4.1 U	4.4 U	3.9 U	4.2 U	4.1 UJ
4,4'-DDT	4.2 U	4.1 U	4.4 U	3.9 U	4.2 U	4.1 UJ
METHOXYCHLOR	21 U	21 U	22 U	20 U	21 U	21 UJ
ENDRIN KETONE	4.2 U	4.1 U	4.4 U	3.9 U	4.2 U	4.1 UJ
ENDRIN ALDEHYDE	4.2 U	4.1 U	4.4 U	3.9 U	4.2 U	4.1 UJ
ALPHA-CHLORDANE	2.1 U	2.1 U	2.2 U	2 U	2.1 U	2.1 UJ
GAMMA-CHLORDANE	2.1 U	2.1 U	2.2 U	2 U	2.1 U	2.1 UJ
TOXAPHENE	210 U	210 U	220 U	200 U	210 U	210 UJ
AROCLOR-1016	42 U	41 U	44 U	39 U	42 U	41 UJ
AROCLOR-1221	84 U	83 U	88 U	79 U	84 U	83 UJ
AROCLOR-1232	42 U	41 U	44 U	39 U	42 U	41 UJ
AROCLOR-1242	42 U	41 U	44 U	39 U	42 U	41 UJ
AROCLOR-1248	42 U	41 U	44 U	39 U	42 U	41 UJ
AROCLOR-1254	42 U	41 U	44 U	39 U	42 U	41 UJ
AROCLOR-1260	42 U	41 U	44 U	39 U	42 U	41 UJ

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW01-01	63-TW02-04	63-TW03-03	63-TW04-03	63-TW05-02	63-TW06-02
DATE SAMPLED	11/12/95	11/11/95	11/12/95	11/10/95	11/10/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)						
CHLOROMETHANE	12 U	13 U	12 U	12 U	12 U	13 U
BROMOMETHANE	12 U	13 U	12 U	12 U	12 U	13 U
VINYL CHLORIDE	12 U	13 U	12 U	12 U	12 U	13 U
CHLOROETHANE	12 U	13 U	12 U	12 U	12 U	13 U
METHYLENE CHLORIDE	12 U	13 U	12 U	12 U	12 U	13 U
ACETONE	12 U	13 U	12 U	12 U	12 U	13 U
CARBON DISULFIDE	12 U	13 U	12 U	12 U	12 U	13 U
1,1-DICHLOROETHENE	12 U	13 U	12 U	12 U	12 U	13 U
1,1-DICHLOROETHANE	12 U	13 U	12 U	12 U	12 U	13 U
1,2-DICHLOROETHENE (TOTAL)	12 U	13 U	12 U	12 U	12 U	13 U
CHLOROFORM	12 U	13 U	12 U	12 U	12 U	13 U
1,2-DICHLOROETHANE	12 U	13 U	12 U	12 U	12 U	13 U
2-BUTANONE	12 U	13 U	12 U	12 UJ	12 UJ	13 U
1,1,1-TRICHLOROETHANE	12 U	13 U	12 U	12 U	12 U	13 U
CARBON TETRACHLORIDE	12 U	13 U	12 U	12 U	12 U	13 U
BROMODICHLOROMETHANE	12 U	13 U	12 U	12 U	12 U	13 U
1,2-DICHLOROPROPANE	12 U	13 U	12 U	12 U	12 U	13 U
CIS-1,3-DICHLOROPROPENE	12 U	13 U	12 U	12 U	12 U	13 U
TRICHLOROETHENE	12 U	13 U	12 U	12 U	12 U	13 U
DIBROMOCHLOROMETHANE	12 U	13 U	12 U	12 U	12 U	13 U
1,1,2-TRICHLOROETHANE	12 U	13 U	12 U	12 U	12 U	13 U
BENZENE	12 U	13 U	12 U	12 U	12 U	13 U
TRANS-1,3-DICHLOROPROPENE	12 U	13 U	12 U	12 U	12 U	13 U
BROMOFORM	12 U	13 U	12 U	12 U	12 U	13 U
4-METHYL-2-PENTANONE	12 U	13 U	12 U	12 UJ	12 UJ	13 U
2-HEXANONE	12 U	13 U	12 U	12 UJ	12 UJ	13 U
TETRACHLOROETHENE	12 U	13 U	12 U	12 U	12 U	13 U
1,1,2,2-TETRACHLOROETHANE	12 U	13 U	12 U	12 U	12 U	13 U
TOLUENE	12 U	13 U	12 U	12 U	12 U	13 U
CHLOROBENZENE	12 U	13 U	12 U	12 U	12 U	13 U
ETHYLBENZENE	12 U	13 U	12 U	12 U	12 U	13 U
STYRENE	12 U	13 U	12 U	12 U	12 U	13 U
XYLENE (TOTAL)	12 U	13 U	12 U	12 U	12 U	13 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW01-01	63-TW02-04	63-TW03-03	63-TW04-03	63-TW05-02	63-TW06-02
DATE SAMPLED	11/12/95	11/11/95	11/12/95	11/10/95	11/10/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)						
PHENOL	390 U	440 U	410 U	390 U	400 U	410 U
BIS(2-CHLOROETHYL)ETHER	390 U	440 U	410 U	390 U	400 U	410 U
2-CHLOROPHENOL	390 U	440 U	410 U	390 U	400 U	410 U
1,3-DICHLOROBENZENE	390 U	440 U	410 U	390 U	400 U	410 U
1,4-DICHLOROBENZENE	390 U	440 U	410 U	390 U	400 U	410 U
1,2-DICHLOROBENZENE	390 U	440 U	410 U	390 U	400 U	410 U
2-METHYLPHENOL	390 U	440 U	410 U	390 U	400 U	410 U
2,2'-OXYBIS(1-CHLOROPROPANE)	390 U	440 U	410 U	390 U	400 U	410 U
4-METHYLPHENOL	390 U	440 U	410 U	390 U	400 U	410 U
N-NITROSO-DI-N-PROPYLAMINE	390 U	440 U	410 U	390 U	400 U	410 U
HEXACHLOROETHANE	390 U	440 U	410 U	390 U	400 U	410 U
NITROBENZENE	390 U	440 U	410 U	390 U	400 U	410 U
ISOPHORONE	390 U	440 U	410 U	390 U	400 U	410 U
2-NITROPHENOL	390 U	440 U	410 U	390 U	400 U	410 U
2,4-DIMETHYLPHENOL	390 U	440 U	410 U	390 U	400 U	410 U
BIS(2-CHLOROETHOXY)METHANE	390 U	440 U	410 U	390 U	400 U	410 U
2,4-DICHLOROPHENOL	390 U	440 U	410 U	390 U	400 U	410 U
1,2,4-TRICHLOROBENZENE	390 U	440 U	410 U	390 U	400 U	410 U
NAPHTHALENE	390 U	440 U	410 U	390 U	400 U	410 U
4-CHLOROANILINE	390 U	440 U	410 U	390 U	400 U	410 U
HEXACHLOROBUTADIENE	390 U	440 U	410 U	390 U	400 U	410 U
4-CHLORO-3-METHYLPHENOL	390 U	440 U	410 U	390 U	400 U	410 U
2-METHYLNAPHTHALENE	390 U	440 U	410 U	390 U	400 U	410 U
HEXACHLOROCYCLOPENTADIENE	390 U	440 U	410 U	390 U	400 U	410 U
2,4,6-TRICHLOROPHENOL	390 U	440 U	410 U	390 U	400 U	410 U
2,4,5-TRICHLOROPHENOL	980 U	1100 U	1000 U	970 U	990 U	1000 U
2-CHLORONAPHTHALENE	390 U	440 U	410 U	390 U	400 U	410 U
2-NITROANILINE	980 U	1100 U	1000 U	970 U	990 U	1000 U
DIMETHYLPHTHALATE	390 U	440 U	410 U	390 U	400 U	410 U
ACENAPHTHYLENE	390 U	440 U	410 U	390 U	400 U	410 U
2,6-DINITROTOLUENE	390 U	440 U	410 U	390 U	400 U	410 U
3-NITROANILINE	980 U	1100 U	1000 U	970 U	990 U	1000 U
ACENAPHTHENE	390 U	440 U	410 U	390 U	400 U	410 U
2,4-DINITROPHENOL	980 U	1100 U	1000 U	970 U	990 U	1000 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW01-01	63-TW02-04	63-TW03-03	63-TW04-03	63-TW05-02	63-TW06-02
DATE SAMPLED	11/12/95	11/11/95	11/12/95	11/10/95	11/10/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)						
4-NITROPHENOL	980 U	1100 U	1000 U	970 U	990 U	1000 U
DIBENZOFURAN	390 U	440 U	410 U	390 U	400 U	410 U
2,4-DINITROTOLUENE	390 U	440 U	410 U	390 U	400 U	410 U
DIETHYLPHTHALATE	390 U	440 U	410 U	390 U	400 U	410 U
4-CHLOROPHENYL-PHENYLETHER	390 U	440 U	410 U	390 U	400 U	410 U
FLUORENE	390 U	440 U	410 U	390 U	400 U	410 U
4-NITROANILINE	980 U	1100 U	1000 U	970 U	990 U	1000 U
4,6-DINITRO-2-METHYLPHENOL	980 U	1100 U	1000 U	970 U	990 U	1000 U
N-NITROSODIPHENYLAMINE (1)	390 U	440 U	410 U	390 U	400 U	410 U
4-BROMOPHENYL-PHENYLETHER	390 U	440 U	410 U	390 U	400 U	410 U
HEXACHLOROBENZENE	390 U	440 U	410 U	390 U	400 U	410 U
PENTACHLOROPHENOL	980 U	1100 U	1000 U	970 U	990 U	1000 U
PHENANTHRENE	390 U	440 U	410 U	390 U	400 U	410 U
ANTHRACENE	390 U	440 U	410 U	390 U	400 U	410 U
CARBAZOLE	390 U	440 U	410 U	390 U	400 U	410 U
DI-N-BUTYLPHTHALATE	490 U	630 U	510 U	390 U	400 U	410 U
FLUORANTHENE	390 U	440 U	410 U	390 U	400 U	410 U
PYRENE	390 U	440 U	410 U	390 U	400 U	410 U
BUTYLBENZYLPHTHALATE	390 U	440 U	410 U	390 U	400 U	410 U
3,3'-DICHLOROBENZIDINE	390 U	440 U	410 U	390 U	400 U	410 U
BENZO(A)ANTHRACENE	390 U	440 U	410 U	390 U	400 U	410 U
CHRYSENE	390 U	440 U	410 U	390 U	400 U	410 U
BIS(2-ETHYLHEXYL)PHTHALATE	390 U	61 J	410 U	390 U	400 U	410 U
DI-N-OCTYL PHTHALATE	390 UJ	440 UJ	410 UJ	390 U	400 U	410 U
BENZO(B)FLUORANTHENE	390 U	440 U	410 U	390 U	400 U	410 U
BENZO(K)FLUORANTHENE	390 U	440 U	410 U	390 U	400 U	410 U
BENZO(A)PYRENE	390 U	440 U	410 U	390 U	400 U	410 U
INDENO(1,2,3-CD)PYRENE	390 U	440 U	410 U	390 U	400 U	410 U
DIBENZO(A,H)ANTHRACENE	390 U	440 U	410 U	390 U	400 U	410 U
BENZO(G,H,I)PERYLENE	390 U	440 U	410 U	390 U	400 U	410 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW01-01	63-TW02-04	63-TW03-03	63-TW04-03	63-TW05-02	63-TW06-02
DATE SAMPLED	11/12/95	11/11/95	11/12/95	11/10/95	11/10/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)						
ALPHA-BHC	1.9 UJ	2.2 U	2.1 UJ	1.9 U	2 U	2.1 U
BETA-BHC	1.9 UJ	2.2 U	2.1 UJ	1.9 U	2 U	2.1 U
DELTA-BHC	1.9 UJ	2.2 U	2.1 UJ	1.9 UJ	2 UJ	2.1 UJ
HEPTACHLOR	1.9 UJ	2.2 U	2.1 UJ	1.9 U	2 U	2.1 U
ALDRIN	1.9 UJ	2.2 U	2.1 UJ	1.9 U	2 U	2.1 U
HEPTACHLOR EPOXIDE	1.9 UJ	2.2 U	2.1 UJ	1.9 U	2 U	2.1 U
ENDOSULFAN I	1.9 UJ	2.2 U	2.1 UJ	1.9 U	2 U	2.1 U
DIELDRIN	3.9 UJ	4.4 U	4.1 UJ	3.8 U	4 U	4.2 U
4,4'-DDE	3.9 UJ	4.4 U	4.1 UJ	3.8 UJ	4 UJ	4.2 UJ
ENDRIN	3.9 UJ	4.4 U	4.1 UJ	3.8 U	4 U	4.2 U
4,4'-DDD	3.9 UJ	4.4 U	4.1 UJ	3.8 U	4 U	4.2 U
ENDOSULFAN SULFATE	3.9 UJ	4.4 U	4.1 UJ	3.8 U	4 U	4.2 U
4,4'-DDT	3.9 UJ	4.4 U	4.1 UJ	3.8 U	4 U	4.2 U
METHOXYCHLOR	19 UJ	22 U	21 UJ	19 U	20 U	21 U
ENDRIN KETONE	3.9 UJ	4.4 U	4.1 UJ	3.8 U	4 U	4.2 U
ENDRIN ALDEHYDE	3.9 UJ	4.4 U	4.1 UJ	3.8 U	4 U	4.2 U
ALPHA-CHLORDANE	1.9 UJ	2.2 U	2.1 UJ	1.9 U	2 U	2.1 U
GAMMA-CHLORDANE	1.9 UJ	2.2 U	2.1 UJ	1.9 U	2 U	2.1 U
TOXAPHENE	190 UJ	220 U	210 UJ	190 U	200 U	210 U
AROCLOR-1016	39 UJ	44 U	41 UJ	38 U	40 U	42 U
AROCLOR-1221	78 UJ	87 U	83 UJ	77 U	80 U	83 U
AROCLOR-1232	39 UJ	44 U	41 UJ	38 U	40 U	42 U
AROCLOR-1242	39 UJ	44 U	41 UJ	38 U	40 U	42 U
AROCLOR-1248	39 UJ	44 U	41 UJ	38 U	40 U	42 U
AROCLOR-1254	39 UJ	44 U	41 UJ	38 U	40 U	42 U
AROCLOR-1260	39 UJ	44 U	41 UJ	38 U	40 U	42 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW07-01	63-TW08-03
DATE SAMPLED	11/11/95	11/09/95
DEPTH	N/A	N/A
VOLATILES (ug/kg)		
CHLOROMETHANE	12 U	13 U
BROMOMETHANE	12 U	13 U
VINYL CHLORIDE	12 U	13 U
CHLOROETHANE	12 U	13 U
METHYLENE CHLORIDE	12 U	13 U
ACETONE	12 U	13 U
CARBON DISULFIDE	12 U	13 U
1,1-DICHLOROETHENE	12 U	13 U
1,1-DICHLOROETHANE	12 U	13 U
1,2-DICHLOROETHENE (TOTAL)	12 U	13 U
CHLOROFORM	12 U	13 U
1,2-DICHLOROETHANE	12 U	13 U
2-BUTANONE	12 U	13 U
1,1,1-TRICHLOROETHANE	12 U	13 U
CARBON TETRACHLORIDE	12 U	13 U
BROMODICHLOROMETHANE	12 U	13 U
1,2-DICHLOROPROPANE	12 U	13 U
CIS-1,3-DICHLOROPROPENE	12 U	13 U
TRICHLOROETHENE	12 U	13 U
DIBROMOCHLOROMETHANE	12 U	13 U
1,1,2-TRICHLOROETHANE	12 U	13 U
BENZENE	12 U	13 U
TRANS-1,3-DICHLOROPROPENE	12 U	13 U
BROMOFORM	12 U	13 U
4-METHYL-2-PENTANONE	12 U	13 U
2-HEXANONE	12 U	13 U
TETRACHLOROETHENE	12 U	13 U
1,1,2,2-TETRACHLOROETHANE	12 U	13 U
TOLUENE	12 U	13 U
CHLOROBENZENE	12 U	13 U
ETHYLBENZENE	12 U	13 U
STYRENE	12 U	13 U
XYLENE (TOTAL)	12 U	13 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW07-01	63-TW08-03
DATE SAMPLED	11/11/95	11/09/95
DEPTH	N/A	N/A
SEMIVOLATILES (ug/kg)		
PHENOL	390 U	420 U
BIS(2-CHLOROETHYL)ETHER	390 U	420 U
2-CHLOROPHENOL	390 U	420 U
1,3-DICHLOROBENZENE	390 U	420 U
1,4-DICHLOROBENZENE	390 U	420 U
1,2-DICHLOROBENZENE	390 U	420 U
2-METHYLPHENOL	390 U	420 U
2,2'-OXYBIS(1-CHLOROPROPANE)	390 U	420 U
4-METHYLPHENOL	390 U	420 U
N-NITROSO-DI-N-PROPYLAMINE	390 U	420 U
HEXACHLOROETHANE	390 U	420 U
NITROBENZENE	390 U	420 U
ISOPHORONE	390 U	420 U
2-NITROPHENOL	390 U	420 U
2,4-DIMETHYLPHENOL	390 U	420 U
BIS(2-CHLOROETHOXY)METHANE	390 U	420 U
2,4-DICHLOROPHENOL	390 U	420 U
1,2,4-TRICHLOROBENZENE	390 U	420 U
NAPHTHALENE	390 U	420 U
4-CHLOROANILINE	390 U	420 U
HEXACHLOROBUTADIENE	390 U	420 U
4-CHLORO-3-METHYLPHENOL	390 U	420 U
2-METHYLNAPHTHALENE	390 U	420 U
HEXACHLOROCYCLOPENTADIENE	390 U	420 U
2,4,6-TRICHLOROPHENOL	390 U	420 U
2,4,5-TRICHLOROPHENOL	980 U	1000 U
2-CHLORONAPHTHALENE	390 U	420 U
2-NITROANILINE	980 U	1000 U
DIMETHYLPHTHALATE	390 U	420 U
ACENAPHTHYLENE	390 U	420 U
2,6-DINITROTOLUENE	390 U	420 U
3-NITROANILINE	980 U	1000 U
ACENAPHTHENE	390 U	420 U
2,4-DINITROPHENOL	980 U	1000 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW07-01	63-TW08-03
DATE SAMPLED	11/11/95	11/09/95
DEPTH	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)		
4-NITROPHENOL	980 U	1000 U
DIBENZOFURAN	390 U	420 U
2,4-DINITROTOLUENE	390 U	420 U
DIETHYLPHTHALATE	390 U	420 U
4-CHLOROPHENYL-PHENYLETHER	390 U	420 U
FLUORENE	390 U	420 U
4-NITROANILINE	980 U	1000 U
4,6-DINITRO-2-METHYLPHENOL	980 U	1000 U
N-NITROSODIPHENYLAMINE (1)	390 U	420 U
4-BROMOPHENYL-PHENYLETHER	390 U	420 U
HEXACHLOROBENZENE	390 U	420 U
PENTACHLOROPHENOL	980 U	1000 U
PHENANTHRENE	390 U	420 U
ANTHRACENE	390 U	420 U
CARBAZOLE	390 U	420 U
DI-N-BUTYLPHTHALATE	390 U	1500 U
FLUORANTHENE	390 U	420 U
PYRENE	390 U	420 U
BUTYLBENZYLPHTHALATE	390 U	420 U
3,3'-DICHLOROBENZIDINE	390 U	420 U
BENZO(A)ANTHRACENE	390 U	420 U
CHRYSENE	390 U	420 U
BIS(2-ETHYLHEXYL)PHTHALATE	390 U	420 U
DI-N-OCTYL PHTHALATE	390 UJ	420 U
BENZO(B)FLUORANTHENE	390 U	420 U
BENZO(K)FLUORANTHENE	390 U	420 U
BENZO(A)PYRENE	390 U	420 U
INDENO(1,2,3-CD)PYRENE	390 U	420 U
DIBENZO(A,H)ANTHRACENE	390 U	420 U
BENZO(G,H,I)PERYLENE	390 U	420 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW07-01	63-TW08-03
DATE SAMPLED	11/11/95	11/09/95
DEPTH	N/A	N/A
PESTICIDE/PCBS (ug/kg)		
ALPHA-BHC	2 U	2.1 U
BETA-BHC	2 U	2.1 U
DELTA-BHC	2 U	2.1 UJ
HEPTACHLOR	2 U	2.1 U
ALDRIN	2 U	2.1 U
HEPTACHLOR EPOXIDE	2 U	2.1 U
ENDOSULFAN I	2 U	2.1 U
DIELDRIN	3.9 U	4.3 U
4,4'-DDE	3.9 U	4.3 U
ENDRIN	3.9 U	4.3 U
4,4'-DDD	3.9 U	4.3 U
ENDOSULFAN SULFATE	3.9 U	4.3 U
4,4'-DDT	3.9 U	4.3 U
METHOXYCHLOR	20 U	21 U
ENDRIN KETONE	3.9 U	4.3 U
ENDRIN ALDEHYDE	3.9 U	4.3 U
ALPHA-CHLORDANE	2 U	2.1 U
GAMMA-CHLORDANE	2 U	2.1 U
TOXAPHENE	200 U	210 U
AROCLOR-1016	39 U	43 U
AROCLOR-1221	78 U	85 U
AROCLOR-1232	39 U	43 U
AROCLOR-1242	39 U	43 U
AROCLOR-1248	39 U	43 U
AROCLOR-1254	39 U	43 U
AROCLOR-1260	39 U	43 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
VOLATILES (ug/kg)								
CHLOROMETHANE	11 U	14 U	ND	ND		0/50	NA	NA
BROMOMETHANE	11 U	14 U	ND	ND		0/50	NA	NA
VINYL CHLORIDE	11 U	14 U	ND	ND		0/50	NA	NA
CHLOROETHANE	11 U	14 U	ND	ND		0/50	NA	NA
METHYLENE CHLORIDE	11 U	14 U	20	100	63-SB25-03	5/50	43.40	26.00
ACETONE	11 U	14 U	23 J	150 J	63-SB25-03	7/50	62.71	48.00
CARBON DISULFIDE	11 U	14 U	ND	ND		0/50	NA	NA
1,1-DICHLOROETHENE	11 U	14 U	ND	ND		0/50	NA	NA
1,1-DICHLOROETHANE	11 U	14 U	ND	ND		0/50	NA	NA
1,2-DICHLOROETHENE (TOTAL)	11 U	14 U	ND	ND		0/50	NA	NA
CHLOROFORM	11 U	14 U	ND	ND		0/50	NA	NA
1,2-DICHLOROETHANE	11 U	14 U	ND	ND		0/50	NA	NA
2-BUTANONE	11 U	14 U	ND	ND		0/50	NA	NA
1,1,1-TRICHLOROETHANE	11 U	14 U	ND	ND		0/50	NA	NA
CARBON TETRACHLORIDE	11 U	14 U	ND	ND		0/50	NA	NA
BROMODICHLOROMETHANE	11 U	14 U	ND	ND		0/50	NA	NA
1,2-DICHLOROPROPANE	11 U	14 U	ND	ND		0/50	NA	NA
CIS-1,3-DICHLOROPROPENE	11 U	14 U	ND	ND		0/50	NA	NA
TRICHLOROETHENE	11 U	14 U	ND	ND		0/50	NA	NA
DIBROMOCHLOROMETHANE	11 U	14 U	ND	ND		0/50	NA	NA
1,1,2-TRICHLOROETHANE	11 U	14 U	ND	ND		0/50	NA	NA
BENZENE	11 U	14 U	ND	ND		0/50	NA	NA
TRANS-1,3-DICHLOROPROPENE	11 U	14 U	ND	ND		0/50	NA	NA
BROMOFORM	11 U	14 U	ND	ND		0/50	NA	NA
4-METHYL-2-PENTANONE	11 U	14 U	ND	ND		0/50	NA	NA
2-HEXANONE	11 U	14 U	ND	ND		0/50	NA	NA
TETRACHLOROETHENE	11 U	14 U	ND	ND		0/50	NA	NA
1,1,2,2-TETRACHLOROETHANE	11 U	14 U	ND	ND		0/50	NA	NA
TOLUENE	11 U	14 U	ND	ND		0/50	NA	NA
CHLOROBENZENE	11 U	14 U	ND	ND		0/50	NA	NA
ETHYLBENZENE	11 U	14 U	ND	ND		0/50	NA	NA
STYRENE	11 U	14 U	41	41	63-SB15-04	1/50	41.00	41.00
XYLENE (TOTAL)	11 U	14 U	ND	ND		0/50	NA	NA

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/kg)								
PHENOL	370 U	450 U	ND	ND		0/50	NA	NA
BIS(2-CHLOROETHYL)ETHER	370 U	450 U	ND	ND		0/49	NA	NA
2-CHLOROPHENOL	370 U	450 U	ND	ND		0/50	NA	NA
1,3-DICHLOROBENZENE	370 U	450 U	ND	ND		0/49	NA	NA
1,4-DICHLOROBENZENE	370 U	450 U	ND	ND		0/49	NA	NA
1,2-DICHLOROBENZENE	370 U	450 U	ND	ND		0/49	NA	NA
2-METHYLPHENOL	370 U	450 U	ND	ND		0/50	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	450 U	ND	ND		0/49	NA	NA
4-METHYLPHENOL	370 U	450 U	ND	ND		0/50	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	370 U	450 U	ND	ND		0/49	NA	NA
HEXACHLOROETHANE	370 U	450 U	ND	ND		0/49	NA	NA
NITROBENZENE	370 U	450 U	ND	ND		0/49	NA	NA
ISOPHORONE	370 U	450 U	ND	ND		0/49	NA	NA
2-NITROPHENOL	370 U	450 U	ND	ND		0/50	NA	NA
2,4-DIMETHYLPHENOL	370 U	450 U	ND	ND		0/50	NA	NA
BIS(2-CHLOROETHOXY)METHANE	370 U	450 U	ND	ND		0/49	NA	NA
2,4-DICHLOROPHENOL	370 U	450 U	ND	ND		0/50	NA	NA
1,2,4-TRICHLOROBENZENE	370 U	450 U	ND	ND		0/49	NA	NA
NAPHTHALENE	370 U	450 U	ND	ND		0/49	NA	NA
4-CHLOROANILINE	370 U	450 U	ND	ND		0/49	NA	NA
HEXACHLOROBUTADIENE	370 U	450 U	ND	ND		0/49	NA	NA
4-CHLORO-3-METHYLPHENOL	370 U	450 U	ND	ND		0/50	NA	NA
2-METHYLNAPHTHALENE	370 U	450 U	ND	ND		0/49	NA	NA
HEXACHLOROCYCLOPENTADIENE	370 U	450 U	ND	ND		0/49	NA	NA
2,4,6-TRICHLOROPHENOL	370 U	450 U	ND	ND		0/50	NA	NA
2,4,5-TRICHLOROPHENOL	920 U	1100 U	ND	ND		0/50	NA	NA
2-CHLORONAPHTHALENE	370 U	450 U	ND	ND		0/49	NA	NA
2-NITROANILINE	920 U	1100 U	ND	ND		0/49	NA	NA
DIMETHYLPHTHALATE	370 U	450 U	ND	ND		0/49	NA	NA
ACENAPHTHYLENE	370 U	450 U	ND	ND		0/49	NA	NA
2,6-DINITROTOLUENE	370 U	450 U	ND	ND		0/49	NA	NA
3-NITROANILINE	920 U	1100 U	ND	ND		0/49	NA	NA
ACENAPHTHENE	370 U	450 U	ND	ND		0/49	NA	NA
2,4-DINITROPHENOL	920 U	1100 U	ND	ND		0/50	NA	NA

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/kg) (cont)								
4-NITROPHENOL	920 U	1100 U	ND	ND		0/50	NA	NA
DIBENZOFURAN	370 U	450 U	ND	ND		0/49	NA	NA
2,4-DINITROTOLUENE	370 U	450 U	ND	ND		0/49	NA	NA
DIETHYLPHTHALATE	370 U	450 U	ND	ND		0/49	NA	NA
4-CHLOROPHENYL-PHENYLETHER	370 U	450 U	ND	ND		0/49	NA	NA
FLUORENE	370 U	450 U	ND	ND		0/49	NA	NA
4-NITROANILINE	920 U	1100 U	ND	ND		0/49	NA	NA
4,6-DINITRO-2-METHYLPHENOL	920 U	1100 U	ND	ND		0/50	NA	NA
N-NITROSODIPHENYLAMINE (1)	370 U	450 U	94 J	350 J	63-SB19-03	2/49	222.00	222.00
4-BROMOPHENYL-PHENYLETHER	370 U	450 U	ND	ND		0/49	NA	NA
HEXACHLOROBENZENE	370 U	450 U	ND	ND		0/49	NA	NA
PENTACHLOROPHENOL	920 U	1100 U	ND	ND		0/49	NA	NA
PHENANTHRENE	370 U	450 U	ND	ND		0/49	NA	NA
ANTHRACENE	370 U	450 U	ND	ND		0/49	NA	NA
CARBAZOLE	370 U	450 U	ND	ND		0/49	NA	NA
DI-N-BUTYLPHTHALATE	39 U	1800 U	ND	ND		0/49	NA	NA
FLUORANTHENE	370 U	450 U	ND	ND		0/49	NA	NA
PYRENE	370 U	450 U	ND	ND		0/49	NA	NA
BUTYLBENZYLPHTHALATE	370 U	450 U	ND	ND		0/49	NA	NA
3,3'-DICHLOROBENZIDINE	370 U	450 U	ND	ND		0/49	NA	NA
BENZO(A)ANTHRACENE	370 U	450 U	ND	ND		0/49	NA	NA
CHRYSENE	370 U	450 U	ND	ND		0/49	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	380 U	2200 U	41 J	4700	63-SB19-03	12/49	639.75	165.00
DI-N-OCTYL PHTHALATE	370 U	450 U	ND	ND		0/49	NA	NA
BENZO(B)FLUORANTHENE	370 U	450 U	ND	ND		0/49	NA	NA
BENZO(K)FLUORANTHENE	370 U	450 U	ND	ND		0/49	NA	NA
BENZO(A)PYRENE	370 U	450 U	ND	ND		0/49	NA	NA
INDENO(1,2,3-CD)PYRENE	370 U	450 U	ND	ND		0/49	NA	NA
DIBENZO(A,H)ANTHRACENE	370 U	450 U	ND	ND		0/49	NA	NA
BENZO(G,H,I)PERYLENE	370 U	450 U	ND	ND		0/49	NA	NA

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
PESTICIDE/PCBS (ug/kg)								
ALPHA-BHC	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
BETA-BHC	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
DELTA-BHC	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
HEPTACHLOR	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
ALDRIN	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
HEPTACHLOR EPOXIDE	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
ENDOSULFAN I	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
DIELDRIN	3.7 U	4.5 U	2.1 J	5 J	63-SB32-02	2/50	3.55	3.55
4,4'-DDE	3.8 UJ	4.5 U	2.6 J	2.8 J	63-SB22-03	2/50	2.70	2.70
ENDRIN	3.7 U	4.5 U	ND	ND		0/50	NA	NA
4,4'-DDD	3.7 U	4.5 U	5.6	5.6	63-SB22-03	1/50	5.60	5.60
ENDOSULFAN SULFATE	3.7 U	4.5 U	ND	ND		0/50	NA	NA
4,4'-DDT	3.8 UJ	4.5 U	7.8	7.8	63-SB20-01	1/50	7.80	7.80
METHOXYCHLOR	19 UJ	23 U	ND	ND		0/50	NA	NA
ENDRIN KETONE	3.7 U	4.5 U	ND	ND		0/50	NA	NA
ENDRIN ALDEHYDE	3.7 U	4.5 U	ND	ND		0/50	NA	NA
ALPHA-CHLORDANE	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
GAMMA-CHLORDANE	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
TOXAPHENE	190 UJ	230 U	ND	ND		0/50	NA	NA
AROCLOR-1016	37 U	45 U	ND	ND		0/50	NA	NA
AROCLOR-1221	74 U	91 UJ	ND	ND		0/50	NA	NA
AROCLOR-1232	37 U	45 U	ND	ND		0/50	NA	NA
AROCLOR-1242	37 U	45 U	ND	ND		0/50	NA	NA
AROCLOR-1248	37 U	45 U	ND	ND		0/50	NA	NA
AROCLOR-1254	37 U	45 U	ND	ND		0/50	NA	NA
AROCLOR-1260	37 U	45 U	ND	ND		0/50	NA	NA

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
VOLATILES (ug/kg)								
CHLOROMETHANE	11 U	14 U	ND	ND		0/50	NA	NA
BROMOMETHANE	11 U	14 U	ND	ND		0/50	NA	NA
VINYL CHLORIDE	11 U	14 U	ND	ND		0/50	NA	NA
CHLOROETHANE	11 U	14 U	ND	ND		0/50	NA	NA
METHYLENE CHLORIDE	11 U	14 U	20	100	63-SB25-03	5/50	43.40	26.00
ACETONE	11 U	14 U	23 J	150 J	63-SB25-03	7/50	62.71	48.00
CARBON DISULFIDE	11 U	14 U	ND	ND		0/50	NA	NA
1,1-DICHLOROETHENE	11 U	14 U	ND	ND		0/50	NA	NA
1,1-DICHLOROETHANE	11 U	14 U	ND	ND		0/50	NA	NA
1,2-DICHLOROETHENE (TOTAL)	11 U	14 U	ND	ND		0/50	NA	NA
CHLOROFORM	11 U	14 U	ND	ND		0/50	NA	NA
1,2-DICHLOROETHANE	11 U	14 U	ND	ND		0/50	NA	NA
2-BUTANONE	11 U	14 U	ND	ND		0/50	NA	NA
1,1,1-TRICHLOROETHANE	11 U	14 U	ND	ND		0/50	NA	NA
CARBON TETRACHLORIDE	11 U	14 U	ND	ND		0/50	NA	NA
BROMODICHLOROMETHANE	11 U	14 U	ND	ND		0/50	NA	NA
1,2-DICHLOROPROPANE	11 U	14 U	ND	ND		0/50	NA	NA
CIS-1,3-DICHLOROPROPENE	11 U	14 U	ND	ND		0/50	NA	NA
TRICHLOROETHENE	11 U	14 U	ND	ND		0/50	NA	NA
DIBROMOCHLOROMETHANE	11 U	14 U	ND	ND		0/50	NA	NA
1,1,2-TRICHLOROETHANE	11 U	14 U	ND	ND		0/50	NA	NA
BENZENE	11 U	14 U	ND	ND		0/50	NA	NA
TRANS-1,3-DICHLOROPROPENE	11 U	14 U	ND	ND		0/50	NA	NA
BROMOFORM	11 U	14 U	ND	ND		0/50	NA	NA
4-METHYL-2-PENTANONE	11 U	14 U	ND	ND		0/50	NA	NA
2-HEXANONE	11 U	14 U	ND	ND		0/50	NA	NA
TETRACHLOROETHENE	11 U	14 U	ND	ND		0/50	NA	NA
1,1,2,2-TETRACHLOROETHANE	11 U	14 U	ND	ND		0/50	NA	NA
TOLUENE	11 U	14 U	ND	ND		0/50	NA	NA
CHLOROBENZENE	11 U	14 U	ND	ND		0/50	NA	NA
ETHYLBENZENE	11 U	14 U	ND	ND		0/50	NA	NA
STYRENE	11 U	14 U	41	41	63-SB15-04	1/50	41.00	41.00
XYLENE (TOTAL)	11 U	14 U	ND	ND		0/50	NA	NA

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/kg)								
PHENOL	370 U	450 U	ND	ND		0/50	NA	NA
BIS(2-CHLOROETHYL)ETHER	370 U	450 U	ND	ND		0/49	NA	NA
2-CHLOROPHENOL	370 U	450 U	ND	ND		0/50	NA	NA
1,3-DICHLOROBENZENE	370 U	450 U	ND	ND		0/49	NA	NA
1,4-DICHLOROBENZENE	370 U	450 U	ND	ND		0/49	NA	NA
1,2-DICHLOROBENZENE	370 U	450 U	ND	ND		0/49	NA	NA
2-METHYLPHENOL	370 U	450 U	ND	ND		0/50	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	370 U	450 U	ND	ND		0/49	NA	NA
4-METHYLPHENOL	370 U	450 U	ND	ND		0/50	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	370 U	450 U	ND	ND		0/49	NA	NA
HEXACHLOROETHANE	370 U	450 U	ND	ND		0/49	NA	NA
NITROBENZENE	370 U	450 U	ND	ND		0/49	NA	NA
ISOPHORONE	370 U	450 U	ND	ND		0/49	NA	NA
2-NITROPHENOL	370 U	450 U	ND	ND		0/50	NA	NA
2,4-DIMETHYLPHENOL	370 U	450 U	ND	ND		0/50	NA	NA
BIS(2-CHLOROETHOXY)METHANE	370 U	450 U	ND	ND		0/49	NA	NA
2,4-DICHLOROPHENOL	370 U	450 U	ND	ND		0/50	NA	NA
1,2,4-TRICHLOROBENZENE	370 U	450 U	ND	ND		0/49	NA	NA
NAPHTHALENE	370 U	450 U	ND	ND		0/49	NA	NA
4-CHLOROANILINE	370 U	450 U	ND	ND		0/49	NA	NA
HEXACHLOROBUTADIENE	370 U	450 U	ND	ND		0/49	NA	NA
4-CHLORO-3-METHYLPHENOL	370 U	450 U	ND	ND		0/50	NA	NA
2-METHYLNAPHTHALENE	370 U	450 U	ND	ND		0/49	NA	NA
HEXACHLOROCYCLOPENTADIENE	370 U	450 U	ND	ND		0/49	NA	NA
2,4,6-TRICHLOROPHENOL	370 U	450 U	ND	ND		0/50	NA	NA
2,4,5-TRICHLOROPHENOL	920 U	1100 U	ND	ND		0/50	NA	NA
2-CHLORONAPHTHALENE	370 U	450 U	ND	ND		0/49	NA	NA
2-NITROANILINE	920 U	1100 U	ND	ND		0/49	NA	NA
DIMETHYLPHTHALATE	370 U	450 U	ND	ND		0/49	NA	NA
ACENAPHTHYLENE	370 U	450 U	ND	ND		0/49	NA	NA
2,6-DINITROTOLUENE	370 U	450 U	ND	ND		0/49	NA	NA
3-NITROANILINE	920 U	1100 U	ND	ND		0/49	NA	NA
ACENAPHTHENE	370 U	450 U	ND	ND		0/49	NA	NA
2,4-DINITROPHENOL	920 U	1100 U	ND	ND		0/50	NA	NA

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/kg) (cont)								
4-NITROPHENOL	920 U	1100 U	ND	ND		0/50	NA	NA
DIBENZOFURAN	370 U	450 U	ND	ND		0/49	NA	NA
2,4-DINITROTOLUENE	370 U	450 U	ND	ND		0/49	NA	NA
DIETHYLPHTHALATE	370 U	450 U	ND	ND		0/49	NA	NA
4-CHLOROPHENYL-PHENYLETHER	370 U	450 U	ND	ND		0/49	NA	NA
FLUORENE	370 U	450 U	ND	ND		0/49	NA	NA
4-NITROANILINE	920 U	1100 U	ND	ND		0/49	NA	NA
4,6-DINITRO-2-METHYLPHENOL	920 U	1100 U	ND	ND		0/50	NA	NA
N-NITROSODIPHENYLAMINE (1)	370 U	450 U	94 J	350 J	63-SB19-03	2/49	222.00	222.00
4-BROMOPHENYL-PHENYLETHER	370 U	450 U	ND	ND		0/49	NA	NA
HEXACHLOROBENZENE	370 U	450 U	ND	ND		0/49	NA	NA
PENTACHLOROPHENOL	920 U	1100 U	ND	ND		0/49	NA	NA
PHENANTHRENE	370 U	450 U	ND	ND		0/49	NA	NA
ANTHRACENE	370 U	450 U	ND	ND		0/49	NA	NA
CARBAZOLE	370 U	450 U	ND	ND		0/49	NA	NA
DI-N-BUTYLPHTHALATE	39 U	1800 U	ND	ND		0/49	NA	NA
FLUORANTHENE	370 U	450 U	ND	ND		0/49	NA	NA
PYRENE	370 U	450 U	ND	ND		0/49	NA	NA
BUTYLBENZYLPHTHALATE	370 U	450 U	ND	ND		0/49	NA	NA
3,3'-DICHLOROBENZIDINE	370 U	450 U	ND	ND		0/49	NA	NA
BENZO(A)ANTHRACENE	370 U	450 U	ND	ND		0/49	NA	NA
CHRYSENE	370 U	450 U	ND	ND		0/49	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	380 U	2200 U	41 J	4700	63-SB19-03	12/49	639.75	165.00
DI-N-OCTYL PHTHALATE	370 U	450 U	ND	ND		0/49	NA	NA
BENZO(B)FLUORANTHENE	370 U	450 U	ND	ND		0/49	NA	NA
BENZO(K)FLUORANTHENE	370 U	450 U	ND	ND		0/49	NA	NA
BENZO(A)PYRENE	370 U	450 U	ND	ND		0/49	NA	NA
INDENO(1,2,3-CD)PYRENE	370 U	450 U	ND	ND		0/49	NA	NA
DIBENZO(A,H)ANTHRACENE	370 U	450 U	ND	ND		0/49	NA	NA
BENZO(G,H,I)PERYLENE	370 U	450 U	ND	ND		0/49	NA	NA

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
PESTICIDE/PCBS (ug/kg)								
ALPHA-BHC	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
BETA-BHC	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
DELTA-BHC	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
HEPTACHLOR	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
ALDRIN	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
HEPTACHLOR EPOXIDE	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
ENDOSULFAN I	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
DIELDRIN	3.7 U	4.5 U	2.1 J	5 J	63-SB32-02	2/50	3.55	3.55
4,4'-DDE	3.8 UJ	4.5 U	2.6 J	2.8 J	63-SB22-03	2/50	2.70	2.70
ENDRIN	3.7 U	4.5 U	ND	ND		0/50	NA	NA
4,4'-DDD	3.7 U	4.5 U	5.6	5.6	63-SB22-03	1/50	5.60	5.60
ENDOSULFAN SULFATE	3.7 U	4.5 U	ND	ND		0/50	NA	NA
4,4'-DDT	3.8 UJ	4.5 U	7.8	7.8	63-SB20-01	1/50	7.80	7.80
METHOXYCHLOR	19 UJ	23 U	ND	ND		0/50	NA	NA
ENDRIN KETONE	3.7 U	4.5 U	ND	ND		0/50	NA	NA
ENDRIN ALDEHYDE	3.7 U	4.5 U	ND	ND		0/50	NA	NA
ALPHA-CHLORDANE	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
GAMMA-CHLORDANE	1.9 UJ	2.3 U	ND	ND		0/50	NA	NA
TOXAPHENE	190 UJ	230 U	ND	ND		0/50	NA	NA
AROCLOR-1016	37 U	45 U	ND	ND		0/50	NA	NA
AROCLOR-1221	74 U	91 UJ	ND	ND		0/50	NA	NA
AROCLOR-1232	37 U	45 U	ND	ND		0/50	NA	NA
AROCLOR-1242	37 U	45 U	ND	ND		0/50	NA	NA
AROCLOR-1248	37 U	45 U	ND	ND		0/50	NA	NA
AROCLOR-1254	37 U	45 U	ND	ND		0/50	NA	NA
AROCLOR-1260	37 U	45 U	ND	ND		0/50	NA	NA

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB01-04	63-SB02-04	63-SB03-05	63-SB03-06	63-SB04-03	63-SB05-03	63-SB05-06	63-SB06-01
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/11/95	11/06/95	11/11/95	11/11/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL METALS (mg/kg)								
ALUMINUM, TOTAL	9900	9710	13200	10400	13100 J	15400	12900	12200
ANTIMONY, TOTAL	2.3 UJ	4.9 J	2.7 R	3.2 R	3.1 U	3 R	2.3 R	2.1 UJ
ARSENIC, TOTAL	2.3 J	6 J	7.8 J	3.6 J	3.4	0.69 J	1.7 J	0.68 J
BARIUM, TOTAL	9.2	10.6	11.4	10.9	14	13.1	10.7	25.3
BERYLLIUM, TOTAL	0.14	0.15	0.19 J	0.12 J	0.08 U	0.11 J	0.15 J	0.05 U
CADMIUM, TOTAL	0.78 U	0.86 U	0.91 U	1.1 U	1.1 U	1 U	0.8 U	0.73 U
CALCIUM, TOTAL	6.9	17.1	32.7 U	30.9 U	29.4	37	46.8	271
CHROMIUM, TOTAL	12.4	13.9	27.1 J	25.9 J	16.1	20 J	19.7 J	10.5
COBALT, TOTAL	0.41 U	0.45 U	0.48 U	0.59	0.8	0.66	0.77	0.45
COPPER, TOTAL	4.1	1.3	7.6	8.8	1.4 U	7.8	8.1	1.1
IRON, TOTAL	4420	6430	20700 J	27600 J	4590	8290 J	9740 J	6380
LEAD, TOTAL	6.8	6.5	8.3 J	7.9 J	7.7 J	7.1 J	7.4 J	6.8
MAGNESIUM, TOTAL	264	338	473	404	476	513	438	337
MANGANESE, TOTAL	5.1	6.9	10.3 J	9.5 J	9.3	7.9 J	9 J	6
MERCURY, TOTAL	0.06 U	0.06 U	0.06 U	0.05 U	0.06 U	0.05 U	0.05 U	0.06 U
NICKEL, TOTAL	1.2 J	1.3 J	1.4	0.96 U	1.5	1.4	2.5	2.9 J
POTASSIUM, TOTAL	641	615	855	846	741	751	855	291
SELENIUM, TOTAL	0.33 UJ	0.38 UJ	0.31 J	0.37 U	0.36 U	0.29 U	0.32 U	0.25 UJ
SILVER, TOTAL	0.6 U	0.66 U	0.69 U	0.83 U	0.81 U	0.78 U	0.61 U	0.56 U
SODIUM, TOTAL	31 U	27.9 U	28	29.8	29.9	28	27.6	23.1 U
THALLIUM, TOTAL	0.13 U	0.15 U	0.12 U	0.15 U	0.15 UJ	0.18	0.13 U	0.14
VANADIUM, TOTAL	12.2	21.4	37.7 J	27.2 J	17.8	26.1 J	20.9 J	20.7
ZINC, TOTAL	5.6	5	9.9	11.8	6.5	5.2	11.2	5.3

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB07-04	63-SB08-05	63-SB08-07	63-SB09-03	63-SB09-06	63-SB10-02	63-SB11-05	63-SB12-04
DATE SAMPLED	11/11/95	11/10/95	11/10/95	11/10/95	11/10/95	11/09/95	11/09/95	11/07/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL METALS (mg/kg)								
ALUMINUM, TOTAL	16000	11300	11900	9330	9110	8710 J	11600 J	9230 J
ANTIMONY, TOTAL	4.4 J	2.7 UJ	2.5 J	3.6 J	2.9 UJ	4.1 U	5 U	2.3 UJ
ARSENIC, TOTAL	2.5 J	2.3 J	5.4 J	3.4 J	2.5 J	6.3	6.5	2.7
BARIUM, TOTAL	15.1	12.7	16	8.7	8.2	10.6	13.2	9.3
BERYLLIUM, TOTAL	0.21	0.07 U	0.22	0.05 U	0.17	0.18 U	0.21 U	0.17
CADMIUM, TOTAL	0.91 U	0.94 U	0.83 U	0.67 U	1 U	0.37 U	0.45 U	0.8 U
CALCIUM, TOTAL	55.9	6.4	61.9	15.8	14.2	39.8	27.1 U	96.9 U
CHROMIUM, TOTAL	23.9	23.1	19.9	10.6	20.6	13.2	26.3	12.3
COBALT, TOTAL	0.47 U	0.49 U	10.4	0.35 U	1.2	0.6 U	0.73 U	0.57
COPPER, TOTAL	8.6	6.8	7.3	0.32 U	0.48 U	2.4	4.5	2.5
IRON, TOTAL	12500	18200	9530	4970	13500	5710	13900	3960 J
LEAD, TOTAL	8.1	7.6	8.9	6	7.6	7.2 J	8.2 J	7
MAGNESIUM, TOTAL	552	323	511	215	399	240	387	223
MANGANESE, TOTAL	10	5.6	67.9	3.5	10.9	5.5	5.9	4.1
MERCURY, TOTAL	0.06 U	0.06 U	0.07 U	0.06 U	0.06 U	0.05 U	0.05 U	0.05 U
NICKEL, TOTAL	3.9 J	1.2 J	13.9 J	0.59 U	2.5 J	43.7	2.4 U	4.4
POTASSIUM, TOTAL	1040	808	1050	477	946	468	740	509
SELENIUM, TOTAL	0.37 UJ	0.32 UJ	0.4 UJ	0.31 UJ	0.36 UJ	0.36 U	0.36	0.34 UJ
SILVER, TOTAL	0.69 U	0.71 U	0.63 U	0.51 U	0.76 U	0.51 U	0.62 U	0.61 U
SODIUM, TOTAL	28.4 U	42.3	45.2	19.5 U	38.5	18.4 U	27.7 U	20.4 U
THALLIUM, TOTAL	0.18	0.13 U	0.16 U	0.12 U	0.15 U	0.31 UJ	0.28 UJ	0.14 U
VANADIUM, TOTAL	33.7	29.2	19.9	18.9	29.7	14.4	36.8	15.5
ZINC, TOTAL	8.3	6.3	36.4	3	9.5	4.9	7.2	3 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB13-03	63-SB13-05	63-SB14-04	63-SB15-04	63-SB16-02	63-SB17-03	63-SB18-05	63-SB19-03
DATE SAMPLED	11/06/95	11/06/95	11/08/95	11/06/95	11/08/95	11/08/95	11/07/95	11/06/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL METALS (mg/kg)								
ALUMINUM, TOTAL	12000 J	10000 J	6600	9600 J	9140	9020	6610 J	6280 J
ANTIMONY, TOTAL	2.9 U	2.2 U	2.7 UJ	2.6 U	3 UJ	2.9 J	2.6 UJ	2.5 UJ
ARSENIC, TOTAL	2.8	3.2	16	1.5	1	3.7	3.7	0.68
BARIUM, TOTAL	9.1	18.8	6.4	7	13.2	7.5	7.2	5.9
BERYLLIUM, TOTAL	0.08	0.15	0.06 U	0.06 U	0.07 U	0.21	0.12	0.06 U
CADMIUM, TOTAL	0.98 U	0.75 U	0.91 U	0.89 U	1 U	0.91 U	0.9 U	0.86 U
CALCIUM, TOTAL	55.7	15.8	4	3.8 U	8.5	92.2	7.5 U	25.8 U
CHROMIUM, TOTAL	22.5	16.1	12.7	13.3	8.2	11.1	14	5.8
COBALT, TOTAL	0.59	1.1	0.47 UJ	0.47 U	0.53 UJ	0.48 UJ	0.47 U	0.45 U
COPPER, TOTAL	5.4 U	4.2 U	4.4 J	0.42 U	0.48 UJ	3.2 J	3.4	2.1
IRON, TOTAL	12700	3580	7320	2890	2320	2890	7640 J	807 J
LEAD, TOTAL	8.2 J	10.9 J	8.4	8.8 J	5.4	5.9	7.3	4.3
MAGNESIUM, TOTAL	225	286	158	190	191	184	157	104
MANGANESE, TOTAL	5.4	11	4.2	7.1	3.9	5.5	4.6	3.4
MERCURY, TOTAL	0.05 U	0.06 U	0.06 U	0.05 U	0.05 U	0.06 U	0.06 U	0.05 U
NICKEL, TOTAL	18.6	1.8	24.8	1.1	3.3	1.8	57	2.4
POTASSIUM, TOTAL	496	691	420	414	224	432	453	191 J
SELENIUM, TOTAL	0.38	0.33 U	0.72	0.38	0.36 U	0.28 U	0.34 UJ	0.29 UJ
SILVER, TOTAL	0.74 U	0.57 U	0.69 U	0.68 U	0.77 U	0.7 U	0.68 U	0.66 U
SODIUM, TOTAL	28.1 U	84.6	11.1 U	27.3 U	8.7 U	10 U	11.9 U	10.7 U
THALLIUM, TOTAL	0.14 UJ	0.13 UJ	0.14 UJ	0.13 UJ	0.14 U	0.11 U	0.14 U	0.12 U
VANADIUM, TOTAL	48.2	17.8	17.8	13.4	13.2	15.6	17.7	7.5
ZINC, TOTAL	3.6 U	5.6	2.9	3.6 U	3.9	2.9	2.9 U	2 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB20-01	63-SB21-03	63-SB22-03	63-SB23-03	63-SB24-03	63-SB25-03	63-SB26-03	63-SB27-02
DATE SAMPLED	11/09/95	11/08/95	11/07/95	11/07/95	11/07/95	11/06/95	11/06/95	11/06/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL METALS (mg/kg)								
ALUMINUM, TOTAL	1140 J	6640	312	5490 J	3710 J	710 J	6090 J	10400 J
ANTIMONY, TOTAL	3.5 U	2.8 UJ	2.2 UJ	16.2 J	1.9 UJ	2.6 U	2.9 UJ	3 U
ARSENIC, TOTAL	0.4	2.6	0.3 U	6.3	0.71	0.31 U	1.5	0.54
BARIUM, TOTAL	3.4	7	4	1120	5.8	2.5	6.9	11.6
BERYLLIUM, TOTAL	0.15 U	0.07 U	0.05 U	0.11 U	0.05 U	0.06 U	0.07 U	0.07 U
CADMIUM, TOTAL	0.31 U	0.95 U	0.76 U	1.5 U	0.64 U	0.88 U	0.98 U	1 U
CALCIUM, TOTAL	289	223	184	865 J	33.9 U	17.2	61.2 U	38.9
CHROMIUM, TOTAL	1.2	11.6	1.2	84.4	3.9	2.2	9.5	12
COBALT, TOTAL	0.5 U	0.75 J	0.4 UJ	14.9	0.34	0.56	0.52 U	0.72
COPPER, TOTAL	0.55	4 J	0.36 UJ	160	1.4	0.99 U	1.9	0.79 U
IRON, TOTAL	1040	4980 J	425 J	149000 J	1590 J	790	4180 J	1450
LEAD, TOTAL	6 J	6.8	3.7	1650	3.1	2 J	4.8	7.2 J
MAGNESIUM, TOTAL	32.7	195	27.3	103	63.3	18.1	108	276
MANGANESE, TOTAL	6.9	31.3 J	11.1 J	586	1.5	1.5	2.9	6.1
MERCURY, TOTAL	0.05 U	0.06 U	0.04 U	0.04 U	0.04 U	0.04 U	0.05 U	0.06 U
NICKEL, TOTAL	1.6 U	3.3	53.6	37.7	7.6	1.1	76.1	1.7
POTASSIUM, TOTAL	116 U	451	15.9 UJ	32.2 UJ	82.5 J	30.8	165 J	580
SELENIUM, TOTAL	0.25 U	0.31 U	0.28 U	0.27 UJ	0.3 UJ	0.29 U	0.36 UJ	0.35 J
SILVER, TOTAL	0.43 U	0.72 U	0.58 U	5.3	0.49 U	0.67 U	0.75 U	0.79 U
SODIUM, TOTAL	8.3 U	9.7	4.2 U	32.5	4.6 U	7.6 U	5.9 U	25.8 U
THALLIUM, TOTAL	0.22 UJ	0.12 U	0.11 U	0.54 UJ	0.12 U	0.12 UJ	0.14 U	0.11 UJ
VANADIUM, TOTAL	1.9	16.6	0.54	7.6	4.7	3.1	11.3	13.2
ZINC, TOTAL	7.1	16.1	6.5	1130	1.5 U	1.1 U	1.8 U	4.4 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB28-02	63-SB29-03	63-SB30-03	63-SB31-04	63-SB32-02	63-SB33-02	63-SB34-05	63-SB36-02
DATE SAMPLED	11/07/95	11/07/95	11/09/95	11/08/95	11/09/95	11/08/95	11/07/95	11/09/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL METALS (mg/kg)								
ALUMINUM, TOTAL	6740	11000 J	5920	10000	9290	5350	7490	8010
ANTIMONY, TOTAL	2.2 UJ	2.6 UJ	2.8 UJ	2.9 UJ	2.9 UJ	2.7 UJ	3.2 UJ	3.6 J
ARSENIC, TOTAL	1.7	4.1	1	0.49	2.1	1.3	2.9	0.8
BARIUM, TOTAL	9.4	177	11	10.4	10.8	8.5	8.7	10.2
BERYLLIUM, TOTAL	0.05 U	0.1	0.07 U	0.26	0.07 U	0.07 U	0.08 U	0.06 U
CADMIUM, TOTAL	0.75 U	0.9 U	0.95 U	1 U	0.98 U	0.93 U	1.1 U	0.88 U
CALCIUM, TOTAL	119	535 J	174	477	14.6	25.3 U	96.1	197
CHROMIUM, TOTAL	8.9	24	7.4	14	9.5	5.6	15.2	7.6
COBALT, TOTAL	0.44 J	4	0.5 UJ	0.52 UJ	0.52 UJ	0.49 UJ	0.57 UJ	0.46 UJ
COPPER, TOTAL	0.36 UJ	69.2	3.1 J	1.5 J	3.7 J	0.44 UJ	5.7 J	2.8 J
IRON, TOTAL	2950 J	40000 J	2050	3250	6080	3220 J	11600 J	5030
LEAD, TOTAL	7.1	182	6.1	4.3	12.4	4.3	8.3	3.6
MAGNESIUM, TOTAL	181	409	166	218	159	133	316	119
MANGANESE, TOTAL	6.5 J	202	10.5	4.3	4.4	3.5 J	6.3 J	3.5
MERCURY, TOTAL	0.05 U	0.06 U	0.05 U	0.05 U	0.05 U	0.042 U	0.06 U	0.06 U
NICKEL, TOTAL	2.2	12.8	1.8	1.7	3	5.7	37.5	2.1
POTASSIUM, TOTAL	315	737	279	457	229	84.6 J	536	148 U
SELENIUM, TOTAL	0.45	0.35 UJ	0.34 U	0.27 U	0.34 U	0.39	0.35 U	0.36 U
SILVER, TOTAL	0.57 U	1.8	0.72 U	0.76 U	0.75 U	0.71 U	0.82 U	0.67 U
SODIUM, TOTAL	8.9	61.9	19 U	12.5 U	9.4 U	5.1 U	12.8	8.6 U
THALLIUM, TOTAL	0.1 U	0.14 U	0.14 U	0.11 U	0.14 U	0.1 U	0.14 U	0.14 U
VANADIUM, TOTAL	13.6	22.1	11.2	27.7	13.5	9.5	19	13.1
ZINC, TOTAL	7.4	88.4	2.5	1.9	4.8	2.7 U	7.5	1.3

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB37-04	63-SB38-02	63-TW01-01	63-TW02-04	63-TW03-03	63-TW04-03	63-TW05-02	63-TW06-02
DATE SAMPLED	11/08/95	11/08/95	11/12/95	11/11/95	11/12/95	11/10/95	11/10/95	11/10/95
DEPTH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL METALS (mg/kg)								
ALUMINUM, TOTAL	7230	12100	1710	9790	9960	5610 J	3350 J	15100 J
ANTIMONY, TOTAL	3.1 UJ	3 UJ	2.7 R	3 R	3 R	4.3 U	3.5 U	4.4 U
ARSENIC, TOTAL	1.7	3	0.31 UJ	2.5 J	4.6 J	0.65 J	1.1 J	2.5
BARIUM, TOTAL	7.6	13.9	7.2	9.9	8.7	11.6	12.4	25.3
BERYLLIUM, TOTAL	0.08 U	0.29	0.07 UJ	0.07 UJ	0.07 UJ	0.18 U	0.15 U	0.19 U
CADMIUM, TOTAL	1.1 U	1 U	0.91 U	1 U	1 U	0.39 U	0.32 U	0.39 U
CALCIUM, TOTAL	119	172	220	60.9	58.7	23.9 U	12.2 U	79
CHROMIUM, TOTAL	14.6	19.3	4.3 J	14.7 J	15.5 J	5.5	5.2	13.6
COBALT, TOTAL	0.56 UJ	0.54 UJ	0.48 U	0.53 U	0.54 U	0.93	0.51 U	0.96
COPPER, TOTAL	4.8 J	5.4 J	5.7	6.7	8.2	1.9	2.1	2.2
IRON, TOTAL	6960 J	10100	2580 J	7470 J	10400 J	2090	2290	4670
LEAD, TOTAL	7.3	7.9	3.2 J	6.7 J	7 J	3.9 J	6.3 J	11.2 J
MAGNESIUM, TOTAL	147	523	41.6 J	350	285	92.8	120	331
MANGANESE, TOTAL	2.4 J	10.4	16.6 J	8 J	6.2 J	3.1	4.1	6.6
MERCURY, TOTAL	0.05 U	0.05 U	0.05 U	0.05 U	0.06 U	0.06 U	0.05 U	0.06 U
NICKEL, TOTAL	1.5	4	0.8 U	0.98	8.4	7.9	5.3	4.2
POTASSIUM, TOTAL	374	705	40.9	663	620	145 U	142	253
SELENIUM, TOTAL	0.35 U	0.56	0.29 U	0.31 U	0.26 U	0.28 U	0.28 U	0.59
SILVER, TOTAL	0.82 U	0.78 U	0.69 U	0.77 U	0.79 U	0.53 U	0.44 U	0.55 U
SODIUM, TOTAL	10.1	20.2 U	9.6	17.3	7.6	11 U	14 U	26 U
THALLIUM, TOTAL	0.14 U	0.15 U	0.12 U	0.12 U	0.1 U	0.25 UJ	0.24 UJ	0.27 UJ
VANADIUM, TOTAL	22	22.1	3.3 J	20.2 J	19.9 J	7.6	7.4	16.7
ZINC, TOTAL	3.2 U	7	4.5	4.6	3.9	4.5 U	5.6	6.9

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-TW07-01	63-TW08-03
DATE SAMPLED	11/11/95	11/09/95
DEPTH	N/A	N/A
TOTAL METALS (mg/kg)		
ALUMINUM, TOTAL	5470	10600
ANTIMONY, TOTAL	2.2 R	3 UJ
ARSENIC, TOTAL	0.82 J	2.3
BARIUM, TOTAL	18	13.4
BERYLLIUM, TOTAL	0.05 UJ	0.29
CADMIUM, TOTAL	0.76 U	1 U
CALCIUM, TOTAL	191	130
CHROMIUM, TOTAL	9.9 J	17.1
COBALT, TOTAL	0.4 U	0.54 UJ
COPPER, TOTAL	19.7	5.8 J
IRON, TOTAL	7270 J	11000
LEAD, TOTAL	13 J	7
MAGNESIUM, TOTAL	185	427
MANGANESE, TOTAL	17.9 J	8.7
MERCURY, TOTAL	0.05 U	0.04 U
NICKEL, TOTAL	1.9	0.91 U
POTASSIUM, TOTAL	238	555
SELENIUM, TOTAL	0.28 U	0.37 U
SILVER, TOTAL	0.58 U	0.79 U
SODIUM, TOTAL	9.5	19.5 U
THALLIUM, TOTAL	0.11 U	0.15 U
VANADIUM, TOTAL	14.7 J	19.1
ZINC, TOTAL	146	6.2

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
TOTAL METALS (mg/kg)								
ALUMINUM, TOTAL	NA	NA	312	16000	63-SB07-04	50/50	8649.04	9260.00
ANTIMONY, TOTAL	1.9 UJ	5 U	2.5 J	16.2 J	63-SB23-03	7/42	5.44	3.60
ARSENIC, TOTAL	0.3 U	0.31 U	0.4	16	63-SB14-04	47/50	2.89	2.50
BARIUM, TOTAL	NA	NA	2.5	1120	63-SB23-03	50/50	36.19	10.50
BERYLLIUM, TOTAL	0.05 U	0.21 U	0.08	0.29	63-TW08-03	18/50	0.17	0.16
CADMIUM, TOTAL	0.31 U	1.5 U	ND	ND		0/50	NA	NA
CALCIUM, TOTAL	3.8 U	96.9 U	4	865 J	63-SB23-03	38/50	132.60	61.40
CHROMIUM, TOTAL	NA	NA	1.2	84.4	63-SB23-03	50/50	14.74	13.25
COBALT, TOTAL	0.35 U	0.73 U	0.34	14.9	63-SB23-03	19/50	2.14	0.75
COPPER, TOTAL	0.32 U	5.4 U	0.55	160	63-SB23-03	38/50	10.54	4.25
IRON, TOTAL	NA	NA	425 J	149000 J	63-SB23-03	50/50	10260.64	5370.00
LEAD, TOTAL	NA	NA	2 J	1650	63-SB23-03	50/50	43.27	7.10
MAGNESIUM, TOTAL	NA	NA	18.1	552	63-SB07-04	50/50	252.30	220.50
MANGANESE, TOTAL	NA	NA	1.5	586	63-SB23-03	50/50	23.90	6.25
MERCURY, TOTAL	0.04 U	0.07 U	ND	ND		0/50	NA	NA
NICKEL, TOTAL	0.59 U	2.4 U	0.98	76.1	63-SB26-03	44/50	10.79	2.95
POTASSIUM, TOTAL	15.9 UJ	148 U	30.8	1050	63-SB08-07	45/50	499.82	477.00
SELENIUM, TOTAL	0.25 UJ	0.4 UJ	0.31 J	0.72	63-SB14-04	10/50	0.45	0.39
SILVER, TOTAL	0.43 U	0.83 U	1.8	5.3	63-SB23-03	2/50	3.55	3.55
SODIUM, TOTAL	4.2 U	31 U	7.6	84.6	63-SB13-05	19/50	28.09	28.00
THALLIUM, TOTAL	0.1 U	0.54 UJ	0.14	0.18	63-SB07-04	3/50	0.17	0.18
VANADIUM, TOTAL	NA	NA	0.54	48.2	63-SB13-03	50/50	17.50	17.20
ZINC, TOTAL	1.1 U	4.5 U	1.3	1130	63-SB23-03	38/50	42.36	6.25

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
TOTAL METALS (mg/kg)								
ALUMINUM, TOTAL	NA	NA	312	16000	63-SB07-04	50/50	8649.04	9260.00
ANTIMONY, TOTAL	1.9 UJ	5 U	2.5 J	16.2 J	63-SB23-03	7/42	5.44	3.60
ARSENIC, TOTAL	0.3 U	0.31 U	0.4	16	63-SB14-04	47/50	2.89	2.50
BARIUM, TOTAL	NA	NA	2.5	1120	63-SB23-03	50/50	36.19	10.50
BERYLLIUM, TOTAL	0.05 U	0.21 U	0.08	0.29	63-TW08-03	18/50	0.17	0.16
CADMIUM, TOTAL	0.31 U	1.5 U	ND	ND		0/50	NA	NA
CALCIUM, TOTAL	3.8 U	96.9 U	4	865 J	63-SB23-03	38/50	132.60	61.40
CHROMIUM, TOTAL	NA	NA	1.2	84.4	63-SB23-03	50/50	14.74	13.25
COBALT, TOTAL	0.35 U	0.73 U	0.34	14.9	63-SB23-03	19/50	2.14	0.75
COPPER, TOTAL	0.32 U	5.4 U	0.55	160	63-SB23-03	38/50	10.54	4.25
IRON, TOTAL	NA	NA	425 J	149000 J	63-SB23-03	50/50	10260.64	5370.00
LEAD, TOTAL	NA	NA	2 J	1650	63-SB23-03	50/50	43.27	7.10
MAGNESIUM, TOTAL	NA	NA	18.1	552	63-SB07-04	50/50	252.30	220.50
MANGANESE, TOTAL	NA	NA	1.5	586	63-SB23-03	50/50	23.90	6.25
MERCURY, TOTAL	0.04 U	0.07 U	ND	ND		0/50	NA	NA
NICKEL, TOTAL	0.59 U	2.4 U	0.98	76.1	63-SB26-03	44/50	10.79	2.95
POTASSIUM, TOTAL	15.9 UJ	148 U	30.8	1050	63-SB08-07	45/50	499.82	477.00
SELENIUM, TOTAL	0.25 UJ	0.4 UJ	0.31 J	0.72	63-SB14-04	10/50	0.45	0.39
SILVER, TOTAL	0.43 U	0.83 U	1.8	5.3	63-SB23-03	2/50	3.55	3.55
SODIUM, TOTAL	4.2 U	31 U	7.6	84.6	63-SB13-05	19/50	28.09	28.00
THALLIUM, TOTAL	0.1 U	0.54 UJ	0.14	0.18	63-SB07-04	3/50	0.17	0.18
VANADIUM, TOTAL	NA	NA	0.54	48.2	63-SB13-03	50/50	17.50	17.20
ZINC, TOTAL	1.1 U	4.5 U	1.3	1130	63-SB23-03	38/50	42.36	6.25

GROUNDWATER

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-GW01-01	63-GW02-01	63-GW03-01	63-TW01-01	63-TW02-01	63-TW03-01	63-TW04-01
DATE SAMPLED	11/15/95	11/15/95	11/15/95	11/12/95	11/13/95	11/13/95	11/13/95
VOLATILES (ug/L)							
CHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BROMOMETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VINYL CHLORIDE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
METHYLENE CHLORIDE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
ACETONE	10 U	10 U	180 U	10 U	10 U	10 U	10 U
CARBON DISULFIDE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-DICHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-DICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROETHENE (TOTAL	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROFORM	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-BUTANONE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,1-TRICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CARBON TETRACHLORIDE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BROMODICHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROPROPANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CIS-1,3-DICHLOROPROPENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TRICHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
DIBROMOCHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-TRICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TRANS-1,3-DICHLOROPROPEN	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BROMOFORM	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-METHYL-2-PENTANONE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-HEXANONE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TETRACHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TOLUENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROBENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
ETHYLBENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
STYRENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
XYLENE (TOTAL)	10 U	10 U	10 U	10 U	10 U	10 U	10 U

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	63-GW01-01 11/15/95	63-GW02-01 11/15/95	63-GW03-01 11/15/95	63-TW01-01 11/12/95	63-TW02-01 11/13/95	63-TW03-01 11/13/95	63-TW04-01 11/13/95
SEMIVOLATILES (ug/L)							
PHENOL	10 U	9 U	11 U	12 U	11 U	10 U	10 U
BIS(2-CHLOROETHYL)ETHER	10 U	9 U	11 U	12 U	11 U	10 U	10 U
2-CHLOROPHENOL	10 U	9 U	11 U	12 U	11 U	10 U	10 U
1,3-DICHLOROBENZENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
1,4-DICHLOROBENZENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
1,2-DICHLOROBENZENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
2-METHYLPHENOL	10 U	9 U	11 U	12 U	11 U	10 U	10 U
2,2'-OXYBIS(1-CHLOROPROPA	10 U	9 U	11 U	12 U	11 U	10 U	10 U
4-METHYLPHENOL	10 U	9 U	11 U	12 U	11 U	10 U	10 U
N-NITROSO-DI-N-PROPYLAMIN	10 U	9 U	11 U	12 U	11 U	10 U	10 U
HEXACHLOROETHANE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
NITROBENZENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
ISOPHORONE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
2-NITROPHENOL	10 U	9 U	11 U	12 U	11 U	10 U	10 U
2,4-DIMETHYLPHENOL	10 U	9 U	11 U	12 U	11 U	10 U	10 U
BIS(2-CHLOROETHOXY)METHA	10 U	9 U	11 U	12 U	11 U	10 U	10 U
2,4-DICHLOROPHENOL	10 U	9 U	11 U	12 U	11 U	10 U	10 U
1,2,4-TRICHLOROBENZENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
NAPHTHALENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
4-CHLOROANILINE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
HEXACHLOROBUTADIENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
4-CHLORO-3-METHYLPHENOL	10 U	9 U	11 U	12 U	11 U	10 U	10 U
2-METHYLNAPHTHALENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
HEXACHLOROCYCLOPENTADI	10 U	9 U	11 U	12 U	11 U	10 U	10 U
2,4,6-TRICHLOROPHENOL	10 U	9 U	11 U	12 U	11 U	10 U	10 U
2,4,5-TRICHLOROPHENOL	26 U	22 U	26 U	30 U	26 U	25 U	26 U
2-CHLORONAPHTHALENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
2-NITROANILINE	26 U	22 U	26 U	30 U	26 U	25 U	26 U
DIMETHYLPHTHALATE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
ACENAPHTHYLENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
2,6-DINITROTOLUENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
3-NITROANILINE	26 U	22 U	26 U	30 U	26 U	25 U	26 U
ACENAPHTHENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
2,4-DINITROPHENOL	26 U	22 U	26 U	30 U	26 U	25 U	26 U
4-NITROPHENOL	26 U	22 U	26 U	30 U	26 U	25 U	26 U
DIBENZOFURAN	10 U	9 U	11 U	12 U	11 U	10 U	10 U

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	63-GW01-01 11/15/95	63-GW02-01 11/15/95	63-GW03-01 11/15/95	63-TW01-01 11/12/95	63-TW02-01 11/13/95	63-TW03-01 11/13/95	63-TW04-01 11/13/95
SEMIVOLATILES (ug/L) (cont)							
2,4-DINITROTOLUENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
DIETHYLPHTHALATE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
4-CHLOROPHENYL-PHENYLET	10 U	9 U	11 U	12 U	11 U	10 U	10 U
FLUORENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
4-NITROANILINE	26 U	22 U	26 U	30 U	26 U	25 U	26 U
4,6-DINITRO-2-METHYLPHENOL	26 U	22 U	26 U	30 U	26 U	25 U	26 U
N-NITROSODIPHENYLAMINE (1	10 U	9 U	11 U	12 U	11 U	10 U	10 U
4-BROMOPHENYL-PHENYLETH	10 U	9 U	11 U	12 U	11 U	10 U	10 U
HEXACHLOROBENZENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
PENTACHLOROPHENOL	26 U	22 U	26 U	30 U	26 U	25 U	26 U
PHENANTHRENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
ANTHRACENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
CARBAZOLE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
DI-N-BUTYLPHTHALATE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
FLUORANTHENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
PYRENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
BUTYLBENZYLPHTHALATE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
3,3'-DICHLOROBENZIDINE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
BENZO(A)ANTHRACENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
CHRYSENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
BIS(2-ETHYLHEXYL)PHTHALAT	1 J	9 U	11 U	12 U	11 U	10 U	11
DI-N-OCTYL PHTHALATE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
BENZO(B)FLUORANTHENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
BENZO(K)FLUORANTHENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
BENZO(A)PYRENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
INDENO(1,2,3-CD)PYRENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
DIBENZO(A,H)ANTHRACENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U
BENZO(G,H,I)PERYLENE	10 U	9 U	11 U	12 U	11 U	10 U	10 U

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	63-GW01-01 11/15/95	63-GW02-01 11/15/95	63-GW03-01 11/15/95	63-TW01-01 11/12/95	63-TW02-01 11/13/95	63-TW03-01 11/13/95	63-TW04-01 11/13/95
PESTICIDE/PCBS (ug/L)							
ALPHA-BHC	0.053 UJ	0.053 UJ	0.052 U	0.058 UJ	0.054 UJ	0.05 UJ	0.052 UJ
BETA-BHC	0.053 UJ	0.053 UJ	0.052 U	0.058 UJ	0.054 U	0.05 U	0.052 UJ
DELTA-BHC	0.053 UJ	0.053 UJ	0.052 U	0.058 UJ	0.054 UJ	0.05 UJ	0.052 UJ
HEPTACHLOR	0.053 UJ	0.053 UJ	0.052 U	0.058 UJ	0.054 U	0.05 U	0.052 UJ
ALDRIN	0.053 UJ	0.053 UJ	0.052 U	0.058 UJ	0.054 U	0.05 U	0.052 UJ
HEPTACHLOR EPOXIDE	0.053 UJ	0.053 UJ	0.052 U	0.058 UJ	0.054 U	0.05 U	0.052 UJ
ENDOSULFAN I	0.053 UJ	0.053 UJ	0.052 U	0.058 UJ	0.054 U	0.05 U	0.052 UJ
DIELDRIN	0.11 UJ	0.11 UJ	0.1 U	0.12 UJ	0.11 U	0.099 U	0.1 UJ
4,4'-DDE	0.11 UJ	0.11 UJ	0.1 UJ	0.12 UJ	0.11 U	0.099 U	0.1 UJ
ENDRIN	0.11 UJ	0.11 UJ	0.1 U	0.12 UJ	0.11 U	0.099 U	0.1 UJ
4,4'-DDD	0.11 UJ	0.11 UJ	0.1 U	0.12 UJ	0.11 UJ	0.099 UJ	0.1 UJ
ENDOSULFAN SULFATE	0.11 UJ	0.11 UJ	0.1 U	0.12 UJ	0.11 U	0.099 U	0.1 UJ
4,4'-DDT	0.11 UJ	0.11 UJ	0.1 U	0.12 UJ	0.11 U	0.099 U	0.1 UJ
METHOXYCHLOR	0.53 UJ	0.53 UJ	0.52 U	0.58 UJ	0.54 UJ	0.5 UJ	0.52 UJ
ENDRIN KETONE	0.11 UJ	0.11 UJ	0.1 U	0.12 UJ	0.11 U	0.099 U	0.1 UJ
ENDRIN ALDEHYDE	0.11 UJ	0.11 UJ	0.1 U	0.12 UJ	0.11 U	0.099 U	0.1 UJ
ALPHA-CHLORDANE	0.053 UJ	0.053 UJ	0.052 U	0.058 UJ	0.054 U	0.05 U	0.052 UJ
GAMMA-CHLORDANE	0.053 UJ	0.053 UJ	0.052 U	0.058 UJ	0.054 U	0.05 U	0.052 UJ
TOXAPHENE	5.3 UJ	5.3 UJ	5.2 U	5.8 UJ	5.4 U	5 U	5.2 UJ
AROCLOR-1016	1.1 UJ	1.1 UJ	1 U	1.2 UJ	1.1 U	0.99 U	1 UJ
AROCLOR-1221	2.1 UJ	2.1 UJ	2.1 U	2.3 UJ	2.2 U	2 U	2.1 UJ
AROCLOR-1232	1.1 UJ	1.1 UJ	1 U	1.2 UJ	1.1 U	0.99 U	1 UJ
AROCLOR-1242	1.1 UJ	1.1 UJ	1 U	1.2 UJ	1.1 U	0.99 U	1 UJ
AROCLOR-1248	1.1 UJ	1.1 UJ	1 U	1.2 UJ	1.1 U	0.99 U	1 UJ
AROCLOR-1254	1.1 UJ	1.1 UJ	1 U	1.2 UJ	1.1 U	0.99 U	1 UJ
AROCLOR-1260	1.1 UJ	1.1 UJ	1 U	1.2 UJ	1.1 U	0.99 U	1 UJ

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW05-01	63-TW06-01	63-TW07-01	63-TW08-01
DATE SAMPLED	11/13/95	11/13/95	11/15/95	11/14/95
VOLATILES (ug/L)				
CHLOROMETHANE	10 U	10 U	10 U	10 U
BROMOMETHANE	10 U	10 U	10 U	10 U
VINYL CHLORIDE	10 U	10 U	10 U	10 U
CHLOROETHANE	10 U	10 U	10 U	10 U
METHYLENE CHLORIDE	10 U	10 U	10 U	10 U
ACETONE	10 U	10 U	10 U	10 U
CARBON DISULFIDE	10 U	10 U	10 U	10 U
1,1-DICHLOROETHENE	10 U	10 U	10 U	10 U
1,1-DICHLOROETHANE	10 U	10 U	10 U	10 U
1,2-DICHLOROETHENE (TOTAL	10 U	10 U	10 U	10 U
CHLOROFORM	10 U	10 U	10 U	10 U
1,2-DICHLOROETHANE	10 U	10 U	10 U	10 U
2-BUTANONE	10 U	10 U	10 U	10 U
1,1,1-TRICHLOROETHANE	10 U	10 U	10 U	10 U
CARBON TETRACHLORIDE	10 U	10 U	10 U	10 U
BROMODICHLOROMETHANE	10 U	10 U	10 U	10 U
1,2-DICHLOROPROPANE	10 U	10 U	10 U	10 U
CIS-1,3-DICHLOROPROPENE	10 U	10 U	10 U	10 U
TRICHLOROETHENE	10 U	10 U	10 U	10 U
DIBROMOCHLOROMETHANE	10 U	10 U	10 U	10 U
1,1,2-TRICHLOROETHANE	10 U	10 U	10 U	10 U
BENZENE	10 U	10 U	10 U	10 U
TRANS-1,3-DICHLOROPROPEN	10 U	10 U	10 U	10 U
BROMOFORM	10 U	10 U	10 U	10 U
4-METHYL-2-PENTANONE	10 U	10 U	10 U	10 U
2-HEXANONE	10 U	10 U	10 U	10 U
TETRACHLOROETHENE	10 U	10 U	10 U	10 U
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	10 U	10 U
TOLUENE	10 U	10 U	10 U	10 U
CHLOROBENZENE	10 U	10 U	10 U	10 U
ETHYLBENZENE	10 U	10 U	10 U	10 U
STYRENE	10 U	10 U	10 U	10 U
XYLENE (TOTAL)	10 U	10 U	10 U	10 U

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW05-01	63-TW06-01	63-TW07-01	63-TW08-01
DATE SAMPLED	11/13/95	11/13/95	11/15/95	11/14/95
SEMIVOLATILES (ug/L)				
PHENOL	10 U	11 U	11 U	11 U
BIS(2-CHLOROETHYL)ETHER	10 U	11 U	11 U	11 U
2-CHLOROPHENOL	10 U	11 U	11 U	11 U
1,3-DICHLOROBENZENE	10 U	11 U	11 U	11 U
1,4-DICHLOROBENZENE	10 U	11 U	11 U	11 U
1,2-DICHLOROBENZENE	10 U	11 U	11 U	11 U
2-METHYLPHENOL	10 U	11 U	11 U	11 U
2,2'-OXYBIS(1-CHLOROPROPA	10 U	11 U	11 U	11 U
4-METHYLPHENOL	10 U	11 U	11 U	11 U
N-NITROSO-DI-N-PROPYLAMIN	10 U	11 U	11 U	11 U
HEXACHLOROETHANE	10 U	11 U	11 U	11 U
NITROBENZENE	10 U	11 U	11 U	11 U
ISOPHORONE	10 U	11 U	11 U	11 U
2-NITROPHENOL	10 U	11 U	11 U	11 U
2,4-DIMETHYLPHENOL	10 U	11 U	11 U	11 U
BIS(2-CHLOROETHOXY)METHA	10 U	11 U	11 U	11 U
2,4-DICHLOROPHENOL	10 U	11 U	11 U	11 U
1,2,4-TRICHLOROBENZENE	10 U	11 U	11 U	11 U
NAPHTHALENE	10 U	11 U	11 U	11 U
4-CHLOROANILINE	10 U	11 U	11 U	11 U
HEXACHLOROBUTADIENE	10 U	11 U	11 U	11 U
4-CHLORO-3-METHYLPHENOL	10 U	11 U	11 U	11 U
2-METHYLNAPHTHALENE	10 U	11 U	11 U	11 U
HEXACHLOROCYCLOPENTADI	10 U	11 U	11 U	11 U
2,4,6-TRICHLOROPHENOL	10 U	11 U	11 U	11 U
2,4,5-TRICHLOROPHENOL	25 U	26 U	26 U	26 U
2-CHLORONAPHTHALENE	10 U	11 U	11 U	11 U
2-NITROANILINE	25 U	26 U	26 U	26 U
DIMETHYLPHTHALATE	10 U	11 U	11 U	11 U
ACENAPHTHYLENE	10 U	11 U	11 U	11 U
2,6-DINITROTOLUENE	10 U	11 U	11 U	11 U
3-NITROANILINE	25 U	26 U	26 U	26 U
ACENAPHTHENE	10 U	11 U	11 U	11 U
2,4-DINITROPHENOL	25 U	26 U	26 U	26 U
4-NITROPHENOL	25 U	26 U	26 U	26 U
DIBENZOFURAN	10 U	11 U	11 U	11 U

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW05-01	63-TW06-01	63-TW07-01	63-TW08-01
DATE SAMPLED	11/13/95	11/13/95	11/15/95	11/14/95
SEMIVOLATILES (ug/L) (cont)				
2,4-DINITROTOLUENE	10 U	11 U	11 U	11 U
DIETHYLPHTHALATE	10 U	11 U	11 U	11 U
4-CHLOROPHENYL-PHENYLET	10 U	11 U	11 U	11 U
FLUORENE	10 U	11 U	11 U	11 U
4-NITROANILINE	25 U	26 U	26 U	26 U
4,6-DINITRO-2-METHYLPHENOL	25 U	26 U	26 U	26 U
N-NITROSODIPHENYLAMINE (1	10 U	11 U	11 U	11 U
4-BROMOPHENYL-PHENYLETH	10 U	11 U	11 U	11 U
HEXACHLOROBENZENE	10 U	11 U	11 U	11 U
PENTACHLOROPHENOL	25 U	26 U	26 U	26 U
PHENANTHRENE	10 U	11 U	11 U	11 U
ANTHRACENE	10 U	11 U	11 U	11 U
CARBAZOLE	10 U	11 U	11 U	11 U
DI-N-BUTYLPHTHALATE	10 U	11 U	11 U	11 U
FLUORANTHENE	10 U	11 U	11 U	11 U
PYRENE	10 U	11 U	11 U	11 U
BUTYLBENZYLPHTHALATE	10 U	11 U	11 U	11 U
3,3'-DICHLOROBENZIDINE	10 U	11 U	11 U	11 U
BENZO(A)ANTHRACENE	10 U	11 U	11 U	11 U
CHRYSENE	10 U	11 U	11 U	11 U
BIS(2-ETHYLHEXYL)PHTHALAT	10 U	11 U	11 U	11 U
DI-N-OCTYL PHTHALATE	10 U	11 U	11 U	11 U
BENZO(B)FLUORANTHENE	10 U	11 U	11 U	11 U
BENZO(K)FLUORANTHENE	10 U	11 U	11 U	11 U
BENZO(A)PYRENE	10 U	11 U	11 U	11 U
INDENO(1,2,3-CD)PYRENE	10 U	11 U	11 U	11 U
DIBENZO(A,H)ANTHRACENE	10 U	11 U	11 U	11 U
BENZO(G,H,I)PERYLENE	10 U	11 U	11 U	11 U

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW05-01	63-TW06-01	63-TW07-01	63-TW08-01
DATE SAMPLED	11/13/95	11/13/95	11/15/95	11/14/95
PESTICIDE/PCBS (ug/L)				
ALPHA-BHC	0.054 UJ	0.052 R	0.052 U	0.052 U
BETA-BHC	0.054 UJ	0.052 R	0.052 U	0.052 U
DELTA-BHC	0.054 UJ	0.052 R	0.052 U	0.052 UJ
HEPTACHLOR	0.054 UJ	0.052 R	0.052 U	0.052 U
ALDRIN	0.054 UJ	0.052 R	0.052 U	0.052 U
HEPTACHLOR EPOXIDE	0.054 UJ	0.052 R	0.052 U	0.052 U
ENDOSULFAN I	0.054 UJ	0.052 R	0.052 U	0.052 U
DIELDRIN	0.11 UJ	0.1 R	0.1 U	0.1 U
4,4'-DDE	0.11 UJ	0.1 R	0.1 UJ	0.1 U
ENDRIN	0.11 UJ	0.1 R	0.1 U	0.1 U
4,4'-DDD	0.11 UJ	0.1 R	0.1 U	0.1 U
ENDOSULFAN SULFATE	0.11 UJ	0.1 R	0.1 U	0.1 U
4,4'-DDT	0.11 UJ	0.1 R	0.1 U	0.1 U
METHOXYCHLOR	0.54 UJ	0.52 R	0.52 U	0.52 UJ
ENDRIN KETONE	0.11 UJ	0.1 R	0.1 U	0.1 U
ENDRIN ALDEHYDE	0.11 UJ	0.1 R	0.1 U	0.1 UJ
ALPHA-CHLORDANE	0.054 UJ	0.052 R	0.052 U	0.052 U
GAMMA-CHLORDANE	0.054 UJ	0.052 R	0.052 U	0.052 U
TOXAPHENE	5.4 UJ	5.2 R	5.2 U	5.2 U
AROCLOR-1016	1.1 UJ	1 R	1 U	1 U
AROCLOR-1221	2.2 UJ	2.1 R	2.1 U	2.1 U
AROCLOR-1232	1.1 UJ	1 R	1 U	1 U
AROCLOR-1242	1.1 UJ	1 R	1 U	1 U
AROCLOR-1248	1.1 UJ	1 R	1 U	1 U
AROCLOR-1254	1.1 UJ	1 R	1 U	1 U
AROCLOR-1260	1.1 UJ	1 R	1 U	1 U

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
VOLATILES (ug/L)								
CHLOROMETHANE	10 U	10 U	ND	ND		0/11	NA	NA
BROMOMETHANE	10 U	10 U	ND	ND		0/11	NA	NA
VINYL CHLORIDE	10 U	10 U	ND	ND		0/11	NA	NA
CHLOROETHANE	10 U	10 U	ND	ND		0/11	NA	NA
METHYLENE CHLORIDE	10 U	10 U	ND	ND		0/11	NA	NA
ACETONE	10 U	180 U	ND	ND		0/11	NA	NA
CARBON DISULFIDE	10 U	10 U	ND	ND		0/11	NA	NA
1,1-DICHLOROETHENE	10 U	10 U	ND	ND		0/11	NA	NA
1,1-DICHLOROETHANE	10 U	10 U	ND	ND		0/11	NA	NA
1,2-DICHLOROETHENE (TOTAL	10 U	10 U	ND	ND		0/11	NA	NA
CHLOROFORM	10 U	10 U	ND	ND		0/11	NA	NA
1,2-DICHLOROETHANE	10 U	10 U	ND	ND		0/11	NA	NA
2-BUTANONE	10 U	10 U	ND	ND		0/11	NA	NA
1,1,1-TRICHLOROETHANE	10 U	10 U	ND	ND		0/11	NA	NA
CARBON TETRACHLORIDE	10 U	10 U	ND	ND		0/11	NA	NA
BROMODICHLOROMETHANE	10 U	10 U	ND	ND		0/11	NA	NA
1,2-DICHLOROPROPANE	10 U	10 U	ND	ND		0/11	NA	NA
CIS-1,3-DICHLOROPROPENE	10 U	10 U	ND	ND		0/11	NA	NA
TRICHLOROETHENE	10 U	10 U	ND	ND		0/11	NA	NA
DIBROMOCHLOROMETHANE	10 U	10 U	ND	ND		0/11	NA	NA
1,1,2-TRICHLOROETHANE	10 U	10 U	ND	ND		0/11	NA	NA
BENZENE	10 U	10 U	ND	ND		0/11	NA	NA
TRANS-1,3-DICHLOROPROPEN	10 U	10 U	ND	ND		0/11	NA	NA
BROMOFORM	10 U	10 U	ND	ND		0/11	NA	NA
4-METHYL-2-PENTANONE	10 U	10 U	ND	ND		0/11	NA	NA
2-HEXANONE	10 U	10 U	ND	ND		0/11	NA	NA
TETRACHLOROETHENE	10 U	10 U	ND	ND		0/11	NA	NA
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	ND	ND		0/11	NA	NA
TOLUENE	10 U	10 U	ND	ND		0/11	NA	NA
CHLOROBENZENE	10 U	10 U	ND	ND		0/11	NA	NA
ETHYLBENZENE	10 U	10 U	ND	ND		0/11	NA	NA
STYRENE	10 U	10 U	ND	ND		0/11	NA	NA
XYLENE (TOTAL)	10 U	10 U	ND	ND		0/11	NA	NA

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/L)								
PHENOL	9 U	12 U	ND	ND		0/11	NA	NA
BIS(2-CHLOROETHYL)ETHER	9 U	12 U	ND	ND		0/11	NA	NA
2-CHLOROPHENOL	9 U	12 U	ND	ND		0/11	NA	NA
1,3-DICHLOROBENZENE	9 U	12 U	ND	ND		0/11	NA	NA
1,4-DICHLOROBENZENE	9 U	12 U	ND	ND		0/11	NA	NA
1,2-DICHLOROBENZENE	9 U	12 U	ND	ND		0/11	NA	NA
2-METHYLPHENOL	9 U	12 U	ND	ND		0/11	NA	NA
2,2'-OXYBIS(1-CHLOROPROPA	9 U	12 U	ND	ND		0/11	NA	NA
4-METHYLPHENOL	9 U	12 U	ND	ND		0/11	NA	NA
N-NITROSO-DI-N-PROPYLAMIN	9 U	12 U	ND	ND		0/11	NA	NA
HEXACHLOROETHANE	9 U	12 U	ND	ND		0/11	NA	NA
NITROBENZENE	9 U	12 U	ND	ND		0/11	NA	NA
ISOPHORONE	9 U	12 U	ND	ND		0/11	NA	NA
2-NITROPHENOL	9 U	12 U	ND	ND		0/11	NA	NA
2,4-DIMETHYLPHENOL	9 U	12 U	ND	ND		0/11	NA	NA
BIS(2-CHLOROETHOXY)METHA	9 U	12 U	ND	ND		0/11	NA	NA
2,4-DICHLOROPHENOL	9 U	12 U	ND	ND		0/11	NA	NA
1,2,4-TRICHLOROBENZENE	9 U	12 U	ND	ND		0/11	NA	NA
NAPHTHALENE	9 U	12 U	ND	ND		0/11	NA	NA
4-CHLOROANILINE	9 U	12 U	ND	ND		0/11	NA	NA
HEXACHLOROBUTADIENE	9 U	12 U	ND	ND		0/11	NA	NA
4-CHLORO-3-METHYLPHENOL	9 U	12 U	ND	ND		0/11	NA	NA
2-METHYLNAPHTHALENE	9 U	12 U	ND	ND		0/11	NA	NA
HEXACHLOROCYCLOPENTADI	9 U	12 U	ND	ND		0/11	NA	NA
2,4,6-TRICHLOROPHENOL	9 U	12 U	ND	ND		0/11	NA	NA
2,4,5-TRICHLOROPHENOL	22 U	30 U	ND	ND		0/11	NA	NA
2-CHLORONAPHTHALENE	9 U	12 U	ND	ND		0/11	NA	NA
2-NITROANILINE	22 U	30 U	ND	ND		0/11	NA	NA
DIMETHYLPHTHALATE	9 U	12 U	ND	ND		0/11	NA	NA
ACENAPHTHYLENE	9 U	12 U	ND	ND		0/11	NA	NA
2,6-DINITROTOLUENE	9 U	12 U	ND	ND		0/11	NA	NA
3-NITROANILINE	22 U	30 U	ND	ND		0/11	NA	NA
ACENAPHTHENE	9 U	12 U	ND	ND		0/11	NA	NA
2,4-DINITROPHENOL	22 U	30 U	ND	ND		0/11	NA	NA
4-NITROPHENOL	22 U	30 U	ND	ND		0/11	NA	NA
DIBENZOFURAN	9 U	12 U	ND	ND		0/11	NA	NA

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/L) (cont)								
2,4-DINITROTOLUENE	9 U	12 U	ND	ND		0/11	NA	NA
DIETHYLPHTHALATE	9 U	12 U	ND	ND		0/11	NA	NA
4-CHLOROPHENYL-PHENYLET	9 U	12 U	ND	ND		0/11	NA	NA
FLUORENE	9 U	12 U	ND	ND		0/11	NA	NA
4-NITROANILINE	22 U	30 U	ND	ND		0/11	NA	NA
4,6-DINITRO-2-METHYLPHENOL	22 U	30 U	ND	ND		0/11	NA	NA
N-NITROSODIPHENYLAMINE (1	9 U	12 U	ND	ND		0/11	NA	NA
4-BROMOPHENYL-PHENYLETH	9 U	12 U	ND	ND		0/11	NA	NA
HEXACHLOROBENZENE	9 U	12 U	ND	ND		0/11	NA	NA
PENTACHLOROPHENOL	22 U	30 U	ND	ND		0/11	NA	NA
PHENANTHRENE	9 U	12 U	ND	ND		0/11	NA	NA
ANTHRACENE	9 U	12 U	ND	ND		0/11	NA	NA
CARBAZOLE	9 U	12 U	ND	ND		0/11	NA	NA
DI-N-BUTYLPHTHALATE	9 U	12 U	ND	ND		0/11	NA	NA
FLUORANTHENE	9 U	12 U	ND	ND		0/11	NA	NA
PYRENE	9 U	12 U	ND	ND		0/11	NA	NA
BUTYLBENZYLPHTHALATE	9 U	12 U	ND	ND		0/11	NA	NA
3,3'-DICHLOROBENZIDINE	9 U	12 U	ND	ND		0/11	NA	NA
BENZO(A)ANTHRACENE	9 U	12 U	ND	ND		0/11	NA	NA
CHRYSENE	9 U	12 U	ND	ND		0/11	NA	NA
BIS(2-ETHYLHEXYL)PHTHALAT	9 U	12 U	1 J	11	63-TW04-01	2/11	6.00	6.00
DI-N-OCTYL PHTHALATE	9 U	12 U	ND	ND		0/11	NA	NA
BENZO(B)FLUORANTHENE	9 U	12 U	ND	ND		0/11	NA	NA
BENZO(K)FLUORANTHENE	9 U	12 U	ND	ND		0/11	NA	NA
BENZO(A)PYRENE	9 U	12 U	ND	ND		0/11	NA	NA
INDENO(1,2,3-CD)PYRENE	9 U	12 U	ND	ND		0/11	NA	NA
DIBENZO(A,H)ANTHRACENE	9 U	12 U	ND	ND		0/11	NA	NA
BENZO(G,H,I)PERYLENE	9 U	12 U	ND	ND		0/11	NA	NA

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
PESTICIDE/PCBS (ug/L)								
ALPHA-BHC	0.05 UJ	0.058 UJ	ND	ND		0/10	NA	NA
BETA-BHC	0.05 U	0.058 UJ	ND	ND		0/10	NA	NA
DELTA-BHC	0.05 UJ	0.058 UJ	ND	ND		0/10	NA	NA
HEPTACHLOR	0.05 U	0.058 UJ	ND	ND		0/10	NA	NA
ALDRIN	0.05 U	0.058 UJ	ND	ND		0/10	NA	NA
HEPTACHLOR EPOXIDE	0.05 U	0.058 UJ	ND	ND		0/10	NA	NA
ENDOSULFAN I	0.05 U	0.058 UJ	ND	ND		0/10	NA	NA
DIELDRIN	0.099 U	0.12 UJ	ND	ND		0/10	NA	NA
4,4'-DDE	0.099 U	0.12 UJ	ND	ND		0/10	NA	NA
ENDRIN	0.099 U	0.12 UJ	ND	ND		0/10	NA	NA
4,4'-DDD	0.099 UJ	0.12 UJ	ND	ND		0/10	NA	NA
ENDOSULFAN SULFATE	0.099 U	0.12 UJ	ND	ND		0/10	NA	NA
4,4'-DDT	0.099 U	0.12 UJ	ND	ND		0/10	NA	NA
METHOXYCHLOR	0.5 UJ	0.58 UJ	ND	ND		0/10	NA	NA
ENDRIN KETONE	0.099 U	0.12 UJ	ND	ND		0/10	NA	NA
ENDRIN ALDEHYDE	0.099 U	0.12 UJ	ND	ND		0/10	NA	NA
ALPHA-CHLORDANE	0.05 U	0.058 UJ	ND	ND		0/10	NA	NA
GAMMA-CHLORDANE	0.05 U	0.058 UJ	ND	ND		0/10	NA	NA
TOXAPHENE	5 U	5.8 UJ	ND	ND		0/10	NA	NA
AROCLOR-1016	0.99 U	1.2 UJ	ND	ND		0/10	NA	NA
AROCLOR-1221	2 U	2.3 UJ	ND	ND		0/10	NA	NA
AROCLOR-1232	0.99 U	1.2 UJ	ND	ND		0/10	NA	NA
AROCLOR-1242	0.99 U	1.2 UJ	ND	ND		0/10	NA	NA
AROCLOR-1248	0.99 U	1.2 UJ	ND	ND		0/10	NA	NA
AROCLOR-1254	0.99 U	1.2 UJ	ND	ND		0/10	NA	NA
AROCLOR-1260	0.99 U	1.2 UJ	ND	ND		0/10	NA	NA

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
VOLATILES (ug/L)								
CHLOROMETHANE	10 U	10 U	ND	ND		0/11	NA	NA
BROMOMETHANE	10 U	10 U	ND	ND		0/11	NA	NA
VINYL CHLORIDE	10 U	10 U	ND	ND		0/11	NA	NA
CHLOROETHANE	10 U	10 U	ND	ND		0/11	NA	NA
METHYLENE CHLORIDE	10 U	10 U	ND	ND		0/11	NA	NA
ACETONE	10 U	180 U	ND	ND		0/11	NA	NA
CARBON DISULFIDE	10 U	10 U	ND	ND		0/11	NA	NA
1,1-DICHLOROETHENE	10 U	10 U	ND	ND		0/11	NA	NA
1,1-DICHLOROETHANE	10 U	10 U	ND	ND		0/11	NA	NA
1,2-DICHLOROETHENE (TOTAL)	10 U	10 U	ND	ND		0/11	NA	NA
CHLOROFORM	10 U	10 U	ND	ND		0/11	NA	NA
1,2-DICHLOROETHANE	10 U	10 U	ND	ND		0/11	NA	NA
2-BUTANONE	10 U	10 U	ND	ND		0/11	NA	NA
1,1,1-TRICHLOROETHANE	10 U	10 U	ND	ND		0/11	NA	NA
CARBON TETRACHLORIDE	10 U	10 U	ND	ND		0/11	NA	NA
BROMODICHLOROMETHANE	10 U	10 U	ND	ND		0/11	NA	NA
1,2-DICHLOROPROPANE	10 U	10 U	ND	ND		0/11	NA	NA
CIS-1,3-DICHLOROPROPENE	10 U	10 U	ND	ND		0/11	NA	NA
TRICHLOROETHENE	10 U	10 U	ND	ND		0/11	NA	NA
DIBROMOCHLOROMETHANE	10 U	10 U	ND	ND		0/11	NA	NA
1,1,2-TRICHLOROETHANE	10 U	10 U	ND	ND		0/11	NA	NA
BENZENE	10 U	10 U	ND	ND		0/11	NA	NA
TRANS-1,3-DICHLOROPROPENE	10 U	10 U	ND	ND		0/11	NA	NA
BROMOFORM	10 U	10 U	ND	ND		0/11	NA	NA
4-METHYL-2-PENTANONE	10 U	10 U	ND	ND		0/11	NA	NA
2-HEXANONE	10 U	10 U	ND	ND		0/11	NA	NA
TETRACHLOROETHENE	10 U	10 U	ND	ND		0/11	NA	NA
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	ND	ND		0/11	NA	NA
TOLUENE	10 U	10 U	ND	ND		0/11	NA	NA
CHLOROBENZENE	10 U	10 U	ND	ND		0/11	NA	NA
ETHYLBENZENE	10 U	10 U	ND	ND		0/11	NA	NA
STYRENE	10 U	10 U	ND	ND		0/11	NA	NA
XYLENE (TOTAL)	10 U	10 U	ND	ND		0/11	NA	NA

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/L)								
PHENOL	9 U	12 U	ND	ND		0/11	NA	NA
BIS(2-CHLOROETHYL)ETHER	9 U	12 U	ND	ND		0/11	NA	NA
2-CHLOROPHENOL	9 U	12 U	ND	ND		0/11	NA	NA
1,3-DICHLOROBENZENE	9 U	12 U	ND	ND		0/11	NA	NA
1,4-DICHLOROBENZENE	9 U	12 U	ND	ND		0/11	NA	NA
1,2-DICHLOROBENZENE	9 U	12 U	ND	ND		0/11	NA	NA
2-METHYLPHENOL	9 U	12 U	ND	ND		0/11	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	9 U	12 U	ND	ND		0/11	NA	NA
4-METHYLPHENOL	9 U	12 U	ND	ND		0/11	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	9 U	12 U	ND	ND		0/11	NA	NA
HEXACHLOROETHANE	9 U	12 U	ND	ND		0/11	NA	NA
NITROBENZENE	9 U	12 U	ND	ND		0/11	NA	NA
ISOPHORONE	9 U	12 U	ND	ND		0/11	NA	NA
2-NITROPHENOL	9 U	12 U	ND	ND		0/11	NA	NA
2,4-DIMETHYLPHENOL	9 U	12 U	ND	ND		0/11	NA	NA
BIS(2-CHLOROETHOXY)METHANE	9 U	12 U	ND	ND		0/11	NA	NA
2,4-DICHLOROPHENOL	9 U	12 U	ND	ND		0/11	NA	NA
1,2,4-TRICHLOROBENZENE	9 U	12 U	ND	ND		0/11	NA	NA
NAPHTHALENE	9 U	12 U	ND	ND		0/11	NA	NA
4-CHLOROANILINE	9 U	12 U	ND	ND		0/11	NA	NA
HEXACHLOROBUTADIENE	9 U	12 U	ND	ND		0/11	NA	NA
4-CHLORO-3-METHYLPHENOL	9 U	12 U	ND	ND		0/11	NA	NA
2-METHYLNAPHTHALENE	9 U	12 U	ND	ND		0/11	NA	NA
HEXACHLOROCYCLOPENTADIENE	9 U	12 U	ND	ND		0/11	NA	NA
2,4,6-TRICHLOROPHENOL	9 U	12 U	ND	ND		0/11	NA	NA
2,4,5-TRICHLOROPHENOL	22 U	30 U	ND	ND		0/11	NA	NA
2-CHLORONAPHTHALENE	9 U	12 U	ND	ND		0/11	NA	NA
2-NITROANILINE	22 U	30 U	ND	ND		0/11	NA	NA
DIMETHYLPHTHALATE	9 U	12 U	ND	ND		0/11	NA	NA
ACENAPHTHYLENE	9 U	12 U	ND	ND		0/11	NA	NA
2,6-DINITROTOLUENE	9 U	12 U	ND	ND		0/11	NA	NA
3-NITROANILINE	22 U	30 U	ND	ND		0/11	NA	NA
ACENAPHTHENE	9 U	12 U	ND	ND		0/11	NA	NA
2,4-DINITROPHENOL	22 U	30 U	ND	ND		0/11	NA	NA

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/L) (cont)								
4-NITROPHENOL	22 U	30 U	ND	ND		0/11	NA	NA
DIBENZOFURAN	9 U	12 U	ND	ND		0/11	NA	NA
2,4-DINITROTOLUENE	9 U	12 U	ND	ND		0/11	NA	NA
DIETHYLPHTHALATE	9 U	12 U	ND	ND		0/11	NA	NA
4-CHLOROPHENYL-PHENYLETHER	9 U	12 U	ND	ND		0/11	NA	NA
FLUORENE	9 U	12 U	ND	ND		0/11	NA	NA
4-NITROANILINE	22 U	30 U	ND	ND		0/11	NA	NA
4,6-DINITRO-2-METHYLPHENOL	22 U	30 U	ND	ND		0/11	NA	NA
N-NITROSODIPHENYLAMINE (1)	9 U	12 U	ND	ND		0/11	NA	NA
4-BROMOPHENYL-PHENYLETHER	9 U	12 U	ND	ND		0/11	NA	NA
HEXACHLOROBENZENE	9 U	12 U	ND	ND		0/11	NA	NA
PENTACHLOROPHENOL	22 U	30 U	ND	ND		0/11	NA	NA
PHENANTHRENE	9 U	12 U	ND	ND		0/11	NA	NA
ANTHRACENE	9 U	12 U	ND	ND		0/11	NA	NA
CARBAZOLE	9 U	12 U	ND	ND		0/11	NA	NA
DI-N-BUTYLPHTHALATE	9 U	12 U	ND	ND		0/11	NA	NA
FLUORANTHENE	9 U	12 U	ND	ND		0/11	NA	NA
PYRENE	9 U	12 U	ND	ND		0/11	NA	NA
BUTYLBENZYLPHTHALATE	9 U	12 U	ND	ND		0/11	NA	NA
3,3'-DICHLOROBENZIDINE	9 U	12 U	ND	ND		0/11	NA	NA
BENZO(A)ANTHRACENE	9 U	12 U	ND	ND		0/11	NA	NA
CHRYSENE	9 U	12 U	ND	ND		0/11	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	9 U	12 U	1 J	11	63-TW04-01	2/11	6.00	6.00
DI-N-OCTYL PHTHALATE	9 U	12 U	ND	ND		0/11	NA	NA
BENZO(B)FLUORANTHENE	9 U	12 U	ND	ND		0/11	NA	NA
BENZO(K)FLUORANTHENE	9 U	12 U	ND	ND		0/11	NA	NA
BENZO(A)PYRENE	9 U	12 U	ND	ND		0/11	NA	NA
INDENO(1,2,3-CD)PYRENE	9 U	12 U	ND	ND		0/11	NA	NA
DIBENZO(A,H)ANTHRACENE	9 U	12 U	ND	ND		0/11	NA	NA
BENZO(G,H,I)PERYLENE	9 U	12 U	ND	ND		0/11	NA	NA

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
PESTICIDE/PCBS (ug/L)								
ALPHA-BHC	0.05 UJ	0.058 UJ	ND	ND		0/10	NA	NA
BETA-BHC	0.05 U	0.058 UJ	ND	ND		0/10	NA	NA
DELTA-BHC	0.05 UJ	0.058 UJ	ND	ND		0/10	NA	NA
HEPTACHLOR	0.05 U	0.058 UJ	ND	ND		0/10	NA	NA
ALDRIN	0.05 U	0.058 UJ	ND	ND		0/10	NA	NA
HEPTACHLOR EPOXIDE	0.05 U	0.058 UJ	ND	ND		0/10	NA	NA
ENDOSULFAN I	0.05 U	0.058 UJ	ND	ND		0/10	NA	NA
DIELDRIN	0.099 U	0.12 UJ	ND	ND		0/10	NA	NA
4,4'-DDE	0.099 U	0.12 UJ	ND	ND		0/10	NA	NA
ENDRIN	0.099 U	0.12 UJ	ND	ND		0/10	NA	NA
4,4'-DDD	0.099 UJ	0.12 UJ	ND	ND		0/10	NA	NA
ENDOSULFAN SULFATE	0.099 U	0.12 UJ	ND	ND		0/10	NA	NA
4,4'-DDT	0.099 U	0.12 UJ	ND	ND		0/10	NA	NA
METHOXYCHLOR	0.5 UJ	0.58 UJ	ND	ND		0/10	NA	NA
ENDRIN KETONE	0.099 U	0.12 UJ	ND	ND		0/10	NA	NA
ENDRIN ALDEHYDE	0.099 U	0.12 UJ	ND	ND		0/10	NA	NA
ALPHA-CHLORDANE	0.05 U	0.058 UJ	ND	ND		0/10	NA	NA
GAMMA-CHLORDANE	0.05 U	0.058 UJ	ND	ND		0/10	NA	NA
TOXAPHENE	5 U	5.8 UJ	ND	ND		0/10	NA	NA
AROCLOR-1016	0.99 U	1.2 UJ	ND	ND		0/10	NA	NA
AROCLOR-1221	2 U	2.3 UJ	ND	ND		0/10	NA	NA
AROCLOR-1232	0.99 U	1.2 UJ	ND	ND		0/10	NA	NA
AROCLOR-1242	0.99 U	1.2 UJ	ND	ND		0/10	NA	NA
AROCLOR-1248	0.99 U	1.2 UJ	ND	ND		0/10	NA	NA
AROCLOR-1254	0.99 U	1.2 UJ	ND	ND		0/10	NA	NA
AROCLOR-1260	0.99 U	1.2 UJ	ND	ND		0/10	NA	NA

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-GW01-01	63-GW02-01	63-GW03-01	63-TW01-01	63-TW02-01	63-TW03-01	63-TW04-01
DATE SAMPLED	11/15/95	11/15/95	11/15/95	11/12/95	11/13/95	11/13/95	11/13/95
TOTAL METALS (ug/L)							
ALUMINUM, TOTAL	213	325	175	98.4 U	763	2420	287
ANTIMONY, TOTAL	23.5 U	23.5 U	23.5 U	23.5 U	23.5 U	23.5 U	23.5 U
ARSENIC, TOTAL	1.6 U	1.8	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
BARIUM, TOTAL	18.3	461	78.3	47.8	81.7	53.2	65.6
BERYLLIUM, TOTAL	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CADMIUM, TOTAL	2.1 U	2.1 U	2.1 U	4.2 U	4.2 U	4.2 U	4.2 U
CALCIUM, TOTAL	911 J	12400 J	5230 J	24900	3010	352	1410
CHROMIUM, TOTAL	2.1 U	2.1 U	2.1 U	4.6 U	4.6 U	4.6 U	4.6 U
COBALT, TOTAL	3.4 U	3.4 U	11.9	3.4 U	8.3	5.1	3.4 U
COPPER, TOTAL	1.5 U	2.8 U	1.7 U	2 U	2 U	2 U	2.8 U
IRON, TOTAL	93.6	24300	73.5	48.7 U	77.7 U	54.6 U	550
LEAD, TOTAL	1 U	1.7	1 U	1 U	1.3	2.2	1 U
MAGNESIUM, TOTAL	529	5800	2130	1280	3060	1010	692
MANGANESE, TOTAL	1.8	311	54	3.8	21.3	15.8	23.7
MERCURY, TOTAL	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
NICKEL, TOTAL	11.1 U	11.1 U	12.5	89.4	15.8	33.6	83.2
POTASSIUM, TOTAL	1430	8290	947	1300	1260	787 U	787 U
SELENIUM, TOTAL	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
SILVER, TOTAL	2.9 U	2.9 U	2.9 U	3.2 U	3.2 U	3.2 U	3.2 U
SODIUM, TOTAL	2850	4920	2830	2510	11800	7280	4750
THALLIUM, TOTAL	0.6 U	0.6 U	0.6 U	0.6 UJ	0.6 UJ	0.6 UJ	0.6 UJ
VANADIUM, TOTAL	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U
ZINC, TOTAL	6.7 U	20.8 U	48.2	4.9	11.8	41.4	3.6 U

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-TW05-01	63-TW06-01	63-TW07-01	63-TW08-01
DATE SAMPLED	11/13/95	11/13/95	11/15/95	11/14/95
TOTAL METALS (ug/L)				
ALUMINUM, TOTAL	2120	936	103 U	257
ANTIMONY, TOTAL	23.5 U	23.5 U	23.5 U	23.5 U
ARSENIC, TOTAL	1.6 U	1.6 U	1.6 U	1.6 U
BARIUM, TOTAL	85.6	56.4	145	16.6
BERYLLIUM, TOTAL	1 U	1 U	1 U	1 U
CADMIUM, TOTAL	2.1 U	2.1 U	2.1 U	2.1 U
CALCIUM, TOTAL	1330 J	3450 J	6490 J	1520 J
CHROMIUM, TOTAL	2.1 U	2.1 U	2.1 U	2.1 U
COBALT, TOTAL	4.8	3.4 U	5.1	3.4 U
COPPER, TOTAL	8.3 U	2.1 U	2.2 U	1.5 U
IRON, TOTAL	24300	248	2540	88.2
LEAD, TOTAL	9.4	1.2	1 U	1 U
MAGNESIUM, TOTAL	590	1220	2560	564
MANGANESE, TOTAL	191	5.1	181	3.8
MERCURY, TOTAL	0.1 U	0.1 U	0.1 U	0.1 U
NICKEL, TOTAL	74.2	15.5	57.4	44.5
POTASSIUM, TOTAL	1210	787 U	2670	787 U
SELENIUM, TOTAL	1.5 U	1.5 U	1.5 U	1.5 U
SILVER, TOTAL	2.9 U	2.9 U	2.9 U	2.9 U
SODIUM, TOTAL	2300	7120	5140	3710
THALLIUM, TOTAL	0.6 U	0.6 U	0.6 U	0.6 U
VANADIUM, TOTAL	3.2 U	3.2 U	3.2 U	3.2 U
ZINC, TOTAL	183	9.9 U	17100	4.4 U

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
TOTAL METALS (ug/L)								
ALUMINUM, TOTAL	98.4 U	103 U	175	2420	63-TW03-01	9/11	832.89	325.00
ANTIMONY, TOTAL	23.5 U	23.5 U	ND	ND		0/11	NA	NA
ARSENIC, TOTAL	1.6 U	1.6 U	1.8	1.8	63-GW02-01	1/11	1.80	1.80
BARIUM, TOTAL	NA	NA	16.6	461	63-GW02-01	11/11	100.86	65.60
BERYLLIUM, TOTAL	1 U	1 U	ND	ND		0/11	NA	NA
CADMIUM, TOTAL	2.1 U	4.2 U	ND	ND		0/11	NA	NA
CALCIUM, TOTAL	NA	NA	352	24900	63-TW01-01	11/11	5545.73	3010.00
CHROMIUM, TOTAL	2.1 U	4.6 U	ND	ND		0/11	NA	NA
COBALT, TOTAL	3.4 U	3.4 U	4.8	11.9	63-GW03-01	5/11	7.04	5.10
COPPER, TOTAL	1.5 U	8.3 U	ND	ND		0/11	NA	NA
IRON, TOTAL	48.7 U	77.7 U	73.5	24300	63-TW05-01	8/11	6524.16	399.00
LEAD, TOTAL	1 U	1 U	1.2	9.4	63-TW05-01	5/11	3.16	1.70
MAGNESIUM, TOTAL	NA	NA	529	5800	63-GW02-01	11/11	1766.82	1220.00
MANGANESE, TOTAL	NA	NA	1.8	311	63-GW02-01	11/11	73.85	21.30
MERCURY, TOTAL	0.1 U	0.1 U	ND	ND		0/11	NA	NA
NICKEL, TOTAL	11.1 U	11.1 U	12.5	89.4	63-TW01-01	9/11	47.34	44.50
POTASSIUM, TOTAL	787 U	787 U	947	8290	63-GW02-01	7/11	2443.86	1300.00
SELENIUM, TOTAL	1.5 U	1.5 U	ND	ND		0/11	NA	NA
SILVER, TOTAL	2.9 U	3.2 U	ND	ND		0/11	NA	NA
SODIUM, TOTAL	NA	NA	2300	11800	63-TW02-01	11/11	5019.09	4750.00
THALLIUM, TOTAL	0.6 U	0.6 U	ND	ND		0/11	NA	NA
VANADIUM, TOTAL	3.2 U	3.2 U	ND	ND		0/11	NA	NA
ZINC, TOTAL	3.6 U	20.8 U	4.9	17100	63-TW07-01	6/11	2898.22	44.80

SITE 63, VERONA LOOP DUMP
GROUNDWATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
TOTAL METALS (ug/L)								
ALUMINUM, TOTAL	98.4 U	103 U	175	2420	63-TW03-01	9/11	832.89	325.00
ANTIMONY, TOTAL	23.5 U	23.5 U	ND	ND		0/11	NA	NA
ARSENIC, TOTAL	1.6 U	1.6 U	1.8	1.8	63-GW02-01	1/11	1.80	1.80
BARIUM, TOTAL	NA	NA	16.6	461	63-GW02-01	11/11	100.86	65.60
BERYLLIUM, TOTAL	1 U	1 U	ND	ND		0/11	NA	NA
CADMIUM, TOTAL	2.1 U	4.2 U	ND	ND		0/11	NA	NA
CALCIUM, TOTAL	NA	NA	352	24900	63-TW01-01	11/11	5545.73	3010.00
CHROMIUM, TOTAL	2.1 U	4.6 U	ND	ND		0/11	NA	NA
COBALT, TOTAL	3.4 U	3.4 U	4.8	11.9	63-GW03-01	5/11	7.04	5.10
COPPER, TOTAL	1.5 U	8.3 U	ND	ND		0/11	NA	NA
IRON, TOTAL	48.7 U	77.7 U	73.5	24300	63-TW05-01	8/11	6524.16	399.00
LEAD, TOTAL	1 U	1 U	1.2	9.4	63-TW05-01	5/11	3.16	1.70
MAGNESIUM, TOTAL	NA	NA	529	5800	63-GW02-01	11/11	1766.82	1220.00
MANGANESE, TOTAL	NA	NA	1.8	311	63-GW02-01	11/11	73.85	21.30
MERCURY, TOTAL	0.1 U	0.1 U	ND	ND		0/11	NA	NA
NICKEL, TOTAL	11.1 U	11.1 U	12.5	89.4	63-TW01-01	9/11	47.34	44.50
POTASSIUM, TOTAL	787 U	787 U	947	8290	63-GW02-01	7/11	2443.86	1300.00
SELENIUM, TOTAL	1.5 U	1.5 U	ND	ND		0/11	NA	NA
SILVER, TOTAL	2.9 U	3.2 U	ND	ND		0/11	NA	NA
SODIUM, TOTAL	NA	NA	2300	11800	63-TW02-01	11/11	5019.09	4750.00
THALLIUM, TOTAL	0.6 U	0.6 U	ND	ND		0/11	NA	NA
VANADIUM, TOTAL	3.2 U	3.2 U	ND	ND		0/11	NA	NA
ZINC, TOTAL	3.6 U	20.8 U	4.9	17100	63-TW07-01	6/11	2898.22	44.80

SURFACE WATER

SITE 63, VERONA LOOP DUMP
SURFACE WATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SW01	63-SW02	63-SW03	63-SW04	63-SW05
DATE SAMPLED	11/10/95	11/10/95	11/10/95	11/10/95	11/10/95
VOLATILES (ug/L)					
CHLOROMETHANE	10 U	10 U	10 U	10 U	10 U
BROMOMETHANE	10 U	10 U	10 U	10 U	10 U
VINYL CHLORIDE	10 U	10 U	10 U	10 U	10 U
CHLOROETHANE	10 U	10 U	10 U	10 U	10 U
METHYLENE CHLORIDE	10 U	10 U	10 U	10 U	10 U
ACETONE	10 UJ	10 UJ	10 UJ	11 J	10 UJ
CARBON DISULFIDE	10 U	10 U	10 U	10 U	10 U
1,1-DICHLOROETHENE	10 U	10 U	10 U	10 U	10 U
1,1-DICHLOROETHANE	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROETHENE (TOTAL)	10 U	10 U	10 U	10 U	10 U
CHLOROFORM	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROETHANE	10 U	10 U	10 U	10 U	10 U
2-BUTANONE	10 U	10 U	10 U	10 U	10 U
1,1,1-TRICHLOROETHANE	10 U	10 U	10 U	10 U	10 U
CARBON TETRACHLORIDE	10 U	10 U	10 U	10 U	10 U
BROMODICHLOROMETHANE	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROPROPANE	10 U	10 U	10 U	10 U	10 U
CIS-1,3-DICHLOROPROPENE	10 U	10 U	10 U	10 U	10 U
TRICHLOROETHENE	10 U	10 U	10 U	10 U	10 U
DIBROMOCHLOROMETHANE	10 U	10 U	10 U	10 U	10 U
1,1,2-TRICHLOROETHANE	10 U	10 U	10 U	10 U	10 U
BENZENE	10 U	10 U	10 U	10 U	10 U
TRANS-1,3-DICHLOROPROPENE	10 U	10 U	10 U	10 U	10 U
BROMOFORM	10 U	10 U	10 U	10 U	10 U
4-METHYL-2-PENTANONE	10 U	10 U	10 U	10 U	10 U
2-HEXANONE	10 U	10 U	10 U	10 U	10 U
TETRACHLOROETHENE	10 U	10 U	10 U	10 U	10 U
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	10 U	10 U	10 U
TOLUENE	10 U	10 U	10 U	10 U	10 U
CHLOROBENZENE	10 U	10 U	10 U	10 U	10 U
ETHYLBENZENE	10 U	10 U	10 U	10 U	10 U
STYRENE	10 U	10 U	10 U	10 U	10 U
XYLENE (TOTAL)	10 U	10 U	10 U	10 U	10 U

SITE 63, VERONA LOOP DUMP
SURFACE WATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SW01	63-SW02	63-SW03	63-SW04	63-SW05
DATE SAMPLED	11/10/95	11/10/95	11/10/95	11/10/95	11/10/95
SEMIVOLATILES (ug/L)					
PHENOL	10 U	10 U	10 U	9 U	10 U
BIS(2-CHLOROETHYL)ETHER	10 U	10 U	10 U	9 U	10 U
2-CHLOROPHENOL	10 U	10 U	10 U	9 U	10 U
1,3-DICHLOROBENZENE	10 U	10 U	10 U	9 U	10 U
1,4-DICHLOROBENZENE	10 U	10 U	10 U	9 U	10 U
1,2-DICHLOROBENZENE	10 U	10 U	10 U	9 U	10 U
2-METHYLPHENOL	10 U	10 U	10 U	9 U	10 U
2,2'-OXYBIS(1-CHLOROPROPANE)	10 U	10 U	10 U	9 U	10 U
4-METHYLPHENOL	10 U	10 U	10 U	9 U	10 U
N-NITROSO-DI-N-PROPYLAMINE	10 U	10 U	10 U	9 U	10 U
HEXACHLOROETHANE	10 U	10 U	10 U	9 U	10 U
NITROBENZENE	10 U	10 U	10 U	9 U	10 U
ISOPHORONE	10 U	10 U	10 U	9 U	10 U
2-NITROPHENOL	10 U	10 U	10 U	9 U	10 U
2,4-DIMETHYLPHENOL	10 U	10 U	10 U	9 U	10 U
BIS(2-CHLOROETHOXY)METHANE	10 U	10 U	10 U	9 U	10 U
2,4-DICHLOROPHENOL	10 U	10 U	10 U	9 U	10 U
1,2,4-TRICHLOROBENZENE	10 U	10 U	10 U	9 U	10 U
NAPHTHALENE	10 U	10 U	10 U	9 U	10 U
4-CHLOROANILINE	10 U	10 U	10 U	9 U	10 U
HEXACHLOROBUTADIENE	10 U	10 U	10 U	9 U	10 U
4-CHLORO-3-METHYLPHENOL	10 U	10 U	10 U	9 U	10 U
2-METHYLNAPHTHALENE	10 U	10 U	10 U	9 U	10 U
HEXACHLOROCYCLOPENTADIENE	10 U	10 U	10 U	9 U	10 U
2,4,6-TRICHLOROPHENOL	10 U	10 U	10 U	9 U	10 U
2,4,5-TRICHLOROPHENOL	25 U	24 U	25 U	24 U	25 U
2-CHLORONAPHTHALENE	10 U	10 U	10 U	9 U	10 U
2-NITROANILINE	25 U	24 U	25 U	24 U	25 U
DIMETHYLPHTHALATE	10 U	10 U	10 U	9 U	10 U
ACENAPHTHYLENE	10 U	10 U	10 U	9 U	10 U
2,6-DINITROTOLUENE	10 U	10 U	10 U	9 U	10 U
3-NITROANILINE	25 U	24 U	25 U	24 U	25 U
ACENAPHTHENE	10 U	10 U	10 U	9 U	10 U
2,4-DINITROPHENOL	25 U	24 U	25 U	24 U	25 U
4-NITROPHENOL	25 U	24 U	25 U	24 U	25 U
DIBENZOFURAN	10 U	10 U	10 U	9 U	10 U

SITE 63, VERONA LOOP DUMP
SURFACE WATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SW01	63-SW02	63-SW03	63-SW04	63-SW05
DATE SAMPLED	11/10/95	11/10/95	11/10/95	11/10/95	11/10/95
SEMIVOLATILES (ug/L) (cont)					
2,4-DINITROTOLUENE	10 U	10 U	10 U	9 U	10 U
DIETHYLPHTHALATE	10 U	10 U	10 U	9 U	10 U
4-CHLOROPHENYL-PHENYLETHER	10 U	10 U	10 U	9 U	10 U
FLUORENE	10 U	10 U	10 U	9 U	10 U
4-NITROANILINE	25 U	24 U	25 U	24 U	25 U
4,6-DINITRO-2-METHYLPHENOL	25 U	24 U	25 U	24 U	25 U
N-NITROSODIPHENYLAMINE (1)	10 U	10 U	10 U	9 U	10 U
4-BROMOPHENYL-PHENYLETHER	10 U	10 U	10 U	9 U	10 U
HEXACHLOROBENZENE	10 U	10 U	10 U	9 U	10 U
PENTACHLOROPHENOL	25 U	24 U	25 U	24 U	25 U
PHENANTHRENE	10 U	10 U	10 U	9 U	10 U
ANTHRACENE	10 U	10 U	10 U	9 U	10 U
CARBAZOLE	10 U	10 U	10 U	9 U	10 U
DI-N-BUTYLPHTHALATE	10 U	10 U	10 U	9 U	10 U
FLUORANTHENE	10 U	10 U	10 U	9 U	10 U
PYRENE	10 U	10 U	10 U	9 U	10 U
BUTYLBENZYLPHTHALATE	10 U	10 U	10 U	9 U	10 U
3,3'-DICHLOROBENZIDINE	10 U	10 U	10 U	9 U	10 U
BENZO(A)ANTHRACENE	10 U	10 U	10 U	9 U	10 U
CHRYSENE	10 U	10 U	10 U	9 U	10 U
BIS(2-ETHYLHEXYL)PHTHALATE	100	10 U	10 U	9 U	10 U
DI-N-OCTYL PHTHALATE	10 U	10 U	10 U	9 U	10 U
BENZO(B)FLUORANTHENE	10 U	10 U	10 U	9 U	10 U
BENZO(K)FLUORANTHENE	10 U	10 U	10 U	9 U	10 U
BENZO(A)PYRENE	10 U	10 U	10 U	9 U	10 U
INDENO(1,2,3-CD)PYRENE	10 U	10 U	10 U	9 U	10 U
DIBENZO(A,H)ANTHRACENE	10 U	10 U	10 U	9 U	10 U
BENZO(G,H,I)PERYLENE	10 U	10 U	10 U	9 U	10 U

SITE 63, VERONA LOOP DUMP
SURFACE WATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SW01	63-SW02	63-SW03	63-SW04	63-SW05
DATE SAMPLED	11/10/95	11/10/95	11/10/95	11/10/95	11/10/95
PESTICIDE/PCBS (ug/L)					
ALPHA-BHC	0.048 UJ	0.048 UJ	0.05 UJ	0.048 UJ	0.048 UJ
BETA-BHC	0.048 UJ	0.048 UJ	0.05 UJ	0.048 UJ	0.048 UJ
DELTA-BHC	0.048 UJ	0.048 UJ	0.05 UJ	0.048 UJ	0.048 UJ
HEPTACHLOR	0.048 UJ	0.048 UJ	0.05 UJ	0.048 UJ	0.048 UJ
ALDRIN	0.048 UJ	0.048 UJ	0.05 UJ	0.048 UJ	0.048 UJ
HEPTACHLOR EPOXIDE	0.048 UJ	0.048 UJ	0.05 UJ	0.048 UJ	0.048 UJ
ENDOSULFAN I	0.048 UJ	0.048 UJ	0.05 UJ	0.048 UJ	0.048 UJ
DIELDRIN	0.096 UJ	0.097 UJ	0.1 UJ	0.097 UJ	0.096 UJ
4,4'-DDE	0.096 UJ	0.097 UJ	0.1 UJ	0.097 UJ	0.096 UJ
ENDRIN	0.096 UJ	0.097 UJ	0.1 UJ	0.097 UJ	0.096 UJ
4,4'-DDD	0.096 UJ	0.097 UJ	0.1 UJ	0.097 UJ	0.096 UJ
ENDOSULFAN SULFATE	0.096 UJ	0.097 UJ	0.1 UJ	0.097 UJ	0.096 UJ
4,4'-DDT	0.096 UJ	0.097 UJ	0.1 UJ	0.097 UJ	0.096 UJ
METHOXYCHLOR	0.48 UJ	0.48 UJ	0.5 UJ	0.48 UJ	0.48 UJ
ENDRIN KETONE	0.096 UJ	0.097 UJ	0.1 UJ	0.097 UJ	0.096 UJ
ENDRIN ALDEHYDE	0.096 UJ	0.097 UJ	0.1 UJ	0.097 UJ	0.096 UJ
ALPHA-CHLORDANE	0.048 UJ	0.048 UJ	0.05 UJ	0.048 UJ	0.048 UJ
GAMMA-CHLORDANE	0.048 UJ	0.048 UJ	0.05 UJ	0.048 UJ	0.048 UJ
TOXAPHENE	4.8 UJ	4.8 UJ	5 UJ	4.8 UJ	4.8 UJ
AROCLOR-1016	0.96 UJ	0.97 UJ	1 UJ	0.97 UJ	0.96 UJ
AROCLOR-1221	1.9 UJ	1.9 UJ	2 UJ	1.9 UJ	1.9 UJ
AROCLOR-1232	0.96 UJ	0.97 UJ	1 UJ	0.97 UJ	0.96 UJ
AROCLOR-1242	0.96 UJ	0.97 UJ	1 UJ	0.97 UJ	0.96 UJ
AROCLOR-1248	0.96 UJ	0.97 UJ	1 UJ	0.97 UJ	0.96 UJ
AROCLOR-1254	0.96 UJ	0.97 UJ	1 UJ	0.97 UJ	0.96 UJ
AROCLOR-1260	0.96 UJ	0.97 UJ	1 UJ	0.97 UJ	0.96 UJ

SITE 63, VERONA LOOP DUMP
SURFACE WATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
VOLATILES (ug/L)								
CHLOROMETHANE	10 U	10 U	ND	ND		0/5	NA	NA
BROMOMETHANE	10 U	10 U	ND	ND		0/5	NA	NA
VINYL CHLORIDE	10 U	10 U	ND	ND		0/5	NA	NA
CHLOROETHANE	10 U	10 U	ND	ND		0/5	NA	NA
METHYLENE CHLORIDE	10 U	10 U	ND	ND		0/5	NA	NA
ACETONE	10 UJ	10 UJ	11 J	11 J	63-SW04	1/5	11.00	11.00
CARBON DISULFIDE	10 U	10 U	ND	ND		0/5	NA	NA
1,1-DICHLOROETHENE	10 U	10 U	ND	ND		0/5	NA	NA
1,1-DICHLOROETHANE	10 U	10 U	ND	ND		0/5	NA	NA
1,2-DICHLOROETHENE (TOTAL)	10 U	10 U	ND	ND		0/5	NA	NA
CHLOROFORM	10 U	10 U	ND	ND		0/5	NA	NA
1,2-DICHLOROETHANE	10 U	10 U	ND	ND		0/5	NA	NA
2-BUTANONE	10 U	10 U	ND	ND		0/5	NA	NA
1,1,1-TRICHLOROETHANE	10 U	10 U	ND	ND		0/5	NA	NA
CARBON TETRACHLORIDE	10 U	10 U	ND	ND		0/5	NA	NA
BROMODICHLOROMETHANE	10 U	10 U	ND	ND		0/5	NA	NA
1,2-DICHLOROPROPANE	10 U	10 U	ND	ND		0/5	NA	NA
CIS-1,3-DICHLOROPROPENE	10 U	10 U	ND	ND		0/5	NA	NA
TRICHLOROETHENE	10 U	10 U	ND	ND		0/5	NA	NA
DIBROMOCHLOROMETHANE	10 U	10 U	ND	ND		0/5	NA	NA
1,1,2-TRICHLOROETHANE	10 U	10 U	ND	ND		0/5	NA	NA
BENZENE	10 U	10 U	ND	ND		0/5	NA	NA
TRANS-1,3-DICHLOROPROPENE	10 U	10 U	ND	ND		0/5	NA	NA
BROMOFORM	10 U	10 U	ND	ND		0/5	NA	NA
4-METHYL-2-PENTANONE	10 U	10 U	ND	ND		0/5	NA	NA
2-HEXANONE	10 U	10 U	ND	ND		0/5	NA	NA
TETRACHLOROETHENE	10 U	10 U	ND	ND		0/5	NA	NA
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	ND	ND		0/5	NA	NA
TOLUENE	10 U	10 U	ND	ND		0/5	NA	NA
CHLOROBENZENE	10 U	10 U	ND	ND		0/5	NA	NA
ETHYLBENZENE	10 U	10 U	ND	ND		0/5	NA	NA
STYRENE	10 U	10 U	ND	ND		0/5	NA	NA
XYLENE (TOTAL)	10 U	10 U	ND	ND		0/5	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE WATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/L)								
PHENOL	9 U	10 U	ND	ND		0/5	NA	NA
BIS(2-CHLOROETHYL)ETHER	9 U	10 U	ND	ND		0/5	NA	NA
2-CHLOROPHENOL	9 U	10 U	ND	ND		0/5	NA	NA
1,3-DICHLOROBENZENE	9 U	10 U	ND	ND		0/5	NA	NA
1,4-DICHLOROBENZENE	9 U	10 U	ND	ND		0/5	NA	NA
1,2-DICHLOROBENZENE	9 U	10 U	ND	ND		0/5	NA	NA
2-METHYLPHENOL	9 U	10 U	ND	ND		0/5	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	9 U	10 U	ND	ND		0/5	NA	NA
4-METHYLPHENOL	9 U	10 U	ND	ND		0/5	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	9 U	10 U	ND	ND		0/5	NA	NA
HEXACHLOROETHANE	9 U	10 U	ND	ND		0/5	NA	NA
NITROBENZENE	9 U	10 U	ND	ND		0/5	NA	NA
ISOPHORONE	9 U	10 U	ND	ND		0/5	NA	NA
2-NITROPHENOL	9 U	10 U	ND	ND		0/5	NA	NA
2,4-DIMETHYLPHENOL	9 U	10 U	ND	ND		0/5	NA	NA
BIS(2-CHLOROETHOXY)METHANE	9 U	10 U	ND	ND		0/5	NA	NA
2,4-DICHLOROPHENOL	9 U	10 U	ND	ND		0/5	NA	NA
1,2,4-TRICHLOROBENZENE	9 U	10 U	ND	ND		0/5	NA	NA
NAPHTHALENE	9 U	10 U	ND	ND		0/5	NA	NA
4-CHLOROANILINE	9 U	10 U	ND	ND		0/5	NA	NA
HEXACHLOROBUTADIENE	9 U	10 U	ND	ND		0/5	NA	NA
4-CHLORO-3-METHYLPHENOL	9 U	10 U	ND	ND		0/5	NA	NA
2-METHYLNAPHTHALENE	9 U	10 U	ND	ND		0/5	NA	NA
HEXACHLOROCYCLOPENTADIENE	9 U	10 U	ND	ND		0/5	NA	NA
2,4,6-TRICHLOROPHENOL	9 U	10 U	ND	ND		0/5	NA	NA
2,4,5-TRICHLOROPHENOL	24 U	25 U	ND	ND		0/5	NA	NA
2-CHLORONAPHTHALENE	9 U	10 U	ND	ND		0/5	NA	NA
2-NITROANILINE	24 U	25 U	ND	ND		0/5	NA	NA
DIMETHYLPHTHALATE	9 U	10 U	ND	ND		0/5	NA	NA
ACENAPHTHYLENE	9 U	10 U	ND	ND		0/5	NA	NA
2,6-DINITROTOLUENE	9 U	10 U	ND	ND		0/5	NA	NA
3-NITROANILINE	24 U	25 U	ND	ND		0/5	NA	NA
ACENAPHTHENE	9 U	10 U	ND	ND		0/5	NA	NA
2,4-DINITROPHENOL	24 U	25 U	ND	ND		0/5	NA	NA
4-NITROPHENOL	24 U	25 U	ND	ND		0/5	NA	NA
DIBENZOFURAN	9 U	10 U	ND	ND		0/5	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE WATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/L) (cont)								
2,4-DINITROTOLUENE	9 U	10 U	ND	ND		0/5	NA	NA
DIETHYLPHTHALATE	9 U	10 U	ND	ND		0/5	NA	NA
4-CHLOROPHENYL-PHENYLETHER	9 U	10 U	ND	ND		0/5	NA	NA
FLUORENE	9 U	10 U	ND	ND		0/5	NA	NA
4-NITROANILINE	24 U	25 U	ND	ND		0/5	NA	NA
4,6-DINITRO-2-METHYLPHENOL	24 U	25 U	ND	ND		0/5	NA	NA
N-NITROSODIPHENYLAMINE (1)	9 U	10 U	ND	ND		0/5	NA	NA
4-BROMOPHENYL-PHENYLETHER	9 U	10 U	ND	ND		0/5	NA	NA
HEXACHLOROBENZENE	9 U	10 U	ND	ND		0/5	NA	NA
PENTACHLOROPHENOL	24 U	25 U	ND	ND		0/5	NA	NA
PHENANTHRENE	9 U	10 U	ND	ND		0/5	NA	NA
ANTHRACENE	9 U	10 U	ND	ND		0/5	NA	NA
CARBAZOLE	9 U	10 U	ND	ND		0/5	NA	NA
DI-N-BUTYLPHTHALATE	9 U	10 U	ND	ND		0/5	NA	NA
FLUORANTHENE	9 U	10 U	ND	ND		0/5	NA	NA
PYRENE	9 U	10 U	ND	ND		0/5	NA	NA
BUTYLBENZYLPHTHALATE	9 U	10 U	ND	ND		0/5	NA	NA
3,3'-DICHLOROBENZIDINE	9 U	10 U	ND	ND		0/5	NA	NA
BENZO(A)ANTHRACENE	9 U	10 U	ND	ND		0/5	NA	NA
CHRYSENE	9 U	10 U	ND	ND		0/5	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	9 U	10 U	100	100	63-SW01	1/5	100.00	100.00
DI-N-OCTYL PHTHALATE	9 U	10 U	ND	ND		0/5	NA	NA
BENZO(B)FLUORANTHENE	9 U	10 U	ND	ND		0/5	NA	NA
BENZO(K)FLUORANTHENE	9 U	10 U	ND	ND		0/5	NA	NA
BENZO(A)PYRENE	9 U	10 U	ND	ND		0/5	NA	NA
INDENO(1,2,3-CD)PYRENE	9 U	10 U	ND	ND		0/5	NA	NA
DIBENZO(A,H)ANTHRACENE	9 U	10 U	ND	ND		0/5	NA	NA
BENZO(G,H,I)PERYLENE	9 U	10 U	ND	ND		0/5	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE WATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
PESTICIDE/PCBS (ug/L)								
ALPHA-BHC	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
BETA-BHC	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
DELTA-BHC	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
HEPTACHLOR	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
ALDRIN	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
HEPTACHLOR EPOXIDE	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
ENDOSULFAN I	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
DIELDRIN	0.096 UJ	0.1 UJ	ND	ND		0/5	NA	NA
4,4'-DDE	0.096 UJ	0.1 UJ	ND	ND		0/5	NA	NA
ENDRIN	0.096 UJ	0.1 UJ	ND	ND		0/5	NA	NA
4,4'-DDD	0.096 UJ	0.1 UJ	ND	ND		0/5	NA	NA
ENDOSULFAN SULFATE	0.096 UJ	0.1 UJ	ND	ND		0/5	NA	NA
4,4'-DDT	0.096 UJ	0.1 UJ	ND	ND		0/5	NA	NA
METHOXYCHLOR	0.48 UJ	0.5 UJ	ND	ND		0/5	NA	NA
ENDRIN KETONE	0.096 UJ	0.1 UJ	ND	ND		0/5	NA	NA
ENDRIN ALDEHYDE	0.096 UJ	0.1 UJ	ND	ND		0/5	NA	NA
ALPHA-CHLORDANE	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
GAMMA-CHLORDANE	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
TOXAPHENE	4.8 UJ	5 UJ	ND	ND		0/5	NA	NA
AROCLOR-1016	0.96 UJ	1 UJ	ND	ND		0/5	NA	NA
AROCLOR-1221	1.9 UJ	2 UJ	ND	ND		0/5	NA	NA
AROCLOR-1232	0.96 UJ	1 UJ	ND	ND		0/5	NA	NA
AROCLOR-1242	0.96 UJ	1 UJ	ND	ND		0/5	NA	NA
AROCLOR-1248	0.96 UJ	1 UJ	ND	ND		0/5	NA	NA
AROCLOR-1254	0.96 UJ	1 UJ	ND	ND		0/5	NA	NA
AROCLOR-1260	0.96 UJ	1 UJ	ND	ND		0/5	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE WATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
VOLATILES (ug/L)								
CHLOROMETHANE	10 U	10 U	ND	ND		0/5	NA	NA
BROMOMETHANE	10 U	10 U	ND	ND		0/5	NA	NA
VINYL CHLORIDE	10 U	10 U	ND	ND		0/5	NA	NA
CHLOROETHANE	10 U	10 U	ND	ND		0/5	NA	NA
METHYLENE CHLORIDE	10 U	10 U	ND	ND		0/5	NA	NA
ACETONE	10 UJ	10 UJ	11 J	11 J	63-SW04	1/5	11.00	11.00
CARBON DISULFIDE	10 U	10 U	ND	ND		0/5	NA	NA
1,1-DICHLOROETHENE	10 U	10 U	ND	ND		0/5	NA	NA
1,1-DICHLOROETHANE	10 U	10 U	ND	ND		0/5	NA	NA
1,2-DICHLOROETHENE (TOTAL)	10 U	10 U	ND	ND		0/5	NA	NA
CHLOROFORM	10 U	10 U	ND	ND		0/5	NA	NA
1,2-DICHLOROETHANE	10 U	10 U	ND	ND		0/5	NA	NA
2-BUTANONE	10 U	10 U	ND	ND		0/5	NA	NA
1,1,1-TRICHLOROETHANE	10 U	10 U	ND	ND		0/5	NA	NA
CARBON TETRACHLORIDE	10 U	10 U	ND	ND		0/5	NA	NA
BROMODICHLOROMETHANE	10 U	10 U	ND	ND		0/5	NA	NA
1,2-DICHLOROPROPANE	10 U	10 U	ND	ND		0/5	NA	NA
CIS-1,3-DICHLOROPROPENE	10 U	10 U	ND	ND		0/5	NA	NA
TRICHLOROETHENE	10 U	10 U	ND	ND		0/5	NA	NA
DIBROMOCHLOROMETHANE	10 U	10 U	ND	ND		0/5	NA	NA
1,1,2-TRICHLOROETHANE	10 U	10 U	ND	ND		0/5	NA	NA
BENZENE	10 U	10 U	ND	ND		0/5	NA	NA
TRANS-1,3-DICHLOROPROPENE	10 U	10 U	ND	ND		0/5	NA	NA
BROMOFORM	10 U	10 U	ND	ND		0/5	NA	NA
4-METHYL-2-PENTANONE	10 U	10 U	ND	ND		0/5	NA	NA
2-HEXANONE	10 U	10 U	ND	ND		0/5	NA	NA
TETRACHLOROETHENE	10 U	10 U	ND	ND		0/5	NA	NA
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	ND	ND		0/5	NA	NA
TOLUENE	10 U	10 U	ND	ND		0/5	NA	NA
CHLOROBENZENE	10 U	10 U	ND	ND		0/5	NA	NA
ETHYLBENZENE	10 U	10 U	ND	ND		0/5	NA	NA
STYRENE	10 U	10 U	ND	ND		0/5	NA	NA
XYLENE (TOTAL)	10 U	10 U	ND	ND		0/5	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE WATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/L)								
PHENOL	9 U	10 U	ND	ND		0/5	NA	NA
BIS(2-CHLOROETHYL)ETHER	9 U	10 U	ND	ND		0/5	NA	NA
2-CHLOROPHENOL	9 U	10 U	ND	ND		0/5	NA	NA
1,3-DICHLOROBENZENE	9 U	10 U	ND	ND		0/5	NA	NA
1,4-DICHLOROBENZENE	9 U	10 U	ND	ND		0/5	NA	NA
1,2-DICHLOROBENZENE	9 U	10 U	ND	ND		0/5	NA	NA
2-METHYLPHENOL	9 U	10 U	ND	ND		0/5	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	9 U	10 U	ND	ND		0/5	NA	NA
4-METHYLPHENOL	9 U	10 U	ND	ND		0/5	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	9 U	10 U	ND	ND		0/5	NA	NA
HEXACHLOROETHANE	9 U	10 U	ND	ND		0/5	NA	NA
NITROBENZENE	9 U	10 U	ND	ND		0/5	NA	NA
ISOPHORONE	9 U	10 U	ND	ND		0/5	NA	NA
2-NITROPHENOL	9 U	10 U	ND	ND		0/5	NA	NA
2,4-DIMETHYLPHENOL	9 U	10 U	ND	ND		0/5	NA	NA
BIS(2-CHLOROETHOXY)METHANE	9 U	10 U	ND	ND		0/5	NA	NA
2,4-DICHLOROPHENOL	9 U	10 U	ND	ND		0/5	NA	NA
1,2,4-TRICHLOROBENZENE	9 U	10 U	ND	ND		0/5	NA	NA
NAPHTHALENE	9 U	10 U	ND	ND		0/5	NA	NA
4-CHLOROANILINE	9 U	10 U	ND	ND		0/5	NA	NA
HEXACHLOROBUTADIENE	9 U	10 U	ND	ND		0/5	NA	NA
4-CHLORO-3-METHYLPHENOL	9 U	10 U	ND	ND		0/5	NA	NA
2-METHYLNAPHTHALENE	9 U	10 U	ND	ND		0/5	NA	NA
HEXACHLOROCYCLOPENTADIENE	9 U	10 U	ND	ND		0/5	NA	NA
2,4,6-TRICHLOROPHENOL	9 U	10 U	ND	ND		0/5	NA	NA
2,4,5-TRICHLOROPHENOL	24 U	25 U	ND	ND		0/5	NA	NA
2-CHLORONAPHTHALENE	9 U	10 U	ND	ND		0/5	NA	NA
2-NITROANILINE	24 U	25 U	ND	ND		0/5	NA	NA
DIMETHYLPHTHALATE	9 U	10 U	ND	ND		0/5	NA	NA
ACENAPHTHYLENE	9 U	10 U	ND	ND		0/5	NA	NA
2,6-DINITROTOLUENE	9 U	10 U	ND	ND		0/5	NA	NA
3-NITROANILINE	24 U	25 U	ND	ND		0/5	NA	NA
ACENAPHTHENE	9 U	10 U	ND	ND		0/5	NA	NA
2,4-DINITROPHENOL	24 U	25 U	ND	ND		0/5	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE WATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/L) (cont)								
4-NITROPHENOL	24 U	25 U	ND	ND		0/5	NA	NA
DIBENZOFURAN	9 U	10 U	ND	ND		0/5	NA	NA
2,4-DINITROTOLUENE	9 U	10 U	ND	ND		0/5	NA	NA
DIETHYLPHTHALATE	9 U	10 U	ND	ND		0/5	NA	NA
4-CHLOROPHENYL-PHENYLETHER	9 U	10 U	ND	ND		0/5	NA	NA
FLUORENE	9 U	10 U	ND	ND		0/5	NA	NA
4-NITROANILINE	24 U	25 U	ND	ND		0/5	NA	NA
4,6-DINITRO-2-METHYLPHENOL	24 U	25 U	ND	ND		0/5	NA	NA
N-NITROSODIPHENYLAMINE (1)	9 U	10 U	ND	ND		0/5	NA	NA
4-BROMOPHENYL-PHENYLETHER	9 U	10 U	ND	ND		0/5	NA	NA
HEXACHLOROBENZENE	9 U	10 U	ND	ND		0/5	NA	NA
PENTACHLOROPHENOL	24 U	25 U	ND	ND		0/5	NA	NA
PHENANTHRENE	9 U	10 U	ND	ND		0/5	NA	NA
ANTHRACENE	9 U	10 U	ND	ND		0/5	NA	NA
CARBAZOLE	9 U	10 U	ND	ND		0/5	NA	NA
DI-N-BUTYLPHTHALATE	9 U	10 U	ND	ND		0/5	NA	NA
FLUORANTHENE	9 U	10 U	ND	ND		0/5	NA	NA
PYRENE	9 U	10 U	ND	ND		0/5	NA	NA
BUTYLBENZYLPHTHALATE	9 U	10 U	ND	ND		0/5	NA	NA
3,3'-DICHLOROBENZIDINE	9 U	10 U	ND	ND		0/5	NA	NA
BENZO(A)ANTHRACENE	9 U	10 U	ND	ND		0/5	NA	NA
CHRYSENE	9 U	10 U	ND	ND		0/5	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	9 U	10 U	100	100	63-SW01	1/5	100.00	100.00
DI-N-OCTYL PHTHALATE	9 U	10 U	ND	ND		0/5	NA	NA
BENZO(B)FLUORANTHENE	9 U	10 U	ND	ND		0/5	NA	NA
BENZO(K)FLUORANTHENE	9 U	10 U	ND	ND		0/5	NA	NA
BENZO(A)PYRENE	9 U	10 U	ND	ND		0/5	NA	NA
INDENO(1,2,3-CD)PYRENE	9 U	10 U	ND	ND		0/5	NA	NA
DIBENZO(A,H)ANTHRACENE	9 U	10 U	ND	ND		0/5	NA	NA
BENZO(G,H,I)PERYLENE	9 U	10 U	ND	ND		0/5	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE WATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
PESTICIDE/PCBS (ug/L)								
ALPHA-BHC	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
BETA-BHC	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
DELTA-BHC	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
HEPTACHLOR	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
ALDRIN	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
HEPTACHLOR EPOXIDE	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
ENDOSULFAN I	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
DIELDRIN	0.096 UJ	0.1 UJ	ND	ND		0/5	NA	NA
4,4'-DDE	0.096 UJ	0.1 UJ	ND	ND		0/5	NA	NA
ENDRIN	0.096 UJ	0.1 UJ	ND	ND		0/5	NA	NA
4,4'-DDD	0.096 UJ	0.1 UJ	ND	ND		0/5	NA	NA
ENDOSULFAN SULFATE	0.096 UJ	0.1 UJ	ND	ND		0/5	NA	NA
4,4'-DDT	0.096 UJ	0.1 UJ	ND	ND		0/5	NA	NA
METHOXYCHLOR	0.48 UJ	0.5 UJ	ND	ND		0/5	NA	NA
ENDRIN KETONE	0.096 UJ	0.1 UJ	ND	ND		0/5	NA	NA
ENDRIN ALDEHYDE	0.096 UJ	0.1 UJ	ND	ND		0/5	NA	NA
ALPHA-CHLORDANE	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
GAMMA-CHLORDANE	0.048 UJ	0.05 UJ	ND	ND		0/5	NA	NA
TOXAPHENE	4.8 UJ	5 UJ	ND	ND		0/5	NA	NA
AROCLOR-1016	0.96 UJ	1 UJ	ND	ND		0/5	NA	NA
AROCLOR-1221	1.9 UJ	2 UJ	ND	ND		0/5	NA	NA
AROCLOR-1232	0.96 UJ	1 UJ	ND	ND		0/5	NA	NA
AROCLOR-1242	0.96 UJ	1 UJ	ND	ND		0/5	NA	NA
AROCLOR-1248	0.96 UJ	1 UJ	ND	ND		0/5	NA	NA
AROCLOR-1254	0.96 UJ	1 UJ	ND	ND		0/5	NA	NA
AROCLOR-1260	0.96 UJ	1 UJ	ND	ND		0/5	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE WATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SW01	63-SW02	63-SW03	63-SW04	63-SW05
DATE SAMPLED	11/10/95	11/10/95	11/10/95	11/10/95	11/10/95
TOTAL METALS (ug/L)					
ALUMINUM, TOTAL	627	650	653	602	688
ANTIMONY, TOTAL	23.5 U	23.5 U	23.5 U	23.5 U	23.5 U
ARSENIC, TOTAL	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
BARIUM, TOTAL	22.1	24.6	26.4	26	23.7
BERYLLIUM, TOTAL	1 U	1 U	1 U	1 U	1 U
CADMIUM, TOTAL	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U
CALCIUM, TOTAL	1780	1900	1960	1940	1740
CHROMIUM, TOTAL	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U
COBALT, TOTAL	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U
COPPER, TOTAL	2 U	2 U	2 U	2 U	2 U
IRON, TOTAL	292	309	390	615	834
LEAD, TOTAL	1 U	1	2.2	1.2	1.6
MAGNESIUM, TOTAL	678	710	713	739	809
MANGANESE, TOTAL	4.7	6.2	9.2	9.4	10
MERCURY, TOTAL	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
NICKEL, TOTAL	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U
POTASSIUM, TOTAL	787 U	787 U	787 U	787 U	787 U
SELENIUM, TOTAL	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
SILVER, TOTAL	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U
SODIUM, TOTAL	4250	4370	4480	4420	4290
THALLIUM, TOTAL	0.6 UJ	0.6 UJ	0.6 UJ	0.6 UJ	0.6 UJ
VANADIUM, TOTAL	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U
ZINC, TOTAL	6.6	5.5	22.6	8.4	7.8

SITE 63, VERONA LOOP DUMP
SURFACE WATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
TOTAL METALS (ug/L)								
ALUMINUM, TOTAL	NA	NA	602	688	63-SW05	5/5	644.00	650.00
ANTIMONY, TOTAL	23.5 U	23.5 U	ND	ND		0/5	NA	NA
ARSENIC, TOTAL	1.6 U	1.6 U	ND	ND		0/5	NA	NA
BARIUM, TOTAL	NA	NA	22.1	26.4	63-SW03	5/5	24.56	24.60
BERYLLIUM, TOTAL	1 U	1 U	ND	ND		0/5	NA	NA
CADMIUM, TOTAL	4.2 U	4.2 U	ND	ND		0/5	NA	NA
CALCIUM, TOTAL	NA	NA	1740	1960	63-SW03	5/5	1864.00	1900.00
CHROMIUM, TOTAL	4.6 U	4.6 U	ND	ND		0/5	NA	NA
COBALT, TOTAL	3.4 U	3.4 U	ND	ND		0/5	NA	NA
COPPER, TOTAL	2 U	2 U	ND	ND		0/5	NA	NA
IRON, TOTAL	NA	NA	292	834	63-SW05	5/5	488.00	390.00
LEAD, TOTAL	1 U	1 U	1	2.2	63-SW03	4/5	1.50	1.40
MAGNESIUM, TOTAL	NA	NA	678	809	63-SW05	5/5	729.80	713.00
MANGANESE, TOTAL	NA	NA	4.7	10	63-SW05	5/5	7.90	9.20
MERCURY, TOTAL	0.1 U	0.1 U	ND	ND		0/5	NA	NA
NICKEL, TOTAL	11.1 U	11.1 U	ND	ND		0/5	NA	NA
POTASSIUM, TOTAL	787 U	787 U	ND	ND		0/5	NA	NA
SELENIUM, TOTAL	1.5 U	1.5 U	ND	ND		0/5	NA	NA
SILVER, TOTAL	3.2 U	3.2 U	ND	ND		0/5	NA	NA
SODIUM, TOTAL	NA	NA	4250	4480	63-SW03	5/5	4362.00	4370.00
THALLIUM, TOTAL	0.6 UJ	0.6 UJ	ND	ND		0/5	NA	NA
VANADIUM, TOTAL	3.2 U	3.2 U	ND	ND		0/5	NA	NA
ZINC, TOTAL	NA	NA	5.5	22.6	63-SW03	5/5	10.18	7.80

SITE 63, VERONA LOOP DUMP
SURFACE WATER - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
TOTAL METALS (ug/L)								
ALUMINUM, TOTAL	NA	NA	602	688	63-SW05	5/5	644.00	650.00
ANTIMONY, TOTAL	23.5 U	23.5 U	ND	ND		0/5	NA	NA
ARSENIC, TOTAL	1.6 U	1.6 U	ND	ND		0/5	NA	NA
BARIUM, TOTAL	NA	NA	22.1	26.4	63-SW03	5/5	24.56	24.60
BERYLLIUM, TOTAL	1 U	1 U	ND	ND		0/5	NA	NA
CADMIUM, TOTAL	4.2 U	4.2 U	ND	ND		0/5	NA	NA
CALCIUM, TOTAL	NA	NA	1740	1960	63-SW03	5/5	1864.00	1900.00
CHROMIUM, TOTAL	4.6 U	4.6 U	ND	ND		0/5	NA	NA
COBALT, TOTAL	3.4 U	3.4 U	ND	ND		0/5	NA	NA
COPPER, TOTAL	2 U	2 U	ND	ND		0/5	NA	NA
IRON, TOTAL	NA	NA	292	834	63-SW05	5/5	488.00	390.00
LEAD, TOTAL	1 U	1 U	1	2.2	63-SW03	4/5	1.50	1.40
MAGNESIUM, TOTAL	NA	NA	678	809	63-SW05	5/5	729.80	713.00
MANGANESE, TOTAL	NA	NA	4.7	10	63-SW05	5/5	7.90	9.20
MERCURY, TOTAL	0.1 U	0.1 U	ND	ND		0/5	NA	NA
NICKEL, TOTAL	11.1 U	11.1 U	ND	ND		0/5	NA	NA
POTASSIUM, TOTAL	787 U	787 U	ND	ND		0/5	NA	NA
SELENIUM, TOTAL	1.5 U	1.5 U	ND	ND		0/5	NA	NA
SILVER, TOTAL	3.2 U	3.2 U	ND	ND		0/5	NA	NA
SODIUM, TOTAL	NA	NA	4250	4480	63-SW03	5/5	4362.00	4370.00
THALLIUM, TOTAL	0.6 UJ	0.6 UJ	ND	ND		0/5	NA	NA
VANADIUM, TOTAL	3.2 U	3.2 U	ND	ND		0/5	NA	NA
ZINC, TOTAL	NA	NA	5.5	22.6	63-SW03	5/5	10.18	7.80

SEDIMENT

SITE 63, VERONA LOOP DUMP
SEDIMENT - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SD01-01	63-SD02-01	63-SD03-01	63-SD04-01	63-SD05-01
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/11/95	11/11/95
DEPTH	N/A	N/A	N/A	N/A	N/A
VOLATILES (ug/kg)					
CHLOROMETHANE	15 U	15 U	13 U	16 U	13 U
BROMOMETHANE	15 U	15 U	13 U	16 U	13 U
VINYL CHLORIDE	15 U	15 U	13 U	16 U	13 U
CHLOROETHANE	15 U	15 U	13 U	16 U	13 U
METHYLENE CHLORIDE	15 U	15 U	13 U	16 U	13 U
ACETONE	15 U	15 U	13 U	16 U	13 U
CARBON DISULFIDE	15 U	15 U	13 U	16 U	13 U
1,1-DICHLOROETHENE	15 U	15 U	13 U	16 U	13 U
1,1-DICHLOROETHANE	15 U	15 U	13 U	16 U	13 U
1,2-DICHLOROETHENE (TOTAL)	15 U	15 U	13 U	16 U	13 U
CHLOROFORM	15 U	15 U	13 U	16 U	13 U
1,2-DICHLOROETHANE	15 U	15 U	13 U	16 U	13 U
2-BUTANONE	15 U	15 U	13 U	16 U	13 U
1,1,1-TRICHLOROETHANE	15 U	15 U	13 U	16 U	13 U
CARBON TETRACHLORIDE	15 U	15 U	13 U	16 U	13 U
BROMODICHLOROMETHANE	15 U	15 U	13 U	16 U	13 U
1,2-DICHLOROPROPANE	15 U	15 U	13 U	16 U	13 U
CIS-1,3-DICHLOROPROPENE	15 U	15 U	13 U	16 U	13 U
TRICHLOROETHENE	15 U	15 U	13 U	16 U	13 U
DIBROMOCHLOROMETHANE	15 U	15 U	13 U	16 U	13 U
1,1,2-TRICHLOROETHANE	15 U	15 U	13 U	16 U	13 U
BENZENE	15 U	15 U	13 U	16 U	13 U
TRANS-1,3-DICHLOROPROPENE	15 U	15 U	13 U	16 U	13 U
BROMOFORM	15 U	15 U	13 U	16 U	13 U
4-METHYL-2-PENTANONE	15 U	15 U	13 U	16 U	13 U
2-HEXANONE	15 U	15 U	13 U	16 U	13 U
TETRACHLOROETHENE	15 U	15 U	13 U	16 U	13 U
1,1,2,2-TETRACHLOROETHANE	15 U	15 U	13 U	16 U	13 U
TOLUENE	15 U	15 U	13 U	16 U	13 U
CHLOROBENZENE	15 U	15 U	13 U	16 U	13 U
ETHYLBENZENE	15 U	15 U	13 U	16 U	13 U
STYRENE	15 U	15 U	13 U	16 U	13 U
XYLENE (TOTAL)	15 U	15 U	13 U	16 U	13 U

SITE 63, VERONA LOOP DUMP
SEDIMENT - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SD01-01	63-SD02-01	63-SD03-01	63-SD04-01	63-SD05-01
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/11/95	11/11/95
DEPTH	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg)					
PHENOL	490 U	500 U	430 U	520 U	430 U
BIS(2-CHLOROETHYL)ETHER	490 U	500 U	430 U	520 U	430 U
2-CHLOROPHENOL	490 U	500 U	430 U	520 U	430 U
1,3-DICHLOROBENZENE	490 U	500 U	430 U	520 U	430 U
1,4-DICHLOROBENZENE	490 U	500 U	430 U	520 U	430 U
1,2-DICHLOROBENZENE	490 U	500 U	430 U	520 U	430 U
2-METHYLPHENOL	490 U	500 U	430 U	520 U	430 U
2,2'-OXYBIS(1-CHLOROPROPANE)	490 U	500 U	430 U	520 U	430 U
4-METHYLPHENOL	490 U	500 U	430 U	520 U	430 U
N-NITROSO-DI-N-PROPYLAMINE	490 U	500 U	430 U	520 U	430 U
HEXACHLOROETHANE	490 U	500 U	430 U	520 U	430 U
NITROBENZENE	490 U	500 U	430 U	520 U	430 U
ISOPHORONE	490 U	500 U	430 U	520 U	430 U
2-NITROPHENOL	490 U	500 U	430 U	520 U	430 U
2,4-DIMETHYLPHENOL	490 U	500 U	430 U	520 U	430 U
BIS(2-CHLOROETHOXY)METHANE	490 U	500 U	430 U	520 U	430 U
2,4-DICHLOROPHENOL	490 U	500 U	430 U	520 U	430 U
1,2,4-TRICHLOROBENZENE	490 U	500 U	430 U	520 U	430 U
NAPHTHALENE	490 U	500 U	430 U	520 U	430 U
4-CHLOROANILINE	490 U	500 U	430 U	520 U	430 U
HEXACHLOROBUTADIENE	490 U	500 U	430 U	520 U	430 U
4-CHLORO-3-METHYLPHENOL	490 U	500 U	430 U	520 U	430 U
2-METHYLNAPHTHALENE	490 U	500 U	430 U	520 U	430 U
HEXACHLOROCYCLOPENTADIENE	490 U	500 U	430 U	520 U	430 U
2,4,6-TRICHLOROPHENOL	490 U	500 U	430 U	520 U	430 U
2,4,5-TRICHLOROPHENOL	1200 U	1200 U	1100 U	1300 U	1100 U
2-CHLORONAPHTHALENE	490 U	500 U	430 U	520 U	430 U
2-NITROANILINE	1200 U	1200 U	1100 U	1300 U	1100 U
DIMETHYLPHTHALATE	490 U	500 U	430 U	520 U	430 U
ACENAPHTHYLENE	490 U	500 U	430 U	520 U	430 U
2,6-DINITROTOLUENE	490 U	500 U	430 U	520 U	430 U
3-NITROANILINE	1200 U	1200 U	1100 U	1300 U	1100 U
ACENAPHTHENE	490 U	500 U	430 U	520 U	430 U
2,4-DINITROPHENOL	1200 U	1200 U	1100 UJ	1300 U	1100 U
4-NITROPHENOL	1200 U	1200 U	1100 U	1300 U	1100 U

SITE 63, VERONA LOOP DUMP
SEDIMENT - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SD01-01	63-SD02-01	63-SD03-01	63-SD04-01	63-SD05-01
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/11/95	11/11/95
DEPTH	N/A	N/A	N/A	N/A	N/A
SEMIVOLATILES (ug/kg) (cont)					
DIBENZOFURAN	490 U	500 U	430 U	520 U	430 U
2,4-DINITROTOLUENE	490 U	500 U	430 U	520 U	430 U
DIETHYLPHTHALATE	490 U	500 U	430 U	520 U	430 U
4-CHLOROPHENYL-PHENYLETHER	490 U	500 U	430 U	520 U	430 U
FLUORENE	490 U	500 U	430 U	520 U	430 U
4-NITROANILINE	1200 U	1200 U	1100 U	1300 U	1100 U
4,6-DINITRO-2-METHYLPHENOL	1200 U	1200 U	1100 U	1300 U	1100 U
N-NITROSODIPHENYLAMINE (1)	490 U	500 U	430 U	520 U	430 U
4-BROMOPHENYL-PHENYLETHER	490 U	500 U	430 U	520 U	430 U
HEXACHLOROBENZENE	490 U	500 U	430 U	520 U	430 U
PENTACHLOROPHENOL	1200 U	1200 U	1100 U	1300 U	1100 U
PHENANTHRENE	490 U	500 U	430 U	520 U	430 U
ANTHRACENE	490 U	500 U	430 U	520 U	430 U
CARBAZOLE	490 U	500 U	430 U	520 U	430 U
DI-N-BUTYLPHTHALATE	490 U	500 U	430 U	520 U	430 U
FLUORANTHENE	490 U	500 U	430 U	520 U	430 U
PYRENE	490 U	500 U	430 U	520 U	430 U
BUTYLBENZYLPHTHALATE	490 U	500 U	430 U	520 U	430 U
3,3'-DICHLOROBENZIDINE	490 U	500 U	430 U	520 U	430 U
BENZO(A)ANTHRACENE	490 U	500 U	430 U	520 U	430 U
CHRYSENE	490 U	500 U	430 U	520 U	430 U
BIS(2-ETHYLHEXYL)PHTHALATE	490 U	500 U	430 U	520 U	430 U
DI-N-OCTYL PHTHALATE	490 U	500 U	430 U	520 U	430 U
BENZO(B)FLUORANTHENE	490 U	500 U	430 U	520 U	430 U
BENZO(K)FLUORANTHENE	490 U	500 U	430 U	520 U	430 U
BENZO(A)PYRENE	490 U	500 U	430 U	520 U	430 U
INDENO(1,2,3-CD)PYRENE	490 U	500 U	430 U	520 U	430 U
DIBENZO(A,H)ANTHRACENE	490 U	500 U	430 U	520 U	430 U
BENZO(G,H,I)PERYLENE	490 U	500 U	430 U	520 U	430 U

SITE 63, VERONA LOOP DUMP
SEDIMENT - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SD01-01	63-SD02-01	63-SD03-01	63-SD04-01	63-SD05-01
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/11/95	11/11/95
DEPTH	N/A	N/A	N/A	N/A	N/A
PESTICIDE/PCBS (ug/kg)					
ALPHA-BHC	2.4 U	2.5 UJ	2.2 UJ	2.6 UJ	2.1 UJ
BETA-BHC	2.4 U	2.5 UJ	2.2 UJ	2.6 UJ	2.1 UJ
DELTA-BHC	2.4 U	2.5 UJ	2.2 UJ	2.6 UJ	2.1 UJ
HEPTACHLOR	2.4 U	2.5 UJ	2.2 UJ	2.6 UJ	2.1 UJ
ALDRIN	2.4 U	2.5 UJ	2.2 UJ	2.6 UJ	2.1 UJ
HEPTACHLOR EPOXIDE	2.4 U	2.5 UJ	2.2 UJ	2.6 UJ	2.1 UJ
ENDOSULFAN I	2.4 U	2.5 UJ	2.2 UJ	2.6 UJ	2.1 UJ
DIELDRIN	4.9 U	5 UJ	4.3 UJ	5.2 UJ	4.2 UJ
4,4'-DDE	4.9 U	5 UJ	4.3 UJ	4.2 J	4.2 UJ
ENDRIN	4.9 U	5 UJ	4.3 UJ	5.2 UJ	4.2 UJ
4,4'-DDD	4.9 U	5 UJ	2.6 J	11 J	4.2 UJ
ENDOSULFAN SULFATE	4.9 U	5 UJ	4.3 UJ	5.2 UJ	4.2 UJ
4,4'-DDT	4.9 U	5 UJ	4.3 UJ	1.6 J	4.2 UJ
METHOXYCHLOR	24 U	25 UJ	22 UJ	26 UJ	21 UJ
ENDRIN KETONE	4.9 U	5 UJ	4.3 UJ	5.2 UJ	4.2 UJ
ENDRIN ALDEHYDE	4.9 U	5 UJ	4.3 UJ	5.2 UJ	4.2 UJ
ALPHA-CHLORDANE	2.4 U	2.5 UJ	2.2 UJ	4.7 J	2.1 UJ
GAMMA-CHLORDANE	2.4 U	2.5 UJ	2.2 UJ	6.2 J	2.1 UJ
TOXAPHENE	240 U	250 UJ	220 UJ	260 UJ	210 UJ
AROCLOR-1016	49 U	50 UJ	43 UJ	52 UJ	42 UJ
AROCLOR-1221	97 U	100 UJ	87 UJ	100 UJ	85 UJ
AROCLOR-1232	49 U	50 UJ	43 UJ	52 UJ	42 UJ
AROCLOR-1242	49 U	50 UJ	43 UJ	52 UJ	42 UJ
AROCLOR-1248	49 U	50 UJ	43 UJ	52 UJ	42 UJ
AROCLOR-1254	49 U	50 UJ	43 UJ	52 UJ	42 UJ
AROCLOR-1260	49 U	50 UJ	43 UJ	52 UJ	42 UJ

SITE 63, VERONA LOOP DUMP
SEDIMENT - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
VOLATILES (ug/kg)								
CHLOROMETHANE	13 U	16 U	ND	ND		0/5	NA	NA
BROMOMETHANE	13 U	16 U	ND	ND		0/5	NA	NA
VINYL CHLORIDE	13 U	16 U	ND	ND		0/5	NA	NA
CHLOROETHANE	13 U	16 U	ND	ND		0/5	NA	NA
METHYLENE CHLORIDE	13 U	16 U	ND	ND		0/5	NA	NA
ACETONE	13 U	16 U	ND	ND		0/5	NA	NA
CARBON DISULFIDE	13 U	16 U	ND	ND		0/5	NA	NA
1,1-DICHLOROETHENE	13 U	16 U	ND	ND		0/5	NA	NA
1,1-DICHLOROETHANE	13 U	16 U	ND	ND		0/5	NA	NA
1,2-DICHLOROETHENE (TOTAL)	13 U	16 U	ND	ND		0/5	NA	NA
CHLOROFORM	13 U	16 U	ND	ND		0/5	NA	NA
1,2-DICHLOROETHANE	13 U	16 U	ND	ND		0/5	NA	NA
2-BUTANONE	13 U	16 U	ND	ND		0/5	NA	NA
1,1,1-TRICHLOROETHANE	13 U	16 U	ND	ND		0/5	NA	NA
CARBON TETRACHLORIDE	13 U	16 U	ND	ND		0/5	NA	NA
BROMODICHLOROMETHANE	13 U	16 U	ND	ND		0/5	NA	NA
1,2-DICHLOROPROPANE	13 U	16 U	ND	ND		0/5	NA	NA
CIS-1,3-DICHLOROPROPENE	13 U	16 U	ND	ND		0/5	NA	NA
TRICHLOROETHENE	13 U	16 U	ND	ND		0/5	NA	NA
DIBROMOCHLOROMETHANE	13 U	16 U	ND	ND		0/5	NA	NA
1,1,2-TRICHLOROETHANE	13 U	16 U	ND	ND		0/5	NA	NA
BENZENE	13 U	16 U	ND	ND		0/5	NA	NA
TRANS-1,3-DICHLOROPROPENE	13 U	16 U	ND	ND		0/5	NA	NA
BROMOFORM	13 U	16 U	ND	ND		0/5	NA	NA
4-METHYL-2-PENTANONE	13 U	16 U	ND	ND		0/5	NA	NA
2-HEXANONE	13 U	16 U	ND	ND		0/5	NA	NA
TETRACHLOROETHENE	13 U	16 U	ND	ND		0/5	NA	NA
1,1,2,2-TETRACHLOROETHANE	13 U	16 U	ND	ND		0/5	NA	NA
TOLUENE	13 U	16 U	ND	ND		0/5	NA	NA
CHLOROBENZENE	13 U	16 U	ND	ND		0/5	NA	NA
ETHYLBENZENE	13 U	16 U	ND	ND		0/5	NA	NA
STYRENE	13 U	16 U	ND	ND		0/5	NA	NA
XYLENE (TOTAL)	13 U	16 U	ND	ND		0/5	NA	NA

SITE 63, VERONA LOOP DUMP
SEDIMENT - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/kg)								
PHENOL	430 U	520 U	ND	ND		0/5	NA	NA
BIS(2-CHLOROETHYL)ETHER	430 U	520 U	ND	ND		0/5	NA	NA
2-CHLOROPHENOL	430 U	520 U	ND	ND		0/5	NA	NA
1,3-DICHLOROBENZENE	430 U	520 U	ND	ND		0/5	NA	NA
1,4-DICHLOROBENZENE	430 U	520 U	ND	ND		0/5	NA	NA
1,2-DICHLOROBENZENE	430 U	520 U	ND	ND		0/5	NA	NA
2-METHYLPHENOL	430 U	520 U	ND	ND		0/5	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	430 U	520 U	ND	ND		0/5	NA	NA
4-METHYLPHENOL	430 U	520 U	ND	ND		0/5	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	430 U	520 U	ND	ND		0/5	NA	NA
HEXACHLOROETHANE	430 U	520 U	ND	ND		0/5	NA	NA
NITROBENZENE	430 U	520 U	ND	ND		0/5	NA	NA
ISOPHORONE	430 U	520 U	ND	ND		0/5	NA	NA
2-NITROPHENOL	430 U	520 U	ND	ND		0/5	NA	NA
2,4-DIMETHYLPHENOL	430 U	520 U	ND	ND		0/5	NA	NA
BIS(2-CHLOROETHOXY)METHANE	430 U	520 U	ND	ND		0/5	NA	NA
2,4-DICHLOROPHENOL	430 U	520 U	ND	ND		0/5	NA	NA
1,2,4-TRICHLOROBENZENE	430 U	520 U	ND	ND		0/5	NA	NA
NAPHTHALENE	430 U	520 U	ND	ND		0/5	NA	NA
4-CHLOROANILINE	430 U	520 U	ND	ND		0/5	NA	NA
HEXACHLOROBUTADIENE	430 U	520 U	ND	ND		0/5	NA	NA
4-CHLORO-3-METHYLPHENOL	430 U	520 U	ND	ND		0/5	NA	NA
2-METHYLNAPHTHALENE	430 U	520 U	ND	ND		0/5	NA	NA
HEXACHLOROCYCLOPENTADIENE	430 U	520 U	ND	ND		0/5	NA	NA
2,4,6-TRICHLOROPHENOL	430 U	520 U	ND	ND		0/5	NA	NA
2,4,5-TRICHLOROPHENOL	1100 U	1300 U	ND	ND		0/5	NA	NA
2-CHLORONAPHTHALENE	430 U	520 U	ND	ND		0/5	NA	NA
2-NITROANILINE	1100 U	1300 U	ND	ND		0/5	NA	NA
DIMETHYLPHTHALATE	430 U	520 U	ND	ND		0/5	NA	NA
ACENAPHTHYLENE	430 U	520 U	ND	ND		0/5	NA	NA
2,6-DINITROTOLUENE	430 U	520 U	ND	ND		0/5	NA	NA
3-NITROANILINE	1100 U	1300 U	ND	ND		0/5	NA	NA
ACENAPHTHENE	430 U	520 U	ND	ND		0/5	NA	NA
2,4-DINITROPHENOL	1100 UJ	1300 U	ND	ND		0/5	NA	NA
4-NITROPHENOL	1100 U	1300 U	ND	ND		0/5	NA	NA

SITE 63, VERONA LOOP DUMP
SEDIMENT - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/kg) (cont)								
DIBENZOFURAN	430 U	520 U	ND	ND		0/5	NA	NA
2,4-DINITROTOLUENE	430 U	520 U	ND	ND		0/5	NA	NA
DIETHYLPHTHALATE	430 U	520 U	ND	ND		0/5	NA	NA
4-CHLOROPHENYL-PHENYLETHER	430 U	520 U	ND	ND		0/5	NA	NA
FLUORENE	430 U	520 U	ND	ND		0/5	NA	NA
4-NITROANILINE	1100 U	1300 U	ND	ND		0/5	NA	NA
4,6-DINITRO-2-METHYLPHENOL	1100 U	1300 U	ND	ND		0/5	NA	NA
N-NITROSODIPHENYLAMINE (1)	430 U	520 U	ND	ND		0/5	NA	NA
4-BROMOPHENYL-PHENYLETHER	430 U	520 U	ND	ND		0/5	NA	NA
HEXACHLOROBENZENE	430 U	520 U	ND	ND		0/5	NA	NA
PENTACHLOROPHENOL	1100 U	1300 U	ND	ND		0/5	NA	NA
PHENANTHRENE	430 U	520 U	ND	ND		0/5	NA	NA
ANTHRACENE	430 U	520 U	ND	ND		0/5	NA	NA
CARBAZOLE	430 U	520 U	ND	ND		0/5	NA	NA
DI-N-BUTYLPHTHALATE	430 U	520 U	ND	ND		0/5	NA	NA
FLUORANTHENE	430 U	520 U	ND	ND		0/5	NA	NA
PYRENE	430 U	520 U	ND	ND		0/5	NA	NA
BUTYLBENZYLPHTHALATE	430 U	520 U	ND	ND		0/5	NA	NA
3,3'-DICHLOROBENZIDINE	430 U	520 U	ND	ND		0/5	NA	NA
BENZO(A)ANTHRACENE	430 U	520 U	ND	ND		0/5	NA	NA
CHRYSENE	430 U	520 U	ND	ND		0/5	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	430 U	520 U	ND	ND		0/5	NA	NA
DI-N-OCTYL PHTHALATE	430 U	520 U	ND	ND		0/5	NA	NA
BENZO(B)FLUORANTHENE	430 U	520 U	ND	ND		0/5	NA	NA
BENZO(K)FLUORANTHENE	430 U	520 U	ND	ND		0/5	NA	NA
BENZO(A)PYRENE	430 U	520 U	ND	ND		0/5	NA	NA
INDENO(1,2,3-CD)PYRENE	430 U	520 U	ND	ND		0/5	NA	NA
DIBENZO(A,H)ANTHRACENE	430 U	520 U	ND	ND		0/5	NA	NA
BENZO(G,H,I)PERYLENE	430 U	520 U	ND	ND		0/5	NA	NA

SITE 63, VERONA LOOP DUMP
SEDIMENT - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
PESTICIDE/PCBS (ug/kg)								
ALPHA-BHC	2.1 UJ	2.6 UJ	ND	ND		0/5	NA	NA
BETA-BHC	2.1 UJ	2.6 UJ	ND	ND		0/5	NA	NA
DELTA-BHC	2.1 UJ	2.6 UJ	ND	ND		0/5	NA	NA
HEPTACHLOR	2.1 UJ	2.6 UJ	ND	ND		0/5	NA	NA
ALDRIN	2.1 UJ	2.6 UJ	ND	ND		0/5	NA	NA
HEPTACHLOR EPOXIDE	2.1 UJ	2.6 UJ	ND	ND		0/5	NA	NA
ENDOSULFAN I	2.1 UJ	2.6 UJ	ND	ND		0/5	NA	NA
DIELDRIN	4.2 UJ	5.2 UJ	ND	ND		0/5	NA	NA
4,4'-DDE	4.2 UJ	5 UJ	4.2 J	4.2 J	63-SD04-01	1/5	4.20	4.20
ENDRIN	4.2 UJ	5.2 UJ	ND	ND		0/5	NA	NA
4,4'-DDD	4.2 UJ	5 UJ	2.6 J	11 J	63-SD04-01	2/5	6.80	6.80
ENDOSULFAN SULFATE	4.2 UJ	5.2 UJ	ND	ND		0/5	NA	NA
4,4'-DDT	4.2 UJ	5 UJ	1.6 J	1.6 J	63-SD04-01	1/5	1.60	1.60
METHOXYCHLOR	21 UJ	26 UJ	ND	ND		0/5	NA	NA
ENDRIN KETONE	4.2 UJ	5.2 UJ	ND	ND		0/5	NA	NA
ENDRIN ALDEHYDE	4.2 UJ	5.2 UJ	ND	ND		0/5	NA	NA
ALPHA-CHLORDANE	2.1 UJ	2.5 UJ	4.7 J	4.7 J	63-SD04-01	1/5	4.70	4.70
GAMMA-CHLORDANE	2.1 UJ	2.5 UJ	6.2 J	6.2 J	63-SD04-01	1/5	6.20	6.20
TOXAPHENE	210 UJ	260 UJ	ND	ND		0/5	NA	NA
AROCLOR-1016	42 UJ	52 UJ	ND	ND		0/5	NA	NA
AROCLOR-1221	85 UJ	100 UJ	ND	ND		0/5	NA	NA
AROCLOR-1232	42 UJ	52 UJ	ND	ND		0/5	NA	NA
AROCLOR-1242	42 UJ	52 UJ	ND	ND		0/5	NA	NA
AROCLOR-1248	42 UJ	52 UJ	ND	ND		0/5	NA	NA
AROCLOR-1254	42 UJ	52 UJ	ND	ND		0/5	NA	NA
AROCLOR-1260	42 UJ	52 UJ	ND	ND		0/5	NA	NA

SITE 63, VERONA LOOP DUMP
SEDIMENT - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
VOLATILES (ug/kg)								
CHLOROMETHANE	13 U	16 U	ND	ND		0/5	NA	NA
BROMOMETHANE	13 U	16 U	ND	ND		0/5	NA	NA
VINYL CHLORIDE	13 U	16 U	ND	ND		0/5	NA	NA
CHLOROETHANE	13 U	16 U	ND	ND		0/5	NA	NA
METHYLENE CHLORIDE	13 U	16 U	ND	ND		0/5	NA	NA
ACETONE	13 U	16 U	ND	ND		0/5	NA	NA
CARBON DISULFIDE	13 U	16 U	ND	ND		0/5	NA	NA
1,1-DICHLOROETHENE	13 U	16 U	ND	ND		0/5	NA	NA
1,1-DICHLOROETHANE	13 U	16 U	ND	ND		0/5	NA	NA
1,2-DICHLOROETHENE (TOTAL)	13 U	16 U	ND	ND		0/5	NA	NA
CHLOROFORM	13 U	16 U	ND	ND		0/5	NA	NA
1,2-DICHLOROETHANE	13 U	16 U	ND	ND		0/5	NA	NA
2-BUTANONE	13 U	16 U	ND	ND		0/5	NA	NA
1,1,1-TRICHLOROETHANE	13 U	16 U	ND	ND		0/5	NA	NA
CARBON TETRACHLORIDE	13 U	16 U	ND	ND		0/5	NA	NA
BROMODICHLOROMETHANE	13 U	16 U	ND	ND		0/5	NA	NA
1,2-DICHLOROPROPANE	13 U	16 U	ND	ND		0/5	NA	NA
CIS-1,3-DICHLOROPROPENE	13 U	16 U	ND	ND		0/5	NA	NA
TRICHLOROETHENE	13 U	16 U	ND	ND		0/5	NA	NA
DIBROMOCHLOROMETHANE	13 U	16 U	ND	ND		0/5	NA	NA
1,1,2-TRICHLOROETHANE	13 U	16 U	ND	ND		0/5	NA	NA
BENZENE	13 U	16 U	ND	ND		0/5	NA	NA
TRANS-1,3-DICHLOROPROPENE	13 U	16 U	ND	ND		0/5	NA	NA
BROMOFORM	13 U	16 U	ND	ND		0/5	NA	NA
4-METHYL-2-PENTANONE	13 U	16 U	ND	ND		0/5	NA	NA
2-HEXANONE	13 U	16 U	ND	ND		0/5	NA	NA
TETRACHLOROETHENE	13 U	16 U	ND	ND		0/5	NA	NA
1,1,2,2-TETRACHLOROETHANE	13 U	16 U	ND	ND		0/5	NA	NA
TOLUENE	13 U	16 U	ND	ND		0/5	NA	NA
CHLOROBENZENE	13 U	16 U	ND	ND		0/5	NA	NA
ETHYLBENZENE	13 U	16 U	ND	ND		0/5	NA	NA
STYRENE	13 U	16 U	ND	ND		0/5	NA	NA
XYLENE (TOTAL)	13 U	16 U	ND	ND		0/5	NA	NA

SITE 63, VERONA LOOP DUMP
SEDIMENT - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (ug/kg)								
PHENOL	430 U	520 U	ND	ND		0/5	NA	NA
BIS(2-CHLOROETHYL)ETHER	430 U	520 U	ND	ND		0/5	NA	NA
2-CHLOROPHENOL	430 U	520 U	ND	ND		0/5	NA	NA
1,3-DICHLOROBENZENE	430 U	520 U	ND	ND		0/5	NA	NA
1,4-DICHLOROBENZENE	430 U	520 U	ND	ND		0/5	NA	NA
1,2-DICHLOROBENZENE	430 U	520 U	ND	ND		0/5	NA	NA
2-METHYLPHENOL	430 U	520 U	ND	ND		0/5	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	430 U	520 U	ND	ND		0/5	NA	NA
4-METHYLPHENOL	430 U	520 U	ND	ND		0/5	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	430 U	520 U	ND	ND		0/5	NA	NA
HEXACHLOROETHANE	430 U	520 U	ND	ND		0/5	NA	NA
NITROBENZENE	430 U	520 U	ND	ND		0/5	NA	NA
ISOPHORONE	430 U	520 U	ND	ND		0/5	NA	NA
2-NITROPHENOL	430 U	520 U	ND	ND		0/5	NA	NA
2,4-DIMETHYLPHENOL	430 U	520 U	ND	ND		0/5	NA	NA
BIS(2-CHLOROETHOXY)METHANE	430 U	520 U	ND	ND		0/5	NA	NA
2,4-DICHLOROPHENOL	430 U	520 U	ND	ND		0/5	NA	NA
1,2,4-TRICHLOROBENZENE	430 U	520 U	ND	ND		0/5	NA	NA
NAPHTHALENE	430 U	520 U	ND	ND		0/5	NA	NA
4-CHLOROANILINE	430 U	520 U	ND	ND		0/5	NA	NA
HEXACHLOROBUTADIENE	430 U	520 U	ND	ND		0/5	NA	NA
4-CHLORO-3-METHYLPHENOL	430 U	520 U	ND	ND		0/5	NA	NA
2-METHYLNAPHTHALENE	430 U	520 U	ND	ND		0/5	NA	NA
HEXACHLOROCYCLOPENTADIENE	430 U	520 U	ND	ND		0/5	NA	NA
2,4,6-TRICHLOROPHENOL	430 U	520 U	ND	ND		0/5	NA	NA
2,4,5-TRICHLOROPHENOL	1100 U	1300 U	ND	ND		0/5	NA	NA
2-CHLORONAPHTHALENE	430 U	520 U	ND	ND		0/5	NA	NA
2-NITROANILINE	1100 U	1300 U	ND	ND		0/5	NA	NA
DIMETHYLPHTHALATE	430 U	520 U	ND	ND		0/5	NA	NA
ACENAPHTHYLENE	430 U	520 U	ND	ND		0/5	NA	NA
2,6-DINITROTOLUENE	430 U	520 U	ND	ND		0/5	NA	NA
3-NITROANILINE	1100 U	1300 U	ND	ND		0/5	NA	NA
ACENAPHTHENE	430 U	520 U	ND	ND		0/5	NA	NA
2,4-DINITROPHENOL	1100 UJ	1300 U	ND	ND		0/5	NA	NA
4-NITROPHENOL	1100 U	1300 U	ND	ND		0/5	NA	NA

SITE 63, VERONA LOOP DUMP
SEDIMENT - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
SEMIVOLATILES (cont)								
DIBENZOFURAN	430 U	520 U	ND	ND		0/5	NA	NA
2,4-DINITROTOLUENE	430 U	520 U	ND	ND		0/5	NA	NA
DIETHYLPHTHALATE	430 U	520 U	ND	ND		0/5	NA	NA
4-CHLOROPHENYL-PHENYLETHER	430 U	520 U	ND	ND		0/5	NA	NA
FLUORENE	430 U	520 U	ND	ND		0/5	NA	NA
4-NITROANILINE	1100 U	1300 U	ND	ND		0/5	NA	NA
4,6-DINITRO-2-METHYLPHENOL	1100 U	1300 U	ND	ND		0/5	NA	NA
N-NITROSODIPHENYLAMINE (1)	430 U	520 U	ND	ND		0/5	NA	NA
4-BROMOPHENYL-PHENYLETHER	430 U	520 U	ND	ND		0/5	NA	NA
HEXACHLOROBENZENE	430 U	520 U	ND	ND		0/5	NA	NA
PENTACHLOROPHENOL	1100 U	1300 U	ND	ND		0/5	NA	NA
PHENANTHRENE	430 U	520 U	ND	ND		0/5	NA	NA
ANTHRACENE	430 U	520 U	ND	ND		0/5	NA	NA
CARBAZOLE	430 U	520 U	ND	ND		0/5	NA	NA
DI-N-BUTYLPHTHALATE	430 U	520 U	ND	ND		0/5	NA	NA
FLUORANTHENE	430 U	520 U	ND	ND		0/5	NA	NA
PYRENE	430 U	520 U	ND	ND		0/5	NA	NA
BUTYLBENZYLPHTHALATE	430 U	520 U	ND	ND		0/5	NA	NA
3,3'-DICHLOROBENZIDINE	430 U	520 U	ND	ND		0/5	NA	NA
BENZO(A)ANTHRACENE	430 U	520 U	ND	ND		0/5	NA	NA
CHRYSENE	430 U	520 U	ND	ND		0/5	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	430 U	520 U	ND	ND		0/5	NA	NA
DI-N-OCTYL PHTHALATE	430 U	520 U	ND	ND		0/5	NA	NA
BENZO(B)FLUORANTHENE	430 U	520 U	ND	ND		0/5	NA	NA
BENZO(K)FLUORANTHENE	430 U	520 U	ND	ND		0/5	NA	NA
BENZO(A)PYRENE	430 U	520 U	ND	ND		0/5	NA	NA
INDENO(1,2,3-CD)PYRENE	430 U	520 U	ND	ND		0/5	NA	NA
DIBENZO(A,H)ANTHRACENE	430 U	520 U	ND	ND		0/5	NA	NA
BENZO(G,H,I)PERYLENE	430 U	520 U	ND	ND		0/5	NA	NA

SITE 63, VERONA LOOP DUMP
SEDIMENT - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
PESTICIDE/PCBS								
ALPHA-BHC	2.1 UJ	2.6 UJ	ND	ND		0/5	NA	NA
BETA-BHC	2.1 UJ	2.6 UJ	ND	ND		0/5	NA	NA
DELTA-BHC	2.1 UJ	2.6 UJ	ND	ND		0/5	NA	NA
HEPTACHLOR	2.1 UJ	2.6 UJ	ND	ND		0/5	NA	NA
ALDRIN	2.1 UJ	2.6 UJ	ND	ND		0/5	NA	NA
HEPTACHLOR EPOXIDE	2.1 UJ	2.6 UJ	ND	ND		0/5	NA	NA
ENDOSULFAN I	2.1 UJ	2.6 UJ	ND	ND		0/5	NA	NA
DIELDRIN	4.2 UJ	5.2 UJ	ND	ND		0/5	NA	NA
4,4'-DDE	4.2 UJ	5 UJ	4.2 J	4.2 J	63-SD04-01	1/5	4.20	4.20
ENDRIN	4.2 UJ	5.2 UJ	ND	ND		0/5	NA	NA
4,4'-DDD	4.2 UJ	5 UJ	2.6 J	11 J	63-SD04-01	2/5	6.80	6.80
ENDOSULFAN SULFATE	4.2 UJ	5.2 UJ	ND	ND		0/5	NA	NA
4,4'-DDT	4.2 UJ	5 UJ	1.6 J	1.6 J	63-SD04-01	1/5	1.60	1.60
METHOXYCHLOR	21 UJ	26 UJ	ND	ND		0/5	NA	NA
ENDRIN KETONE	4.2 UJ	5.2 UJ	ND	ND		0/5	NA	NA
ENDRIN ALDEHYDE	4.2 UJ	5.2 UJ	ND	ND		0/5	NA	NA
ALPHA-CHLORDANE	2.1 UJ	2.5 UJ	4.7 J	4.7 J	63-SD04-01	1/5	4.70	4.70
GAMMA-CHLORDANE	2.1 UJ	2.5 UJ	6.2 J	6.2 J	63-SD04-01	1/5	6.20	6.20
TOXAPHENE	210 UJ	260 UJ	ND	ND		0/5	NA	NA
AROCLOR-1016	42 UJ	52 UJ	ND	ND		0/5	NA	NA
AROCLOR-1221	85 UJ	100 UJ	ND	ND		0/5	NA	NA
AROCLOR-1232	42 UJ	52 UJ	ND	ND		0/5	NA	NA
AROCLOR-1242	42 UJ	52 UJ	ND	ND		0/5	NA	NA
AROCLOR-1248	42 UJ	52 UJ	ND	ND		0/5	NA	NA
AROCLOR-1254	42 UJ	52 UJ	ND	ND		0/5	NA	NA
AROCLOR-1260	42 UJ	52 UJ	ND	ND		0/5	NA	NA

SITE 63, VERONA LOOP DUMP
SEDIMENT - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SD01-01	63-SD02-01	63-SD03-01	63-SD04-01	63-SD05-01
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/11/95	11/11/95
DEPTH	N/A	N/A	N/A	N/A	N/A
TOTAL METALS (mg/kg)					
ALUMINUM, TOTAL	890	1270	5910	7050	1240
ANTIMONY, TOTAL	2.4 R	2.6 R	2.2 R	3.2 R	2.9 R
ARSENIC, TOTAL	0.35 UJ	0.39 UJ	0.29 J	0.63 J	0.33 UJ
BARIUM, TOTAL	9.3	8.9	15.1	19.6	3.8
BERYLLIUM, TOTAL	0.06 UJ	0.06 UJ	0.05 U	0.14 J	0.07 UJ
CADMIUM, TOTAL	0.82 U	0.87 U	0.74 U	1.1 U	1 U
CALCIUM, TOTAL	66	118	106	178	49.9
CHROMIUM, TOTAL	0.9 U	1.4 J	5.7 J	8.1 J	1.7 J
COBALT, TOTAL	0.43 U	0.46 U	0.39 U	0.58 U	0.52 U
COPPER, TOTAL	4	2.8	5.7	6.9	0.47 U
IRON, TOTAL	84.9 J	174 J	1260 J	2050 J	419 J
LEAD, TOTAL	3.7 J	11.9 J	5.9 J	13.7 J	3.2 J
MAGNESIUM, TOTAL	11.3 J	32.9 J	170	259	39.6 J
MANGANESE, TOTAL	1.6 J	1.7 J	4.1 J	7.5 J	3 J
MERCURY, TOTAL	0.06 U	0.07 U	0.04 U	0.06 U	0.04 U
NICKEL, TOTAL	0.72 U	0.77 U	1.9	0.97 U	0.88 U
POTASSIUM, TOTAL	17.1 U	27.4	186	367	45.4
SELENIUM, TOTAL	0.33 U	0.36 U	0.28 U	0.38 U	0.31 U
SILVER, TOTAL	0.62 U	0.66 U	0.56 U	0.84 U	0.76 U
SODIUM, TOTAL	7.6	9.8	12.9	12.5	7.8
THALLIUM, TOTAL	0.13 U	0.15 U	0.11 U	0.15 U	0.12 U
VANADIUM, TOTAL	1.2 J	1.5 J	7.7 J	12.4 J	1.5 J
ZINC, TOTAL	0.94	0.92	5.4	6.7	1

SITE 63, VERONA LOOP DUMP
SEDIMENT - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
TOTAL METALS (mg/kg)								
ALUMINUM, TOTAL	NA	NA	890	7050	63-SD04-01	5/5	3272.00	1270.00
ANTIMONY, TOTAL	NA	NA	ND	ND		0/0	NA	NA
ARSENIC, TOTAL	0.33 UJ	0.39 UJ	0.29 J	0.63 J	63-SD04-01	2/5	0.46	0.46
BARIUM, TOTAL	NA	NA	3.8	19.6	63-SD04-01	5/5	11.34	9.30
BERYLLIUM, TOTAL	0.05 U	0.07 UJ	0.14 J	0.14 J	63-SD04-01	1/5	0.14	0.14
CADMIUM, TOTAL	0.74 U	1.1 U	ND	ND		0/5	NA	NA
CALCIUM, TOTAL	NA	NA	49.9	178	63-SD04-01	5/5	103.58	106.00
CHROMIUM, TOTAL	0.9 U	0.9 U	1.4 J	8.1 J	63-SD04-01	4/5	4.23	3.70
COBALT, TOTAL	0.39 U	0.58 U	ND	ND		0/5	NA	NA
COPPER, TOTAL	0.47 U	0.47 U	2.8	6.9	63-SD04-01	4/5	4.85	4.85
IRON, TOTAL	NA	NA	84.9 J	2050 J	63-SD04-01	5/5	797.58	419.00
LEAD, TOTAL	NA	NA	3.2 J	13.7 J	63-SD04-01	5/5	7.68	5.90
MAGNESIUM, TOTAL	NA	NA	11.3 J	259	63-SD04-01	5/5	102.56	39.60
MANGANESE, TOTAL	NA	NA	1.6 J	7.5 J	63-SD04-01	5/5	3.58	3.00
MERCURY, TOTAL	0.04 U	0.07 U	ND	ND		0/5	NA	NA
NICKEL, TOTAL	0.72 U	0.97 U	1.9	1.9	63-SD03-01	1/5	1.90	1.90
POTASSIUM, TOTAL	17.1 U	17.1 U	27.4	367	63-SD04-01	4/5	156.45	115.70
SELENIUM, TOTAL	0.28 U	0.38 U	ND	ND		0/5	NA	NA
SILVER, TOTAL	0.56 U	0.84 U	ND	ND		0/5	NA	NA
SODIUM, TOTAL	NA	NA	7.6	12.9	63-SD03-01	5/5	10.12	9.80
THALLIUM, TOTAL	0.11 U	0.15 U	ND	ND		0/5	NA	NA
VANADIUM, TOTAL	NA	NA	1.2 J	12.4 J	63-SD04-01	5/5	4.86	1.50
ZINC, TOTAL	NA	NA	0.92	6.7	63-SD04-01	5/5	2.99	1.00

SITE 63, VERONA LOOP DUMP
SEDIMENT - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED DEPTH	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION	AVERAGE OF POSITIVE DETECTIONS	MEDIAN OF POSITIVE DETECTIONS
TOTAL METALS (mg/kg)								
ALUMINUM, TOTAL	NA	NA	890	7050	63-SD04-01	5/5	3272.00	1270.00
ANTIMONY, TOTAL	NA	NA	ND	ND		0/0	NA	NA
ARSENIC, TOTAL	0.33 UJ	0.39 UJ	0.29 J	0.63 J	63-SD04-01	2/5	0.46	0.46
BARIUM, TOTAL	NA	NA	3.8	19.6	63-SD04-01	5/5	11.34	9.30
BERYLLIUM, TOTAL	0.05 U	0.07 UJ	0.14 J	0.14 J	63-SD04-01	1/5	0.14	0.14
CADMIUM, TOTAL	0.74 U	1.1 U	ND	ND		0/5	NA	NA
CALCIUM, TOTAL	NA	NA	49.9	178	63-SD04-01	5/5	103.58	106.00
CHROMIUM, TOTAL	0.9 U	0.9 U	1.4 J	8.1 J	63-SD04-01	4/5	4.23	3.70
COBALT, TOTAL	0.39 U	0.58 U	ND	ND		0/5	NA	NA
COPPER, TOTAL	0.47 U	0.47 U	2.8	6.9	63-SD04-01	4/5	4.85	4.85
IRON, TOTAL	NA	NA	84.9 J	2050 J	63-SD04-01	5/5	797.58	419.00
LEAD, TOTAL	NA	NA	3.2 J	13.7 J	63-SD04-01	5/5	7.68	5.90
MAGNESIUM, TOTAL	NA	NA	11.3 J	259	63-SD04-01	5/5	102.56	39.60
MANGANESE, TOTAL	NA	NA	1.6 J	7.5 J	63-SD04-01	5/5	3.58	3.00
MERCURY, TOTAL	0.04 U	0.07 U	ND	ND		0/5	NA	NA
NICKEL, TOTAL	0.72 U	0.97 U	1.9	1.9	63-SD03-01	1/5	1.90	1.90
POTASSIUM, TOTAL	17.1 U	17.1 U	27.4	367	63-SD04-01	4/5	156.45	115.70
SELENIUM, TOTAL	0.28 U	0.38 U	ND	ND		0/5	NA	NA
SILVER, TOTAL	0.56 U	0.84 U	ND	ND		0/5	NA	NA
SODIUM, TOTAL	NA	NA	7.6	12.9	63-SD03-01	5/5	10.12	9.80
THALLIUM, TOTAL	0.11 U	0.15 U	ND	ND		0/5	NA	NA
VANADIUM, TOTAL	NA	NA	1.2 J	12.4 J	63-SD04-01	5/5	4.86	1.50
ZINC, TOTAL	NA	NA	0.92	6.7	63-SD04-01	5/5	2.99	1.00

APPENDIX I
STATISTICAL SUMMARIES

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB01-00	63-SB02-00	63-SB03-00	63-SB04-00	63-SB05-00	63-SB06-00
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/06/95	11/11/95	11/10/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
VOLATILES (ug/kg)						
METHYLENE CHLORIDE	5.5 U	6 U	5.5 U	6 U	6.5 U	5.5 U
ACETONE	5.5 U	6 U	5.5 U	6 U	6.5 U	5.5 U
SEMIVOLATILES (ug/kg)						
SEMIVOLATILES (cont)						
N-NITROSODIPHENYLAMINE (1)	185 U	200 U	180 U	200 U	215 U	185 U
DI-N-BUTYLPHTHALATE	185 U	200 U	180 U	600 U	215 U	185 U
BIS(2-ETHYLHEXYL)PHTHALATE	185 U	200 U	180 U	63 J	215 U	185 U
PESTICIDE/PCBS (ug/kg)						
DIELDRIN	1.85 UJ	2 U	1.8 UJ	2.05 U	2.15 U	1.85 UJ
4,4'-DDE	1.85 UJ	2 U	1.8 UJ	2.05 UJ	2.15 U	1.85 UJ
4,4'-DDD	1.85 UJ	2 U	1.8 UJ	2.05 U	2.15 U	1.85 UJ
ENDOSULFAN SULFATE	1.85 UJ	2 U	1.8 UJ	2.05 U	2.15 U	1.85 UJ
4,4'-DDT	1.85 UJ	2 U	1.8 UJ	2.05 U	2.15 U	1.85 UJ
ALPHA-CHLORDANE	0.9 UJ	1 U	0.9 UJ	1 U	1.05 U	0.95 UJ
GAMMA-CHLORDANE	0.9 UJ	1 U	0.9 UJ	1 U	1.05 U	0.95 UJ
AROCLOR-1260	18.5 UJ	20 U	18 UJ	20.5 U	21.5 U	18.5 UJ

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB07-00	63-SB08-00	63-SB09-00	63-SB10-00	63-SB11-00	63-SB12-00
DATE SAMPLED	11/11/95	11/10/95	11/10/95	11/09/95	11/09/95	11/07/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
VOLATILES (ug/kg)						
METHYLENE CHLORIDE	6 U	6 U	6 U	6.5 U	6 U	5.5 U
ACETONE	6 U	6 UJ	6 U	6.5 U	6 U	5.5 U
SEMIVOLATILES (ug/kg)						
SEMIVOLATILES (cont)						
N-NITROSODIPHENYLAMINE (1)	190 U	190 U	190 U	210 U	205 U	51 J
DI-N-BUTYLPHTHALATE	255 U	550 U	550 U	210 U	205 U	175 U
BIS(2-ETHYLHEXYL)PHTHALATE	190 U	190 U	190 U	210 U	205 U	4400
PESTICIDE/PCBS (ug/kg)						
DIELDRIN	1.9 UJ	1.9 UJ	1.9 UJ	2.1 U	3.7 J	1.75 U
4,4'-DDE	1.9 UJ	1.9 UJ	1.9 UJ	2.1 UJ	R	1.75 U
4,4'-DDD	1.9 UJ	1.9 UJ	1.9 UJ	2.1 U	R	1.75 U
ENDOSULFAN SULFATE	1.9 UJ	1.9 UJ	1.9 UJ	2.1 U	R	1.75 U
4,4'-DDT	1.9 UJ	1.9 UJ	1.9 UJ	2.1 J	R	1.75 U
ALPHA-CHLORDANE	0.95 UJ	0.95 UJ	0.95 UJ	1.05 U	R	0.9 U
GAMMA-CHLORDANE	0.95 UJ	0.95 UJ	0.95 UJ	1.05 U	R	0.9 U
AROCLOR-1260	19 UJ	19 UJ	19 UJ	21 U	R	17.5 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB13-00	63-SB14-00	63-SB15-00	63-SB16-00	63-SB17-00	63-SB18-00
DATE SAMPLED	11/06/95	11/08/95	11/06/95	11/08/95	11/08/95	11/07/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
VOLATILES (ug/kg)						
METHYLENE CHLORIDE	5.5 U	5.5 U	14	6 U	6 U	6 UJ
ACETONE	5.5 U	5.5 U	5.5 U	6 U	6 U	6 UJ
SEMIVOLATILES (ug/kg)						
SEMIVOLATILES (cont)						
N-NITROSODIPHENYLAMINE (1)	175 U	190 U	190 U	195 U	190 U	205 U
DI-N-BUTYLPHTHALATE	470 U	190 U	500 U	195 U	850 U	205 U
BIS(2-ETHYLHEXYL)PHTHALATE	175 U	190 U	190 U	195 U	190 U	53 J
PESTICIDE/PCBS (ug/kg)						
DIELDRIN	1.75 U	1.9 UJ	1.9 U	1.95 UJ	1.95 UJ	2.05 UJ
4,4'-DDE	1.75 UJ	1.9 UJ	1.9 UJ	1.95 UJ	1.95 UJ	2.05 UJ
4,4'-DDD	1.75 U	1.9 UJ	1.9 U	1.95 UJ	1.95 UJ	2.05 UJ
ENDOSULFAN SULFATE	1.75 U	1.9 UJ	1.9 U	1.95 UJ	1.95 UJ	2.8 J
4,4'-DDT	1.75 U	1.9 UJ	1.9 U	1.95 UJ	1.95 UJ	2.05 UJ
ALPHA-CHLORDANE	0.85 U	0.95 UJ	0.95 U	0.95 UJ	0.95 UJ	1 UJ
GAMMA-CHLORDANE	0.85 U	0.95 UJ	0.95 U	0.95 UJ	0.95 UJ	1 UJ
AROCLOR-1260	17.5 U	19 UJ	19 U	19.5 UJ	19.5 UJ	20.5 UJ

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB19-00	63-SB20-00	63-SB21-00	63-SB22-00	63-SB23-00	63-SB24-00
DATE SAMPLED	11/06/95	11/09/95	11/08/95	11/07/95	11/07/95	11/07/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
VOLATILES (ug/kg)						
METHYLENE CHLORIDE	5.5 U	6.5 U	6 U	5.5 U	5.5 U	5.5 U
ACETONE	5.5 U	6.5 U	6 U	5.5 U	5.5 U	5.5 U
SEMIVOLATILES (ug/kg)						
SEMIVOLATILES (cont)						
N-NITROSODIPHENYLAMINE (1)	175 U	1050 U	195 U	190 U	175 U	175 U
DI-N-BUTYLPHTHALATE	175 U	1050 U	315 U	750 U	175 U	175 U
BIS(2-ETHYLHEXYL)PHTHALATE	175 U	1050 U	195 U	190 U	140 J	41 J
PESTICIDE/PCBS (ug/kg)						
DIELDRIN	1.8 U	3 J	1.9 U	1.9 U	1.8 UJ	1.75 U
4,4'-DDE	1.8 U	3 J	1.9 U	1.9 U	8.2 J	1.75 U
4,4'-DDD	1.8 U	2.15 U	1.9 U	1.9 U	1.8 UJ	1.75 U
ENDOSULFAN SULFATE	1.8 U	2.15 U	1.9 U	1.9 U	1.8 UJ	1.75 U
4,4'-DDT	1.8 U	2.15 U	3.8 J	2.7 J	10 J	2.5 J
ALPHA-CHLORDANE	0.9 U	1.05 U	0.95 U	0.95 U	0.9 UJ	0.9 U
GAMMA-CHLORDANE	0.9 U	1.05 U	0.95 U	0.95 U	0.9 UJ	0.9 U
AROCLOR-1260	18 U	21.5 U	28 J	19 U	18 UJ	17.5 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB25-00	63-SB26-00	63-SB27-00	63-SB28-00	63-SB29-00	63-SB30-00
DATE SAMPLED	11/06/95	11/06/95	11/06/95	11/07/95	11/07/95	11/09/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
VOLATILES (ug/kg)						
METHYLENE CHLORIDE	34 J	5.5 U	20	6 U	6 U	6 U
ACETONE	5 U	5.5 U	5.5 U	6 U	6 U	6 U
SEMIVOLATILES (ug/kg)						
SEMIVOLATILES (cont)						
N-NITROSODIPHENYLAMINE (1)	170 U	180 U	185 U	200 U	195 U	190 U
DI-N-BUTYLPHTHALATE	470 U	180 U	460 U	550 U	195 U	190 U
BIS(2-ETHYLHEXYL)PHTHALATE	170 U	120 J	185 U	200 U	65 J	190 U
PESTICIDE/PCBS (ug/kg)						
DIELDRIN	1.75 U	1.8 U	1.85 U	2 U	1.95 U	1.9 U
4,4'-DDE	1.75 UJ	1.8 U	1.85 UJ	2 U	44	1.9 U
4,4'-DDD	1.75 U	1.8 U	1.85 U	2 U	12	1.9 U
ENDOSULFAN SULFATE	1.75 U	2.5 J	1.85 U	2 U	2 J	1.9 U
4,4'-DDT	1.75 U	1.8 U	1.85 U	2 J	50 J	1.9 U
ALPHA-CHLORDANE	0.85 U	0.9 U	0.9 U	1 U	3.5	0.95 U
GAMMA-CHLORDANE	0.85 U	0.9 U	0.9 U	1 U	2.7 J	0.95 U
AROCLOR-1260	17.5 U	18 U	18.5 U	20 U	19.5 U	97

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB31-00	63-SB32-00	63-SB33-00	63-SB34-00	63-SB35-00	63-SB36-00
DATE SAMPLED	11/08/95	11/09/95	11/08/95	11/07/95	11/09/95	11/09/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
VOLATILES (ug/kg)						
METHYLENE CHLORIDE	6 U	6 U	6 U	5.5 U	6.5 U	5.5 U
ACETONE	6 U	6 U	6 U	5.5 U	6.5 U	11 J
SEMIVOLATILES (ug/kg)						
SEMIVOLATILES (cont)						
N-NITROSODIPHENYLAMINE (1)	190 U	R	195 U	185 U	215 U	185 U
DI-N-BUTYLPHTHALATE	190 U	R	435 U	480 U	215 U	435 U
BIS(2-ETHYLHEXYL)PHTHALATE	190 U	R	195 U	185 U	215 U	185 U
PESTICIDE/PCBS (ug/kg)						
DIELDRIN	1.9 UJ	4.1 J	1.9 U	1.85 U	2.15 U	1.85 U
4,4'-DDE	1.9 UJ	2.05 U	1.9 U	1.85 U	55 J	1.85 U
4,4'-DDD	1.9 UJ	2.05 U	1.9 U	1.85 U	26 J	1.85 U
ENDOSULFAN SULFATE	1.9 UJ	2.05 U	1.9 U	1.9 J	2.15 U	1.85 U
4,4'-DDT	1.9 UJ	2.05 U	1.9 U	1.85 U	24	1.85 U
ALPHA-CHLORDANE	0.95 UJ	1.05 U	0.95 U	0.95 U	16	0.95 U
GAMMA-CHLORDANE	0.95 UJ	1.05 U	0.95 U	0.95 U	9	0.95 U
AROCLOR-1260	19 UJ	20.5 U	19 U	18.5 U	21.5 U	18.5 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB37-00	63-SB38-00	63-TW01-00	63-TW02-00	63-TW03-00	63-TW04-00
DATE SAMPLED	11/08/95	11/08/95	11/12/95	11/11/95	11/12/95	11/10/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
VOLATILES (ug/kg)						
METHYLENE CHLORIDE	5.5 U	7 U	5.5 U	5.5 U	6 U	5.5 U
ACETONE	5.5 U	7 U	5.5 U	5.5 U	6 U	5.5 U
SEMIVOLATILES (ug/kg)						
SEMIVOLATILES (cont)						
N-NITROSODIPHENYLAMINE (1)	185 U	225 U	185 U	190 U	195 U	185 U
DI-N-BUTYLPHTHALATE	230 U	365 U	215 U	190 U	335 U	185 U
BIS(2-ETHYLHEXYL)PHTHALATE	185 U	225 U	185 U	190 U	195 U	185 U
PESTICIDE/PCBS (ug/kg)						
DIELDRIN	1.85 U	2.2 UJ	1.85 U	1.9 UJ	1.95 UJ	1.8 U
4,4'-DDE	1.85 U	2.2 UJ	1.85 U	1.9 UJ	2.7 J	3.3 J
4,4'-DDD	1.85 U	2.2 UJ	1.85 U	1.9 UJ	1.95 UJ	1.8 U
ENDOSULFAN SULFATE	1.85 U	2.2 UJ	1.85 U	1.9 UJ	1.95 UJ	1.8 U
4,4'-DDT	1.85 U	2.2 UJ	1.85 U	1.9 UJ	4.3 J	3.3 J
ALPHA-CHLORDANE	0.9 U	1.1 UJ	0.9 U	0.95 UJ	0.95 UJ	0.9 U
GAMMA-CHLORDANE	0.9 U	1.1 UJ	0.9 U	0.95 UJ	0.95 UJ	0.9 U
AROCLOR-1260	18.5 U	22 UJ	18.5 U	19 UJ	19.5 UJ	18 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW05-00	63-TW06-00	63-TW07-00	63-TW08-00
DATE SAMPLED	11/10/95	11/10/95	11/11/95	11/09/95
DEPTH	0-6"	0-6"	0-6"	0-6"
VOLATILES (ug/kg)				
METHYLENE CHLORIDE	6 U	5.5 U	6 U	6 U
ACETONE	6 U	5.5 U	6 U	6 U
SEMIVOLATILES (ug/kg)				
SEMIVOLATILES (cont)				
N-NITROSODIPHENYLAMINE (1)	195 U	185 U	200 U	200 U
DI-N-BUTYLPHTHALATE	195 U	78 J	200 U	550 U
BIS(2-ETHYLHEXYL)PHTHALATE	195 U	185 U	200 U	200 U
PESTICIDE/PCBS (ug/kg)				
DIELDRIN	1.95 U	1.85 U	2 U	2.05 U
4,4'-DDE	1.95 UJ	1.85 UJ	3.6 J	2.05 U
4,4'-DDD	1.95 U	1.85 U	2 U	2.05 U
ENDOSULFAN SULFATE	1.95 U	1.85 U	2 U	2.05 U
4,4'-DDT	1.95 U	1.85 U	12	2.05 U
ALPHA-CHLORDANE	0.95 U	0.9 U	1 U	1.05 U
GAMMA-CHLORDANE	0.95 U	0.9 U	1 U	1.05 U
AROCLOR-1260	19.5 U	18.5 U	20 U	20.5 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
VOLATILES (ug/kg)						
METHYLENE CHLORIDE	6.96	4.73	8.13	1.85	0.34	7.41
ACETONE	5.95	0.85	6.16	1.78	0.11	6.12
SEMIVOLATILES (ug/kg)						
SEMIVOLATILES (cont)						
N-NITROSODIPHENYLAMINE (1)	207.58	130.62	240.37	5.26	0.33	223.42
DI-N-BUTYLPHTHALATE	331.18	207.70	383.32	5.64	0.55	389.02
BIS(2-ETHYLHEXYL)PHTHALATE	289.82	641.38	450.83	5.23	0.67	289.65
PESTICIDE/PCBS (ug/kg)						
DIELDRIN	2.02	0.45	2.13	0.69	0.17	2.11
4,4'-DDE	4.28	9.98	6.78	0.87	0.71	3.88
4,4'-DDD	2.67	3.86	3.64	0.75	0.47	2.71
ENDOSULFAN SULFATE	1.95	0.19	2.00	0.67	0.09	2.00
4,4'-DDT	4.04	7.94	6.03	0.92	0.70	4.04
ALPHA-CHLORDANE	1.34	2.27	1.91	0.04	0.46	1.33
GAMMA-CHLORDANE	1.17	1.22	1.48	0.02	0.37	1.22
AROCLOR-1260	21.13	11.70	24.07	3.00	0.25	22.17

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB01-00	63-SB02-00	63-SB03-00	63-SB04-00	63-SB05-00	63-SB06-00
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/06/95	11/11/95	11/10/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	1510	2990	2400	4450 J	6080	1720
ANTIMONY, TOTAL	2.1 J	1.15 UJ	R	1.3 U	R	4.3 J
ARSENIC, TOTAL	0.145 UJ	0.53 J	0.16 UJ	1.2	1.1 J	0.46 J
BARIUM, TOTAL	7.3	8.4	14.8	17.1	23.8	6.2
BERYLLIUM, TOTAL	0.025 U	0.03 U	0.03 UJ	0.03 U	0.1 J	0.025 U
CADMIUM, TOTAL	0.34 U	0.395 U	0.395 U	0.44 U	0.49 U	0.385 U
CALCIUM, TOTAL	69.3	35.9	11.05 U	332	271	185
CHROMIUM, TOTAL	1.4	2.6	1.8 J	4.9	5.6 J	1.7
COBALT, TOTAL	0.18 U	0.21 U	0.21 U	0.55	0.255 U	0.2 U
COPPER, TOTAL	0.16 U	0.19 U	4.8	0.44 U	6.3	0.18 U
IRON, TOTAL	932	2380	1060 J	4470	5410 J	1740
LEAD, TOTAL	7.7	9	3.4 J	14.9 J	15.6 J	8.7
MAGNESIUM, TOTAL	38.2	79.7	54	178	200	71
MANGANESE, TOTAL	9	7	348 J	47.2	75.1 J	10
MERCURY, TOTAL	0.025 U	0.025 U	0.025 U	0.03 U	0.07	0.025 U
NICKEL, TOTAL	0.62 J	0.99 J	1.8	1.9	2.4	0.91 J
POTASSIUM, TOTAL	45.3	100	43.2	179	181	91.3
SELENIUM, TOTAL	0.135 UJ	0.15 UJ	0.15 U	0.155 U	0.165 U	0.16 UJ
SILVER, TOTAL	0.26 U	0.3 U	0.3 U	0.335 U	0.37 U	0.29 U
SODIUM, TOTAL	5.65 U	5.25 U	10.8	10.85 U	20.9	6.35 U
VANADIUM, TOTAL	3.1	5.1	2.2 J	8.2	9 J	3.3
ZINC, TOTAL	1.2	2.1	2.9	5.6	7.7	2.9

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB07-00	63-SB08-00	63-SB09-00	63-SB10-00	63-SB11-00	63-SB12-00
DATE SAMPLED	11/11/95	11/10/95	11/10/95	11/09/95	11/09/95	11/07/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	2550	2570	2850	5950 J	1320 J	1670 J
ANTIMONY, TOTAL	1.2 UJ	1.05 UJ	1 UJ	2.5 U	2.5 U	1.15 UJ
ARSENIC, TOTAL	0.47 J	1.2 J	0.6 J	0.88 J	0.36	0.17 U
BARIUM, TOTAL	6.4	7.9	8.2	18.8	4.7	5.4
BERYLLIUM, TOTAL	0.03 U	0.0255 U	0.025 U	0.105 U	0.105 U	0.03 U
CADMIUM, TOTAL	0.405 U	0.355 U	0.345 U	0.225 U	0.22 U	0.39 U
CALCIUM, TOTAL	51.4	127	103	154	42.2	21.3 U
CHROMIUM, TOTAL	1.5	2.2	2.4	5.2	1.2	1.7
COBALT, TOTAL	0.21 U	0.185 U	0.18 U	1.1	0.36 U	0.205 U
COPPER, TOTAL	0.195 U	0.55	0.165 U	1.1	0.47	0.89
IRON, TOTAL	1960	2410	2050	3200	973	1220 J
LEAD, TOTAL	2.6	7	6.9	13 J	5.1 J	3.9
MAGNESIUM, TOTAL	62.4	80.6	88.3	168	49.7	44.4
MANGANESE, TOTAL	14.2	21.9	6.7	29.6	6.7	18.6
MERCURY, TOTAL	0.03 U	0.025 U	0.06	0.03 U	0.03 U	0.025 U
NICKEL, TOTAL	0.355 U	0.31 U	1 J	3.4	1.15 U	0.87
POTASSIUM, TOTAL	71.5	77.5	84.2	83.5 U	83 U	40.8 J
SELENIUM, TOTAL	0.16 UJ	0.14 UJ	0.14 UJ	0.27	0.155 U	0.16 UJ
SILVER, TOTAL	0.31 U	0.27 U	0.26 U	0.31 U	0.305 U	0.72
SODIUM, TOTAL	5.05 U	5.75 U	7.75 U	8.5 U	5.1 U	5.4 U
VANADIUM, TOTAL	3.1	4.7	4.5	8.6	2.5	2.1
ZINC, TOTAL	2	2.3	2.9	6.9	1.9 U	1.65 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB13-00	63-SB14-00	63-SB15-00	63-SB16-00	63-SB17-00	63-SB18-00
DATE SAMPLED	11/06/95	11/08/95	11/06/95	11/08/95	11/08/95	11/07/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	1040 J	1440	2110 J	3700	2670	7050 J
ANTIMONY, TOTAL	1.1 U	3.2 J	1.2 U	1.15 UJ	1.15 UJ	1.3 UJ
ARSENIC, TOTAL	0.51	0.18 U	0.43	1.7	0.82	1.4
BARIUM, TOTAL	3	3.5	4.6	8.5	5.9	27.3
BERYLLIUM, TOTAL	0.025 U	0.035 U	0.03 U	0.2	0.03 U	0.1
CADMIUM, TOTAL	0.38 U	0.475 U	0.41 U	0.385 U	0.39 U	0.435 U
CALCIUM, TOTAL	29.2	26.3	13.2	10.4	36.4	289 J
CHROMIUM, TOTAL	1.7	1.6	2.6	7.4	4	6.8
COBALT, TOTAL	0.2 U	0.25 UJ	0.215 U	0.2 UJ	0.205 UJ	0.23 U
COPPER, TOTAL	0.34 U	0.225 UJ	0.195 U	5.9 J	1.4 J	2.3
IRON, TOTAL	1220	2230	1290	3120	2590	4870 J
LEAD, TOTAL	9.8 J	6.7	7.2 J	7.6	5.6	15.9
MAGNESIUM, TOTAL	38.5	37.1	48.4	197	127	217
MANGANESE, TOTAL	4.1	5.9	6.4	7.3	10.4	14.2
MERCURY, TOTAL	0.02 U	0.025 U	0.025 U	0.025 U	0.025 U	0.03 U
NICKEL, TOTAL	0.335 U	0.42 U	0.36 U	0.74	0.94	2.2
POTASSIUM, TOTAL	58.1	27.5 U	55.4	341	218	164 J
SELENIUM, TOTAL	0.135 U	0.17 U	0.16 U	0.17 U	0.16 U	0.175 UJ
SILVER, TOTAL	0.29 U	0.36 U	0.315 U	0.295 U	0.3 U	0.33 U
SODIUM, TOTAL	2.9 U	2.6 U	6.6 U	2.9 U	4.3 U	34.7
VANADIUM, TOTAL	2.5	3.4	4.6	8.9	6.2	11
ZINC, TOTAL	1.1 U	1.5	1.25 U	7.6	3.9	10.4

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB19-00	63-SB20-00	63-SB21-00	63-SB22-00	63-SB23-00	63-SB24-00	63-SB25-00
DATE SAMPLED	11/06/95	11/09/95	11/08/95	11/07/95	11/07/95	11/07/95	11/06/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
TOTAL METALS (mg/kg)							
ALUMINUM, TOTAL	869 J	1840 J	4050	3250	1400 J	1300 J	952 J
ANTIMONY, TOTAL	2.4 J	1.9 U	1.1 UJ	3 J	1.25 UJ	2.6 J	1.3 U
ARSENIC, TOTAL	0.135 U	0.64	3.7	1.3	1.1	0.5	0.15 U
BARIUM, TOTAL	3.7	5.8	25.3	9.2	4.5	34.6	6.2
BERYLLIUM, TOTAL	0.03 U	0.08 U	0.025 U	0.035 U	0.03 U	0.025 U	0.03 U
CADMIUM, TOTAL	0.395 U	0.17 U	3.1	0.47 U	0.425 U	0.36 U	0.445 U
CALCIUM, TOTAL	17.15 U	1840	185	23.25 U	2780 J	44.9 U	247
CHROMIUM, TOTAL	1.1	4.2	11.1	5.5	2.9	1.8	4.2
COBALT, TOTAL	0.21 U	0.275 U	2.3 J	0.245 UJ	0.49	0.19 U	0.65
COPPER, TOTAL	0.19 U	10	31.2	7.9 J	10.3	11.2	8.2
IRON, TOTAL	1650 J	4180	22400 J	4010 J	1560 J	1510 J	825
LEAD, TOTAL	5.1	11.6 J	58.2	14.7	27.6	9.2	8.3 J
MAGNESIUM, TOTAL	28.4	199	129	139	47.8	42.2	45.4
MANGANESE, TOTAL	13.7	49.5	134 J	6.9 J	13.1	13.9	20.5
MERCURY, TOTAL	0.02 U	0.08	0.03 U	0.025 U	0.21 J	0.025 U	0.025 U
NICKEL, TOTAL	1.1	2.3	9.8	1.5	1.6	1.9	2.1
POTASSIUM, TOTAL	47.8 J	64 U	349	198 J	21.8 J	47.1 J	40.6
SELENIUM, TOTAL	0.13 UJ	0.13 U	0.155 U	0.135 U	0.12 UJ	0.16 UJ	0.14 U
SILVER, TOTAL	0.3 U	0.235 U	0.29 U	0.36 U	0.325 U	0.275 U	0.335 U
SODIUM, TOTAL	3.65 U	100	41.1	5.3	2.6 U	2.55 U	3.9 U
VANADIUM, TOTAL	2.1	3.2	10	8	2.5	3	2.1
ZINC, TOTAL	0.98	182	1860	6.7	64.2	13.1	9.5

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB26-00	63-SB27-00	63-SB28-00	63-SB29-00	63-SB30-00	63-SB31-00	63-SB32-00
DATE SAMPLED	11/06/95	11/06/95	11/07/95	11/07/95	11/09/95	11/08/95	11/09/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
TOTAL METALS (mg/kg)							
ALUMINUM, TOTAL	686 J	1210 J	4900	3420 J	2870	577	6300
ANTIMONY, TOTAL	1.2 UJ	0.95 U	1 UJ	1.45 UJ	1.3 UJ	1.3 UJ	1.4 UJ
ARSENIC, TOTAL	0.43	0.135 U	0.71	1.1	0.59	0.18 U	0.57
BARIUM, TOTAL	3.6	5.4	7.5	25.6	10.4	7.4	34.8
BERYLLIUM, TOTAL	0.03 U	0.025 U	0.025 U	0.15	0.03 U	0.03 U	0.27
CADMIUM, TOTAL	0.4 U	0.315 U	0.34 U	0.49 U	0.435 U	0.445 U	0.47 U
CALCIUM, TOTAL	8.7 U	16.8	9.1 U	104 U	138	135	173
CHROMIUM, TOTAL	1.4	2.2	6.5	9.1	4.5	0.485 U	3.9
COBALT, TOTAL	0.21 U	0.165 U	0.18 UJ	4.3	0.23 UJ	0.23 UJ	0.245 UJ
COPPER, TOTAL	0.19 U	0.15 U	6.8 J	74.8	8.2 J	0.21 UJ	6.2 J
IRON, TOTAL	1320 J	1100	1350 J	20400 J	2460	590	3500
LEAD, TOTAL	6.3	8.7 J	8	107	17.5	5.8	11.2
MAGNESIUM, TOTAL	33.1	44.3	124	223	119	30.1	124
MANGANESE, TOTAL	7.6	3.6	3.4 J	90.1	15	8	8
MERCURY, TOTAL	0.025 U	0.025 U	0.03 U	0.025 U	0.025 U	0.025 U	0.02 U
NICKEL, TOTAL	1.5	0.28 U	1.3	8.3	0.95	0.39 U	1.6
POTASSIUM, TOTAL	23 J	65.2	199 J	213 J	181	18.8 U	199
SELENIUM, TOTAL	0.135 UJ	0.125 U	0.135 U	0.155 UJ	0.165 U	0.17 U	0.165 U
SILVER, TOTAL	0.305 U	0.24 U	0.26 U	0.97	0.33 U	0.34 U	0.36 U
SODIUM, TOTAL	2.2 U	5.85 U	1.85 U	9.25 U	3.15 U	2.45 U	23.5 U
VANADIUM, TOTAL	2.6	2.9	7.6	8.6	6	0.7 U	8.5
ZINC, TOTAL	0.9 U	1.05 U	4.9	48.5	7.3	2	7.9

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB33-00	63-SB34-00	63-SB35-00	63-SB36-00	63-SB37-00	63-SB38-00	63-TW01-00
DATE SAMPLED	11/08/95	11/07/95	11/09/95	11/09/95	11/08/95	11/08/95	11/12/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
TOTAL METALS (mg/kg)							
ALUMINUM, TOTAL	4040	3340	2110 J	2190	1180	3630	2270
ANTIMONY, TOTAL	1.35 UJ	1.25 UJ	1.95 U	2.6 J	1.25 UJ	1.55 UJ	R
ARSENIC, TOTAL	0.84	0.34	0.94	0.51	0.45	0.8	0.155 UJ
BARIUM, TOTAL	10.3	6.2	53.1	7.4	5.3	11.1	7.3
BERYLLIUM, TOTAL	0.035 U	0.03 U	0.085 U	0.03 U	0.03 U	0.035 U	0.035 UJ
CADMIUM, TOTAL	0.46 U	0.42 U	0.175 U	0.42 U	0.43 U	0.5 U	0.46 U
CALCIUM, TOTAL	14.2 U	74.4	208	116	89.3	431	173
CHROMIUM, TOTAL	6.6	3.9	3.8	2	1.1	3.6	1.9 J
COBALT, TOTAL	0.24 UJ	0.22 UJ	0.62	0.22 UJ	0.225 UJ	0.275 UJ	0.24 U
COPPER, TOTAL	0.61 J	5.1 J	24.5	0.2 UJ	0.205 UJ	0.25 UJ	6
IRON, TOTAL	3320 J	1620 J	5090	1350	732 J	2450	1740 J
LEAD, TOTAL	7.8	6.1	53 J	3.7 J	5.8	13.5	7.5 J
MAGNESIUM, TOTAL	114	106	89	48.4	33.5	161	64.5
MANGANESE, TOTAL	15.7 J	12.7 J	17	13.4	9.7 J	11.5	33 J
MERCURY, TOTAL	0.03 U	0.025 U	0.02 U	0.025 U	0.025 U	0.03 U	0.02 U
NICKEL, TOTAL	0.99	2.4	1.9	0.37 U	1.4	1.3	0.405 U
POTASSIUM, TOTAL	192 J	121 J	65.5 U	24.9 U	18.9 J	227	73.1
SELENIUM, TOTAL	0.15 U	0.13 U	0.15 U	0.33	0.145 U	0.185 U	0.145 U
SILVER, TOTAL	0.35 U	0.32 U	0.24 U	0.32 U	0.325 U	0.395 U	0.35 U
SODIUM, TOTAL	2.5 U	2.3 U	5.6 U	2.3 U	2.35 U	17.05 U	2.55 U
VANADIUM, TOTAL	9.4	5.5	5.1	2.8	2	7.6	3.4 J
ZINC, TOTAL	2.1 U	12.1	38.5	1.5	1.6 U	7.2	6.2

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-TW02-00	63-TW03-00	63-TW04-00	63-TW05-00	63-TW06-00	63-TW07-00	63-TW08-00
DATE SAMPLED	11/11/95	11/12/95	11/10/95	11/10/95	11/10/95	11/11/95	11/09/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"
TOTAL METALS (mg/kg)							
ALUMINUM, TOTAL	2730	1840	1370 J	3840 J	268 J	5040	4520
ANTIMONY, TOTAL	R	R	2.1 U	2.35 U	2.25 U	R	3.7 J
ARSENIC, TOTAL	0.52 J	0.35 J	0.32	1.9	0.165 U	1.4 J	0.63
BARIUM, TOTAL	7.7	4.4	3.2	5.2	5.6	16.8	9.2
BERYLLIUM, TOTAL	0.03 UJ	0.03 UJ	0.09 U	0.1 U	0.095 U	0.025 UJ	0.035 U
CADMIUM, TOTAL	0.39 U	0.4 U	0.19 U	0.21 U	0.2 U	0.37 U	1
CALCIUM, TOTAL	50.5	76.4	16.6 U	36.6	350	233	244
CHROMIUM, TOTAL	2.3 J	2.5 J	1.7	6.7	0.2 U	7.6 J	5
COBALT, TOTAL	0.205 U	0.21 U	0.305 U	0.335 U	0.325 U	0.195 U	0.26 UJ
COPPER, TOTAL	3.6	4.1	0.64	2.9	0.68	16	0.24 UJ
IRON, TOTAL	2160 J	1480 J	1450	3440	621	4270 J	2120
LEAD, TOTAL	7.7 J	6.5 J	7 J	7.2 J	5 J	46.3 J	8.7
MAGNESIUM, TOTAL	80	52.7 J	39.5	127	37.3	223	124
MANGANESE, TOTAL	60.3 J	13.9 J	4	5.8	36.7	14.7 J	8.9
MERCURY, TOTAL	0.02 U	0.02 U	0.02 U	0.03 U	0.02 U	0.02 U	0.025 U
NICKEL, TOTAL	0.85	0.355 U	1 U	2.8	1.05 U	1.4	1.7
POTASSIUM, TOTAL	77.2	64.5	71 U	275	74.5 U	284	69 U
SELENIUM, TOTAL	0.14 U	0.145 U	0.13 U	0.13 U	0.155 U	0.16 U	0.17 U
SILVER, TOTAL	0.295 U	0.305 U	0.26 U	0.285 U	0.275 U	0.28 U	0.38 U
SODIUM, TOTAL	2.15 U	2.2 U	5.25 U	6.7 U	3.65 U	14.9	5.05 U
VANADIUM, TOTAL	3.3 J	4 J	2.5	9.3	0.305 U	9.6 J	6.4
ZINC, TOTAL	2.9	2.9	1.4 U	2.15 U	337	27.6	3.4

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED DEPTH	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	2740.48	1645.90	3149.14	7.72	0.69	3522.89
ANTIMONY, TOTAL	1.75	0.81	1.96	0.47	0.40	1.97
ARSENIC, TOTAL	0.71	0.63	0.87	-0.65	0.81	0.96
BARIUM, TOTAL	11.27	10.28	13.83	2.15	0.70	13.56
BERYLLIUM, TOTAL	0.05	0.05	0.07	-3.18	0.64	0.06
CADMIUM, TOTAL	0.45	0.42	0.56	-0.94	0.45	0.49
CALCIUM, TOTAL	209.62	475.34	327.64	4.35	1.34	351.76
CHROMIUM, TOTAL	3.57	2.42	4.17	1.02	0.78	4.86
COBALT, TOTAL	0.41	0.68	0.58	-1.26	0.65	0.43
COPPER, TOTAL	5.79	12.21	8.82	0.33	1.79	19.14
IRON, TOTAL	3083.11	4150.91	4113.75	7.66	0.75	3626.17
LEAD, TOTAL	13.82	18.36	18.38	2.25	0.75	15.97
MAGNESIUM, TOTAL	95.82	60.26	110.78	4.37	0.64	117.98
MANGANESE, TOTAL	27.98	54.43	41.49	2.68	0.98	33.31
MERCURY, TOTAL	0.03	0.03	0.04	-3.58	0.42	0.03
NICKEL, TOTAL	1.59	1.77	2.03	0.12	0.81	2.05
POTASSIUM, TOTAL	114.11	88.10	135.99	4.44	0.80	154.06
SELENIUM, TOTAL	0.16	0.03	0.17	-1.87	0.18	0.16
SILVER, TOTAL	0.33	0.12	0.36	-1.14	0.24	0.35
SODIUM, TOTAL	9.42	15.90	13.37	1.71	0.88	11.03
VANADIUM, TOTAL	5.04	2.89	5.76	1.42	0.72	6.75
ZINC, TOTAL	59.16	277.09	127.96	1.69	1.61	45.10

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB01-04	63-SB02-04	63-SB03-05	63-SB03-06	63-SB04-03	63-SB05-03
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/11/95	11/06/95	11/11/95
DEPTH	7-9'	7-9'	9-11'	11-13'	5-7'	5-7'
VOLATILES (ug/kg)						
METHYLENE CHLORIDE	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U
ACETONE	6.5 U	6.5 U	6.5 U	6.5 U	82 J	6.5 U
STYRENE	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U
SEMIVOLATILES (ug/kg)						
N-NITROSODIPHENYLAMINE (1)	215 U	210 U	220 U	225 U	210 U	215 U
BIS(2-ETHYLHEXYL)PHTHALATE	215 U	210 U	220 U	225 U	210 U	215 U
PESTICIDE/PCBS (ug/kg)						
DIELDRIN	2.15 UJ	2.1 UJ	2.2 U	2.25 U	2.1 U	2.15 U
4,4'-DDE	2.15 UJ	2.1 UJ	2.2 U	2.25 U	2.1 UJ	2.15 U
4,4'-DDD	2.15 UJ	2.1 UJ	2.2 U	2.25 U	2.1 U	2.15 U
4,4'-DDT	2.15 UJ	2.1 UJ	2.2 U	2.25 U	2.1 U	2.15 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB05-06	63-SB06-01	63-SB07-04	63-SB08-05	63-SB08-07	63-SB09-03	63-SB09-06
DATE SAMPLED	11/11/95	11/10/95	11/11/95	11/10/95	11/10/95	11/10/95	11/10/95
DEPTH	11-13'	1-3'	7-9'	9-11'	13-15'	5-7'	11-13'
VOLATILES (ug/kg)							
METHYLENE CHLORIDE	7 U	6 U	7 U	6.5 U	7 U	6 U	6.5 U
ACETONE	7 U	6 U	7 U	6.5 UJ	23 J	6 UJ	6.5 UJ
STYRENE	7 U	6 U	7 U	6.5 U	7 U	6 U	6.5 U
SEMIVOLATILES (ug/kg)							
N-NITROSODIPHENYLAMINE (1)	225 U	200 U	225 U	210 U	225 U	190 U	220 U
BIS(2-ETHYLHEXYL)PHTHALATE	225 U	200 U	225 U	54 J	225 U	190 U	220 U
PESTICIDE/PCBS (ug/kg)							
DIELDRIN	2.25 U	2 UJ	2.25 UJ	2.1 U	2.25 UJ	1.9 UJ	2.2 UJ
4,4'-DDE	2.25 U	2 UJ	2.25 UJ	2.1 U	2.25 UJ	1.9 UJ	2.2 UJ
4,4'-DDD	2.25 U	2 UJ	2.25 UJ	2.1 U	2.25 UJ	1.9 UJ	2.2 UJ
4,4'-DDT	2.25 U	2 UJ	2.25 UJ	2.1 U	2.25 UJ	1.9 UJ	2.2 UJ

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB10-02	63-SB11-05	63-SB12-04	63-SB13-03	63-SB13-05	63-SB14-04	63-SB15-04
DATE SAMPLED	11/09/95	11/09/95	11/07/95	11/06/95	11/06/95	11/08/95	11/06/95
DEPTH	3-5'	9-11'	7-9'	5-7'	9-11'	7-9'	7-9'
VOLATILES (ug/kg)							
METHYLENE CHLORIDE	6.5 U	6.5 U	6.5 U	20	47	6.5 U	24
ACETONE	6.5 U	6.5 U	6.5 U	48 J	47 J	6.5 U	57 J
STYRENE	6.5 U	6.5 U	6.5 U	6 U	6.5 U	6.5 U	41
SEMIVOLATILES (ug/kg)							
N-NITROSODIPHENYLAMINE (1)	210 U	215 U	210 U	200 U	210 U	210 U	210 U
BIS(2-ETHYLHEXYL)PHTHALATE	210 U	215 U	97 J	41 J	980	210 U	770
PESTICIDE/PCBS (ug/kg)							
DIELDRIN	2.1 J	2.15 U	2.1 U	2 UJ	2.1 UJ	2.1 UJ	2.1 U
4,4'-DDE	2.15 UJ	2.15 UJ	2.1 U	2 UJ	2.1 UJ	2.1 UJ	2.1 UJ
4,4'-DDD	2.15 U	2.15 U	2.1 U	2 UJ	2.1 UJ	2.1 UJ	2.1 U
4,4'-DDT	2.15 U	2.15 U	2.1 U	2 UJ	2.1 UJ	2.1 UJ	2.1 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB16-02	63-SB17-03	63-SB18-05	63-SB19-03	63-SB20-01	63-SB21-03	63-SB22-03
DATE SAMPLED	11/08/95	11/08/95	11/07/95	11/06/95	11/09/95	11/08/95	11/07/95
DEPTH	3-5'	5-7'	9-11'	5-7'	1-3'	5-7'	5-7'
VOLATILES (ug/kg)							
METHYLENE CHLORIDE	6 U	6 U	6 U	6 U	5.5 U	6 U	6 U
ACETONE	6 U	6 UJ	6 U	6 U	5.5 U	6 U	6 U
STYRENE	6 U	6 U	6 UJ	6 U	5.5 U	6 U	6 U
SEMIVOLATILES (ug/kg)							
N-NITROSODIPHENYLAMINE (1)	200 U	94 J	200 U	350 J	185 U	200 U	200 U
BIS(2-ETHYLHEXYL)PHTHALATE	200 U	1100 U	200 U	4700	210 J	200 U	200 U
PESTICIDE/PCBS (ug/kg)							
DIELDRIN	2 UJ	2.1 UJ	2 U	2 U	1.85 U	2 U	2 U
4,4'-DDE	2 UJ	2.1 UJ	2 U	2 U	2.6 J	2 U	2.8 J
4,4'-DDD	2 UJ	2.1 UJ	2 U	2 U	1.85 U	2 U	5.6
4,4'-DDT	2 UJ	2.1 UJ	2 U	2 U	7.8	2 U	2 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB23-03	63-SB24-03	63-SB25-03	63-SB26-03	63-SB27-02	63-SB28-02	63-SB29-03
DATE SAMPLED	11/07/95	11/07/95	11/06/95	11/06/95	11/06/95	11/07/95	11/07/95
DEPTH	5-7'	5-7'	5-7'	5-7'	3-5'	3-5'	5-7'
VOLATILES (ug/kg)							
METHYLENE CHLORIDE	6 U	6 U	100	6 U	26	6 U	6.5 U
ACETONE	6 U	6 U	150 J	6 U	32	6 U	6.5 U
STYRENE	6 UJ	6 U	6 U	6 U	6.5 U	6 U	6.5 U
SEMIVOLATILES (ug/kg)							
N-NITROSODIPHENYLAMINE (1)	195 U	195 U	195 U	200 U	205 U	195 U	215 U
BIS(2-ETHYLHEXYL)PHTHALATE	120 J	195 U	195 U	230 J	205 U	195 U	54 J
PESTICIDE/PCBS (ug/kg)							
DIELDRIN	1.95 U	1.95 U	1.95 U	2 U	2.1 U	1.95 U	2.15 U
4,4'-DDE	1.95 U	1.95 U	1.95 UJ	2 U	2.1 UJ	1.95 U	2.15 U
4,4'-DDD	1.95 U	1.95 U	1.95 U	2 U	2.1 U	1.95 U	2.15 U
4,4'-DDT	1.95 U	1.95 U	1.95 U	2 U	2.1 U	1.95 U	2.15 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB30-03	63-SB31-04	63-SB32-02	63-SB33-02	63-SB34-05	63-SB36-02	63-SB37-04
DATE SAMPLED	11/09/95	11/08/95	11/09/95	11/08/95	11/07/95	11/09/95	11/08/95
DEPTH	5-7'	7-9'	3-5'	3-5'	9-11'	3-5'	7-9'
VOLATILES (ug/kg)							
METHYLENE CHLORIDE	6 U	6.5 U	6.5 U	6 U	6.5 UJ	6 U	6.5 U
ACETONE	6 U	6.5 U	6.5 U	6 U	6.5 UJ	6 U	6.5 U
STYRENE	6 U	6.5 U	6.5 U	6 U	6.5 UJ	6 U	6.5 U
SEMIVOLATILES (ug/kg)							
N-NITROSODIPHENYLAMINE (1)	R	205 U	210 U	205 U	220 U	200 U	215 U
BIS(2-ETHYLHEXYL)PHTHALATE	R	205 U	210 U	205 U	220 U	200 U	360 NA
PESTICIDE/PCBS (ug/kg)							
DIELDRIN	1.9 U	2.05 UJ	5 J	2.05 U	2.2 U	1.95 U	2.1 U
4,4'-DDE	1.9 U	2.05 UJ	2.1 U	2.05 U	2.2 U	1.95 U	2.1 U
4,4'-DDD	1.9 U	2.05 UJ	2.1 U	2.05 U	2.2 U	1.95 U	2.1 U
4,4'-DDT	1.9 U	2.05 UJ	2.1 U	2.05 U	2.2 U	1.95 U	2.1 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB38-02	63-TW01-01	63-TW02-04	63-TW03-03	63-TW04-03	63-TW05-02	63-TW06-02
DATE SAMPLED	11/08/95	11/12/95	11/11/95	11/12/95	11/10/95	11/10/95	11/10/95
DEPTH	3-5'	1-3'	7-9'	5-7'	5-7'	3-5'	3-5'
VOLATILES (ug/kg)							
METHYLENE CHLORIDE	6.5 U	6 U	6.5 U	6 U	6 U	6 U	6.5 U
ACETONE	6.5 U	6 U	6.5 U	6 U	6 U	6 U	6.5 U
STYRENE	6.5 U	6 U	6.5 U	6 U	6 U	6 U	6.5 U
SEMIVOLATILES (ug/kg)							
N-NITROSODIPHENYLAMINE (1)	210 U	195 U	220 U	205 U	195 U	200 U	205 U
BIS(2-ETHYLHEXYL)PHTHALATE	210 U	195 U	61 J	205 U	195 U	200 U	205 U
PESTICIDE/PCBS (ug/kg)							
DIELDRIN	2.05 UJ	1.95 UJ	2.2 U	2.05 UJ	1.9 U	2 U	2.1 U
4,4'-DDE	2.05 UJ	1.95 UJ	2.2 U	2.05 UJ	1.9 UJ	2 UJ	2.1 UJ
4,4'-DDD	2.05 UJ	1.95 UJ	2.2 U	2.05 UJ	1.9 U	2 U	2.1 U
4,4'-DDT	2.05 UJ	1.95 UJ	2.2 U	2.05 UJ	1.9 U	2 U	2.1 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW07-01	63-TW08-03
DATE SAMPLED	11/11/95	11/09/95
DEPTH	1-3'	5-7'
VOLATILES (ug/kg)		
METHYLENE CHLORIDE	6 U	6.5 U
ACETONE	6 U	6.5 U
STYRENE	6 U	6.5 U
SEMIVOLATILES (ug/kg)		
N-NITROSODIPHENYLAMINE (1)	195 U	210 U
BIS(2-ETHYLHEXYL)PHTHALATE	195 U	210 U
PESTICIDE/PCBS (ug/kg)		
DIELDRIN	1.95 U	2.15 U
4,4'-DDE	1.95 U	2.15 U
4,4'-DDD	1.95 U	2.15 U
4,4'-DDT	1.95 U	2.15 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
VOLATILES (ug/kg)						
METHYLENE CHLORIDE	10.00	14.74	13.51	2.01	0.56	10.29
ACETONE	14.17	24.82	20.08	2.13	0.78	14.62
STYRENE	6.98	4.92	8.15	1.87	0.27	7.24
SEMIVOLATILES (ug/kg)						
N-NITROSODIPHENYLAMINE (1)	207.63	28.07	214.39	5.33	0.14	215.55
BIS(2-ETHYLHEXYL)PHTHALATE	331.37	665.90	491.56	5.36	0.73	351.65
PESTICIDE/PCBS (ug/kg)						
DIELDRIN	2.12	0.43	2.22	0.74	0.13	2.19
4,4'-DDE	2.10	0.16	2.14	0.74	0.07	2.13
4,4'-DDD	2.14	0.51	2.26	0.74	0.15	2.21
4,4'-DDT	2.18	0.82	2.38	0.75	0.19	2.27

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB01-04	63-SB02-04	63-SB03-05	63-SB03-06	63-SB04-03	63-SB05-03
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/11/95	11/06/95	11/11/95
DEPTH	7-9'	7-9'	9-11'	11-13'	5-7'	5-7'
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	9900	9710	13200	10400	13100 J	15400
ANTIMONY, TOTAL	1.15 UJ	4.9 J	R	R	1.55 U	R
ARSENIC, TOTAL	2.3 J	6 J	7.8 J	3.6 J	3.4	0.69 J
BARIUM, TOTAL	9.2	10.6	11.4	10.9	14	13.1
BERYLLIUM, TOTAL	0.14	0.15	0.19 J	0.12 J	0.04 U	0.11 J
CALCIUM, TOTAL	6.9	17.1	16.35 U	15.45 U	29.4	37
CHROMIUM, TOTAL	12.4	13.9	27.1 J	25.9 J	16.1	20 J
COBALT, TOTAL	0.205 U	0.225 U	0.24 U	0.59	0.8	0.66
COPPER, TOTAL	4.1	1.3	7.6	8.8	0.7 U	7.8
IRON, TOTAL	4420	6430	20700 J	27600 J	4590	8290 J
LEAD, TOTAL	6.8	6.5	8.3 J	7.9 J	7.7 J	7.1 J
MAGNESIUM, TOTAL	264	338	473	404	476	513
MANGANESE, TOTAL	5.1	6.9	10.3 J	9.5 J	9.3	7.9 J
NICKEL, TOTAL	1.2 J	1.3 J	1.4	0.48 U	1.5	1.4
POTASSIUM, TOTAL	641	615	855	846	741	751
SELENIUM, TOTAL	0.165 UJ	0.19 UJ	0.31 J	0.185 U	0.18 U	0.145 U
SILVER, TOTAL	0.3 U	0.33 U	0.345 U	0.415 U	0.405 U	0.39 U
SODIUM, TOTAL	15.5 U	13.95 U	28	29.8	29.9	28
THALLIUM, TOTAL	0.065 U	0.075 U	0.06 U	0.075 U	0.075 UJ	0.18
VANADIUM, TOTAL	12.2	21.4	37.7 J	27.2 J	17.8	26.1 J
ZINC, TOTAL	5.6	5	9.9	11.8	6.5	5.2

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB05-06	63-SB06-01	63-SB07-04	63-SB08-05	63-SB08-07	63-SB09-03
DATE SAMPLED	11/11/95	11/10/95	11/11/95	11/10/95	11/10/95	11/10/95
DEPTH	11-13'	1-3'	7-9'	9-11'	13-15'	5-7'
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	12900	12200	16000	11300	11900	9330
ANTIMONY, TOTAL	R	1.05 UJ	4.4 J	1.35 UJ	2.5 J	3.6 J
ARSENIC, TOTAL	1.7 J	0.68 J	2.5 J	2.3 J	5.4 J	3.4 J
BARIUM, TOTAL	10.7	25.3	15.1	12.7	16	8.7
BERYLLIUM, TOTAL	0.15 J	0.025 U	0.21	0.035 U	0.22	0.025 U
CALCIUM, TOTAL	46.8	271	55.9	6.4	61.9	15.8
CHROMIUM, TOTAL	19.7 J	10.5	23.9	23.1	19.9	10.6
COBALT, TOTAL	0.77	0.45	0.235 U	0.245 U	10.4	0.175 U
COPPER, TOTAL	8.1	1.1	8.6	6.8	7.3	0.16 U
IRON, TOTAL	9740 J	6380	12500	18200	9530	4970
LEAD, TOTAL	7.4 J	6.8	8.1	7.6	8.9	6
MAGNESIUM, TOTAL	438	337	552	323	511	215
MANGANESE, TOTAL	9 J	6	10	5.6	67.9	3.5
NICKEL, TOTAL	2.5	2.9 J	3.9 J	1.2 J	13.9 J	0.295 U
POTASSIUM, TOTAL	855	291	1040	808	1050	477
SELENIUM, TOTAL	0.16 U	0.125 UJ	0.185 UJ	0.16 UJ	0.2 UJ	0.155 UJ
SILVER, TOTAL	0.305 U	0.28 U	0.345 U	0.355 U	0.315 U	0.255 U
SODIUM, TOTAL	27.6	11.55 U	14.2 U	42.3	45.2	9.75 U
THALLIUM, TOTAL	0.065 U	0.14	0.18	0.065 U	0.08 U	0.06 U
VANADIUM, TOTAL	20.9 J	20.7	33.7	29.2	19.9	18.9
ZINC, TOTAL	11.2	5.3	8.3	6.3	36.4	3

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB09-06	63-SB10-02	63-SB11-05	63-SB12-04	63-SB13-03	63-SB13-05
DATE SAMPLED	11/10/95	11/09/95	11/09/95	11/07/95	11/06/95	11/06/95
DEPTH	11-13'	3-5'	9-11'	7-9'	5-7'	9-11'
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	9110	8710 J	11600 J	9230 J	12000 J	10000 J
ANTIMONY, TOTAL	1.45 UJ	2.05 U	2.5 U	1.15 UJ	1.45 U	1.1 U
ARSENIC, TOTAL	2.5 J	6.3	6.5	2.7	2.8	3.2
BARIUM, TOTAL	8.2	10.6	13.2	9.3	9.1	18.8
BERYLLIUM, TOTAL	0.17	0.09 U	0.105 U	0.17	0.08	0.15
CALCIUM, TOTAL	14.2	39.8	13.55 U	48.45 U	55.7	15.8
CHROMIUM, TOTAL	20.6	13.2	26.3	12.3	22.5	16.1
COBALT, TOTAL	1.2	0.3 U	0.365 U	0.57	0.59	1.1
COPPER, TOTAL	0.24 U	2.4	4.5	2.5	2.7 U	2.1 U
IRON, TOTAL	13500	5710	13900	3960 J	12700	3580
LEAD, TOTAL	7.6	7.2 J	8.2 J	7	8.2 J	10.9 J
MAGNESIUM, TOTAL	399	240	387	223	225	286
MANGANESE, TOTAL	10.9	5.5	5.9	4.1	5.4	11
NICKEL, TOTAL	2.5 J	43.7	1.2 U	4.4	18.6	1.8
POTASSIUM, TOTAL	946	468	740	509	496	691
SELENIUM, TOTAL	0.18 UJ	0.18 U	0.36	0.17 UJ	0.38	0.165 U
SILVER, TOTAL	0.38 U	0.255 U	0.31 U	0.305 U	0.37 U	0.285 U
SODIUM, TOTAL	38.5	9.2 U	13.85 U	10.2 U	14.05 U	84.6
THALLIUM, TOTAL	0.075 U	0.155 UJ	0.14 UJ	0.07 U	0.07 UJ	0.065 UJ
VANADIUM, TOTAL	29.7	14.4	36.8	15.5	48.2	17.8
ZINC, TOTAL	9.5	4.9	7.2	1.5 U	1.8 U	5.6

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB14-04	63-SB15-04	63-SB16-02	63-SB17-03	63-SB18-05	63-SB19-03
DATE SAMPLED	11/08/95	11/06/95	11/08/95	11/08/95	11/07/95	11/06/95
DEPTH	7-9'	7-9'	3-5'	5-7'	9-11'	5-7'
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	6600	9600 J	9140	9020	6610 J	6280 J
ANTIMONY, TOTAL	1.35 UJ	1.3 U	1.5 UJ	2.9 J	1.3 UJ	1.25 UJ
ARSENIC, TOTAL	16	1.5	1	3.7	3.7	0.68
BARIUM, TOTAL	6.4	7	13.2	7.5	7.2	5.9
BERYLLIUM, TOTAL	0.03 U	0.03 U	0.035 U	0.21	0.12	0.03 U
CALCIUM, TOTAL	4	1.9 U	8.5	92.2	3.75 U	12.9 U
CHROMIUM, TOTAL	12.7	13.3	8.2	11.1	14	5.8
COBALT, TOTAL	0.235 UJ	0.235 U	0.265 UJ	0.24 UJ	0.235 U	0.225 U
COPPER, TOTAL	4.4 J	0.21 U	0.24 UJ	3.2 J	3.4	2.1
IRON, TOTAL	7320	2890	2320	2890	7640 J	807 J
LEAD, TOTAL	8.4	8.8 J	5.4	5.9	7.3	4.3
MAGNESIUM, TOTAL	158	190	191	184	157	104
MANGANESE, TOTAL	4.2	7.1	3.9	5.5	4.6	3.4
NICKEL, TOTAL	24.8	1.1	3.3	1.8	57	2.4
POTASSIUM, TOTAL	420	414	224	432	453	191 J
SELENIUM, TOTAL	0.72	0.38	0.18 U	0.14 U	0.17 UJ	0.145 UJ
SILVER, TOTAL	0.345 U	0.34 U	0.385 U	0.35 U	0.34 U	0.33 U
SODIUM, TOTAL	5.55 U	13.65 U	4.35 U	5 U	5.95 U	5.35 U
THALLIUM, TOTAL	0.07 UJ	0.065 UJ	0.07 U	0.055 U	0.07 U	0.06 U
VANADIUM, TOTAL	17.8	13.4	13.2	15.6	17.7	7.5
ZINC, TOTAL	2.9	1.8 U	3.9	2.9	1.45 U	1 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB20-01	63-SB21-03	63-SB22-03	63-SB23-03	63-SB24-03	63-SB25-03
DATE SAMPLED	11/09/95	11/08/95	11/07/95	11/07/95	11/07/95	11/06/95
DEPTH	1-3'	5-7'	5-7'	5-7'	5-7'	5-7'
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	1140 J	6640	312	5490 J	3710 J	710 J
ANTIMONY, TOTAL	1.75 U	1.4 UJ	1.1 UJ	16.2 J	0.95 UJ	1.3 U
ARSENIC, TOTAL	0.4	2.6	0.15 U	6.3	0.71	0.155 U
BARIUM, TOTAL	3.4	7	4	1120	5.8	2.5
BERYLLIUM, TOTAL	0.075 U	0.035 U	0.025 U	0.055 U	0.025 U	0.03 U
CALCIUM, TOTAL	289	223	184	865 J	16.95 U	17.2
CHROMIUM, TOTAL	1.2	11.6	1.2	84.4	3.9	2.2
COBALT, TOTAL	0.25 U	0.75 J	0.2 UJ	14.9	0.34	0.56
COPPER, TOTAL	0.55	4 J	0.18 UJ	160	1.4	0.495 U
IRON, TOTAL	1040	4980 J	425 J	149000 J	1590 J	790
LEAD, TOTAL	6 J	6.8	3.7	1650	3.1	2 J
MAGNESIUM, TOTAL	32.7	195	27.3	103	63.3	18.1
MANGANESE, TOTAL	6.9	31.3 J	11.1 J	586	1.5	1.5
NICKEL, TOTAL	0.8 U	3.3	53.6	37.7	7.6	1.1
POTASSIUM, TOTAL	58 U	451	7.95 UJ	16.1 UJ	82.5 J	30.8
SELENIUM, TOTAL	0.125 U	0.155 U	0.14 U	0.135 UJ	0.15 UJ	0.145 U
SILVER, TOTAL	0.215 U	0.36 U	0.29 U	5.3	0.245 U	0.335 U
SODIUM, TOTAL	4.15 U	9.7	2.1 U	32.5	2.3 U	3.8 U
THALLIUM, TOTAL	0.11 UJ	0.06 U	0.055 U	0.27 UJ	0.06 U	0.06 UJ
VANADIUM, TOTAL	1.9	16.6	0.54	7.6	4.7	3.1
ZINC, TOTAL	7.1	16.1	6.5	1130	0.75 U	0.55 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB26-03	63-SB27-02	63-SB28-02	63-SB29-03	63-SB30-03	63-SB31-04
DATE SAMPLED	11/06/95	11/06/95	11/07/95	11/07/95	11/09/95	11/08/95
DEPTH	5-7'	3-5'	3-5'	5-7'	5-7'	7-9'
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	6090 J	10400 J	6740	11000 J	5920	10000
ANTIMONY, TOTAL	1.45 UJ	1.5 U	1.1 UJ	1.3 UJ	1.4 UJ	1.45 UJ
ARSENIC, TOTAL	1.5	0.54	1.7	4.1	1	0.49
BARIUM, TOTAL	6.9	11.6	9.4	177	11	10.4
BERYLLIUM, TOTAL	0.035 U	0.035 U	0.025 U	0.1	0.035 U	0.26
CALCIUM, TOTAL	30.6 U	38.9	119	535 J	174	477
CHROMIUM, TOTAL	9.5	12	8.9	24	7.4	14
COBALT, TOTAL	0.26 U	0.72	0.44 J	4	0.25 UJ	0.26 UJ
COPPER, TOTAL	1.9	0.395 U	0.18 UJ	69.2	3.1 J	1.5 J
IRON, TOTAL	4180 J	1450	2950 J	40000 J	2050	3250
LEAD, TOTAL	4.8	7.2 J	7.1	182	6.1	4.3
MAGNESIUM, TOTAL	108	276	181	409	166	218
MANGANESE, TOTAL	2.9	6.1	6.5 J	202	10.5	4.3
NICKEL, TOTAL	76.1	1.7	2.2	12.8	1.8	1.7
POTASSIUM, TOTAL	165 J	580	315	737	279	457
SELENIUM, TOTAL	0.18 UJ	0.35 J	0.45	0.175 UJ	0.17 U	0.135 U
SILVER, TOTAL	0.375 U	0.395 U	0.285 U	1.8	0.36 U	0.38 U
SODIUM, TOTAL	2.95 U	12.9 U	8.9	61.9	9.5 U	6.25 U
THALLIUM, TOTAL	0.07 U	0.055 UJ	0.05 U	0.07 U	0.07 U	0.055 U
VANADIUM, TOTAL	11.3	13.2	13.6	22.1	11.2	27.7
ZINC, TOTAL	0.9 U	2.2 U	7.4	88.4	2.5	1.9

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB32-02	63-SB33-02	63-SB34-05	63-SB36-02	63-SB37-04	63-SB38-02
DATE SAMPLED	11/09/95	11/08/95	11/07/95	11/09/95	11/08/95	11/08/95
DEPTH	3-5'	3-5'	9-11'	3-5'	7-9'	3-5'
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	9290	5350	7490	8010	7230	12100
ANTIMONY, TOTAL	1.45 UJ	1.35 UJ	1.6 UJ	3.6 J	1.55 UJ	1.5 UJ
ARSENIC, TOTAL	2.1	1.3	2.9	0.8	1.7	3
BARIUM, TOTAL	10.8	8.5	8.7	10.2	7.6	13.9
BERYLLIUM, TOTAL	0.035 U	0.035 U	0.04 U	0.03 U	0.04 U	0.29
CALCIUM, TOTAL	14.6	12.65 U	96.1	197	119	172
CHROMIUM, TOTAL	9.5	5.6	15.2	7.6	14.6	19.3
COBALT, TOTAL	0.26 UJ	0.245 UJ	0.285 UJ	0.23 UJ	0.28 UJ	0.27 UJ
COPPER, TOTAL	3.7 J	0.22 UJ	5.7 J	2.8 J	4.8 J	5.4 J
IRON, TOTAL	6080	3220 J	11600 J	5030	6960 J	10100
LEAD, TOTAL	12.4	4.3	8.3	3.6	7.3	7.9
MAGNESIUM, TOTAL	159	133	316	119	147	523
MANGANESE, TOTAL	4.4	3.5 J	6.3 J	3.5	2.4 J	10.4
NICKEL, TOTAL	3	5.7	37.5	2.1	1.5	4
POTASSIUM, TOTAL	229	84.6 J	536	74 U	374	705
SELENIUM, TOTAL	0.17 U	0.39	0.175 U	0.18 U	0.175 U	0.56
SILVER, TOTAL	0.375 U	0.355 U	0.41 U	0.335 U	0.41 U	0.39 U
SODIUM, TOTAL	4.7 U	2.55 U	12.8	4.3 U	10.1	10.1 U
THALLIUM, TOTAL	0.07 U	0.05 U	0.07 U	0.07 U	0.07 U	0.075 U
VANADIUM, TOTAL	13.5	9.5	19	13.1	22	22.1
ZINC, TOTAL	4.8	1.35 U	7.5	1.3	1.6 U	7

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-TW01-01	63-TW02-04	63-TW03-03	63-TW04-03	63-TW05-02	63-TW06-02
DATE SAMPLED	11/12/95	11/11/95	11/12/95	11/10/95	11/10/95	11/10/95
DEPTH	1-3'	7-9'	5-7'	5-7'	3-5'	3-5'
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	1710	9790	9960	5610 J	3350 J	15100 J
ANTIMONY, TOTAL	R	R	R	2.15 U	1.75 U	2.2 U
ARSENIC, TOTAL	0.155 UJ	2.5 J	4.6 J	0.65 J	1.1 J	2.5
BARIUM, TOTAL	7.2	9.9	8.7	11.6	12.4	25.3
BERYLLIUM, TOTAL	0.035 UJ	0.035 UJ	0.035 UJ	0.09 U	0.075 U	0.095 U
CALCIUM, TOTAL	220	60.9	58.7	11.95 U	6.1 U	79
CHROMIUM, TOTAL	4.3 J	14.7 J	15.5 J	5.5	5.2	13.6
COBALT, TOTAL	0.24 U	0.265 U	0.27 U	0.93	0.255 U	0.96
COPPER, TOTAL	5.7	6.7	8.2	1.9	2.1	2.2
IRON, TOTAL	2580 J	7470 J	10400 J	2090	2290	4670
LEAD, TOTAL	3.2 J	6.7 J	7 J	3.9 J	6.3 J	11.2 J
MAGNESIUM, TOTAL	41.6 J	350	285	92.8	120	331
MANGANESE, TOTAL	16.6 J	8 J	6.2 J	3.1	4.1	6.6
NICKEL, TOTAL	0.4 U	0.98	8.4	7.9	5.3	4.2
POTASSIUM, TOTAL	40.9	663	620	72.5 U	142	253
SELENIUM, TOTAL	0.145 U	0.155 U	0.13 U	0.14 U	0.14 U	0.59
SILVER, TOTAL	0.345 U	0.385 U	0.395 U	0.265 U	0.22 U	0.275 U
SODIUM, TOTAL	9.6	17.3	7.6	5.5 U	7 U	13 U
THALLIUM, TOTAL	0.06 U	0.06 U	0.05 U	0.125 UJ	0.12 UJ	0.135 UJ
VANADIUM, TOTAL	3.3 J	20.2 J	19.9 J	7.6	7.4	16.7
ZINC, TOTAL	4.5	4.6	3.9	2.25 U	5.6	6.9

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-TW07-01	63-TW08-03
DATE SAMPLED	11/11/95	11/09/95
DEPTH	1-3'	5-7'
TOTAL METALS (mg/kg)		
ALUMINUM, TOTAL	5470	10600
ANTIMONY, TOTAL	R	1.5 UJ
ARSENIC, TOTAL	0.82 J	2.3
BARIUM, TOTAL	18	13.4
BERYLLIUM, TOTAL	0.025 UJ	0.29
CALCIUM, TOTAL	191	130
CHROMIUM, TOTAL	9.9 J	17.1
COBALT, TOTAL	0.2 U	0.27 UJ
COPPER, TOTAL	19.7	5.8 J
IRON, TOTAL	7270 J	11000
LEAD, TOTAL	13 J	7
MAGNESIUM, TOTAL	185	427
MANGANESE, TOTAL	17.9 J	8.7
NICKEL, TOTAL	1.9	0.455 U
POTASSIUM, TOTAL	238	555
SELENIUM, TOTAL	0.14 U	0.185 U
SILVER, TOTAL	0.29 U	0.395 U
SODIUM, TOTAL	9.5	9.75 U
THALLIUM, TOTAL	0.055 U	0.075 U
VANADIUM, TOTAL	14.7 J	19.1
ZINC, TOTAL	146	6.2

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED DEPTH	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	8649.04	3666.09	9522.13	8.89	0.76	12308.10
ANTIMONY, TOTAL	2.13	2.40	2.75	0.55	0.52	2.33
ARSENIC, TOTAL	2.73	2.67	3.37	0.58	1.02	4.46
BARIUM, TOTAL	36.19	158.23	73.87	2.43	0.89	22.69
BERYLLIUM, TOTAL	0.09	0.08	0.11	-2.73	0.80	0.12
CALCIUM, TOTAL	104.59	159.05	142.47	3.74	1.42	217.98
CHROMIUM, TOTAL	14.74	12.08	17.62	2.45	0.76	19.57
COBALT, TOTAL	0.97	2.52	1.57	-0.86	0.94	0.90
COPPER, TOTAL	8.16	24.04	13.89	0.90	1.46	13.74
IRON, TOTAL	10260.64	21263.56	15324.63	8.59	1.04	13930.07
LEAD, TOTAL	43.27	233.19	98.81	2.05	0.97	17.49
MAGNESIUM, TOTAL	252.30	145.67	286.99	5.30	0.78	348.86
MANGANESE, TOTAL	23.90	86.17	44.42	2.01	1.04	19.22
NICKEL, TOTAL	9.57	16.79	13.57	1.22	1.37	15.69
POTASSIUM, TOTAL	454.41	291.09	523.73	5.74	1.11	892.06
SELENIUM, TOTAL	0.22	0.13	0.25	-1.64	0.44	0.24
SILVER, TOTAL	0.46	0.73	0.64	-1.01	0.48	0.47
SODIUM, TOTAL	15.74	16.08	19.57	2.38	0.86	20.66
THALLIUM, TOTAL	0.08	0.04	0.09	-2.57	0.38	0.09
VANADIUM, TOTAL	17.50	9.55	19.77	2.65	0.79	24.87
ZINC, TOTAL	32.54	160.10	70.66	1.62	1.32	21.63

GROUNDWATER

SITE 63, VERONA LOOP DUMP
GROUNDWATER - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-GW01-01	63-GW02-01	63-GW03-01	63-TW01-01	63-TW02-01	63-TW03-01
DATE SAMPLED	11/15/95	11/15/95	11/15/95	11/12/95	11/13/95	11/13/95
VOLATILES (ug/L)						
SEMIVOLATILES (ug/L)						
BIS(2-ETHYLHEXYL)PHTHALATE	1 J	4.5 U	5.5 U	6 U	5.5 U	5 U
PESTICIDE/PCBS (ug/L)						

SITE 63, VERONA LOOP DUMP
GROUNDWATER - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-TW04-01	63-TW05-01	63-TW06-01	63-TW07-01	63-TW08-01
DATE SAMPLED	11/13/95	11/13/95	11/13/95	11/15/95	11/14/95
VOLATILES (ug/L)					
SEMIVOLATILES (ug/L)					
BIS(2-ETHYLHEXYL)PHTHALATE	11	5 U	5.5 U	5.5 U	5.5 U
PESTICIDE/PCBS (ug/L)					

SITE 63, VERONA LOOP DUMP
GROUNDWATER - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
VOLATILES (ug/L)						
SEMIVOLATILES (ug/L)						
BIS(2-ETHYLHEXYL)PHTHALATE	5.45	2.29	6.70	1.59	0.57	8.77
PESTICIDE/PCBS (ug/L)						

SITE 63, VERONA LOOP DUMP
GROUNDWATER - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-GW01-01	63-GW02-01	63-GW03-01	63-TW01-01	63-TW02-01	63-TW03-01
DATE SAMPLED	11/15/95	11/15/95	11/15/95	11/12/95	11/13/95	11/13/95
TOTAL METALS (ug/L)						
ALUMINUM, TOTAL	213	325	175	49.2 U	763	2420
ARSENIC, TOTAL	0.8 U	1.8	0.8 U	0.8 U	0.8 U	0.8 U
BARIUM, TOTAL	18.3	461	78.3	47.8	81.7	53.2
CALCIUM, TOTAL	911 J	12400 J	5230 J	24900	3010	352
COBALT, TOTAL	1.7 U	1.7 U	11.9	1.7 U	8.3	5.1
IRON, TOTAL	93.6	24300	73.5	24.35 U	38.85 U	27.3 U
LEAD, TOTAL	0.5 U	1.7	0.5 U	0.5 U	1.3	2.2
MAGNESIUM, TOTAL	529	5800	2130	1280	3060	1010
MANGANESE, TOTAL	1.8	311	54	3.8	21.3	15.8
NICKEL, TOTAL	5.55 U	5.55 U	12.5	89.4	15.8	33.6
POTASSIUM, TOTAL	1430	8290	947	1300	1260	393.5 U
SODIUM, TOTAL	2850	4920	2830	2510	11800	7280
ZINC, TOTAL	3.35 U	10.4 U	48.2	4.9	11.8	41.4

SITE 63, VERONA LOOP DUMP
GROUNDWATER - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-TW04-01	63-TW05-01	63-TW06-01	63-TW07-01	63-TW08-01
DATE SAMPLED	11/13/95	11/13/95	11/13/95	11/15/95	11/14/95
TOTAL METALS (ug/L)					
ALUMINUM, TOTAL	287	2120	936	51.5 U	257
ARSENIC, TOTAL	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
BARIUM, TOTAL	65.6	85.6	56.4	145	16.6
CALCIUM, TOTAL	1410	1330 J	3450 J	6490 J	1520 J
COBALT, TOTAL	1.7 U	4.8	1.7 U	5.1	1.7 U
IRON, TOTAL	550	24300	248	2540	88.2
LEAD, TOTAL	0.5 U	9.4	1.2	0.5 U	0.5 U
MAGNESIUM, TOTAL	692	590	1220	2560	564
MANGANESE, TOTAL	23.7	191	5.1	181	3.8
NICKEL, TOTAL	83.2	74.2	15.5	57.4	44.5
POTASSIUM, TOTAL	393.5 U	1210	393.5 U	2670	393.5 U
SODIUM, TOTAL	4750	2300	7120	5140	3710
ZINC, TOTAL	1.8 U	183	4.95 U	17100	2.2 U

SITE 63, VERONA LOOP DUMP
GROUNDWATER - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
TOTAL METALS (ug/L)						
ALUMINUM, TOTAL	690.61	830.53	1144.36	5.84	1.30	4269.31
ARSENIC, TOTAL	0.89	0.30	1.06	-0.15	0.24	1.03
BARIUM, TOTAL	100.86	124.49	168.88	4.19	0.91	237.23
CALCIUM, TOTAL	5545.73	7300.14	9534.08	7.95	1.23	23709.18
COBALT, TOTAL	4.13	3.40	5.98	1.15	0.75	7.80
IRON, TOTAL	4753.07	9691.81	10048.08	5.76	2.54	3401871.19
LEAD, TOTAL	1.71	2.62	3.14	-0.01	0.94	3.78
MAGNESIUM, TOTAL	1766.82	1591.47	2636.30	7.17	0.79	3455.68
MANGANESE, TOTAL	73.85	104.98	131.20	3.10	1.78	1976.04
NICKEL, TOTAL	39.75	31.87	57.16	3.28	1.04	143.81
POTASSIUM, TOTAL	1698.27	2289.77	2949.26	6.94	0.96	4073.04
SODIUM, TOTAL	5019.09	2837.30	6569.22	8.39	0.51	7366.23
ZINC, TOTAL	1582.91	5146.71	4394.76	3.01	2.65	375743.68

SURFACE WATER

SITE 63, VERONA LOOP DUMP
SURFACE WATER - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SW01	63-SW02	63-SW03	63-SW04	63-SW05
DATE SAMPLED	11/10/95	11/10/95	11/10/95	11/10/95	11/10/95
VOLATILES (ug/L)					
ACETONE	5 UJ	5 UJ	5 UJ	11 J	5 UJ
SEMIVOLATILES					
SEMIVOLATILES (cont)					
BIS(2-ETHYLHEXYL)PHTHALATE	100	5 U	5 U	4.5 U	5 U
PESTICIDE/PCBS (ug/L)					

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
VOLATILES (ug/L)						
ACETONE	6.20	2.68	8.76	1.77	0.35	9.94
SEMIVOLATILES						
SEMIVOLATILES (cont)						
BIS(2-ETHYLHEXYL)PHTHALATE	23.90	42.54	64.46	2.19	1.35	2740.70
PESTICIDE/PCBS (ug/L)						

SITE 63, VERONA LOOP DUMP
SURFACE WATER - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SW01	63-SW02	63-SW03	63-SW04	63-SW05
DATE SAMPLED	11/10/95	11/10/95	11/10/95	11/10/95	11/10/95
TOTAL METALS (ug/L)					
ALUMINUM, TOTAL	627	650	653	602	688
BARIUM, TOTAL	22.1	24.6	26.4	26	23.7
CALCIUM, TOTAL	1780	1900	1960	1940	1740
IRON, TOTAL	292	309	390	615	834
LEAD, TOTAL	0.5 U	1	2.2	1.2	1.6
MAGNESIUM, TOTAL	678	710	713	739	809
MANGANESE, TOTAL	4.7	6.2	9.2	9.4	10
SODIUM, TOTAL	4250	4370	4480	4420	4290
ZINC, TOTAL	6.6	5.5	22.6	8.4	7.8

SITE 63, VERONA LOOP DUMP
SURFACE WATER - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
TOTAL METALS (ug/L)						
ALUMINUM, TOTAL	644.00	32.04	674.55	6.47	0.05	677.62
BARIUM, TOTAL	24.56	1.75	26.23	3.20	0.07	26.45
CALCIUM, TOTAL	1864.00	98.39	1957.81	7.53	0.05	1968.36
IRON, TOTAL	488.00	232.33	709.52	6.10	0.45	970.86
LEAD, TOTAL	1.30	0.64	1.91	0.15	0.56	3.39
MAGNESIUM, TOTAL	729.80	49.28	776.79	6.59	0.07	780.89
MANGANESE, TOTAL	7.90	2.32	10.11	2.03	0.33	12.37
SODIUM, TOTAL	4362.00	93.65	4451.29	8.38	0.02	4458.54
ZINC, TOTAL	10.18	7.03	16.88	2.18	0.55	25.37

SEDIMENT

SITE 63, VERONA LOOP DUMP
SEDIMENT - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SD01-01	63-SD02-01	63-SD03-01	63-SD04-01	63-SD05-01
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/11/95	11/11/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"
PESTICIDE/PCBS (ug/kg)					
4,4'-DDE	2.45 U	2.5 UJ	2.15 UJ	4.2 J	2.1 UJ
4,4'-DDD	2.45 U	2.5 UJ	2.6 J	11 J	2.1 UJ
4,4'-DDT	2.45 U	2.5 UJ	2.15 UJ	1.6 J	2.1 UJ
ALPHA-CHLORDANE	1.2 U	1.25 UJ	1.1 UJ	4.7 J	1.05 UJ
GAMMA-CHLORDANE	1.2 U	1.25 UJ	1.1 UJ	6.2 J	1.05 UJ

SITE 63, VERONA LOOP DUMP
SEDIMENT - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED DEPTH	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
PESTICIDE/PCBS (ug/kg)						
4,4'-DDE	2.68	0.87	3.51	0.95	0.28	3.78
4,4'-DDD	4.13	3.85	7.80	1.18	0.68	14.44
4,4'-DDT	2.16	0.36	2.50	0.76	0.18	2.64
ALPHA-CHLORDANE	1.86	1.59	3.38	0.42	0.63	5.94
GAMMA-CHLORDANE	2.16	2.26	4.31	0.47	0.76	9.98

SITE 63, VERONA LOOP DUMP
SEDIMENT - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SD01-01	63-SD02-01	63-SD03-01	63-SD04-01	63-SD05-01
DATE SAMPLED	11/11/95	11/11/95	11/11/95	11/11/95	11/11/95
DEPTH	0-6"	0-6"	0-6"	0-6"	0-6"
TOTAL METALS (mg/kg)					
ALUMINUM, TOTAL	890	1270	5910	7050	1240
ARSENIC, TOTAL	0.175 UJ	0.195 UJ	0.29 J	0.63 J	0.165 UJ
BARIUM, TOTAL	9.3	8.9	15.1	19.6	3.8
BERYLLIUM, TOTAL	0.03 UJ	0.03 UJ	0.025 U	0.14 J	0.035 UJ
CALCIUM, TOTAL	66	118	106	178	49.9
CHROMIUM, TOTAL	0.45 U	1.4 J	5.7 J	8.1 J	1.7 J
COPPER, TOTAL	4	2.8	5.7	6.9	0.235 U
IRON, TOTAL	84.9 J	174 J	1260 J	2050 J	419 J
LEAD, TOTAL	3.7 J	11.9 J	5.9 J	13.7 J	3.2 J
MAGNESIUM, TOTAL	11.3 J	32.9 J	170	259	39.6 J
MANGANESE, TOTAL	1.6 J	1.7 J	4.1 J	7.5 J	3 J
NICKEL, TOTAL	0.36 U	0.385 U	1.9	0.485 U	0.44 U
POTASSIUM, TOTAL	8.55 U	27.4	186	367	45.4
SODIUM, TOTAL	7.6	9.8	12.9	12.5	7.8
VANADIUM, TOTAL	1.2 J	1.5 J	7.7 J	12.4 J	1.5 J
ZINC, TOTAL	0.94	0.92	5.4	6.7	1

SITE 63, VERONA LOOP DUMP
SEDIMENT - STATISTICAL SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED DEPTH	NORMAL ARITHMETIC MEAN	NORMAL STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG ARITHMETIC MEAN	LOG STANDARD DEVIATION	LOG UPPER 95% CONFIDENCE INTERVAL
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	3272.00	2959.87	6094.11	7.72	0.97	39240.90
ARSENIC, TOTAL	0.29	0.20	0.48	-1.38	0.56	0.74
BARIUM, TOTAL	11.34	6.11	17.17	2.29	0.63	37.90
BERYLLIUM, TOTAL	0.05	0.05	0.10	-3.20	0.70	0.22
CALCIUM, TOTAL	103.58	50.11	151.36	4.54	0.50	222.48
CHROMIUM, TOTAL	3.47	3.28	6.59	0.78	1.16	139.60
COPPER, TOTAL	3.93	2.59	6.40	0.93	1.37	858.62
IRON, TOTAL	797.58	840.01	1598.50	6.08	1.33	118851.46
LEAD, TOTAL	7.68	4.83	12.28	1.87	0.66	27.06
MAGNESIUM, TOTAL	102.56	107.43	204.99	4.06	1.28	12413.46
MANGANESE, TOTAL	3.58	2.42	5.89	1.11	0.64	12.06
NICKEL, TOTAL	0.71	0.66	1.35	-0.58	0.69	2.53
POTASSIUM, TOTAL	126.87	151.40	271.23	4.08	1.50	90696.90
SODIUM, TOTAL	10.12	2.51	12.51	2.29	0.25	13.76
VANADIUM, TOTAL	4.86	5.02	9.65	1.11	1.08	141.37
ZINC, TOTAL	2.99	2.83	5.69	0.69	1.01	69.39

APPENDIX J
FIELD DUPLICATE RESULTS

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB06-00D	63-SB11-00D	63-SB23-00D	63-SB24-00D	63-SB25-00D	63-SB31-00D
DATE SAMPLED	11/10/95	11/09/95	11/07/95	11/07/95	11/06/95	11/08/95
DEPTH	'0-12"	'0-12"	'0-12"	'0-12"	'0-12"	'0-12"
VOLATILES (ug/kg)						
CHLOROMETHANE	11 U	11 U	11 U	12 U	11 U	11 U
BROMOMETHANE	11 U	11 U	11 U	12 U	11 U	11 U
VINYL CHLORIDE	11 U	11 U	11 U	12 U	11 U	11 U
CHLOROETHANE	11 U	11 U	11 U	12 U	11 U	11 U
METHYLENE CHLORIDE	11 U	11 U	11 U	12 U	65	11 U
ACETONE	11 UJ	11 U	11 U	12 U	46 J	11 U
CARBON DISULFIDE	11 U	11 U	11 U	12 U	11 U	11 U
1,1-DICHLOROETHENE	11 U	11 U	11 U	12 U	11 U	11 U
1,1-DICHLOROETHANE	11 U	11 U	11 U	12 U	11 U	11 U
1,2-DICHLOROETHENE (TOTAL)	11 U	11 U	11 U	12 U	11 U	11 U
CHLOROFORM	11 U	11 U	11 U	12 U	11 U	11 U
1,2-DICHLOROETHANE	11 U	11 U	11 U	12 U	11 U	11 U
2-BUTANONE	11 U	11 UJ	11 U	12 U	11 U	11 U
1,1,1-TRICHLOROETHANE	11 U	11 U	11 U	12 U	11 U	11 U
CARBON TETRACHLORIDE	11 U	11 U	11 U	12 U	11 U	11 U
BROMODICHLOROMETHANE	11 U	11 U	11 U	12 U	11 U	11 U
1,2-DICHLOROPROPANE	11 U	11 U	11 U	12 U	11 U	11 U
CIS-1,3-DICHLOROPROPENE	11 U	11 U	11 U	12 U	11 U	11 U
TRICHLOROETHENE	11 U	11 U	11 U	12 U	11 U	11 U
DIBROMOCHLOROMETHANE	11 U	11 U	11 U	12 U	11 U	11 U
1,1,2-TRICHLOROETHANE	11 U	11 U	11 U	12 U	11 U	11 U
BENZENE	11 U	11 U	11 U	12 U	11 U	11 U
TRANS-1,3-DICHLOROPROPENE	11 U	11 U	11 U	12 U	11 U	11 U
BROMOFORM	11 U	11 U	11 U	12 U	11 U	11 U
4-METHYL-2-PENTANONE	11 U	11 UJ	11 U	12 U	11 U	11 U
2-HEXANONE	11 U	11 UJ	11 U	12 U	11 U	11 U
TETRACHLOROETHENE	11 U	11 U	11 U	12 U	11 U	11 U
1,1,2,2-TETRACHLOROETHANE	11 U	11 U	11 U	12 U	11 U	11 U
TOLUENE	11 U	11 U	11 U	12 U	11 U	11 U
CHLOROBENZENE	11 U	11 U	11 U	12 U	11 U	11 U
ETHYLBENZENE	11 U	11 U	11 U	12 U	11 U	11 U
STYRENE	11 U	11 U	11 U	12 U	11 U	11 U
XYLENE (TOTAL)	11 U	11 U	11 U	12 U	11 U	11 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB06-00D	63-SB11-00D	63-SB23-00D	63-SB24-00D	63-SB25-00D	63-SB31-00D
DATE SAMPLED	11/10/95	11/09/95	11/07/95	11/07/95	11/06/95	11/08/95
DEPTH	'0-12"	'0-12"	'0-12"	'0-12"	'0-12"	'0-12"
SEMIVOLATILES (ug/kg)						
PHENOL	380 U	370 U	360 U	350 U	350 U	380 U
BIS(2-CHLOROETHYL)ETHER	380 U	370 U	360 U	350 U	350 U	380 U
2-CHLOROPHENOL	380 U	370 U	360 U	350 U	350 U	380 U
1,3-DICHLOROBENZENE	380 U	370 U	360 U	350 U	350 U	380 U
1,4-DICHLOROBENZENE	380 U	370 U	360 U	350 U	350 U	380 U
1,2-DICHLOROBENZENE	380 U	370 U	360 U	350 U	350 U	380 U
2-METHYLPHENOL	380 U	370 U	360 U	350 U	350 U	380 U
2,2'-OXYBIS(1-CHLOROPROPANE)	380 U	370 U	360 U	350 U	350 U	380 U
4-METHYLPHENOL	380 U	370 U	360 U	350 U	350 U	380 U
N-NITROSO-DI-N-PROPYLAMINE	380 U	370 U	360 U	350 U	350 U	380 U
HEXACHLOROETHANE	380 U	370 U	360 U	350 U	350 U	380 U
NITROBENZENE	380 U	370 U	360 U	350 U	350 U	380 U
ISOPHORONE	380 U	370 U	360 U	350 U	350 U	380 U
2-NITROPHENOL	380 U	370 U	360 U	350 U	350 U	380 U
2,4-DIMETHYLPHENOL	380 U	370 U	360 U	350 U	350 U	380 U
BIS(2-CHLOROETHOXY)METHANE	380 U	370 U	360 U	350 U	350 U	380 U
2,4-DICHLOROPHENOL	380 U	370 U	360 U	350 U	350 U	380 U
1,2,4-TRICHLOROBENZENE	380 U	370 U	360 U	350 U	350 U	380 U
NAPHTHALENE	380 U	370 U	360 U	350 U	350 U	380 U
4-CHLOROANILINE	380 U	370 U	360 U	350 U	350 U	380 U
HEXACHLOROBUTADIENE	380 U	370 U	360 U	350 U	350 U	380 U
4-CHLORO-3-METHYLPHENOL	380 U	370 U	360 U	350 U	350 U	380 U
2-METHYLNAPHTHALENE	380 U	370 U	360 U	350 U	350 U	380 U
HEXACHLOROCYCLOPENTADIENE	380 U	370 U	360 U	350 U	350 U	380 U
2,4,6-TRICHLOROPHENOL	380 U	370 U	360 U	350 U	350 U	380 U
2,4,5-TRICHLOROPHENOL	940 U	920 U	900 U	880 U	860 U	940 U
2-CHLORONAPHTHALENE	380 U	370 U	360 U	350 U	350 U	380 U
2-NITROANILINE	940 U	920 U	900 U	880 U	860 U	940 U
DIMETHYLPHTHALATE	380 U	370 U	360 U	350 U	350 U	380 U
ACENAPHTHYLENE	380 U	370 U	360 U	350 U	350 U	380 U
2,6-DINITROTOLUENE	380 U	370 U	360 U	350 U	350 U	380 U
3-NITROANILINE	940 U	920 U	900 U	880 U	860 U	940 U
ACENAPHTHENE	380 U	370 U	360 U	350 U	350 U	380 U
2,4-DINITROPHENOL	940 U	920 U	900 U	880 U	860 U	940 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB06-00D	63-SB11-00D	63-SB23-00D	63-SB24-00D	63-SB25-00D	63-SB31-00D
DATE SAMPLED	11/10/95	11/09/95	11/07/95	11/07/95	11/06/95	11/08/95
DEPTH	'0-12"	'0-12"	'0-12"	'0-12"	'0-12"	'0-12"
SEMIVOLATILES (ug/kg)(cont)						
4-NITROPHENOL	940 U	920 U	900 U	880 U	860 U	940 U
DIBENZOFURAN	380 U	370 U	360 U	350 U	350 U	380 U
2,4-DINITROTOLUENE	380 U	370 U	360 U	350 U	350 U	380 U
DIETHYLPHTHALATE	380 U	370 U	360 U	350 U	350 U	380 U
4-CHLOROPHENYL-PHENYLETHER	380 U	370 U	360 U	350 U	350 U	380 U
FLUORENE	380 U	370 U	360 U	350 U	350 U	380 U
4-NITROANILINE	940 U	920 U	900 U	880 U	860 U	940 U
4,6-DINITRO-2-METHYLPHENOL	940 U	920 U	900 U	880 U	860 U	940 U
N-NITROSODIPHENYLAMINE (1)	380 U	370 U	360 U	350 U	350 U	380 U
4-BROMOPHENYL-PHENYLETHER	380 U	370 U	360 U	350 U	350 U	380 U
HEXACHLOROBENZENE	380 U	370 U	360 U	350 U	350 U	380 U
PENTACHLOROPHENOL	940 U	920 U	900 U	880 U	860 U	940 U
PHENANTHRENE	380 U	370 U	360 U	350 U	350 U	380 U
ANTHRACENE	380 U	370 U	360 U	350 U	350 U	380 U
CARBAZOLE	380 U	370 U	360 U	350 U	350 U	380 U
DI-N-BUTYLPHTHALATE	380 U	370 U	360 U	350 U	1000 U	380 U
FLUORANTHENE	380 U	370 U	360 U	350 U	350 U	380 U
PYRENE	380 U	370 U	360 U	350 U	350 U	380 U
BUTYLBENZYLPHTHALATE	380 U	370 U	360 U	350 U	350 U	380 U
3,3'-DICHLOROBENZIDINE	380 U	370 U	360 U	350 U	350 U	380 U
BENZO(A)ANTHRACENE	380 U	370 U	360 U	350 U	350 U	380 U
CHRYSENE	380 U	370 U	360 U	350 U	350 U	380 U
BIS(2-ETHYLHEXYL)PHTHALATE	380 U	370 U	82 J	350 U	350 U	380 U
DI-N-OCTYL PHTHALATE	380 U	370 U	360 U	350 U	350 U	380 U
BENZO(B)FLUORANTHENE	380 U	370 U	360 U	350 U	350 U	380 U
BENZO(K)FLUORANTHENE	380 U	370 U	360 U	350 U	350 U	380 U
BENZO(A)PYRENE	380 U	370 U	360 U	350 U	350 U	380 U
INDENO(1,2,3-CD)PYRENE	380 U	370 U	360 U	350 U	350 U	380 U
DIBENZO(A,H)ANTHRACENE	380 U	370 U	360 U	350 U	350 U	380 U
BENZO(G,H,I)PERYLENE	380 U	370 U	360 U	350 U	350 U	380 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB06-00D	63-SB11-00D	63-SB23-00D	63-SB24-00D	63-SB25-00D	63-SB31-00D
DATE SAMPLED	11/10/95	11/09/95	11/07/95	11/07/95	11/06/95	11/08/95
DEPTH	'0-12"	'0-12"	'0-12"	'0-12"	'0-12"	'0-12"
PEST/PCB's (ug/kg)						
ALPHA-BHC	1.9 UJ	1.8 U	1.8 U	1.8 U	1.7 UJ	1.9 U
BETA-BHC	1.9 UJ	1.8 U	1.8 U	1.8 U	1.7 UJ	1.9 U
DELTA-BHC	1.9 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.7 UJ	1.9 UJ
HEPTACHLOR	1.9 UJ	1.8 U	1.8 U	1.8 U	1.7 UJ	1.9 U
ALDRIN	1.9 UJ	1.8 U	1.8 U	1.8 U	1.7 UJ	1.9 U
HEPTACHLOR EPOXIDE	1.9 UJ	1.8 U	1.8 U	1.8 U	1.7 UJ	1.9 U
ENDOSULFAN I	1.9 UJ	1.8 U	1.8 U	1.8 U	1.7 UJ	1.9 U
DIELDRIN	3.7 UJ	3.7 U	3.6 U	3.5 U	3.5 UJ	3.7 U
4,4'-DDE	3.7 UJ	3.7 UJ	9.3	1.8 J	3.5 UJ	3.7 U
ENDRIN	3.7 UJ	3.7 U	3.6 UJ	3.5 UJ	3.5 UJ	3.7 U
4,4'-DDD	3.7 UJ	3.7 U	3.6 U	3.5 U	3.5 UJ	3.7 U
ENDOSULFAN SULFATE	3.7 UJ	3.7 U	3.6 U	3.5 U	3.5 UJ	3.7 U
4,4'-DDT	3.7 UJ	3.7 U	9.7	2.1 J	3.5 UJ	3.7 U
METHOXYCHLOR	19 UJ	18 U	18 U	18 U	17 UJ	19 U
ENDRIN KETONE	3.7 UJ	3.7 U	3.6 U	3.5 U	3.5 UJ	3.7 U
ENDRIN ALDEHYDE	3.7 UJ	3.7 U	3.6 U	3.5 U	3.5 UJ	3.7 U
ALPHA-CHLORDANE	1.9 UJ	1.8 U	1.8 U	1.8 U	1.7 UJ	1.9 U
GAMMA-CHLORDANE	1.9 UJ	1.8 U	1.8 U	1.8 U	1.7 UJ	1.9 U
TOXAPHENE	190 UJ	180 U	180 U	180 U	170 UJ	190 U
AROCLOR-1016	37 UJ	37 U	36 U	35 U	35 UJ	37 U
AROCLOR-1221	75 UJ	74 U	72 U	70 U	69 UJ	75 U
AROCLOR-1232	37 UJ	37 U	36 U	35 U	35 UJ	37 U
AROCLOR-1242	37 UJ	37 U	36 U	35 U	35 UJ	37 U
AROCLOR-1248	37 UJ	37 U	36 U	35 U	35 UJ	37 U
AROCLOR-1254	37 UJ	37 U	36 U	35 U	35 UJ	37 U
AROCLOR-1260	37 UJ	37 U	36 U	35 U	35 UJ	37 U

SITE 63, VERONA LOOP DUMP
SURFACE SOIL - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB06-00D	63-SB11-00D	63-SB23-00D	63-SB24-00D	63-SB25-00D	63-SB31-00D
DATE SAMPLED	11/10/95	11/09/95	11/07/95	11/07/95	11/06/95	11/08/95
DEPTH	'0-12"	'0-12"	'0-12"	'0-12"	'0-12"	'0-12"
TOTAL METALS (mg/kg)						
ALUMINUM, TOTAL	1720	1070 J	1560 J	1390 J	1030 J	601
ANTIMONY, TOTAL	2.4 J	4.7 U	3.2 J	2.4 J	2.5 U	2.6 UJ
ARSENIC, TOTAL	0.57 J	0.3 U	0.89	0.84	0.29	0.29 U
BARIUM, TOTAL	5.5	4.5	5.1	42	5.9	7.4
BERYLLIUM, TOTAL	0.05 U	0.2 U	0.05 U	0.06 U	0.06 U	0.06 U
CADMIUM, TOTAL	0.65 U	0.42 U	0.75 U	0.81 U	0.84 U	0.88 U
CALCIUM, TOTAL	166	39.7	3860 J	99.8 U	238	106
CHROMIUM, TOTAL	1.3	1.6	3.4	3.1	1.9	1.3
COBALT, TOTAL	0.34 U	0.68 U	0.4 U	0.45	0.44 U	0.46 UJ
COPPER, TOTAL	0.31 U	0.94	13.1	12.5	4.8 U	0.42 UJ
IRON, TOTAL	1780	917	1800 J	3040 J	794	593
LEAD, TOTAL	7.7	7.2 J	47.6	12.2	9 J	4.5
MAGNESIUM, TOTAL	58.6	37.2	111	49.4	51.2	32.7
MANGANESE, TOTAL	11.4	4.4	17.4	19.5	18.9	8.9
MERCURY, TOTAL	0.05 U	0.05 U	0.24 J	0.05 U	0.04 U	0.05 U
NICKEL, TOTAL	0.71 J	2.6	1.6	1.7	0.74 U	1.1
POTASSIUM, TOTAL	70	157 U	36.4 J	51.7 J	54.4	39.5 U
SELENIUM, TOTAL	0.3 UJ	0.28 U	0.26 UJ	0.31 UJ	0.27 U	0.28 U
SILVER, TOTAL	0.5 U	0.58 U	0.57 U	0.62 U	0.64 U	0.67 U
SODIUM, TOTAL	18.8 U	16 U	10.4 U	4.5 U	13.8 U	4.8 U
THALLIUM, TOTAL	0.12 U	0.24 UJ	0.1 U	0.12 U	0.11 UJ	0.11 U
VANADIUM, TOTAL	3.1	2.2	2.7	3.3	2.3	1.5 U
ZINC, TOTAL	2.6	3.4 U	76.5	20.4	8.6	2.1

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB03-06D	63-SB09-03D	63-SB24-03D	63-TW06-02D
DATE SAMPLED	11/11/95	11/10/95	11/07/95	11/10/95
DEPTH	11-13'	5-7'	5-7'	3-5'
VOLATILES (ug/kg)				
CHLOROMETHANE	14 U	11 U	12 U	13 U
BROMOMETHANE	14 U	11 U	12 U	13 U
VINYL CHLORIDE	14 U	11 U	12 U	13 U
CHLOROETHANE	14 U	11 U	12 U	13 U
METHYLENE CHLORIDE	14 U	11 U	12 U	13 U
ACETONE	14 U	11 UJ	12 U	13 U
CARBON DISULFIDE	14 U	11 U	12 U	13 U
1,1-DICHLOROETHENE	14 U	11 U	12 U	13 U
1,1-DICHLOROETHANE	14 U	11 U	12 U	13 U
1,2-DICHLOROETHENE (TOTAL)	14 U	11 U	12 U	13 U
CHLOROFORM	14 U	11 U	12 U	13 U
1,2-DICHLOROETHANE	14 U	11 U	12 U	13 U
2-BUTANONE	14 U	11 U	12 U	13 U
1,1,1-TRICHLOROETHANE	14 U	11 U	12 U	13 U
CARBON TETRACHLORIDE	14 U	11 U	12 U	13 U
BROMODICHLOROMETHANE	14 U	11 U	12 U	13 U
1,2-DICHLOROPROPANE	14 U	11 U	12 U	13 U
CIS-1,3-DICHLOROPROPENE	14 U	11 U	12 U	13 U
TRICHLOROETHENE	14 U	11 U	12 U	13 U
DIBROMOCHLOROMETHANE	14 U	11 U	12 U	13 U
1,1,2-TRICHLOROETHANE	14 U	11 U	12 U	13 U
BENZENE	14 U	11 U	12 U	13 U
TRANS-1,3-DICHLOROPROPENE	14 U	11 U	12 U	13 U
BROMOFORM	14 U	11 U	12 U	13 U
4-METHYL-2-PENTANONE	14 U	11 U	12 U	13 U
2-HEXANONE	14 U	11 U	12 U	13 U
TETRACHLOROETHENE	14 U	11 U	12 U	13 U
1,1,2,2-TETRACHLOROETHANE	14 U	11 U	12 U	13 U
TOLUENE	14 U	11 U	12 U	13 U
CHLOROBENZENE	14 U	11 U	12 U	13 U
ETHYLBENZENE	14 U	11 U	12 U	13 U
STYRENE	14 U	11 U	12 U	13 U
XYLENE (TOTAL)	14 U	11 U	12 U	13 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB03-06D	63-SB09-03D	63-SB24-03D	63-TW06-02D
DATE SAMPLED	11/11/95	11/10/95	11/07/95	11/10/95
DEPTH	11-13'	5-7'	5-7'	3-5'
SEMIVOLATILES (ug/kg)				
PHENOL	470 U	380 U	390 U	430 U
BIS(2-CHLOROETHYL)ETHER	470 U	380 U	390 U	430 U
2-CHLOROPHENOL	470 U	380 U	390 U	430 U
1,3-DICHLOROBENZENE	470 U	380 U	390 U	430 U
1,4-DICHLOROBENZENE	470 U	380 U	390 U	430 U
1,2-DICHLOROBENZENE	470 U	380 U	390 U	430 U
2-METHYLPHENOL	470 U	380 U	390 U	430 U
2,2'-OXYBIS(1-CHLOROPROPANE)	470 U	380 U	390 U	430 U
4-METHYLPHENOL	470 U	380 U	390 U	430 U
N-NITROSO-DI-N-PROPYLAMINE	470 U	380 U	390 U	430 U
HEXACHLOROETHANE	470 U	380 U	390 U	430 U
NITROBENZENE	470 U	380 U	390 U	430 U
ISOPHORONE	470 U	380 U	390 U	430 U
2-NITROPHENOL	470 U	380 U	390 U	430 U
2,4-DIMETHYLPHENOL	470 U	380 U	390 U	430 U
BIS(2-CHLOROETHOXY)METHANE	470 U	380 U	390 U	430 U
2,4-DICHLOROPHENOL	470 U	380 U	390 U	430 U
1,2,4-TRICHLOROBENZENE	470 U	380 U	390 U	430 U
NAPHTHALENE	470 U	380 U	390 U	430 U
4-CHLOROANILINE	470 U	380 U	390 U	430 U
HEXACHLOROBUTADIENE	470 U	380 U	390 U	430 U
4-CHLORO-3-METHYLPHENOL	470 U	380 U	390 U	430 U
2-METHYLNAPHTHALENE	470 U	380 U	390 U	430 U
HEXACHLOROCYCLOPENTADIENE	470 U	380 U	390 U	430 U
2,4,6-TRICHLOROPHENOL	470 U	380 U	390 U	430 U
2,4,5-TRICHLOROPHENOL	1200 U	940 U	980 U	1100 U
2-CHLORONAPHTHALENE	470 U	380 U	390 U	430 U
2-NITROANILINE	1200 U	940 U	980 U	1100 U
DIMETHYLPHTHALATE	470 U	380 U	390 U	430 U
ACENAPHTHYLENE	470 U	380 U	390 U	430 U
2,6-DINITROTOLUENE	470 U	380 U	390 U	430 U
3-NITROANILINE	1200 U	940 U	980 U	1100 U
ACENAPHTHENE	470 U	380 U	390 U	430 U
2,4-DINITROPHENOL	1200 UJ	940 U	980 U	1100 U
4-NITROPHENOL	1200 U	940 U	980 U	1100 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB03-06D	63-SB09-03D	63-SB24-03D	63-TW06-02D
DATE SAMPLED	11/11/95	11/10/95	11/07/95	11/10/95
DEPTH	11-13'	5-7'	5-7'	3-5'
SEMIVOLATILES (ug/kg) (cont)				
DIBENZOFURAN	470 U	380 U	390 U	430 U
2,4-DINITROTOLUENE	470 U	380 U	390 U	430 U
DIETHYLPHTHALATE	470 U	380 U	390 U	430 U
4-CHLOROPHENYL-PHENYLETHER	470 U	380 U	390 U	430 U
FLUORENE	470 U	380 U	390 U	430 U
4-NITROANILINE	1200 U	940 U	980 U	1100 U
4,6-DINITRO-2-METHYLPHENOL	1200 U	940 U	980 U	1100 U
N-NITROSODIPHENYLAMINE (1)	470 U	380 U	100 J	430 U
4-BROMOPHENYL-PHENYLETHER	470 U	380 U	390 U	430 U
HEXACHLOROBENZENE	470 U	380 U	390 U	430 U
PENTACHLOROPHENOL	1200 U	940 U	980 U	1100 U
PHENANTHRENE	470 U	380 U	390 U	430 U
ANTHRACENE	470 U	380 U	390 U	430 U
CARBAZOLE	470 U	380 U	390 U	430 U
DI-N-BUTYLPHTHALATE	470 U	380 U	390 U	430 U
FLUORANTHENE	470 U	380 U	390 U	430 U
PYRENE	470 U	380 U	390 U	430 U
BUTYLBENZYLPHTHALATE	470 U	380 U	390 U	430 U
3,3'-DICHLOROBENZIDINE	470 U	380 U	390 U	430 U
BENZO(A)ANTHRACENE	470 U	380 U	390 U	430 U
CHRYSENE	470 U	380 U	390 U	430 U
BIS(2-ETHYLHEXYL)PHTHALATE	60 J	380 U	2000	430 U
DI-N-OCTYL PHTHALATE	470 U	380 U	390 U	430 U
BENZO(B)FLUORANTHENE	470 U	380 U	390 U	430 U
BENZO(K)FLUORANTHENE	470 U	380 U	390 U	430 U
BENZO(A)PYRENE	470 U	380 U	390 U	430 U
INDENO(1,2,3-CD)PYRENE	470 U	380 U	390 U	430 U
DIBENZO(A,H)ANTHRACENE	470 U	380 U	390 U	430 U
BENZO(G,H,I)PERYLENE	470 U	380 U	390 U	430 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SB03-06D	63-SB09-03D	63-SB24-03D	63-TW06-02D
DATE SAMPLED	11/11/95	11/10/95	11/07/95	11/10/95
DEPTH	11-13'	5-7'	5-7'	3-5'
PEST/PCB's (ug/kg)				
ALPHA-BHC	2.3 U	1.9 U	2 U	2.1 U
BETA-BHC	2.3 U	1.9 U	2 U	2.1 U
DELTA-BHC	2.3 U	1.9 U	2 UJ	2.1 UJ
HEPTACHLOR	2.3 U	1.9 U	2 U	2.1 U
ALDRIN	2.3 U	1.9 U	2 U	2.1 U
HEPTACHLOR EPOXIDE	2.3 U	1.9 U	2 U	2.1 U
ENDOSULFAN I	2.3 U	1.9 U	2 U	2.1 U
DIELDRIN	4.7 U	3.7 U	3.9 U	4.2 U
4,4'-DDE	4.7 U	3.7 U	3.9 U	4.2 UJ
ENDRIN	4.7 U	3.7 U	3.9 UJ	4.2 U
4,4'-DDD	4.7 U	3.7 U	3.9 U	4.2 U
ENDOSULFAN SULFATE	4.7 U	3.7 U	3.9 U	4.2 U
4,4'-DDT	4.7 U	3.7 U	3.9 U	4.2 U
METHOXYCHLOR	23 U	19 U	20 U	21 U
ENDRIN KETONE	4.7 U	3.7 U	3.9 U	4.2 U
ENDRIN ALDEHYDE	4.7 U	3.7 U	3.9 U	4.2 U
ALPHA-CHLORDANE	2.3 U	1.9 U	2 U	2.1 U
GAMMA-CHLORDANE	2.3 U	1.9 U	2 U	2.1 U
TOXAPHENE	230 U	190 U	200 U	210 U
AROCLOR-1016	47 U	37 U	39 U	42 U
AROCLOR-1221	93 U	75 U	79 U	84 U
AROCLOR-1232	47 U	37 U	39 U	42 U
AROCLOR-1242	47 U	37 U	39 U	42 U
AROCLOR-1248	47 U	37 U	39 U	42 U
AROCLOR-1254	47 U	37 U	39 U	42 U
AROCLOR-1260	47 U	37 U	39 U	42 U

SITE 63, VERONA LOOP DUMP
SUBSURFACE SOIL - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SB03-06D	63-SB09-03D	63-SB24-03D	63-TW06-02D
DATE SAMPLED	11/11/95	11/10/95	11/07/95	11/10/95
DEPTH	11-3'	5-7'	5-7'	3-5'
TOTAL METALS (mg/kg)				
ALUMINUM, TOTAL	9700	6480	4490 J	18000 J
ANTIMONY, TOTAL	2.5 R	2.5 UJ	2.7 UJ	4.2 U
ARSENIC, TOTAL	2.4 J	2.7 J	0.71	1.6 J
BARIUM, TOTAL	11.4	8	8.1	32.7
BERYLLIUM, TOTAL	0.11 J	0.06 U	0.07 U	0.18 U
CADMIUM, TOTAL	0.84 U	0.85 U	0.93 U	0.38 U
CALCIUM, TOTAL	33.7 U	7.1	67.8 U	86.3
CHROMIUM, TOTAL	19.3 J	9.1	4.5	11.6
COBALT, TOTAL	0.44 U	0.45 U	0.49 U	1.6
COPPER, TOTAL	7.1	0.41 U	0.44 U	1.9
IRON, TOTAL	13100 J	6330	2830 J	5000
LEAD, TOTAL	8.7 J	6.1	2.3	11.4 J
MAGNESIUM, TOTAL	395	179	78.9	317
MANGANESE, TOTAL	8.1 J	4	2.4	7.3
MERCURY, TOTAL	0.054 U	0.05 U	0.05 U	0.06 U
NICKEL, TOTAL	0.83	2.6 J	9.6	4.8
POTASSIUM, TOTAL	831	488	71 J	142 U
SELENIUM, TOTAL	0.33 U	0.28 UJ	0.28 UJ	0.91
SILVER, TOTAL	0.64 U	0.65 U	0.71 U	0.52 U
SODIUM, TOTAL	34.6	23.4 U	5.1 U	22.8 U
THALLIUM, TOTAL	0.13 U	0.11 U	0.11 U	0.31 UJ
VANADIUM, TOTAL	19.8 J	17.5	7.4	15.1
ZINC, TOTAL	9.8	2	1.6 U	8.6

GROUNDWATER

SITE 63, VERONA LOOP DUMP
GROUNDWATER - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-GW01-01D	63-TW04-01D
DATE SAMPLED	11/15/95	11/13/95
VOLATILES (ug/L)		
CHLOROMETHANE	10 U	10 U
BROMOMETHANE	10 U	10 U
VINYL CHLORIDE	10 U	10 U
CHLOROETHANE	10 U	10 U
METHYLENE CHLORIDE	10 U	10 U
ACETONE	10 U	10 U
CARBON DISULFIDE	10 U	10 U
1,1-DICHLOROETHENE	10 U	10 U
1,1-DICHLOROETHANE	10 U	10 U
1,2-DICHLOROETHENE (TOTAL)	10 U	10 U
CHLOROFORM	10 U	10 U
1,2-DICHLOROETHANE	10 U	10 U
2-BUTANONE	10 U	10 U
1,1,1-TRICHLOROETHANE	10 U	10 U
CARBON TETRACHLORIDE	10 U	10 U
BROMODICHLOROMETHANE	10 U	10 U
1,2-DICHLOROPROPANE	10 U	10 U
CIS-1,3-DICHLOROPROPENE	10 U	10 U
TRICHLOROETHENE	10 U	10 U
DIBROMOCHLOROMETHANE	10 U	10 U
1,1,2-TRICHLOROETHANE	10 U	10 U
BENZENE	10 U	10 U
TRANS-1,3-DICHLOROPROPENE	10 U	10 U
BROMOFORM	10 U	10 U
4-METHYL-2-PENTANONE	10 U	10 U
2-HEXANONE	10 U	10 U
TETRACHLOROETHENE	10 U	10 U
1,1,2,2-TETRACHLOROETHANE	10 U	10 U
TOLUENE	10 U	10 U
CHLOROBENZENE	10 U	10 U
ETHYLBENZENE	10 U	10 U
STYRENE	10 U	10 U
XYLENE (TOTAL)	10 U	10 U

SITE 63, VERONA LOOP DUMP
GROUNDWATER - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-GW01-01D	63-TW04-01D
DATE SAMPLED	11/15/95	11/13/95
SEMIVOLATILES (ug/L)		
PHENOL	9 U	10 U
BIS(2-CHLOROETHYL)ETHER	9 U	10 U
2-CHLOROPHENOL	9 U	10 U
1,3-DICHLOROBENZENE	9 U	10 U
1,4-DICHLOROBENZENE	9 U	10 U
1,2-DICHLOROBENZENE	9 U	10 U
2-METHYLPHENOL	9 U	10 U
2,2'-OXYBIS(1-CHLOROPROPANE)	9 U	10 U
4-METHYLPHENOL	9 U	10 U
N-NITROSO-DI-N-PROPYLAMINE	9 U	10 U
HEXACHLOROETHANE	9 U	10 U
NITROBENZENE	9 U	10 U
ISOPHORONE	9 U	10 U
2-NITROPHENOL	9 U	10 U
2,4-DIMETHYLPHENOL	9 U	10 U
BIS(2-CHLOROETHOXY)METHANE	9 U	10 U
2,4-DICHLOROPHENOL	9 U	10 U
1,2,4-TRICHLOROBENZENE	9 U	10 U
NAPHTHALENE	9 U	10 U
4-CHLOROANILINE	9 U	10 U
HEXACHLOROBUTADIENE	9 U	10 U
4-CHLORO-3-METHYLPHENOL	9 U	10 U
2-METHYLNAPHTHALENE	9 U	10 U
HEXACHLOROCYCLOPENTADIENE	9 U	10 U
2,4,6-TRICHLOROPHENOL	9 U	10 U
2,4,5-TRICHLOROPHENOL	24 U	26 U
2-CHLORONAPHTHALENE	9 U	10 U
2-NITROANILINE	24 U	26 U
DIMETHYLPHTHALATE	9 U	10 U
ACENAPHTHYLENE	9 U	10 U
2,6-DINITROTOLUENE	9 U	10 U
3-NITROANILINE	24 U	26 U
ACENAPHTHENE	9 U	10 U
2,4-DINITROPHENOL	24 U	26 U
4-NITROPHENOL	24 U	26 U

SITE 63, VERONA LOOP DUMP
GROUNDWATER - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-GW01-01D	63-TW04-01D
DATE SAMPLED	11/15/95	11/13/95
SEMIVOLATILES(ug/L) (cont)		
DIBENZOFURAN	9 U	10 U
2,4-DINITROTOLUENE	9 U	10 U
DIETHYLPHTHALATE	9 U	10 U
4-CHLOROPHENYL-PHENYLETHER	9 U	10 U
FLUORENE	9 U	10 U
4-NITROANILINE	24 U	26 U
4,6-DINITRO-2-METHYLPHENOL	24 U	26 U
N-NITROSODIPHENYLAMINE (1)	9 U	10 U
4-BROMOPHENYL-PHENYLETHER	9 U	10 U
HEXACHLOROBENZENE	9 U	10 U
PENTACHLOROPHENOL	24 U	26 U
PHENANTHRENE	9 U	10 U
ANTHRACENE	9 U	10 U
CARBAZOLE	9 U	10 U
DI-N-BUTYLPHTHALATE	9 U	10 U
FLUORANTHENE	9 U	10 U
PYRENE	9 U	10 U
BUTYLBENZYLPHTHALATE	9 U	10 U
3,3'-DICHLOROBENZIDINE	9 U	10 U
BENZO(A)ANTHRACENE	9 U	10 U
CHRYSENE	9 U	10 U
BIS(2-ETHYLHEXYL)PHTHALATE	1 J	10 U
DI-N-OCTYL PHTHALATE	9 U	10 U
BENZO(B)FLUORANTHENE	9 U	10 U
BENZO(K)FLUORANTHENE	9 U	10 U
BENZO(A)PYRENE	9 U	10 U
INDENO(1,2,3-CD)PYRENE	9 U	10 U
DIBENZO(A,H)ANTHRACENE	9 U	10 U
BENZO(G,H,I)PERYLENE	9 U	10 U

SITE 63, VERONA LOOP DUMP
GROUNDWATER - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-GW01-01D	63-TW04-01D
DATE SAMPLED	11/15/95	11/13/95
PEST/PCB's (ug/L)		
ALPHA-BHC	0.051 UJ	0.052 UJ
BETA-BHC	0.051 UJ	0.052 U
DELTA-BHC	0.051 UJ	0.052 UJ
HEPTACHLOR	0.051 UJ	0.052 U
ALDRIN	0.051 UJ	0.052 U
HEPTACHLOR EPOXIDE	0.051 UJ	0.052 U
ENDOSULFAN I	0.051 UJ	0.052 U
DIELDRIN	0.1 UJ	0.1 U
4,4'-DDE	0.1 UJ	0.1 U
ENDRIN	0.1 UJ	0.1 U
4,4'-DDD	0.1 UJ	0.1 UJ
ENDOSULFAN SULFATE	0.1 UJ	0.1 U
4,4'-DDT	0.1 UJ	0.1 U
METHOXYCHLOR	0.51 UJ	0.52 UJ
ENDRIN KETONE	0.1 UJ	0.1 U
ENDRIN ALDEHYDE	0.1 UJ	0.1 U
ALPHA-CHLORDANE	0.051 UJ	0.052 U
GAMMA-CHLORDANE	0.051 UJ	0.052 U
TOXAPHENE	5.1 UJ	5.2 U
AROCLOR-1016	1 UJ	1 U
AROCLOR-1221	2 UJ	2.1 U
AROCLOR-1232	1 UJ	1 U
AROCLOR-1242	1 UJ	1 U
AROCLOR-1248	1 UJ	1 U
AROCLOR-1254	1 UJ	1 U
AROCLOR-1260	1 UJ	1 U

SITE 63, VERONA LOOP DUMP
GROUNDWATER - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-GW01-01D	63-TW04-01D
DATE SAMPLED	11/15/95	11/13/95
TOTAL METALS (ug/L)		
ALUMINUM, TOTAL	253	277
ANTIMONY, TOTAL	23.5 U	23.5 U
ARSENIC, TOTAL	1.6 U	1.6 U
BARIUM, TOTAL	18.3	67.6
BERYLLIUM, TOTAL	1 U	1 U
CADMIUM, TOTAL	2.1 U	4.2 U
CALCIUM, TOTAL	906 J	1450
CHROMIUM, TOTAL	2.1 U	4.6 U
COBALT, TOTAL	3.4 U	3.4 U
COPPER, TOTAL	1.5 U	5.3 U
IRON, TOTAL	105	549
LEAD, TOTAL	1 U	1 U
MAGNESIUM, TOTAL	515	702
MANGANESE, TOTAL	1.8	23.4
MERCURY, TOTAL	0.1 U	0.1 U
NICKEL, TOTAL	11.1 U	80.7
POTASSIUM, TOTAL	1110	912
SELENIUM, TOTAL	1.5 U	1.5 U
SILVER, TOTAL	2.9 U	3.2 U
SODIUM, TOTAL	2750	4910
THALLIUM, TOTAL	0.6 U	0.6 UJ
VANADIUM, TOTAL	3.2 U	3.2 U
ZINC, TOTAL	9 U	3.6 U

SURFACE WATER

SITE 63, VERONA LOOP DUMP
SURFACE WATER - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SW03D
DATE SAMPLED	11/10/95
VOLATILES (ug/L)	
CHLOROMETHANE	10 U
BROMOMETHANE	10 U
VINYL CHLORIDE	10 U
CHLOROETHANE	10 U
METHYLENE CHLORIDE	10 U
ACETONE	10 UJ
CARBON DISULFIDE	10 U
1,1-DICHLOROETHENE	10 U
1,1-DICHLOROETHANE	10 U
1,2-DICHLOROETHENE (TOTAL)	10 U
CHLOROFORM	10 U
1,2-DICHLOROETHANE	10 U
2-BUTANONE	10 U
1,1,1-TRICHLOROETHANE	10 U
CARBON TETRACHLORIDE	10 U
BROMODICHLOROMETHANE	10 U
1,2-DICHLOROPROPANE	10 U
CIS-1,3-DICHLOROPROPENE	10 U
TRICHLOROETHENE	10 U
DIBROMOCHLOROMETHANE	10 U
1,1,2-TRICHLOROETHANE	10 U
BENZENE	10 U
TRANS-1,3-DICHLOROPROPENE	10 U
BROMOFORM	10 U
4-METHYL-2-PENTANONE	10 U
2-HEXANONE	10 U
TETRACHLOROETHENE	10 U
1,1,2,2-TETRACHLOROETHANE	10 U
TOLUENE	10 U
CHLOROBENZENE	10 U
ETHYLBENZENE	10 U
STYRENE	10 U
XYLENE (TOTAL)	10 U

SITE 63, VERONA LOOP DUMP
SURFACE WATER - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SW03D
DATE SAMPLED	11/10/95
SEMIVOLATILES (ug/L)	
PHENOL	10 U
BIS(2-CHLOROETHYL)ETHER	10 U
2-CHLOROPHENOL	10 U
1,3-DICHLOROBENZENE	10 U
1,4-DICHLOROBENZENE	10 U
1,2-DICHLOROBENZENE	10 U
2-METHYLPHENOL	10 U
2,2'-OXYBIS(1-CHLOROPROPANE)	10 U
4-METHYLPHENOL	10 U
N-NITROSO-DI-N-PROPYLAMINE	10 U
HEXACHLOROETHANE	10 U
NITROBENZENE	10 U
ISOPHORONE	10 U
2-NITROPHENOL	10 U
2,4-DIMETHYLPHENOL	10 U
BIS(2-CHLOROETHOXY)METHANE	10 U
2,4-DICHLOROPHENOL	10 U
1,2,4-TRICHLOROBENZENE	10 U
NAPHTHALENE	10 U
4-CHLOROANILINE	10 U
HEXACHLOROBUTADIENE	10 U
4-CHLORO-3-METHYLPHENOL	10 U
2-METHYLNAPHTHALENE	10 U
HEXACHLOROCYCLOPENTADIENE	10 U
2,4,6-TRICHLOROPHENOL	10 U
2,4,5-TRICHLOROPHENOL	25 U
2-CHLORONAPHTHALENE	10 U
2-NITROANILINE	25 U
DIMETHYLPHTHALATE	10 U
ACENAPHTHYLENE	10 U
2,6-DINITROTOLUENE	10 U
3-NITROANILINE	25 U
ACENAPHTHENE	10 U
2,4-DINITROPHENOL	25 U
4-NITROPHENOL	25 U
DIBENZOFURAN	10 U

SITE 63, VERONA LOOP DUMP
SURFACE WATER - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SW03D
DATE SAMPLED	11/10/95
SEMIVOLATILES (ug/L) (cont)	
2,4-DINITROTOLUENE	10 U
DIETHYLPHTHALATE	10 U
4-CHLOROPHENYL-PHENYLETHER	10 U
FLUORENE	10 U
4-NITROANILINE	25 U
4,6-DINITRO-2-METHYLPHENOL	25 U
N-NITROSODIPHENYLAMINE (1)	10 U
4-BROMOPHENYL-PHENYLETHER	10 U
HEXACHLOROBENZENE	10 U
PENTACHLOROPHENOL	25 U
PHENANTHRENE	10 U
ANTHRACENE	10 U
CARBAZOLE	10 U
DI-N-BUTYLPHTHALATE	10 U
FLUORANTHENE	10 U
PYRENE	10 U
BUTYLBENZYLPHTHALATE	10 U
3,3'-DICHLOROBENZIDINE	10 U
BENZO(A)ANTHRACENE	10 U
CHRYSENE	10 U
BIS(2-ETHYLHEXYL)PHTHALATE	10 U
DI-N-OCTYL PHTHALATE	10 U
BENZO(B)FLUORANTHENE	10 U
BENZO(K)FLUORANTHENE	10 U
BENZO(A)PYRENE	10 U
INDENO(1,2,3-CD)PYRENE	10 U
DIBENZO(A,H)ANTHRACENE	10 U
BENZO(G,H,I)PERYLENE	10 U

SITE 63, VERONA LOOP DUMP
SURFACE WATER - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SW03D
DATE SAMPLED	11/10/95
PEST/PCB's (ug/L)	
ALPHA-BHC	0.048 UJ
BETA-BHC	0.048 UJ
DELTA-BHC	0.048 UJ
HEPTACHLOR	0.048 UJ
ALDRIN	0.048 UJ
HEPTACHLOR EPOXIDE	0.048 UJ
ENDOSULFAN I	0.048 UJ
DIELDRIN	0.097 UJ
4,4'-DDE	0.097 UJ
ENDRIN	0.097 UJ
4,4'-DDD	0.097 UJ
ENDOSULFAN SULFATE	0.097 UJ
4,4'-DDT	0.097 UJ
METHOXYCHLOR	0.48 UJ
ENDRIN KETONE	0.097 UJ
ENDRIN ALDEHYDE	0.097 UJ
ALPHA-CHLORDANE	0.048 UJ
GAMMA-CHLORDANE	0.048 UJ
TOXAPHENE	4.8 UJ
AROCLOR-1016	0.97 UJ
AROCLOR-1221	1.9 UJ
AROCLOR-1232	0.97 UJ
AROCLOR-1242	0.97 UJ
AROCLOR-1248	0.97 UJ
AROCLOR-1254	0.97 UJ
AROCLOR-1260	0.97 UJ

SITE 63, VERONA LOOP DUMP
SURFACE WATER - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SW03D	
DATE SAMPLED	11/10/95	
TOTAL METALS (ug/L)		
ALUMINUM, TOTAL	616	
ANTIMONY, TOTAL	23.5	U
ARSENIC, TOTAL	1.6	U
BARIUM, TOTAL	25.3	
BERYLLIUM, TOTAL	1	U
CADMIUM, TOTAL	4.2	U
CALCIUM, TOTAL	1920	
CHROMIUM, TOTAL	4.6	U
COBALT, TOTAL	3.4	U
COPPER, TOTAL	2	U
IRON, TOTAL	380	
LEAD, TOTAL	1.4	
MAGNESIUM, TOTAL	736	
MANGANESE, TOTAL	8.3	
MERCURY, TOTAL	0.1	U
NICKEL, TOTAL	11.1	U
POTASSIUM, TOTAL	787	U
SELENIUM, TOTAL	1.5	U
SILVER, TOTAL	3.2	U
SODIUM, TOTAL	4270	
THALLIUM, TOTAL	0.6	UJ
VANADIUM, TOTAL	3.2	U
ZINC, TOTAL	8.2	

SEDIMENT

SITE 63, VERONA LOOP DUMP
SEDIMENT - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SD03-01D
DATE SAMPLED	11/11/95
DEPTH	0-6"
VOLATILES (ug/kg)	
CHLOROMETHANE	15 U
BROMOMETHANE	15 U
VINYL CHLORIDE	15 U
CHLOROETHANE	15 U
METHYLENE CHLORIDE	15 U
ACETONE	15 U
CARBON DISULFIDE	15 U
1,1-DICHLOROETHENE	15 U
1,1-DICHLOROETHANE	15 U
1,2-DICHLOROETHENE (TOTAL)	15 U
CHLOROFORM	15 U
1,2-DICHLOROETHANE	15 U
2-BUTANONE	15 U
1,1,1-TRICHLOROETHANE	15 U
CARBON TETRACHLORIDE	15 U
BROMODICHLOROMETHANE	15 U
1,2-DICHLOROPROPANE	15 U
CIS-1,3-DICHLOROPROPENE	15 U
TRICHLOROETHENE	15 U
DIBROMOCHLOROMETHANE	15 U
1,1,2-TRICHLOROETHANE	15 U
BENZENE	15 U
TRANS-1,3-DICHLOROPROPENE	15 U
BROMOFORM	15 U
4-METHYL-2-PENTANONE	15 U
2-HEXANONE	15 U
TETRACHLOROETHENE	15 U
1,1,2,2-TETRACHLOROETHANE	15 U
TOLUENE	15 U
CHLOROBENZENE	15 U
ETHYLBENZENE	15 U
STYRENE	15 U
XYLENE (TOTAL)	15 U

SITE 63, VERONA LOOP DUMP
SEDIMENT - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SD03-01D
DATE SAMPLED	11/11/95
DEPTH	0-6"
SEMIVOLATILES (ug/kg)	
PHENOL	490 U
BIS(2-CHLOROETHYL)ETHER	490 U
2-CHLOROPHENOL	490 U
1,3-DICHLOROBENZENE	490 U
1,4-DICHLOROBENZENE	490 U
1,2-DICHLOROBENZENE	490 U
2-METHYLPHENOL	490 U
2,2'-OXYBIS(1-CHLOROPROPANE)	490 U
4-METHYLPHENOL	490 U
N-NITROSO-DI-N-PROPYLAMINE	490 U
HEXACHLOROETHANE	490 U
NITROBENZENE	490 U
ISOPHORONE	490 U
2-NITROPHENOL	490 U
2,4-DIMETHYLPHENOL	490 U
BIS(2-CHLOROETHOXY)METHANE	490 U
2,4-DICHLOROPHENOL	490 U
1,2,4-TRICHLOROBENZENE	490 U
NAPHTHALENE	490 U
4-CHLOROANILINE	490 U
HEXACHLOROBUTADIENE	490 U
4-CHLORO-3-METHYLPHENOL	490 U
2-METHYLNAPHTHALENE	490 U
HEXACHLOROCYCLOPENTADIENE	490 U
2,4,6-TRICHLOROPHENOL	490 U
2,4,5-TRICHLOROPHENOL	1200 U
2-CHLORONAPHTHALENE	490 U
2-NITROANILINE	1200 U
DIMETHYLPHTHALATE	490 U
ACENAPHTHYLENE	490 U
2,6-DINITROTOLUENE	490 U
3-NITROANILINE	1200 U
ACENAPHTHENE	490 U
2,4-DINITROPHENOL	1200 U
4-NITROPHENOL	1200 U

SITE 63, VERONA LOOP DUMP
SEDIMENT - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SD03-01D
DATE SAMPLED	11/11/95
DEPTH	0-6"
SEMIVOLATILES (ug/kg) (cont)	
DIBENZOFURAN	490 U
2,4-DINITROTOLUENE	490 U
DIETHYLPHTHALATE	490 U
4-CHLOROPHENYL-PHENYLETHER	490 U
FLUORENE	490 U
4-NITROANILINE	1200 U
4,6-DINITRO-2-METHYLPHENOL	1200 U
N-NITROSODIPHENYLAMINE (1)	490 U
4-BROMOPHENYL-PHENYLETHER	490 U
HEXACHLOROBENZENE	490 U
PENTACHLOROPHENOL	1200 U
PHENANTHRENE	490 U
ANTHRACENE	490 U
CARBAZOLE	490 U
DI-N-BUTYLPHTHALATE	490 U
FLUORANTHENE	490 U
PYRENE	490 U
BUTYLBENZYLPHTHALATE	490 U
3,3'-DICHLOROBENZIDINE	490 U
BENZO(A)ANTHRACENE	490 U
CHRYSENE	490 U
BIS(2-ETHYLHEXYL)PHTHALATE	490 U
DI-N-OCTYL PHTHALATE	490 U
BENZO(B)FLUORANTHENE	490 U
BENZO(K)FLUORANTHENE	490 U
BENZO(A)PYRENE	490 U
INDENO(1,2,3-CD)PYRENE	490 U
DIBENZO(A,H)ANTHRACENE	490 U
BENZO(G,H,I)PERYLENE	490 U

SITE 63, VERONA LOOP DUMP
SEDIMENT - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	63-SD03-01D
DATE SAMPLED	11/11/95
DEPTH	0-6"
PEST/PCB's (ug/kg)	
ALPHA-BHC	2.4 UJ
BETA-BHC	2.4 UJ
DELTA-BHC	2.4 UJ
HEPTACHLOR	2.4 UJ
ALDRIN	2.4 UJ
HEPTACHLOR EPOXIDE	2.4 UJ
ENDOSULFAN I	2.4 UJ
DIELDRIN	4.9 UJ
4,4'-DDE	4.9 UJ
ENDRIN	4.9 UJ
4,4'-DDD	4.9 UJ
ENDOSULFAN SULFATE	4.9 UJ
4,4'-DDT	4.9 UJ
METHOXYCHLOR	24 UJ
ENDRIN KETONE	4.9 UJ
ENDRIN ALDEHYDE	4.9 UJ
ALPHA-CHLORDANE	2.4 UJ
GAMMA-CHLORDANE	2.4 UJ
TOXAPHENE	240 UJ
AROCLOR-1016	49 UJ
AROCLOR-1221	98 UJ
AROCLOR-1232	49 UJ
AROCLOR-1242	49 UJ
AROCLOR-1248	49 UJ
AROCLOR-1254	49 UJ
AROCLOR-1260	49 UJ

SITE 63, VERONA LOOP DUMP
SEDIMENT - DUPLICATE SUMMARY
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	63-SD03-01D
DATE SAMPLED	11/11/95
DEPTH	0-6"
TOTAL METALS (mg/kg)	
ALUMINUM, TOTAL	5480
ANTIMONY, TOTAL	2.9 UJ
ARSENIC, TOTAL	0.36 UJ
BARIUM, TOTAL	13.5
BERYLLIUM, TOTAL	0.07 U
CADMIUM, TOTAL	0.99 U
CALCIUM, TOTAL	97.7
CHROMIUM, TOTAL	2.9
COBALT, TOTAL	0.52 U
COPPER, TOTAL	0.47 U
IRON, TOTAL	962
LEAD, TOTAL	4.4
MAGNESIUM, TOTAL	132
MANGANESE, TOTAL	3.7
MERCURY, TOTAL	0.06 U
NICKEL, TOTAL	1.3 J
POTASSIUM, TOTAL	130
SELENIUM, TOTAL	0.33 UJ
SILVER, TOTAL	0.75 U
SODIUM, TOTAL	12 U
THALLIUM, TOTAL	0.13 U
VANADIUM, TOTAL	5.7
ZINC, TOTAL	6.1

APPENDIX K
QA/QC SAMPLING RESULTS

SITE 63, VERONA LOOP DUMP
SOIL QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	340-FB-01	63-SIER-01	63-SIER-02	63-SIER-03	63-SIER-04	63-SIER-05
DATE SAMPLED	11/14/95	11/07/95	11/07/95	11/08/95	11/09/95	11/09/95
VOLATILES (ug/L)						
CHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U
BROMOMETHANE	10 U	10 U	10 U	10 U	10 U	10 U
VINYL CHLORIDE	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U
METHYLENE CHLORIDE	10 U	10 U	10 U	10 U	13 J	10 U
ACETONE	36 J	10 U	10 U	10 U	10 U	10 U
CARBON DISULFIDE	10 U	10 U	10 U	10 U	10 U	10 U
1,1-DICHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U
1,1-DICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROETHENE (TOTAL)	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROFORM	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U
2-BUTANONE	10 U	10 UJ	10 U	10 U	10 U	10 U
1,1,1-TRICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U
CARBON TETRACHLORIDE	10 U	10 U	10 U	10 U	10 U	10 U
BROMODICHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROPROPANE	10 U	10 U	10 U	10 U	10 U	10 U
CIS-1,3-DICHLOROPROPENE	10 U	10 U	10 U	10 U	10 U	10 U
TRICHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U
DIBROMOCHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-TRICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U
BENZENE	10 U	10 U	10 U	10 U	10 U	10 U
TRANS-1,3-DICHLOROPROPENE	10 U	10 U	10 U	10 U	10 U	10 U
BROMOFORM	10 U	10 U	10 U	10 U	10 U	10 U
4-METHYL-2-PENTANONE	10 U	10 U	10 U	10 U	10 U	10 U
2-HEXANONE	10 U	10 U	10 U	10 U	10 U	10 U
TETRACHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U
TOLUENE	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROBENZENE	10 U	10 U	10 U	10 U	10 U	10 U
ETHYLBENZENE	10 U	10 U	10 U	10 U	10 U	10 U
STYRENE	10 U	10 U	10 U	10 U	10 U	10 U
XYLENE (TOTAL)	10 U	10 U	10 U	10 U	10 U	10 U

SITE 63, VERONA LOOP DUMP
SOIL QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	340-FB-01	63-SIER-01	63-SIER-02	63-SIER-03	63-SIER-04	63-SIER-05
DATE SAMPLED	11/14/95	11/07/95	11/07/95	11/08/95	11/09/95	11/09/95
SEMIVOLATILES (ug/L)						
PHENOL	10 U	10 U	10 U	10 U	10 U	10 U
BIS(2-CHLOROETHYL)ETHER	10 U	10 U	10 U	10 U	10 U	10 U
2-CHLOROPHENOL	10 U	10 U	10 U	10 U	10 U	10 U
1,3-DICHLOROBENZENE	10 U	10 U	10 U	10 U	10 U	10 U
1,4-DICHLOROBENZENE	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROBENZENE	10 U	10 U	10 U	10 U	10 U	10 U
2-METHYLPHENOL	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-OXYBIS(1-CHLOROPROPANE)	10 U	10 U	10 U	10 U	10 U	10 U
4-METHYLPHENOL	10 U	10 U	10 U	10 U	10 U	10 U
N-NITROSO-DI-N-PROPYLAMINE	10 U	10 U	10 U	10 U	10 U	10 U
HEXACHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U
NITROBENZENE	10 U	10 U	10 U	10 U	10 U	10 U
ISOPHORONE	10 U	10 U	10 U	10 U	10 U	10 U
2-NITROPHENOL	10 U	10 U	10 U	10 U	10 U	10 U
2,4-DIMETHYLPHENOL	10 U	10 U	10 U	10 U	10 U	10 U
BIS(2-CHLOROETHOXY)METHANE	10 U	10 U	10 U	10 U	10 U	10 U
2,4-DICHLOROPHENOL	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-TRICHLOROBENZENE	10 U	10 U	10 U	10 U	10 U	10 U
NAPHTHALENE	10 U	10 U	10 U	10 U	10 U	10 U
4-CHLOROANILINE	10 U	10 U	10 U	10 U	10 U	10 U
HEXACHLOROBUTADIENE	10 U	10 U	10 U	10 U	10 U	10 U
4-CHLORO-3-METHYLPHENOL	10 U	10 U	10 U	10 U	10 U	10 U
2-METHYLNAPHTHALENE	10 U	10 U	10 U	10 U	10 U	10 U
HEXACHLOROCYCLOPENTADIENE	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-TRICHLOROPHENOL	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-TRICHLOROPHENOL	25 U	25 U	24 U	24 U	25 U	25 U
2-CHLORONAPHTHALENE	10 U	10 U	10 U	10 U	10 U	10 U
2-NITROANILINE	25 U	25 U	24 U	24 U	25 U	25 U
DIMETHYLPHTHALATE	10 U	10 U	10 U	10 U	10 U	10 U
ACENAPHTHYLENE	10 U	10 U	10 U	10 U	10 U	10 U
2,6-DINITROTOLUENE	10 U	10 U	10 U	10 U	10 U	10 U
3-NITROANILINE	25 U	25 U	24 U	24 U	25 U	25 U
ACENAPHTHENE	10 U	10 U	10 U	10 U	10 U	10 U
2,4-DINITROPHENOL	25 U	25 U	24 U	24 U	25 U	25 U
4-NITROPHENOL	25 U	25 U	24 U	24 U	25 U	25 U
DIBENZOFURAN	10 U	10 U	10 U	10 U	10 U	10 U

SITE 63, VERONA LOOP DUMP
SOIL QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	340-FB-01	63-SIER-01	63-SIER-02	63-SIER-03	63-SIER-04	63-SIER-05
DATE SAMPLED	11/14/95	11/07/95	11/07/95	11/08/95	11/09/95	11/09/95
SEMIVOLATILES (ug/L) (cont)						
2,4-DINITROTOLUENE	10 U	10 U	10 U	10 U	10 U	10 U
DIETHYLPHTHALATE	10 U	10 U	10 U	10 U	10 U	10 U
4-CHLOROPHENYL-PHENYLETHER	10 U	10 U	10 U	10 U	10 U	10 U
FLUORENE	10 U	10 U	10 U	10 U	10 U	10 U
4-NITROANILINE	25 U	25 U	24 U	24 U	25 U	25 U
4,6-DINITRO-2-METHYLPHENOL	25 U	25 U	24 U	24 U	25 U	25 U
N-NITROSODIPHENYLAMINE (1)	10 U	10 U	10 U	10 U	10 U	10 U
4-BROMOPHENYL-PHENYLETHER	10 U	10 U	10 U	10 U	10 U	10 U
HEXACHLOROBENZENE	10 U	10 U	10 U	10 U	10 U	10 U
PENTACHLOROPHENOL	25 U	25 U	24 U	24 U	25 U	25 U
PHENANTHRENE	10 U	10 U	10 U	10 U	10 U	10 U
ANTHRACENE	10 U	10 U	10 U	10 U	10 U	10 U
CARBAZOLE	10 U	10 U	10 U	10 U	10 U	10 U
DI-N-BUTYLPHTHALATE	10 U	10 U	10 U	10 U	10 U	10 U
FLUORANTHENE	10 U	10 U	10 U	10 U	10 U	10 U
PYRENE	10 U	10 U	10 U	10 U	10 U	10 U
BUTYLBENZYLPHTHALATE	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-DICHLOROBENZIDINE	10 U	10 U	10 U	10 U	10 U	10 U
BENZO(A)ANTHRACENE	10 U	10 U	10 U	10 U	10 U	10 U
CHRYSENE	10 U	10 U	10 U	10 U	10 U	10 U
BIS(2-ETHYLHEXYL)PHTHALATE	56 J	10 U	10 U	10 U	10 U	10 U
DI-N-OCTYL PHTHALATE	10 U	10 U	10 U	10 U	10 U	10 U
BENZO(B)FLUORANTHENE	10 U	10 U	10 U	10 U	10 U	10 U
BENZO(K)FLUORANTHENE	10 U	10 U	10 U	10 U	10 U	10 U
BENZO(A)PYRENE	10 U	10 U	10 U	10 U	10 U	10 U
INDENO(1,2,3-CD)PYRENE	10 U	10 U	10 U	10 U	10 U	10 U
DIBENZO(A,H)ANTHRACENE	10 U	10 U	10 U	10 U	10 U	10 U
BENZO(G,H,I)PERYLENE	10 U	10 U	10 U	10 U	10 U	10 U

SITE 63, VERONA LOOP DUMP
SOIL QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	340-FB-01	63-SIER-01	63-SIER-02	63-SIER-03	63-SIER-04	63-SIER-05
DATE SAMPLED	11/14/95	11/07/95	11/07/95	11/08/95	11/09/95	11/09/95
PESTICIDE/PCBS (ug/L)						
ALPHA-BHC	0.048 U	0.051 U	0.048 U	0.048 U	0.05 U	0.052 UJ
BETA-BHC	0.048 U	0.051 U	0.048 U	0.048 U	0.05 U	0.052 UJ
DELTA-BHC	0.048 UJ	0.051 UJ	0.048 UJ	0.048 UJ	0.05 UJ	0.052 UJ
HEPTACHLOR	0.048 U	0.051 U	0.048 U	0.048 U	0.05 U	0.052 UJ
ALDRIN	0.048 U	0.051 U	0.048 U	0.048 U	0.05 U	0.052 UJ
HEPTACHLOR EPOXIDE	0.048 U	0.051 U	0.048 U	0.048 U	0.05 U	0.052 UJ
ENDOSULFAN I	0.048 U	0.051 U	0.048 U	0.048 U	0.05 U	0.052 UJ
DIELDRIN	0.096 U	0.1 U	0.096 U	0.095 U	0.1 U	0.1 UJ
4,4'-DDE	0.096 U	0.1 U	0.096 U	0.095 U	0.1 U	0.1 UJ
ENDRIN	0.096 U	0.1 UJ	0.096 U	0.095 U	0.1 U	0.1 UJ
4,4'-DDD	0.096 U	0.1 U	0.096 U	0.095 U	0.1 U	0.1 UJ
ENDOSULFAN SULFATE	0.096 U	0.1 U	0.096 U	0.095 U	0.1 U	0.1 UJ
4,4'-DDT	0.096 U	0.1 U	0.096 U	0.095 U	0.1 U	0.1 UJ
METHOXYCHLOR	0.48 UJ	0.51 U	0.48 U	0.48 U	0.5 U	0.52 UJ
ENDRIN KETONE	0.096 U	0.1 U	0.096 U	0.095 U	0.1 U	0.1 UJ
ENDRIN ALDEHYDE	0.096 UJ	0.1 U	0.096 U	0.095 U	0.1 U	0.1 UJ
ALPHA-CHLORDANE	0.048 U	0.051 U	0.048 U	0.048 U	0.05 U	0.052 UJ
GAMMA-CHLORDANE	0.048 U	0.051 U	0.048 U	0.048 U	0.05 U	0.052 UJ
TOXAPHENE	4.8 U	5.1 U	4.8 U	4.8 U	5 U	5.2 UJ
AROCLOR-1016	0.96 U	1 U	0.96 U	0.95 U	1 U	1 UJ
AROCLOR-1221	1.9 U	2 U	1.9 U	1.9 U	2 U	2.1 UJ
AROCLOR-1232	0.96 U	1 U	0.96 U	0.95 U	1 U	1 UJ
AROCLOR-1242	0.96 U	1 U	0.96 U	0.95 U	1 U	1 UJ
AROCLOR-1248	0.96 U	1 U	0.96 U	0.95 U	1 U	1 UJ
AROCLOR-1254	0.96 U	1 U	0.96 U	0.95 U	1 U	1 UJ
AROCLOR-1260	0.96 U	1 U	0.96 U	0.95 U	1 U	1 UJ

SITE 63, VERONA LOOP DUMP
SOIL QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	340-TB-01	340-TB-02	340-TB-03	340-TB-04	340-TB05	340-TB-06	340-TB-07
DATE SAMPLED	11/08/95	11/06/95	11/07/95	11/08/95	11/09/95	11/10/95	11/11/95
VOLATILES (ug/L)							
CHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BROMOMETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VINYL CHLORIDE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
METHYLENE CHLORIDE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
ACETONE	16 J	11 J	13	12 J	10 UJ	15 J	14 J
CARBON DISULFIDE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-DICHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-DICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROETHENE (TOTAL)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROFORM	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-BUTANONE	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
1,1,1-TRICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CARBON TETRACHLORIDE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BROMODICHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROPROPANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CIS-1,3-DICHLOROPROPENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TRICHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
DIBROMOCHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-TRICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TRANS-1,3-DICHLOROPROPENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BROMOFORM	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-METHYL-2-PENTANONE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-HEXANONE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TETRACHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TOLUENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROBENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
ETHYLBENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
STYRENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
XYLENE (TOTAL)	10 U	10 U	10 U	10 U	10 U	10 U	10 U

SITE 63, VERONA LOOP DUMP
SOIL QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	340-TB-01	340-TB-02	340-TB-03	340-TB-04	340-TB05	340-TB-06	340-TB-07
DATE SAMPLED	11/08/95	11/06/95	11/07/95	11/08/95	11/09/95	11/10/95	11/11/95
SEMIVOLATILES (ug/L)							
PHENOL	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA
NITROBENZENE	NA	NA	NA	NA	NA	NA	NA
ISOPHORONE	NA	NA	NA	NA	NA	NA	NA
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NA	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	NA
2-NITROANILINE	NA	NA	NA	NA	NA	NA	NA
DIMETHYLPHTHALATE	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	NA

SITE 63, VERONA LOOP DUMP
SOIL QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	340-TB-01	340-TB-02	340-TB-03	340-TB-04	340-TB05	340-TB-06	340-TB-07
DATE SAMPLED	11/08/95	11/06/95	11/07/95	11/08/95	11/09/95	11/10/95	11/11/95
SEMIVOLATILES (ug/L) (cont)							
2,4-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	NA
DIETHYLPHTHALATE	NA	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL-PHENYLETHER	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA
4-NITROANILINE	NA	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE (1)	NA	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL-PHENYLETHER	NA	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA
CARBAZOLE	NA	NA	NA	NA	NA	NA	NA
DI-N-BUTYLPHTHALATE	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA
BUTYLBENZYLPHTHALATE	NA	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA

SITE 63, VERONA LOOP DUMP
SOIL QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	340-TB-01	340-TB-02	340-TB-03	340-TB-04	340-TB05	340-TB-06	340-TB-07
DATE SAMPLED	11/08/95	11/06/95	11/07/95	11/08/95	11/09/95	11/10/95	11/11/95
PESTICIDE/PCBS (ug/L)							
ALPHA-BHC	NA	NA	NA	NA	NA	NA	NA
BETA-BHC	NA	NA	NA	NA	NA	NA	NA
DELTA-BHC	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR	NA	NA	NA	NA	NA	NA	NA
ALDRIN	NA	NA	NA	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN I	NA	NA	NA	NA	NA	NA	NA
DIELDRIN	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA
ENDRIN	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA
ENDOSULFAN SULFATE	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA
METHOXYCHLOR	NA	NA	NA	NA	NA	NA	NA
ENDRIN KETONE	NA	NA	NA	NA	NA	NA	NA
ENDRIN ALDEHYDE	NA	NA	NA	NA	NA	NA	NA
ALPHA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA
GAMMA-CHLORDANE	NA	NA	NA	NA	NA	NA	NA
TOXAPHENE	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA

SITE 63, VERONA LOOP DUMP
SOIL QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
VOLATILES (ug/L)						
CHLOROMETHANE	10 U	10 U	ND	ND		0/13
BROMOMETHANE	10 U	10 U	ND	ND		0/13
VINYL CHLORIDE	10 U	10 U	ND	ND		0/13
CHLOROETHANE	10 U	10 U	ND	ND		0/13
METHYLENE CHLORIDE	10 U	10 U	13 J	13 J	63-SIER-04	1/13
ACETONE	10 U	10 U	11 J	36 J	340-FB-01	7/13
CARBON DISULFIDE	10 U	10 U	ND	ND		0/13
1,1-DICHLOROETHENE	10 U	10 U	ND	ND		0/13
1,1-DICHLOROETHANE	10 U	10 U	ND	ND		0/13
1,2-DICHLOROETHENE (TOTAL)	10 U	10 U	ND	ND		0/13
CHLOROFORM	10 U	10 U	ND	ND		0/13
1,2-DICHLOROETHANE	10 U	10 U	ND	ND		0/13
2-BUTANONE	10 U	10 U	ND	ND		0/13
1,1,1-TRICHLOROETHANE	10 U	10 U	ND	ND		0/13
CARBON TETRACHLORIDE	10 U	10 U	ND	ND		0/13
BROMODICHLOROMETHANE	10 U	10 U	ND	ND		0/13
1,2-DICHLOROPROPANE	10 U	10 U	ND	ND		0/13
CIS-1,3-DICHLOROPROPENE	10 U	10 U	ND	ND		0/13
TRICHLOROETHENE	10 U	10 U	ND	ND		0/13
DIBROMOCHLOROMETHANE	10 U	10 U	ND	ND		0/13
1,1,2-TRICHLOROETHANE	10 U	10 U	ND	ND		0/13
BENZENE	10 U	10 U	ND	ND		0/13
TRANS-1,3-DICHLOROPROPENE	10 U	10 U	ND	ND		0/13
BROMOFORM	10 U	10 U	ND	ND		0/13
4-METHYL-2-PENTANONE	10 U	10 U	ND	ND		0/13
2-HEXANONE	10 U	10 U	ND	ND		0/13
TETRACHLOROETHENE	10 U	10 U	ND	ND		0/13
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	ND	ND		0/13
TOLUENE	10 U	10 U	ND	ND		0/13
CHLOROBENZENE	10 U	10 U	ND	ND		0/13
ETHYLBENZENE	10 U	10 U	ND	ND		0/13
STYRENE	10 U	10 U	ND	ND		0/13
XYLENE (TOTAL)	10 U	10 U	ND	ND		0/13

SITE 63, VERONA LOOP DUMP
SOIL QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES (ug/L)						
PHENOL	10 U	10 U	ND	ND		0/6
BIS(2-CHLOROETHYL)ETHER	10 U	10 U	ND	ND		0/6
2-CHLOROPHENOL	10 U	10 U	ND	ND		0/6
1,3-DICHLOROBENZENE	10 U	10 U	ND	ND		0/6
1,4-DICHLOROBENZENE	10 U	10 U	ND	ND		0/6
1,2-DICHLOROBENZENE	10 U	10 U	ND	ND		0/6
2-METHYLPHENOL	10 U	10 U	ND	ND		0/6
2,2'-OXYBIS(1-CHLOROPROPANE)	10 U	10 U	ND	ND		0/6
4-METHYLPHENOL	10 U	10 U	ND	ND		0/6
N-NITROSO-DI-N-PROPYLAMINE	10 U	10 U	ND	ND		0/6
HEXACHLOROETHANE	10 U	10 U	ND	ND		0/6
NITROBENZENE	10 U	10 U	ND	ND		0/6
ISOPHORONE	10 U	10 U	ND	ND		0/6
2-NITROPHENOL	10 U	10 U	ND	ND		0/6
2,4-DIMETHYLPHENOL	10 U	10 U	ND	ND		0/6
BIS(2-CHLOROETHOXY)METHANE	10 U	10 U	ND	ND		0/6
2,4-DICHLOROPHENOL	10 U	10 U	ND	ND		0/6
1,2,4-TRICHLOROBENZENE	10 U	10 U	ND	ND		0/6
NAPHTHALENE	10 U	10 U	ND	ND		0/6
4-CHLOROANILINE	10 U	10 U	ND	ND		0/6
HEXACHLOROBUTADIENE	10 U	10 U	ND	ND		0/6
4-CHLORO-3-METHYLPHENOL	10 U	10 U	ND	ND		0/6
2-METHYLNAPHTHALENE	10 U	10 U	ND	ND		0/6
HEXACHLOROCYCLOPENTADIENE	10 U	10 U	ND	ND		0/6
2,4,6-TRICHLOROPHENOL	10 U	10 U	ND	ND		0/6
2,4,5-TRICHLOROPHENOL	24 U	25 U	ND	ND		0/6
2-CHLORONAPHTHALENE	10 U	10 U	ND	ND		0/6
2-NITROANILINE	24 U	25 U	ND	ND		0/6
DIMETHYLPHTHALATE	10 U	10 U	ND	ND		0/6
ACENAPHTHYLENE	10 U	10 U	ND	ND		0/6
2,6-DINITROTOLUENE	10 U	10 U	ND	ND		0/6
3-NITROANILINE	24 U	25 U	ND	ND		0/6
ACENAPHTHENE	10 U	10 U	ND	ND		0/6
2,4-DINITROPHENOL	24 U	25 U	ND	ND		0/6
4-NITROPHENOL	24 U	25 U	ND	ND		0/6
DIBENZOFURAN	10 U	10 U	ND	ND		0/6

SITE 63, VERONA LOOP DUMP
SOIL QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES (ug/L) (cont)						
2,4-DINITROTOLUENE	10 U	10 U	ND	ND		0/6
DIETHYLPHTHALATE	10 U	10 U	ND	ND		0/6
4-CHLOROPHENYL-PHENYLETHER	10 U	10 U	ND	ND		0/6
FLUORENE	10 U	10 U	ND	ND		0/6
4-NITROANILINE	24 U	25 U	ND	ND		0/6
4,6-DINITRO-2-METHYLPHENOL	24 U	25 U	ND	ND		0/6
N-NITROSODIPHENYLAMINE (1)	10 U	10 U	ND	ND		0/6
4-BROMOPHENYL-PHENYLETHER	10 U	10 U	ND	ND		0/6
HEXACHLOROBENZENE	10 U	10 U	ND	ND		0/6
PENTACHLOROPHENOL	24 U	25 U	ND	ND		0/6
PHENANTHRENE	10 U	10 U	ND	ND		0/6
ANTHRACENE	10 U	10 U	ND	ND		0/6
CARBAZOLE	10 U	10 U	ND	ND		0/6
DI-N-BUTYLPHTHALATE	10 U	10 U	ND	ND		0/6
FLUORANTHENE	10 U	10 U	ND	ND		0/6
PYRENE	10 U	10 U	ND	ND		0/6
BUTYLBENZYLPHTHALATE	10 U	10 U	ND	ND		0/6
3,3'-DICHLOROBENZIDINE	10 U	10 U	ND	ND		0/6
BENZO(A)ANTHRACENE	10 U	10 U	ND	ND		0/6
CHRYSENE	10 U	10 U	ND	ND		0/6
BIS(2-ETHYLHEXYL)PHTHALATE	10 U	10 U	56 J	56 J	340-FB-01	1/6
DI-N-OCTYL PHTHALATE	10 U	10 U	ND	ND		0/6
BENZO(B)FLUORANTHENE	10 U	10 U	ND	ND		0/6
BENZO(K)FLUORANTHENE	10 U	10 U	ND	ND		0/6
BENZO(A)PYRENE	10 U	10 U	ND	ND		0/6
INDENO(1,2,3-CD)PYRENE	10 U	10 U	ND	ND		0/6
DIBENZO(A,H)ANTHRACENE	10 U	10 U	ND	ND		0/6
BENZO(G,H,I)PERYLENE	10 U	10 U	ND	ND		0/6

SITE 63, VERONA LOOP DUMP
SOIL QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
PESTICIDE/PCBS (ug/L)						
ALPHA-BHC	0.048 U	0.052 UJ	ND	ND		0/6
BETA-BHC	0.048 U	0.052 UJ	ND	ND		0/6
DELTA-BHC	0.048 UJ	0.052 UJ	ND	ND		0/6
HEPTACHLOR	0.048 U	0.052 UJ	ND	ND		0/6
ALDRIN	0.048 U	0.052 UJ	ND	ND		0/6
HEPTACHLOR EPOXIDE	0.048 U	0.052 UJ	ND	ND		0/6
ENDOSULFAN I	0.048 U	0.052 UJ	ND	ND		0/6
DIELDRIN	0.095 U	0.1 U	ND	ND		0/6
4,4'-DDE	0.095 U	0.1 U	ND	ND		0/6
ENDRIN	0.095 U	0.1 UJ	ND	ND		0/6
4,4'-DDD	0.095 U	0.1 U	ND	ND		0/6
ENDOSULFAN SULFATE	0.095 U	0.1 U	ND	ND		0/6
4,4'-DDT	0.095 U	0.1 U	ND	ND		0/6
METHOXYCHLOR	0.48 UJ	0.52 UJ	ND	ND		0/6
ENDRIN KETONE	0.095 U	0.1 U	ND	ND		0/6
ENDRIN ALDEHYDE	0.095 U	0.1 U	ND	ND		0/6
ALPHA-CHLORDANE	0.048 U	0.052 UJ	ND	ND		0/6
GAMMA-CHLORDANE	0.048 U	0.052 UJ	ND	ND		0/6
TOXAPHENE	4.8 U	5.2 UJ	ND	ND		0/6
AROCLOR-1016	0.95 U	1 U	ND	ND		0/6
AROCLOR-1221	1.9 U	2.1 UJ	ND	ND		0/6
AROCLOR-1232	0.95 U	1 U	ND	ND		0/6
AROCLOR-1242	0.95 U	1 U	ND	ND		0/6
AROCLOR-1248	0.95 U	1 U	ND	ND		0/6
AROCLOR-1254	0.95 U	1 U	ND	ND		0/6
AROCLOR-1260	0.95 U	1 U	ND	ND		0/6

SITE 63, VERONA LOOP DUMP
SOIL QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	340-FB-01	63-SIER-01	63-SIER-02	63-SIER-03	63-SIER-04	63-SIER-05
DATE SAMPLED	11/14/95	11/07/95	11/07/95	11/08/95	11/09/95	11/09/95
TOTAL METALS (ug/L)						
ALUMINUM, TOTAL	30.9 U	14.9 U	14.9 U	18.2	28.2	14.9 U
ANTIMONY, TOTAL	23.5 U	12.3 U	12.3 U	12.3 U	12.3 U	12.3 U
ARSENIC, TOTAL	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
BARIUM, TOTAL	1.4 U	1.8	1.2	2	1.8	2.6
BERYLLIUM, TOTAL	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
CADMIUM, TOTAL	2.1 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U
CALCIUM, TOTAL	56.2 U	74.3 U	87 U	82.7 U	61.2 U	90.3 U
CHROMIUM, TOTAL	2.1 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U
COBALT, TOTAL	3.4 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
COPPER, TOTAL	1.7 U	2 U	2 U	2 U	2 U	15.4
IRON, TOTAL	9.7 U	6 U	9.7 U	6 U	6 U	6 U
LEAD, TOTAL	1.7	1 U	1 U	1 U	3.4 J	1 U
MAGNESIUM, TOTAL	25.4 U	44.6 U	44.6 U	44.6 U	44.6 U	44.6 U
MANGANESE, TOTAL	1.8 U	0.7 U	0.7 U	0.7 U	0.73 U	0.7 U
MERCURY, TOTAL	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
NICKEL, TOTAL	11.1 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U
POTASSIUM, TOTAL	787 U	88.1 U	88.1 U	88.1 U	88.1 U	88.1 U
SELENIUM, TOTAL	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
SILVER, TOTAL	2.9 U	3.2 U	3.2 U	3.2 U	3.2	4.1
SODIUM, TOTAL	206 U	82.7 U	86.4 U	149 U	100 U	129 U
THALLIUM, TOTAL	0.6 U	0.6 UJ	0.6 UJ	0.6 UJ	0.6 UJ	0.6 UJ
VANADIUM, TOTAL	3.2 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
ZINC, TOTAL	12.5 U	3.9	6.7	3.6 U	3.7	6.3

SITE 63, VERONA LOOP DUMP
SOIL QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
TOTAL METALS (ug/L)						
ALUMINUM, TOTAL	14.9 U	30.9 U	18.2	28.2	63-SIER-04	2/6
ANTIMONY, TOTAL	12.3 U	23.5 U	ND	ND		0/6
ARSENIC, TOTAL	1.6 U	1.6 U	ND	ND		0/6
BARIUM, TOTAL	1.4 U	1.4 U	1.2	2.6	63-SIER-05	5/6
BERYLLIUM, TOTAL	0.3 U	1 U	ND	ND		0/6
CADMIUM, TOTAL	2.1 U	4.2 U	ND	ND		0/6
CALCIUM, TOTAL	56.2 U	90.3 U	ND	ND		0/6
CHROMIUM, TOTAL	2.1 U	4.6 U	ND	ND		0/6
COBALT, TOTAL	2.2 U	3.4 U	ND	ND		0/6
COPPER, TOTAL	1.7 U	2 U	15.4	15.4	63-SIER-05	1/6
IRON, TOTAL	6 U	9.7 U	ND	ND		0/6
LEAD, TOTAL	1 U	1 U	1.7	3.4 J	63-SIER-04	2/6
MAGNESIUM, TOTAL	25.4 U	44.6 U	ND	ND		0/6
MANGANESE, TOTAL	0.7 U	1.8 U	ND	ND		0/6
MERCURY, TOTAL	0.1 U	0.1 U	ND	ND		0/6
NICKEL, TOTAL	3.7 U	11.1 U	ND	ND		0/6
POTASSIUM, TOTAL	88.1 U	787 U	ND	ND		0/6
SELENIUM, TOTAL	1.5 U	1.5 U	ND	ND		0/6
SILVER, TOTAL	2.9 U	3.2 U	3.2	4.1	63-SIER-05	2/6
SODIUM, TOTAL	82.7 U	206 U	ND	ND		0/6
THALLIUM, TOTAL	0.6 U	0.6 U	ND	ND		0/6
VANADIUM, TOTAL	1.7 U	3.2 U	ND	ND		0/6
ZINC, TOTAL	3.6 U	12.5 U	3.7	6.7	63-SIER-02	4/6

GROUNDWATER

SITE 63, VERONA LOOP DUMP
GROUNDWATER QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	340-FB-01	63-GWER-01	63-GWER-02	63-GWER-03	340-TB-08	340-TB-09	340-TB-10
DATE SAMPLED	11/14/95	11/12/95	11/13/95	11/15/95	11/14/95	11/14/95	11/16/95
VOLATILES (ug/L)							
CHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BROMOMETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VINYL CHLORIDE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
METHYLENE CHLORIDE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
ACETONE	36 J	10 UJ	10 U	10 U	15 J	18 J	13 U
CARBON DISULFIDE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-DICHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-DICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROETHENE (TOTAL)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROFORM	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-BUTANONE	10 U	10 U	84 J	10 U	10 U	10 U	10 U
1,1,1-TRICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CARBON TETRACHLORIDE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BROMODICHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROPROPANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CIS-1,3-DICHLOROPROPENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TRICHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
DIBROMOCHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-TRICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TRANS-1,3-DICHLOROPROPENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
BROMOFORM	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-METHYL-2-PENTANONE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-HEXANONE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TETRACHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
TOLUENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROBENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
ETHYLBENZENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
STYRENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
XYLENE (TOTAL)	10 U	10 U	10 U	10 U	10 U	10 U	10 U

SITE 63, VERONA LOOP DUMP
GROUNDWATER QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	340-FB-01	63-GWER-01	63-GWER-02	63-GWER-03	340-TB-08	340-TB-09	340-TB-10
DATE SAMPLED	11/14/95	11/12/95	11/13/95	11/15/95	11/14/95	11/14/95	11/16/95
SEMIVOLATILES (ug/L)							
PHENOL	10 U	10 U	10 U	10 U	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	10 U	10 U	10 U	10 U	NA	NA	NA
2-CHLOROPHENOL	10 U	10 U	10 U	10 U	NA	NA	NA
1,3-DICHLOROBENZENE	10 U	10 U	10 U	10 U	NA	NA	NA
1,4-DICHLOROBENZENE	10 U	10 U	10 U	10 U	NA	NA	NA
1,2-DICHLOROBENZENE	10 U	10 U	10 U	10 U	NA	NA	NA
2-METHYLPHENOL	10 U	10 U	10 U	10 U	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	10 U	10 U	10 U	10 U	NA	NA	NA
4-METHYLPHENOL	10 U	10 U	10 U	10 U	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	10 U	10 U	10 U	10 U	NA	NA	NA
HEXACHLOROETHANE	10 U	10 U	10 U	10 U	NA	NA	NA
NITROBENZENE	10 U	10 U	10 U	10 U	NA	NA	NA
ISOPHORONE	10 U	10 U	10 U	10 U	NA	NA	NA
2-NITROPHENOL	10 U	10 U	10 U	10 U	NA	NA	NA
2,4-DIMETHYLPHENOL	10 U	10 U	10 U	10 U	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	10 U	10 U	10 U	10 U	NA	NA	NA
2,4-DICHLOROPHENOL	10 U	10 U	10 U	10 U	NA	NA	NA
1,2,4-TRICHLOROBENZENE	10 U	10 U	10 U	10 U	NA	NA	NA
NAPHTHALENE	10 U	10 U	10 U	10 U	NA	NA	NA
4-CHLOROANILINE	10 U	10 U	10 U	10 U	NA	NA	NA
HEXACHLOROBUTADIENE	10 U	10 U	10 U	10 U	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	10 U	10 U	10 U	10 U	NA	NA	NA
2-METHYLNAPHTHALENE	10 U	10 U	10 U	10 U	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	10 U	10 U	10 U	10 U	NA	NA	NA
2,4,6-TRICHLOROPHENOL	10 U	10 U	10 U	10 U	NA	NA	NA
2,4,5-TRICHLOROPHENOL	25 U	25 U	26 U	25 U	NA	NA	NA
2-CHLORONAPHTHALENE	10 U	10 U	10 U	10 U	NA	NA	NA
2-NITROANILINE	25 U	25 U	26 U	25 U	NA	NA	NA
DIMETHYLPHTHALATE	10 U	10 U	10 U	10 U	NA	NA	NA
ACENAPHTHYLENE	10 U	10 U	10 U	10 U	NA	NA	NA
2,6-DINITROTOLUENE	10 U	10 U	10 U	10 U	NA	NA	NA
3-NITROANILINE	25 U	25 U	26 U	25 U	NA	NA	NA
ACENAPHTHENE	10 U	10 U	10 U	10 U	NA	NA	NA
2,4-DINITROPHENOL	25 U	25 U	26 U	25 U	NA	NA	NA
4-NITROPHENOL	25 U	25 U	26 U	25 U	NA	NA	NA
DIBENZOFURAN	10 U	10 U	10 U	10 U	NA	NA	NA

SITE 63, VERONA LOOP DUMP
GROUNDWATER QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	340-FB-01	63-GWER-01	63-GWER-02	63-GWER-03	340-TB-08	340-TB-09	340-TB-10
DATE SAMPLED	11/14/95	11/12/95	11/13/95	11/15/95	11/14/95	11/14/95	11/16/95
SEMIVOLATILES ug/L (cont)							
2,4-DINITROTOLUENE	10 U	10 U	10 U	10 U	NA	NA	NA
DIETHYLPHTHALATE	10 U	10 U	10 U	10 U	NA	NA	NA
4-CHLOROPHENYL-PHENYLETHER	10 U	10 U	10 U	10 U	NA	NA	NA
FLUORENE	10 U	10 U	10 U	10 U	NA	NA	NA
4-NITROANILINE	25 U	25 U	26 U	25 U	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	25 U	25 U	26 U	25 U	NA	NA	NA
N-NITROSODIPHENYLAMINE (1)	10 U	10 U	10 U	10 U	NA	NA	NA
4-BROMOPHENYL-PHENYLETHER	10 U	10 U	10 U	10 U	NA	NA	NA
HEXACHLOROBENZENE	10 U	10 U	10 U	10 U	NA	NA	NA
PENTACHLOROPHENOL	25 U	25 U	26 U	25 U	NA	NA	NA
PHENANTHRENE	10 U	10 U	10 U	10 U	NA	NA	NA
ANTHRACENE	10 U	10 U	10 U	10 U	NA	NA	NA
CARBAZOLE	10 U	10 U	10 U	10 U	NA	NA	NA
DI-N-BUTYLPHTHALATE	10 U	10 U	10 U	10 U	NA	NA	NA
FLUORANTHENE	10 U	10 U	10 U	10 U	NA	NA	NA
PYRENE	10 U	10 U	10 U	10 U	NA	NA	NA
BUTYLBENZYLPHTHALATE	10 U	10 U	10 U	10 U	NA	NA	NA
3,3'-DICHLOROBENZIDINE	10 U	10 U	10 U	10 U	NA	NA	NA
BENZO(A)ANTHRACENE	10 U	10 U	10 U	10 U	NA	NA	NA
CHRYSENE	10 U	10 U	10 U	10 U	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	56 J	10 U	10 U	10 U	NA	NA	NA
DI-N-OCTYL PHTHALATE	10 U	10 U	10 U	10 U	NA	NA	NA
BENZO(B)FLUORANTHENE	10 U	10 U	10 U	10 U	NA	NA	NA
BENZO(K)FLUORANTHENE	10 U	10 U	10 U	10 U	NA	NA	NA
BENZO(A)PYRENE	10 U	10 U	10 U	10 U	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	10 U	10 U	10 U	10 U	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	10 U	10 U	10 U	10 U	NA	NA	NA
BENZO(G,H,I)PERYLENE	10 U	10 U	10 U	10 U	NA	NA	NA

SITE 63, VERONA LOOP DUMP
GROUNDWATER QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	340-FB-01	63-GWER-01	63-GWER-02	63-GWER-03	340-TB-08	340-TB-09	340-TB-10
DATE SAMPLED	11/14/95	11/12/95	11/13/95	11/15/95	11/14/95	11/14/95	11/16/95
PESTICIDE/PCBS (ug/L)							
ALPHA-BHC	0.048 U	0.05 UJ	0.052 UJ	0.052 UJ	NA	NA	NA
BETA-BHC	0.048 U	0.05 UJ	0.052 UJ	0.052 UJ	NA	NA	NA
DELTA-BHC	0.048 UJ	0.05 UJ	0.052 UJ	0.052 UJ	NA	NA	NA
HEPTACHLOR	0.048 U	0.05 UJ	0.052 UJ	0.052 UJ	NA	NA	NA
ALDRIN	0.048 U	0.05 UJ	0.052 UJ	0.052 UJ	NA	NA	NA
HEPTACHLOR EPOXIDE	0.048 U	0.05 UJ	0.052 UJ	0.052 UJ	NA	NA	NA
ENDOSULFAN I	0.048 U	0.05 UJ	0.052 UJ	0.052 UJ	NA	NA	NA
DIELDRIN	0.096 U	0.1 UJ	0.1 UJ	0.1 UJ	NA	NA	NA
4,4'-DDE	0.096 U	0.1 UJ	0.1 UJ	0.1 UJ	NA	NA	NA
ENDRIN	0.096 U	0.1 UJ	0.1 UJ	0.1 UJ	NA	NA	NA
4,4'-DDD	0.096 U	0.1 UJ	0.1 UJ	0.1 UJ	NA	NA	NA
ENDOSULFAN SULFATE	0.096 U	0.1 UJ	0.1 UJ	0.1 UJ	NA	NA	NA
4,4'-DDT	0.096 U	0.1 UJ	0.1 UJ	0.1 UJ	NA	NA	NA
METHOXYCHLOR	0.48 UJ	0.5 UJ	0.52 UJ	0.52 UJ	NA	NA	NA
ENDRIN KETONE	0.096 U	0.1 UJ	0.1 UJ	0.1 UJ	NA	NA	NA
ENDRIN ALDEHYDE	0.096 UJ	0.1 UJ	0.1 UJ	0.1 UJ	NA	NA	NA
ALPHA-CHLORDANE	0.048 U	0.05 UJ	0.052 UJ	0.052 UJ	NA	NA	NA
GAMMA-CHLORDANE	0.048 U	0.05 UJ	0.052 UJ	0.052 UJ	NA	NA	NA
TOXAPHENE	4.8 U	5 UJ	5.2 UJ	5.2 UJ	NA	NA	NA
AROCLOR-1016	0.96 U	1 UJ	1 UJ	1 UJ	NA	NA	NA
AROCLOR-1221	1.9 U	2 UJ	2.1 UJ	2.1 UJ	NA	NA	NA
AROCLOR-1232	0.96 U	1 UJ	1 UJ	1 UJ	NA	NA	NA
AROCLOR-1242	0.96 U	1 UJ	1 UJ	1 UJ	NA	NA	NA
AROCLOR-1248	0.96 U	1 UJ	1 UJ	1 UJ	NA	NA	NA
AROCLOR-1254	0.96 U	1 UJ	1 UJ	1 UJ	NA	NA	NA
AROCLOR-1260	0.96 U	1 UJ	1 UJ	1 UJ	NA	NA	NA

SITE 63, VERONA LOOP DUMP
GROUNDWATER QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
VOLATILES (ug/L)						
CHLOROMETHANE	10 U	10 U	ND	ND		0/7
BROMOMETHANE	10 U	10 U	ND	ND		0/7
VINYL CHLORIDE	10 U	10 U	ND	ND		0/7
CHLOROETHANE	10 U	10 U	ND	ND		0/7
METHYLENE CHLORIDE	10 U	10 U	ND	ND		0/7
ACETONE	10 UJ	13 U	15 J	36 J	340-FB-01	3/7
CARBON DISULFIDE	10 U	10 U	ND	ND		0/7
1,1-DICHLOROETHENE	10 U	10 U	ND	ND		0/7
1,1-DICHLOROETHANE	10 U	10 U	ND	ND		0/7
1,2-DICHLOROETHENE (TOTAL)	10 U	10 U	ND	ND		0/7
CHLOROFORM	10 U	10 U	ND	ND		0/7
1,2-DICHLOROETHANE	10 U	10 U	ND	ND		0/7
2-BUTANONE	10 U	10 U	84 J	84 J	63-GWER-02	1/7
1,1,1-TRICHLOROETHANE	10 U	10 U	ND	ND		0/7
CARBON TETRACHLORIDE	10 U	10 U	ND	ND		0/7
BROMODICHLOROMETHANE	10 U	10 U	ND	ND		0/7
1,2-DICHLOROPROPANE	10 U	10 U	ND	ND		0/7
CIS-1,3-DICHLOROPROPENE	10 U	10 U	ND	ND		0/7
TRICHLOROETHENE	10 U	10 U	ND	ND		0/7
DIBROMOCHLOROMETHANE	10 U	10 U	ND	ND		0/7
1,1,2-TRICHLOROETHANE	10 U	10 U	ND	ND		0/7
BENZENE	10 U	10 U	ND	ND		0/7
TRANS-1,3-DICHLOROPROPENE	10 U	10 U	ND	ND		0/7
BROMOFORM	10 U	10 U	ND	ND		0/7
4-METHYL-2-PENTANONE	10 U	10 U	ND	ND		0/7
2-HEXANONE	10 U	10 U	ND	ND		0/7
TETRACHLOROETHENE	10 U	10 U	ND	ND		0/7
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	ND	ND		0/7
TOLUENE	10 U	10 U	ND	ND		0/7
CHLOROBENZENE	10 U	10 U	ND	ND		0/7
ETHYLBENZENE	10 U	10 U	ND	ND		0/7
STYRENE	10 U	10 U	ND	ND		0/7
XYLENE (TOTAL)	10 U	10 U	ND	ND		0/7

SITE 63, VERONA LOOP DUMP
GROUNDWATER QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES (ug/L)						
PHENOL	10 U	10 U	ND	ND		0/4
BIS(2-CHLOROETHYL)ETHER	10 U	10 U	ND	ND		0/4
2-CHLOROPHENOL	10 U	10 U	ND	ND		0/4
1,3-DICHLOROBENZENE	10 U	10 U	ND	ND		0/4
1,4-DICHLOROBENZENE	10 U	10 U	ND	ND		0/4
1,2-DICHLOROBENZENE	10 U	10 U	ND	ND		0/4
2-METHYLPHENOL	10 U	10 U	ND	ND		0/4
2,2'-OXYBIS(1-CHLOROPROPANE)	10 U	10 U	ND	ND		0/4
4-METHYLPHENOL	10 U	10 U	ND	ND		0/4
N-NITROSO-DI-N-PROPYLAMINE	10 U	10 U	ND	ND		0/4
HEXACHLOROETHANE	10 U	10 U	ND	ND		0/4
NITROBENZENE	10 U	10 U	ND	ND		0/4
ISOPHORONE	10 U	10 U	ND	ND		0/4
2-NITROPHENOL	10 U	10 U	ND	ND		0/4
2,4-DIMETHYLPHENOL	10 U	10 U	ND	ND		0/4
BIS(2-CHLOROETHOXY)METHANE	10 U	10 U	ND	ND		0/4
2,4-DICHLOROPHENOL	10 U	10 U	ND	ND		0/4
1,2,4-TRICHLOROBENZENE	10 U	10 U	ND	ND		0/4
NAPHTHALENE	10 U	10 U	ND	ND		0/4
4-CHLOROANILINE	10 U	10 U	ND	ND		0/4
HEXACHLOROBUTADIENE	10 U	10 U	ND	ND		0/4
4-CHLORO-3-METHYLPHENOL	10 U	10 U	ND	ND		0/4
2-METHYLNAPHTHALENE	10 U	10 U	ND	ND		0/4
HEXACHLOROCYCLOPENTADIENE	10 U	10 U	ND	ND		0/4
2,4,6-TRICHLOROPHENOL	10 U	10 U	ND	ND		0/4
2,4,5-TRICHLOROPHENOL	25 U	26 U	ND	ND		0/4
2-CHLORONAPHTHALENE	10 U	10 U	ND	ND		0/4
2-NITROANILINE	25 U	26 U	ND	ND		0/4
DIMETHYLPHTHALATE	10 U	10 U	ND	ND		0/4
ACENAPHTHYLENE	10 U	10 U	ND	ND		0/4
2,6-DINITROTOLUENE	10 U	10 U	ND	ND		0/4
3-NITROANILINE	25 U	26 U	ND	ND		0/4
ACENAPHTHENE	10 U	10 U	ND	ND		0/4
2,4-DINITROPHENOL	25 U	26 U	ND	ND		0/4
4-NITROPHENOL	25 U	26 U	ND	ND		0/4
DIBENZOFURAN	10 U	10 U	ND	ND		0/4

SITE 63, VERONA LOOP DUMP
GROUNDWATER QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES ug/L (cont)						
2,4-DINITROTOLUENE	10 U	10 U	ND	ND		0/4
DIETHYLPHTHALATE	10 U	10 U	ND	ND		0/4
4-CHLOROPHENYL-PHENYLETHER	10 U	10 U	ND	ND		0/4
FLUORENE	10 U	10 U	ND	ND		0/4
4-NITROANILINE	25 U	26 U	ND	ND		0/4
4,6-DINITRO-2-METHYLPHENOL	25 U	26 U	ND	ND		0/4
N-NITROSODIPHENYLAMINE (1)	10 U	10 U	ND	ND		0/4
4-BROMOPHENYL-PHENYLETHER	10 U	10 U	ND	ND		0/4
HEXACHLOROBENZENE	10 U	10 U	ND	ND		0/4
PENTACHLOROPHENOL	25 U	26 U	ND	ND		0/4
PHENANTHRENE	10 U	10 U	ND	ND		0/4
ANTHRACENE	10 U	10 U	ND	ND		0/4
CARBAZOLE	10 U	10 U	ND	ND		0/4
DI-N-BUTYLPHTHALATE	10 U	10 U	ND	ND		0/4
FLUORANTHENE	10 U	10 U	ND	ND		0/4
PYRENE	10 U	10 U	ND	ND		0/4
BUTYLBENZYLPHTHALATE	10 U	10 U	ND	ND		0/4
3,3'-DICHLOROBENZIDINE	10 U	10 U	ND	ND		0/4
BENZO(A)ANTHRACENE	10 U	10 U	ND	ND		0/4
CHRYSENE	10 U	10 U	ND	ND		0/4
BIS(2-ETHYLHEXYL)PHTHALATE	10 U	10 U	56 J	56 J	340-FB-01	1/4
DI-N-OCTYL PHTHALATE	10 U	10 U	ND	ND		0/4
BENZO(B)FLUORANTHENE	10 U	10 U	ND	ND		0/4
BENZO(K)FLUORANTHENE	10 U	10 U	ND	ND		0/4
BENZO(A)PYRENE	10 U	10 U	ND	ND		0/4
INDENO(1,2,3-CD)PYRENE	10 U	10 U	ND	ND		0/4
DIBENZO(A,H)ANTHRACENE	10 U	10 U	ND	ND		0/4
BENZO(G,H,I)PERYLENE	10 U	10 U	ND	ND		0/4

SITE 63, VERONA LOOP DUMP
GROUNDWATER QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
PESTICIDE/PCBS (ug/L)						
ALPHA-BHC	0.048 U	0.052 UJ	ND	ND		0/4
BETA-BHC	0.048 U	0.052 UJ	ND	ND		0/4
DELTA-BHC	0.048 UJ	0.052 UJ	ND	ND		0/4
HEPTACHLOR	0.048 U	0.052 UJ	ND	ND		0/4
ALDRIN	0.048 U	0.052 UJ	ND	ND		0/4
HEPTACHLOR EPOXIDE	0.048 U	0.052 UJ	ND	ND		0/4
ENDOSULFAN I	0.048 U	0.052 UJ	ND	ND		0/4
DIELDRIN	0.096 U	0.1 UJ	ND	ND		0/4
4,4'-DDE	0.096 U	0.1 UJ	ND	ND		0/4
ENDRIN	0.096 U	0.1 UJ	ND	ND		0/4
4,4'-DDD	0.096 U	0.1 UJ	ND	ND		0/4
ENDOSULFAN SULFATE	0.096 U	0.1 UJ	ND	ND		0/4
4,4'-DDT	0.096 U	0.1 UJ	ND	ND		0/4
METHOXYCHLOR	0.48 UJ	0.52 UJ	ND	ND		0/4
ENDRIN KETONE	0.096 U	0.1 UJ	ND	ND		0/4
ENDRIN ALDEHYDE	0.096 UJ	0.1 UJ	ND	ND		0/4
ALPHA-CHLORDANE	0.048 U	0.052 UJ	ND	ND		0/4
GAMMA-CHLORDANE	0.048 U	0.052 UJ	ND	ND		0/4
TOXAPHENE	4.8 U	5.2 UJ	ND	ND		0/4
AROCLOR-1016	0.96 U	1 UJ	ND	ND		0/4
AROCLOR-1221	1.9 U	2.1 UJ	ND	ND		0/4
AROCLOR-1232	0.96 U	1 UJ	ND	ND		0/4
AROCLOR-1242	0.96 U	1 UJ	ND	ND		0/4
AROCLOR-1248	0.96 U	1 UJ	ND	ND		0/4
AROCLOR-1254	0.96 U	1 UJ	ND	ND		0/4
AROCLOR-1260	0.96 U	1 UJ	ND	ND		0/4

SITE 63, VERONA LOOP DUMP
GROUNDWATER QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	340-FB-01	63-GWER-01	63-GWER-02	63-GWER-03
DATE SAMPLED	11/14/95	11/12/95	11/13/95	11/15/95
TOTAL METALS (ug/L)				
ALUMINUM, TOTAL	30.9 U	34.4 U	22.6 U	40.2 U
ANTIMONY, TOTAL	23.5 U	23.5 U	23.5 U	23.5 U
ARSENIC, TOTAL	1.6 U	1.6 U	1.6 U	1.6 U
BARIUM, TOTAL	1.4 U	3.4	9.2	2.5 U
BERYLLIUM, TOTAL	1 U	1 U	1 U	1 U
CADMIUM, TOTAL	2.1 U	4.2 U	4.2 U	2.1 U
CALCIUM, TOTAL	56.2 U	61.9 U	52.3 U	66.7 U
CHROMIUM, TOTAL	2.1 U	4.6 U	4.6 U	2.1 U
COBALT, TOTAL	3.4 U	3.4 U	3.4 U	3.4 U
COPPER, TOTAL	1.7 U	2 U	2 U	1.7 U
IRON, TOTAL	9.7 U	9.7 U	9.7 U	9.7 U
LEAD, TOTAL	1.7	1 U	1 U	1 U
MAGNESIUM, TOTAL	25.4 U	44.6 U	44.6 U	25.4 U
MANGANESE, TOTAL	1.8 U	1.8 U	1.8 U	1.8 U
MERCURY, TOTAL	0.1 U	0.1 U	0.1 U	0.1 U
NICKEL, TOTAL	11.1 U	11.1 U	11.1 U	11.1 U
POTASSIUM, TOTAL	787 U	787 U	787 U	787 U
SELENIUM, TOTAL	1.5 U	1.5 U	1.5 U	1.5 U
SILVER, TOTAL	2.9 U	3.2 U	3.2 U	2.9 U
SODIUM, TOTAL	206 U	87.7 U	97.7 U	120 U
THALLIUM, TOTAL	0.6 U	0.6 UJ	0.6 UJ	0.6 U
VANADIUM, TOTAL	3.2 U	3.2 U	3.2 U	3.2 U
ZINC, TOTAL	12.5 U	3.6 U	3.6 U	6.4 U

SITE 63, VERONA LOOP DUMP
GROUNDWATER QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
TOTAL METALS (ug/L)						
ALUMINUM, TOTAL	22.6 U	40.2 U	ND	ND		0/4
ANTIMONY, TOTAL	23.5 U	23.5 U	ND	ND		0/4
ARSENIC, TOTAL	1.6 U	1.6 U	ND	ND		0/4
BARIUM, TOTAL	1.4 U	2.5 U	3.4	9.2	63-GWER-02	2/4
BERYLLIUM, TOTAL	1 U	1 U	ND	ND		0/4
CADMIUM, TOTAL	2.1 U	4.2 U	ND	ND		0/4
CALCIUM, TOTAL	52.3 U	66.7 U	ND	ND		0/4
CHROMIUM, TOTAL	2.1 U	4.6 U	ND	ND		0/4
COBALT, TOTAL	3.4 U	3.4 U	ND	ND		0/4
COPPER, TOTAL	1.7 U	2 U	ND	ND		0/4
IRON, TOTAL	9.7 U	9.7 U	ND	ND		0/4
LEAD, TOTAL	1 U	1 U	1.7	1.7	340-FB-01	1/4
MAGNESIUM, TOTAL	25.4 U	44.6 U	ND	ND		0/4
MANGANESE, TOTAL	1.8 U	1.8 U	ND	ND		0/4
MERCURY, TOTAL	0.1 U	0.1 U	ND	ND		0/4
NICKEL, TOTAL	11.1 U	11.1 U	ND	ND		0/4
POTASSIUM, TOTAL	787 U	787 U	ND	ND		0/4
SELENIUM, TOTAL	1.5 U	1.5 U	ND	ND		0/4
SILVER, TOTAL	2.9 U	3.2 U	ND	ND		0/4
SODIUM, TOTAL	87.7 U	206 U	ND	ND		0/4
THALLIUM, TOTAL	0.6 U	0.6 U	ND	ND		0/4
VANADIUM, TOTAL	3.2 U	3.2 U	ND	ND		0/4
ZINC, TOTAL	3.6 U	12.5 U	ND	ND		0/4

SURFACE WATER AND SEDIMENT

SITE 63, VERONA LOOP DUMP
SURFACE WATER AND SEDIMENT QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION	340-FB-01	63-SDER-01
DATE SAMPLED	11/14/95	11/11/95
TOTAL METALS (ug/L)		
ALUMINUM, TOTAL	30.9 U	14.9 U
ANTIMONY, TOTAL	23.5 U	12.3 U
ARSENIC, TOTAL	1.6 U	1.6 U
BARIUM, TOTAL	1.4 U	1.1 U
BERYLLIUM, TOTAL	1 U	0.3 U
CADMIUM, TOTAL	2.1 U	4.2 U
CALCIUM, TOTAL	56.2 U	33.6 U
CHROMIUM, TOTAL	2.1 U	4.6 U
COBALT, TOTAL	3.4 U	2.2 U
COPPER, TOTAL	1.7 U	2 U
IRON, TOTAL	9.7 U	27.2 U
LEAD, TOTAL	1.7	1 U
MAGNESIUM, TOTAL	25.4 U	44.6 U
MANGANESE, TOTAL	1.8 U	0.7 U
MERCURY, TOTAL	0.1 U	0.1 U
NICKEL, TOTAL	11.1 U	3.7 U
POTASSIUM, TOTAL	787 U	88.1 U
SELENIUM, TOTAL	1.5 U	1.5 U
SILVER, TOTAL	2.9 U	3.2 U
SODIUM, TOTAL	206 U	124 U
THALLIUM, TOTAL	0.6 U	0.6 U
VANADIUM, TOTAL	3.2 U	1.7 U
ZINC, TOTAL	12.5 U	3.6 U

SITE 63, VERONA LOOP DUMP
SURFACE WATER AND SEDIMENT QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
INORGANIC ANALYTES

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
TOTAL METALS (ug/L)						
ALUMINUM, TOTAL	14.9 U	30.9 U	ND	ND		0/2
ANTIMONY, TOTAL	12.3 U	23.5 U	ND	ND		0/2
ARSENIC, TOTAL	1.6 U	1.6 U	ND	ND		0/2
BARIUM, TOTAL	1.1 U	1.4 U	ND	ND		0/2
BERYLLIUM, TOTAL	0.3 U	1 U	ND	ND		0/2
CADMIUM, TOTAL	2.1 U	4.2 U	ND	ND		0/2
CALCIUM, TOTAL	33.6 U	56.2 U	ND	ND		0/2
CHROMIUM, TOTAL	2.1 U	4.6 U	ND	ND		0/2
COBALT, TOTAL	2.2 U	3.4 U	ND	ND		0/2
COPPER, TOTAL	1.7 U	2 U	ND	ND		0/2
IRON, TOTAL	9.7 U	27.2 U	ND	ND		0/2
LEAD, TOTAL	1 U	1 U	1.7	1.7	340-FB-01	1/2
MAGNESIUM, TOTAL	25.4 U	44.6 U	ND	ND		0/2
MANGANESE, TOTAL	0.7 U	1.8 U	ND	ND		0/2
MERCURY, TOTAL	0.1 U	0.1 U	ND	ND		0/2
NICKEL, TOTAL	3.7 U	11.1 U	ND	ND		0/2
POTASSIUM, TOTAL	88.1 U	787 U	ND	ND		0/2
SELENIUM, TOTAL	1.5 U	1.5 U	ND	ND		0/2
SILVER, TOTAL	2.9 U	3.2 U	ND	ND		0/2
SODIUM, TOTAL	124 U	206 U	ND	ND		0/2
THALLIUM, TOTAL	0.6 U	0.6 U	ND	ND		0/2
VANADIUM, TOTAL	1.7 U	3.2 U	ND	ND		0/2
ZINC, TOTAL	3.6 U	12.5 U	ND	ND		0/2

SITE 63, VERONA LOOP DUMP
SURFACE WATER AND SEDIMENT QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	340-FB-01	63-SDER-01	340-TB-05	340-TB-06	340-TB-07	340-TB-08
DATE SAMPLED	11/14/95	11/11/95	11/09/95	11/10/95	11/11/95	11/14/95
VOLATILES (ug/L)						
CHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U
BROMOMETHANE	10 U	10 U	10 U	10 U	10 U	10 U
VINYL CHLORIDE	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U
METHYLENE CHLORIDE	10 U	10 U	10 U	10 U	10 U	10 U
ACETONE	36 J	10 U	10 UJ	15 J	14 J	15 J
CARBON DISULFIDE	10 U	10 U	10 U	10 U	10 U	10 U
1,1-DICHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U
1,1-DICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROETHENE (TOTAL)	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROFORM	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U
2-BUTANONE	10 U	49 J	10 U	10 U	10 U	10 U
1,1,1-TRICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U
CARBON TETRACHLORIDE	10 U	10 U	10 U	10 U	10 U	10 U
BROMODICHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U
1,2-DICHLOROPROPANE	10 U	10 U	10 U	10 U	10 U	10 U
CIS-1,3-DICHLOROPROPENE	10 U	10 U	10 U	10 U	10 U	10 U
TRICHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U
DIBROMOCHLOROMETHANE	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-TRICHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U
BENZENE	10 U	10 U	10 U	10 U	10 U	10 U
TRANS-1,3-DICHLOROPROPENE	10 U	10 U	10 U	10 U	10 U	10 U
BROMOFORM	10 U	10 U	10 U	10 U	10 U	10 U
4-METHYL-2-PENTANONE	10 U	10 U	10 U	10 U	10 U	10 U
2-HEXANONE	10 U	10 U	10 U	10 U	10 U	10 U
TETRACHLOROETHENE	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	10 U	10 U	10 U	10 U
TOLUENE	10 U	10 U	10 U	10 U	10 U	10 U
CHLOROBENZENE	10 U	10 U	10 U	10 U	10 U	10 U
ETHYLBENZENE	10 U	10 U	10 U	10 U	10 U	10 U
STYRENE	10 U	10 U	10 U	10 U	10 U	10 U
XYLENE (TOTAL)	10 U	10 U	10 U	10 U	10 U	10 U

SITE 63, VERONA LOOP DUMP
SURFACE WATER AND SEDIMENT QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	340-FB-01	63-SDER-01	340-TB-05	340-TB-06	340-TB-07	340-TB-08
DATE SAMPLED	11/14/95	11/11/95	11/09/95	11/10/95	11/11/95	11/14/95
SEMIVOLATILES (ug/L)						
PHENOL	10 U	10 U	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	10 U	10 U	NA	NA	NA	NA
2-CHLOROPHENOL	10 U	10 U	NA	NA	NA	NA
1,3-DICHLOROBENZENE	10 U	10 U	NA	NA	NA	NA
1,4-DICHLOROBENZENE	10 U	10 U	NA	NA	NA	NA
1,2-DICHLOROBENZENE	10 U	10 U	NA	NA	NA	NA
2-METHYLPHENOL	10 U	10 U	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	10 U	10 U	NA	NA	NA	NA
4-METHYLPHENOL	10 U	10 U	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	10 U	10 U	NA	NA	NA	NA
HEXACHLOROETHANE	10 U	10 U	NA	NA	NA	NA
NITROBENZENE	10 U	10 U	NA	NA	NA	NA
ISOPHORONE	10 U	10 U	NA	NA	NA	NA
2-NITROPHENOL	10 U	10 U	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	10 U	10 U	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	10 U	10 U	NA	NA	NA	NA
2,4-DICHLOROPHENOL	10 U	10 U	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	10 U	10 U	NA	NA	NA	NA
NAPHTHALENE	10 U	10 U	NA	NA	NA	NA
4-CHLOROANILINE	10 U	10 U	NA	NA	NA	NA
HEXACHLOROBUTADIENE	10 U	10 U	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	10 U	10 U	NA	NA	NA	NA
2-METHYLNAPHTHALENE	10 U	10 U	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	10 U	10 U	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	10 U	10 U	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	25 U	26 U	NA	NA	NA	NA
2-CHLORONAPHTHALENE	10 U	10 U	NA	NA	NA	NA
2-NITROANILINE	25 U	26 U	NA	NA	NA	NA
DIMETHYLPHTHALATE	10 U	10 U	NA	NA	NA	NA
ACENAPHTHYLENE	10 U	10 U	NA	NA	NA	NA
2,6-DINITROTOLUENE	10 U	10 U	NA	NA	NA	NA
3-NITROANILINE	25 U	26 U	NA	NA	NA	NA
ACENAPHTHENE	10 U	10 U	NA	NA	NA	NA
2,4-DINITROPHENOL	25 U	26 U	NA	NA	NA	NA
4-NITROPHENOL	25 U	26 U	NA	NA	NA	NA
DIBENZOFURAN	10 U	10 U	NA	NA	NA	NA
2,4-DINITROTOLUENE	10 U	10 U	NA	NA	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE WATER AND SEDIMENT QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	340-FB-01	63-SDER-01	340-TB-05	340-TB-06	340-TB-07	340-TB-08
DATE SAMPLED	11/14/95	11/11/95	11/09/95	11/10/95	11/11/95	11/14/95
SEMIVOLATILES (ug/L) (cont)						
DIETHYLPHTHALATE	10 U	10 U	NA	NA	NA	NA
4-CHLOROPHENYL-PHENYLETHER	10 U	10 U	NA	NA	NA	NA
FLUORENE	10 U	10 U	NA	NA	NA	NA
4-NITROANILINE	25 U	26 U	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	25 U	26 U	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE (1)	10 U	10 U	NA	NA	NA	NA
4-BROMOPHENYL-PHENYLETHER	10 U	10 U	NA	NA	NA	NA
HEXACHLOROBENZENE	10 U	10 U	NA	NA	NA	NA
PENTACHLOROPHENOL	25 U	26 U	NA	NA	NA	NA
PHENANTHRENE	10 U	10 U	NA	NA	NA	NA
ANTHRACENE	10 U	10 U	NA	NA	NA	NA
CARBAZOLE	10 U	10 U	NA	NA	NA	NA
DI-N-BUTYLPHTHALATE	10 U	10 U	NA	NA	NA	NA
FLUORANTHENE	10 U	10 U	NA	NA	NA	NA
PYRENE	10 U	10 U	NA	NA	NA	NA
BUTYLBENZYLPHTHALATE	10 U	10 U	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	10 U	10 U	NA	NA	NA	NA
BENZO(A)ANTHRACENE	10 U	10 U	NA	NA	NA	NA
CHRYSENE	10 U	10 U	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	56 J	10 U	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	10 U	10 U	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	10 U	10 U	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	10 U	10 U	NA	NA	NA	NA
BENZO(A)PYRENE	10 U	10 U	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	10 U	10 U	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	10 U	10 U	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	10 U	10 U	NA	NA	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE WATER AND SEDIMENT QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION	340-FB-01	63-SDER-01	340-TB-05	340-TB-06	340-TB-07	340-TB-08
DATE SAMPLED	11/14/95	11/11/95	11/09/95	11/10/95	11/11/95	11/14/95
PESTICIDE/PCBS (ug/L)						
ALPHA-BHC	0.048 U	0.05 UJ	NA	NA	NA	NA
BETA-BHC	0.048 U	0.05 UJ	NA	NA	NA	NA
DELTA-BHC	0.048 UJ	0.05 UJ	NA	NA	NA	NA
HEPTACHLOR	0.048 U	0.05 UJ	NA	NA	NA	NA
ALDRIN	0.048 U	0.05 UJ	NA	NA	NA	NA
HEPTACHLOR EPOXIDE	0.048 U	0.05 UJ	NA	NA	NA	NA
ENDOSULFAN I	0.048 U	0.05 UJ	NA	NA	NA	NA
DIELDRIN	0.096 U	0.099 UJ	NA	NA	NA	NA
4,4'-DDE	0.096 U	0.099 UJ	NA	NA	NA	NA
ENDRIN	0.096 U	0.099 UJ	NA	NA	NA	NA
4,4'-DDD	0.096 U	0.099 UJ	NA	NA	NA	NA
ENDOSULFAN SULFATE	0.096 U	0.099 UJ	NA	NA	NA	NA
4,4'-DDT	0.096 U	0.099 UJ	NA	NA	NA	NA
METHOXYCHLOR	0.48 UJ	0.5 UJ	NA	NA	NA	NA
ENDRIN KETONE	0.096 U	0.099 UJ	NA	NA	NA	NA
ENDRIN ALDEHYDE	0.096 UJ	0.099 UJ	NA	NA	NA	NA
ALPHA-CHLORDANE	0.048 U	0.05 UJ	NA	NA	NA	NA
GAMMA-CHLORDANE	0.048 U	0.05 UJ	NA	NA	NA	NA
TOXAPHENE	4.8 U	5 UJ	NA	NA	NA	NA
AROCLOR-1016	0.96 U	0.99 UJ	NA	NA	NA	NA
AROCLOR-1221	1.9 U	2 UJ	NA	NA	NA	NA
AROCLOR-1232	0.96 U	0.99 UJ	NA	NA	NA	NA
AROCLOR-1242	0.96 U	0.99 UJ	NA	NA	NA	NA
AROCLOR-1248	0.96 U	0.99 UJ	NA	NA	NA	NA
AROCLOR-1254	0.96 U	0.99 UJ	NA	NA	NA	NA
AROCLOR-1260	0.96 U	0.99 UJ	NA	NA	NA	NA

SITE 63, VERONA LOOP DUMP
SURFACE WATER AND SEDIMENT QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
VOLATILES (ug/L)						
CHLOROMETHANE	10 U	10 U	ND	ND		0/6
BROMOMETHANE	10 U	10 U	ND	ND		0/6
VINYL CHLORIDE	10 U	10 U	ND	ND		0/6
CHLOROETHANE	10 U	10 U	ND	ND		0/6
METHYLENE CHLORIDE	10 U	10 U	ND	ND		0/6
ACETONE	10 U	10 U	14 J	36 J	340-FB-01	4/6
CARBON DISULFIDE	10 U	10 U	ND	ND		0/6
1,1-DICHLOROETHENE	10 U	10 U	ND	ND		0/6
1,1-DICHLOROETHANE	10 U	10 U	ND	ND		0/6
1,2-DICHLOROETHENE (TOTAL)	10 U	10 U	ND	ND		0/6
CHLOROFORM	10 U	10 U	ND	ND		0/6
1,2-DICHLOROETHANE	10 U	10 U	ND	ND		0/6
2-BUTANONE	10 U	10 U	49 J	49 J	63-SDER-01	1/6
1,1,1-TRICHLOROETHANE	10 U	10 U	ND	ND		0/6
CARBON TETRACHLORIDE	10 U	10 U	ND	ND		0/6
BROMODICHLOROMETHANE	10 U	10 U	ND	ND		0/6
1,2-DICHLOROPROPANE	10 U	10 U	ND	ND		0/6
CIS-1,3-DICHLOROPROPENE	10 U	10 U	ND	ND		0/6
TRICHLOROETHENE	10 U	10 U	ND	ND		0/6
DIBROMOCHLOROMETHANE	10 U	10 U	ND	ND		0/6
1,1,2-TRICHLOROETHANE	10 U	10 U	ND	ND		0/6
BENZENE	10 U	10 U	ND	ND		0/6
TRANS-1,3-DICHLOROPROPENE	10 U	10 U	ND	ND		0/6
BROMOFORM	10 U	10 U	ND	ND		0/6
4-METHYL-2-PENTANONE	10 U	10 U	ND	ND		0/6
2-HEXANONE	10 U	10 U	ND	ND		0/6
TETRACHLOROETHENE	10 U	10 U	ND	ND		0/6
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	ND	ND		0/6
TOLUENE	10 U	10 U	ND	ND		0/6
CHLOROBENZENE	10 U	10 U	ND	ND		0/6
ETHYLBENZENE	10 U	10 U	ND	ND		0/6
STYRENE	10 U	10 U	ND	ND		0/6
XYLENE (TOTAL)	10 U	10 U	ND	ND		0/6

SITE 63, VERONA LOOP DUMP
SURFACE WATER AND SEDIMENT QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES (ug/L)						
PHENOL	10 U	10 U	ND	ND		0/2
BIS(2-CHLOROETHYL)ETHER	10 U	10 U	ND	ND		0/2
2-CHLOROPHENOL	10 U	10 U	ND	ND		0/2
1,3-DICHLOROBENZENE	10 U	10 U	ND	ND		0/2
1,4-DICHLOROBENZENE	10 U	10 U	ND	ND		0/2
1,2-DICHLOROBENZENE	10 U	10 U	ND	ND		0/2
2-METHYLPHENOL	10 U	10 U	ND	ND		0/2
2,2'-OXYBIS(1-CHLOROPROPANE)	10 U	10 U	ND	ND		0/2
4-METHYLPHENOL	10 U	10 U	ND	ND		0/2
N-NITROSO-DI-N-PROPYLAMINE	10 U	10 U	ND	ND		0/2
HEXACHLOROETHANE	10 U	10 U	ND	ND		0/2
NITROBENZENE	10 U	10 U	ND	ND		0/2
ISOPHORONE	10 U	10 U	ND	ND		0/2
2-NITROPHENOL	10 U	10 U	ND	ND		0/2
2,4-DIMETHYLPHENOL	10 U	10 U	ND	ND		0/2
BIS(2-CHLOROETHOXY)METHANE	10 U	10 U	ND	ND		0/2
2,4-DICHLOROPHENOL	10 U	10 U	ND	ND		0/2
1,2,4-TRICHLOROBENZENE	10 U	10 U	ND	ND		0/2
NAPHTHALENE	10 U	10 U	ND	ND		0/2
4-CHLOROANILINE	10 U	10 U	ND	ND		0/2
HEXACHLOROBUTADIENE	10 U	10 U	ND	ND		0/2
4-CHLORO-3-METHYLPHENOL	10 U	10 U	ND	ND		0/2
2-METHYLNAPHTHALENE	10 U	10 U	ND	ND		0/2
HEXACHLOROCYCLOPENTADIENE	10 U	10 U	ND	ND		0/2
2,4,6-TRICHLOROPHENOL	10 U	10 U	ND	ND		0/2
2,4,5-TRICHLOROPHENOL	25 U	26 U	ND	ND		0/2
2-CHLORONAPHTHALENE	10 U	10 U	ND	ND		0/2
2-NITROANILINE	25 U	26 U	ND	ND		0/2
DIMETHYLPHTHALATE	10 U	10 U	ND	ND		0/2
ACENAPHTHYLENE	10 U	10 U	ND	ND		0/2
2,6-DINITROTOLUENE	10 U	10 U	ND	ND		0/2
3-NITROANILINE	25 U	26 U	ND	ND		0/2
ACENAPHTHENE	10 U	10 U	ND	ND		0/2
2,4-DINITROPHENOL	25 U	26 U	ND	ND		0/2
4-NITROPHENOL	25 U	26 U	ND	ND		0/2
DIBENZOFURAN	10 U	10 U	ND	ND		0/2
2,4-DINITROTOLUENE	10 U	10 U	ND	ND		0/2

SITE 63, VERONA LOOP DUMP
SURFACE WATER AND SEDIMENT QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES (ug/L) (cont)						
DIETHYLPHTHALATE	10 U	10 U	ND	ND		0/2
4-CHLOROPHENYL-PHENYLETHER	10 U	10 U	ND	ND		0/2
FLUORENE	10 U	10 U	ND	ND		0/2
4-NITROANILINE	25 U	26 U	ND	ND		0/2
4,6-DINITRO-2-METHYLPHENOL	25 U	26 U	ND	ND		0/2
N-NITROSODIPHENYLAMINE (1)	10 U	10 U	ND	ND		0/2
4-BROMOPHENYL-PHENYLETHER	10 U	10 U	ND	ND		0/2
HEXACHLOROBENZENE	10 U	10 U	ND	ND		0/2
PENTACHLOROPHENOL	25 U	26 U	ND	ND		0/2
PHENANTHRENE	10 U	10 U	ND	ND		0/2
ANTHRACENE	10 U	10 U	ND	ND		0/2
CARBAZOLE	10 U	10 U	ND	ND		0/2
DI-N-BUTYLPHTHALATE	10 U	10 U	ND	ND		0/2
FLUORANTHENE	10 U	10 U	ND	ND		0/2
PYRENE	10 U	10 U	ND	ND		0/2
BUTYLBENZYLPHTHALATE	10 U	10 U	ND	ND		0/2
3,3'-DICHLOROBENZIDINE	10 U	10 U	ND	ND		0/2
BENZO(A)ANTHRACENE	10 U	10 U	ND	ND		0/2
CHRYSENE	10 U	10 U	ND	ND		0/2
BIS(2-ETHYLHEXYL)PHTHALATE	10 U	10 U	56 J	56 J	340-FB-01	1/2
DI-N-OCTYL PHTHALATE	10 U	10 U	ND	ND		0/2
BENZO(B)FLUORANTHENE	10 U	10 U	ND	ND		0/2
BENZO(K)FLUORANTHENE	10 U	10 U	ND	ND		0/2
BENZO(A)PYRENE	10 U	10 U	ND	ND		0/2
INDENO(1,2,3-CD)PYRENE	10 U	10 U	ND	ND		0/2
DIBENZO(A,H)ANTHRACENE	10 U	10 U	ND	ND		0/2
BENZO(G,H,I)PERYLENE	10 U	10 U	ND	ND		0/2

SITE 63, VERONA LOOP DUMP
SURFACE WATER AND SEDIMENT QA/QC - FREQUENCY OF DETECTION SUMMARY
REMEDIAL INVESTIGATION, CTO - 0340
MCB, CAMP LEJEUNE, NORTH CAROLINA
ORGANIC COMPOUNDS

LOCATION DATE SAMPLED	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
PESTICIDE/PCBS (ug/L)						
ALPHA-BHC	0.048 U	0.05 UJ	ND	ND		0/2
BETA-BHC	0.048 U	0.05 UJ	ND	ND		0/2
DELTA-BHC	0.048 UJ	0.05 UJ	ND	ND		0/2
HEPTACHLOR	0.048 U	0.05 UJ	ND	ND		0/2
ALDRIN	0.048 U	0.05 UJ	ND	ND		0/2
HEPTACHLOR EPOXIDE	0.048 U	0.05 UJ	ND	ND		0/2
ENDOSULFAN I	0.048 U	0.05 UJ	ND	ND		0/2
DIELDRIN	0.096 U	0.099 UJ	ND	ND		0/2
4,4'-DDE	0.096 U	0.099 UJ	ND	ND		0/2
ENDRIN	0.096 U	0.099 UJ	ND	ND		0/2
4,4'-DDD	0.096 U	0.099 UJ	ND	ND		0/2
ENDOSULFAN SULFATE	0.096 U	0.099 UJ	ND	ND		0/2
4,4'-DDT	0.096 U	0.099 UJ	ND	ND		0/2
METHOXYCHLOR	0.48 UJ	0.5 UJ	ND	ND		0/2
ENDRIN KETONE	0.096 U	0.099 UJ	ND	ND		0/2
ENDRIN ALDEHYDE	0.096 UJ	0.099 UJ	ND	ND		0/2
ALPHA-CHLORDANE	0.048 U	0.05 UJ	ND	ND		0/2
GAMMA-CHLORDANE	0.048 U	0.05 UJ	ND	ND		0/2
TOXAPHENE	4.8 U	5 UJ	ND	ND		0/2
AROCLOR-1016	0.96 U	0.99 UJ	ND	ND		0/2
AROCLOR-1221	1.9 U	2 UJ	ND	ND		0/2
AROCLOR-1232	0.96 U	0.99 UJ	ND	ND		0/2
AROCLOR-1242	0.96 U	0.99 UJ	ND	ND		0/2
AROCLOR-1248	0.96 U	0.99 UJ	ND	ND		0/2
AROCLOR-1254	0.96 U	0.99 UJ	ND	ND		0/2
AROCLOR-1260	0.96 U	0.99 UJ	ND	ND		0/2

APPENDIX L
GRAIN SIZE, TOTAL ORGANIC CARBON, AND WET CHEMISTRY ANALYTICAL RESULTS

GRAIN SIZE

ROY F. WESTON, INC. ENVIRONMENTAL TECHNOLOGY LABORATORY

GEOTECHNICAL TESTING DATA AND RESULTS

PROJECT	Baker - Camp LeJeune #340	PROJECT SAMPLE I.D.	63-SD01-01	PROJECT ANALYST	JDT
JOB NUMBER	9511G215	ETL SAMPLE NUMBER	006	QA/QC ANALYST	RWF
W. O. NUMBER	06629-009-013-0001-00	DATE RECEIVED	11/21/95	DATE COMPLETED	12/02/95

PARTICLE SIZE DISTRIBUTION

U. S. Standard Sieve Size	Diameter mm	% Finer
3"	75.00	100.0
1½"	37.50	100.0
3/4"	19.00	100.0
3/8"	9.500	100.0
#4	4.750	99.7
#10	2.000	98.6
#20	0.850	96.0
#50	0.300	55.2
#100	0.150	12.6
#200	0.075	5.1
HYDROMETER	0.0508	5.0
	0.0361	4.2
	0.0255	4.2
	0.0182	3.4
	0.0133	2.6
	0.0094	2.6
	0.0067	1.9
	0.0047	1.9
	0.0034	1.9
	0.0024	1.9
	0.0014	1.7
	0.0010	1.9

EFFECTIVE SIZES

% Finer	Diameter mm
60	0.365
30	0.211
10	0.124
Uniformity Coefficient	Gradation Coefficient
2.9	1.0

SAMPLE DESCRIPTION

reddish-brown silty or clayey SAND
with 5% silt or clay
contains organic debris

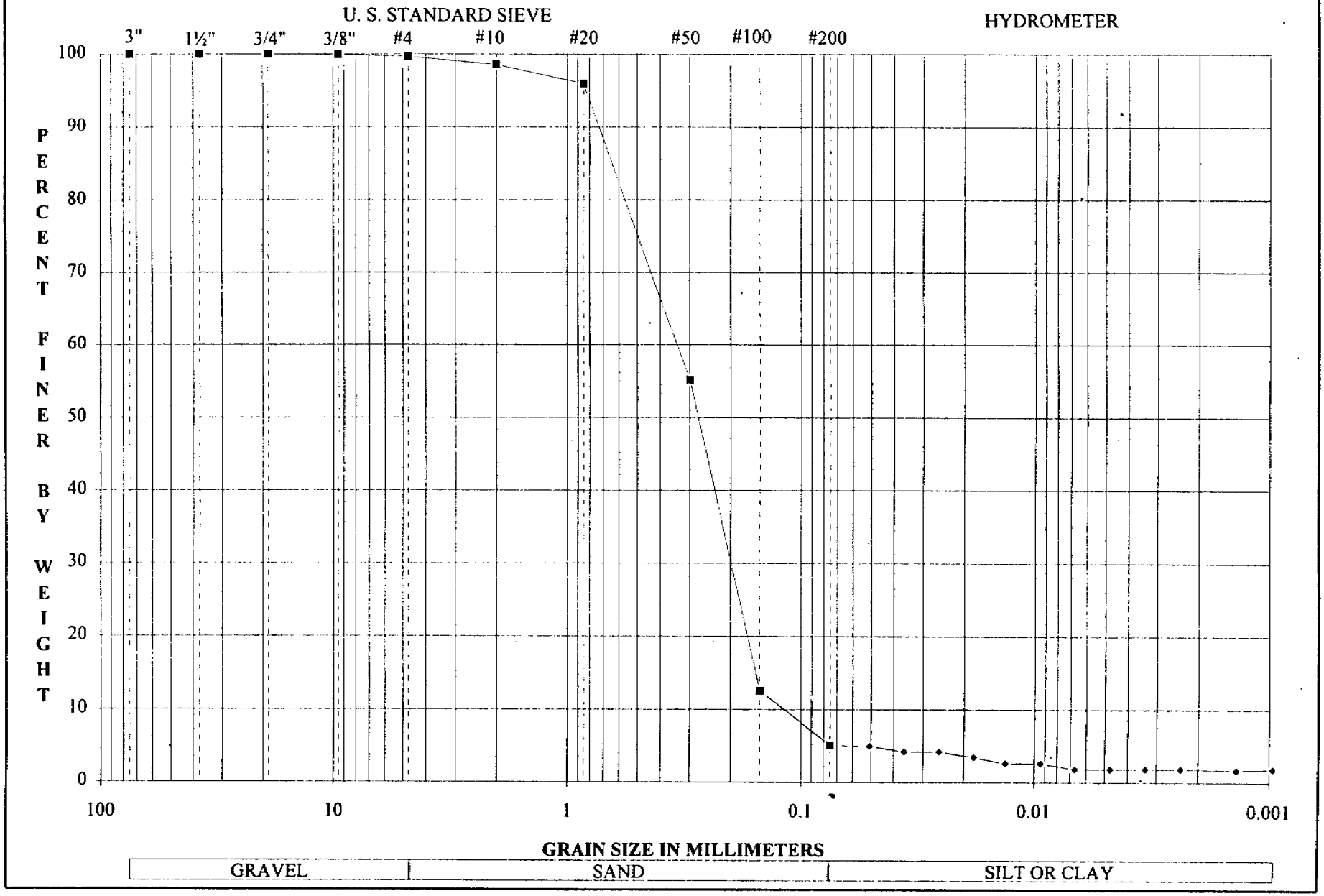
Unified Soil Classification System (USCS) Group Symbol

SP/SM or SP/SC

NOTES

ROY F. WESTON, INC. ENVIRONMENTAL TECHNOLOGY LABORATORY

PARTICLE-SIZE DISTRIBUTION CURVE
PROJECT SAMPLE 63-SD01-01, ETL SAMPLE 9511G215-006



GSC6.XLS

12/15/95

ROY F. WESTON, INC. ENVIRONMENTAL TECHNOLOGY LABORATORY

GEOTECHNICAL TESTING DATA AND RESULTS

PROJECT	Baker - Camp LeJeune #340	PROJECT SAMPLE I.D.	63-SD02-01	PROJECT ANALYST	JDT
JOB NUMBER	9511G215	ETL SAMPLE NUMBER	005	QA/QC ANALYST	RWF
W. O. NUMBER	06629-009-013-0001-00	DATE RECEIVED	11/21/95	DATE COMPLETED	12/02/95

PARTICLE SIZE DISTRIBUTION

U. S. Standard Sieve Size	Diameter mm	% Finer
3"	75.00	100.0
1½"	37.50	100.0
3/4"	19.00	100.0
3/8"	9.500	99.9
#4	4.750	99.8
#10	2.000	99.7
#20	0.850	97.2
#50	0.300	80.5
#100	0.150	25.4
#200	0.075	9.4
HYDROMETER	0.0496	8.1
	0.0355	6.5
	0.0253	5.7
	0.0181	4.2
	0.0132	4.2
	0.0094	3.4
	0.0067	2.6
	0.0047	2.6
	0.0034	1.9
	0.0024	1.9
	0.0014	1.7
	0.0010	1.9

EFFECTIVE SIZES

% Finer	Diameter mm
60	0.244
30	0.163
10	0.078
Uniformity Coefficient	Gradation Coefficient
3.1	1.4

SAMPLE DESCRIPTION

reddish-brown silty or clayey SAND
with 9% silt or clay
contains organic debris

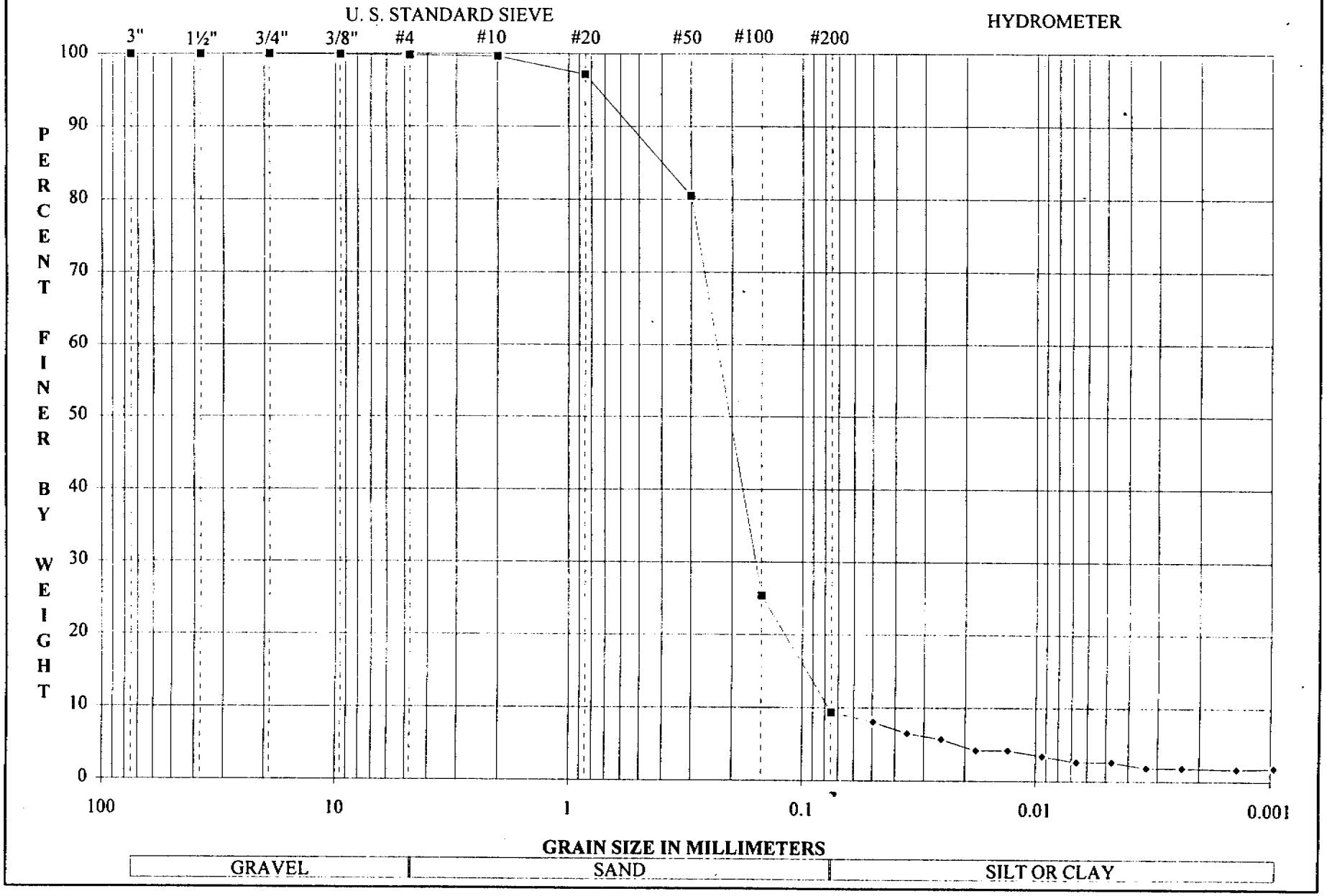
Unified Soil Classification System (USCS) Group Symbol

SP/SM or SP/SC

NOTES

ROY F. WESTON, INC. ENVIRONMENTAL TECHNOLOGY LABORATORY

PARTICLE-SIZE DISTRIBUTION CURVE
PROJECT SAMPLE 63-SD02-01, ETL SAMPLE 9511G215-005



GSC5.XLS

12/15/95

ROY F. WESTON, INC. ENVIRONMENTAL TECHNOLOGY LABORATORY

GEOTECHNICAL TESTING DATA AND RESULTS

PROJECT	Baker - Camp LeJeune #340	PROJECT SAMPLE I.D.	63-SD03-01	PROJECT ANALYST	JDT
JOB NUMBER	9511G215	ETL SAMPLE NUMBER	004	QA/QC ANALYST	RWF
W. O. NUMBER	06629-009-013-0001-00	DATE RECEIVED	11/21/95	DATE COMPLETED	12/02/95

PARTICLE SIZE DISTRIBUTION

U. S. Standard Sieve Size	Diameter mm	% Finer
3"	75.00	100.0
1½"	37.50	100.0
3/4"	19.00	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#10	2.000	99.8
#20	0.850	97.7
#50	0.300	88.6
#100	0.150	49.7
#200	0.075	19.0
HYDROMETER	0.0469	14.6
	0.0340	11.6
	0.0242	10.9
	0.0174	8.6
	0.0128	7.9
	0.0091	7.1
	0.0065	6.3
	0.0046	5.6
	0.0033	4.8
	0.0023	4.8
	0.0014	3.9
	0.0010	4.1

EFFECTIVE SIZES

% Finer	Diameter mm
60	0.190
30	0.102
10	NA
Uniformity Coefficient	Gradation Coefficient
NA	NA

SAMPLE DESCRIPTION

brown silty or clayey SAND
with 19% silt or clay

Unified Soil Classification System (USCS) Group Symbol

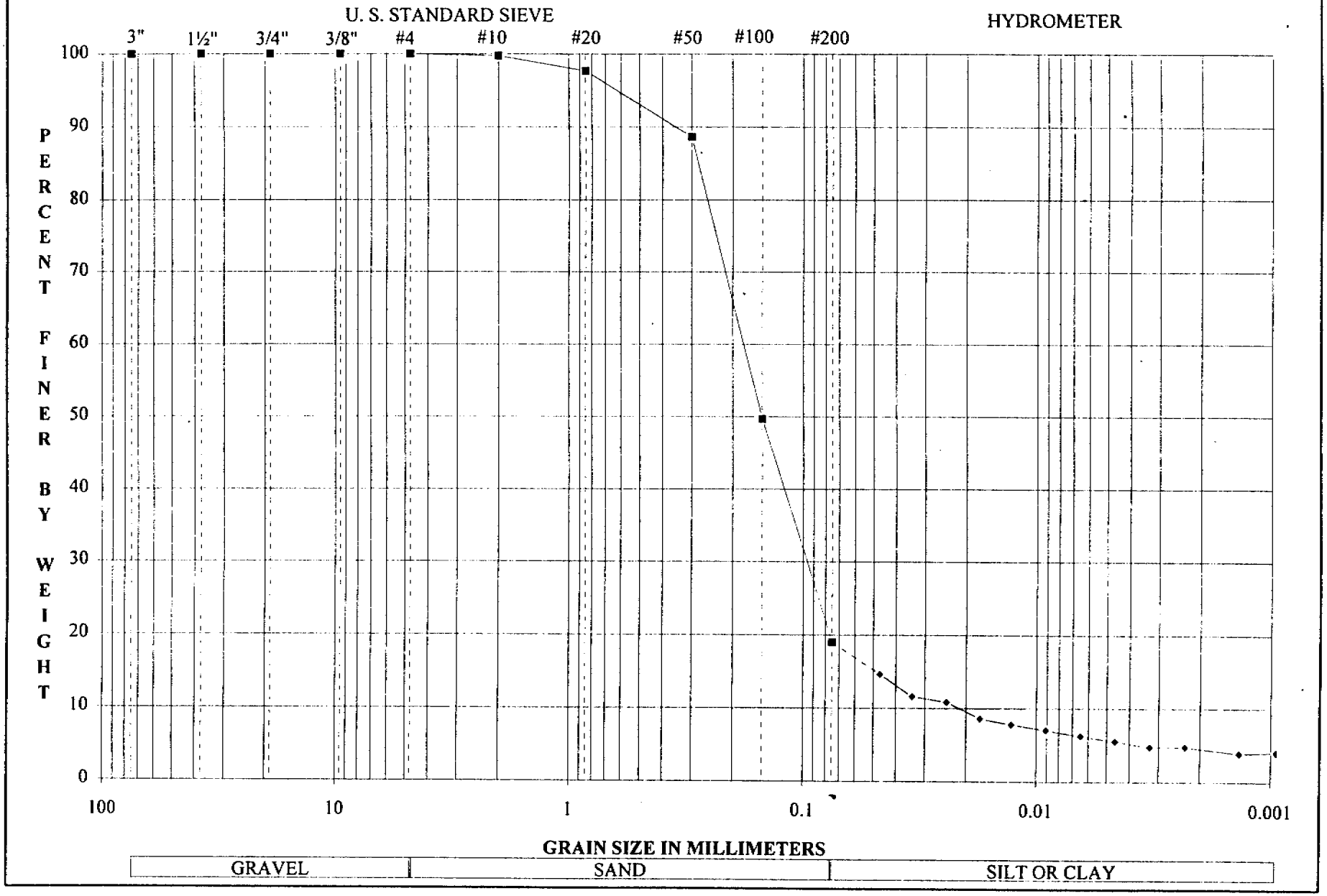
SM or SC

NOTES

NA=NOT APPLICABLE

ROY F. WESTON, INC. ENVIRONMENTAL TECHNOLOGY LABORATORY

PARTICLE-SIZE DISTRIBUTION CURVE
PROJECT SAMPLE 63-SD03-01, ETL SAMPLE 9511G215-004



GSC4.XLS

12/15/95

ROY F. WESTON, INC. ENVIRONMENTAL TECHNOLOGY LABORATORY

GEOTECHNICAL TESTING DATA AND RESULTS

PROJECT	Baker - Camp LeJeune #340	PROJECT SAMPLE I.D.	63-SD04-01	PROJECT ANALYST	JDT
JOB NUMBER	9511G215	ETL SAMPLE NUMBER	003	QA/QC ANALYST	RWF
W. O. NUMBER	06629-009-013-0001-00	DATE RECEIVED	11/21/95	DATE COMPLETED	12/02/95

PARTICLE SIZE DISTRIBUTION

U. S. Standard Sieve Size	Diameter mm	% Finer
3"	75.00	100.0
1½"	37.50	100.0
3/4"	19.00	100.0
3/8"	9.500	99.7
#4	4.750	98.4
#10	2.000	94.7
#20	0.850	89.2
#50	0.300	75.8
#100	0.150	65.3
#200	0.075	39.2
HYDROMETER	0.0447	33.7
	0.0327	27.3
	0.0235	24.7
	0.0168	22.2
	0.0125	18.4
	0.0088	18.4
	0.0063	15.8
	0.0045	14.5
	0.0032	13.3
	0.0023	12.0
	0.0013	11.7
	0.0009	12.0

EFFECTIVE SIZES

% Finer	Diameter mm
60	0.135
30	NA
10	NA
Uniformity Coefficient	Gradation Coefficient
NA	NA

SAMPLE DESCRIPTION

light brown silty or clayey SAND
with 2% gravel and 39% silt or clay

Unified Soil Classification System (USCS) Group Symbol

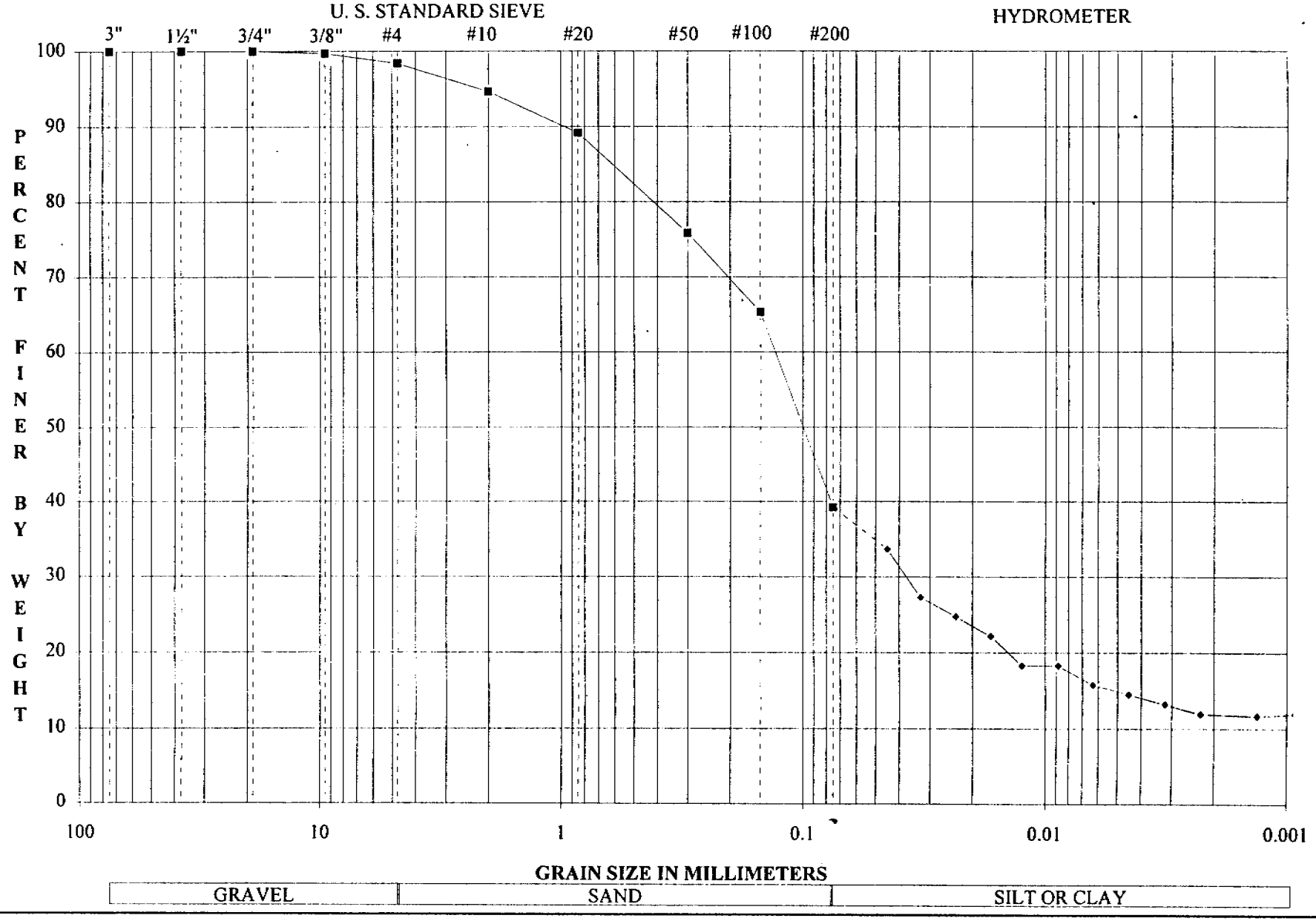
SM or SC

NOTES

NA=NOT APPLICABLE

ROY F. WESTON, INC. ENVIRONMENTAL TECHNOLOGY LABORATORY

PARTICLE-SIZE DISTRIBUTION CURVE
PROJECT SAMPLE 63-SD04-01, ETL SAMPLE 9511G215-003



GSC3.XLS

12/15/95

ROY F. WESTON, INC. ENVIRONMENTAL TECHNOLOGY LABORATORY

GEOTECHNICAL TESTING DATA AND RESULTS

PROJECT	Baker - Camp LeJeune #340	PROJECT SAMPLE I.D.	63-SD05-01	PROJECT ANALYST	JDT
JOB NUMBER	9511G215	ETL SAMPLE NUMBER	002	QA/QC ANALYST	RWF
W. O. NUMBER	06629-009-013-0001-00	DATE RECEIVED	11/21/95	DATE COMPLETED	12/02/95

PARTICLE SIZE DISTRIBUTION

U. S. Standard Sieve Size	Diameter mm	% Finer
3"	75.00	100.0
1½"	37.50	100.0
3/4"	19.00	98.5
3/8"	9.500	97.5
#4	4.750	96.9
#10	2.000	96.5
#20	0.850	94.8
#50	0.300	84.3
#100	0.150	27.0
#200	0.075	5.5
HYDROMETER	0.0505	5.6
	0.0359	4.8
	0.0255	4.1
	0.0182	3.3
	0.0133	3.3
	0.0094	3.3
	0.0067	2.6
	0.0047	2.6
	0.0034	1.8
	0.0024	1.8
	0.0014	1.7
	0.0010	1.8

EFFECTIVE SIZES

% Finer	Diameter mm
60	0.236
30	0.158
10	0.091
Uniformity Coefficient	Gradation Coefficient
2.6	1.2

SAMPLE DESCRIPTION

gray-brown silty or clayey SAND
with 3% gravel and 6% silt or clay
contains organic debris

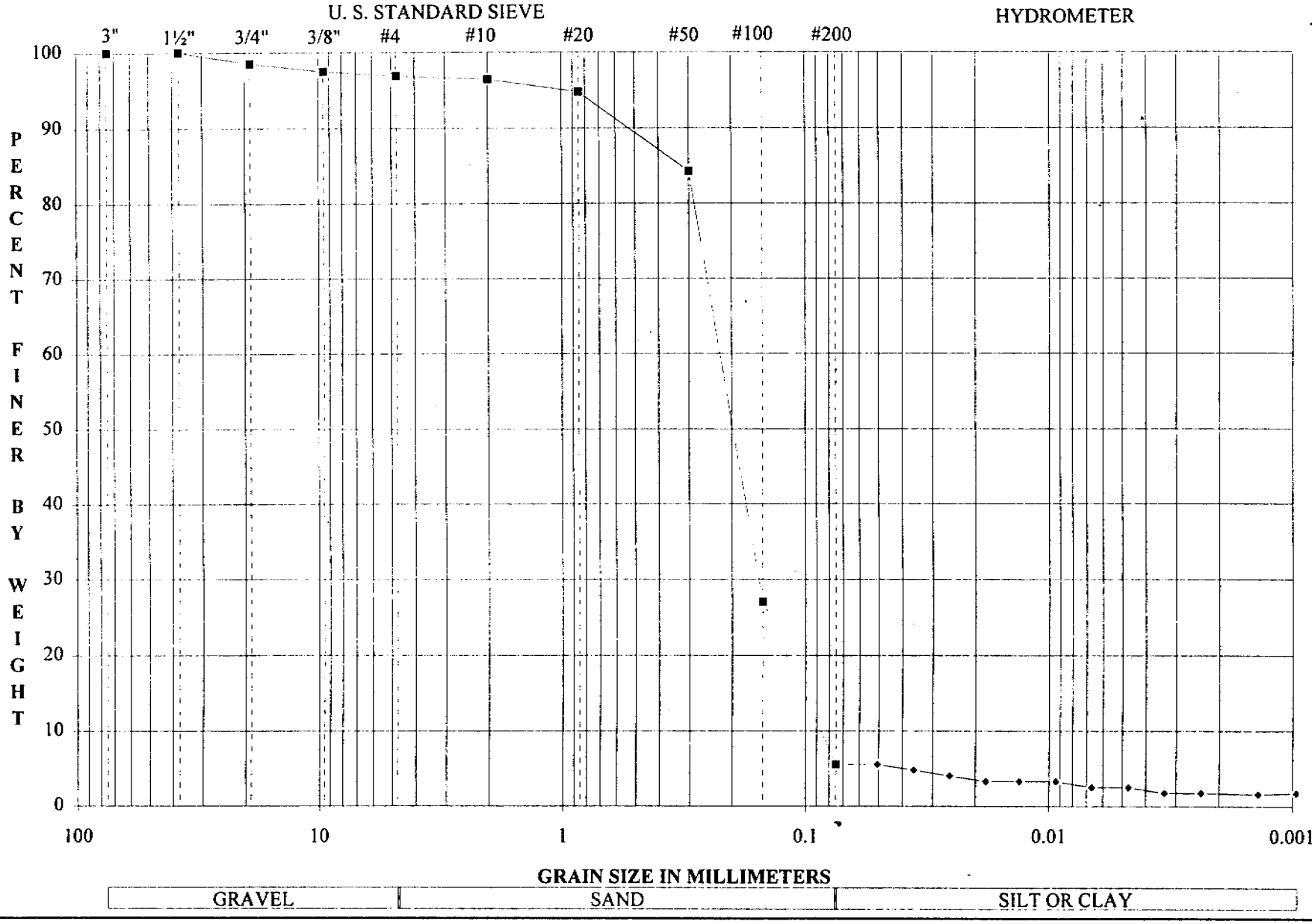
Unified Soil Classification System (USCS) Group Symbol

SP/SM or SP/SC

NOTES

ROY F. WESTON, INC. ENVIRONMENTAL TECHNOLOGY LABORATORY

PARTICLE-SIZE DISTRIBUTION CURVE
PROJECT SAMPLE 63-SD05-01, ETL SAMPLE 9511G215-002



GSC2.XLS

12/15/95

ROY F. WESTON, INC. ENVIRONMENTAL TECHNOLOGY LABORATORY

GEOTECHNICAL TESTING DATA AND RESULTS

PROJECT	Baker - Camp LeJeune #340	PROJECT SAMPLE I.D.	63-TW01	PROJECT ANALYST	JDT
JOB NUMBER	9511G215	ETL SAMPLE NUMBER	008	QA/QC ANALYST	RWF
W. O. NUMBER	06629-009-013-0001-00	DATE RECEIVED	11/21/95	DATE COMPLETED	12/06/95

PARTICLE SIZE DISTRIBUTION

U. S. Standard Sieve Size	Diameter mm	% Finer
3"	75.00	100.0
1½"	37.50	100.0
3/4"	19.00	100.0
3/8"	9.500	100.0
#4	4.750	99.8
#10	2.000	99.6
#20	0.850	99.4
#50	0.300	96.5
#100	0.150	80.8
#200	0.075	50.6
HYDROMETER	0.0430	39.0
	0.0311	35.3
	0.0223	32.8
	0.0160	30.3
	0.0118	29.1
	0.0084	27.8
	0.0060	25.3
	0.0043	24.1
	0.0030	22.8
	0.0022	21.6
	0.0013	21.6
	0.0009	19.1

EFFECTIVE SIZES

% Finer	Diameter mm
60	0.098
30	NA
10	NA
Uniformity Coefficient	Gradation Coefficient
NA	NA

SAMPLE DESCRIPTION

light brown SILT or CLAY
with 49% sand

Unified Soil Classification System (USCS) Group Symbol

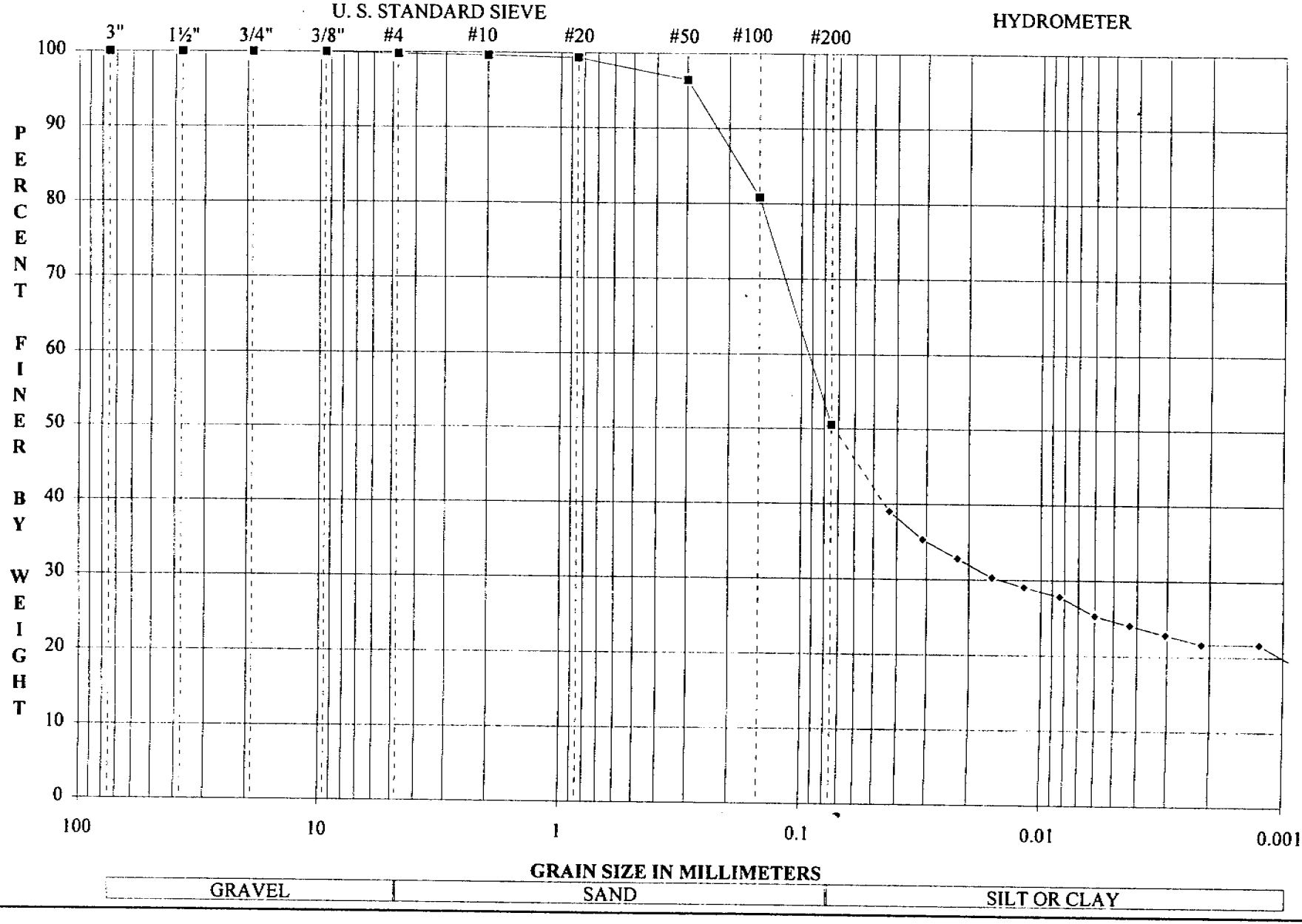
ML, CL, MH, or CH

NOTES

NA=NOT APPLICABLE

ROY F. WESTON, INC. ENVIRONMENTAL TECHNOLOGY LABORATORY

PARTICLE-SIZE DISTRIBUTION CURVE
PROJECT SAMPLE 63-TW01, ETL SAMPLE 9511G215-008



ROY F. WESTON, INC. ENVIRONMENTAL TECHNOLOGY LABORATORY

GEOTECHNICAL TESTING DATA AND RESULTS

PROJECT	Baker - Camp LeJeune #340	PROJECT SAMPLE I.D.	63-TW03	PROJECT ANALYST	JDT
JOB NUMBER	9511G215	ETL SAMPLE NUMBER	007	QA/QC ANALYST	RWF
W. O. NUMBER	06629-009-013-0001-00	DATE RECEIVED	11/21/95	DATE COMPLETED	12/06/95

PARTICLE SIZE DISTRIBUTION

U. S. Standard Sieve Size	Diameter mm	% Finer
3"	75.00	100.0
1½"	37.50	100.0
3/4"	19.00	100.0
3/8"	9.500	100.0
#4	4.750	100.0
#10	2.000	99.9
#20	0.850	99.6
#50	0.300	96.1
#100	0.150	66.1
#200	0.075	43.9
HYDROMETER	0.0391	33.4
	0.0290	29.4
	0.0213	25.5
	0.0153	23.9
	0.0113	23.1
	0.0080	22.3
	0.0058	20.8
	0.0041	19.2
	0.0030	17.6
	0.0021	16.8
	0.0012	16.8
	0.0009	15.3

EFFECTIVE SIZES

% Finer	Diameter mm
60	0.129
30	NA
10	NA
Uniformity Coefficient	Gradation Coefficient
NA	NA

SAMPLE DESCRIPTION

yellow silty or clayey SAND
with 44% silt or clay

Unified Soil Classification System (USCS) Group Symbol

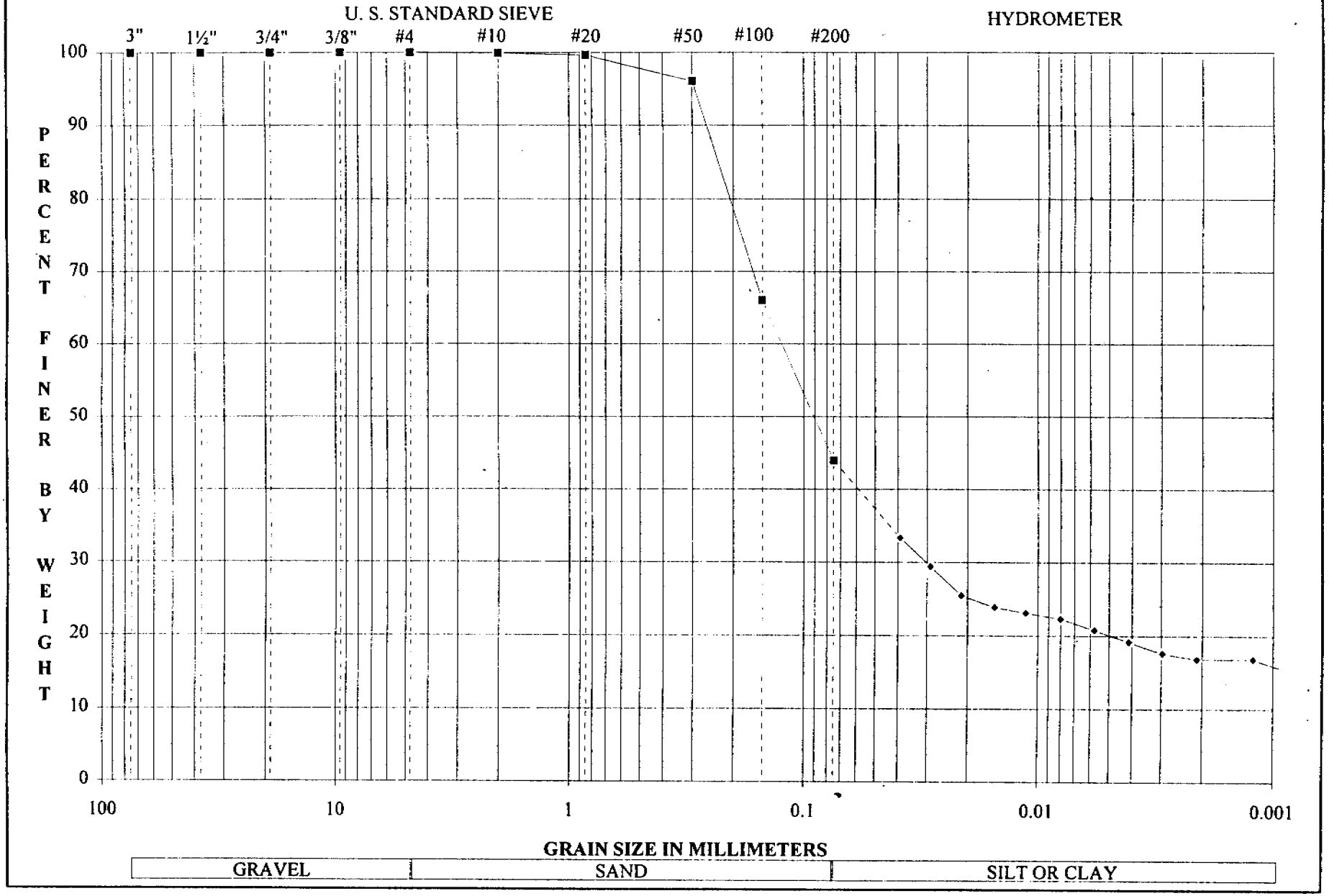
SM or SC

NOTES

NA=NOT APPLICABLE

ROY F. WESTON, INC. ENVIRONMENTAL TECHNOLOGY LABORATORY

PARTICLE-SIZE DISTRIBUTION CURVE
PROJECT SAMPLE 63-TW03, ETL SAMPLE 9511G215-007



ROY F. WESTON, INC. ENVIRONMENTAL TECHNOLOGY LABORATORY

GEOTECHNICAL TESTING DATA AND RESULTS

PROJECT	Baker - Camp LeJeune #340	PROJECT SAMPLE I.D.	63-TW05	PROJECT ANALYST	JDT
JOB NUMBER	9511G215	ETL SAMPLE NUMBER	001	QA/QC ANALYST	RWF
W. O. NUMBER	06629-009-013-0001-00	DATE RECEIVED	11/21/95	DATE COMPLETED	12/02/95

PARTICLE SIZE DISTRIBUTION

U. S. Standard Sieve Size	Diameter mm	% Finer
3"	75.00	100.0
1½"	37.50	100.0
3/4"	19.00	99.9
3/8"	9.500	99.3
#4	4.750	99.0
#10	2.000	98.5
#20	0.850	98.0
#50	0.300	92.0
#100	0.150	46.4
#200	0.075	12.8
HYDROMETER	0.0485	10.5
	0.0345	9.8
	0.0245	9.1
	0.0174	8.3
	0.0128	7.6
	0.0091	6.9
	0.0064	6.9
	0.0046	6.1
	0.0032	6.1
	0.0023	5.4
	0.0013	4.5
	0.0009	4.7

EFFECTIVE SIZES

% Finer	Diameter mm
60	0.195
30	0.113
10	NA
Uniformity Coefficient	Gradation Coefficient
NA	NA

SAMPLE DESCRIPTION

light brown silty or clayey SAND
with 1% gravel and 13% silt or clay
contains organic debris & metal fragments

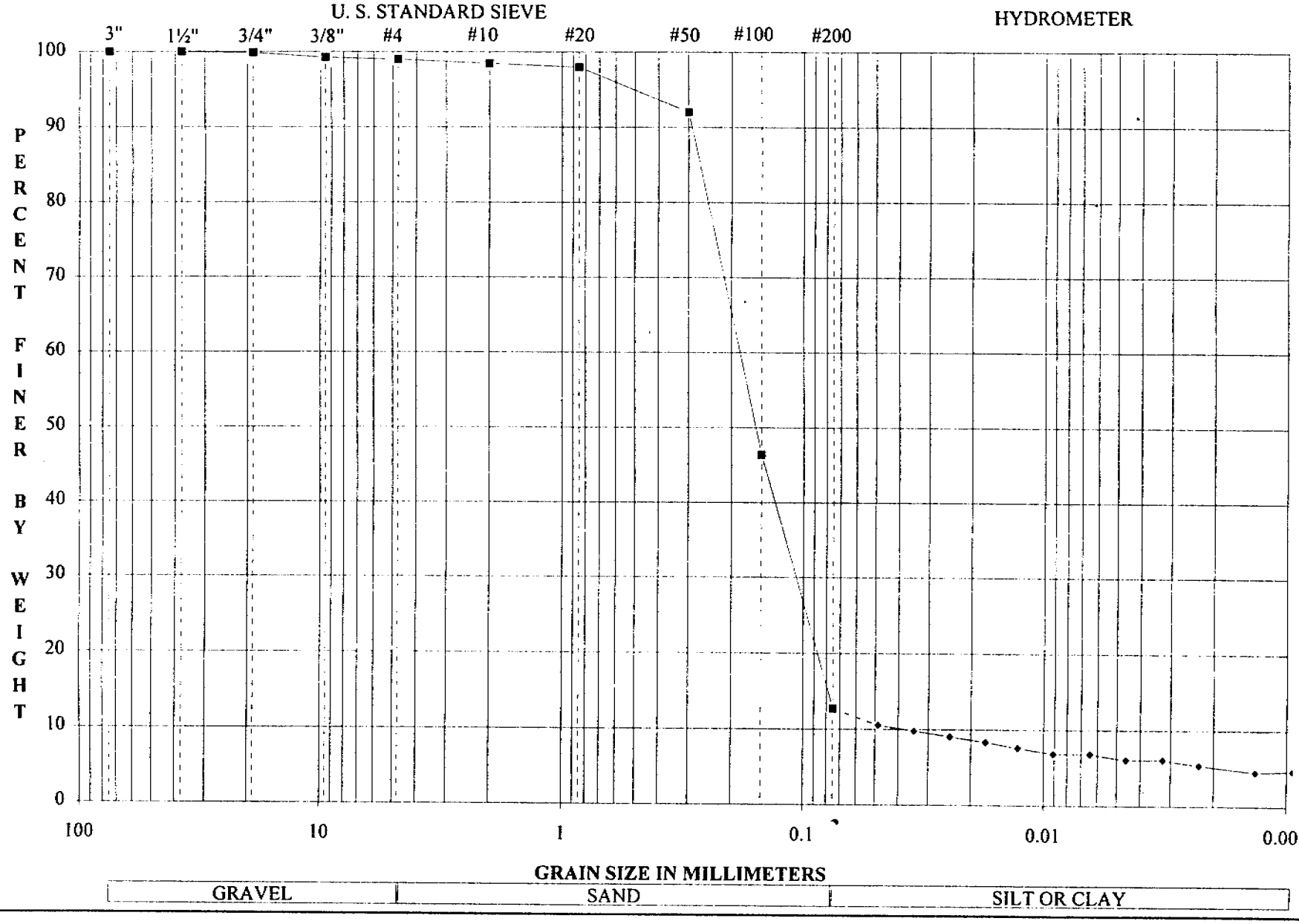
Unified Soil Classification System (USCS) Group Symbol

SM or SC

NOTES

NA=NOT APPLICABLE

PARTICLE-SIZE DISTRIBUTION CURVE
PROJECT SAMPLE 63-TW05, ETL SAMPLE 9511G215-001



TOTAL ORGANIC CARBON

SITE 63, VERONA LOOP DUMP
TOTAL ORGANIC CARBON RESULTS
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA

LOCATION	63-SB12	63-SB22	63-SD01-01	63-SD02-01	63-SD03-01	63-SD03-01D	63-SD04-01	63-SD05-01
DATE SAMPLED	11/07/95	11/07/95	11/11/95	11/11/95	11/11/95	11/11/95	11/11/95	11/11/95
% SOLIDS	79.3	90	68.5	66.9	76.7	68.2	64.1	78.1
TOTAL ORGANIC CARBON (%)	0.08	0.58	2.6	4.5	1	1.4	1.2	0.24 U

WET CHEMISTRY

SITE 63, VERONA LOOP DUMP
GROUNDWATER - DISSOLVED AND TOTAL SUSPENDED SOLIDS
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA

LOCATION	63-GW01-01	63-GW01-01D	63-GW02-01	63-GW03-01	63-TW01-01	63-TW02-01
DATE SAMPLED	11/15/95	11/15/95	11/15/95	11/15/95	11/12/95	11/13/95
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
TOTAL DISSOLVED SOLIDS	30	28	200	62	120	78
TOTAL SUSPENDED SOLIDS	5 U	5 U	30	5 U	5 U	5 U

LOCATION	63-TW03-01	63-TW04-01	63-TW04-01D	63-TW05-01	63-TW06-01	63-TW07-01
DATE SAMPLED	11/13/95	11/13/95	11/13/95	11/13/95	11/13/95	11/15/95
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
TOTAL DISSOLVED SOLIDS	78	34	50	67	110	88
TOTAL SUSPENDED SOLIDS	5 U	5 U	5 U	38	630	5 U

LOCATION	63-TW08-01
DATE SAMPLED	11/14/95
UNITS	MG/L
TOTAL DISSOLVED SOLIDS	26
TOTAL SUSPENDED SOLIDS	5 U

APPENDIX M
BASE BACKGROUND ANALYTICAL RESULTS AND EVALUATION REPORTS

EVALUATION OF METALS IN SURFACE AND SUBSURFACE SOIL AT MCB, CAMP LEJEUNE

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

CONTRACT TASK ORDER 0340

APRIL1, 1996

Prepared for:

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

Under the:

LANTDIV CLEAN Program
Contract N62470-89-D-4814

Prepared by:

BAKER ENVIRONMENTAL, INC.
Coraopolis, Pennsylvania

1.0 INTRODUCTION

Under the Department of the Navy (DoN) Installation Restoration Program (IRP). Baker Environmental, Inc. (Baker) has conducted numerous remedial investigations at Marine Corps Base (MCB), Camp Lejeune, North Carolina. As part of these investigations soil, surface and subsurface, samples have been collected. These samples provide the basis for a compilation of data that is representative of the natural concentration of metals in soils within the boundaries of MCB, Camp Lejeune. In general, chemical specific standards and criteria are not available for soil and as a result, base-specific background concentrations have been compiled from a number of locations throughout MCB, Camp Lejeune, allowing for the evaluation of background levels of metals in the surface and subsurface soils. The objectives of this report are as follows:

- To provide insight into the selection of soil locations used as control or background sample locations.
- To discuss general soil types encountered in each area that samples were collected.
- To provide the base background concentrations for each of the metals.
- To provide maps illustrating the locations of each of the background and/or control samples.

2.0 SELECTION OF SAMPLE LOCATIONS

The samples selected for inclusion into the basewide database were collected during nine Remedial Investigations including 23 sites. These samples were collected in areas not known to have been impacted by site operations or disposal activities based on the site histories. In some cases, these soils are representative of naturally occurring conditions and in other cases the soils have been impacted by other base related activities. In the later case the samples are referred to as "control" samples. Control samples are samples which may not represent background conditions, but represent the current state of soil quality upgradient of the site. Examples of activities that may not be site related but still impact the quality of the soils upgradient and across the entire site would include troop maneuvers, artillery practice, and various forms of combat training. Fifty-two surface and forty-six subsurface soil samples were collected from the following sites for inclusion into the base background data base: Sites 6, 78, 41, 69, 74, 1, 2, 28, 30, 35, 48, 16, 80, 7, 36, 43, 44, 54, 86, and 65 (see Figures 1 through 21).

Site background and base background concentration values for metal elements in surface and subsurface soil are presented in Tables 1 and 2, respectively. At the end of each of the tables, the minimum and maximum concentrations, the average and 2 times average concentrations are presented for each of the elements of concern.

3.0 GENERALIZED SOIL COMPARISON

MCB, Camp Lejeune is situated within the Tidewater region of the Atlantic Coastal Plain physiographic province. The sediments of the Atlantic Coastal Plain consist mostly of interbedded sand, silt, clay, calcareous clay, shell beds, sandstone and limestone. These sediments are layered in interfingering beds and lenses that gently dip and thicken to the southeast to a combined thickness of approximately 1,500 feet. These sediments were deposited in marine or near-shore environments and range in age from early Cretaceous to Quaternary time. Regionally, they comprise 10 aquifers and 9 confining units which overlie

igneous and metamorphic basement rocks of the pre-Cretaceous age. Seven of these aquifers and their associated confining units are present in the MCB, Camp Lejeune area (ESE, 1990).

For the basis of discussion, MCB, Camp Lejeune has been segregated into six areas that will be discussed. These areas are as follows: Camp Geiger, Marine Corps Air Station (MCAS), Mumford Point/Tarawa Terrace, Hadnot Point/Holcomb Boulevard, Rifle Range, and Courthouse Bay. The discussion will only involve the soil descriptions from borings advanced for the purpose of collecting background or control samples. In addition, only the soils between ground surface and the water table will be discussed since this is the interval from which the samples were collected.

Sites 35, 36, and 44 are considered within the boundaries of Camp Geiger for the purpose of this report. Fairly consistent soil types were encountered at the three sites considered within the Camp Geiger area. Some of these sites may actually be located just beyond the actual boundaries of Camp Geiger. Soils collected from ground surface to one foot below surface at the forementioned sites were primarily sand with varying amounts of silt.

The soils within MCAS (Sites 41, 43, 48, 54, and 86) are vary inconsistent throughout the area. Background boring logs indicate that sand, silt and clay are encountered to a depth of nine feet. This area of Camp Lejeune has numerous lenses of clay that can range from one to several feet thick, and is discontinuous. One location encountered clay within Site 41 from the zero to one foot interval. The soils from one to seven feet were a combination of sands, silts and clays.

The soils at the Mumford Point/Tarawa Terrace area (Sites 7, 16, and 80) are similar to the soils in the area of Camp Geiger. The first foot of soil appears to be consistently sand and silt with the exception of two locations which specify that clay was encountered. Clay was encountered at Sites 7 and 80. Below one foot bgs the soils are consistently interbedded sand and silt with discontinuous clay beds.

Sites 1, 6, 28, 30 and 74 make up the Hadnot Point/Holcomb Boulevard area. The soils encountered in this area of MCB, Camp Lejeune were primarily sand with varying percentages of silt and clay. This lithology is consistent to depths greater than 19 feet.

Limited information exists from the Rifle Range area. The only site included in the background data is Site 69. The background borings were advanced only to one foot bgs. The soil type encountered at each location was sand. Monitoring wells installed at Site 69 indicate a predominance of fine sand with trace silt present in the subsurface soil. However, within a few monitoring wells, subsurface soils indicate the presence of clay with fine to medium sand and trace silts.

The Courthouse Bay area is comprised of Site 65. The soil types described at Site 65 indicate that sand is the predominant soil from ground surface to 17 feet bgs. At Site 65 a clay was encountered between nine and 11 feet bgs, with sand being encountered again to a groundwater.

Tables 3 and 4 provide a summary of surface soil and subsurface soil, respectively for the sites referenced above.

TABLES

TABLE 1
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 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.

TABLE 1
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 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.

TABLE 1
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.

TABLE 1
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.

TABLE 1
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.

TABLE 1
BASE BACKGROUND
SURFACE SOILS
TAL INORGANICS
MCB CAMP LEJEUNE, NORTH CAROLINA

	7-BB-SB01-00	7-BB-SB02-00	7-BB-SB03-00	36-BB-SB01-00	36-BB-SB02-00	36-BB-SB03-00	43-BB-SB01-00	43-BB-SB02-00
Aluminum	7180.0	3770.0	5800.0	6950	2300	2380	3520	2510
Antimony	6.05	5.50	5.60	1.15	1.2	1.75	2.35	2.3
Arsenic	1.200	1.100	3.900	0.42	0.205	0.17	0.51	0.55
Barium	12.0	10.2	9.7	13.2	12.4	14	6.3	10.8
Beryllium	0.26	0.11	0.11	0.03	0.035	0.075	0.105	0.1
Cadmium	0.600	0.550	0.550	0.31	0.3	0.235	0.335	0.31
Calcium	397.0	69.5	615.0	462	897	1690	1180	908
Chromium	8.4	3.8	10.6	7.9	2.7	3.1	2.8	2.8
Cobalt	1.20	1.10	1.10	0.245	0.255	0.255	0.345	0.335
Copper	1.20	1.10	2.30	2.8	2.8	4.9	0.7	11.2
Iron	3050.0	2170.0	7510.0	6670	1750	1560	1050	2050
Lead	7.10	6.40	8.70	10.3	17.5	39.6	6.6	13.6
Magnesium	104.0	50.5	79.5	185	105	86	68.9	56.4
Manganese	3.25	3.1	1.8	6.9	14.3	21.4	3	5
Mercury	0.060	0.060	0.060	0.045	0.05	0.045	0.13	0.12
Nickel	2.40	2.20	2.25	0.45	1.6	0.9	1.25	1.2
Potassium	121.0	110.0	111.5	138	60.2	58	78.5	76
Selenium	0.600	0.550	1.300	0.12	0.16	0.135	0.195	0.17
Silver	0.60	0.55	0.55	0.265	0.275	0.255	0.345	0.335
Sodium	15.80	15.25	17.30	13.1	14.1	14.05	14.45	9.9
Thallium	1.200	1.100	1.100	0.055	0.075	0.1	0.12	0.105
Vanadium	9.70	5.40	18.20	15.4	8.3	6.4	1.6	3.7
Zinc	5.3	2.9	3.8	6	12.7	20.8	2.6	16.7
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.

TABLE 1
BASE BACKGROUND
SURFACE SOILS
TAL INORGANICS
MCB CAMP LEJEUNE, NORTH CAROLINA

	43-BB-SB03-00	44-BB-SB01-00	54-BB-SB01-00	54-BB-SB02-00	86-BB-SB01-00	65-DW04-00	MIN	MAX	AVG	2Xaverage
Aluminum	2730	4950	8990	4950	6590	773	17.7	9570	2928.041	5856.083
Antimony	2.2	1.2	1.25	1.3	1.95	5.55	0.33	8	2.727	5.455
Arsenic	0.67	1.3	1.1	1.2	0.45	1.1	0.065	3.9	0.661	1.322
Barium	13	14.9	18.7	13.3	13.9	6.9	0.65	20.8	8.646	17.292
Beryllium	0.095	0.08	0.0345	0.0375	0.085	0.11	0.02	0.26	0.103	0.205
Cadmium	0.3	0.325	0.335	0.34	0.265	0.55	0.04	1	0.348	0.696
Calcium	1610	668	1020	3590	3960	79.3	4.25	10700	686.488	1372.977
Chromium	2.9	5.9	9.2	6.8	6.5	1.1	0.33	12.5	3.303	6.607
Cobalt	0.32	0.43	0.375	0.41	0.285	4.15	0.185	4.15	1.023	2.046
Copper	0.75	2.5	2.1	4.2	2.2	1.1	0.5	87.2	3.552	7.104
Iron	1110	3220	4700	2780	4030	509	69.7	9640	1851.213	3702.427
Lead	13.8	19.6	3.95	12.3	21.5	2	0.47	142	11.685	23.370
Magnesium	60.5	189	371	259	233	30.3	2.55	610	101.480	202.960
Manganese	6.5	6.7	14.8	19.9	11.5	9.6	0.87	66	9.255	18.510
Mercury	0.05	0.06	0.041	0.04	0.04	0.055	0.01	0.13	0.047	0.094
Nickel	1.15	1.7	1.3	1.6	7.2	2.25	0.45	7.2	1.727	3.455
Potassium	73.5	220	223	175	160	111.5	1	416	100.030	200.060
Selenium	0.185	0.34	0.145	0.13	0.43	0.55	0.075	1.3	0.377	0.753
Silver	0.32	0.28	0.285	0.295	0.285	0.55	0.0435	4.3	0.440	0.880
Sodium	12.7	12.75	8.3	9.55	18.3	22.25	4.7	126	29.507	59.013
Thallium	0.11	0.065	0.065	0.06	0.13	1.1	0.055	1.2	0.462	0.924
Vanadium	4	11.8	13.4	9.1	48.6	1.1	0.305	48.6	5.723	11.447
Zinc	4.5	7.4	7.2	9.1	18.4	3.9	0.3	28.3	6.882	13.763
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.

TABLE 2
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	6180	5980	4160
Antimony	4.7	4.85	1.4	1.25	0.355	1.6	4.2	3.25	2.95	6.9
Arsenic	0.31	0.315	0.033	0.305	0.24	0.47	1.1	0.29	0.26	0.285
Barium	2	2.05	7.6	6.5	10.9	6.6	7.5	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	10.5	5.5	5.3	7.1
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	6.6	0.6	0.5	2.1
Iron	257	126	456	833	822	2840	4940	1510	1210	567
Lead	1.2	1.6	11.5	2.7	6.1	4.3	5.1	3.8	3.1	3.3
Magnesium	13.1	12.7	133	86.8	188	260	222	189	217	131
Manganese	0.475	0.395	7.5	2.6	2.4	5.2	4.1	4.9	5.4	2.0
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	191	268	98
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	21.6	9.2	9.6
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

TABLE 2
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	5170	2830	5730	2970	17.1	25.7	42.6	777	16.9
Antimony	3.2	3.55	3.55	3.75	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	8.3	7.3	3.4	4.7	3.9	0.7	0.8	0.8	0.7	0.8
Cobalt	0.375	0.42	0.42	0.93	0.45	0.37	0.42	0.43	0.40	0.46
Copper	1.6	0.65	0.65	0.65	0.7	0.6	0.7	0.7	0.6	0.7
Iron	959	2090	749	2780	908	95.9	155	63.3	514	74.5
Lead	4.0	4.1	2.3	7.4	0.7	0.47	1.9	0.91	3.2	0.59
Magnesium	262	153	66	157	24.7	7.5	2.9	2.9	30.2	3.1
Manganese	4.5	3.2	1.5	5.3	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	0.8	0.7	0.8	2.2	1.7	0.8
Potassium	308	122	91.3	136	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	10.9	33.8	28.6	20.3	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	6.4	2.8	8.5	6.2	0.73	1.0	0.84	1.6	0.34
Zinc	2.700	1.9	1.0	4.2	0.35	0.32	0.39	1.2	1.7	1.3

TABLE 2
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	888	2330	11000	2520	5950	9600	9500	1060	1400
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	1.1	7	0.42	0.71	1.40	0.75	0.20	1.05
Copper	0.550	1	1.1	9.5	0.670	1.6	4.4	2.2	0.630	1.05
Iron	442	1220	1870	90500	795	2920	12800	3350	557	571
Lead	8.1	2.4	3.8	21.4	2.9	5	11.7	7.8	5.4	3
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	2.250	0.600	0.455	1.4	0.6	2.2	0.450	2.050
Potassium	145	100.5	228	1250	161	297	1020	458	130	103
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	3.0	3.9	4.9	69.4	2.3	10.8	18.4	13.5	2.4	2.3
Zinc	2.6	8.7	4.9	26.6	2.0	3.5	8.1	4.8	1.7	3.1

TABLE 2
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	36-BB-SB01-02	36-BB-SB02-02	36-BB-SB03-03	43-BB-SB01-02	43-BB-SB02-01
Aluminum	1700	581	1940	888	2330	4480	8700	3810	4320	959
Antimony	5.150	5.750	5.8	5	5.6	1.15	1.2	1.9	2.3	1.75
Arsenic	1.05	1.15	1.15	1	1.1	0.155	0.69	0.185	0.44	0.115
Barium	22.6	10.8	3.7	0.8	3.8	13.9	13.7	5.5	8.9	2.2
Beryllium	0.105	0.115	0.115	0.1	0.11	0.032	0.035	0.08	0.1	0.075
Cadmium	0.50	0.550	0.6	0.5	0.55	0.31	0.315	0.255	0.31	0.235
Calcium	41.55	32.15	135	74.2	290	116	225	48.2	76.9	77.6
Chromium	6.2	3.9	4.7	2.4	4.2	4.2	13.5	3.7	5.5	1.2
Cobalt	1.05	1.15	1.15	1	1.1	0.245	0.25	0.275	0.335	0.255
Copper	1.05	1.15	1.15	1	1.1	0.43	0.98	0.175	0.21	0.16
Iron	709	1620	1150	1220	1870	2690	4080	976	2370	414
Lead	1.8	1.1	2.9	2.4	3.8	5.4	6.6	4	6.1	1.6
Magnesium	44.1	12.25	104	35.7	115	78.6	292	110	121	17.9
Manganese	2.65	2.1	5	2.7	2.4	2.5	6.7	3.6	3	1.3
Mercury	0.050	0.060	0.06	0.055	0.06	0.06	0.06	0.045	0.045	0.05
Nickel	2.050	2.300	2.3	2	2.25	1	9.1	1	1.2	0.9
Potassium	102.5	114.5	116	100.5	228	91.3	222	62.5	76	57.5
Selenium	0.50	0.55	0.6	0.5	0.55	0.12	0.175	0.145	0.185	0.155
Silver	0.50	0.55	0.6	0.5	0.55	0.27	0.27	0.275	0.335	0.255
Sodium	13.6	15.65	29.8	10.3	28.2	11.3	25.6	6.1	36.65	4.2
Thallium	1.05	1.15	1.15	1	1.1	0.055	0.085	0.105	0.11	0.095
Vanadium	3.1	2.5	4	3.9	4.9	8.2	17	2.05	5.9	0.9
Zinc	2.1	3.15	15	4.35	2.45	0.82	2.6	0.89	2.3	0.76

TABLE 2
BASE BACKGROUND
SUBSURFACE SOIL
TAL INORGANICS
MCB CAMP LEJEUNE, NORTH CAROLINA

	43-BB-SB03-02	44-BB-SB01-03	54-BB-SB01-04	54-BB-SB02-04	86-BB-SB01-02	65-DW04-05	MIN	MAX	AVG	2Xaverage
Aluminum	2260	10300	1100	1040	2460	4560	16.900	11000.000	3706.615	7413.230
Antimony	2.25	1.15	1.25	1.25	2	5.25	0.355	6.900	3.249	6.498
Arsenic	0.31	1.2	0.16	0.195	0.22	1.05	0.033	15.400	0.985	1.971
Barium	9.1	12.5	1.15	1.05	4.4	10.9	0.650	22.600	7.185	14.370
Beryllium	0.1	0.065	0.06	0.0345	0.09	0.105	0.010	0.310	0.096	0.191
Cadmium	0.305	0.305	0.325	0.335	0.275	0.5	0.155	1.200	0.359	0.718
Calcium	295	20.9	24.6	14.7	50.8	111	4.750	4410.000	193.912	387.824
Chromium	2	11	1.15	1	3.1	5.7	0.650	66.400	6.268	12.537
Cobalt	0.33	0.495	0.26	0.305	0.29	3.2	0.175	7.000	0.805	1.611
Copper	0.265	0.86	0.45	0.46	0.185	1.05	0.160	9.500	1.205	2.410
Iron	507	4720	392	319	3160	925	63.300	90500.000	3567.320	7134.639
Lead	2.8	4.15	0.8	1.75	2.4	2.7	0.465	21.400	4.132	8.264
Magnesium	49.3	302	16.4	17.35	71.3	192	2.850	852.000	131.699	263.398
Manganese	2.5	3.9	0.5	0.6	1.8	5.6	0.395	19.900	3.995	7.990
Mercury	0.055	0.0425	0.11	0.05	0.055	0.05	0.010	0.680	0.065	0.129
Nickel	1.2	0.92	9.2	7.7	1.05	2.1	0.450	9.200	1.863	3.725
Potassium	75	207	29.9	14.45	66.5	105	1.050	1250.000	172.126	344.252
Selenium	0.17	0.155	0.145	0.17	0.175	0.5	0.085	2.400	0.403	0.806
Silver	0.33	0.26	0.28	0.29	0.29	0.5	0.175	1.000	0.434	0.869
Sodium	8.75	86.4	4.4	2.2	6.8	69.9	2.200	141.000	27.285	54.570
Thallium	0.105	0.07	0.065	0.08	0.13	1.05	0.055	2.700	0.490	0.980
Vanadium	1.7	17.1	0.85	0.8	1.85	4.1	0.340	69.400	6.670	13.340
Zinc	1.6	2.5	0.92	1.3	0.37	3.45	0.320	26.600	3.334	6.668

TABLE 3

SUMMARY OF SURFACE SOILS, PHYSICAL PROPERTIES
EVALUATION OF METALS AT
MCB CAMP LEJEUNE, NORTH CAROLINA

Soil Boring Identification	Location	USCS		USDA Soil Symbol	Field Observation		Physical Characteristics		Organic Matter
		Classification	Depth		Description	Depth	Soil Reaction pH	Moist Bulk Density	
6-20IN-SB11	Site 6	SP, SP-SM	0 - 80"	KuB	Fine sand with trace to little silt and clay	0 - 1'	4.5 - 7.3	-0.2	<2
6-201N-SB12	Site 6	SP, SP-SM	0 - 80"	KuB	Fine sand with trace to little silt and clay	0 - 1'	4.5 - 7.3	-0.2	<2
6-201C-SB38	Site 6	SP, SP-SM	0 - 80"	KuB	Fine sand with trace to little silt and clay	0 - 1'	4.5 - 7.3	-0.2	<2
6-201C-SB39	Site 6	SP, SP-SM	0 - 80"	KuB	Fine sand with trace to little silt and clay	0 - 1'	4.5 - 7.3	-0.2	<2
78-BB-SB01	Site 78	SP, SP-SM	0 - 21"	On	Fine sand with trace to little silt and clay	0 - 1'	3.6 - 5.5	-0.2	.5 - 2
41-BB-SB01	Site 41	ML, SC, SM, SM-SC	0 - 28"	Mk	Silty sand fine grained with trace clay	0 - 1'	5.1 - 7.3	---	.5 - 2
41-BB-SB02	Site 41	SM, SP-SM	0 - 36"	BmB	Silty sand fine grained with trace clay	0 - 1'	4.5 - 6.5	-0.15	.5 - 1
41-BB-SB03	Site 41	SM	0 - 12"	MaC	Silty sand fine grained with trace clay	0 - 1'	4.5 - 6.5	---	<2
41-BB-SB04	Site 41	SM	0 - 12"	MaC	Silty sand fine grained with trace clay	0 - 1'	4.5 - 6.0	---	<2
69-BB-SB01	Site 69	SM, SP-SM	0 - 30"	BmB	Fine grained sand with silt	0 - 1'	4.5 - 6.5	-0.15	.5 - 1

TABLE 3 (Continued)

SUMMARY OF SURFACE SOILS, PHYSICAL PROPERTIES
EVALUATION OF METALS AT
MCB CAMP LEJEUNE, NORTH CAROLINA

Soil Boring Identification	Location	USCS		USDA Soil Symbol	Field Observation		Physical Characteristics		Organic Matter
		Classification	Depth		Description	Depth	Soil Reaction pH	Moist Bulk Density	
69-BB-SB02	Site 69	SM, SP-SM	0 - 30"	BmB	Fine grained sand with silt	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
69-BB-SB03	Site 69	SM, SP-SM	0 - 30"	BmB	Fine grained sand with silt	0 - 1'	4. 5 - 6.5	1.60 - 1.75	.5 - 1
69-BB-SB04	Site 69	SM, SP-SM	0 - 30"	BmB	Fine grained sand with silt	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
74-BB-SB01	Site 74	SM	0 - 8"	FoA	Silt and clay	0 - 1'	4.5 - 6.5	1.20 - 1.40	.5 - 2
74-BB-SB02	Site 74	SM	0 - 8"	FoA	Fine sand with trace to little silt and clay	0 - 1'	4.5 - 6.5	1.20 - 1.40	.5 - 2
74-BB-SB03	Site 74	SM	0 - 8"	FoA	Fine sand with trace to little silt and clay	0 - 1'	4.5 - 6.5	1.20 - 1.40	.5 - 2
74-BB-SB04	Site 74	SM	0 - 8"	FoA	Fine sand with trace to little silt and clay	0 - 1'	4.5 - 6.5	1.20 - 1.40	.5 - 2
1-BB-SB38	Site 1	SM, SP-SM	0 - 30"	BmB	Fine sand with trace to little silt and clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
1-BB-SB39	Site 1	SM, SP-SM	0 - 30"	BmB	Fine sand with trace to little silt and clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
1-GW13	Site 1	SM, SP-SM	0 - 30"	BmB	Fine sand with trace to little silt and clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
2-GW09	NA	NA	NA	NA	NA	NA	NA	NA	NA
28-BB-SB37	Site 28	SM, SP-SM	0 - 30"	BmB	Fine sand with trace to little silt and clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 -1
28-BB-SB38	Site 28	SM, SP-SM	0 - 30"	BmB	Fine sand with trace to little silt and clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1

TABLE 3 (Continued)

SUMMARY OF SURFACE SOILS, PHYSICAL PROPERTIES
EVALUATION OF METALS AT
MCB CAMP LEJEUNE, NORTH CAROLINA

Soil Boring Identification	Location	USCS		USDA Soil Symbol	Field Observation		Physical Characteristics		Organic Matter
		Classification	Depth		Description	Depth	Soil Reaction pH	Moist Bulk Density	
28-GW09DW	Site 28	SM, SP-SM	0 - 30"	BaB	Fine sand with trace to little silt and clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
30-BB-SB12	NA	NA	NA	NA	NA	NA	NA	NA	NA
30-BB-SB13	Site 30	SP, SP-SM	0 - 80"	KuB	Fine grained sand with trace silt	0 - 1'	4.5 - 7.3	1.60 - 1.80	<2
30-BB-SB14	Site 30	SP, SP-SM	0 - 80"	KuB	Fine grained sand with trace silt	0 - 1'	4.5 - 7.3	1.60 - 1.80	<2
30-BB-SB15	Site 30	SP, SP-SM	0 - 80"	KuB	Fine grained sand with trace silt	0 - 1'	4.5 - 7.3	1.60 - 1.80	<2
30-BB-SB16	Site 30	SP, SP-SM	0 - 80"	KuB	Fine grained sand with trace silt	0 - 1'	4.5 - 7.3	1.60 - 1.80	<2
30-GW03	Site 30	SP, SP-SM	0 - 80"	KuB	Fine grained sand with trace silt	0 - 1'	4.5 - 7.3	1.60 - 1.80	<2
35-GWD-1	NA	NA	NA	NA	NA	NA	NA	NA	NA
35-SS01	Site 35	SM, SP-SM	0 - 30"	BaB	Silty sand fine grained	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
48-BB-SB02	Site 48	SM, SP-SM	0 - 30"	BmB	Fine grained sand with silt, trace clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
48-BB-SB03	Site 48	SM, SP-SM	0 - 30"	BmB	Fine grained sand with silt, trace clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
16-BB-SB01	Site 16	SM, SP-SM	0 - 30"	BmB	Fine grained, little to trace silt, trace clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
16-BB-SB02	Site 16	SM, SP-SM	0 - 30"	BmB	Fine grained, little to trace silt, trace clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1

TABLE 3 (Continued)

SUMMARY OF SURFACE SOILS, PHYSICAL PROPERTIES
EVALUATION OF METALS AT
MCB CAMP LEJEUNE, NORTH CAROLINA

Soil Boring Identification	Location	USCS		USDA Soil Symbol	Field Observation		Physical Characteristics		Organic Matter
		Classification	Depth		Description	Depth	Soil Reaction pH	Moist Bulk Density	
16-BB-SB03	Site 16	SM, SP-SM	0 - 30"	BmB	Fine grained, little to trace silt, trace clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
80-BB-SB01	Site 80	SM, ML	0 - 12"	Ra	Silt, trace fine grained sand and clay	0 - 1'	4.5 - 6.5	1.30 - 1.60	1 - 6
80-BB-SB02	Site 80	SM, ML	0 - 12"	Ra	Silt, trace fine grained sand and clay	0 - 1'	4.5 - 6.5	1.30 - 1.60	1 - 6
80-BB-SB03	Site 80	SM, ML	0 - 12"	Ra	Silt, trace fine grained sand and clay	0 - 1'	4.5 - 6.5	1.30 - 1.60	1 - 6
7-BB-SB01	Site 7	ML, SC, SM	0 - 28"	Mk	Silty clay with trace fine grained sand	0 - 1'	5.1 - 7.3	---	.5 - 2
7-BB-SB02	Site 7	SM	0 - 12"	MaC	Fine grained sand with little to trace silt	0 - 1'	4.5 - 6.0	---	<2
7-BB-SB03	Site 7	SM	0 - 12"	MaC	Fine grained sand with little to trace silt	0 - 1'	4.5 - 6.0	---	<2
36-BB-SB01	Site 36	SM, SP-SM	0 - 30"	BaB	Fine sand with trace silt and clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
36-BB-SB02	Site 36	SM, SP-SM	0 - 30"	BaB	Fine sand with trace silt and clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
36-BB-SB03	Site 36	SM, SP-SM	0 - 30"	BaB	Fine sand with trace silt and clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
43-BB-SB01	Site 43	SM, SP-SM	0 - 30"	BaB	Fine sand with trace silt and clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
43-BB-SB02	Site 43	SM, SP-SM	0 - 30"	BaB	Fine sand with trace silt and clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1

TABLE 3 (Continued)

SUMMARY OF SURFACE SOILS, PHYSICAL PROPERTIES
EVALUATION OF METALS AT
MCB CAMP LEJEUNE, NORTH CAROLINA

Soil Boring Identification	Location	USCS		USDA Soil Symbol	Field Observation		Physical Characteristics		Organic Matter
		Classification	Depth		Description	Depth	Soil Reaction pH	Moist Bulk Density	
43-BB-SB03	Site 43	SM, SP-SM	0 - 30"	BaB	Fine sand with trace silt and clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
44-BB-SB01	Site 44	SM, SP-SM	0 - 30"	BaB	Fine sand with trace silt and clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
54-BB-SB01	Site 54	SM, SP-SM	0 - 30"	BaB	Fine sand with trace silt and clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
54-BB-SB02	Site 54	SM, SP-SM	0 - 30"	BaB	Fine sand with trace silt and clay	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1
86-BB-SB01	Site 86	SM, SM-SC	0 - 13"	GpB	Fine grained sand with some silt, trace clay	0 - 1'	4.5 - 6.0	1.40 - 1.60	.5 - 2
65-DW04	Site 65	SM, SP-SM	0 - 30"	BmB	Fine grained sand with trace silt	0 - 1'	4.5 - 6.5	1.60 - 1.75	.5 - 1

Notes:

SP = Fine sand
SM = Loamy fine sand
ML = Loam
SC = Clayey sand
---- = Not estimated
NA = Not Available - No surface sample collected

TABLE 4

SUMMARY OF SUBSURFACE SOILS, PHYSICAL PROPERTIES
EVALUATION OF METALS AT
MCB CAMP LEJEUNE, NORTH CAROLINA

Soil Boring Identification	Location	USCS		USDA Soil Symbol	Field Observation		Physical Characteristics		Organic Matter (%)
		Classification	Depth (inches)		Description	Depth (feet)	Soil Reaction pH	Moist Bulk Density	
6-201N-SB11-07	Site 6	SP, SP-SM	0 - 80	--	Fine to medium grained sand, trace silt	13 - 15	4.5 - 7.3	1.60 - 1.80	>2
6-201N-SB12-02	Site 6	SP, SP-SM	0 - 80	KuB	Fine to medium grained sand, trace silt	3 - 5	4.5 - 7.3	1.60 - 1.80	>2
6-201C-SB38-01	Site 6	SP, SP-SM	0 - 80	KuB	Fine to medium grained sand, trace silt	1 - 3	4.5 - 7.3	1.60 - 1.80	>2
6-201C-SB39-04	Site 6	SP, SP-SM	0 - 80	KuB	Fine to medium grained sand, trace silt	7 - 9	4.5 - 7.3	1.60 - 1.80	>2
78-BB-SB01-01	Site 78	SM, SP-SM	21 - 68	On	Fine sand, little silt	1 - 3	3.6 - 5.5	1.30 - 1.50	.5 - 2
2-GW09-01	Site 2	SM	12 - 80	Wo	Fine grained sand, some silt	1 - 3	3.6 - 5.5	1.45 - 1.65	2 - 4
1-BB-SB38-05	Site 1	SM, SP-SM	56 - 80	--	Fine grained sand, little silt	9 - 11	4.5 - 6.5	1.60 - 1.75	.5 - 1
1-BB-SB39-06	Site 1	SM, SP-SM	56 - 80	--	Fine grained sand, little silt	11 - 13	4.5 - 6.5	1.60 - 1.75	.5 - 1
1-GW13-04	Site 1	SM, SP-SM	56 - 80	BmB	Fine grained sand with silt, trace clay	7 - 9	4.5 - 6.5	1.60 - 1.75	.5 - 1
1-GW13-08	Site 1	SM, SP-SM	56 - 80	--	Fine grained sand with silt, trace clay	15 - 17	4.5 - 6.5	1.60 - 1.75	.5 - 1

TABLE 4 (Continued)

SUMMARY OF SUBSURFACE SOILS, PHYSICAL PROPERTIES
EVALUATION OF METALS AT
MCB CAMP LEJEUNE, NORTH CAROLINA

Soil Boring Identification	Location	USCS		USDA Soil Symbol	Field Observation		Physical Characteristics		Organic Matter (%)
		Classification	Depth (inches)		Description	Depth (feet)	Soil Reaction pH	Moist Bulk Density	
28-BB-SB37-03	Site 28	SM, SP-SM	56 - 80	BmB	Silt, little fine grained sand	5 - 7	4.5 - 6.5	1.60 - 1.75	.5 - 1
28-BB-SB38-04	Site 28	SM, SP-SM	56 - 80	BmB	Fine grained sand, trace silt and clay	7 - 9	4.5 - 6.5	1.60 - 1.75	.5 - 1
28-GW09DW-01	Site 28	SM, SP-SM	0 - 30	BaB	Fine grained sand, trace silt	1 - 3	4.5 - 6.5	1.60 - 1.75	.5 - 1
30-BB-SB12-03	Site 30	SM, SP-SM	0 - 80	KuB	Fine grained sand, trace silt	5 - 7	4.5 - 7.3	1.60 - 1.80	<2
30-BB-SB13-01	Site 30	SP, SP-SM	0 - 80	KuB	Fine grained sand, trace silt	1 - 3	4.5 - 7.3	1.60 - 1.80	<2
30-BB-SB14-01	Site 30	SP, SP-SM	0 - 80	KuB	Fine grained sand, trace silt	1 - 3	4.5 - 7.3	1.60 - 1.80	<2
30-BB-SB15-01	Site 30	SP, SP-SM	0 - 80	KuB	Fine grained sand, trace silt	1 - 3	4.5 - 7.3	1.60 - 1.80	<2
30-BB-SB16-02	Site 30	SP, SP-SM	0 - 80	KuB	Fine grained sand, trace silt	3 - 5	4.5 - 7.3	1.60 - 1.80	<2
30-GW-03-01	Site 30	SP, SP-SM	0 - 80	KuB	Fine grained sand, little silt	1 - 3	4.5 - 7.3	1.60 - 1.80	<2
35-GWDS01-03	Site 35	SM, SP-SM	56 - 80	BaB	Fine grained sand, some silt	5 - 7	4.5 - 6.5	1.60 - 1.75	.5 - 1
48-BB-SB02-07	Site 48	SM, SP-SM	56 - 80	--	Fine grained sand, little silt, trace clay	13 - 15	4.5 - 6.5	1.60 - 1.75	.5 - 1

TABLE 4 (Continued)

SUMMARY OF SUBSURFACE SOILS, PHYSICAL PROPERTIES
EVALUATION OF METALS AT
MCB CAMP LEJEUNE, NORTH CAROLINA

Soil Boring Identification	Location	USCS		USDA Soil Symbol	Field Observation		Physical Characteristics		Organic Matter (%)
		Classification	Depth (inches)		Description	Depth (feet)	Soil Reaction pH	Moist Bulk Density	
48-BB-SB03-05	Site 48	SM, SP-SM	56 - 80	--	Fine grained sand, little silt, trace clay	9 - 11	4.5 - 6.5	1.60 - 1.75	.5 - 1
16-BB-SB01-07	Site 16	SM, SP-SM	56 - 80	--	Fine grained sand, little to trace silt, trace clay	13 - 15	4.5 - 6.5	1.60 - 1.75	.5 - 1
16-BB-SB02-07	Site 16	SM, SP-SM	56 - 80	--	Fine grained sand, little to trace silt, trace clay	13 - 15	4.5 - 6.5	1.60 - 1.75	.5 - 1
16-BB-SB03-05	Site 16	SM, SP-SM	56 - 80	--	Fine grained sand, little to trace silt	9 - 11	4.5 - 6.5	1.60 - 1.75	.5 - 1
80-BB-SB01-06	Site 80	SM, SC, ML, CL	45 - 80	--	Clay, trace silt	11 - 13	4.5 - 5.5	1.30 - 1.60	1 - 6
80-BB-SB01-03	Site 80	SM, SC, ML, CL	45 - 80	Ra	Fine to medium grained sand, little to trace silt, trace clay	5 - 7	4.5 - 5.5	1.30 - 1.60	1 - 6
80-BB-SB02-03	Site 80	SM, SC, ML, CL	45 - 80	Ra	Clay, trace silt, and fine grained sand	5 - 7	4.5 - 5.5	1.30 - 1.60	1 - 6
80-BB-SB02-06	Site 80	SM, SC, ML, CL	45 - 80	--	Fine grained sand, little clay, trace silt	11 - 13	4.5 - 5.5	1.30 - 1.60	1 - 6
80-BB-SB03-03	Site 80	SM, SC, ML, CL	45 - 80	Ra	Silt, trace to some clay, little fine grained sand	5 - 7	4.5 - 5.5	1.30 - 1.60	1 - 6

TABLE 4 (Continued)

SUMMARY OF SUBSURFACE SOILS, PHYSICAL PROPERTIES
EVALUATION OF METALS AT
MCB CAMP LEJEUNE, NORTH CAROLINA

Soil Boring Identification	Location	USCS		USDA Soil Symbol	Field Observation		Physical Characteristics		Organic Matter (%)
		Classification	Depth (inches)		Description	Depth (feet)	Soil Reaction pH	Moist Bulk Density	
80-BB-SB03-06	Site 80	SM, SC, ML, CL	45 - 80	--	Fine grained sand trace to little silt, trace clay	11 - 13	4.5 - 5.5	1.30 - 1.60	1-6
7-BB-SB01-05	Site 7	SM	28 - 75	--	Fine grained sand, little to trace silt	9 - 11	5.6 - 8.4	--	..5 - 2
7-BB-SB02-05	Site 7	Sm, CL, ML, CL	52 - 75	--	Fine grained sand, little trace silt, trace clay	9 - 11	4.5 - 6.0	--	<2
7-BB-SB03-09	Site 7	SM, SC, ML, CL	52 - 75	--	Fine to medium grained sand, little to trace silt, trace clay	17 - 19	4.5 - 6.0	--	<2
36-BB-SB01-02	Site 36	SC, SM,. SM-SC	30 - 56	BaB	Fine grained sand, some silt, trace clay	3 - 5	4.5 - 6.5	1.45 - 1.60	.5 - 1
36-BB-SB02-02	Site 36	SC, SM,. SM-SC	30 - 56	BaB	Silt and clay, trace fine grained sand	3 - 5	4.5 - 6.5	1.45 - 1.60	.5 - 1
36-BB-SB03-03	Site 36	SM, SP-SM	56 - 80	BaB	Fine grained sand, some silt, trace clay	5 - 7	4.5 - 6.5	1.60 - 1.75	.5 - 1
43-BB-SB01-02	Site 43	SC, SM, SM-SC	30 - 56	BaB	Fine grained sand, some silt, trace clay	3 - 5	4.5 - 6.5	1.45 - 1.60	.5 - 1
43-BB-SB02-01	Site 43	SM, SP-SM	0 - 30	BaB	Fine grained sand, some silt, trace clay	1 - 3	4.5 - 6.5	1.60 - 1.75	.5 - 1
43-BB-SB03-02	Site 43	SC, SM, SM-SC	30 - 56	BaB	Fine grained sand, some silt, trace clay	3 - 5	4.5 - 6.5	1.45 - 1.60	.5 - 1

TABLE 4 (Continued)

SUMMARY OF SUBSURFACE SOILS, PHYSICAL PROPERTIES
EVALUATION OF METALS AT
MCB CAMP LEJEUNE, NORTH CAROLINA

Soil Boring Identification	Location	USCS		USDA Soil Symbol	Field Observation		Physical Characteristics		Organic Matter (%)
		Classification	Depth (inches)		Description	Depth (feet)	Soil Reaction pH	Moist Bulk Density	
44-BB-SB01-03	Site 44	SM, SP-SM	56 - 80	BaB	Fine grained sand, some silt and clay	5 - 7	4.5 - 6.5	1.60 - 1.75	.5 - 1
54-BB-SB01-04	Site 54	SM, SP-SM	56 - 80	BaB	Fine to medium grained sand, little silt	7 - 9	4.5 - 6.5	1.60 - 1.75	.5 - 1
54-BB-SB02-04	Site 54	SM, SP-=SM	56 - 80	BaB	fine to coarse grained sand, trace to little silt, trace clay	7 - 9	4.5 - 6.5	1.60 - 1.75	.5 - 1
86-BB-SB01-02	Site 86	SM-SC, SC, CL-ML, CL	13 - 80	GpB	Fine to medium grained sand, some silt, little clay	3 - 5	4.5 - 5.5	1.30 - 1.50	.5 - 2
65-DW04-05	Site 65	SM, SP-SM	56 - 80	--	Sand, fine grained, trace silt	9 - 11	4.5 - 6.5	1.60 - 1.75	.5 - 1

Notes:

CL = Clayey sand
SP = Fine sand
SM = Loamy fine sand
ML = Loam
SC = Clayey sand
---- = Not estimated
NA = Not Available - No subsurface sample collected

FIGURES

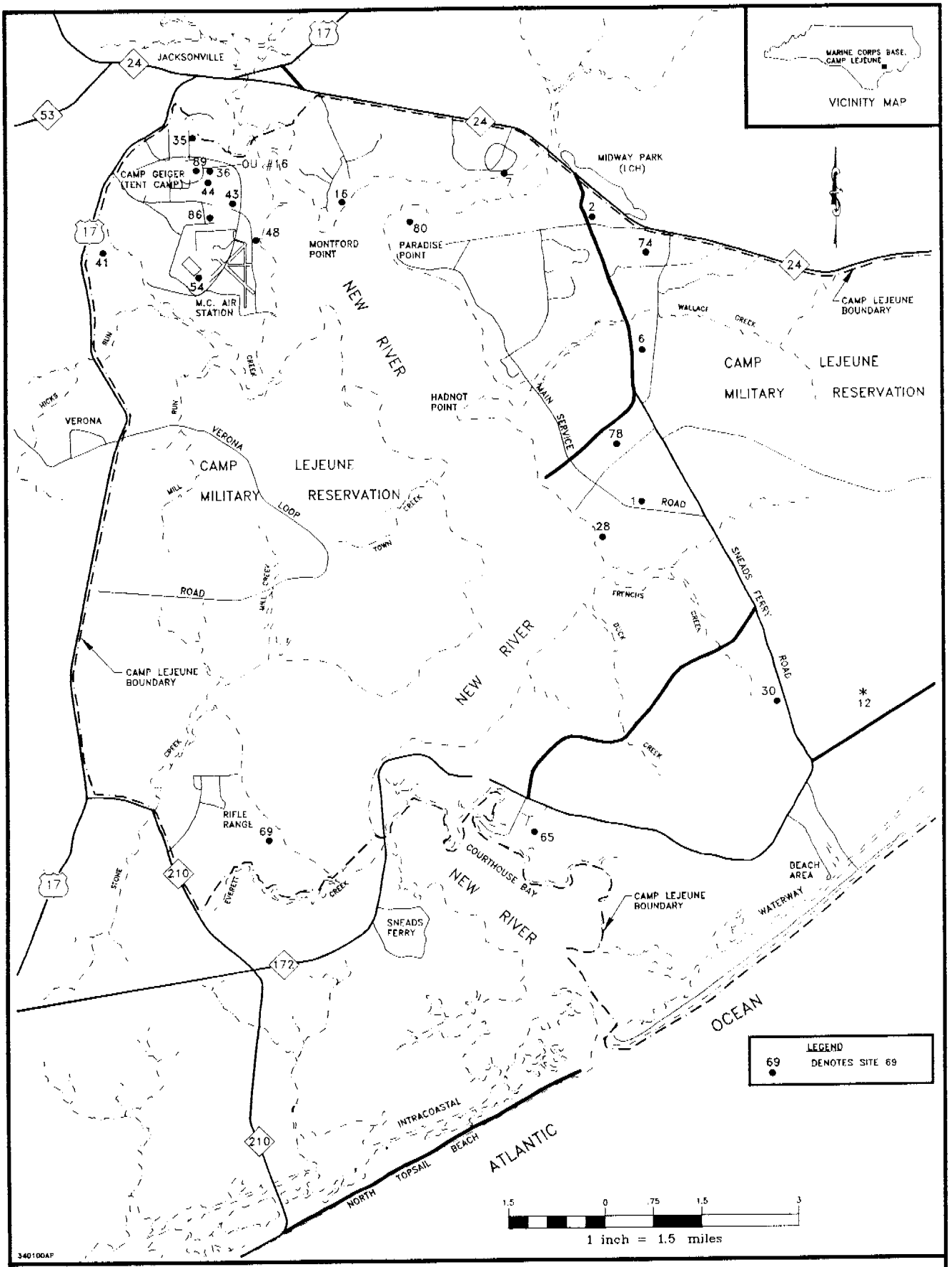


FIGURE 1
SITE LOCATIONS AT
MARINE CORPS BASE CAMP LEJEUNE

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

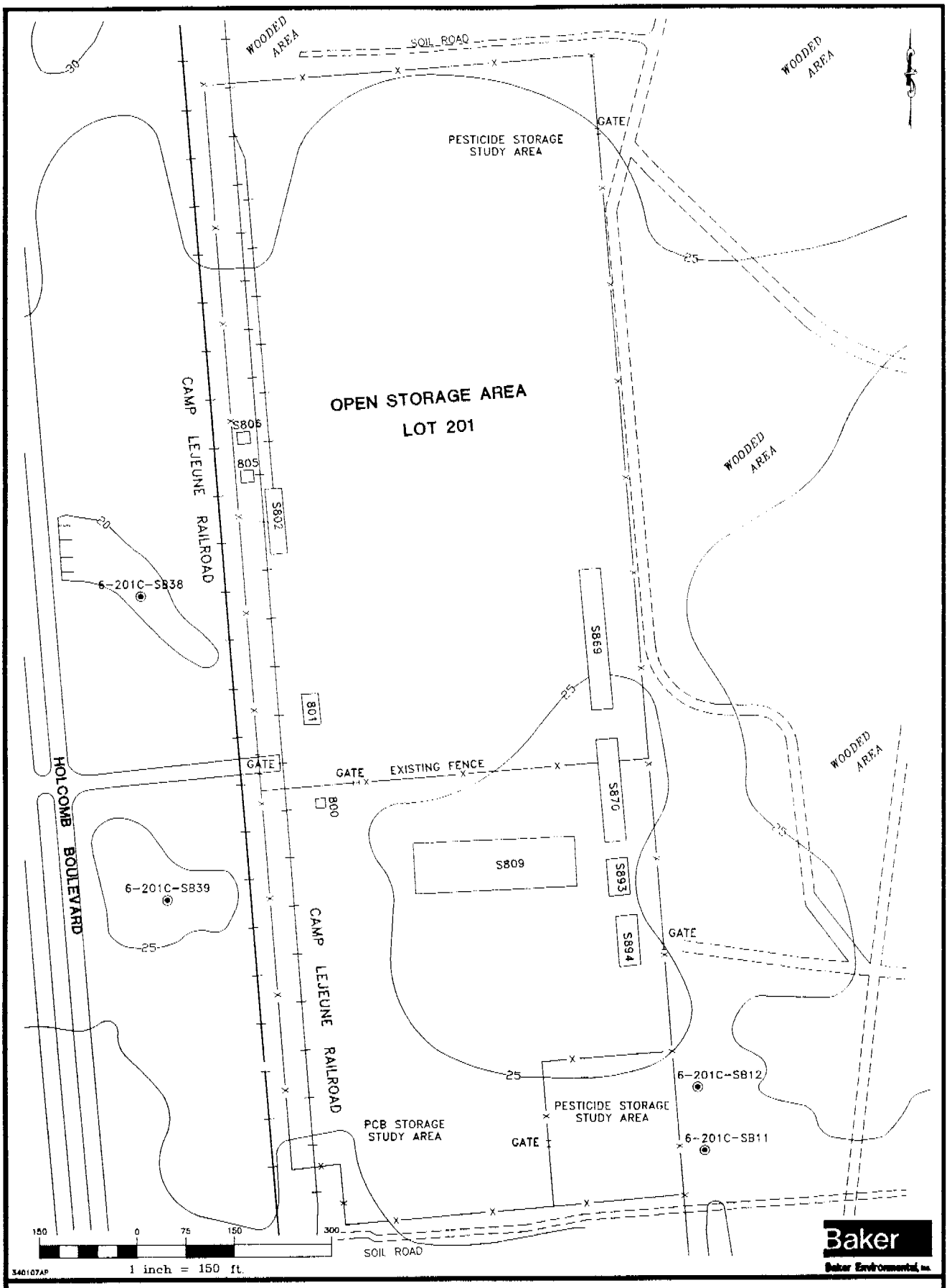
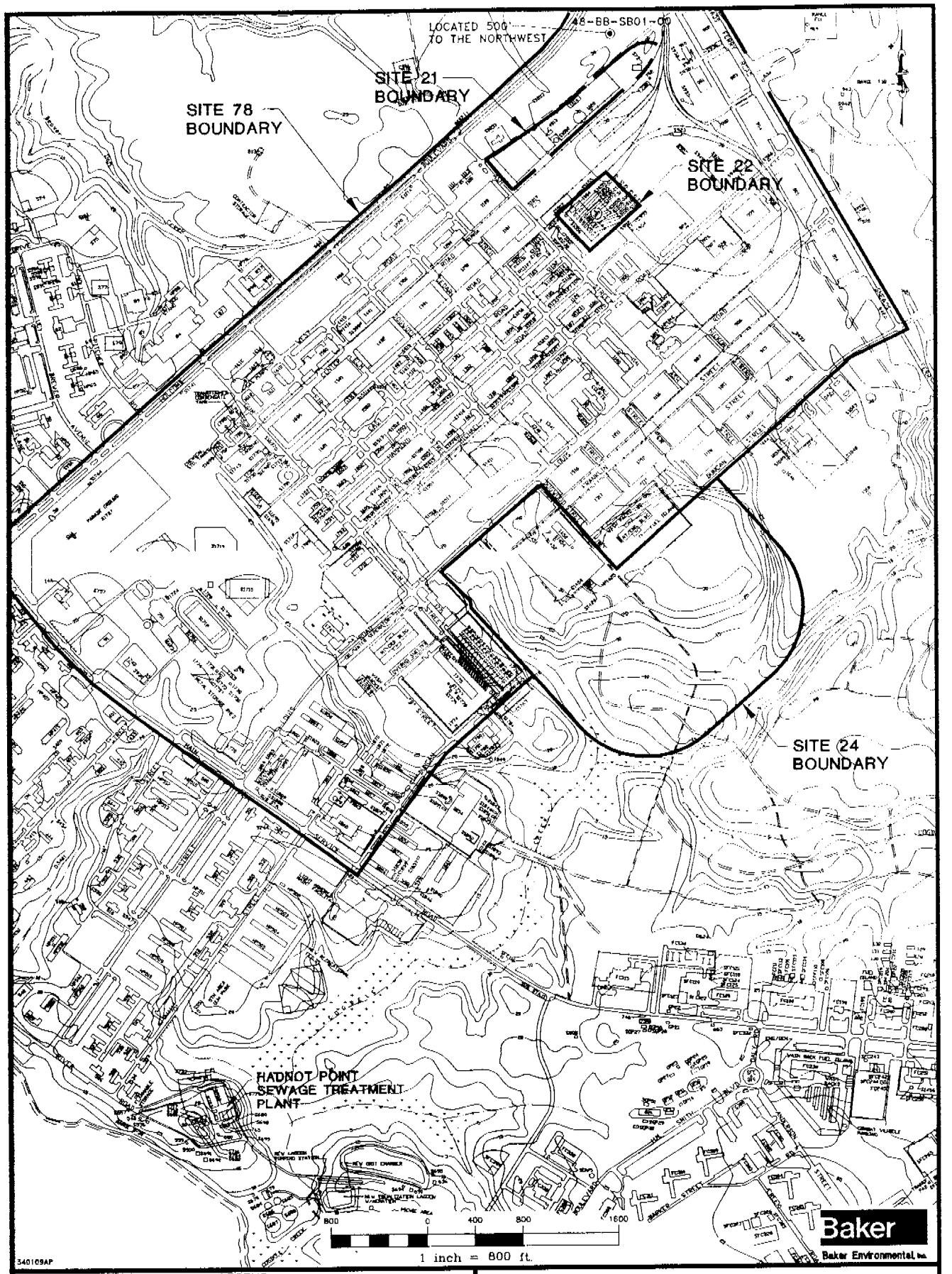


FIGURE 2
SITE PLAN OF LOT 201
SITE 6
REMEDIAL INVESTIGATION CTO-0133

MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA

SOURCE: LANTDIV, FEBRUARY 1992



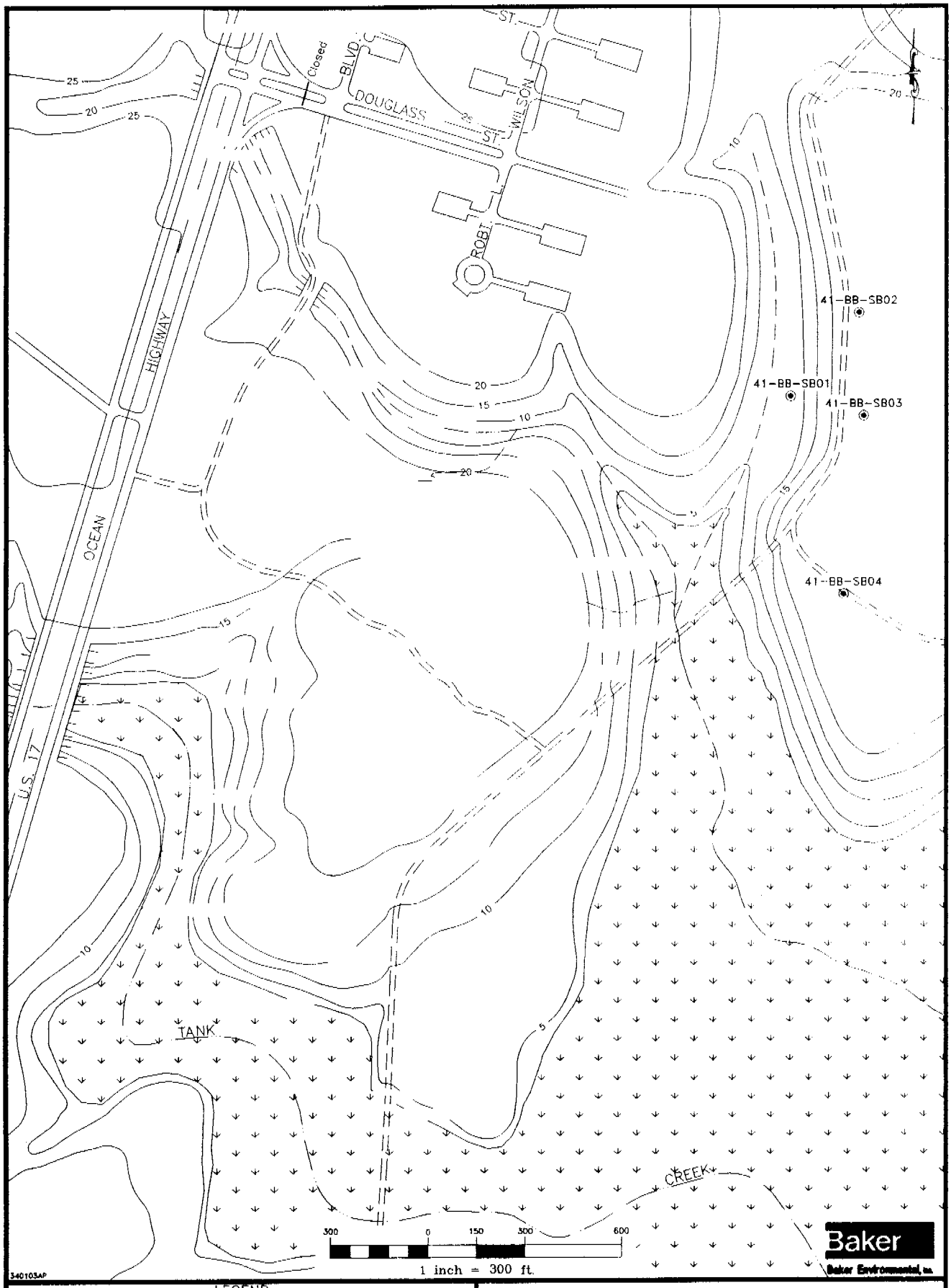
LEGEND

X

SOURCE: LANTDIV, FEBRUARY 1992

FIGURE 3
SITE MAP
SITE 78: HPIA
REMEDIAL INVESTIGATION CTO-0177

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

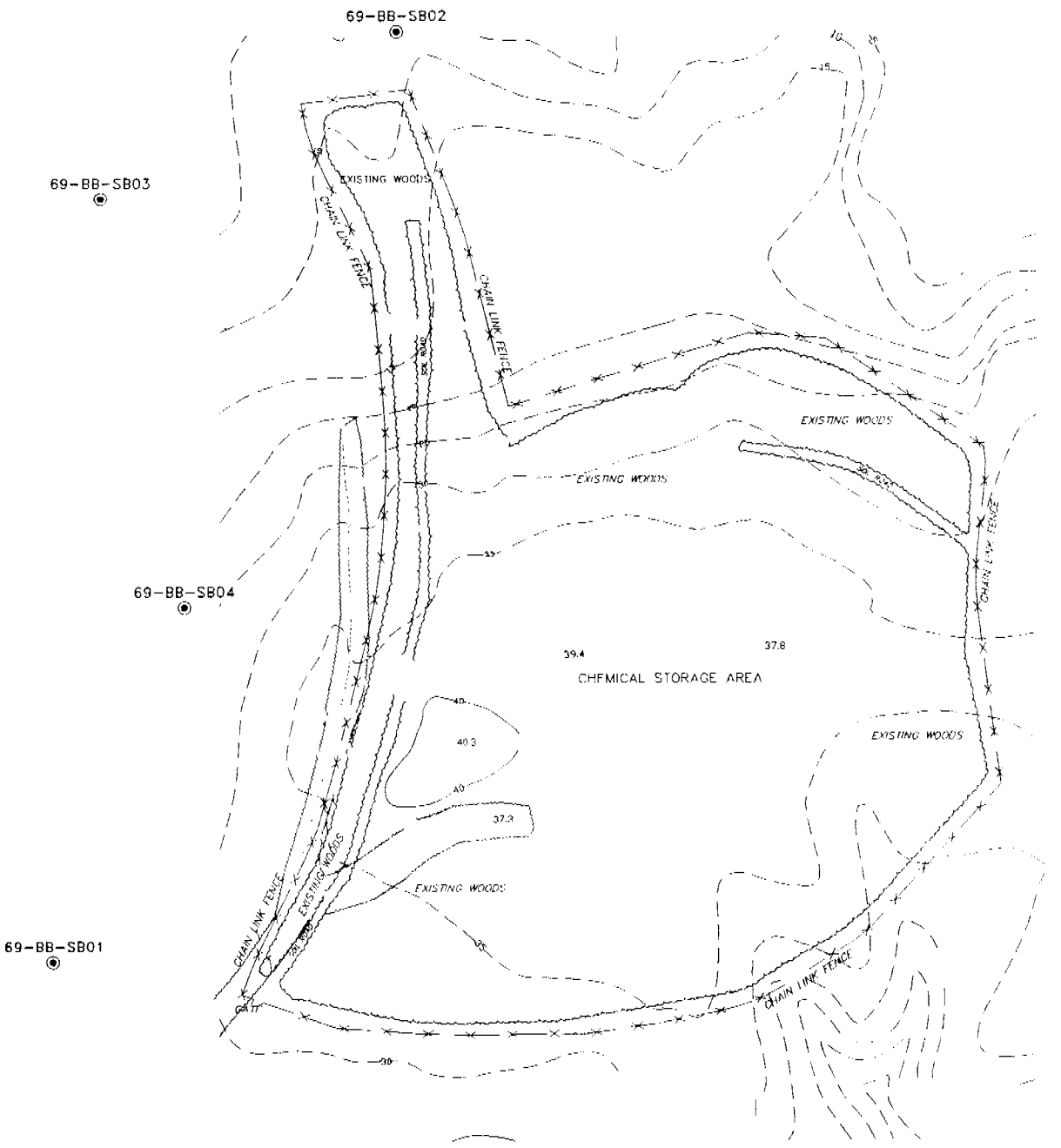


LEGEND

41-BB-SB01 – SOIL BORING LOCATION
– MARSH
5 – TOPOGRAPHIC ELEVATION LINES (FEET, MEAN SEA LEVEL)
– ROAD (IMPROVED)
– ROAD (UNIMPROVED)
– INTERMITTENT STREAM

SOURCE: LANTDIV, OCT. 1991

FIGURE 4
SURFACE AND SUBSURFACE SOIL SAMPLING LOCATIONS – SITE 41
CAMP GEIGER DUMP NEAR FORMER TRAILER PARK
REMEDIAL INVESTIGATION CTO-0212
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



200 0 100 200 400

1 inch = 200 ft.

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LEGEND

69-BB-SB01 SOIL BORING LOCATION

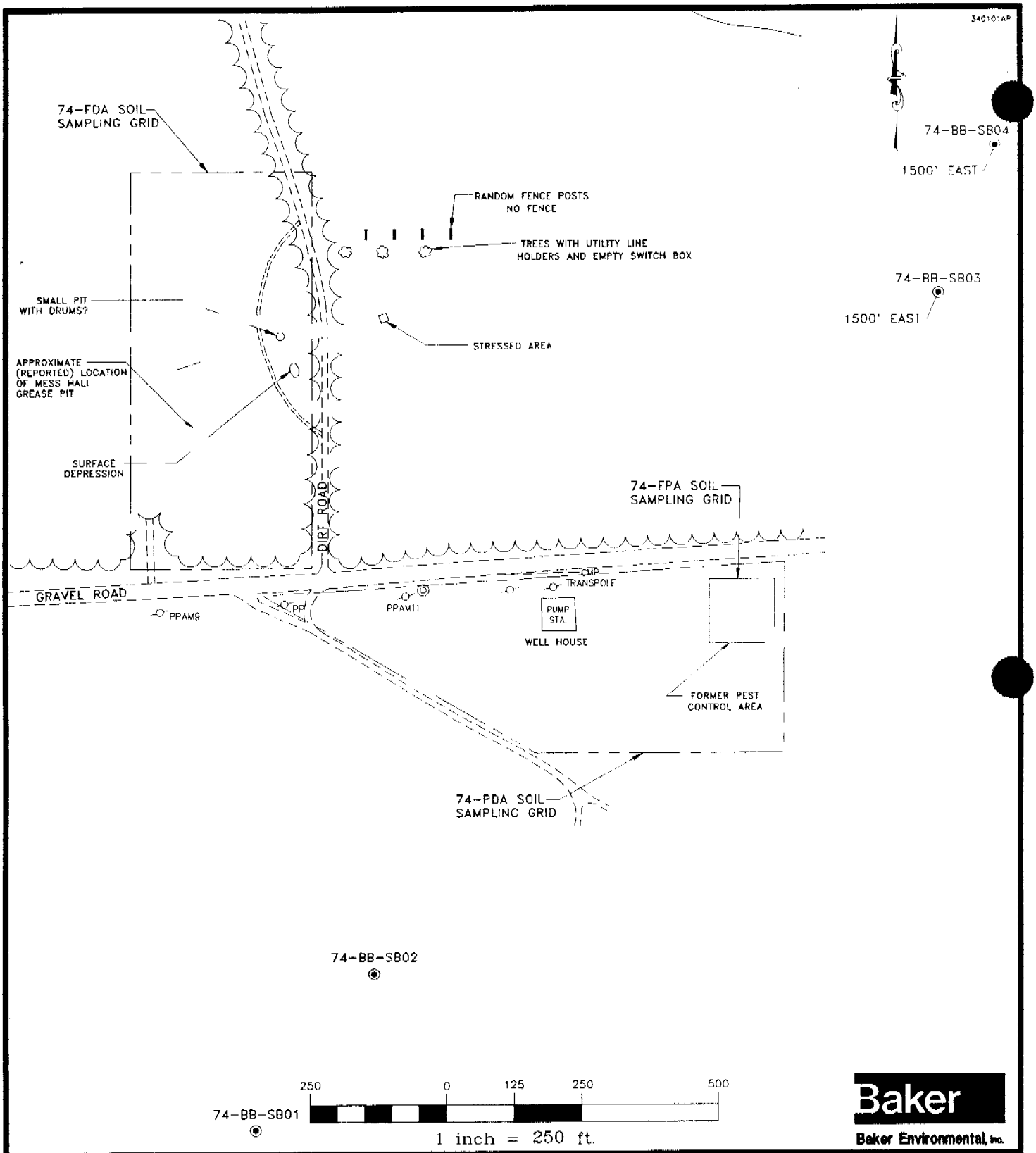
FENCE

VEGETATION

TOPOGRAPHIC ELEVATION LINES (FEET, MSL)

SOURCE: REVISED FROM LANTDIV, OCT. 1991

FIGURE 5
SURFACE AND SUBSURFACE SOIL SAMPLING LOCATIONS
SITE 69 – RIFLE RANGE CHEMICAL DUMP
REMEDIAL INVESTIGATION CTO-0212
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

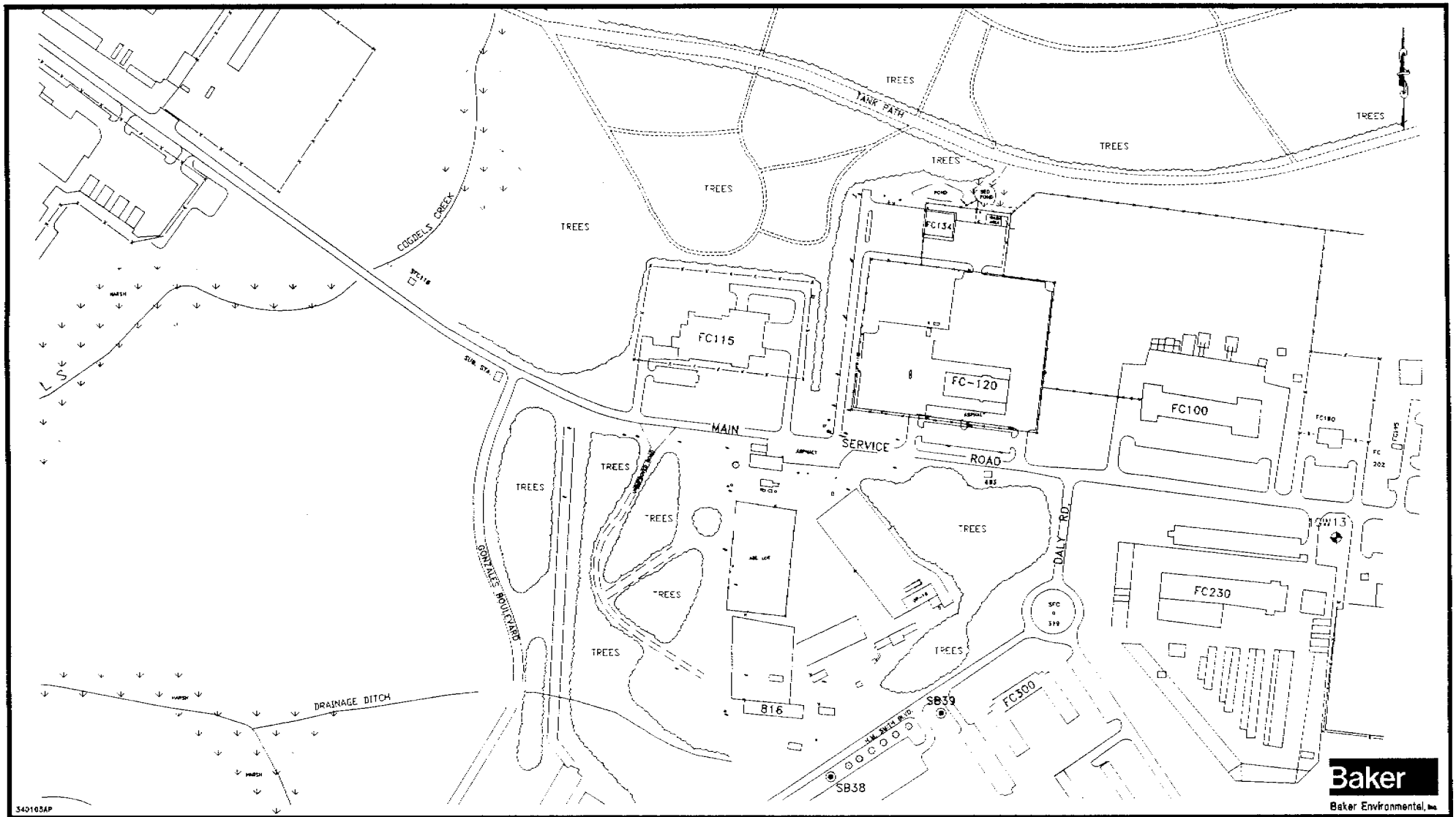


LEGEND

74-BB-SB02 ◉ BACKGROUND SOIL BORING LOCATION

SOURCE: REVISED FROM LANTDIV. OCT. 1991

FIGURE 6
SURFACE AND SUBSURFACE SOIL SAMPLING LOCATIONS - SITE 74
MESS HALL GREASE PIT DISPOSAL ARE
REMEDIAL INVESTIGATION CTO-0212
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



LEGEND

1GW13 SHALLOW MONITORING WELL

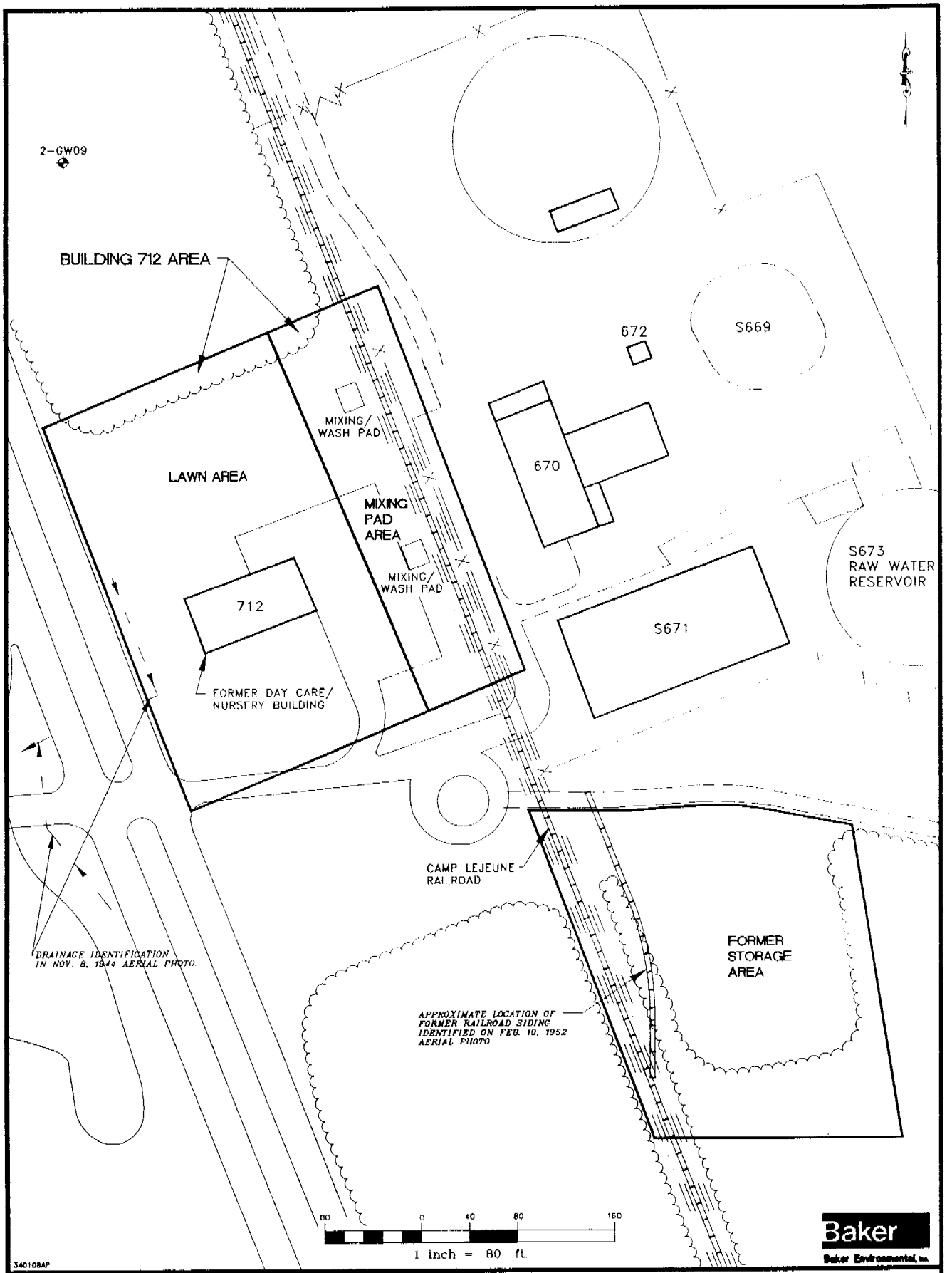
SB39 SOIL BORING LOCATION

300 0 150 300 600

1 inch = 300 ft.

SOURCE: LANTDIV, FEBRUARY 1992, ESE, SEPTEMBER 1990, AND W.K. DICKSON & ASSOC., JUNE 1994

FIGURE 7
SAMPLING LOCATIONS
CONFIRMATION STUDY
SITE 1 – FRENCH CREEK LIQUIDS DISPOSAL AREA
REMEDIAL INVESTIGATION CTO-0231
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



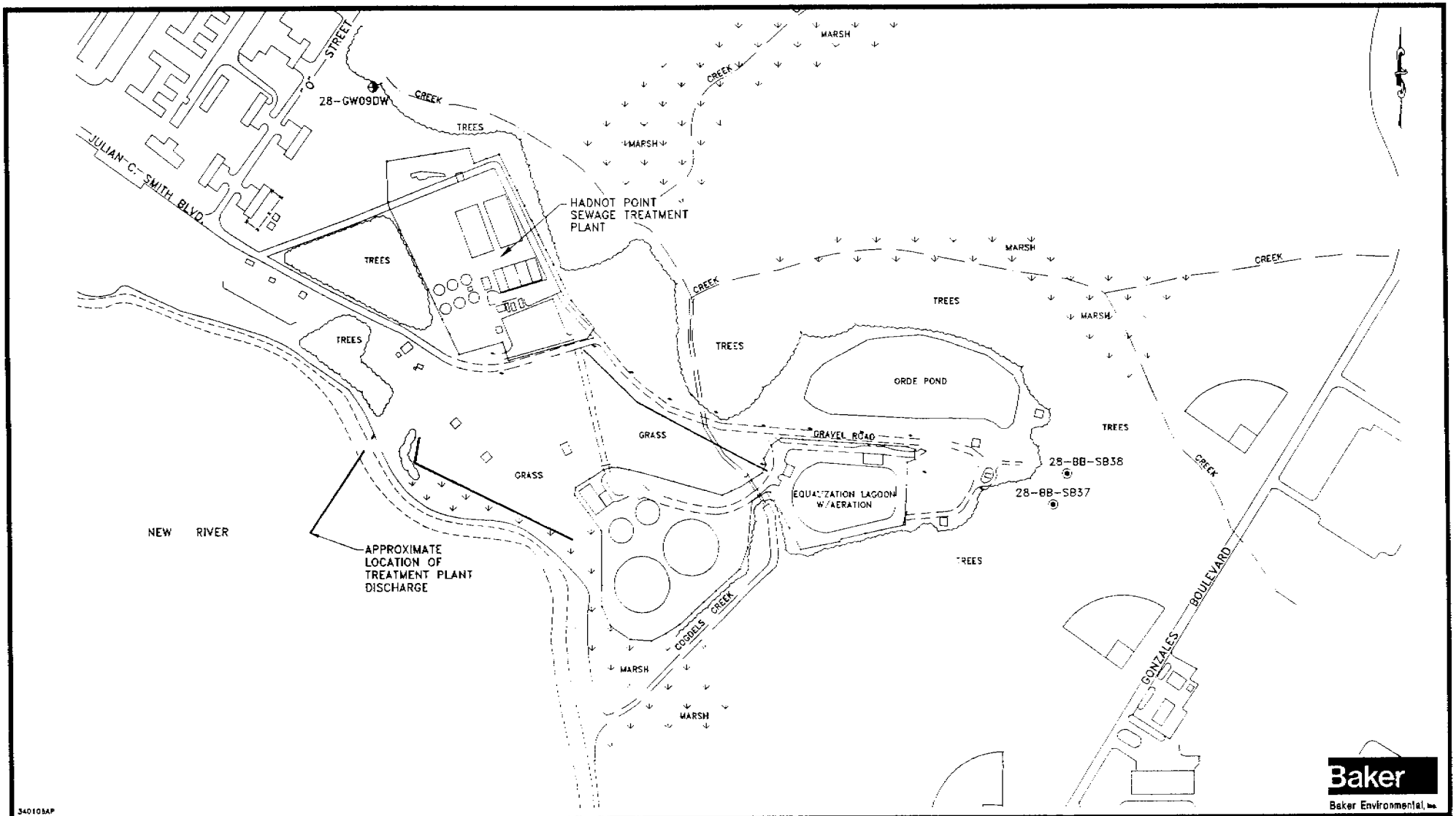
LEGEND

2-GW09 SOIL BORING FOR SHALLOW MONITORING WELL

SOURCE: LANTDIV, FEB. 1992

FIGURE 8
STUDY AREA
SITE 2
REMEDIAL INVESTIGATION CTO-0174

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



LEGEND

28-GW01DW NEWLY INSTALLED DEEP MONITORING WELL (BAKER, 1994)

SB37 SOIL BORING LOCATION

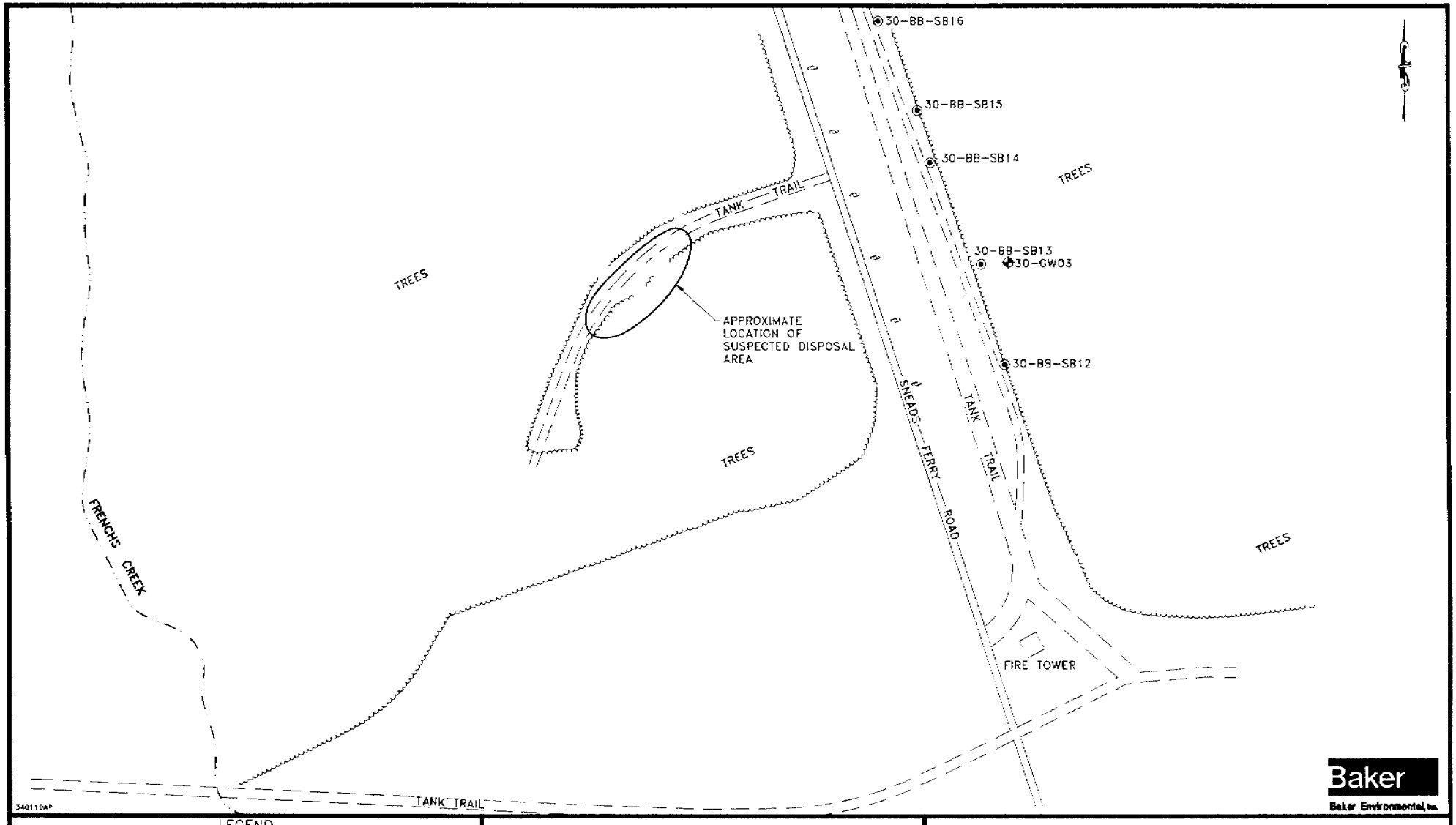
SOURCE: LANTDIV, FEBRUARY 1992 AND W.K. DICKSON, JUNE 1994

300 0 150 300 600

1 inch = 300 ft.

FIGURE 9
SHALLOW AND DEEP MONITORING WELL LOCATIONS
SITE 28 - HADNOT POINT BURN DUMP
REMEDIAL INVESTIGATION CTO-0231

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



LEGEND

30-GW03 — PILOT TEST BORING FOR SHALLOW MONITORING WELL

SOIL BORING LOCATION

30-BB-SB12 — BASE BACKGROUND SOIL BORING LOCATION

ASPHALT ROAD

UNIMPROVED ROAD

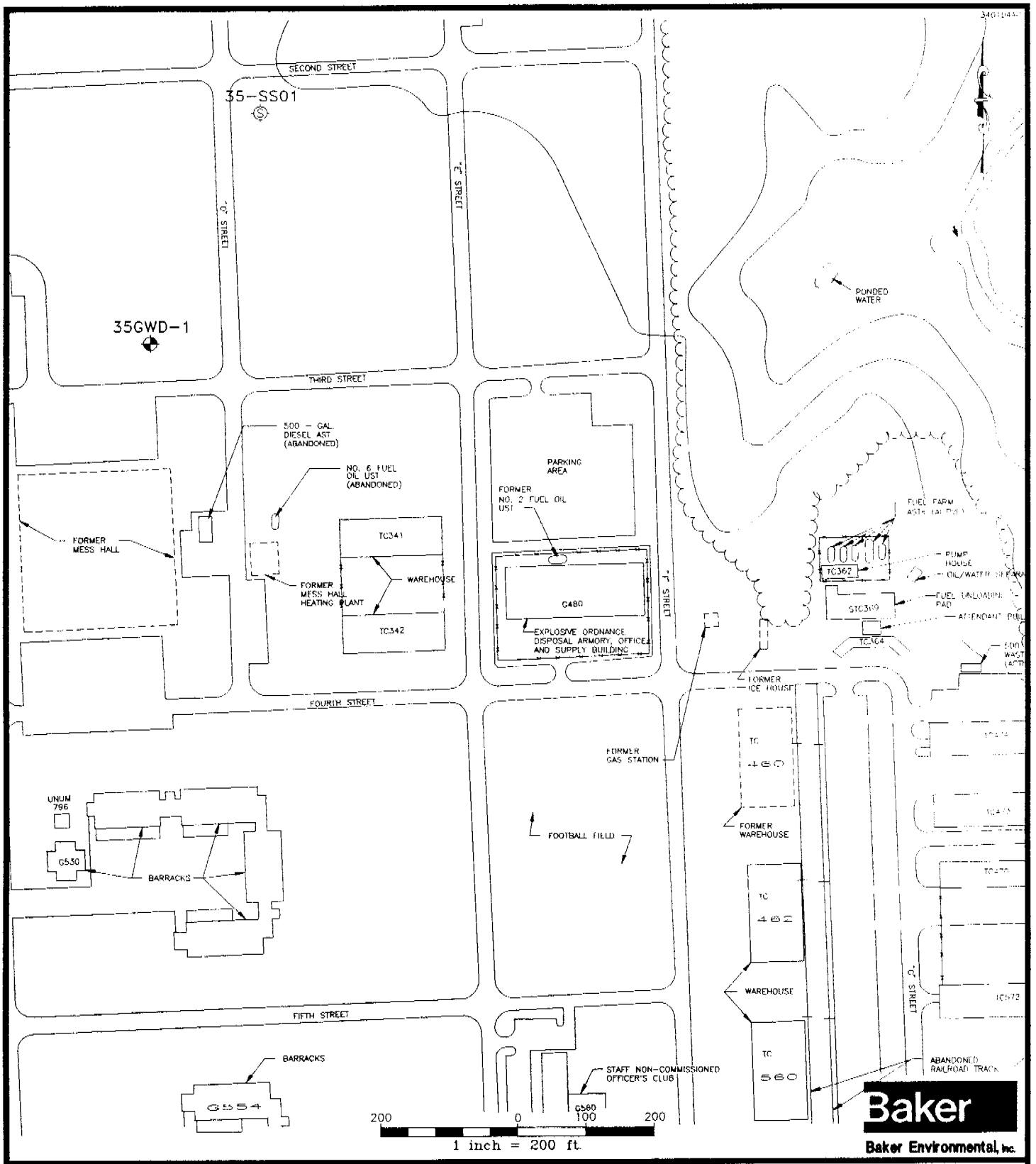
POLE

SOURCE: LAN[illegible]EB. 1992 AND W.K. DICKSON, JUNE 1994

300 0 150 300 600

1 inch = 300 ft

FIGURE 10
SURFACE AND SUBSURFACE SOIL SAMPLING LOCATIONS
SITE 30 – SNEADS FERRY ROAD FUEL
TANK SLUDGE AREA
REMEDIAL INVESTIGATION CTO-0231
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



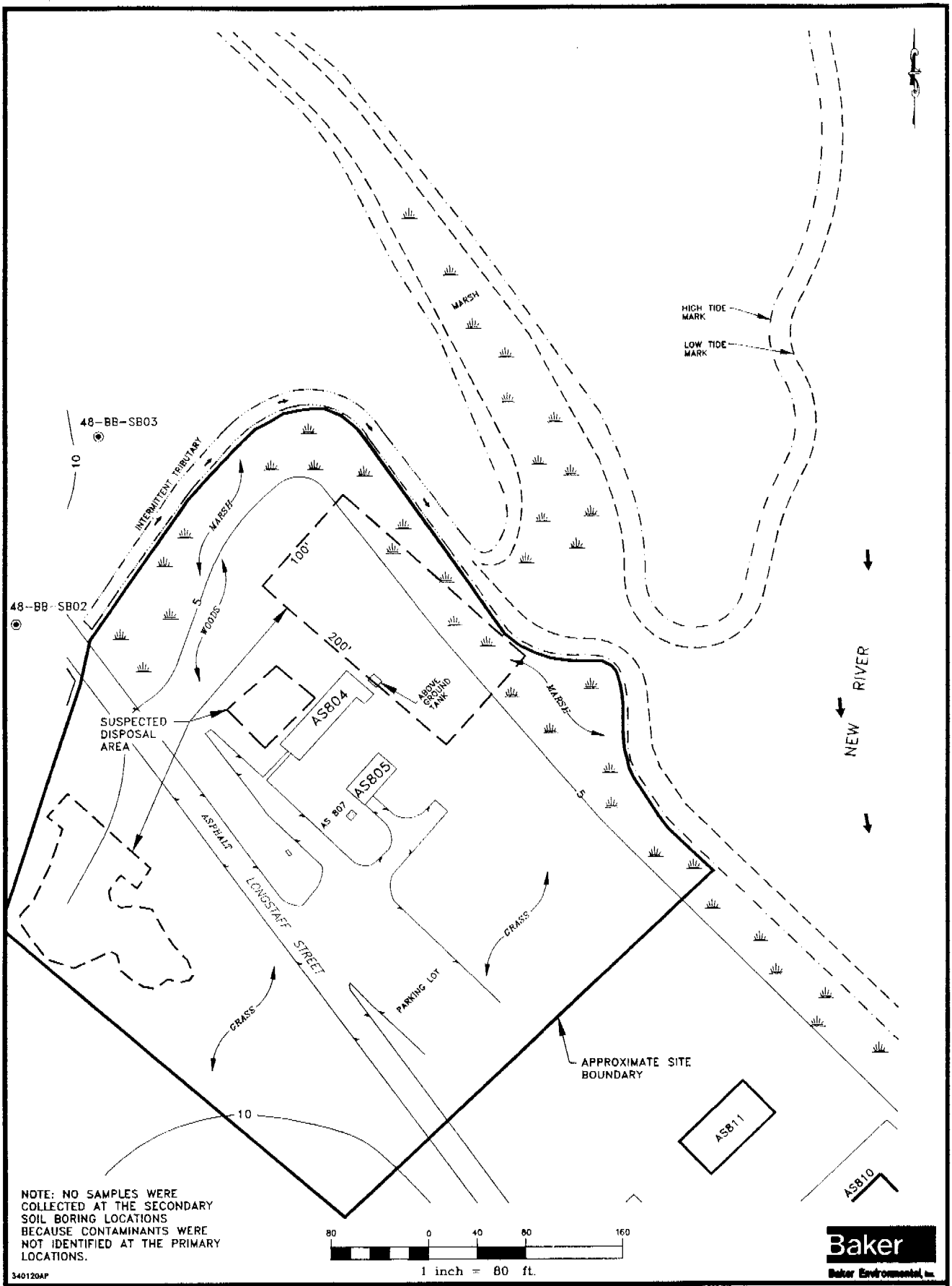
LEGEND

35-SS01 SOIL BORING LOCATION

35GWD-1 SOIL BORING FOR SHALLOW MONITORING WELL

SOURCE: FEB. 1992

FIGURE 11
SAMPLING LOCATIONS
SITE 35, CAMP GEIGER
AREA FUEL FARM
CTO-0232
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



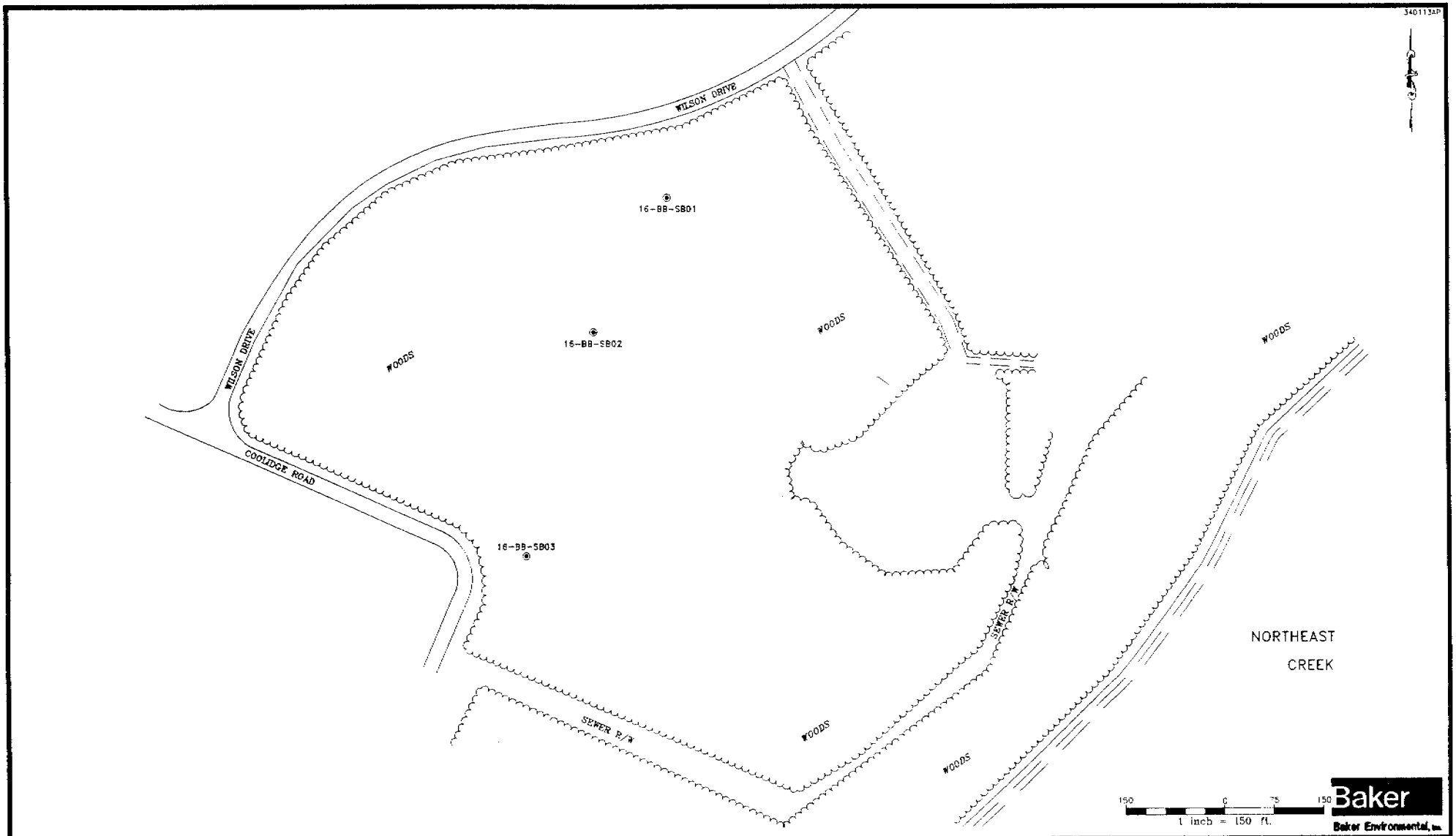
LEGEND

48-BB-SB02 ◉ BACKGROUND SOIL BORING

SOURCE: LANTDIV, FEB. 1992

FIGURE 12
SOIL BORING LOCATION MAP
SITE 48

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

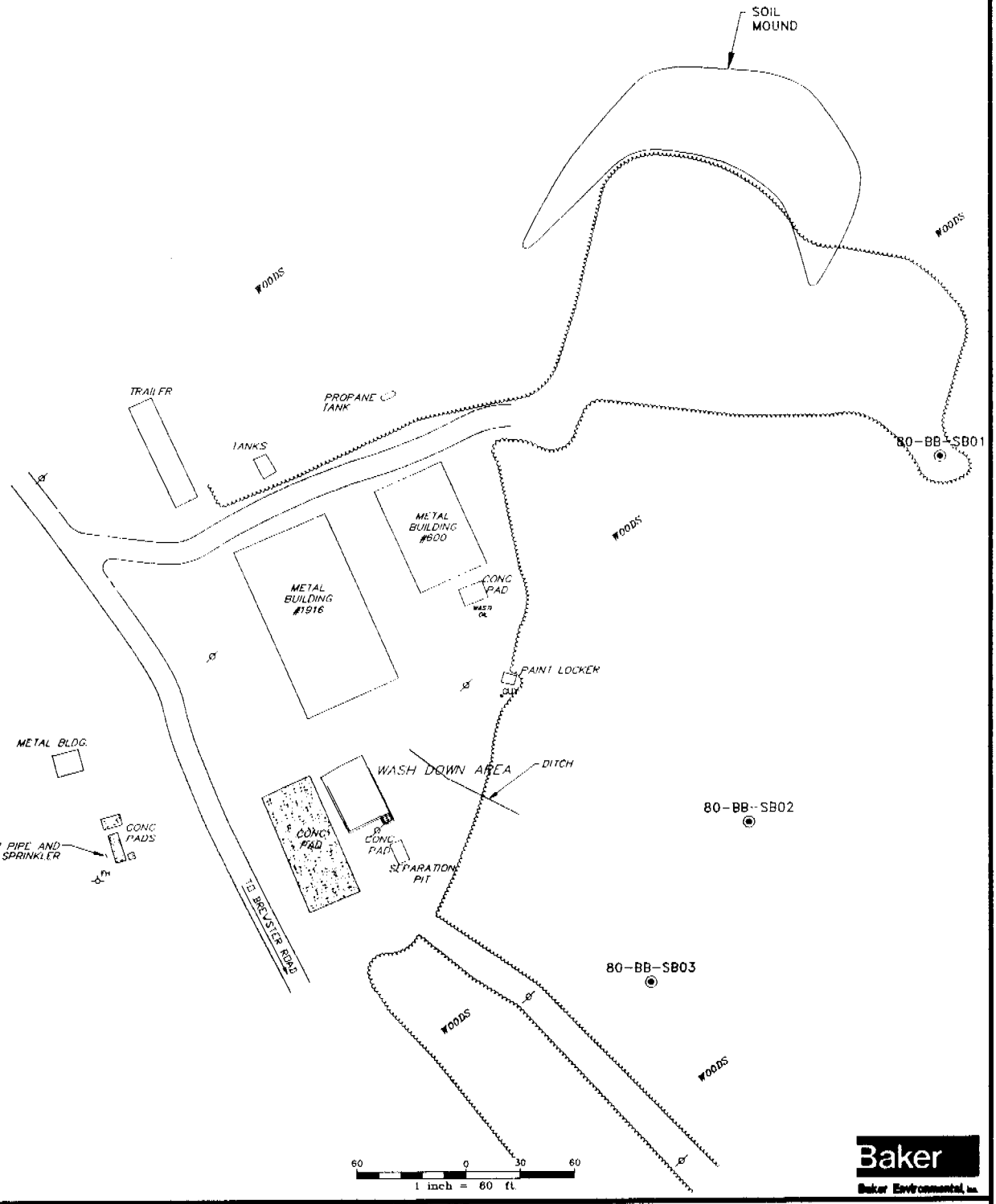


LEGEND

16-BB-SB03 SOIL BORING LOCATION

SOURCE: W.K. DICKSON & CO., INC., JANUARY 1995

FIGURE 13
SOIL SAMPLING LOCATIONS
SITE 16 - MONTFORD POINT BURN DUMP
REMEDIAL INVESTIGATION CTO-0274
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



Baker

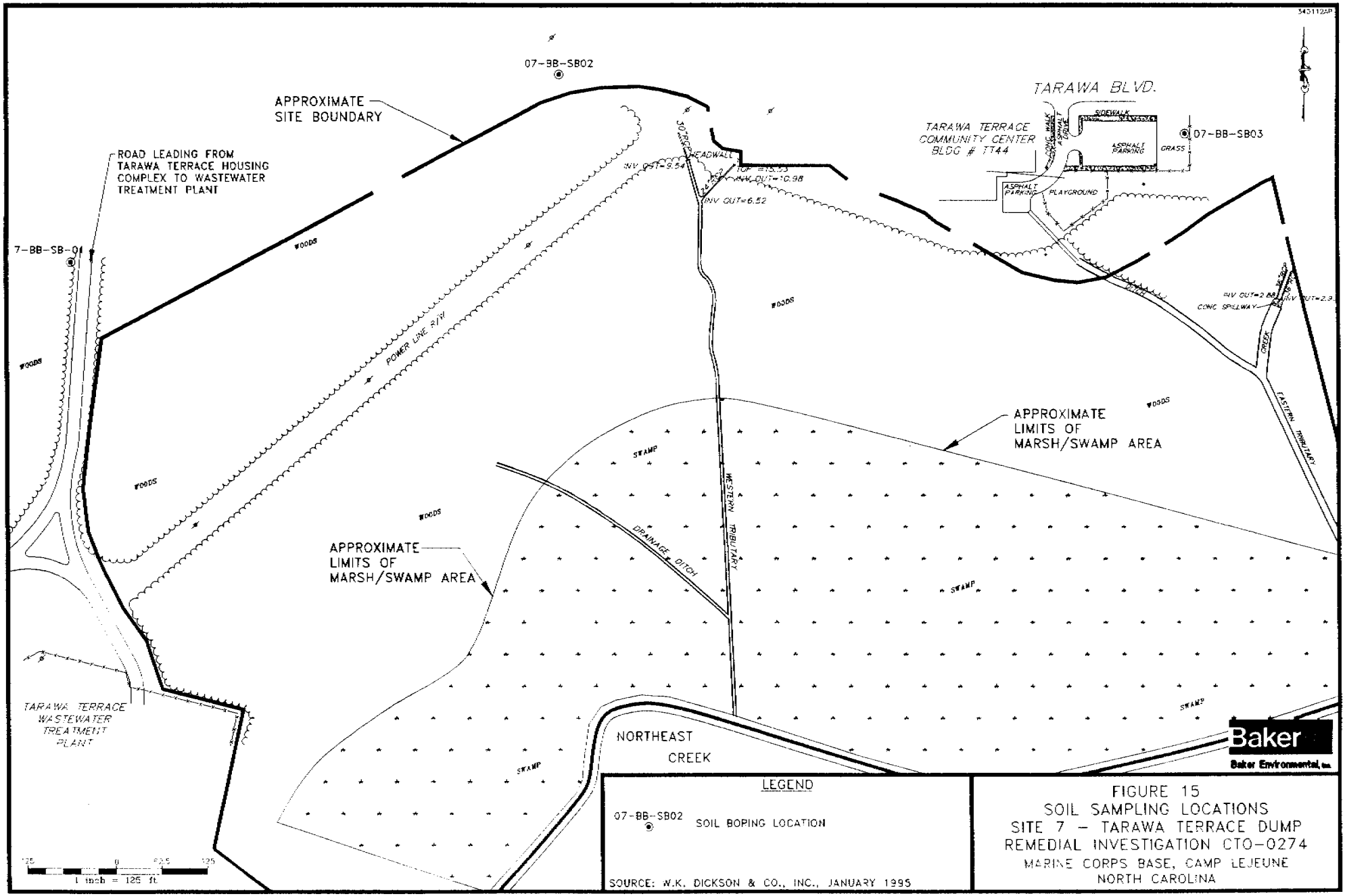
Baker Environmental, Inc.

LEGEND

80-BB-SB01 SOIL BORING LOCATION (INSTALLED DURING THE FIRST PART OF THE SOIL INVESTIGATION NOVEMBER 1 THROUGH NOVEMBER 7, 1994).

SOURCE: W.K. DICKSON & CO., INC., JANUARY 1995

FIGURE 14
SOIL SAMPLING LOCATIONS
SITE 80 - PARADISE POINT
GOLF COURSE MAINTENANCE AREA
REMEDIAL INVESTIGATION CTO-0274
MARINE CORPS BASE, CAMP, LEJEUNE
NORTH CAROLINA


07-BB-SB02
APPROXIMATE SITE BOUNDARY
ROAD LEADING FROM TARAWA TERRACE HOUSING COMPLEX TO WASTEWATER TREATMENT PLANT
7-BB-SB-01
TARAWA BLVD.
TARAWA TERRACE COMMUNITY CENTER BLDG # TT44
07-BB-SB03
SIDEWALK
CONC WALK
ASPHALT DRIVE
ASPHALT PARKING
GRASS
ASPHALT PARKING
PLAYGROUND
30"RCP
HEADWALL
INV OUT=9.54
TOP =15.53
INV OUT=10.98
INV OUT=6.52
INV OUT=2.88
CONC SPILLWAY
INV OUT=2.9
CREEK
EASTERN TRIBUTARY
WOODS
POWER LINE R/W
APPROXIMATE LIMITS OF MARSH/SWAMP AREA
SWAMP
WESTERN TRIBUTARY
DRAINAGE DITCH
APPROXIMATE LIMITS OF MARSH/SWAMP AREA
TARAWA TERRACE WASTEWATER TREATMENT PLANT
NORTHEAST CREEK
125 0 62.5 125
1 inch = 125 ft
LEGEND
07-BB-SB02 SOIL BOPING LOCATION
SOURCE: W.K. DICKSON & CO., INC., JANUARY 1995
Baker
Baker Environmental, Inc.
FIGURE 15
SOIL SAMPLING LOCATIONS
SITE 7 – TARAWA TERRACE DUMP
REMEDIAL INVESTIGATION CTO-0274
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

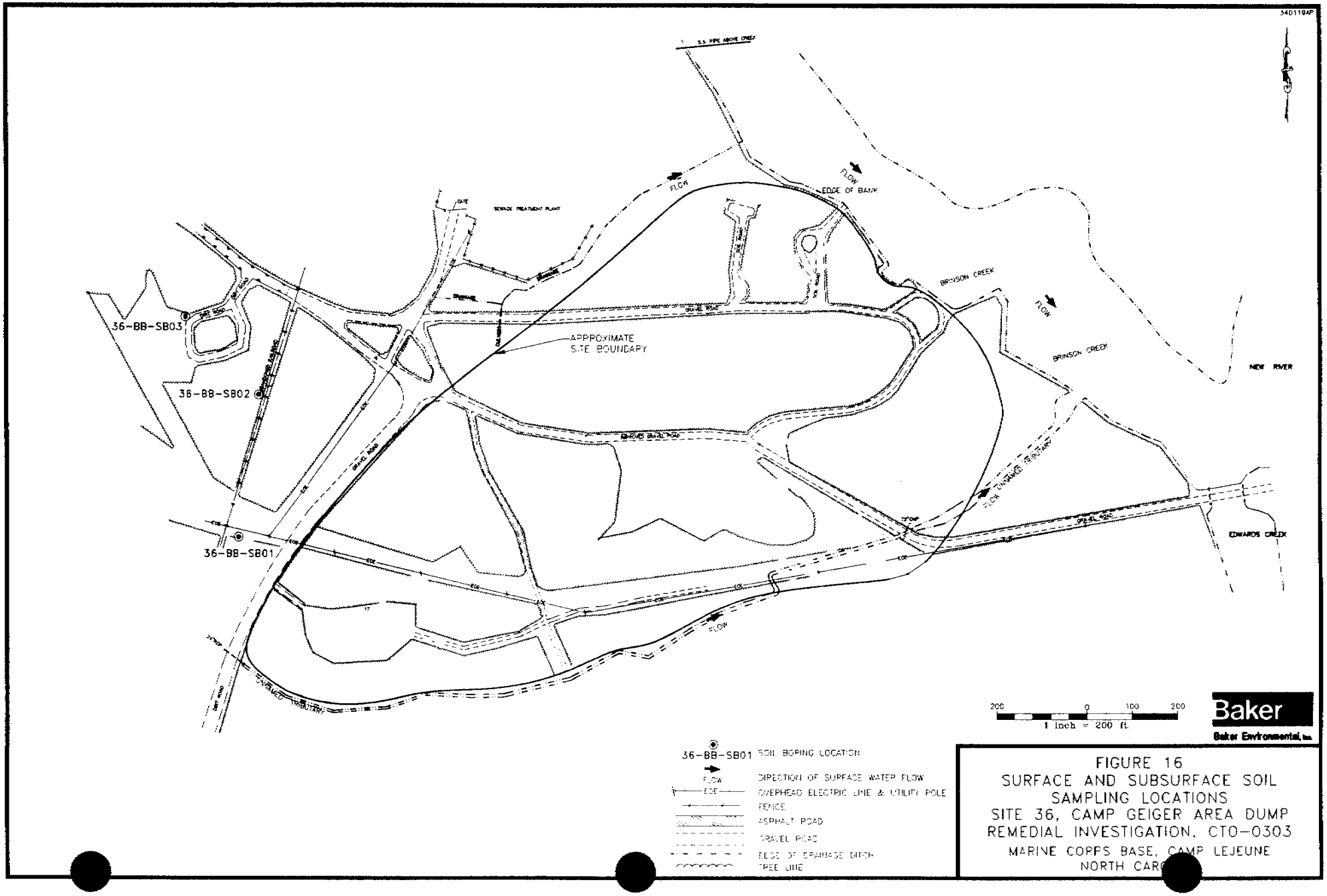


FIGURE 16
SURFACE AND SUBSURFACE SOIL SAMPLING LOCATIONS
SITE 36, CAMP GEIGER AREA DUMP
REMEDIAL INVESTIGATION, CTO-0303
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAR

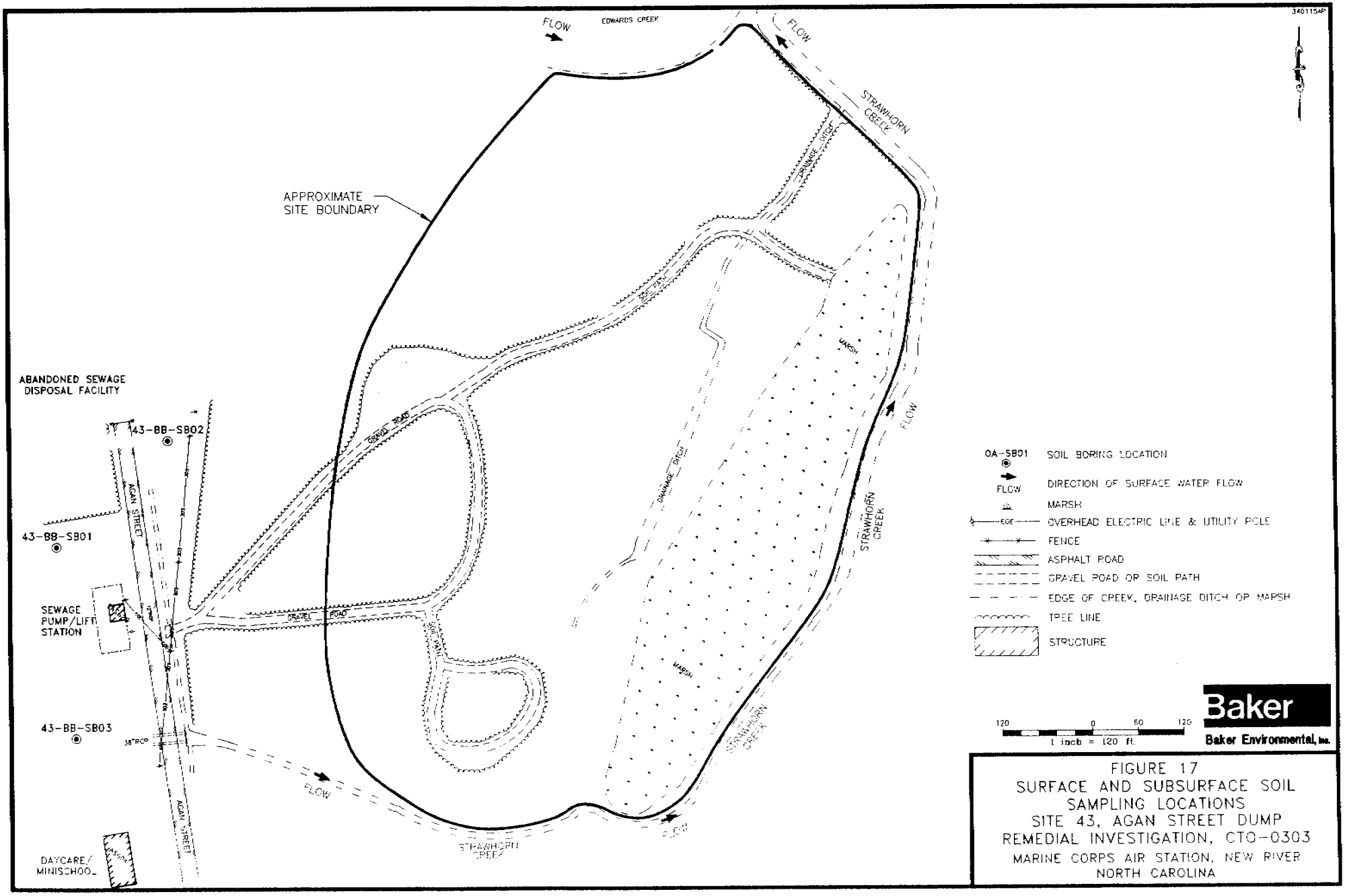
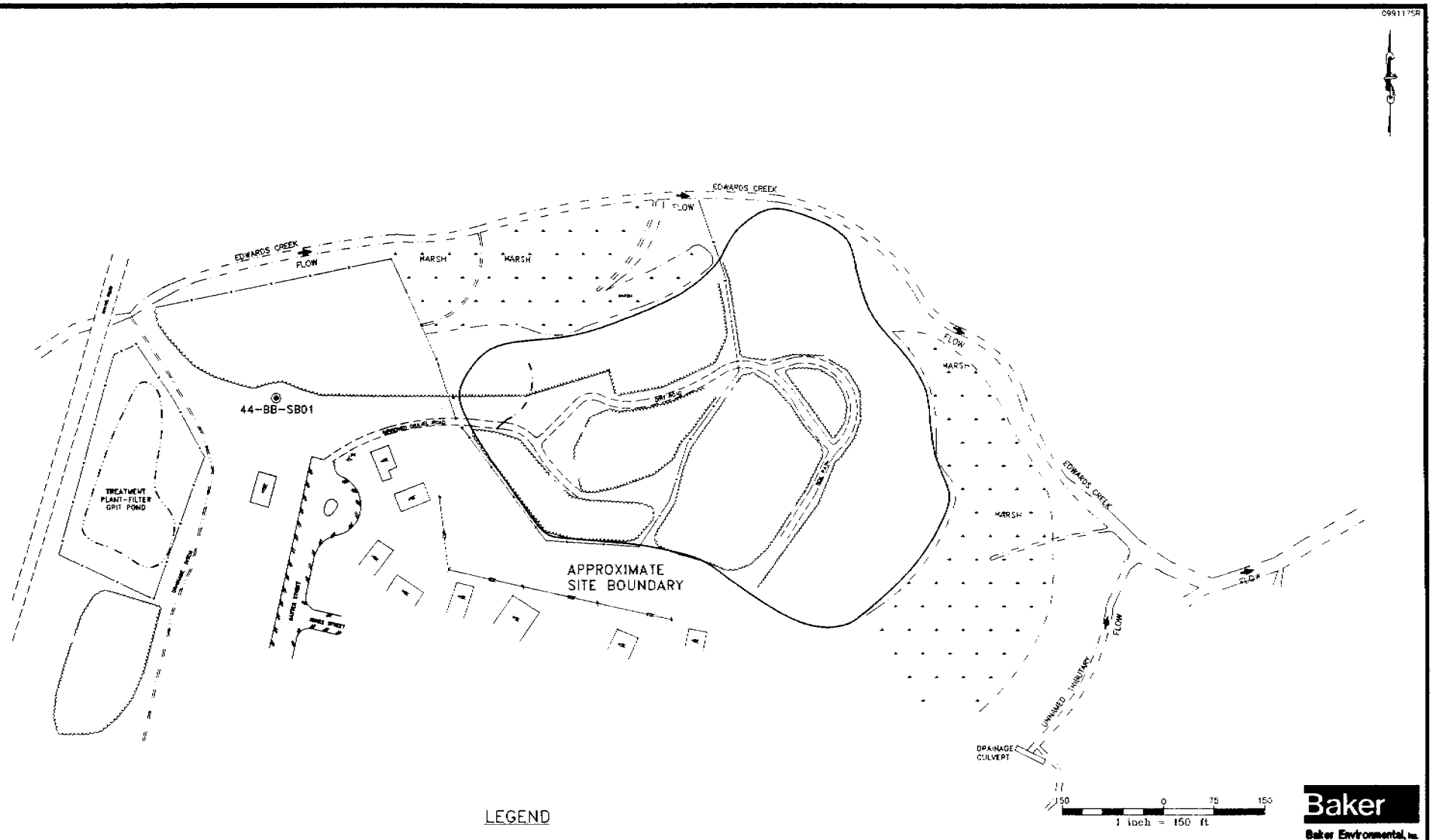


FIGURE 17
SURFACE AND SUBSURFACE SOIL SAMPLING LOCATIONS
SITE 43, AGAN STREET DUMP
REMEDIAL INVESTIGATION, CTO-0303
MARINE CORPS AIR STATION, NEW RIVER
NORTH CAROLINA



LEGEND

- OA-SB02 — SOIL BORING LOCATION
- FLOW — DIRECTION OF SURFACE WATER FLOW
- MARSH
- EDGE — OVERHEAD ELECTRIC LINE & UTILITY POLE
- FENCE
- ASPHALT ROAD
- GRAVEL OR DIRT ROAD
- EDGE OF CREEK, DRAINAGE DITCH, MARSH OR POND
- TREE LINE
- HOUSING UNIT

Baker

Baker Environmental, Inc.

FIGURE 18
SURFACE AND SUBSURFACE SOIL SAMPLING LOCATION
SITE 44, JONES STREET DUMP
REMEDIAL INVESTIGATION, CTO-0303
MARINE CORPS AIR STATION NEW RIVER
NORTH CAROL

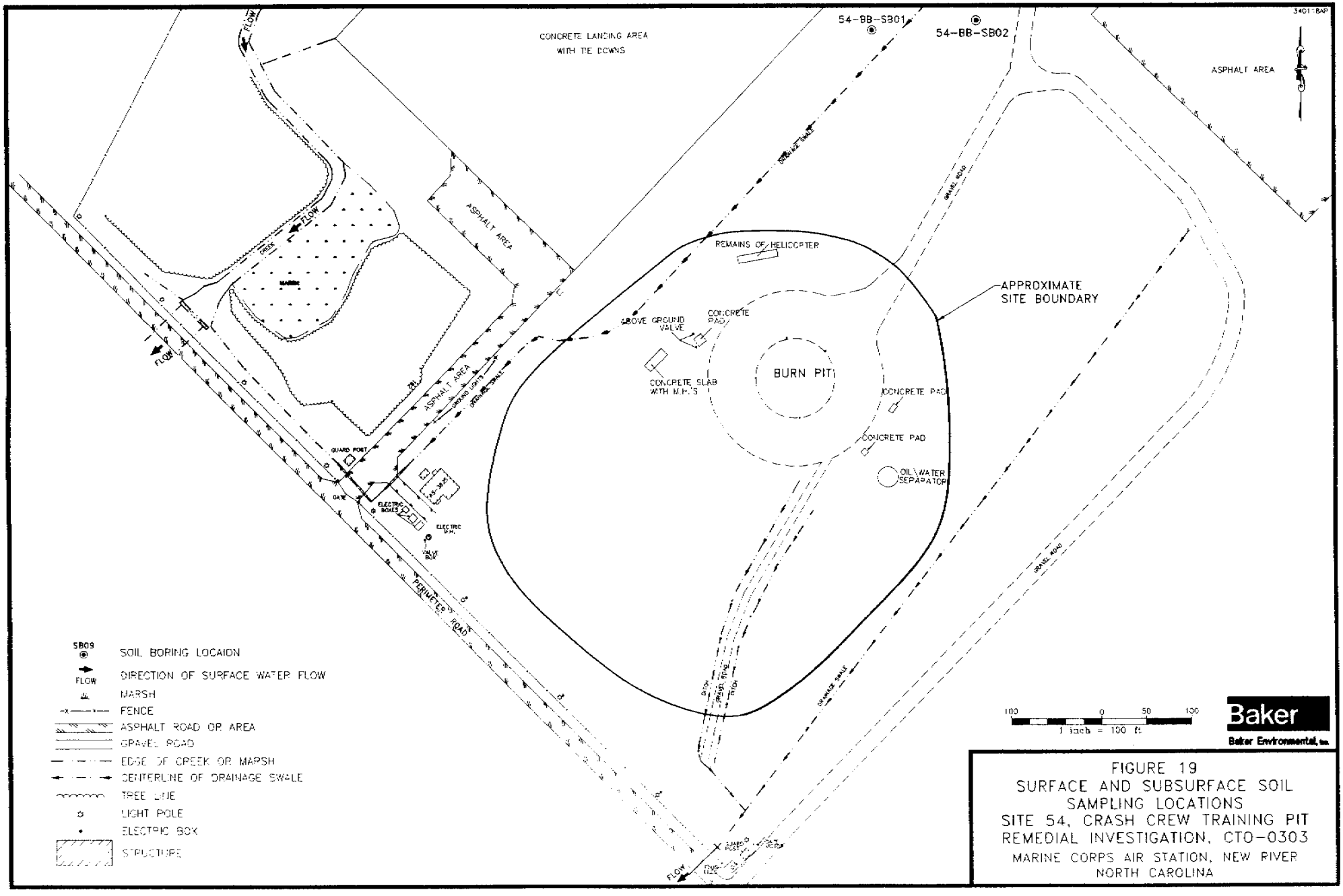
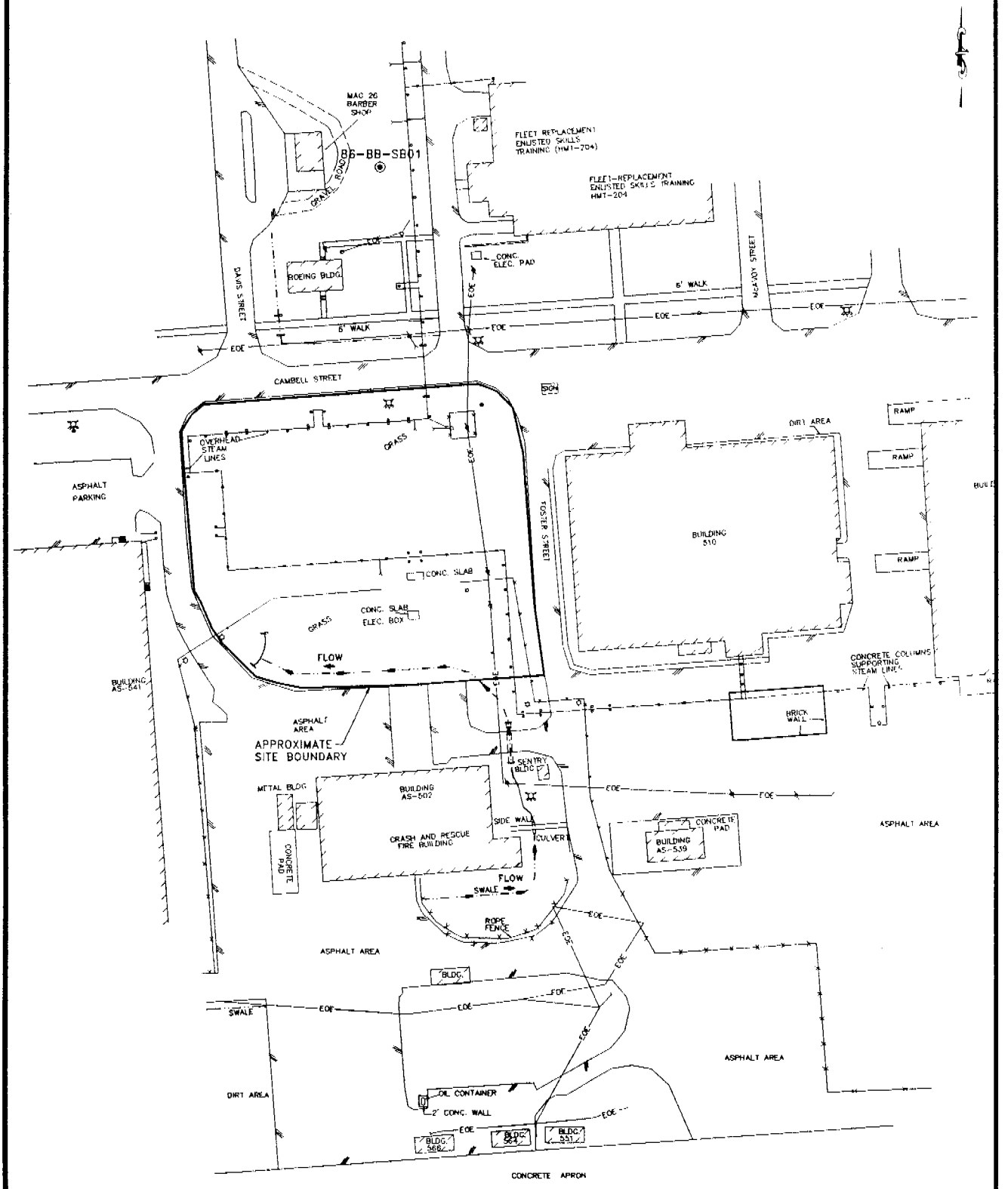


FIGURE 19
SURFACE AND SUBSURFACE SOIL
SAMPLING LOCATIONS
SITE 54, CRASH CREW TRAINING PIT
REMEDIAL INVESTIGATION, CTO-0303
MARINE CORPS AIR STATION, NEW RIVER
NORTH CAROLINA



340116AP

80 0 40 80

1 inch = 80 ft.

Baker

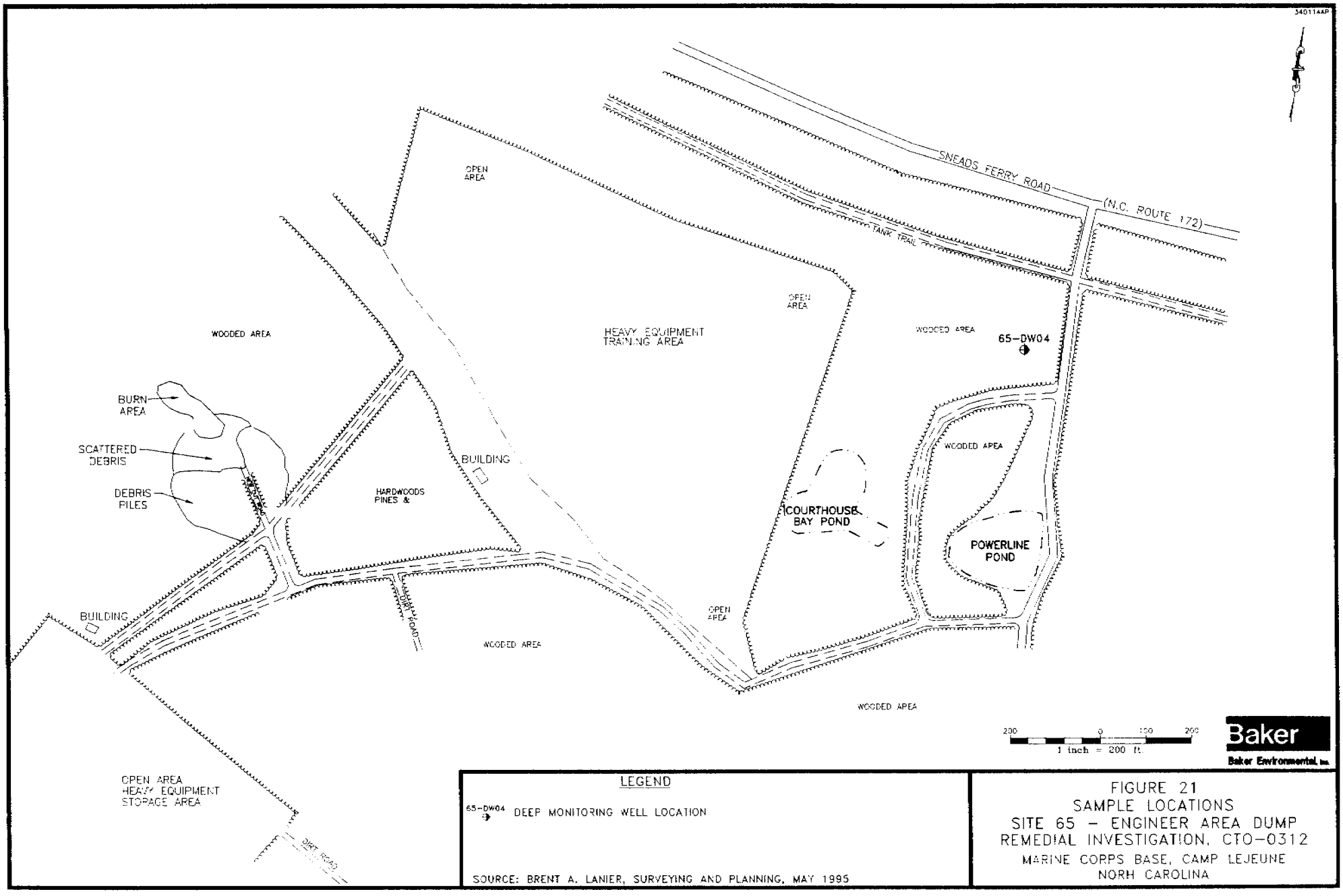
Baker Environmental, Inc.

LEGEND

- SB09 — SOIL BORING LOCATION
- FLOW — DIRECTION OF SURFACE WATER FLOW
- OHE — OVERHEAD ELECTRIC LINE & UTILITY POLE
- ASPHALT ROAD
- CENTERLINE OF DRAINAGE SWALE
- LIGHTPOLE
- STRUCTURE
- FENCE
- GUY WIRE
- FIRE HYDRANT

SOURCE: LANTDIV, OCT. 1991

FIGURE 20
SURFACE AND SUBSURFACE SOIL SAMPLING LOCATION
SITE 86, ABOVE GROUND STORAGE TANK AREA
REMEDIAL INVESTIGATION, CTO-0303
MARINE CORPS AIR STATION, NEW RIVER
BAMP LEJEUNE


340114AP
SNEADS FERRY ROAD
(N.C. ROUTE 172)
TANK TRAIL
OPEN AREA
WOODED AREA
HEAVY EQUIPMENT TRAINING AREA
OPEN AREA
WOODED AREA
65-DW04
BURN AREA
SCATTERED DEBRIS
DEBRIS PILES
BUILDING
HARDWOODS PINES &
COURTHOUSE BAY POND
WOODED AREA
POWERLINE POND
BUILDING
DIRT ROAD
OPEN AREA
WOODED AREA
WOODED AREA
OPEN AREA HEAVY EQUIPMENT STORAGE AREA
DIRT ROAD
200 0 100 200
1 inch = 200 ft.
Baker
Baker Environmental, Inc.
LEGEND
65-DW04 DEEP MONITORING WELL LOCATION
SOURCE: BRENT A. LANIER, SURVEYING AND PLANNING, MAY 1995
FIGURE 21
SAMPLE LOCATIONS
SITE 65 - ENGINEER AREA DUMP
REMEDIAL INVESTIGATION, CTO-0312
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

GROUNDWATER

DRAFT

EVALUATION OF METALS IN GROUNDWATER

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

CONTRACT TASK ORDER 0177

JUNE 3, 1994

Prepared for:

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

Under the:

LANTDIV CLEAN Program
Contract N62470-89-D-4814

Prepared by:

BAKER ENVIRONMENTAL, INC.
Coraopolis, Pennsylvania

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FIGURES

1 Site Location Map
2 Positive Detections Above Applicable Federal and State Standards for Total and Filtered Inorganic Analytes in Groundwater-Site 2
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TABLES

1 Summary of Total Metals in Shallow Wells
2 Comparison of Repeat Sampling in Shallow Wells
3 Summary of Dissolved Metals in Shallow Wells
4 Summary of Total Metals in Upgradient Wells
5 Comparison of Inorganic Subsurface Soil Concentrations in "Clean" and "Contaminated" Wells
6 Total Metals in Deep Monitoring Wells
7 Summary of Field Parameters in Shallow, Deep, and Supply Wells

1.0 INTRODUCTION

Numerous groundwater investigations have been conducted at Marine Corps Base (MCB), Camp Lejeune under the Department of the Navy (DON) Installation Restoration Program (IRP). These studies have identified elevated levels of total metals in shallow groundwater at almost every site. The degree of contamination, based on dissolved metals analysis of groundwater samples, is limited. It is believed that the presence of elevated metals are not always related to past disposal activities for several reasons, which is the basis of this study.

Currently, Records of Decision (ROD) are being prepared for Operable Units No. 1 (Sites 21, 24, and 78) and No. 5 (Site 2). Both RODs are proposing to not remediate shallow groundwater which contains elevated levels of total metals above State groundwater standards (i.e., North Carolina Water Quality Standards) and/or Federal drinking water standards (i.e., Maximum Contaminant Levels). Specifically, remediation of shallow groundwater due to elevated total metals is not cost effective, or practical, due to the following: (1) the shallow aquifer is not used for potable supply; (2) the source of metals in groundwater cannot be correlated with soil data or previous disposal practices; (3) the extent of shallow groundwater contamination (based on total metals analysis) is widespread and in many cases undefinable, since there are no apparent contaminant plumes or patterns associated with the metals; and (4) deep groundwater, which is the source of potable water, is not significantly contaminated with metals above the standards.

2.0 STUDY OBJECTIVES

The DON/Marine Corps initiated a study on inorganics in groundwater throughout MCB Camp Lejeune to assess whether total metals in groundwater are related to disposal practices or to other factors. The overall goal of this study is to provide information that would be used in consideration of not remediating shallow groundwater at Operable Units No. 1 and No. 5, and possibly other operable units where total metals are elevated without cause. The following study objectives were identified:

(1) Determine whether the elevated total metals detected in the shallow aquifer are related to past disposal practices, well construction factors, sampling techniques, or suspended particulates in the samples;

(2) Determine whether total metals in shallow groundwater are elevated throughout the region or MCB Camp Lejeune;

(3) Determine whether there is a correlation between elevated total metals in groundwater and metals in soil; and

(4) Determine whether the concentrations of total metals (i.e., low versus high) is related to shallow and deep aquifer characteristics.

3.0 SCOPE OF WORK

Groundwater and soil data from a total of 21 sites were compiled as part of the overall study. Three of the 21 sites are located outside the boundary of the base. These sites include the ABC Cleaners Superfund Site, located along Route 24 in Jacksonville, and two sites located along Highway 17 (Off-site Properties No. 1 and No. 2). The two sites along Route 17 were investigated by the DON/Marine Corps as part of a real estate survey. The other 18 sites are located throughout various portions of MCB Camp Lejeune (see Figure 1).

Information from studies conducted by Baker and other consultants were obtained to evaluate metal concentrations in groundwater. The study focused on 14 metals of potential concern to human health and the environment. Some of the information was collected under the IR Program whereas other information was obtained during other investigations (e.g., ABC Cleaners RI/FS). The following data tables were then prepared to determine why total metals are generally elevated in shallow groundwater.

Table 1 - Total Metal Concentrations in Shallow Groundwater by Site

Table 2 - Summary of Repeat Sampling of Shallow Wells (Sites 2 and 78)

Table 3 - Dissolved Metal Concentrations in Shallow Groundwater by Site

Table 4 - Summary of Total Metal Concentrations in Upgradient Wells

Table 5 - Comparison of Subsurface Metal Concentrations in Uncontaminated and Contaminated Wells

Table 6 - Total Metal Concentrations in Deep Groundwater by Site

Table 7 - Summary of Field Parameters in Shallow Monitoring Wells, Deep Monitoring Wells, and Supply Wells

The tables are presented at the end of this report.

4.0 DATA ANALYSIS

The following discussion represents an analysis of the information contained in each of the previously mentioned tables.

Table 1 (Total Metal Concentrations in Shallow Groundwater)

All of the sites had at least one (and in most cases several) metal which exceeded either State water quality standards or Federal drinking water standards. The most frequently detected metals included chromium, lead, and manganese, which were detected at almost every site above drinking water standards. Other frequently detected metals which exceeded drinking water standards included arsenic, beryllium, cadmium, and nickel.

An analysis of the data from Table 1 indicates that elevated total metals are present in shallow groundwater at every site, including the three sites which are located off base. The two sites which did not exhibit significant contamination include the ABC Cleaners site (only chromium exceeded the standards) and Site 48 (only manganese exceeded the standards).

Total metals detected in shallow groundwater at Site 2 exceeded State and/or Federal standards in seven of the 11 shallow monitoring wells. Manganese was the most frequently detected metal (7/11). Lead (3/11), chromium (2/11), and cadmium (1/11) were also detected above the standards,, but less frequently (see Figure 2).

With the exception of Wells 78GW03 and 78GW19, total metals were detected at Site 78 (Hadnot Point Industrial Area) above Federal MCLs or NCWQS in every shallow well (see Figure 3). The extent of elevated total metals in groundwater is widespread, encompassing approximately one square mile (or approximately 660 acres) in total area. The distribution and concentration of total metals in shallow groundwater makes it virtually impossible to identify or illustrate contaminant plumes (see Figure 3).

An analysis of the total metals results indicates the following pattern. Samples exhibiting elevated levels of lead, chromium, or other contaminants of concern, also exhibited elevated levels of other metals such as aluminum, antimony, iron, and zinc. Samples which did not exhibit elevated levels of lead, chromium, or manganese also did not exhibit elevated levels of other metals. This pattern indicates that the elevated total metals are not limited to one or

two contaminants, which would be the case if a lead or chromium plume in the groundwater truly existed. In other words, if a site is impacted by a particular metal due to disposal activities (say chromium for example), then other metals such as aluminum, lead, or zinc should not be consistently elevated as in the case of samples collected from the shallow aquifer at MCB Camp Lejeune. This point is depicted in the data summary tables provided in Appendix A for Sites 2 and 78. These tables were taken from the Remedial Investigation Reports for Operable Units No. 1 and No. 5. As an example, note that sample numbers 78-MW08, 78-MW10, 78-MW11, and 78-MW12 all had elevated levels of total metals when compared to samples 78-MW09-2 and 78-MW09-3. It is clear that most of the metal concentrations in a particular sample follow a consistent pattern throughout.

Table 2 (Comparison of Repeat Sampling of Shallow Wells

Five wells from Sites 2 and 78 were randomly chosen to evaluate total metals concentrations between sampling rounds. The comparison was limited to only chromium, lead, and manganese since these contaminants were frequently detected throughout MCB Camp Lejeune. In several cases, metal concentrations were significantly different between the sampling rounds. If the shallow aquifer was impacted due to former disposal activities, a contaminant plume would be present and concentrations would not significantly deviate. The deviation in metal concentrations may indicate that sampling results are biased due to suspended particulates in the samples.

Table 3 (Dissolved Metal Concentration in Shallow Groundwater by Site)

The data base for Table 3 was limited to 12 sites since many of the previous investigations (i.e., prior to Navy CLEAN) did not analyze for dissolved metals. Nevertheless, an analysis of the 12 sites revealed that elevated levels of dissolved metals in groundwater is limited. Manganese was the most frequently detected metal above drinking water standards (10 of 12 sites exhibited elevated levels). Lead was detected at only one site (Site 21) above drinking water standards. Chromium was also detected at only one site (Site 78) above drinking water standards. No other metal was detected above the standards.

Literature searches have indicated that manganese is a naturally occurring metal in North Carolina. Therefore, the presence of manganese may not be attributable to site-related activities (Greenhorne & O'Mara, 1992).

An analysis of the data from Table 3 clearly shows a significant reduction in metal concentrations when compared to Table 1 (total metals in shallow groundwater). One possible reason for this reduction is that suspended solids or particles are not being introduced into the analysis of the sample due to filtering. A second possibility is that the metals are not significantly present in a dissolved state in shallow groundwater due to the species of metals under site conditions. It should be noted that calcium and sodium did not exhibit such a pattern since the salts of these metals are more soluble in water. For example, the concentrations of total calcium and total sodium versus dissolved calcium and dissolved sodium are similar and are not affected by the removal of the particulates during filtering. The fact that these salts do not exhibit the pattern that the other metals show supports the possibility that total metal concentrations are influenced by particulates in the sample.

Table 4 (Total Metals in Upgradient Shallow Wells)

The data base for Table 4 consists of groundwater results from 14 upgradient shallow monitoring wells (i.e., one well per site). These wells were installed to determine baseline groundwater quality to which on-site groundwater conditions could be compared. In some cases, the upgradient wells were located in areas where other base activities may have influenced groundwater quality.

The analysis of this data shows that manganese was the most frequently detected metal above Federal or State standards in upgradient shallow wells. Manganese was detected in 7 of the 14 upgradient wells above drinking water standards. Chromium and lead were also frequently detected above drinking water standards in upgradient (background) wells. These contaminants were detected in 6 of the 14 upgradient wells. At Site 2, samples collected from an upgradient well (2GW9) exhibited elevated levels of chromium (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 - 13J	6.4 - 12J	2.4 - 36.3	ND - 23.4	ND - 570
Barium	2000	2000	335 - 833	46 - 1420	ND - 1020	427 - 641	ND - 1060	ND - 647	ND - 1120	78.8 - 576	60.1 - 396	55.2 - 999	220 - 745	315 - 3180
Beryllium	NE	4	2.7 J - 43.4	1 - 3	ND - 7.5	ND - 10.3J	ND	ND - 8	ND - 19	ND - 1.2J	ND - 2.4	0.80 - 42.8	1.5 - 4.2	1.4 - 36.6
Cadmium	5	5	ND - 12.9	7	ND	ND	ND	ND	ND - 12	3.3J - 17.3J	ND - 10.7J	3.2 - 110	ND - 6.9	ND - 32
Calcium	NA	NA	8850 - 726000	5710 - 450000	5430 - 64900	5050 - 51300	16100 - 90700	6130J - 63000J	ND - 151000	20200 - 160000	1730 - 11900	8750 - 828000	10300 - 91900	2430 - 191000
Chromium	50	100	172 - 627	11 - 117	ND - 201	47.8 - 220	ND - 214	ND - 348J	19 - 316	9.0J - 140	42.8 - 106J	10.5 - 244	161 - 249	126 - 895
Copper	1000	1300	44.6 - 117	3 - 23	ND - 175	17.7 - 36.4	ND - 39.7	ND - 84	ND - 52	18.8J - 75.4	15.8 - 42.5	16.3 - 1030	64.2 - 104	28.6 - 313
Lead	15	15	40.8J - 176J	2.7 - 44.8	ND - 200	23 - 37.3	ND - 127	ND - 2000J	5.1 - 89	20.3J - 234J	7.7J - 115J	4.8 - 9340	16.5 - 28.8	15.8 - 508
Manganese	50	50 (1)	125 - 1720	21 - 190	ND - 362	56.9 - 220	ND - 91.3	59 - 276J	29 - 518	82.2 - 304	78.5 - 578	56.6 - 2110	72.6 - 297	88 - 1730
Mercury	1.1	2	ND - 1.2J	ND	ND - .46	0.2 - 0.36	ND - 1.4	ND - 2.4J	ND - 3.2	ND - 1.4J	0.88J - 0.9J	0.13 - 0.92	ND - 0.24	ND - 1.1
Nickel	100	100	28.5 - 426	ND	ND - 41.9	ND	ND	ND - 123	ND - 140	ND - 59.8	17.1J - 52.6J	28.8 - 137	20.5 - 143	21.9 - 486
Sodium	NA	NA	9090 - 19000	ND - 103000	1110 - 68700	7040 - 156000	1390 - 4170	7950 - 15700	5230 - 19200	9480 - 74700	5320 - 8100	2080 - 40200	9160 - 22100	4060 - 12600
Vanadium	NE	NE	214 - 640	9 - 184	ND - 330	37.8 - 423	ND - 175	ND - 419	ND - 408	6.1 - 164	57 - 101	20.4 - 244	122 - 233	184 - 759
Zinc	2100	5000 (1)	ND - 1110	6 - 146	ND - 1620	83.6 - 133	ND - 118	27J - 487J	20 - 650	ND	79.2 - 104	25.7 - 5180	19 J - 661J	87.3 - 2800J

Site Number / Units	Site 48 ug/L	Site 63 ug/L	Site 65 ug/L	Site 69 ug/L	Site 78 ug/L	Site 82 ug/L	ABC Cleaners ug/L	Offsite Property #1 ug/L	Offsite Property #2 ug/L
Arsenic	ND	ND - 23.4	ND - 308	2.9 - 29.0	ND - 405J	ND - 67.8	ND - 12	10.3 - 160	ND
Barium	18 - 51.3	56.1 - 5410	105 - 638	46.5 - 850	ND - 1250	ND - 540	35 - 220	ND - 468	ND
Beryllium	ND	ND - 3.1	ND	1.3 - 10.6	ND - 19	ND	NA	ND - 8.5	ND
Cadmium	2.2 - 3.3	ND	ND	2.4 - 11.4	ND - 21	ND	NA	ND	ND
Calcium	30600 - 115000	2830 - 24300	33300 - 181000	2010 - 38700	ND - 642000	6580 - 60800	790 - 16000	ND - 22800	ND - 5200
Chromium	5.8 - 17.5	4.4 - 134	50.1 - 364	15.1 - 159	ND - 858J	ND - 174	ND - 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:
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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 - 70500	NA	1280 - 3860	16200	ND - 183000	NA	NA	2500 - 34200	NA	NA
Vanadium	NE	NE	NA	43	ND	NA	ND	ND	ND	NA	NA	20.4	NA	NA
Zinc	2100	5000 (1)	NA	8 - 35	ND - 350	NA	ND	6B - 50	ND - 437	NA	NA	10.6 - 125	NA	NA

Site Number / Units	Site 48 ug/L	Site 63 ug/L	Site 65 ug/L	Site 69 ug/L	Site 78 ug/L	Site 82 ug/L	ABC Cleaners ug/L	Offsite Property #1 ug/L	Offsite Property #2 ug/L
Arsenic	ND	NA	NA	2.9	ND - 21.6	ND	NA	ND - 18.8	ND
Barium	16.8 - 27.6	NA	NA	13.7 - 35.8	ND	ND	NA	ND	ND
Beryllium	ND	NA	NA	1.3	ND	ND	NA	ND	ND
Cadmium	ND - 3.1	NA	NA	2.4	ND	ND	NA	ND	ND
Calcium	72600 - 80700	NA	NA	764 - 10600	ND - 296000	15200 - 58500	NA	ND - 7710	ND
Chromium	ND	NA	NA	7.2	ND - 59	ND	NA	ND - 30.0	ND
Copper	2.6 - 7.6	NA	NA	16.2	ND - 121	ND	NA	ND - 10.7	ND
Lead	ND	NA	NA	1	ND - 17.2	ND	NA	ND - 15.8	ND
Manganese	39.7 - 539	NA	NA	8.5 - 139	ND - 152	21 - 127	NA	ND - 63.8	ND - 21.3
Mercury	0.05 - 0.09	NA	NA	0.1	ND - 0.6	ND	NA	ND	ND
Nickel	ND	NA	NA	13.6	ND	ND	NA	ND	ND
Sodium	6430 - 8920	NA	NA	5170 - 41100	ND - 42200	5980 - 36000	NA	ND - 9540	ND - 6750
Vanadium	ND	NA	NA	16.6	ND	ND	NA	ND	ND
Zinc	ND	NA	NA	7.0 - 7670	ND - 58	ND - 119	NA	ND - 468	ND - 222

NOTES:
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JB - Value is estimated below the CRDL, but greater than the IDL.
NE - Not established.
NA - Not analyzed.
ND - Not detected.
NCWQS - North Carolina Water Quality Standard
MCL - Maximum Contaminant Level
(1) - Secondary MCL

TABLE 4
SUMMARY OF TOTAL METALS IN UPGRADIENT WELLS
SHALLOW MONITORING WELLS
MCB, CAMP LEJEUNE, NORTH CAROLINA

Well Number	NCWQS	FEDERAL MCL	Upgradient of Site 1	Upgradient of Site 2	Upgradient of Site 6	Upgradient of Site 7	Upgradient of Site 9	Upgradient of Sites 21 and 78	Upgradient of Site 24	Upgradient of Site 28	Upgradient of Site 30	Upgradient of Site 41	Upgradient of Site 43	Upgradient of Site 44
			1GW06	2GW09	6BP6S	7GW03	9GW4S	78GW26	24GW07	28GW04		41GW05		
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		ug/L		
Arsenic	50	50	17.8 J	12.9	ND	ND	ND	ND	3.7 J	7.4 J	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	Upgradient of Site 48	Upgradient of Site 63	Upgradient of Site 65	Upgradient of Site 69	Upgradient of Site 78	Upgradient of Site 82	Upgradient of ABC Cleaners	Upgradient of Offsite Property #1	Upgradient of Offsite Property #2
	48GW1			69GW07	9GW04	6MW3S	MW-S01		
Units	ug/L			ug/L	ug/L	ug/L	ug/L		
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:
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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	
Units	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	"Clean" mg/kg	"Contaminated" 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	8.3	7.1	6.9 J
Manganese	0.40 - 8	NA	NA	4.3 J	4.1	ND	1.8 B	3	11.5	ND	3.7 J	9.5	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	9.3	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	8.2	3.5	20.4
Mercury	ND	ND	NA	NA	NA	NA	0.06	0.31	ND	ND	ND	ND
Nickel	ND	ND	NA	NA	NA	NA	6.6	6.6	7.6	7.3	3.1	5.4
Vanadium	18.4	10	NA	NA	NA	NA	6.8	9.3	7.2	5.8	5	14.7
Zinc	ND	7.8	NA	NA	NA	NA	7.7	130	20.1	3	3.2	34.9

NOTES:
Shaded area indicates inorganic which exceeded a MCL and/or NCWQS in groundwater sample.
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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 48		Site 63		Site 65		Site 69		Site 78		Site 82	
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	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	5.7	6.8	1.7	18.5	9 J	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

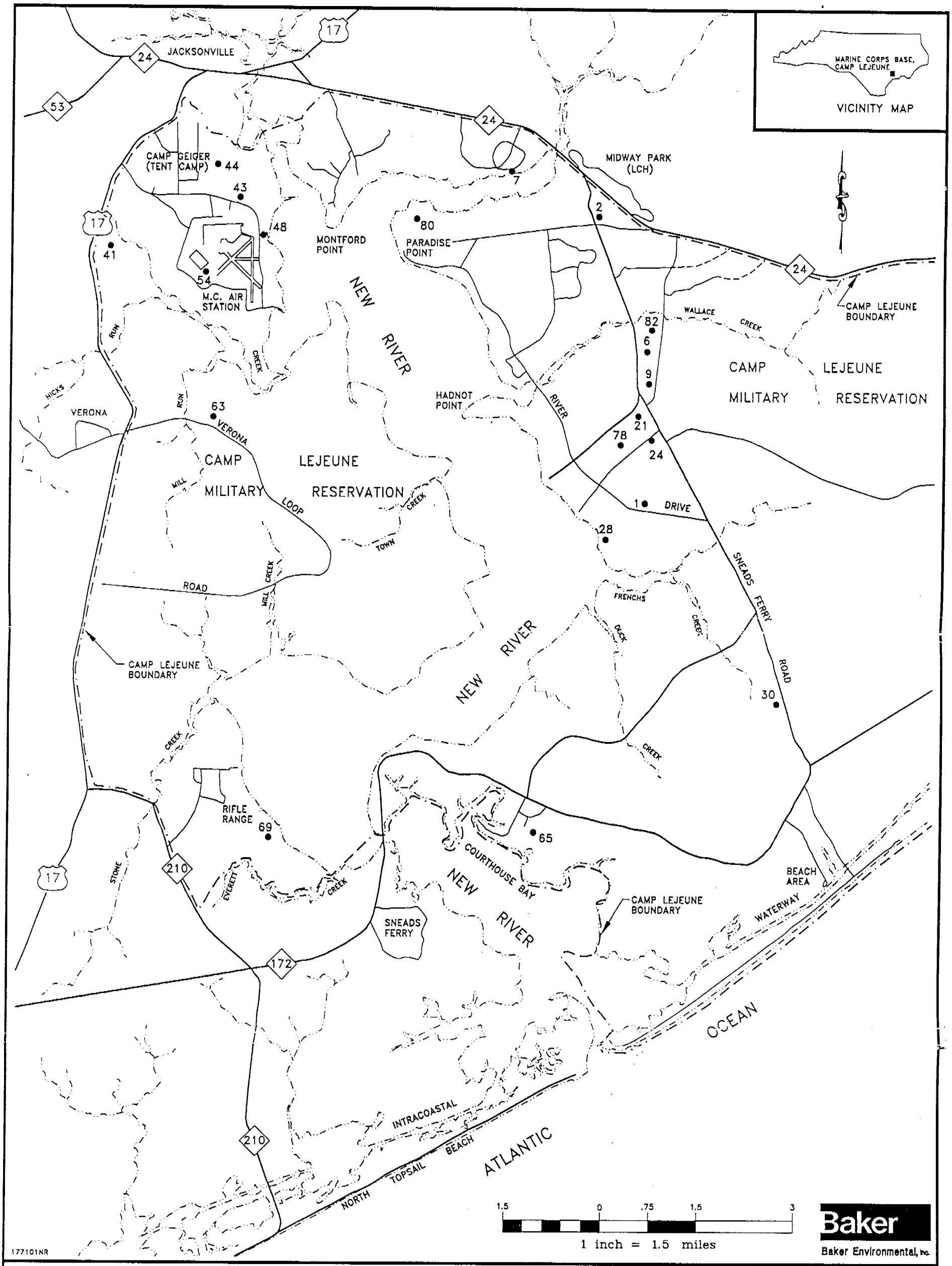


FIGURE 1
SITE LOCATION MAP
INORGANIC GROUNDWATER STUDY

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

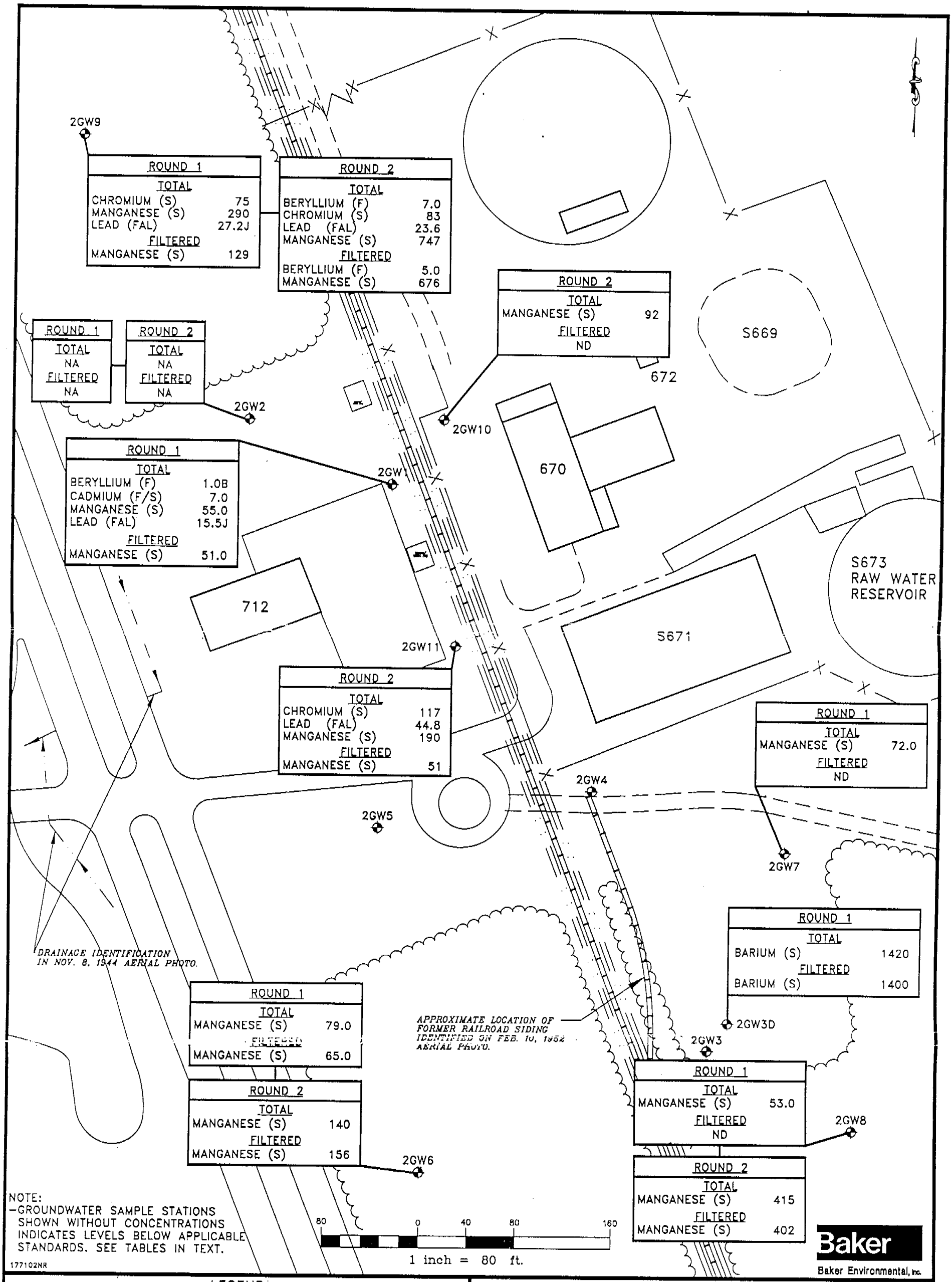
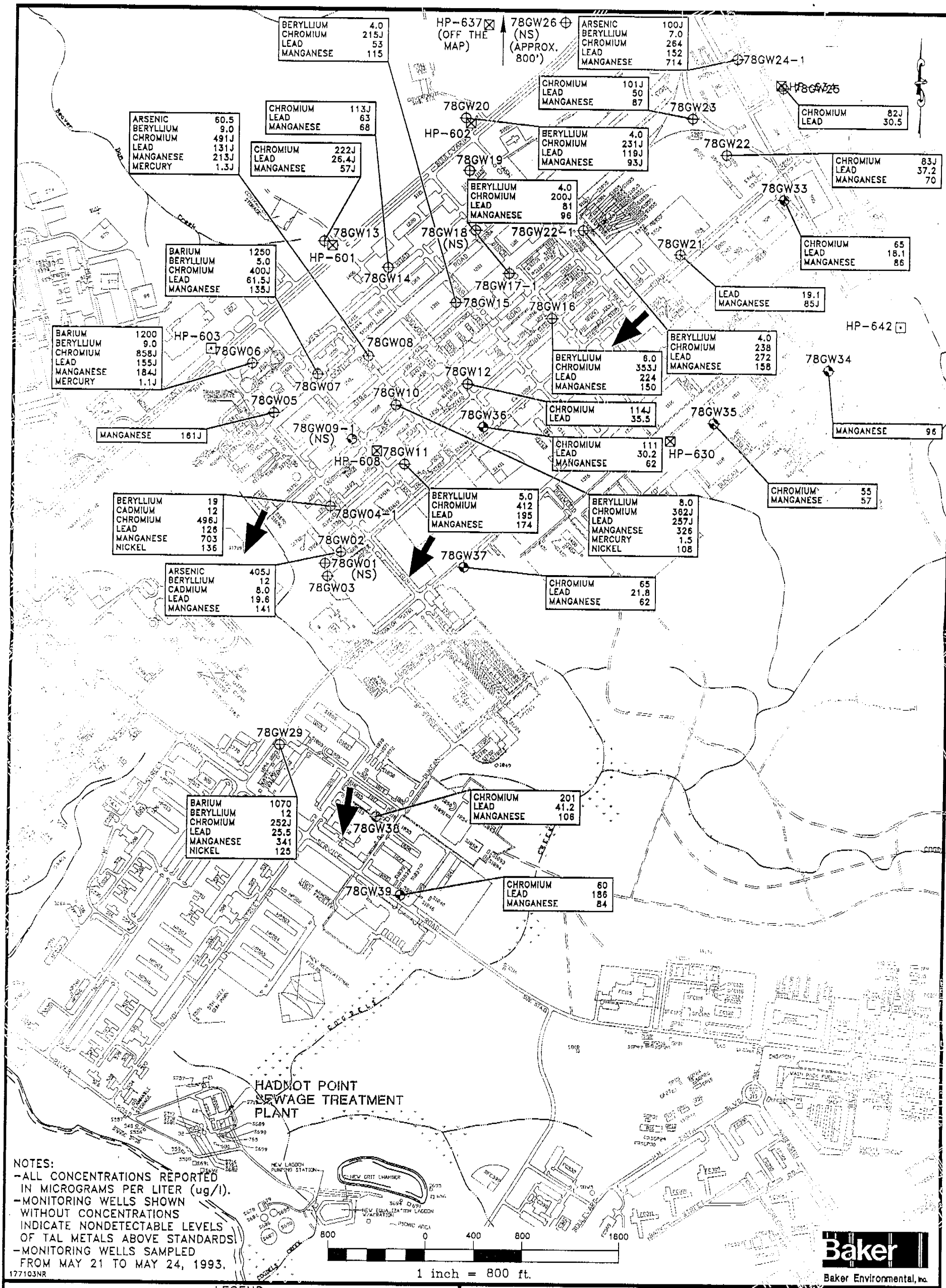


FIGURE 2
POSITIVE DETECTIONS ABOVE APPLICABLE FEDERAL AND STATE STANDARDS FOR TOTAL AND FILTERED INORGANIC ANALYTES IN GROUNDWATER
SITE 2
REMEDIAL INVESTIGATION CTO-0174
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

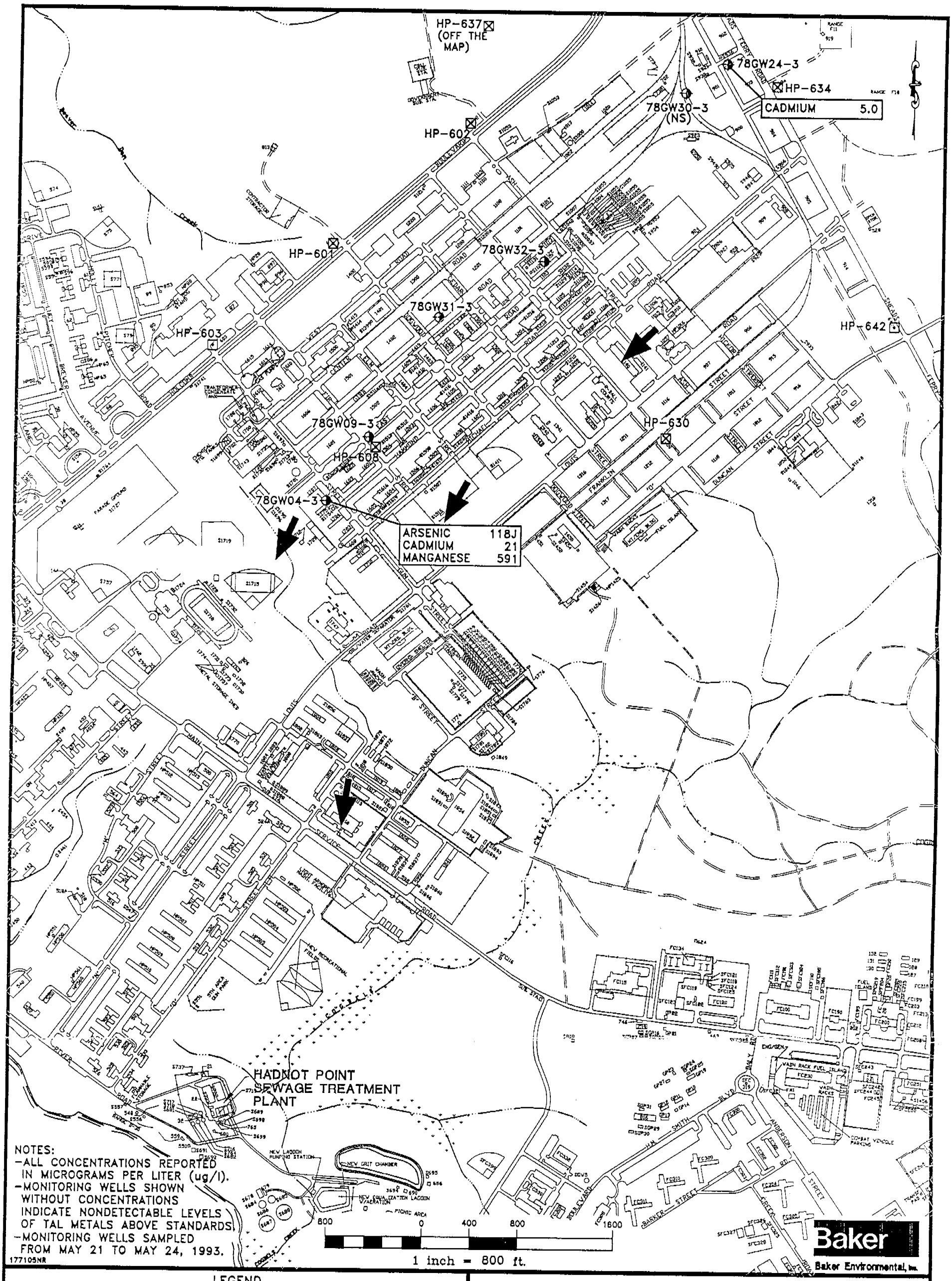


LEGEND

78GW02 ⊕	EXISTING SHALLOW MONITORING WELL INSTALLED BY ESE, 1984-1991
78GW33 ⊕	SHALLOW MONITORING WELL INSTALLED BY BAKER ENVIRONMENTAL, INC., 1993
→	APPROXIMATE DIRECTION OF GROUNDWATER FLOW
(NS)	NOT SAMPLED FOR TAL METALS
HP-603 ⊡	WATER SUPPLY WELL (ACTIVE)-NOT SAMPLED
HP-601 ⊠	WATER SUPPLY WELL (INACTIVE)-NOT SAMPLED

SOURCE: LANTDIV, FEBRUARY 1992

FIGURE 3
POSITIVE DETECTIONS OF TAL METALS ABOVE FEDERAL MCLs AND/OR NCWQS IN SHALLOW WELLS
SITE 78
REMEDIAL INVESTIGATION CTO-0177
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



LEGEND

- 78GW04-3 — EXISTING DEEP MONITORING WELL INSTALLED BY ESE, 1991
- → — APPROXIMATE DIRECTION OF GROUNDWATER FLOW
- (NS) — NOT SAMPLED FOR TAL METALS
- HP-603 — WATER SUPPLY WELL (ACTIVE)—NOT SAMPLED
- HP-601 — WATER SUPPLY WELL (INACTIVE)—NOT SAMPLED

SOURCE: LANTDIV, FEBRUARY 1992

FIGURE 4
POSITIVE DETECTIONS OF TAL METALS ABOVE FEDERAL MCLs AND/OR NCWQS IN DEEP WELLS
SITE 78
REMEDIAL INVESTIGATION CTO-0177
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

SURFACE WATER

BASE BACKGROUND
SURFACE WATER
MCB, CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Sample ID:	6-BH01-SW-06B	6-BH01-SW-06M	6-BH02-SW-06M	6-WC01-SW-06B	6-WC01-SW-06M	6-WC02-SW-06B	6-WC03-SW-06B
ALUMINUM	1210	1230	868	1350	1220	633	747
ANTIMONY	17.2 UJ	14 U	14 U	14 U	14 U	16.2 UJ	49 U
ARSENIC	3 U	3 U	3 UJ	3 UJ	3 UJ	2 U	2 U
BARIUM	13.4 JB	14 JB	25.1 JB	16 JB	16.2 JB	19.3 B	21 U
BERYLLIUM	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	1 U
CADMIUM	1.9 UJ	2.6 UJ	1.9 U	1.9 U	1.9 U	1.9 U	3 U
CALCIUM	612 B	600 B	16100	3640 B	3670 B	9990	9360
CHROMIUM	3.6 U	3.6 U	7 U	3.6 UJ	3.6 UJ	3.6 U	5 U
COBALT	2 U	2 U	3 UJ	2 U	2 U	2 U	6 U
COPPER	3.2 UJ	3 UJ	7 UJ	1.9 U	1.9 U	1.9 U	4 U
CYANIDE	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
IRON	958	818	921	1050	941	844	849
LEAD	1 U	1 U	3 U	2.3 JB	1.9 JB	1.2 B	5
MAGNESIUM	588 B	612 B	1010 B	632 B	639 B	1110 B	916 B
MANGANESE	6.5 B	6.2 B	14 JB	9 UJ	8.9 UJ	8.8 B	9.8 JB
MERCURY	0.04 U	0.05 U	0.04 U	0.04 U	0.04 U	0.07 U	0.2 U
NICKEL	7.9 UJ	7.9 UJ	7.9 U	7.9 UJ	7.9 UJ	7.9 U	17 U
POTASSIUM	117 UJ	146 UJ	685 B	376 B	341 B	604 B	610 B
SELENIUM	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 U
SILVER	2 UJ	2 UJ	4 UJ	2 UJ	2 UJ	3.8 UJ	10 U
SODIUM	4680 B	4850 B	5250	3930 B	3980 B	7790	6240
THALLIUM	2 UJ	2 UJ	2 UJ	2 U	2 UJ	2 UJ	2 UJ
VANADIUM	1.8 UJ	1.8 UJ	2 JB	3.3 JB	1.9 JB	2.1 JB	5 U
ZINC	4.5 U	4.9 U	13.1 U	8.7 U	7.6 U	7.5 U	7.4 U

Concentrations presented in micrograms per liter (UG/L)

BASE BACKGROUND
SURFACE WATER
MCB, CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

	Minumum (ug/L)	Maximum (ug/L)	Average (ug/L)
ALUMINUM	178	1350	803.4
ANTIMONY	ND	ND	NA
ARSENIC	ND	ND	NA
BARIUM	13.4	27.2	17.9
BERYLLIUM	ND	ND	NA
CADMIUM	3	3	1.5
CALCIUM	600	41600	13383.7
CHROMIUM	ND	ND	NA
COBALT	8	8	3.7
COPPER	4	129	12.7
CYANIDE	ND	ND	NA
IRON	413	1460	900.6
LEAD	1.17	10.4	2.6
MAGNESIUM	588	2410	1138.0
MANGANESE	6.2	40	13.4
MERCURY	0.52	0.52	0.1
NICKEL	1380	1380	105.1
POTASSIUM	341	2210	776.8
SELENIUM	ND	ND	NA
SILVER	ND	ND	NA
SODIUM	3930	22100	7835.7
THALLIUM	ND	ND	NA
VANADIUM	1.9	10	4.4
ZINC	18	111	18.0

Qualifiers have been removed per Baker's standards.
Qualifiers U and UJ have been given one-half the detection value.
Qualifiers J, NJ, and B have been removed with no detection value change.

SEDIMENT

BASE BACKGROUND
SEDIMENT
MCB, CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Sample ID:	2-OCSD01-06	2-OCSD01-612	6-BH01-SD-612B	6-BH01-SD-612M	6-BH01-SD-6B	6-BH01-SD-6M	6-BH02-SD-06M
ALUMINUM	8680	9090	6760	7790	5610	6360	3010
ANTIMONY	R	R	4.7 UJ	5.9 U	4.9 UJ	4.8 U	3.8 U
ARSENIC	0.56 UJ	0.57 UJ	1 U	1.1 U	1.1 U	0.93 U	0.77 U
BARIUM	30.5 B	30 B	9.7 JB	14.4 B	8.5 UJ	9.9 JB	12.5 B
BERYLLIUM	0.85 B	0.86 B	0.13 B	0.17 B	0.14 B	0.1 U	0.08 U
CADMIUM	1.4 U	1.4 U	0.51 UJ	0.8 UJ	0.86 UJ	0.65 UJ	0.54 JB
CALCIUM	6320	6180	59.3 U	82.8 U	61.9 U	70.2 U	1410
CHROMIUM	9.9	10	5.1	4.7	4.9	3.6	3.3 U
COBALT	2.3 U	2.3 U	0.53 U	0.84 U	0.55 U	0.69 U	1.1 UJ
COPPER	1.1 B	0.86 B	3.2 JB	10.1 JB	4.2 JB	6.2 JB	2.5 UJ
IRON	842	845	765	1590	638	956	1240
LEAD	8.8	8	8.9	12.3	11.3	10.2	6.9
MAGNESIUM	322 B	307 B	128 B	160 B	103 B	130 B	77.9 B
MANGANESE	4.8	5.7	4.9	6 B	4.7	4.9 B	4.4 J
MERCURY	0.14 U	0.14 U	0.05 U	0.05 U	0.05 U	0.04 UJ	0.03 U
NICKEL	5.6 U	5.7 U	2.1 UJ	3.3 UJ	2.2 UJ	2.7 UJ	2.7 UJ
POTASSIUM	229 B	237 B	125 B	163 B	122 B	140 B	76.8 UJ
SELENIUM	1.7 J	2.1 J	1.7 UJ	1.9 U	1.8 UJ	1.6 UJ	1.3 U
SILVER	0.85 UJ	0.86 UJ	0.53 UJ	0.84 UJ	0.55 UJ	0.69 UJ	0.82 UJ
SODIUM	86.2 B	78.9 B	35.5 UJ	42.8 UJ	41.5 UJ	39.4 UJ	25.4 UJ
THALLIUM	0.31 J	0.29 J	0.69 U	0.76 U	0.73 U	0.62 U	0.51 U
VANADIUM	6.8 B	6.6 B	5.7 B	6.5 B	4.8 B	4.9 B	3.3 JB
ZINC	18.9	18.9	2.1 U	1.4 U	1.6 U	1.8 U	12

Concentrations presented in milligrams per kilogram (mg/kg).

BASE BACKGROUND
SEDIMENT
MCB, CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

Sample ID:	6-WC03-SD-612B	41-UN-SD01-06	41-UN-SD01-612	41-NE-SD05-06	41-NE-SD05-612	41-TC-SD06-06
ALUMINUM	7040 J	1720.0	2780.0	437 J	351 J	2580.0 J
ANTIMONY	6.8 U	2.15 U	2.09 U	1.91 U	1.88 U	2.28 U
ARSENIC	1.3 JB	0.789 U	0.768 U	0.542 U	0.532 U	0.702
BARIUM	25.2 JB	5.24	7.66	3.2 U	3.14 U	13.5
BERYLLIUM	0.26 U	0.351 U	0.342 U	0.196 U	0.193 U	0.234 U
CADMIUM	0.92 U	0.639 U	0.622 U	0.823 U	0.809 U	0.982 U
CALCIUM	4500 J	1250.0	1660.0	314 J	216 J	1090.0 J
CHROMIUM	8.3	4.81 U	3.18 U	2.42 J	2.11 UJ	3.42 J
COBALT	0.97 U	2.65 U	2.58 U	4.13 U	4.06 U	4.92 U
COPPER	79.6	4.41 U	4.29 U	4.21 U	4.13 U	5.02 U
IRON	6050 J	924.0 J	1160.0 J	354 J	262 J	2840.0 J
LEAD	10.3 J	13.8 J	12.6 J	1.94	2.19	18.7
MAGNESIUM	333 JB	62.5	59.4	21.5	18.2 U	99.8
MANGANESE	8.3	2.94	2.67	1.96 J	1.79 UJ	8.72 J
MERCURY	0.11 U	0.068 U	0.066 U	0.064 U	0.063 U	0.077 U
NICKEL	3.8 UJ	5.97	3.79	7.4 U	7.3 U	8.90 U
POTASSIUM	457 B	136.0 U	132.0 U	197 U	193 U	235.0 U
SELENIUM	2.3 U	0.688 U	0.670 U	0.387 UJ	0.38 UJ	0.462 UJ
SILVER	1.3 UJ	0.435 U	0.424 U	0.413 UJ	0.406 UJ	0.492 UJ
SODIUM	382 UJ	73.6 J	49.3 UJ	95 U	117	347.0
THALLIUM	0.93 UJ	1.25 U	1.22 U	0.748 UJ	0.735 UJ	0.892 UJ
VANADIUM	15.7 B	4.52 U	4.40 U	5.26 U	5.17 U	6.28 U
ZINC	12.3 U	10.5 U	15.2 U	7.41 U	13.6	18.0

Concentrations presented in milligrams per kilogram (mg/kg).

BASE BACKGROUND
SEDIMENT
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

	Minimum (mg/kg)	Maximum (mg/kg)	Average (mg/kg)
ALUMINUM	351	9090	4800.8
ANTIMONY	ND	ND	NA
ARSENIC	0.702	1.6	0.6
BARIUM	5.2	37.1	15.5
BERYLLIUM	0.13	0.86	0.2
CADMIUM	0.54	1.3	0.4
CALCIUM	216	22200	2626.4
CHROMIUM	2.42	10	4.7
COBALT	0.6	1.3	1.0
COPPER	0.43	53200	2424.1
IRON	262	6940	2268.6
LEAD	1	314	22.5
MAGNESIUM	21.5	852	200.5
MANGANESE	1.96	23	6.4
MERCURY	ND	ND	NA
NICKEL	2.8	5.97	2.4
POTASSIUM	81.1	457	157.2
SELENIUM	0.862	2.9	0.9
SILVER	7.3	7.3	0.7
SODIUM	73.6	491	130.6
THALLIUM	0.29	0.31	0.4
VANADIUM	3.3	15.7	6.3
ZINC	12	926	49.2

Qualifiers have been removed per Baker's standards.
Qualifiers U and UJ have been given one-half the detection limit.
Qualifiers J, NJ, and B have been removed with no detection value change.

APPENDIX N
COPC SELECTION SUMMARIES

Site 63- Surface Soil

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
ug/kg												
Methylene Chloride	14-34J	7.41	3/46	13J (10)						85,000 ✓		
Acetone	11J	6.12	1/46	36J (10)						780,000 ✓		
ug/kg												
N-Nitrosodiphenylamine (1)	51J	223.42	1/45	ND						13,000 ✓		
Di-n-butylphthalate	78J	389.02	1/45	ND						780,000 ✓		
bis(2-Ethylhexyl)phthalate	41J-440	289.65	7/45	56J (10)(33)						46,000 ✓		
ug/kg												
Dieldrin	3J-4.1J	2.11	3/46	ND						40 ✓		
4,4'-DDE	2.7J-55J	3.88	7/45	ND						1900 ✓		
4,4'-DDD	12-26J	2.71	2/45	ND						2700 ✓		
Endosulfan sulfate	1.9J-2.8J	2.00	4/45	ND						47000 ✓		
4,4'-DDT	2J-50J	4.04	11/45	ND						1900 ✓		
Alpha-Chlordane	3.5-16	1.33	2/45	ND						490 ✓		
Gamma-Chlordane	2.7J-8	1.22	2/45	ND						480 ✓		
Aroclor-1260	28J-97	22.17	2/45 ✓	ND						83		X
mg/kg												
Aluminum	2685J-7050J	3522.89	46/46	28.2	5940.594					7800 ✓		
Antimony	2.1J-4.3J	1.97	8/40	ND	5.344 ✓					3.1		
Arsenic	0.32-3.7	0.96	36/46	ND	1.305					0.43		X
Barium	3-53.1	13.56	46/46	2.6	17.360					550 ✓		
Beryllium	0.1J-0.2J	0.06	5/46	ND	0.205					0.15		X
Cadmium	1-3.1	0.49	2/46	ND	0.688					3.9 ✓		
Calcium	10.4-27800J	3511.76	36/46	ND	1396.788				X	NA		
Chromium	1.1-11.1	4.86	44/46	ND	6.693					39 ✓		
Cobalt	0.49-4.3	0.43	7/46	ND	1.923					470 ✓		

add/carc.

Surface Soil (cont.)

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
Copper	0.47-74.8	19.14	29/46	15.4	7.200					310 ✓		
Iron	590-22,400 J	3626.17	46/46	ND	3755.063					2300		X
Lead	2.6-107	15.97	46/46	3.4 J	23.744					400 ✓		
Magnesium	28.4-223	117.98	46/46	ND	205.751			X		NA		
Manganese	3.4 J-348 N	33.31	46/46	ND	18.497					~~180~~ ✓	180	X
Mercury	0.06-0.2 J	0.03	4/46	ND	0.094					2.3 ✓		
Nickel	0.62 J-9.8	2.05	33/46	ND	3.434					160 ✓		
Potassium	18.9 J-349	154.06	36/46	ND	199.610			X		NA		
Selenium	0.27-0.33	0.16	2/46	ND	0.746					39 ✓		
Silver	0.72-0.97	0.35	2/46	4.1	0.575					39 ✓		
Sodium	5.3-100	11.03	7/46	ND	59.298			X		NA		
Vanadium	2-11	6.75	44/46	ND	11.628					55 ✓		
Zinc	0.98-1860	45.10	36/46	6.7	13.580					2310 ✓		

Site 63 - Subsurface Soil

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
µg/kg												
Methylene chloride	20-100	10.29	5/50	13J(10)						85,000 ✓		
Acetone	23J-150J	14.62	7/50	36J(10)						780,000 ✓		
Styrene	41	7.24	1/50	ND						1,600,000		
µg/kg												
N-nitrosodiphenylamine(1)	94J-350J	25.55	2/49	ND						13,000 ✓		
bis(2-Ethylhexyl)phthalate	41J-4700	351.65	12/49	56J(10)(33)						46,000 ✓		
µg/kg												
Dieldrin	2.1J-5J	2.19	2/50	ND						40 ✓		
4,4'-DDE	2.6J-28J	2.13	2/50	ND						1900 ✓		
4,4'-DDD	5.6	2.21	1/50	ND						2700 ✓		
4,4'-DDT	7.8	2.27	1/50	ND						1900 ✓		
mg/kg												
Aluminum	312-16,000	12,308.10	50/50	28.2	7375.302					7800		X
Antimony	2.5J-16.2J	2.33	7/42	ND	6.409					3.1		X
Arsenic	0.4-16	4.46	47/50	ND	1.968					0.43		X
Barium	2.5-1120	22.69	50/50	2.6	14.204					550		X
Beryllium	0.08-0.29	0.12	18/50	ND	0.191					0.15		X
Calcium	4-865J	217.98	38/50	ND	391.509			X		NA		
Chromium	1.2-84.4	19.57	50/50	ND	12.562					39		X
Cobalt	0.34-14.9	0.90	14/50	ND	1.504					470 ✓		
Copper	0.55-160	13.74	38/50	15.4	2.416					310 ✓		
Iron	425J-147,000J	13930.07	50/50	ND	7252.076					2300		X
Lead	2J-1650	17.49	50/50	3.4J	8.327					400		X
Magnesium	18.1-552	348.86	50/50	ND	260.718			X		NA		
Manganese	1.5-586 ✓	19.22	50/50	ND	7.919					~~200~~	180	X

Subsurface Soil (cont.)

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
Nickel	0.98-76.1	15.69	44/50	ND	3.714					160✓		
Potassium	30.8-1050	892.06	45/50	ND	347.236			X		NA		
Selenium	0.31J-0.72	0.24	10/50	ND	0.801					39 ✓		
Silver	1.8-5.3	0.47	2/50	4.1	0.866					39 ✓		
Sodium	7.6-84.6	20.66	19/50	ND	52.676			X		NA		
Thallium	0.14-0.18	0.09	3/50	ND	0.955 ✓					NA		
Vanadium	0.54-48.2	24.87	50/50	ND	13.454					55 ✓		
Zinc	1.3-1130	21.63	38/50	6.7	6.662					2300✓		

Site 63 Groundwater

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
ug/L												
bis(2-Ethylhexyl)phthalate	1J-11	8.77	2/11	✓56J (10)						4.8		
ug/L												
Aluminum	175-2420	4269.31	9/11	ND						3700✓		
Arsenic	1.8	1.03	1/11	ND						0.0445		X
Barium	16.6-461	237.23	11/11	9.2 (5)						260		X
Calcium	352-24,800	23,709.18	11/11	ND				X		NA		
Cobalt	4.8-11.9	7.80	5/11	ND						220✓		
Iron	73.5-24,300	340187.19	8/11	ND						1100		X
* Lead	1.2-9.4	3.78	5/11	1.7 (5)						NA	15	X
Magnesium	529-5800	3455.68	11/11	ND				X		NA		
Manganese	1.8-3[illegible]	1976.04	11/11	ND						~~[illegible]~~✓	88	X
Nickel	12.5-89.4	143.81	9/11	ND						73		X
Potassium	947-8290	4073.04	7/11	ND				X		NA		
Sodium	2300-11,800	7366.23	11/11	ND				X		NA		
Zinc	4.9-17,100	375743.68	6/11	ND						1100		X

Fed. Act. Level ?

Site 63- Surface Water

ug/L

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	Upstream (average) BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
Acetone	11J	9.94	1/5	✓36J(10)								
Bis(2-ethylhexyl)phthalate	100	2740.70	1/5	✓156J(10)								
Aluminum	602-688	677.62	5/5	ND	333.17							X
Barium	22.1-26.4	26.45	5/5	ND	25.67							X
Calcium	1740-1960	1968.36	5/5	ND	✓17,566.67			X				
Iron	292-834	970.86	5/5	ND	575.67							X
Lead	1-2.2	3.39	4/5	✓1.7(5)	ND							
Magnesium	678-809	780.89	5/5	ND	✓1744.67			X				
Manganese	4.7-10	12.37	5/5	ND	ND							X
Sodium	4250-4980	4458.54	5/5	ND	✓9830.00			X				
Zinc	5.5-22.6	25.37	5/5	ND	ND							X

Site 63- Sediment

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	Upstream (average) BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
ug/kg												
4,4'DDE	4.2J	3.78	1/5	ND	2.42							X
4,4'-DDD	2.6J-11J	14.44	2/5	ND	1.57							X
4,4'-DDT	1.6J	2.64	1/5	ND	✓2.20							
alpha-chlordane	4.7J	5.94	1/5	ND	1.20							X
gamma-chlordane	6.2J	9.98	1/5	ND	1.44							X
mg/kg												
Aluminum	890-7050	39240.90	5/5	ND	1165.57							X
Arsenic	0.29J-0.63J	0.74	2/5	ND	0.37							X
Barium	3.8-19.6	37.90	5/5	ND	6.46							X
Beryllium	0.14J	0.22	1/5	ND	0.09							X
Calcium	49.9-178	222.48	5/5	ND	✓1967.14			X				
Chromium	1.4J-8.1J	139.60	4/5	ND	1.86							X
Copper	2.8-6.9	858.62	4/5	ND	0.75							X
Iron	84.9J-205J	118851.46	5/5	ND	433.71							X
Lead	3.2J-13.7J	27.06	5/5	1.7	0.79							X
Magnesium	11.3J-259	12413.46	5/5	ND	45.25			X				
Manganese	1.6J-7.5J	12.06	5/5	ND	3.63							X
Nickel	1.9	2.53	1/5	ND	ND							X
Potassium	27.4-367	90696.9	4/5	ND	ND			X				
Sodium	7.6-12.9	13.76	5/5	ND	ND			X				
Vanadium	1.2J-12.4J	141.37	5/5	ND	1.52							X
Zinc	0.92-6.7	69.39	5/5	ND	5.11							X

APPENDIX O
CHRONIC DAILY INTAKE CALCULATIONS

Computed by: KTW Checked by: MAS Date: 4/96

EXAMPLE SOIL* INGESTION CALCULATIONS
OPERABLE UNIT NO. 13
CONTRACT TASK ORDER 0340

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

$$Intake\ (mg/kg{\cdot}day) = \frac{0.96\ mg/kg \times 100\ mg/day \times 350\ days/yr \times 30\ yrs \times 1.0E{-}6\ kg/mg}{70\ kg \times 25{,}550\ days}$$

$$= 5.6E\text{-}07$$

Risk = 5.6E-07 mg/kg·day x 1.5 $mg/kg{\cdot}day^{-1}$ = 8.45E-07

Example Noncarcinogen: Manganese

$$Intake\ (mg/kg{\cdot}day) = \frac{33.31\ mg/kg \times 100\ mg/day \times 350\ days/yr \times 30\ yrs \times 1.0E{-}6\ kg/mg}{70\ kg \times 10{,}950\ days}$$

$$= 4.6E\text{-}05$$

$$Risk = \frac{4.6E{-}05\ mg/kg{\cdot}day}{2.4E{-}02\ mg/kg{\cdot}day} = 1.9E\ 03$$

* This example calculation also is applicable for sediment ingestion.
Re: Site 63 Future Residential Adult

SURFACE SOIL INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT MILITARY 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)	
CF = conversion for kg to mg	1E-06
EF = adult exposure frequency (days/yr)	250
ED = adult exposure duration (yr)	4
IR = adult soil ingestion rate (mg/day)	100
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	4
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

COPC	Concentration Carcinogen (mg/kg)	Exposure Frequency (days/yr) Adult	Exposure Duration (yr) Adult	Conversio Factor (kg/mg)	Ingestion Rate (mg/day) Adult	Body Weight (kg) Adult	Average Carc Tim (days)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Aroclor-1260	0.02	250	4	1E-06	100	70	25550	1.2E-09	7.7E+00	9.54E-09	9%	1460	2.2E-08	0.0E+00	0.00E+00	0%
Arsenic	0.96	250	4	1E-06	100	70	25550	5.4E-08	1.5E+00	8.05E-08	77%	1460	9.4E-07	3.0E-04	3.13E-03	19%
Beryllium	0.06	250	4	1E-06	100	70	25550	3.4E-09	4.3E+00	1.44E-08	14%	1460	5.9E-08	5.0E-03	1.17E-05	0%
Iron	3626.17	250	4	1E-06	100	70	25550	2.0E-04	0.0E+00	0.00E+00	0%	1460	3.5E-03	3.0E-01	1.18E-02	72%
Manganese	33.31	250	4	1E-06	100	70	25550	1.9E-06	0.0E+00	0.00E+00	0%	1460	3.3E-05	2.4E-02	1.36E-03	8%
TOTAL										1.0E-07					1.6E-02	

SUBSURFACE SOIL INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT MILITARY 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)	
CF = conversion for kg to mg	1E-06
EF = adult exposure frequency (days/yr)	250
ED = adult exposure duration (yr)	4
IR = adult soil ingestion rate (mg/day)	100
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	4
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

COPC	Concentration (mg/kg)	Exposure Frequency (days/yr) Adult	Exposure Duration (yr) Adult	Conversion Factor (kg/mg)	Ingestion Rate (mg/day) Adult	Body Weight (kg) Adult	Average Carc Tim (days)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Aluminum	12308.10	250	4	1E-06	100	70	25550	6.9E-04	0.0E+00	0.0E+00	0%	1460	1.2E-02	1.0E+00	1.2E-02	15%
Antimony	2.33	250	4	1E-06	100	70	25550	1.3E-07	0.0E+00	0.0E+00	0%	1460	2.3E-06	4.0E-04	5.7E-03	7%
Arsenic	4.46	250	4	1E-06	100	70	25550	2.5E-07	1.5E+00	3.7E-07	93%	1460	4.4E-06	3.0E-04	1.5E-02	18%
Barium	22.69	250	4	1E-06	100	70	25550	1.3E-06	0.0E+00	0.0E+00	0%	1460	2.2E-05	7.0E-02	3.2E-04	0%
Beryllium	0.12	250	4	1E-06	100	70	25550	6.7E-09	4.3E+00	2.9E-08	7%	1460	1.2E-07	5.0E-03	2.3E-05	0%
Chromium	19.57	250	4	1E-06	100	70	25550	1.1E-06	0.0E+00	0.0E+00	0%	1460	1.9E-05	5.0E-03	3.8E-03	5%
Iron	13930.07	250	4	1E-06	100	70	25550	7.8E-04	0.0E+00	0.0E+00	0%	1460	1.4E-02	3.0E-01	4.5E-02	55%
Lead	17.49	250	4	1E-06	100	70	25550	9.8E-07	0.0E+00	0.0E+00	0%	1460	1.7E-05	0.0E+00	0.0E+00	0%
Manganese	19.22	250	4	1E-06	100	70	25550	1.1E-06	0.0E+00	0.0E+00	0%	1460	1.9E-05	2.4E-02	7.8E-04	1%
TOTAL										4.0E-07					8.3E-02	

SEDIMENT INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT MILITARY PERSONNEL

Intake from ingestion of sediment is calculated as follows:

Intake (mg/kg-day) = C * IR * CF * EF * ED/ BW * ATC or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in sediment (mg/kg)	
CF = conversion for kg to mg	1E-06
EF = exposure frequency (days/yr)	48
ED = exposure duration (yr)	4
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)	4
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

COPC	Concentration (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Ingestion Rate (mg/day)	Conversion Factor (kg/mg)	Body Weight (kg)	Average Carc Time (days)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg/day)-1	Carcinogenic Risk	Percent Carcinogenic Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg/day)	Noncarcinogenic Risk	Percent Noncarcinogeni Risk
4,4'-DDE	0.004	48	4	100	1E-06	70	25550	4.1E-11	3.4E-01	1.4E-11	0%	1460	7.1E-10	0.0E+00	0.0E+00	0%
4,4'-DDD	0.011	48	4	100	1E-06	70	25550	1.2E-10	2.4E-01	2.8E-11	0%	1460	2.1E-09	0.0E+00	0.0E+00	0%
alpha-Chlordane	0.005	48	4	100	1E-06	70	25550	5.0E-11	1.3E+00	6.6E-11	0%	1460	8.8E-10	6.0E-05	1.5E-05	0%
gamma-Chlordane	0.006	48	4	100	1E-06	70	25550	6.7E-11	1.3E+00	8.7E-11	1%	1460	1.2E-09	6.0E-05	1.9E-05	1%
Aluminum	7050.000	48	4	100	1E-06	70	25550	7.6E-05	0.0E+00	0.0E+00	0%	1460	1.3E-03	1.0E+00	1.3E-03	34%
Arsenic	0.630	48	4	100	1E-06	70	25550	6.8E-09	1.5E+00	1.0E-08	60%	1460	1.2E-07	3.0E-04	3.9E-04	10%
Barium	19.600	48	4	100	1E-06	70	25550	2.1E-07	0.0E+00	0.0E+00	0%	1460	3.7E-06	7.0E-02	5.3E-05	1%
Beryllium	0.140	48	4	100	1E-06	70	25550	1.5E-09	4.3E+00	6.5E-09	38%	1460	2.6E-08	5.0E-03	5.3E-06	0%
Chromium	8.100	48	4	100	1E-06	70	25550	8.7E-08	0.0E+00	0.0E+00	0%	1460	1.5E-06	5.0E-03	3.0E-04	8%
Copper	6.900	48	4	100	1E-06	70	25550	7.4E-08	0.0E+00	0.0E+00	0%	1460	1.3E-06	4.0E-02	3.2E-05	1%
Iron	2050.000	48	4	100	1E-06	70	25550	2.2E-05	0.0E+00	0.0E+00	0%	1460	3.9E-04	3.0E-01	1.3E-03	33%
Lead	13.700	48	4	100	1E-06	70	25550	1.5E-07	0.0E+00	0.0E+00	0%	1460	2.6E-06	0.0E+00	0.0E+00	0%
Manganese	7.500	48	4	100	1E-06	70	25550	8.1E-08	0.0E+00	0.0E+00	0%	1460	1.4E-06	2.4E-02	5.9E-05	2%
Nickel	1.900	48	4	100	1E-06	70	25550	2.0E-08	0.0E+00	0.0E+00	0%	1460	3.6E-07	2.0E-02	1.8E-05	0%
Vanadium	12.400	48	4	100	1E-06	70	25550	1.3E-07	0.0E+00	0.0E+00	0%	1460	2.3E-06	7.0E-03	3.3E-04	9%
Zinc	6.700	48	4	100	1E-06	70	25550	7.2E-08	0.0E+00	0.0E+00	0%	1460	1.3E-06	3.0E-01	4.2E-06	0%
TOTAL										1.7E-08					3.8E-03	

SURFACE SOIL INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT ADOLESCENT TRESPASSER

Intake from ingestion of soils 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)	
CF = conversion for kg to mg	1E-06
EF = adolescent exposure frequency (days/yr)	130
ED = adolescent exposure duration (yr)	9
IR = adolescent soil ingestion rate (mg/day)	100
BW = adolescent body weight (kg)	37
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	9
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

COPC	Concentration (mg/kg)	Exposure Frequency (days/yr) Adolescent	Exposure Duration (yr) Adolescent	Conversion Factor (kg/mg)	Ingestion Rate (mg/day) Adolescent	Body Weight (kg) Adolescent	Average Carc Time (days)	Carc Dose (mg/kg/day) Adolescent	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Adolescent	Percent Carcinogenic Risk Adolescent	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Adolescent	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Adolescent	Percent Noncarcinogenic Risk Adolescent
Aroclor-1260	0.02	130	9	1E-06	100	37	25550	2.7E-09	7.70E+00	2.11E-08	9%	3285	2.1E-08	0.00E+00	0.00E+00	0%
Arsenic	0.96	130	9	1E-06	100	37	25550	1.2E-07	1.50E+00	1.78E-07	77%	3285	9.2E-07	3.00E-04	3.08E-03	19%
Beryllium	0.06	130	9	1E-06	100	37	25550	7.4E-09	4.30E+00	3.19E-08	14%	3285	5.8E-08	5.00E-03	1.16E-05	0%
Iron	3626.17	130	9	1E-06	100	37	25550	4.5E-04	0.00E+00	0.00E+00	0%	3285	3.5E-03	3.00E-01	1.16E-02	72%
Manganese	33.31	130	9	1E-06	100	37	25550	4.1E-06	0.00E+00	0.00E+00	0%	3285	3.2E-05	2.40E-02	1.34E-03	8%
TOTAL										2.3E-07					1.6E-02	

SEDIMENT INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT ADOLESCENT TRESPASSER

Intake from ingestion of sediment is calculated as follows:

Intake (mg/kg-day) = C * IR * CF * EF * ED/ BW * ATC or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in sediment (mg/kg)	
CF = conversion for kg to mg	1E-06
EF = exposure frequency for adolescent (days/yr)	48
ED = exposure duration for adolescent (yr)	9
IR = soil ingestion rate for adolescent (mg/day)	100
BW = body weight for adolescent (kg)	37
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	9
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

COPC	Concentration (mg/kg)	Exposure Frequency (days/yr) Adolescent	Exposure Duration (yr) Adolescent	Ingestion Rate (mg/day) Adolescent	Conversion Factor (kg/mg)	Body Weight (kg) Adolescent	Average Carc Time (days)	Carc Dose (mg/kg/day) Adolescent	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Adolescent	Percent Carcinogenic Risk Adolescent	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Adolescent	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Adolescent	Percent Noncarcinogenic Risk Adolescent
4,4'-DDE	0.004	48	9	100	1E-06	37	25550	1.7E-10	3.4E-01	5.9E-11	0%	3285	1.3E-09	0.0E+00	0.0E+00	0%
4,4'-DDD	0.011	48	9	100	1E-06	37	25550	5.0E-10	2.4E-01	1.2E-10	0%	3285	3.9E-09	0.0E+00	0.0E+00	0%
alpha-Chlordane	0.005	48	9	100	1E-06	37	25550	2.1E-10	1.3E+00	2.8E-10	0%	3285	1.7E-09	6.0E-05	2.8E-05	0%
gamma-Chlordane	0.006	48	9	100	1E-06	37	25550	2.8E-10	1.3E+00	3.7E-10	1%	3285	2.2E-09	6.0E-05	3.7E-05	1%
Aluminum	7050.000	48	9	100	1E-06	37	25550	3.2E-04	0.0E+00	0.0E+00	0%	3285	2.5E-03	1.0E+00	2.5E-03	34%
Arsenic	0.630	48	9	100	1E-06	37	25550	2.9E-08	1.5E+00	4.3E-08	60%	3285	2.2E-07	3.0E-04	7.5E-04	10%
Barium	19.600	48	9	100	1E-06	37	25550	9.0E-07	0.0E+00	0.0E+00	0%	3285	7.0E-06	7.0E-02	1.0E-04	1%
Beryllium	0.140	48	9	100	1E-06	37	25550	6.4E-09	4.3E+00	2.8E-08	38%	3285	5.0E-08	5.0E-03	1.0E-05	0%
Chromium	8.100	48	9	100	1E-06	37	25550	3.7E-07	0.0E+00	0.0E+00	0%	3285	2.9E-06	5.0E-03	5.8E-04	8%
Copper	5.900	48	9	100	1E-06	37	25550	3.2E-07	0.0E+00	0.0E+00	0%	3285	2.5E-06	4.0E-02	6.1E-05	1%
Iron	2350.000	48	9	100	1E-06	37	25550	8.4E-05	0.0E+00	0.0E+00	0%	3285	7.3E-04	3.0E-01	2.4E-03	33%
Lead	13.700	48	9	100	1E-06	37	25550	6.3E-07	0.0E+00	0.0E+00	0%	3285	4.9E-06	0.0E+00	0.0E+00	0%
Manganese	7.500	48	9	100	1E-06	37	25550	3.4E-07	0.0E+00	0.0E+00	0%	3285	2.7E-06	2.4E-02	1.1E-04	2%
Nickel	1.900	48	9	100	1E-06	37	25550	8.7E-08	0.0E+00	0.0E+00	0%	3285	6.8E-07	2.0E-02	3.4E-05	0%
Vanadium	12.400	48	9	100	1E-06	37	25550	5.7E-07	0.0E+00	0.0E+00	0%	3285	4.4E-06	7.0E-03	6.3E-04	9%
Zinc	6.700	48	9	100	1E-06	37	25550	3.1E-07	0.0E+00	0.0E+00	0%	3285	2.4E-06	3.0E-01	7.9E-06	0%
TOTAL										7.2E-08					7.3E-03	

SURFACE SOIL INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
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)	
CF = conversion for kg to mg	1E-06
EF = child exposure frequency (days/yr)	350
ED = child exposure duration (yr)	6
IR = child soil ingestion rate (mg/day)	200
BW = child 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

COPC	Concentration (mg/kg)	Exposure Frequency (days/yr) Child	Exposure Duration (yr) Child	Conversion Factor (kg/mg)	Ingestion Rate (mg/day) Child	Body Weight (kg) Child	Average Carc Time (days)	Carc Dose (mg/kg/day) Child	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Child	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk Child
Aroclor-1260	0.02	350	6	1E-06	200	15	25550	2.4E-08	7.70E+00	1.87E-07	9%	2190	2.8E-07	0.00E+00	0.0E+00	0%
Arsenic	0.96	350	6	1E-06	200	15	25550	1.1E-06	1.50E+00	1.58E-06	77%	2190	1.2E-05	3.00E-04	4.1E-02	19%
Beryllium	0.06	350	6	1E-06	200	15	25550	6.6E-08	4.30E+00	2.83E-07	14%	2190	7.7E-07	5.00E-03	1.5E-04	0%
Iron	3626.17	350	6	1E-06	200	15	25550	4.0E-03	0.00E+00	0.00E+00	0%	2190	4.6E-02	3.00E-01	1.5E-01	72%
Manganese	33.31	350	6	1E-06	200	15	25550	3.7E-05	0.00E+00	0.00E+00	0%	2190	4.3E-04	2.40E-02	1.8E-02	8%
TOTAL										2.0E-06					2.1E-01	

SEDIMENT INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL CHILD

Intake from ingestion of sediment is calculated as follows:

Intake (mg/kg-day) = C * IR * CF * EF * ED/ BW * ATC or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in sediment (mg/kg)	
CF = conversion for kg to mg	1E-06
EF = exposure frequency for child (days/yr)	48
ED = exposure duration for child (yr)	6
IR = soil ingestion rate for child (mg/day)	200
BW = body weight for child (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

COPC	Concentration (mg/kg)	Exposure Frequency (days/yr) Child	Exposure Duration (yr) Child	Ingestion Rate (mg/day) Child	Conversion Factor (kg/mg)	Body Weight (kg) Child	Average Carc Tim (days)	Carc Dose (mg/kg/day) Child	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Child	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Child	Percent Noncarcinogeni Risk Child
4,4'-DDE	0.004	48	6	200	1E-06	15	25550	5.7E-10	3.4E-01	1.9E-10	0%	2190	6.6E-09	0.0E+00	0.0E+00	0%
4,4'-DDD	0.011	48	6	200	1E-06	15	25550	1.7E-09	2.4E-01	4.0E-10	0%	2190	1.9E-08	0.0E+00	0.0E+00	0%
alpha-Chlordane	0.005	48	6	200	1E-06	15	25550	7.1E-10	1.3E+00	9.2E-10	0%	2190	8.2E-09	6.0E-05	1.4E-04	0%
gamma-Chlordane	0.006	48	6	200	1E-06	15	25550	9.3E-10	1.3E+00	1.2E-09	1%	2190	1.1E-08	6.0E-05	1.8E-04	1%
Aluminum	7050.000	48	6	200	1E-06	15	25550	1.1E-03	0.0E+00	0.0E+00	0%	2190	1.2E-02	1.0E+00	1.2E-02	34%
Arsenic	0.630	48	6	200	1E-06	15	25550	9.5E-08	1.5E+00	1.4E-07	60%	2190	1.1E-06	3.0E-04	3.7E-03	10%
Barium	19.600	48	6	200	1E-06	15	25550	2.9E-06	0.0E+00	0.0E+00	0%	2190	3.4E-05	7.0E-02	4.9E-04	1%
Beryllium	0.140	48	6	200	1E-06	15	25550	2.1E-08	4.3E+00	9.0E-08	38%	2190	2.5E-07	5.0E-03	4.9E-05	0%
Chromium	8.100	48	6	200	1E-06	15	25550	1.2E-06	0.0E+00	0.0E+00	0%	2190	1.4E-05	5.0E-03	2.8E-03	8%
Copper	6.900	48	6	200	1E-06	15	25550	1.0E-06	0.0E+00	0.0E+00	0%	2190	1.2E-05	4.0E-02	3.0E-04	1%
Iron	2050.000	48	6	200	1E-06	15	25550	3.1E-04	0.0E+00	0.0E+00	0%	2190	3.6E-03	3.0E-01	1.2E-02	33%
Lead	13.700	48	6	200	1E-06	15	25550	2.1E-06	0.0E+00	0.0E+00	0%	2190	2.4E-05	0.0E+00	0.0E+00	0%
Manganese	7.500	48	6	200	1E-06	15	25550	1.1E-06	0.0E+00	0.0E+00	0%	2190	1.3E-05	2.4E-02	5.5E-04	2%
Nickel	1.900	48	6	200	1E-06	15	25550	2.9E-07	0.0E+00	0.0E+00	0%	2190	3.3E-06	2.0E-02	1.7E-04	0%
Vanadium	12.400	48	6	200	1E-06	15	25550	1.9E-06	0.0E+00	0.0E+00	0%	2190	2.2E-05	7.0E-03	3.1E-03	9%
Zinc	6.700	48	6	200	1E-06	15	25550	1.0E-06	0.0E+00	0.0E+00	0%	2190	1.2E-05	3.0E-01	3.9E-05	0%
TOTAL										2.4E-07					3.6E-02	

SURFACE SOIL INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT ADULT TRESPASSER

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)	
CF = conversion for kg to mg	1E-06
EF = adult exposure frequency (days/yr)	43
ED = adult exposure duration (yr)	30
IR = adult soil ingestion rate (mg/day)	100
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	30
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

COPC	Concentration (mg/kg)	Exposure Frequency (days/yr) Adult	Exposure Duration (yr) Adult	Conversion Factor (kg/mg)	Ingestion Rate (mg/day) Adult	Body Weight (kg) Adult	Average Carc Tim (days)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Aroclor-1260	0.02	43	30	1E-06	100	70	25550	1.6E-09	7.7E+00	1.2E-08	9%	10950	3.7E-09	0.0E+00	0.0E+00	0%
Arsenic	0.96	43	30	1E-06	100	70	25550	6.9E-08	1.5E+00	1.0E-07	77%	10950	1.6E-07	3.0E-04	5.4E-04	19%
Beryllium	0.06	43	30	1E-06	100	70	25550	4.3E-09	4.3E+00	1.9E-08	14%	10950	1.0E-08	5.0E-03	2.0E-06	0%
Iron	3626.17	43	30	1E-06	100	70	25550	2.6E-04	0.0E+00	0.0E+00	0%	10950	6.1E-04	3.0E-01	2.0E-03	72%
Manganese	33.31	43	30	1E-06	100	70	25550	2.4E-06	0.0E+00	0.0E+00	0%	10950	5.6E-06	2.4E-02	2.3E-04	8%
TOTAL										1.3E-07					2.8E-03	

SEDIMENT INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT ADULT TRESPASSER

Intake from ingestion of sediment is calculated as follows:

Intake (mg/kg-day) = C * IR * CF * EF * ED/ BW * ATC or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in sediment (mg/kg)	
CF = conversion for kg to mg	1E-06
EF = exposure frequency (days/yr)	48
ED = exposure duration (yr)	30
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)	30
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

COPC	Concentration (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Ingestion Rate (mg/day)	Conversion Factor (kg/mg)	Body Weight (kg)	Average Carc Tim (days)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg/day)-1	Carcinogeni Risk	Percent Carcinogenic Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg/day)	Noncarcinogenic Risk	Percent Noncarcinogeni Risk
4,4'-DDE	0.004	48	30	100	1E-06	70	25550	3.0E-10	3.4E-01	1.0E-10	0%	10950	7.1E-10	0.0E+00	0.0E+00	0%
4,4'-DDD	0.011	48	30	100	1E-06	70	25550	8.9E-10	2.4E-01	2.1E-10	0%	10950	2.1E-09	0.0E+00	0.0E+00	0%
alpha-Chlordane	0.005	48	30	100	1E-06	70	25550	3.8E-10	1.3E+00	4.9E-10	0%	10950	8.8E-10	6.0E-05	1.5E-05	0%
gamma-Chlordane	0.006	48	30	100	1E-06	70	25550	5.0E-10	1.3E+00	6.5E-10	1%	10950	1.2E-09	6.0E-05	1.9E-05	1%
Aluminum	7050.000	48	30	100	1E-06	70	25550	5.7E-04	0.0E+00	0.0E+00	0%	10950	1.3E-03	1.0E+00	1.3E-03	34%
Arsenic	0.630	48	30	100	1E-06	70	25550	5.1E-08	1.5E+00	7.6E-08	60%	10950	1.2E-07	3.0E-04	3.9E-04	10%
Barium	19.600	48	30	100	1E-06	70	25550	1.6E-06	0.0E+00	0.0E+00	0%	10950	3.7E-06	7.0E-02	5.3E-05	1%
Beryllium	0.140	48	30	100	1E-06	70	25550	1.1E-08	4.3E+00	4.8E-08	38%	10950	2.6E-08	5.0E-03	5.3E-06	0%
Chromium	8.100	48	30	100	1E-06	70	25550	6.5E-07	0.0E+00	0.0E+00	0%	10950	1.5E-06	5.0E-03	3.0E-04	8%
Copper	6.900	48	30	100	1E-06	70	25550	5.6E-07	0.0E+00	0.0E+00	0%	10950	1.3E-06	4.0E-02	3.2E-05	1%
Iron	2050.000	48	30	100	1E-06	70	25550	1.7E-04	0.0E+00	0.0E+00	0%	10950	3.9E-04	3.0E-01	1.3E-03	33%
Lead	13.700	48	30	100	1E-06	70	25550	1.1E-06	0.0E+00	0.0E+00	0%	10950	2.6E-06	0.0E+00	0.0E+00	0%
Manganese	7.500	48	30	100	1E-06	70	25550	6.0E-07	0.0E+00	0.0E+00	0%	10950	1.4E-06	2.4E-02	5.9E-05	2%
Nickel	1.900	48	30	100	1E-06	70	25550	1.5E-07	0.0E+00	0.0E+00	0%	10950	3.6E-07	2.0E-02	1.8E-05	0%
Vanadium	12.400	48	30	100	1E-06	70	25550	1.0E-06	0.0E+00	0.0E+00	0%	10950	2.3E-06	7.0E-03	3.3E-04	9%
Zinc	6.700	48	30	100	1E-06	70	25550	5.4E-07	0.0E+00	0.0E+00	0%	10950	1.3E-06	3.0E-01	4.2E-06	0%
TOTAL										1.3E-07					3.8E-03	

SURFACE SOIL INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
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)		
CF = conversion for kg to mg		1E-06
EF = adult exposure frequency (days/yr)		350
ED = adult exposure duration (yr)		30
IR = adult soil ingestion rate (mg/day)		100
BW = adult body weight (kg)		70
ATc = averaging time for carcinogen (yr)		70
ATnc = averaging time for noncarcinogen (yr)		30
DY = days per year (days/year)		365
CSF = cancer slope factor (mg/kg-day)-1	specific	
RfD = reference dose (mg/kg-day)	specific	

COPC	Concentration (mg/kg)	Exposure Frequency (days/yr) Adult	Exposure Duration (yr) Adult	Conversion Factor (kg/mg)	Ingestion Rate (mg/day) Adult	Body Weight (kg) Adult	Average Carc Time (days)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Aroclor-1260	0.02	350	30	1E-06	100	70	25550	1.3E-08	7.7E+00	1.00E-07	9%	10950	3.0E-08	0.0E+00	0.0E+00	0%
Arsenic	0.96	350	30	1E-06	100	70	25550	5.6E-07	1.5E+00	8.45E-07	77%	10950	1.3E-06	3.0E-04	4.4E-03	19%
Beryllium	0.06	350	30	1E-06	100	70	25550	3.5E-08	4.3E+00	1.51E-07	14%	10950	8.2E-08	5.0E-03	1.6E-05	0%
Iron	3626.17	350	30	1E-06	100	70	25550	2.1E-03	0.0E+00	0.00E+00	0%	10950	5.0E-03	3.0E-01	1.7E-02	72%
Manganese	33.31	350	30	1E-06	100	70	25550	2.0E-05	0.0E+00	0.00E+00	0%	10950	4.6E-05	2.4E-02	1.9E-03	8%
TOTAL										1.1E-06					2.3E-02	

SEDIMENT INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULT

Intake from ingestion of sediment is calculated as follows:

Intake (mg/kg-day) = C * IR * CF * EF * ED/ BW * ATC or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
C = contaminant concentration in sediment (mg/kg)	
CF = conversion for kg to mg	1E-06
EF = exposure frequency (days/yr)	48
ED = exposure duration (yr)	30
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)	30
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

COPC	Concentration (mg/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Ingestion Rate (mg/day)	Conversion Factor (kg/mg)	Body Weight (kg)	Average Carc Time (days)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg/day)-1	Carcinogenic Risk	Percent Carcinogenic Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg/day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
4,4'-DDE	0.004	48	30	100	1E-06	70	25550	3.0E-10	3.4E-01	1.0E-10	0%	10950	7.1E-10	0.0E+00	0.0E+00	0%
4,4'-DDD	0.011	48	30	100	1E-06	70	25550	8.9E-10	2.4E-01	2.1E-10	0%	10950	2.1E-09	0.0E+00	0.0E+00	0%
alpha-Chlordane	0.005	48	30	100	1E-06	70	25550	3.8E-10	1.3E+00	4.9E-10	0%	10950	8.8E-10	6.0E-05	1.5E-05	0%
gamma-Chlordane	0.006	48	30	100	1E-06	70	25550	5.0E-10	1.3E+00	6.5E-10	1%	10950	1.2E-09	6.0E-05	1.9E-05	1%
Aluminum	7050.000	48	30	100	1E-06	70	25550	5.7E-04	0.0E+00	0.0E+00	0%	10950	1.3E-03	1.0E+00	1.3E-03	34%
Arsenic	0.630	48	30	100	1E-06	70	25550	5.1E-08	1.5E+00	7.6E-08	60%	10950	1.2E-07	3.0E-04	3.9E-04	10%
Barium	19.600	48	30	100	1E-06	70	25550	1.6E-06	0.0E+00	0.0E+00	0%	10950	3.7E-06	7.0E-02	5.3E-05	1%
Beryllium	0.140	48	30	100	1E-06	70	25550	1.1E-08	4.3E+00	4.8E-08	38%	10950	2.6E-08	5.0E-03	5.3E-06	0%
Chromium	8.100	48	30	100	1E-06	70	25550	6.5E-07	0.0E+00	0.0E+00	0%	10950	1.5E-06	5.0E-03	3.0E-04	8%
Copper	6.900	48	30	100	1E-06	70	25550	5.6E-07	0.0E+00	0.0E+00	0%	10950	1.3E-06	4.0E-02	3.2E-05	1%
Iron	2050.000	48	30	100	1E-06	70	25550	1.7E-04	0.0E+00	0.0E+00	0%	10950	3.9E-04	3.0E-01	1.3E-03	33%
Lead	13.700	48	30	100	1E-06	70	25550	1.1E-06	0.0E+00	0.0E+00	0%	10950	2.6E-06	0.0E+00	0.0E+00	0%
Manganese	7.500	48	30	100	1E-06	70	25550	6.0E-07	0.0E+00	0.0E+00	0%	10950	1.4E-06	2.4E-02	5.9E-05	2%
Nickel	1.900	48	30	100	1E-06	70	25550	1.5E-07	0.0E+00	0.0E+00	0%	10950	3.6E-07	2.0E-02	1.8E-05	0%
Vanadium	12.400	48	30	100	1E-06	70	25550	1.0E-06	0.0E+00	0.0E+00	0%	10950	2.3E-06	7.0E-03	3.3E-04	9%
Zinc	6.700	48	30	100	1E-06	70	25550	5.4E-07	0.0E+00	0.0E+00	0%	10950	1.3E-06	3.0E-01	4.2E-06	0%
TOTAL										1.3E-07					3.8E-03	

SURFACE SOIL INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE 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)	
CF = conversion for kg to mg	1E-06
EF = adult exposure frequency (days/yr)	90
ED = adult exposure duration (yr)	1
IR = adult soil ingestion rate (mg/day)	480
BW = adult 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

COPC	Concentration Carcinogen (mg/kg)	Exposure Frequency (days/yr) Adult	Exposure Duration (yr) Adult	Conversion Factor (kg/mg)	Ingestion Rate (mg/day) Adult	Body Weight (kg) Adult	Average Carc Time (days)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Aroclor-1260	0.02	90	1	1E-06	480	70	25550	5.4E-10	7.7E+00	4.1E-09	9%	365	3.7E-08	0.0E+00	0.0E+00	0%
Arsenic	0.96	90	1	1E-06	480	70	25550	2.3E-08	1.5E+00	3.5E-08	77%	365	1.6E-06	3.0E-04	5.4E-03	19%
Beryllium	0.06	90	1	1E-06	480	70	25550	1.4E-09	4.3E+00	6.2E-09	14%	365	1.0E-07	5.0E-03	2.0E-05	0%
Iron	3626.17	90	1	1E-06	480	70	25550	8.8E-05	0.0E+00	0.0E+00	0%	365	6.1E-03	3.0E-01	2.0E-02	72%
Manganese	33.31	90	1	1E-06	480	70	25550	8.0E-07	0.0E+00	0.0E+00	0%	365	5.6E-05	2.4E-02	2.3E-03	8%
TOTAL										4.5E-08					2.8E-02	

SUBSURFACE SOIL INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE 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)	
CF = conversion for kg to mg	1E-06
EF = adult exposure frequency (days/yr)	90
ED = adult exposure duration (yr)	1
IR = adult soil ingestion rate (mg/day)	480
BW = adult 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

COPC	Concentration Carcinogen (mg/kg)	Exposure Frequency (days/yr) Adult	Exposure Duration (yr) Adult	Conversion Factor (kg/mg)	Ingestion Rate (mg/day) Adult	Body Weight (kg) Adult	Average Carc Time (days)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Aluminum	12308.10	90	1	1E-06	480	70	25550	3.0E-04	0.0E+00	0.0E+00	0%	365	2.1E-02	1.0E+00	2.1E-02	15%
Antimony	2.33	90	1	1E-06	480	70	25550	5.6E-08	0.0E+00	0.0E+00	0%	365	3.9E-06	4.0E-04	9.8E-03	7%
Arsenic	4.46	90	1	1E-06	480	70	25550	1.1E-07	1.5E+00	1.6E-07	93%	365	7.5E-06	3.0E-04	2.5E-02	18%
Barium	22.69	90	1	1E-06	480	70	25550	5.5E-07	0.0E+00	0.0E+00	0%	365	3.8E-05	7.0E-02	5.5E-04	0%
Beryllium	0.12	90	1	1E-06	480	70	25550	2.9E-09	4.3E+00	1.2E-08	7%	365	2.0E-07	5.0E-03	4.1E-05	0%
Chromium	19.57	90	1	1E-06	480	70	25550	4.7E-07	0.0E+00	0.0E+00	0%	365	3.3E-05	5.0E-03	6.6E-03	5%
Iron	13930.07	90	1	1E-06	480	70	25550	3.4E-04	0.0E+00	0.0E+00	0%	365	2.4E-02	3.0E-01	7.9E-02	55%
Lead	17.49	90	1	1E-06	480	70	25550	4.2E-07	0.0E+00	0.0E+00	0%	365	3.0E-05	0.0E+00	0.0E+00	0%
Manganese	19.22	90	1	1E-06	480	70	25550	4.6E-07	0.0E+00	0.0E+00	0%	365	3.2E-05	2.4E-02	1.4E-03	1%
TOTAL										1.7E-07					1.4E-01	

Computed by: KTW Checked by: MAS Date: 4/96

EXAMPLE DERMAL CONTACT WITH SOIL* CALCULATIONS
OPERABLE UNIT NO. 13
CONTRACT TASK ORDER 0340

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) - 0.01 organics, 0.001 inorganics
	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 dermally - adjusted CSF $(mg/kg{\cdot}day)^{-1}$
Noncarcinogens = Intake (mg/kg·day)/ dermally - adjusted RfD (mg/kg·day)

Example Carcinogen: Arsenic

$$ntake\ (mg/kg{\cdot}day) = \frac{0.96\ mg/kg \times 1.0E\text{-}06\ kg/mg \times 5{,}800\ cm^2/event \times 0.001 \times 1\ mg/cm^2 \times 350\ days/yr \times 30\ yr}{70\ kg \times 25{,}550\ days}$$

$$= 3.3E\text{-}08$$

Risk = 3.3E-08 mg/kg·day x 7.5 $mg/kg{\cdot}day^{-1}$ = 2.45E-07

Example Noncarcinogen: Manganese

$$Intake\ (mg/kg{\cdot}day) = \frac{33.31\ mg/kg \times 1.0E\text{-}06\ kg/mg \times 5{,}800\ cm^2/event \times 1\ mg/cm^2 \times 0.001 \times 350\ days/yr \times 30\ yrs}{70\ kg \times 10{,}950\ days}$$

$$= 2.6E\text{-}06$$

$$Risk = \frac{2.6E\text{-}06\ mg/kg{\cdot}day}{4.8E\text{-}03\ mg/kg{\cdot}day} = 5.5E\text{-}04$$

* This example calculation also is applicable for sediment dermal contact.
Re: Site 63 Future Residential Adult

SURFACE SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT MILITARY 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)	
CF = conversion factor (kg/mg)	1E-06
SA = adult exposed skin surface area (cm2)	4300
AF = soil to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless)	Specific
EF = adult exposure frequency (events/yr)	250
ED = adult exposure duration (years)	4
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	4
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

COPC	Concentration Carcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2) Adult	Adherence Factor (mg/cm2)	Fraction Absorbed (%)	Exposure Frequency (events/yr) Adult	Exposure Duration (yrs) Adult	Body Weight (kg) Adult	Average Carc Time (days)	Carc Dose (mg/kg/day) Adult	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult	Average Noncarc Tim (days)	Noncarc Dose (mg/kg/day) Adult	Dermal Adjust. Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Aroclor-1260	0.02	1E-06	4300	1	0.01	250	4	70	25550	5.3E-10	1.54E+01	8.21E-09	28%	1460	9.3E-09	0.00E+00	0.00E+00	0%
Arsenic	0.96	1E-06	4300	1	0.001	250	4	70	25550	2.3E-09	7.50E+00	1.73E-08	60%	1460	4.0E-08	6.00E-05	6.73E-04	19%
Beryllium	0.06	1E-06	4300	1	0.001	250	4	70	25550	1.4E-10	2.15E+01	3.10E-09	11%	1460	2.5E-09	1.00E-03	2.52E-06	0%
Iron	3626.17	1E-06	4300	1	0.001	250	4	70	25550	8.7E-06	0.00E+00	0.00E+00	0%	1460	1.5E-04	6.00E-02	2.54E-03	72%
Manganese	33.31	1E-06	4300	1	0.001	250	4	70	25550	8.0E-08	0.00E+00	0.00E+00	0%	1460	1.4E-06	4.80E-03	2.92E-04	8%
TOTAL												2.9E-08					3.5E-03	

SUBSURFACE SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63- VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT MILITARY 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)	
CF = conversion factor (kg/mg)	1E-06
SA = adult exposed skin surface area (cm2)	4300
AF = soil to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless)	Specific
EF = adult exposure frequency (events/yr)	250
ED = adult exposure duration (years)	4
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	4
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

COPC	Concentration (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2) Adult	Adherence Factor (mg/cm2)	Fraction Absorbed (%)	Exposure Frequency (events/yr) Adult	Exposure Duration (yrs) Adult	Body Weight (kg) Adult	Average Carc Time (days)	Carc Dose (mg/kg/day) Adult	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Adult	Dermal Adjust. Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Aluminum	12308.10	1E-06	4300	1	0.001	250	4	70	25550	3.0E-05	0.0E+00	0.0E+00	0%	1460	5.2E-04	2.0E-01	2.6E-03	15%
Antimony	2.33	1E-06	4300	1	0.001	250	4	70	25550	5.6E-09	0.0E+00	0.0E+00	0%	1460	9.8E-08	8.0E-05	1.2E-03	7%
Arsenic	4.46	1E-06	4300	1	0.001	250	4	70	25550	1.1E-08	7.5E+00	8.0E-08	93%	1460	1.9E-07	6.0E-05	3.1E-03	18%
Barium	22.68	1E-06	4300	1	0.001	250	4	70	25550	5.5E-08	0.0E+00	0.0E+00	0%	1460	9.5E-07	1.4E-02	6.8E-05	0%
Beryllium	0.12	1E-06	4300	1	0.001	250	4	70	25550	2.9E-10	2.1E+01	6.2E-09	7%	1460	5.0E-09	1.0E-03	5.0E-06	0%
Chromium	19.57	1E-06	4300	1	0.001	250	4	70	25550	4.7E-08	0.0E+00	0.0E+00	0%	1460	8.2E-07	1.0E-03	8.2E-04	5%
Iron	13930.07	1E-06	4300	1	0.001	250	4	70	25550	3.3E-05	0.0E+00	0.0E+00	0%	1460	5.9E-04	6.0E-02	9.8E-03	55%
Lead	17.49	1E-06	4300	1	0.001	250	4	70	25550	4.2E-08	0.0E+00	0.0E+00	0%	1460	7.4E-07	0.0E+00	0.0E+00	0%
Manganese	19.22	1E-06	4300	1	0.001	250	4	70	25550	4.6E-08	0.0E+00	0.0E+00	0%	1460	8.1E-07	4.8E-03	1.7E-04	1%
TOTAL												8.7E-08					1.8E-02	

SEDIMENT DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT MILITARY PERSONNEL

The intake from dermal contact to sediment 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)	
CF = conversion factor (kg/mg)	1.00E-06
SA = exposed skin surface area (cm2)	4300
AF = sediment to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless) (contaminant specific)	Specific
EF = exposure frequency (events/yr)	48
ED = exposure duration (years)	4
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	4
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

COPC	Concentration (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	ABS Factor (%)	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (days)	Carc Dose (mg/kg/day)	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogeni Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day)	Dermal Adjust. Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
4,4'-DDE	0.004	1E-06	4300	1	0.01	48	4	70	25550	1.7E-11	6.8E-01	1.2E-11	0%	1460	3.1E-10	0.0E+00	0.0E+00	0%
4,4'-DDD	0.011	1E-06	4300	1	0.01	48	4	70	25550	5.1E-11	4.8E-01	2.4E-11	1%	1460	8.9E-10	0.0E+00	0.0E+00	0%
alpha-Chlordane	0.005	1E-06	4300	1	0.01	48	4	70	25550	2.2E-11	2.6E+00	5.6E-11	2%	1460	3.8E-10	3.0E-05	1.3E-05	1%
gamma-Chlordane	0.006	1E-06	4300	1	0.01	48	4	70	25550	2.9E-11	2.6E+00	7.4E-11	2%	1460	5.0E-10	3.0E-05	1.7E-05	2%
Aluminum	7050.000	1E-06	4300	1	0.001	48	4	70	25550	3.3E-06	0.0E+00	0.0E+00	0%	1460	5.7E-05	2.0E-01	2.8E-04	34%
Arsenic	0.630	1E-06	4300	1	0.001	48	4	70	25550	2.9E-10	7.5E+00	2.2E-09	58%	1460	5.1E-09	6.0E-05	8.5E-05	10%
Barium	19.600	1E-06	4300	1	0.001	48	4	70	25550	9.0E-09	0.0E+00	0.0E+00	0%	1460	1.6E-07	1.4E-02	1.1E-05	1%
Beryllium	0.140	1E-06	4300	1	0.001	48	4	70	25550	6.5E-11	2.1E+01	1.4E-09	37%	1460	1.1E-09	1.0E-03	1.1E-06	0%
Chromium	8.100	1E-06	4300	1	0.001	48	4	70	25550	3.7E-09	0.0E+00	0.0E+00	0%	1460	6.5E-08	1.0E-03	6.5E-05	8%
Copper	6.900	1E-06	4300	1	0.001	48	4	70	25550	3.2E-09	0.0E+00	0.0E+00	0%	1460	5.6E-08	8.0E-03	7.0E-06	1%
Iron	2050.000	1E-06	4300	1	0.001	48	4	70	25550	9.5E-07	0.0E+00	0.0E+00	0%	1460	1.7E-05	6.0E-02	2.8E-04	33%
Lead	13.700	1E-06	4300	1	0.001	48	4	70	25550	6.3E-09	0.0E+00	0.0E+00	0%	1460	1.1E-07	0.0E+00	0.0E+00	0%
Manganese	7.500	1E-06	4300	1	0.001	48	4	70	25550	3.5E-09	0.0E+00	0.0E+00	0%	1460	6.1E-08	4.8E-03	1.3E-05	1%
Nickel	1.900	1E-06	4300	1	0.001	48	4	70	25550	8.8E-10	0.0E+00	0.0E+00	0%	1460	1.5E-08	4.0E-03	3.8E-06	0%
Vanadium	12.400	1E-06	4300	1	0.001	48	4	70	25550	5.7E-09	0.0E+00	0.0E+00	0%	1460	1.0E-07	1.4E-03	7.2E-05	8%
Zinc	6.700	1E-06	4300	1	0.001	48	4	70	25550	3.1E-09	0.0E+00	0.0E+00	0%	1460	5.4E-08	6.0E-02	9.0E-07	0%
TOTAL												3.7E-09					8.5E-04	

SURFACE SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT ADOLESCENT TRESPASSER

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)	
CF = conversion factor (kg/mg)	1E-06
SA = adolescent exposed skin surface area (cm2)	3480
AF = soil to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless)	Specific
EF = adolescent exposure frequency (events/yr)	130
ED = adolescent exposure duration (years)	9
BW = adolescent body weight (kg)	37
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	9
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

COPC	Concentration (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2) Adolescent	Adherence Factor (mg/cm2)	Fraction Absorbed (%)	Exposure Frequency (events/yr) Adolescent	Exposure Duration (yrs) Adolescent	Body Weight (kg) Adolescent	Average Carc Time (days)	Carc Dose (mg/kg/day) Adolescent	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adolescent	Percent Carcinogenic Risk Adolescent	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Adolescent	Dermal Adjust. Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adolescent	Percent Noncarcinogenic Risk Adolescent
Aroclor-1260	0.02	1E-06	3480	1	0.01	130	9	37	25550	9.5E-10	1.5E+01	1.47E-08	29%	3285	7.4E-09	0.0E+00	0.00E+00	0%
Arsenic	0.98	1E-06	3480	1	0.001	130	9	37	25550	4.1E-09	7.5E+00	3.10E-08	60%	3285	3.2E-08	6.0E-05	5.36E-04	19%
Beryllium	0.06	1E-06	3480	1	0.001	130	9	37	25550	2.6E-10	2.1E+01	5.56E-09	11%	3285	2.0E-09	1.0E-03	2.01E-06	0%
Iron	3528.17	1E-06	3480	1	0.001	130	9	37	25550	1.6E-05	0.0E+00	0.00E+00	0%	3285	1.2E-04	6.0E-02	2.02E-03	72%
Manganese	33.31	1E-06	3480	1	0.001	130	9	37	25550	1.4E-07	0.0E+00	0.00E+00	0%	3285	1.1E-06	4.8E-03	2.32E-04	8%
TOTAL												5.1E-08					2.8E-03	

SEDIMENT DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT ADOLESCENT TRESPASSER

The intake from dermal contact to sediment 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)	
CF = conversion factor (kg/mg)	1.00E-06
SA = adolescent exposed skin surface area (cm2)	3480
AF = sediment to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless) (contaminant specific)	Specific
EF = adolescent exposure frequency (events/yr)	48
ED = adolescent expsosure duration (years)	9
BW = adolescent body weight (kg)	37
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	9
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

COPC	Concentration Carcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2) Adolescent	Adherence Factor (mg/cm2)	ABS Factor (%)	Exposure Frequency (events/yr) Adolescent	Exposure Duration (yrs) Adolescent	Body Weight (kg) Adolescent	Average Carc Time (days)	Carc Dose (mg/kg/day) Adolescent	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adolescent	Percent Carcinogenic Risk Adolescent	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Adolescent	Dermal Adjust Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adolescent	Percent Noncarcinogenic Risk Adolescent
4,4'-DDE	0.004	1E-06	3480	1	0.01	48	9	37	25550	6.0E-11	6.8E-01	4.1E-11	0%	3285	4.7E-10	0.0E+00	0.0E+00	0%
4,4'-DDD	0.011	1E-06	3480	1	0.01	48	9	37	25550	1.7E-10	4.8E-01	8.4E-11	1%	3285	1.4E-09	0.0E+00	0.0E+00	0%
alpha-Chlordane	0.005	1E-06	3480	1	0.01	48	9	37	25550	7.5E-11	2.6E+00	1.9E-10	2%	3285	5.8E-10	3.0E-05	1.9E-05	1%
gamma-Chlordane	0.006	1E-06	3480	1	0.01	48	9	37	25550	9.9E-11	2.6E+00	2.6E-10	2%	3285	7.7E-10	3.0E-05	2.6E-05	2%
Aluminum	7050.000	1E-06	3480	1	0.001	48	9	37	25550	1.1E-05	0.0E+00	0.0E+00	0%	3285	8.7E-05	2.0E-01	4.4E-04	34%
Arsenic	0.630	1E-06	3480	1	0.001	48	9	37	25550	1.0E-09	7.5E+00	7.5E-09	58%	3285	7.8E-09	3.0E-04	1.3E-04	10%
Barium	19.600	1E-06	3480	1	0.001	48	9	37	25550	3.1E-08	0.0E+00	0.0E+00	0%	3285	2.4E-07	1.4E-02	1.7E-05	1%
Beryllium	0.140	1E-06	3480	1	0.001	48	9	37	25550	2.2E-10	2.1E+01	4.8E-09	37%	3285	1.7E-09	1.3E-03	1.7E-06	0%
Chromium	8.100	1E-06	3480	1	0.001	48	9	37	25550	1.3E-08	0.0E+00	0.0E+00	0%	3285	1.0E-07	1.0E-03	1.0E-04	8%
Copper	6.900	1E-06	3480	1	0.001	48	9	37	25550	1.1E-08	0.0E+00	0.0E+00	0%	3285	8.5E-08	8.0E-03	1.1E-05	1%
Iron	2050.000	1E-06	3480	1	0.001	48	9	37	25550	3.3E-06	0.0E+00	0.0E+00	0%	3285	2.5E-05	6.0E-02	4.2E-04	33%
Lead	13.700	1E-06	3480	1	0.001	48	9	37	25550	2.2E-08	0.0E+00	0.0E+00	0%	3285	1.7E-07	0.0E+00	0.0E+00	0%
Manganese	7.500	1E-06	3480	1	0.001	48	9	37	25550	1.2E-08	0.0E+00	0.0E+00	0%	3285	9.3E-08	4.8E-03	1.9E-05	1%
Nickel	1.900	1E-06	3480	1	0.001	48	9	37	25550	3.0E-09	0.0E+00	0.0E+00	0%	3285	2.4E-08	4.0E-03	5.9E-06	0%
Vanadium	12.400	1E-06	3480	1	0.001	48	9	37	25550	2.0E-08	0.0E+00	0.0E+00	0%	3285	1.5E-07	1.4E-03	1.1E-04	8%
Zinc	5.700	1E-06	3480	1	0.001	48	9	37	25550	1.1E-08	0.0E+00	0.0E+00	0%	3285	8.3E-08	6.0E-02	1.4E-06	0%
TOTAL												1.3E-09					1.3E-03	

SURFACE SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
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)	
CF = conversion factor (kg/mg)	1E-06
SA = child exposed skin surface area (cm2)	2300
AF = soil to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless)	Specific
EF = child exposure frequency (events/yr)	350
ED = child exposure duration (years)	6
BW = child 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

COPC	Concentration (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2) Child	Adherence Factor (mg/cm2)	Fraction Absorbed (%)	Exposure Frequency (events/yr) Child	Exposure Duration (yrs) Child	Body Weight (kg) Child	Average Carc Time (days)	Carc Dose (mg/kg/day) Child	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Child	Dermal Adjust. Reference Dose (mg/kg-day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk Child
Aroclor-1260	0.02	1E-06	2300	1	0.01	350	6	15	25550	2.8E-09	1.5E+01	4.30E-08	29%	2190	3.3E-08	0.0E+00	0.0E+00	0%
Arsenic	0.96	1E-06	2300	1	0.001	350	6	15	25550	1.2E-08	7.5E+00	9.07E-08	60%	2190	1.4E-07	6.0E-05	2.4E-03	19%
Beryllium	0.06	1E-06	2300	1	0.001	350	6	15	25550	7.6E-10	2.1E+01	1.63E-08	11%	2190	8.8E-09	1.0E-03	8.8E-06	0%
Iron	3626.17	1E-06	2300	1	0.001	350	6	15	25550	4.6E-05	0.0E+00	0.00E+00	0%	2190	5.3E-04	6.0E-02	8.9E-03	72%
Manganese	33.31	1E-06	2300	1	0.001	350	6	15	25550	4.2E-07	0.0E+00	0.00E+00	0%	2190	4.9E-06	4.8E-03	1.0E-03	8%
TOTAL												1.5E-07					1.2E-02	

SEDIMENT DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL CHILD

The intake from dermal contact to sediment 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)	
CF = conversion factor (kg/mg)	1.00E-06
SA = child exposed skin surface area (cm2)	2300
AF = sediment to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless) (contaminant specific)	Specific
EF = child exposure frequency (events/yr)	48
ED = child expsosure duration (years)	6
BW = child 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

COPC	Concentration Carcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2) Child	Adherence Factor (mg/cm2)	ABS Factor (%)	Exposure Frequency (events/yr) Child	Exposure Duration (yrs) Child	Body Weight (kg) Child	Average Carc Time (days)	Carc Dose (mg/kg/day) Child	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child	Average Noncarc Tim (days)	Noncarc Dose (mg/kg/day) Child	Dermal Adjust Reference Dose (mg/kg-day)	Noncarcinogeni Risk Child	Percent Noncarcinogenic Risk Child
4,4'-DDE	0.004	1E-06	2300	1	0.01	48	6	15	25550	6.5E-11	6.8E-01	4.4E-11	0%	2190	7.6E-10	0.0E+00	0.0E+00	0%
4,4'-DDD	0.011	1E-06	2300	1	0.01	48	6	15	25550	1.9E-10	4.8E-01	9.1E-11	1%	2190	2.2E-09	0.0E+00	0.0E+00	0%
alpha-Chlordane	0.005	1E-06	2300	1	0.01	48	6	15	25550	8.1E-11	2.6E+00	2.1E-10	2%	2190	9.5E-10	3.0E-05	3.2E-05	1%
gamma-Chlordane	0.006	1E-06	2300	1	0.01	48	6	15	25550	1.1E-10	2.6E+00	2.8E-10	2%	2190	1.3E-09	3.0E-05	4.2E-05	2%
Aluminum	7050.000	1E-06	2300	1	0.001	48	6	15	25550	1.2E-05	0.0E+00	0.0E+00	0%	2190	1.4E-04	2.0E-01	7.1E-04	34%
Arsenic	0.630	1E-06	2300	1	0.001	48	6	15	25550	1.1E-09	7.5E+00	8.2E-09	58%	2190	1.3E-08	6.0E-05	2.1E-04	10%
Barium	19.600	1E-06	2300	1	0.001	48	6	15	25550	3.4E-08	0.0E+00	0.0E+00	0%	2190	4.0E-07	1.4E-02	2.8E-05	1%
Beryllium	0.140	1E-06	2300	1	0.001	48	6	15	25550	2.4E-10	2.1E+01	5.2E-09	37%	2190	2.8E-09	1.0E-03	2.8E-06	0%
Chromium	8.100	1E-06	2300	1	0.001	48	6	15	25550	1.4E-08	0.0E+00	0.0E+00	0%	2190	1.6E-07	1.0E-03	1.6E-04	8%
Copper	6.900	1E-06	2300	1	0.001	48	6	15	25550	1.2E-08	0.0E+00	0.0E+00	0%	2190	1.4E-07	8.0E-03	1.7E-05	1%
Iron	2050.000	1E-06	2300	1	0.001	48	6	15	25550	3.5E-06	0.0E+00	0.0E+00	0%	2190	4.1E-05	6.0E-02	6.9E-04	33%
Lead	13.700	1E-06	2300	1	0.001	48	6	15	25550	2.4E-08	0.0E+00	0.0E+00	0%	2190	2.8E-07	0.0E+00	0.0E+00	0%
Manganese	7.500	1E-06	2300	1	0.001	48	6	15	25550	1.3E-08	0.0E+00	0.0E+00	0%	2190	1.5E-07	4.8E-03	3.2E-05	1%
Nickel	1.900	1E-06	2300	1	0.001	48	6	15	25550	3.3E-09	0.0E+00	0.0E+00	0%	2190	3.8E-08	4.0E-03	9.6E-06	0%
Vanadium	12.400	1E-06	2300	1	0.001	48	6	15	25550	2.1E-08	0.0E+00	0.0E+00	0%	2190	2.5E-07	1.4E-03	1.8E-04	8%
Zinc	6.700	1E-06	2300	1	0.001	48	6	15	25550	1.2E-08	0.0E+00	0.0E+00	0%	2190	1.4E-07	6.0E-02	2.3E-06	0%
TOTAL												1.4E-08					2.1E-03	

SURFACE SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT ADULT TRESPASSER

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)	
CF = conversion factor (kg/mg)	1E-06
SA = adult exposed skin surface area (cm2)	5800
AF = soil to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless)	Specific
EF = adult exposure frequency (events/yr)	43
ED = adult exposure duration (years)	30
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	30
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

COPC	Concentration (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2) Adult	Adherence Factor (mg/cm2)	Fraction Absorbed (%)	Exposure Frequency (events/yr) Adult	Exposure Duration (yrs) Adult	Body Weight (kg) Adult	Average Carc Time (days)	Carc Dose (mg/kg/day) Adult	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Adult	Dermal Adjust. Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Aroclor-1260	0.02	1E-06	5800	1	0.01	43	30	70	25550	9.3E-10	1.5E+01	1.4E-08	23%	10950	2.16E-09	0.00E+00	0.00E+00	0%
Arsenic	9.6E-01	1E-06	5800	1	0.001	43	30	70	25550	4.0E-09	7.5E+00	3.0E-08	60%	10950	9.37E-09	6.00E-05	1.56E-04	19%
Beryllium	6.0E-02	1E-06	5800	1	0.001	43	30	70	25550	2.5E-10	2.1E+01	5.4E-09	11%	10950	5.86E-10	1.00E-03	5.86E-07	0%
Iron	3.6E+03	1E-06	5800	1	0.001	43	30	70	25550	1.5E-05	0.0E+00	0.0E+00	0%	10950	3.54E-05	6.00E-02	5.90E-04	72%
Manganese	3.3E+01	1E-06	5800	1	0.001	43	30	70	25550	1.4E-07	0.0E+00	0.0E+00	0%	10950	3.25E-07	4.80E-03	6.77E-05	8%
TOTAL												5.0E-08					8.1E-04	

SEDIMENT DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT ADULT TRESPASSER

The intake from dermal contact to sediment is calculted 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)	
CF = conversion factor (kg/mg)	1.00E-06
SA = exposed skin surface area (cm2)	5800
AF = sediment to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless) (contaminant specific)	Specific
EF = exposure frequency (events/yr)	48
ED = exposure duration (years)	30
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	30
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

COPC	Concentration (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	ABS Factor (%)	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (days)	Carc Dose (mg/kg/day)	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day)	Dermal Adjust. Reference Dose (mg/kg-day)	Noncarcinogeni Risk	Percent Noncarcinogenic Risk
4,4'-DDE	0.004	1E-06	5800	1	0.01	48	30	70	25550	1.8E-10	6.8E-01	1.2E-10	0%	10950	4.1E-10	0.0E+00	0.0E+00	0%
4,4'-DDD	0.011	1E-06	5800	1	0.01	48	30	70	25550	5.1E-10	4.8E-01	2.5E-10	1%	10950	1.2E-09	0.0E+00	0.0E+00	0%
alpha-Chlordane	0.005	1E-06	5800	1	0.01	48	30	70	25550	2.2E-10	2.6E+00	5.7E-10	2%	10950	5.1E-10	3.0E-05	1.7E-05	1%
gamma-Chlordane	0.006	1E-06	5800	1	0.01	48	30	70	25550	2.9E-10	2.6E+00	7.5E-10	2%	10950	6.8E-10	3.0E-05	2.3E-05	2%
Aluminum	7050.000	1E-06	5800	1	0.001	48	30	70	25550	3.3E-05	0.0E+00	0.0E+00	0%	10950	7.7E-05	2.0E-01	3.8E-04	34%
Arsenic	0.630	1E-06	5800	1	0.001	48	30	70	25550	2.9E-09	7.5E+00	2.2E-08	58%	10950	6.9E-09	6.0E-05	1.1E-04	10%
Barium	19.600	1E-06	5800	1	0.001	48	30	70	25550	9.2E-08	0.0E+00	0.0E+00	0%	10950	2.1E-07	1.4E-02	1.5E-05	1%
Beryllium	0.140	1E-06	5800	1	0.001	48	30	70	25550	6.5E-10	2.1E+01	1.4E-08	37%	10950	1.5E-09	1.0E-03	1.5E-06	0%
Chromium	8.100	1E-06	5800	1	0.001	48	30	70	25550	3.8E-08	0.0E+00	0.0E+00	0%	10950	8.8E-08	1.0E-03	8.8E-05	8%
Copper	6.900	1E-06	5800	1	0.001	48	30	70	25550	3.2E-08	0.0E+00	0.0E+00	0%	10950	7.5E-08	8.0E-03	9.4E-06	1%
Iron	2050.000	1E-06	5800	1	0.001	48	30	70	25550	9.6E-06	0.0E+00	0.0E+00	0%	10950	2.2E-05	6.0E-02	3.7E-04	33%
Lead	13.700	1E-06	5800	1	0.001	48	30	70	25550	6.4E-08	0.0E+00	0.0E+00	0%	10950	1.5E-07	0.0E+00	0.0E+00	0%
Manganese	7.500	1E-06	5800	1	0.001	48	30	70	25550	3.5E-08	0.0E+00	0.0E+00	0%	10950	8.2E-08	4.8E-03	1.7E-05	1%
Nickel	1.900	1E-06	5800	1	0.001	48	30	70	25550	8.9E-09	0.0E+00	0.0E+00	0%	10950	2.1E-08	4.0E-03	5.2E-06	0%
Vanadium	12.400	1E-06	5800	1	0.001	48	30	70	25550	5.8E-08	0.0E+00	0.0E+00	0%	10950	1.4E-07	1.4E-03	9.7E-05	8%
Zinc	6.700	1E-06	5800	1	0.001	48	30	70	25550	3.1E-08	0.0E+00	0.0E+00	0%	10950	7.3E-08	6.0E-02	1.2E-06	0%
TOTAL												3.8E-08					1.1E-03	

SURFACE SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
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)	
CF = conversion factor (kg/mg)	1E-06
SA = adult exposed skin surface area (cm2)	5800
AF = soil to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless)	Specific
EF = adult exposure frequency (events/yr)	350
ED = adult exposure duration (years)	30
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	30
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

COPC	Concentration (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2) Adult	Adherence Factor (mg/cm2)	Fraction Absorbed (%)	Exposure Frequency (events/yr) Adult	Exposure Duration (yrs) Adult	Body Weight (kg) Adult	Average Carc Time (days)	Carc Dose (mg/kg/day) Adult	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult	Average Noncarc Tim (days)	Noncarc Dose (mg/kg/day) Adult	Dermal Adjust. Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Aroclor-1260	0.02	1E-06	5800	1	0.01	350	30	70	25550	7.5E-09	1.5E+01	1.16E-07	29%	10950	1.8E-08	0.0E+00	0.0E+00	0%
Arsenic	0.98	1E-06	5800	1	0.001	350	30	70	25550	3.3E-08	7.5E+00	2.45E-07	60%	10950	7.6E-08	6.0E-05	1.3E-03	19%
Beryllium	0.06	1E-06	5800	1	0.001	350	30	70	25550	2.0E-09	2.1E+01	4.39E-08	11%	10950	4.8E-09	1.0E-03	4.8E-06	0%
Iron	3626.17	1E-06	5800	1	0.001	350	30	70	25550	1.2E-04	0.0E+00	0.00E+00	0%	10950	2.9E-04	6.0E-02	4.8E-03	72%
Manganese	33.31	1E-06	5800	1	0.001	350	30	70	25550	1.1E-06	0.0E+00	0.00E+00	0%	10950	2.6E-06	4.8E-03	5.5E-04	8%
TOTAL												4.1E-07					6.6E-03	

SEDIMENT DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULT

The intake from dermal contact to sediment 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)	
CF = conversion factor (kg/mg)	1.00E-06
SA = exposed skin surface area (cm2)	5800
AF = sediment to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless) (contaminant specific)	Specific
EF = exposure frequency (events/yr)	48
ED = exposure duration (years)	30
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	30
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

COPC	Concentration (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2)	Adherence Factor (mg/cm2)	ABS Factor (%)	Exposure Frequency (events/yr)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (days)	Carc Dose (mg/kg/day)	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day)	Dermal Adjust. Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
4,4'-DDE	0.004	1E-06	5800	1	0.01	48	30	70	25550	1.8E-10	6.8E-01	1.2E-10	0%	10950	4.1E-10	0.0E+00	0.0E+00	0%
4,4'-DDD	0.011	1E-06	5800	1	0.01	48	30	70	25550	5.1E-10	4.9E-01	2.5E-10	1%	10950	1.2E-09	0.0E+00	0.0E+00	0%
alpha-Chlordane	0.005	1E-06	5800	1	0.01	48	30	70	25550	2.2E-10	2.6E+00	5.7E-10	2%	10950	5.1E-10	3.0E-05	1.7E-05	1%
gamma-Chlordane	0.006	1E-06	5800	1	0.01	48	30	70	25550	2.9E-10	2.6E+00	7.5E-10	2%	10950	6.8E-10	3.0E-05	2.3E-05	2%
Aluminum	7050.000	1E-06	5800	1	0.001	48	30	70	25550	3.3E-05	0.0E+00	0.0E+00	0%	10950	7.7E-05	2.0E-01	3.8E-04	34%
Arsenic	0.630	1E-06	5800	1	0.001	48	30	70	25550	2.9E-09	7.5E+00	2.2E-08	58%	10950	6.9E-09	6.0E-05	1.1E-04	10%
Barium	19.600	1E-06	5800	1	0.001	48	30	70	25550	9.2E-08	0.0E+00	0.0E+00	0%	10950	2.1E-07	1.4E-02	1.5E-05	1%
Beryllium	0.140	1E-06	5800	1	0.001	48	30	70	25550	6.5E-10	2.1E+01	1.4E-08	37%	10950	1.5E-09	1.0E-03	1.5E-06	0%
Chromium	8.100	1E-06	5800	1	0.001	48	30	70	25550	3.8E-08	0.0E+00	0.0E+00	0%	10950	8.8E-08	1.0E-03	8.8E-05	8%
Copper	6.900	1E-06	5800	1	0.001	48	30	70	25550	3.2E-08	0.0E+00	0.0E+00	0%	10950	7.5E-08	8.0E-03	9.4E-06	1%
Iron	2050.000	1E-06	5800	1	0.001	48	30	70	25550	9.6E-06	0.0E+00	0.0E+00	0%	10950	2.2E-05	6.0E-02	3.7E-04	33%
Lead	13.700	1E-06	5800	1	0.001	48	30	70	25550	6.4E-08	0.0E+00	0.0E+00	0%	10950	1.5E-07	0.0E+00	0.0E+00	0%
Manganese	7.500	1E-06	5800	1	0.001	48	30	70	25550	3.5E-08	0.0E+00	0.0E+00	0%	10950	8.2E-08	4.9E-03	1.7E-05	1%
Nickel	1.900	1E-06	5800	1	0.001	48	30	70	25550	8.9E-09	0.0E+00	0.0E+00	0%	10950	2.1E-08	4.0E-03	5.2E-06	0%
Vanadium	12.400	1E-06	5800	1	0.001	48	30	70	25550	5.8E-08	0.0E+00	0.0E+00	0%	10950	1.4E-07	1.4E-03	9.7E-05	8%
Zinc	6.700	1E-06	5800	1	0.001	48	30	70	25550	3.1E-08	0.0E+00	0.0E+00	0%	10950	7.3E-08	6.0E-02	1.2E-06	0%
TOTAL												3.8E-08					1.1E-03	

SURFACE SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE 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)	
CF = conversion factor (kg/mg)	1E-06
SA = adult exposed skin surface area (cm2)	4300
AF = soil to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless)	Specific
EF = adult exposure frequency (events/yr)	90
ED = adult exposure duration (years)	1
BW = adult 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

COPC	Concentration Carcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2) Adult	Adherence Factor (mg/cm2)	Fraction Absorbed (%)	Exposure Frequency (events/yr) Adult	Exposure Duration (yrs) Adult	Body Weight (kg) Adult	Average Carc Time (days)	Carc Dose (mg/kg/day) Adult	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Adult	Dermally-Adjuste Reference Dose (mg/kg-day)	Noncarci Risk Adult	Percent Noncarcin Risk Adult
Aroclor-1260	0.02	1E-06	4300	1	0.001	90	1	70	25550	4.8E-12	3.9E+01	1.8E-10	9%	365	3.4E-10	0.0E+00	0.0E+00	0%
Arsenic	0.96	1E-06	4300	1	0.001	90	1	70	25550	2.1E-10	7.5E+00	1.6E-09	77%	365	1.5E-08	6.0E-05	2.4E-04	19%
Beryllium	0.06	1E-06	4300	1	0.001	90	1	70	25550	1.3E-11	2.1E+01	2.8E-10	14%	365	9.1E-10	1.0E-03	9.1E-07	0%
Iron	3526.17	1E-06	4300	1	0.001	90	1	70	25550	7.8E-07	0.0E+00	0.0E+00	0%	365	5.5E-05	6.0E-02	9.2E-04	72%
Manganese	33.31	1E-06	4300	1	0.001	90	1	70	25550	7.2E-09	0.0E+00	0.0E+00	0%	365	5.0E-07	4.8E-03	1.1E-04	8%
TOTAL												2.0E-09					1.3E-03	

SUBSURFACE SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE 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)	
CF = conversion factor (kg/mg)	1E-06
SA = adult exposed skin surface area (cm2)	4300
AF = soil to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless)	Specific
EF = adult exposure frequency (events/yr)	90
ED = adult exposure duration (years)	1
BW = adult 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

COPC	Concentration Carcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2) Adult	Adherence Factor (mg/cm2)	Fraction Absorbed (%)	Exposure Frequency (events/yr) Adult	Exposure Duration (yrs) Adult	Body Weight (kg) Adult	Average Carc Time (days)	Carc Dose (mg/kg/day) Adult	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day) Adult	Dermally-Adjusted Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Aluminum	12308.10	1E-06	4300	1	0.001	90	1	70	25550	2.7E-06	0.0E+00	0.0E+00	0%	365	1.9E-04	2.0E-01	9.3E-04	15%
Antimony	2.33	1E-06	4300	1	0.001	90	1	70	25550	5.0E-10	0.0E+00	0.0E+00	0%	365	3.5E-08	8.0E-05	4.4E-04	7%
Arsenic	4.46	1E-06	4300	1	0.001	90	1	70	25550	9.7E-10	7.5E+00	7.2E-09	93%	365	6.8E-08	6.0E-05	1.1E-03	18%
Barium	22.69	1E-06	4300	1	0.001	90	1	70	25550	4.9E-09	0.0E+00	0.0E+00	0%	365	3.4E-07	1.4E-02	2.5E-05	0%
Beryllium	0.12	1E-06	4300	1	0.001	90	1	70	25550	2.6E-11	2.1E+01	5.6E-10	7%	365	1.8E-09	1.0E-03	1.8E-06	0%
Chromium	19.57	1E-06	4300	1	0.001	90	1	70	25550	4.2E-09	0.0E+00	0.0E+00	0%	365	3.0E-07	1.0E-03	3.0E-04	5%
Iron	13930.07	1E-06	4300	1	0.001	90	1	70	25550	3.0E-06	0.0E+00	0.0E+00	0%	365	2.1E-04	6.0E-02	3.5E-03	55%
Lead	17.49	1E-06	4300	1	0.001	90	1	70	25550	3.8E-09	0.0E+00	0.0E+00	0%	365	2.6E-07	0.0E+00	0.0E+00	0%
Manganese	19.22	1E-06	4300	1	0.001	90	1	70	25550	4.2E-09	0.0E+00	0.0E+00	0%	365	2.9E-07	4.8E-03	6.1E-05	1%
TOTAL												7.8E-09					6.4E-03	

Computed by: KTW Checked by: MAS Date: 4/96

EXAMPLE INHALATION OF PARTICULATES CALCULATIONS
OPERABLE UNIT NO. 13
CONTRACT TASK ORDER 0340

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: Arsenic

$$Intake\ (mg/kg{\cdot}day) = \frac{0.96\ mg/kg \times 20\ m^3/day \times 350\ days/yr \times 30\ yrs \times 1/1.32E{+}09\ m^3/kg}{70\ kg \times 25{,}550\ days}$$

= 8.5E-11

Risk = 8.5E-11 mg/kg·day x 15.1 $mg/kg{\cdot}day^{-1}$ = 1.3E-09

Example Noncarcinogen: Manganese

$$Intake\ (mg/kg{\cdot}day) = \frac{33.31\ mg/kg \times 20\ m^3/day \times 350\ days/yr \times 30\ yrs \times 1/1.32E{+}09\ m^3/kg}{70\ kg \times 10{,}950\ days}$$

= 6.9E-09

$$Risk = \frac{6.9E{-}09\ mg/kg{\cdot}day}{1.4E{-}05\ mg/kg{\cdot}day} = 4.8E\ 04$$

Re: Site 63 Future Residential Adult

SURFACE SOIL PARTICULATE INHALATION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT MILITARY 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)	Calculated
CSF = carcinogenic slope factor	Specific
RfD = reference dose for noncarcinogen	Specific
IR = inhalation rate (m3)	20
EF = adult exposure frequency (days)	250
ED = adult exposure duration (years)	4
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	4
DY = day per year (day/yr)	365
PEF = particulate emission factor (m3/kg)	1.32E+09

COPC	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 Tim (days)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aroclor-1260	0.02	1.3E+09	250	20	4	70	25550	1.9E-13	0.0E+00	0.0E+00	0%	1460	3.3E-12	0.0E+00	0.0E+00	0%
Arsenic	0.96	1.3E+09	250	20	4	70	25550	8.1E-12	1.5E+01	1.2E-10	97%	1460	1.4E-10	0.0E+00	0.0E+00	0%
Beryllium	0.06	1.3E+09	250	20	4	70	25550	5.1E-13	8.4E+00	4.3E-12	3%	1460	8.9E-12	0.0E+00	0.0E+00	0%
Iron	3626.17	1.3E+09	250	20	4	70	25550	3.1E-08	0.0E+00	0.0E+00	0%	1460	5.4E-07	0.0E+00	0.0E+00	0%
Manganese	33.31	1.3E+09	250	20	4	70	25550	2.8E-10	0.0E+00	0.0E+00	0%	1460	4.9E-09	1.4E-05	3.5E-04	100%
TOTAL										1.3E-10					3.5E-04	

SUBSURFACE SOIL PARTICULATE INHALATION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT MILITARY 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)	Calculated
CSF = carcinogenic slope factor	Specific
RfD = reference dose for noncarcinogen	Specific
IR = inhalation rate (m3)	20
EF = adult exposure frequency (days)	250
ED = adult exposure duration (years)	4
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	4
DY = day per year (day/yr)	365
PEF = particulate emission factor (m3/kg)	1.32E+09

COPC	Concentration (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Tim (days)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aluminum	12308.100	1.3E+09	250	20	4	70	25550	1.0E-07	0.0E+00	0.0E+00	0%	1460	1.8E-06	0.0E+00	0.0E+00	0%
Antimony	2.330	1.3E+09	250	20	4	70	25550	2.0E-11	0.0E+00	0.0E+00	0%	1460	3.5E-10	0.0E+00	0.0E+00	0%
Arsenic	4.460	1.3E+09	250	20	4	70	25550	3.8E-11	1.5E+01	5.7E-10	8%	1460	6.6E-10	0.0E+00	0.0E+00	0%
Barium	22.690	1.3E+09	250	20	4	70	25550	1.9E-10	0.0E+00	0.0E+00	0%	1460	3.4E-09	1.4E-04	2.4E-05	11%
Beryllium	0.120	1.3E+09	250	20	4	70	25550	1.0E-12	8.4E+00	8.5E-12	0%	1460	1.8E-11	0.0E+00	0.0E+00	0%
Chromium	19.570	1.3E+09	250	20	4	70	25550	1.7E-10	4.2E+01	7.0E-09	92%	1460	2.9E-09	0.0E+00	0.0E+00	0%
Iron	13930.070	1.3E+09	250	20	4	70	25550	1.2E-07	0.0E+00	0.0E+00	0%	1460	2.1E-06	0.0E+00	0.0E+00	0%
Lead	17.490	1.3E+09	250	20	4	70	25550	1.5E-10	0.0E+00	0.0E+00	0%	1460	2.6E-09	0.0E+00	0.0E+00	0%
Manganese	19.220	1.3E+09	250	20	4	70	25550	1.6E-10	0.0E+00	0.0E+00	0%	1460	2.8E-09	1.4E-05	2.0E-04	89%
TOTAL										7.5E-09					2.2E-04	

SURFACE SOIL PARTICULATE INHALATION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT ADOLESCENT TRESPASSER

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)	Calculated
CSF = carcinogenic slope factor	Specific
RfD = reference dose for noncarcinogen	Specific
IR = inhalation rate (m3)	20
EF = adolescent exposure frequency (days)	130
ED = adolescent exposure duration (years)	9
BW = adolescent body weight (kg)	37
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	9
DY = day per year (day/yr)	365
PEF = particulate emission factor (m3/kg)	1.32E+09

COPC	Concentration (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (days)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogeni Risk
Aroclor-1260	0.02	1.3E+09	130	20	9	37	25550	4.2E-13	0.0E+00	0.0E+00	0%	3285	3.2E-12	0.0E+00	0.0E+00	0%
Arsenic	0.96	1.3E+09	130	20	9	37	25550	1.8E-11	1.5E+01	2.7E-10	97%	3285	1.4E-10	0.0E+00	0.0E+00	0%
Beryllium	0.06	1.3E+09	130	20	9	37	25550	1.1E-12	8.4E+00	9.5E-12	3%	3285	8.8E-12	0.0E+00	0.0E+00	0%
Iron	3626.17	1.3E+09	130	20	9	37	25550	6.8E-08	0.0E+00	0.0E+00	0%	3285	5.3E-07	0.0E+00	0.0E+00	0%
Manganese	33.31	1.3E+09	130	20	9	37	25550	6.2E-10	0.0E+00	0.0E+00	0%	3285	4.9E-09	1.4E-05	3.4E-04	0%
TOTAL										2.8E-10					3.4E-04	

SURFACE SOIL PARTICULATE INHALATION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
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)	Calculated
CSF = carcinogenic slope factor	Specific
RfD = reference dose for noncarcinogen	Specific
IR = inhalation rate (m3)	12
EF = child exposure frequency (days)	350
ED = child exposure duration (years)	6
BW = child 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)	1.32E+09

COPC	Concentration (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (days)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aroclor-1260	0.02	1.3E+09	350	12	6	15	25550	1.1E-12	0.0E+00	0.0E+00	0%	2190	1.3E-11	0.0E+00	0.0E+00	0%
Arsenic	0.96	1.3E+09	350	12	6	15	25550	4.8E-11	1.5E+01	7.2E-10	97%	2190	5.6E-10	0.0E+00	0.0E+00	0%
Beryllium	0.06	1.3E+09	350	12	6	15	25550	3.0E-12	8.4E+00	2.5E-11	3%	2190	3.5E-11	0.0E+00	0.0E+00	0%
Iron	3626.17	1.3E+09	350	12	6	15	25550	1.8E-07	0.0E+00	0.0E+00	0%	2190	2.1E-06	0.0E+00	0.0E+00	0%
Manganese	33.31	1.3E+09	350	12	6	15	25550	1.7E-09	0.0E+00	0.0E+00	0%	2190	1.9E-08	1.4E-05	1.4E-03	100%
TOTAL										7.5E-10					1.4E-03	

SURFACE SOIL PARTICULATE INHALATION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT ADULT TRESPASSER

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 = adult exposure frequency (days)	43
ED = adult exposure duration (years)	30
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	30
DY = day per year (day/yr)	365
PEF = particulate emission factor (m3/kg)	1.32E+09

COPC	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 Tim (days)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aroclor-1260	0.02	1.3E+09	43	20	30	70	25550	2.4E-13	0.0E+00	0.00E+00	0%	10950	5.7E-13	0.0E+00	0.0E+00	0%
Arsenic	0.96	1.3E+09	43	20	30	70	25550	1.0E-11	1.5E+01	1.58E-10	97%	10950	2.4E-11	0.0E+00	0.0E+00	0%
Beryllium	0.06	1.3E+09	43	20	30	70	25550	6.6E-13	8.4E+00	5.51E-12	3%	10950	1.5E-12	0.0E+00	0.0E+00	0%
Iron	3626.17	1.3E+09	43	20	30	70	25550	4.0E-08	0.0E+00	0.00E+00	0%	10950	9.2E-08	0.0E+00	0.0E+00	0%
Manganese	33.31	1.3E+09	43	20	30	70	25550	3.6E-10	0.0E+00	0.00E+00	0%	10950	8.5E-10	1.4E-05	5.9E-05	100%
TOTAL										1.6E-10					5.9E-05	

SURFACE SOIL PARTICULATE INHALATION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
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)	Calculated
CSF = carcinogenic slope factor	Specific
RfD = reference dose for noncarcinogen	Specific
IR = inhalation rate (m3)	20
EF = adult exposure frequency (days)	350
ED = adult exposure duration (years)	30
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	30
DY = day per year (day/yr)	365
PEF = particulate emission factor (m3/kg)	1.32E+09

COPC	Concentration (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (days)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aroclor-1260	0.02	1.3E+09	350	20	30	70	25550	2.0E-12	0.0E+00	0.0E+00	0%	10950	4.6E-12	0.0E+00	0.0E+00	0%
Arsenic	0.96	1.3E+09	350	20	30	70	25550	8.5E-11	1.5E+01	1.3E-09	97%	10950	2.0E-10	0.0E+00	0.0E+00	0%
Beryllium	0.06	1.3E+09	350	20	30	70	25550	5.3E-12	8.4E+00	4.5E-11	3%	10950	1.2E-11	0.0E+00	0.0E+00	0%
Iron	3626.17	1.3E+09	350	20	30	70	25550	3.2E-07	0.0E+00	0.0E+00	0%	10950	7.5E-07	0.0E+00	0.0E+00	0%
Manganese	33.31	1.3E+09	350	20	30	70	25550	3.0E-09	0.0E+00	0.0E+00	0%	10950	6.9E-09	1.4E-05	4.8E-04	0%
TOTAL										1.3E-09					4.8E-04	

SURFACE SOIL PARTICULATE INHALATION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
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 = adult exposure frequency (days)	90
ED = adult exposure duration (years)	1
BW = adult 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)	1.32E+09

COPC	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 (days)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aroclor-1260	0.02	1.3E+09	90	20	1	70	25550	1.7E-14	0.0E+00	0.0E+00	0%	365	1.2E-12	0.0E+00	0.0E+00	0%
Arsenic	0.96	1.3E+09	90	20	1	70	25550	7.3E-13	1.5E+01	1.1E-11	97%	365	5.1E-11	0.0E+00	0.0E+00	0%
Beryllium	0.06	1.3E+09	90	20	1	70	25550	4.6E-14	8.4E+00	3.8E-13	3%	365	3.2E-12	0.0E+00	0.0E+00	0%
Iron	3628.17	1.3E+09	90	20	1	70	25550	2.8E-09	0.0E+00	0.0E+00	0%	365	1.9E-07	0.0E+00	0.0E+00	0%
Manganese	33.31	1.3E+09	90	20	1	70	25550	2.5E-11	0.0E+00	0.0E+00	0%	365	1.8E-09	1.4E-05	1.2E-04	100%
TOTAL										1.1E-11					1.2E-04	

SUBSURFACE SOIL PARTICULATE INHALATION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
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 = adult exposure frequency (days)	90
ED = adult exposure duration (years)	1
BW = adult 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)	1.32E+09

COPC	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 (days)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aluminum	12308.10	1.3E+09	90	20	1	70	25550	9.4E-09	0.0E+00	0.0E+00	0%	365	6.6E-07	0.0E+00	0.0E+00	0%
Antimony	2.33	1.3E+09	90	20	1	70	25550	1.8E-12	0.0E+00	0.0E+00	0%	365	1.2E-10	0.0E+00	0.0E+00	0%
Arsenic	4.46	1.3E+09	90	20	1	70	25550	3.4E-12	1.5E+01	5.1E-11	8%	365	2.4E-10	0.0E+00	0.0E+00	0%
Barium	22.69	1.3E+09	90	20	1	70	25550	1.7E-11	0.0E+00	0.0E+00	0%	365	1.2E-09	1.4E-04	8.5E-06	11%
Beryllium	0.12	1.3E+09	90	20	1	70	25550	9.1E-14	8.4E+00	7.7E-13	0%	365	6.4E-12	0.0E+00	0.0E+00	0%
Chromium	19.57	1.3E+09	90	20	1	70	25550	1.5E-11	4.2E+01	6.3E-10	92%	365	1.0E-09	0.0E+00	0.0E+00	0%
Iron	13930.07	1.3E+09	90	20	1	70	25550	1.1E-08	0.0E+00	0.0E+00	0%	365	7.4E-07	0.0E+00	0.0E+00	0%
Lead	17.49	1.3E+09	90	20	1	70	25550	1.3E-11	0.0E+00	0.0E+00	0%	365	9.3E-10	0.0E+00	0.0E+00	0%
Manganese	19.22	1.3E+09	90	20	1	70	25550	1.5E-11	0.0E+00	0.0E+00	0%	365	1.0E-09	1.4E-05	7.2E-05	89%
TOTAL										6.8E-10					8.0E-05	

GROUNDWATER

Computed by: KTW Checked by: MAS Date: 4/96

EXAMPLE GROUNDWATER INGESTION CALCULATIONS
OPERABLE UNIT NO. 13
CONTRACT TASK ORDER 0340

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 $(mg/kg{\cdot}day)^{-1}$
Noncarcinogens = Intake (mg/kg·day)/RfD (mg/kg·day)

Example Carcinogen: Arsenic

$$Intake\ (mg/kg{\cdot}day) = \frac{0.001\ mg/L \times 2\ L/day \times 350\ days/yr \times 30\ yrs}{70\ kg \times 25{,}550\ days}$$

$$= 1.2E\text{-}05$$

Risk = 1.2E-05 mg/kg·day x 1.5 $mg/kg{\cdot}day^{-1}$ = 1.8E-05

Example Noncarcinogen: Barium

$$Intake\ (mg/kg{\cdot}day) = \frac{0.237\ mg/L \times 2\ L/day \times 350\ days/yr \times 30\ yrs}{70\ kg \times 10{,}950\ days}$$

$$= 6.5E\text{-}03$$

$$Risk = \frac{6.5E\text{-}03\ mg/kg{\cdot}day}{7E\text{-}02\ mg/kg{\cdot}day} = 9.3E\text{-}02$$

GROUNDWATER INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
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)	
IRw = child daily water ingestion rate (L/Day)	1
EF = child exposure frequency (days/yr)	350
ED = child exposure duration (yr)	6
BW = child 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

SHALLOW GROUNDWATER

COPC	Concentration Carcinogen (mg/l)	Ingestion Rate (L/day) Child	Exposure Frequency (day/year) Child	Exposure Duration (year) Child	Body Weight (kg) Child	Average Carc Time (days)	Carc Dose (mg/kg-day) Child	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child	Average Noncarc Time (days)	Noncarc Dose (mg/kg-day) Child	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk Child
Arsenic	0.001	1	350	6	15	25550	5.6E-06	1.5E+00	8.5E-06	100%	2190	6.6E-05	3.0E-04	2.2E-01	2%
Barium	0.237	1	350	6	15	25550	1.3E-03	0.0E+00	0.0E+00	0%	2190	1.5E-02	7.0E-02	2.2E-01	2%
Iron	24.300	1	350	6	15	25550	1.3E-01	0.0E+00	0.0E+00	0%	2190	1.6E+00	3.0E-01	5.2E+00	50%
Lead	0.004	1	350	6	15	25550	2.1E-05	0.0E+00	0.0E+00	0%	2190	2.4E-04	0.0E+00	0.0E+00	0%
Manganese	0.311	1	350	6	15	25550	1.7E-03	0.0E+00	0.0E+00	0%	2190	2.0E-02	2.4E-02	8.3E-01	8%
Nickel	0.089	1	350	6	15	25550	4.9E-04	0.0E+00	0.0E+00	0%	2190	5.7E-03	2.0E-02	2.9E-01	3%
Zinc	17.100	1	350	6	15	25550	9.4E-02	0.0E+00	0.0E+00	0%	2190	1.1E+00	3.0E-01	3.6E+00	35%
TOTAL									8.5E-06					10.4	

GROUNDWATER INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
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)		
IRw = adult daily water ingestion rate (L/Day)		2
EF = adult exposure frequency (days/yr)		350
ED = adult exposure duration (yr)		30
BW = adult 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	

Shallow Groundwater

COPC	Concentration (mg/l)	Ingestion Rate (L/day) Adult	Exposure Frequency (day/year) Adult	Exposure Duration (year) Adult	Body Weight (kg) Adult	Average Carc Time (days)	Carc Dose (mg/kg-day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogeni Risk Adult	Average Noncarc Time (days)	Noncarc Dose (mg/kg-day) Adult	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcionogenic Risk Adult
Arsenic	0.001	2	350	30	70	25550	1.2E-05	1.5E+00	1.8E-05	100%	10950	2.8E-05	3.0E-04	9.4E-02	2%
Barium	0.237	2	350	30	70	25550	2.8E-03	0.0E+00	0.0E+00	0%	10950	6.5E-03	7.0E-02	9.3E-02	2%
Iron	24.300	2	350	30	70	25550	2.9E-01	0.0E+00	0.0E+00	0%	10950	6.7E-01	3.0E-01	2.2E+00	50%
Lead	0.004	2	350	30	70	25550	4.4E-05	0.0E+00	0.0E+00	0%	10950	1.0E-04	0.0E+00	0.0E+00	0%
Manganese	0.311	2	350	30	70	25550	3.7E-03	0.0E+00	0.0E+00	0%	10950	8.5E-03	2.4E-02	3.6E-01	8%
Nickel	0.089	2	350	30	70	25550	1.0E-03	0.0E+00	0.0E+00	0%	10950	2.4E-03	2.0E-02	1.2E-01	3%
Zinc	17.100	2	350	30	70	25550	2.0E-01	0.0E+00	0.0E+00	0%	10950	4.7E-01	3.0E-01	1.6E+00	35%
TOTAL									1.81E-05					4.45	

Computed by: KTW Checked by: MAS Date: 4/96

EXAMPLE DERMAL CONTACT WITH GROUNDWATER CALCULATIONS
OPERABLE UNIT NO. 13
CONTRACT TASK ORDER 0340

Purpose: Estimate intake/risk from dermal contact with groundwater

$$Intake\ (mg/kg{\cdot}day) = \frac{C \times CF \times SA \times PC \times ET \times EF \times ED}{BW \times AT}$$

Where:

C	=	Contaminant concentration in groundwater (mg/L)
CF	=	Conversion factor (1 L/1,000 cm^3)
SA	=	Exposed skin surface available for contact (cm^2)
PC	=	Chemical-specific dermal permeability constant (cm/hr)
ET	=	Exposure time (hr/day)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (years)
IR	=	Ingestion rate (L/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

$$ntake\ (mg/kgday) = \frac{0.001\ mg/L \times 1.0E\text{-}03\ L/cm^3 \times 23{,}000\ cm^2/event \times 1.0E\ 03\ cm/hr \times 0.25\ hr/day \times 350\ days/yr \times 30\ yr}{70\ kg \times 25{,}550\ days}$$

$$= 3.5E\text{-}08$$

Risk = 3.5E-08 mg/kg·day x 7.5 $mg/kg{\cdot}day^{-1}$ = 2.6E-07

Example Noncarcinogen: Barium

$$Intake\ (mg/kg{\cdot}day) = \frac{0.237\ mg/L \times 1.0E\text{-}03\ L/cm^3 \times 23{,}000\ cm^2/event \times 1.0E\text{-}03\ cm/hr \times 0.25\ hr/day \times 350\ days/yr \times 30\ yrs}{70\ kg \times 10{,}950\ days}$$

$$= 1.9E\text{-}05$$

$$Risk = \frac{1.9E\text{-}05\ mg/kg{\cdot}day}{1.4E\text{-}02\ mg/kg{\cdot}day} = 1.3E\text{-}03$$

Re: Site 63 Future Residential Adult

GROUNDWATER DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
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)	
SA = child skin surface available for contact (cm2)	10000
PC = contaminant specific dermal permability (cm/hr)	Specific
ET = child exposure time (hours/day)	0.25
EF = child exposure frequency (days/yr)	350
ED = child exposure duration (years)	6
CF = volumetric conversion factor for water (1liter/1000 cm3)	0.001
BW = child body weight (kg)	15
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	6
DY = days per year (days)	365

SHALLOW GROUNDWATER

COPC	Concentration Carcinogen (mg/l)	Surface Area (cm2) Child	Dermal Permeability (cm/hr)	Exposure Time (hours/day) Child	Exposure Frequency (days/yr) Child	Exposure Duration (years) Child	Volumetric Conversion (L/m3)	Body Weight (kg) Child	Averaging Carc Time (days)	Carc Dose (mg/kg-day) Child	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child	Average Noncarc Time (days)	Noncarc Dose (mg/kg-day) Child	Dermal. Adjust. Reference Dose (mg/kg-day)	Noncarc Risk Child	Percent Noncarcinogenic Risk Child
Arsenic	0.001	10000	1.00E-03	0.25	350	6	0.001	15	25550	1.4E-08	7.5E+00	1.1E-07	100%	2190	1.6E-07	6.0E-05	2.7E-03	3%
Barium	0.237	10000	1.00E-03	0.25	350	6	0.001	15	25550	3.2E-06	0.0E+00	0.0E+00	0%	2190	3.8E-05	1.4E-02	2.7E-03	3%
Iron	24.300	10000	1.00E-03	0.25	350	6	0.001	15	25550	3.3E-04	0.0E+00	0.0E+00	0%	2190	3.9E-03	6.0E-02	6.5E-02	60%
Lead	0.004	10000	4.00E-06	0.25	350	6	0.001	15	25550	2.1E-10	0.0E+00	0.0E+00	0%	2190	2.4E-09	0.0E+00	0.0E+00	0%
Manganese	0.311	10000	1.00E-03	0.25	350	6	0.001	15	25550	4.3E-06	0.0E+00	0.0E+00	0%	2190	5.0E-05	4.8E-03	1.0E-02	10%
Nickel	0.089	10000	1.00E-04	0.25	350	6	0.001	15	25550	1.2E-07	0.0E+00	0.0E+00	0%	2190	1.4E-06	4.0E-03	3.6E-04	0%
Zinc	17.100	10000	6.00E-04	0.25	350	6	0.001	15	25550	1.4E-04	0.0E+00	0.0E+00	0%	2190	1.6E-03	6.0E-02	2.7E-02	25%
TOTAL												1.1E-07					1.1E-01	

GROUNDWATER DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
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)	
SA = adult skin surface available for contact (cm2)	23000
PC = contaminant specific dermal permability (cm/hr)	Specific
ET = adult exposure time (hours/day)	0.25
EF = adult exposure frequency (days/yr)	350
ED = adult exposure duration (years)	30
CF = volumetric conversion factor for water (1liter/1000 cm3)	0.001
BW = adult 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

SHALLOW GROUNDWATER

COPC	Concentration Carcinogen (mg/l)	Surface Area (cm2) Adult	Dermal Permeability (cm/hr)	Exposure Time (hours/day) Adult	Exposure Frequency (days/yr) Adult	Exposure Duration (years) Adult	Volumetric Conversion (L/m3)	Body Weight (kg) Adult	Averaging Carc Time (years)	Carc Dose (mg/kg-day) Adult	Derm. Adj. Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogeni Risk Adult	Average Noncarc Time (years)	Noncarc Dose (mg/kg-day) Adult	Dermal Adjust. Reference Dose (mg/kg-day)	Noncarc Risk Adult	Percent Noncarcinogenic Risk Adult
Arsenic	0.001	23000	1.00E-03	0.25	350	30	0.001	70	25550	3.5E-08	7.5E+00	2.6E-07	100%	10950	8.1E-08	6.0E-05	1.4E-03	3%
Barium	0.237	23000	1.00E-03	0.25	350	30	0.001	70	25550	8.0E-06	0.0E+00	0.0E+00	0%	10950	1.9E-05	1.4E-02	1.3E-03	3%
Iron	24.300	23000	1.00E-03	0.25	350	30	0.001	70	25550	8.2E-04	0.0E+00	0.0E+00	0%	10950	1.9E-03	6.0E-02	3.2E-02	60%
Lead	0.004	23000	4.00E-06	0.25	350	30	0.001	70	25550	5.1E-10	0.0E+00	0.0E+00	0%	10950	1.2E-09	0.0E+00	0.0E+00	0%
Manganese	0.311	23000	1.00E-03	0.25	350	30	0.001	70	25550	1.0E-05	0.0E+00	0.0E+00	0%	10950	2.4E-05	4.8E-03	5.1E-03	10%
Nickel	0.089	23000	1.00E-04	0.25	350	30	0.001	70	25550	3.0E-07	0.0E+00	0.0E+00	0%	10950	7.0E-07	4.0E-03	1.8E-04	0%
Zinc	17.100	23000	6.00E-04	0.25	350	30	0.001	70	25550	3.5E-04	0.0E+00	0.0E+00	0%	10950	8.1E-04	6.0E-02	1.3E-02	25%
TOTAL												2.6E-07					5.3E-02	

SURFACE WATER

Computed by: KTW Checked by: MAS Date: 4/96

EXAMPLE SURFACE WATER INGESTION CALCULATIONS
OPERABLE UNIT NO. 13
CONTRACT TASK ORDER 0340

Purpose: Estimate intake/risk from ingestion of surface water

$$Intake\ (mg/kg{\cdot}day) = \frac{C \times IR \times EF \times ED\ ET}{BW \times AT}$$

Where:	C	=	Contaminant concentration in surface water (mg/L)
	IR	=	Daily intake ingestion rate (kg/meal)
	EF	=	Exposure frequency (meal/year)
	ED	=	Exposure duration (years)
	ET	=	Exposure time (hrs/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·day)$^{-1}$
Noncarcinogens = Intake (mg/kg·day)/RfD (mg/kg·day)

Example Carcinogen: No Carcinogenic COPCs in Surface Water

Example Noncarcinogen: Aluminum

$$Intake\ (mg/kgday) = \frac{0.678\ mg/L \times 0.05\ L/day \times 48\ days/yr \times 30\ yrs \times 2.6\ hrs/day}{70\ kg \times 10{,}950\ days}$$

$$= 1.7E\text{-}04$$

$$Risk = \frac{1.7E\ 04\ mg/kgday}{1.0E{+}00\ mg/kgday} = 1.7E\text{-}04$$

SURFACE WATER INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT MILITARY PERSONNEL

The intake from the ingestion of surface water is calculated as follows:

Intake (mg/kg-day) = Cw * CR * ET * EF * ED/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUT
Cw = contaminant concentration in surface water (mg/l)	
CR = ingestion rate (Liter/hour)	0.05
ET = exposure time (hours/event)	2.6
EF = exposure frequency (events/yr)	48
ED = exposure duration (yrs)	4
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	4
DY = days per year (days)	365
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

COPC	Concentration Carcinogen (mg/l)	Ingestion Rate (l/hour)	Exposure Time (hrs/event)	Exposure Frequency (events/yr)	Exposure Duration (years)	Body Weight (kg)	Average Carc Time (days)	Carc Dose (mg/kg-day)	Cancer Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk	Averaging Time Noncarc. (days)	Noncarc Dose (mg/kg-day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aluminum	0.678	0.05	2.6	48	4	70	25550	9.5E-06	0.0E+00	0.0E+00	0%	1460	1.7E-04	1.0E+00	1.7E-04	16%
Barium	0.026	0.05	2.6	48	4	70	25550	3.7E-07	0.0E+00	0.0E+00	0%	1460	6.4E-06	7.0E-02	9.2E-05	9%
Iron	0.834	0.05	2.6	48	4	70	25550	1.2E-05	0.0E+00	0.0E+00	0%	1460	2.0E-04	3.0E-01	6.8E-04	64%
Lead	0.002	0.05	2.6	48	4	70	25550	3.1E-08	0.0E+00	0.0E+00	0%	1460	5.4E-07	0.0E+00	0.0E+00	0%
Manganese	0.010	0.05	2.6	48	4	70	25550	1.4E-07	0.0E+00	0.0E+00	0%	1460	2.4E-06	2.4E-02	1.0E-04	10%
Zinc	0.023	0.05	2.6	48	4	70	25550	3.2E-07	0.0E+00	0.0E+00	0%	1460	5.5E-06	3.0E-01	1.8E-05	2%
TOTAL										0.0E+00					1.1E-03	

SURFACE WATER INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT ADOLESCENT TRESPASSER

The intake from the ingestion of surface water is calculated as follows:

Intake (mg/kg-day) = Cw * CR * ET * EF * ED/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUT
Cw = contaminant concentration in surface water (mg/l)	
CR = contact rate (Liter/hour)	0.05
ET = adolescent exposure time (hours/event)	2.6
EF = adolescent exposure frequency (events/yr)	48
ED = adolescent exposure duration (yrs)	9
BW = adolescent body weight (kg)	37
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	9
DY = days per year (days)	365
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

COPC	Concentration (mg/l)	Contact Rate (l/hour)	Exposure Time (hrs/event) Adolescent	Exposure Frequency (events/yr) Adolescent	Exposure Duration (years) Adolescent	Body Weight (kg) Adolescent	Averaging Canc. Time (days)	Canc Dose (mg/kg-day) Adolescent	Cancer Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adolescent	Percent Carcinogenic Risk Adolescent	Averaging Time Noncanc (days)	Noncanc Dose (mg/kg-day) Adolescent	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adolescent	Percent Noncarcinogenic Risk Adolescent
Aluminum	0.678	0.05	2.6	48	9	37	25550	4.0E-05	0.0E+00	0.0E+00	0%	3285	3.1E-04	1.0E+00	3.1E-04	16%
Barium	0.029	0.05	2.6	48	9	37	25550	1.6E-06	0.0E+00	0.0E+00	0%	3285	1.2E-05	7.0E-02	1.7E-04	9%
Iron	0.834	0.05	2.6	48	9	37	25550	5.0E-05	0.0E+00	0.0E+00	0%	3285	3.9E-04	3.0E-01	1.3E-03	64%
Lead	0.002	0.05	2.6	48	9	37	25550	1.3E-07	0.0E+00	0.0E+00	0%	3285	1.0E-06	0.0E+00	0.0E+00	0%
Manganese	0.010	0.05	2.6	48	9	37	25550	5.9E-07	0.0E+00	0.0E+00	0%	3285	4.6E-06	2.4E-02	1.9E-04	10%
Zinc	0.023	0.05	2.6	48	9	37	25550	1.3E-06	0.0E+00	0.0E+00	0%	3285	1.0E-05	3.0E-01	3.5E-05	2%
TOTAL										0.0E+00					2.0E-03	

SURFACE WATER INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE CHILD RESIDENT

The intake from the ingestion of surface water is calculated as follows:

Intake (mg/kg-day) = Cw * CR * ET * EF * ED/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUT
Cw = contaminant concentration in surface water (mg/l)	
CR = contact rate (Liter/hour)	0.05
ET = child exposure time (hours/event)	2.6
EF = child exposure frequency (events/yr)	48
ED = child exposure duration (yrs)	6
BW = child body weight (kg)	15
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	6
DY = days per year (days)	365
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

COPC	Concentration Carcinogen (mg/l)	Contact Rate (l/hour)	Exposure Time (hrs/event) Child	Exposure Frequency (events/yr) Child	Exposure Duration (years) Child	Body Weight (kg) Child	Averaging Carc. Time (days)	Carc Dose (mg/kg-day) Child	Cancer Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child	Averaging Time Noncarc (days)	Noncarc Dose (mg/kg-day) Child	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk Child
Aluminum	0.678	0.05	2.6	48	6	15	25550	6.6E-05	0.0E+00	0.0E+00	0%	2190	7.7E-04	1.0E+00	7.7E-04	16%
Barium	0.026	0.05	2.6	48	6	15	25550	2.6E-06	0.0E+00	0.0E+00	0%	2190	3.0E-05	7.0E-02	4.3E-04	9%
Iron	0.834	0.05	2.6	48	6	15	25550	8.1E-05	0.0E+00	0.0E+00	0%	2190	9.5E-04	3.0E-01	3.2E-03	64%
Lead	0.002	0.05	2.6	48	6	15	25550	2.1E-07	0.0E+00	0.0E+00	0%	2190	2.5E-06	0.0E+00	0.0E+00	0%
Manganese	0.010	0.05	2.6	48	6	15	25550	9.8E-07	0.0E+00	0.0E+00	0%	2190	1.1E-05	2.4E-02	4.7E-04	10%
Zinc	0.023	0.05	2.6	48	6	15	25550	2.2E-06	0.0E+00	0.0E+00	0%	2190	2.6E-05	3.0E-01	8.6E-05	2%
TOTAL										0.0E+00					4.9E-03	

SURFACE WATER INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT ADULT TRESPASSER

The intake from the ingestion of surface water is calculated as follows:

Intake (mg/kg-day) = Cw * CR * ET * EF * ED/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUT
Cw = contaminant concentration in surface water (mg/l)	
CR = ingestion rate (Liter/hour)	0.05
ET = exposure time (hours/event)	2.6
EF = exposure frequency (events/yr)	48
ED = exposure duration (yrs)	30
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
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

COPC	Concentration Carcinogen (mg/l)	Contact Rate (l/hour)	Exposure Time (hrs/event)	Exposure Frequency (events/yr)	Exposure Duration (years)	Body Weight (kg)	Average Carc Time (days)	Carc Dose (mg/kg-day)	Cancer Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk	Averaging Time Noncarc (days)	Noncarc Dose (mg/kg-day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aluminum	0.678	0.05	2.6	48	30	70	25550	7.1E-05	0.0E+00	0.0E+00	0%	10950	1.7E-04	1.0E+00	1.7E-04	16%
Barium	0.026	0.05	2.6	48	30	70	25550	2.8E-06	0.0E+00	0.0E+00	0%	10950	6.4E-06	7.0E-02	9.2E-05	9%
Iron	0.834	0.05	2.6	48	30	70	25550	8.7E-05	0.0E+00	0.0E+00	0%	10950	2.0E-04	3.0E-01	6.8E-04	64%
Lead	0.002	0.05	2.6	48	30	70	25550	2.3E-07	0.0E+00	0.0E+00	0%	10950	5.4E-07	0.0E+00	0.0E+00	0%
Manganese	0.010	0.05	2.6	48	30	70	25550	1.0E-06	0.0E+00	0.0E+00	0%	10950	2.4E-06	2.4E-02	1.0E-04	10%
Zinc	0.023	0.05	2.6	48	30	70	25550	2.4E-06	0.0E+00	0.0E+00	0%	10950	5.5E-06	3.0E-01	1.8E-05	2%
TOTAL										0.0E+00					1.1E-03	

SURFACE WATER INGESTION EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE ADULT RESIDENT

The intake from the ingestion of surface water is calculated as follows:

Intake (mg/kg-day) = Cw * CR * ET * EF * ED/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUT
Cw = contaminant concentration in surface water (mg/l)	
CR = ingestion rate (Liter/hour)	0.05
ET = exposure time (hours/event)	2.6
EF = exposure frequency (events/yr)	48
ED = exposure duration (yrs)	30
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
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

COPC	Concentration Carcinogen (mg/l)	Ingestion Rate (l/hour)	Exposure Time (hrs/event)	Exposure Frequency (events/yr)	Exposure Duration (years)	Body Weight (kg)	Average Carc Time (days)	Carc Dose (mg/kg-da	Cancer Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk	Averaging Time Noncarc. (days)	Noncarc Dose (mg/kg-day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Aluminum	0.678	0.05	2.6	48	30	70	25550	7.1E-05	0.0E+00	0.0E+00	0%	10950	1.7E-04	1.0E+00	1.7E-04	16%
Barium	0.026	0.05	2.6	48	30	70	25550	2.8E-06	0.0E+00	0.0E+00	0%	10950	6.4E-06	7.0E-02	9.2E-05	9%
Iron	0.834	0.05	2.6	48	30	70	25550	8.7E-05	0.0E+00	0.0E+00	0%	10950	2.0E-04	3.0E-01	6.8E-04	64%
Lead	0.002	0.05	2.6	48	30	70	25550	2.3E-07	0.0E+00	0.0E+00	0%	10950	5.4E-07	0.0E+00	0.0E+00	0%
Manganese	0.010	0.05	2.6	48	30	70	25550	1.0E-06	0.0E+00	0.0E+00	0%	10950	2.4E-06	2.4E-02	1.0E-04	10%
Zinc	0.023	0.05	2.6	48	30	70	25550	2.4E-06	0.0E+00	0.0E+00	0%	10950	5.5E-06	3.0E-01	1.8E-05	2%
TOTAL										0.0E+00					1.1E-03	

Computed by: KTW Checked by: MAS Date: 4/96

EXAMPLE SURFACE WATER DERMAL CONTACT CALCULATIONS
OPERABLE UNIT NO. 13
CONTRACT TASK ORDER 0340

Purpose: Estimate intake/risk from dermal contact with surface water

$$Intake\ (mg/kgday) = \frac{C \times SA \times CF \times EF \times ED \times ET \times PC}{BW \times AT}$$

Where:

C	=	Contaminant concentration in surface water (mg/L)
SA	=	Skin surface area (cm^2)
CF	=	Conversion factor (1 L/1,000 cm^3)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (years)
ET	=	Exposure time (hrs/day)
PC	=	Chemical-specific dermal permeability constant (cm/hr)
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: No Carcinogenic COPCs in Surface Water

Example Noncarcinogen: Aluminum

$$Intake\ (mg/kgday) = \frac{0.678\ mg/L \times 5{,}800\ cm^2 \times 48\ days/yr \times 30\ yrs \times 2.6\ hrs/day \times 1.0E\ 3\ L/cm^3 \times 1E\text{-}03\ cm/hr}{70\ kg \times 10{,}950\ days}$$

$$= 1.9E\text{-}05$$

$$Risk = \frac{1.9E\text{-}05\ mg/kgday}{2E\text{-}01\ mg/kgday} = 9.6E\text{-}05$$

SURFACE WATER DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT MILITARY PERSONNEL

The intake from dermal contact with surface water is calculated 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)	
SA = skin surface available for contact (cm2)	4300
PC = contaminant specific dermal permability (cm/hr)	Specific
ET = exposure time (hours/day)	2.6
EF = exposure frequency (days/yr)	48
ED = exposure duration (years)	4
CF = volumetric conversion factor for water (1liter/1000 cm	0.001
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	4
DY = days per year (days)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

COPC	Concentration (mg/l)	Surface Area (cm2)	Dermal Permeability (cm/hr)	Exposure Time (hours/day)	Exposure Frequenc (days/yr)	Exposure Duration (years)	Volumetric Conversion (L/m3)	Body Weight (kg)	Averaging Carc Time (days)	Carc Dose (mg/kg-day)	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg-day)	Dermal Adjust. Reference Dose (mg/kg-day)	Noncarc Risk	Percent Noncarcinogenic Risk
Aluminum	0.678	4300	1.0E-03	2.6	48	4	0.001	70	25550	8.1E-07	0.0E+00	0.0E+00	0%	1460	1.4E-05	2.0E-01	7.1E-05	16%
Barium	0.026	4300	1.0E-03	2.6	48	4	0.001	70	25550	3.2E-08	0.0E+00	0.0E+00	0%	1460	5.5E-07	1.4E-02	4.0E-05	9%
Iron	0.834	4300	1.0E-03	2.6	48	4	0.001	70	25550	1.0E-06	0.0E+00	0.0E+00	0%	1460	1.8E-05	6.0E-02	2.9E-04	65%
Lead	0.002	4300	4.0E-06	2.6	48	4	0.001	70	25550	1.1E-11	0.0E+00	0.0E+00	0%	1460	1.8E-10	0.0E+00	0.0E+00	0%
Manganese	0.010	4300	1.0E-03	2.6	48	4	0.001	70	25550	1.2E-08	0.0E+00	0.0E+00	0%	1460	2.1E-07	4.8E-03	4.4E-05	10%
Zinc	0.023	4300	6.0E-04	2.6	48	4	0.001	70	25550	1.6E-08	0.0E+00	0.0E+00	0%	1460	2.8E-07	6.0E-02	4.7E-06	1%
TOTAL												0.0E+00					4.5E-04	

SURFACE WATER DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 83-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT ADOLESCENT TRESPASSER

The intake from dermal contact with surface water is calculated 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)	
SA = adolescent skin surface available for contact (cm2)	3480
PC = contaminant specific dermal permability (cm/hr)	Specific
ET = adolescent exposure time (hours/day)	2.6
EF = adolescent exposure frequency (days/yr)	48
ED = adolescent exposure duration (years)	9
CF = volumetric conversion factor for water (1liter/1000 cm3)	0.001
BW = adolescent body weight (kg)	37
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	9
DY = days per year (days)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

COPC	Concentration Carcinogen (mg/l)	Surface Area (cm2) Adolescent	Dermal Permeability (cm/hr)	Exposure Time (hours/day) Adolescent	Exposure Frequency (days/yr) Adolescent	Exposure Duration (years) Adolescent	Volumetric Conversion (L/m3)	Body Weight (kg) Adolescent	Averaging Carc Time (days)	Carc Dose (mg/kg-day) Adolescent	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adolescent	Percent Carcinogenic Risk Adolescent	Average Noncarc Time (days)	Noncarc Dose (mg/kg-day) Adolescent	Dermal Adjust. Reference Dose (mg/kg-day)	Noncarc. Risk Adolescent	Percent Noncarcinogenic Risk Adolescent
Aluminum	0.678	3480	1.0E-03	2.6	48	9	0.001	37	25550	2.8E-06	0.0E+00	0.0E+00	0%	3285	2.2E-05	2.0E-01	1.1E-04	15%
Barium	0.026	3480	1.0E-03	2.6	48	9	0.001	37	25550	1.1E-07	0.0E+00	0.0E+00	0%	3285	8.5E-07	1.4E-02	6.1E-05	9%
Iron	0.834	3480	1.0E-03	2.6	48	9	0.001	37	25550	3.4E-06	0.0E+00	0.0E+00	0%	3285	2.7E-05	6.0E-02	4.5E-04	65%
Lead	0.002	3480	4.0E-06	2.6	48	9	0.001	37	25550	8.6E-11	0.0E+00	0.0E+00	0%	3285	2.8E-10	0.0E+00	0.0E+00	0%
Manganese	0.010	3480	1.0E-03	2.6	48	9	0.001	37	25550	4.1E-08	0.0E+00	0.0E+00	0%	3285	3.2E-07	4.6E-03	6.7E-05	10%
Zinc	0.023	3480	6.0E-04	2.6	48	9	0.001	37	25550	9.6E-08	0.0E+00	0.0E+00	0%	3285	4.4E-07	6.0E-02	7.3E-06	1%
TOTAL												0.0E+00					6.9E-04	

SURFACE WATER DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE CHILD RESIDENT

The intake from dermal contact with surface water is calculated 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)	
SA = child skin surface available for contact (cm2)	2300
PC = contaminant specific dermal permability (cm/hr)	Specific
ET = child exposure time (hours/day)	2.6
EF = child exposure frequency (days/yr)	48
ED = child exposure duration (years)	6
CF = volumetric conversion factor for water (1liter/1000 cm3)	0.001
BW = child body weight (kg)	15
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	6
DY = days per year (days)	365
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

COPC	Concentration Carcinogen (mg/l)	Surface Area (cm2) Child	Dermal Permeability (cm/hr)	Exposure Time (hours/day) Child	Exposure Frequency (days/yr) Child	Exposure Duration (years) Child	Volumetric Conversion (L/m3)	Body Weight (kg) Child	Averaging Carc Time (days)	Carc Dose (mg/kg-day) Child	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child	Average Noncarc Time (days)	Noncarc Dose (mg/kg-day) Child	Dermal Adjust. Reference Dose (mg/kg-day)	Noncarc. Risk Child	Percent Noncarcinogenic Risk Child
Aluminum	0.678	2300	1.0E-03	2.6	48	6	0.001	15	25550	3.0E-06	0.0E+00	0.0E+00	0%	2190	3.6E-05	2.0E-01	1.8E-04	16%
Barium	0.026	2300	1.0E-03	2.6	48	6	0.001	15	25550	1.2E-07	0.0E+00	0.0E+00	0%	2190	1.4E-06	1.4E-02	9.9E-05	9%
Iron	0.834	2300	1.0E-03	2.6	48	6	0.001	15	25550	3.7E-06	0.0E+00	0.0E+00	0%	2190	4.4E-05	6.0E-02	7.3E-04	65%
Lead	0.002	2300	4.0E-06	2.6	48	6	0.001	15	25550	4.0E-11	0.0E+00	0.0E+00	0%	2190	4.6E-10	0.0E+00	0.0E+00	0%
Manganese	0.010	2300	1.0E-03	2.6	48	6	0.001	15	25550	4.5E-08	0.0E+00	0.0E+00	0%	2190	5.2E-07	4.8E-03	1.1E-04	10%
Zinc	0.023	2300	6.0E-04	2.6	48	6	0.001	15	25550	6.1E-08	0.0E+00	0.0E+00	0%	2190	7.1E-07	6.0E-02	1.2E-05	1%
TOTAL												0.0E+00					1.1E-03	

SURFACE WATER DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT ADULT TRESPASSER

The intake from dermal contact with surface water is calculated 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)	
SA = skin surface available for contact (cm2)	5800
PC = contaminant specific dermal permability (cm/hr)	Specific
ET = exposure time (hours/day)	2.6
EF = exposure frequency (days/yr)	48
ED = exposure duration (years)	30
CF = volumetric conversion factor for water (1liter/10	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
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

COPC	Concentration (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 (days)	Carc Dose (mg/kg-day)	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg-day)	Dermal Adjust. Reference Dose (mg/kg-day)	Noncarc Risk	Percent Noncarcinogenic Risk
Aluminum	0.678	5800	1.0E-03	2.6	48	30	0.001	70	25550	8.2E-06	0.0E+00	0.0E+00	0%	10950	1.9E-05	2.0E-01	9.6E-05	16%
Barium	0.026	5800	1.0E-03	2.6	48	30	0.001	70	25550	3.2E-07	0.0E+00	0.0E+00	0%	10950	7.5E-07	1.4E-02	5.3E-05	9%
Iron	0.834	5800	1.0E-03	2.6	48	30	0.001	70	25550	1.0E-05	0.0E+00	0.0E+00	0%	10950	2.4E-05	6.0E-02	3.9E-04	65%
Lead	0.002	5800	4.0E-06	2.6	48	30	0.001	70	25550	1.1E-10	0.0E+00	0.0E+00	0%	10950	2.5E-10	0.0E+00	0.0E+00	0%
Manganese	0.010	5800	1.0E-03	2.6	48	30	0.001	70	25550	1.2E-07	0.0E+00	0.0E+00	0%	10950	2.8E-07	4.8E-03	5.9E-05	10%
Zinc	0.023	5800	6.0E-04	2.6	48	30	0.001	70	25550	1.6E-07	0.0E+00	0.0E+00	0%	10950	3.8E-07	6.0E-02	6.4E-06	1%
TOTAL												0.0E+00					6.1E-04	

SURFACE WATER DERMAL CONTACT EXPOSURE ASSESSMENT
SITE 63-VERONA LOOP DUMP
REMEDIAL INVESTIGATION CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE ADULT RESIDENT

The intake from dermal contact with surface water is calculated 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)	
SA = skin surface available for contact (cm2)	5800
PC = contaminant specific dermal permability (cm/hr)	Specific
ET = exposure time (hours/day)	2.6
EF = exposure frequency (days/yr)	48
ED = exposure duration (years)	30
CF = volumetric conversion factor for water (1liter/100	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
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

COPC	Concentration (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 (days)	Carc Dose (mg/kg-day)	Dermal Adjust. Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Carcinogenic Risk	Average Noncarc Time (days)	Noncarc Dose (mg/kg-day)	Dermal Adjust. Reference Dose (mg/kg-day)	Noncarc Risk	Percent Noncarcinogenic Risk
Aluminum	0.678	5800	1.0E-03	2.6	48	30	0.001	70	25550	8.2E-06	0.0E+00	0.0E+00	0%	10950	1.9E-05	2.0E-01	9.6E-05	16%
Barium	0.026	5800	1.0E-03	2.6	48	30	0.001	70	25550	3.2E-07	0.0E+00	0.0E+00	0%	10950	7.5E-07	1.4E-02	5.3E-05	9%
Iron	0.834	5800	1.0E-03	2.6	48	30	0.001	70	25550	1.0E-05	0.0E+00	0.0E+00	0%	10950	2.4E-05	6.0E-02	3.9E-04	65%
Lead	0.002	5800	4.0E-06	2.6	48	30	0.001	70	25550	1.1E-10	0.0E+00	0.0E+00	0%	10950	2.5E-10	0.0E+00	0.0E+00	0%
Manganese	0.010	5800	1.0E-03	2.6	48	30	0.001	70	25550	1.2E-07	0.0E+00	0.0E+00	0%	10950	2.8E-07	4.8E-03	5.9E-05	10%
Zinc	0.023	5800	6.0E-04	2.6	48	30	0.001	70	25550	1.6E-07	0.0E+00	0.0E+00	0%	10950	3.8E-07	6.0E-02	6.4E-06	1%
TOTAL												0.0E+00					6.1E-04	

APPENDIX P
PERMEABILITY CONSTANT CALCULATIONS

CALCULATION OF PERMEABILITY CONSTANTS

Chemical-specific permeability constants (PCs or k_p) were calculated using the following equation. (Reference: USEPA, 1992)

$$\textbf{Log kp} = -2.72 + 0.71 \log k_{ow} - 0.0061\ MW$$

Where,

k_p = permeability constant (cm/hr)
k_{ow} = octanol/water coefficient (unitless)
MW = molecular weight (g/mole)

Parameter	Log k_{ow}	MW	k_p
acenapthene	4	154	0.01
2-methylnaphthalene	3.86	142.2	1.5×10^{-3}

PC VALUES FILE: PCVAL.WQ1

10-Apr-96

PARAMETER	[CM/HR]	
	linked here	
	1.50E-03	
1,1-Dichloroethane	0.0126	
1,1-Dichloroethene	0.0015	
1,2,4-Trichlorobenzene	0.1000	
1,2-Dichloroethane	0.0053	
1,2-Dichloroethene (total)	0.0100	
1,2-Dichloropropane	0.0225	
1,3-Dichlorobenzene	0.0573	
1,4-Dichlorobenzene	0.0804	
2,4-Dimethylphenol	0.0150	
2,4-Dinitrotoluene	0.1000	
2-Butanone	0.0060	
2-Chlorophenol	0.0300	
2-Methylnaphthalene	0.1423	
2-Methylphenol	0.0160	
2-methylnaphthalene	0.1423	
4,4'-DDD	0.2800	
4,4'-DDE	0.2400	
4,4'-DDT	0.4300	
4-Methylphenol	0.0180	
Acenaphthene	0.1516	
Acenaphthene	1.50E-03	
Acenaphthylene	1.50E-03	
Acetone	0.0015	
Aldrin	0.0016	
Aluminum	0.0010	
Anthracene	0.0015	
Antimony	0.0010	
Arsenic	0.0010	
Barium	0.0010	
Benzene	0.0210	
Benzo(a)anthracene	0.0079	
Benzo(a)pyrene	0.9000	
Benzo(b)fluoranthene	0.6200	
Benzo(g,h,i)perylene	0.0015	
Benzo(k)fluoranthene	0.6200	
Benzoic acid	0.7120	
Beryllium	0.0010	
Bis(2-chloroethyl)ether	0.0021	
Bis(2-ethylhexyl)phthalate	3.30E-02	
Boron	0.0010	
Cadmium (soil)	0.0010	cadmium chloride
Cadmium (water)	0.0010	cadmium chloride
Carbazole	0.0015	
Carbon disulfide	0.5300	
Chlorobenzene	0.0404	
Chloroform	0.0089	
Chromium	0.0010	
Chrysene	0.6200	
Cis-1,2-Dichloroethene	0.0100	
Cobalt	0.0010	
Copper	0.0010	
Cyanide	0.0010	
Di-n-butylphthalate	2.3E-06	
Dibenz(a,h)anthracene	2.7	
Dibenzofuran	1.5E-03	

Diethyl phthalate	1.1E-05	
Dimethyl phthalate	3.3E-05	
Endosulfan sulfate	1.5E-03	
Endrin	0.0160	
Ethylbenzene	1.2000	
Fluoranthene	0.2970	
Fluorene	1.5E-03	
Heptachlor	0.0094	
Indeno(1,2,3-cd)pyrene	1.9000	
Iron	0.0010	
Isobutyl Alcohol	0.0015	
Kepone	0.0010	
Lead	4.0E-06	(lead acetate)
Magnesium	0.0010	
Manganese	0.0010	
Mercury	0.0010	
Molybdenum	0.0010	
Methylene Chloride	0.0051	
N-nitroso-di-n-propylamine	0.0028	
N-nitrosodiphenylamine	0.0005	
Naphthalene	0.0690	
Nickel	0.0001	(nickel chloride)
Pentachlorophenol	0.4900	
Phenanthrene	0.2700	
Phenol	0.0081	
Pyrene	0.0015	
Selenium	0.0010	
Silicon	0.0010	
Strontium	0.0010	
Styrene	0.6500	
Tetrachloroethene	0.0450	
1,1,2,2-Tetrachloroethane	0.009	
Thallium	0.001	
Tin	0.0010	
Toluene	1.0000	
Total Xylenes	0.0800	
1,1,2-Trichloroethane	0.0167	
Trichloroethene	0.0160	
Trichlorotrifluoroethane	0.0015	
Vanadium	0.0010	
Vinyl Chloride	0.0073	
Zinc	0.0006	(zinc chloride)
Acenapthene	0.1516	
beta-BHC	0.0015	
delta-BHC	0.0015	
gamma-BHC (Lindane)	0.0140	
p-Chloro-m-cresol	0.0500	
p-Cresol	0.0100	

Calculations

log Kp = -2.72 + 0.71 log Kw - 0.0061 MW

	Kp	log Kw	MW (g/mole)
acenapthene	0.15156537557	4	154
2-methylnaphthalene	0.142291841526	3.86	142.2
1,1,2-Trichloroethane	0.016687835114	2.47	133

APPENDIX Q
WHITE OAK RIVER BASIN REFERENCE STATIONS

WHITE OAK RIVER BASIN REFERENCE STATIONS

Water Body Description

Hadnot Creek, Holland Mill Creek (including Cartwheel Branch) and the section of the White Oak River that encompasses Hadnot Creek, Holland Mill Creek, and Webb Creek are classified as SA from their source to the White Oak River. The SA classifies the water body as a tidal saltwater with shellfishing for market purposes and the following uses: primary recreation, aquatic life propagation and survival, fishing, wildlife, and secondary recreation. Webb Creek is classified as C from its source to the White Oak River. The C classifies the water body as a fresh water with the following uses: aquatic life propagation and survival, fishing, wildlife, and secondary recreation. The section of the White Oak River that encompasses these three creeks is designated by the North Carolina Fisheries Rule as Class C - coastal fishing waters (NCMFC, 1993).

Biological Sampling

Biological samples collected at the background stations consisted of fish and benthic macroinvertebrate. The biological samples were collected to obtain population statistics for fish and benthic macroinvertebrates and to obtain fish tissue samples for chemical analysis (Hadnot Creek only). Prior to initiating the sampling event at each station, the following information describing the site was recorded in the field log book:

Average width, depth and velocity of the water body

Description of substrate

Description of "abiotic" characteristics of the reach such as pools, riffles, runs, channel shape, degree of bank erosion, and shade/sun exposure

Description of "biotic" characteristics of the reach including aquatic and riparian vegetation and wetlands

Water quality measurements were collected during the benthic macroinvertebrate sampling, at a minimum, and during collection of some of the fish samples. On-site water quality measurements at these stations consisted of temperature, pH, specific conductance, salinity and dissolved oxygen. These measurements were conducted prior to sample collection. The station locations and sampling procedures for the collection of the fish and benthic macroinvertebrates is discussed later in this appendix.

Fish and Shellfish

This section discusses collection of the fish and shellfish samples in the reference stations at Webb Creek, Hadnot Creek, and Holland Mill Creek.

A literature review was conducted to determine the fish species that may potentially be exposed to contaminants in the surface water/sediment exposure pathway. This review included compiling information from State and Federal natural resources agencies. In addition, Bakers experience in sampling similar areas formed a basis for a database of expected species for the area.

Sampling variability can prevent the same species of fish from being sampled at each station because either the preferred species was not captured, or adequate numbers of uniform-size individuals were not captured. Therefore, if the preferred species was not successfully collected to satisfy the above requirements, a substitute species was collected that, if possible, exhibiting a similar trophic position in the estuarine ecosystem.

The collected fish species were identified, measured, and counted. The small fish (less than 20 mm) were weighed in groups of 10 or 20 because of their low individual weight; the larger fish were weighed individually. The

proportion of individuals as hybrids and the proportion of individuals with disease, tumors, fin damage, and skeletal anomalies was recorded at each station.

Fish that exhibited signs of being dead for an extended period of time (i.e., brown gills, bloating) were not retained for tissue analysis because of the potential for decomposition and leaching of contaminants from the organs into the edible portions of the fish.

Webb Creek

This section discusses collection of the fish samples in Webb Creek including the station locations and sampling procedures.

Station Location

The fish station WC02 was located on Webb Creek approximately 300 feet upstream from the Camp Lejeune railroad crossing. Station WC03 was located in the White Oak River approximately 25 feet downstream from its confluence with Webb Creek. See fish and benthic macroinvertebrate sampling station figure found later in this appendix for approximate sample locations.

Sampling Procedures

Fish were collected in Webb Creek using gill nets and hoop nets. All fish that were collected were processed for population statistics; no fish at these stations were collected for tissue analysis.

The gill nets were six feet deep by 50 to 100 feet long with a stretch mesh size ranging from two to four inches, and an approximate twine break strength of 29 pounds. The nets were deployed approximately at the locations shown on the figure found later in this appendix. Weights were attached to the nets to secure them on the bottom of the stream and yellow buoys marked with "Baker Environmental" were attached to the tops of the nets. The nets were deployed in the morning or evening, and they were checked for fish within twelve hours after deployment.

The hoop nets were three to four feet in diameter and fourteen to sixteen feet in length. Twenty-five foot wings were attached to the nets to help direct fish into the net. The nets were deployed in the middle of the channel with the wings stretched across the creek in a forty-five degree angle. The end of the net and the wings were secured using 6.5 foot wooden posts. The nets were checked at least once daily, as the fish usually survive when captured in these nets.

Hadnot Creek

This section discusses collection of the fish samples in Hadnot Creek including the station locations and sampling procedures.

Station Location

Fish were collected from four stations in Hadnot Creek (HC01, HC02, HC03 and HC04). HC01 was located approximately 100 feet upstream of Rt. 1104. Station HC02 was located approximately 2,500 feet upstream of Rt. 58. Station HC03 was located in the White Oak River approximately 100 feet upstream from its confluence with Hadnot Creek. Finally, station HC04 was located in Hadnot Creek by the road off of the Rt. 1105 crossing. In October, 1993, fish were collected by Baker in Hadnot Creek as part of another investigation (Baker, 1993). Fillet samples of these fish were chemically analyzed and the results are included in this ERA.

Sampling Procedures

Fish were collected at these stations for population statistics; fish were not collected at these stations for tissue analysis. Fish were collected in Hadnot Creek using hoop nets, gill nets, a haul seine, pole fishing, and the

backpack electroshocker. The same sample collection and sample processing procedures used in Webb Creek were conducted at the Hadnot Creek stations for the gill nets and hoop nets. Pole fishing only was conducted during the October 1993 sampling.

Fish were collected in the furthest upstream stations using electrofishing, conducted with a Smith-Root, Inc., backpack electrofisher powered by a 300-watt portable generator. A DC current was applied utilizing a "rattail" as the cathode and a hand-held electrode as the anode. Blocking seines were placed downstream and upstream of the shocking areas to aid in the collection of the fish. The length of the shocking time per subsection was recorded as seconds of applied current. Stunned fish were collected with one-inch mesh or smaller dip nets handled by members of the field sampling team.

Holland Mill Creek

This section discusses collection of the fish samples in Holland Mill Creek including the station locations and sampling procedures.

Station Location

Fish were collected from three stations in Holland Mill Creek (HM01, HM02, and HM03). HM01 was located on Cartwheel Branch just upstream of Rt. 1444. Station HM02 was located at the confluence of Holland Mill Creek and Cartwheel Branch. Station HM03 was located in the White Oak River approximately 50 feet downstream from Holland Mill Creek.

Sampling Procedures

Fish were collected at these stations for population statistics. Fish were not collected at these stations for tissue analysis. Fish were collected in Holland Mill Creek using hoop nets, gill nets, a haul seine, and the backpack electroshocker. The same sample collection and sample processing procedures used in the Webb Creek and Hadnot Creek stations were conducted at the Holland Mill Creek stations.

Benthic Macroinvertebrates

This section discusses collection of benthic macroinvertebrate samples in the reference stations at Webb Creek, Hadnot Creek, and Holland Mill Creek.

Webb Creek

Benthic macroinvertebrates were collected in Webb Creek using the ponar grab deployed from the boat.

Benthic macroinvertebrates were collected from a boat using a standard ponar grab. The dimensions of the ponar are 23 x 23 cm (9 x 9 in.) for a sampling area of 529 cm^2 or 0.0523 m2 (81 in2).

The ponar was deployed from the boat, which was positioned in slightly different locations for each replicate to prevent re-sampling the same area. After retrieving the ponar with a sediment sample, it was opened into a clean tub and the sediments were removed with a teflon spatula. The sediments were transferred to a 0.5 mm sieve that was agitated (by hand) in water to remove the small particles. The remaining contents in the sieve were transferred into 16-ounce plastic sample jars. The jars were filled up to one-half full with sediments, and buffered formalin solution (10 percent by weight) was added to the remainder of the jar to preserve the benthic macroinvertebrates contained in the sediments. A 100 percent cotton paper label, marked in pencil with the sample number, was placed inside the jar. The outside of the jar was labeled with the sample number using a black permanent marker to identify the sample containers.

After all the benthic macroinvertebrate sampling at the New River was completed, the sample jars were transported to RMC Environmental Services, Inc. for sample sorting and taxonimic identification of the benthic

macroinvertebrates.

Hadnot Creek

Benthic macroinvertebrates were collected in Hadnot Creek using the ponar grab deployed from the boat. The boat was not used at HC01 or HC04 because the water was too shallow. Benthic macroinvertebrates were collected using the same procedures used for collecting benthic macroinvertebrates in Webb Creek.

Holland Mill Creek

Benthic macroinvertebrates were collected in Holland Mill Creek using the ponar grab deployed from the boat. The boat was not used at HM01 because the water was too shallow. The same sample collection and sample processing procedures used in Webb Creek were conducted at the Holland Mill Creek stations.

Biological Tissue Sample Results

The analytical parameters included TCL VOCs, TCL SVOCs, TAL metals, and TCL pesticides/PCBs. Background fish fillet tissue were collected from Hadnot Creek and analyzed these results are discussed below.

Hadnot Creek

Several metals were detected in the Hadnot Creek fillet tissue samples. These metals included aluminum, arsenic, calcium, chromium, copper, magnesium, manganese, mercury, nickel, potassium, sodium and zinc in the fillet samples. The range of detected levels for these chemicals in the fish fillet tissue samples from Hadnot Creek are as follows:

	Minimum (mg/kg)	Maximum (mg/kg)
Aluminum	36.5	36.5
Arsenic	0.34	3.9
Calcium	154	1,170
Chromium	0.21	0.68
Copper	0.18	0.46
Magnesium	254	319
Manganese	0.008	0.38
Mercury	0.05	0.24
Nickel	0.45	0.45
Potassium	3,270	4,040
Sodium	505	1,060
Zinc	3.9	6.5

The maximum detect of manganese was in the southern flounder. The maximum detect of sodium was found in the red drum. Aluminum, calcium, chromium, magnesium, mercury, and potssium were detected at their highest concentrations in the largemouth bass. The maximum detects of arsenic, copper, nickel, and zinc were found in the longnose gar.

Two pesticides were detected in the fillet tissue samples, 4-4'-DDE and alpha-chlordane. 4,4'-DDE was detected twice, both in the longnose gar. Alpha-chlordane was detected once in the largemouth bass. The range of detected concentrations for these constituents were as follows:

	Minimum (ug/kg)	Maximum (ug/kg)
4-4'-DDE	9.7	12.0
alpha-Chlordane	0.17	0.17

Two VOCs and three SVOCs were detected in the fillet tissue samples. Common laboratory contaminants were the primary detections, which included methylene chloride, acetone, di-n-octyl phthalate and bis(2-ethylhexyl)phthalate. Phenol was also detected in the fillet tissue samples. The concentration ranges for these chemicals were the following:

	Minimum (ug/kg)	Maximum (ug/kg)
Methylene chloride	3.0	41.0
Acetone	16	130
di-n-octyl phthalate	61	500
bis(2-ethylhexyl) phthalate	820	17,000
Phenol	460	2,100

Field Chemistry Results

Samples from these surface water bodies were collected from the water surface and bottom.

Webb Creek

At Webb Creek, the salinity at station WC02 ranged from 0 to 7 ppt. Conductivity ranged from 850 to 10,500 micromhos/cm. Dissolved oxygen levels ranged from 4.4 to 9 mg/L. The pH at station WC02 in Webb Creek ranged from 6.85 to 7.48 S.U. in the surface water. The temperature of the water at WC02 ranged from 17.5 to 21 °C.

At WC03, the salinity ranged from 10 to 12.8 ppt. The conductivity ranged from 16,500 to 18,000 micromhos/cm. Dissolved oxygen levels ranged from 8.5 to 10 mg/L. The pH at WC03 in Webb Creek ranged from 7.33 to 7.56 S.U. in the surface water. The temperature of the water at WC03 ranged from 19 to 23 °C.

Hadnot Creek

In Hadnot Creek, the salinity at station HC01 was 0 ppt. The conductivity was 13.5 micromhos/cm. The dissolved oxygen level was 7.7 mg/L. The pH at HC01 was 6.89 S.U in the surface water, and the temperature of the Hadnot Creek water was 17 °C.

At station HC02, the salinity ranged from 0 to 16.5 ppt. The conductivity ranged from 720 to 22,800 micromhos/cm. The dissolved oxygen levels ranged from 1 to 7.3 mg/L. The pH at HC02 ranged from 6.7 to 7.2 S.U. in the surface water. The temperature of the water at HC02 ranged from 15.5 to 22 °C.

At station HC03, the salinity ranged from 17 to 17.9 ppt. The conductivity ranged from 25,500 to 26,500 micromhos/cm. The dissolved oxygen level was 12 mg/L. The pH at HC03 ranged from 7.69 to 7.79 S.U. in the surface water. The temperature of the water at HC03 ranged from 17.5 to 17.8 °C.

At station HC04, the salinity was 0 ppt. The conductivity was 65 micromhos/cm, and the dissolved oxygen level was 5.3 mg/L. The pH at HC04 was 6.16 S.U. in the surface water, and the temperature of the water was 17.3 °C.

Holland Mill Creek

In Holland Mill Creek, the salinity was 0 ppt at station HM01. The conductivity was 140 micromhos/cm, and the dissolved oxygen level was 8.0 mg/L. The pH at station HM01 was 6.9 S.U. in the surface water, and the temperature of the water was 17.5 °C.

At station HM02, the salinity ranged from 1 to 25 ppt. The conductivity ranged from 2,490 to 38,000 micromhos/cm. The dissolved oxygen levels ranged from 5.0 to 11.8 mg/L. The pH at station HM02 ranged from 6.72 to 7.9 S.U. in the surface water. The temperature of the water at HM02 ranged from 15.2 to 20 °C.

At station HM03, the salinity ranged from 13.5 to 22 ppt. The conductivity ranged from 19,000 to 32,000 micromhos. The dissolved oxygen levels ranged from 3.4 to 10.8 mg/L. The pH at station HM03 ranged from 6.81 to 7.90 S.U. in the surface water. The temperature of the water at HM03 ranged from 17.5 to 17.8 °C.

Statistical Summary of
Analytical Results
(Surface Water)

KEY TO STATISTICAL AND ANALYTICAL SUMMARY TABLES

U - Indicated analyte was analyzed for but not detected

J - Indicates an estimated value

UJ - Not detected, quantitation limit may be inaccurate or imprecise

R - Result is rejected and unusable

B - Not detected substantially above the level reported in laboratory or field blanks (organics)

P - There is greater than 25% difference for detected pesticide/PCB concentrations between the two GC columns, the lower of the two values is reported

L - Result is biased low

K - Result is biased high

ND - Analyte not detected

NZ - Analyte not analyzed

mg/L - Milligrams per liter

ug/L - Micrograms per liter

mg/kg - Milligrams per kilogram

ug/kg - Micrograms per kilogram

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HADNOT CREEK
SURFACE WATER - METALS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)		SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Aluminum	692.00	692.00	+	HC-SW04	253.10	488.87	1019.72	1	5	20%
Arsenic	20.00	20.00	+	HC-SW03	5.30	13.35	3190.11	1	5	20%
Barium	9.00	26.00	+	HC-SW03	19.60	25.87	35.22	5	5	100%
Calcium	11600.00	107000.00	+	HC-SW03D	53760.00	92784.90	456379.04	5	5	100%
Chromium	125.00	130.00	+	HC-SW03	54.70	118.12	40374.07	2	5	40%
Iron	291.00	746.00	+	HC-SW01	492.00	666.33	793.41	5	5	100%
Magnesium	954.00	633000.00	+	HC-SW03	258640.80	576299.05	1.50E+16	5	5	100%
Potassium	14500.00	203000.00	+	HC-SW03	84234.00	187308.88	5.24E+12	3	5	60%
Selenium	6.00	6.00	+	HC-SW03	2.00	4.29	38.67	1	5	20%
Sodium	6090.00	2560000.00	+	HC-SW03D	1.01E+06	2.17E+06	4.80E+14	5	5	100%

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+ = THE LOG NORMAL 95% UCL IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HADNOT CREEK
SURFACE WATER - PESTICIDES/PCBs

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO PESTICIDES/PCBs WERE DETECTED									

* = THE RME IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HADNOT CREEK
SURFACE WATER - SEMIVOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO SEMIVOLATILE ORGANIC COMPOUNDS WERE DETECTED									

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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HADNOT CREEK
SURFACE WATER - VOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED									

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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HOLLAND MILL CREEK
SURFACE WATER - METALS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Aluminum	535.00	535.00	*+ HM-SW02	269.50	657.32	48037.76	1	3	33%
Barium	20.00	49.00	*+ HM-SW01	35.67	60.35	204.30	3	3	100%
Calcium	14100.00	302000.00	*+ HM-SW03	118766.67	387190.45	4.42E+14	3	3	100%
Chromium	36.00	158.00	*+ HM-SW03	66.33	202.69	3.67E+12	2	3	67%
Iron	320.00	559.00	*+ HM-SW02	434.67	636.62	843.56	3	3	100%
Lead	58.10	58.10	*+ HM-SW03	19.95	75.65	1.70E+27	1	3	33%
Magnesium	2830.00	754000.00	*+ HM-SW03	288610.00	973947.76	1.02E+35	3	3	100%
Potassium	41100.00	288000.00	*+ HM-SW03	109978.33	372096.67	1.33E+36	2	3	67%
Selenium	1.50	41.00	*+ HM-SW03	15.00	52.97	8.42E+13	2	3	67%
Silver	37.00	37.00	*+ HM-SW03	16.83	46.42	284713.62	1	3	33%
Sodium	16500.00	6750000.00	*+ HM-SW03	2501833.33	8733985.25	1.96E+44	3	3	100%

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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HOLLAND MILL CREEK
SURFACE WATER - PESTICIDES/PCBs

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO PESTICIDES/PCBs WERE DETECTED									

* = THE RME IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HOLLAND MILL CREEK
SURFACE WATER - SEMIVOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO SEMIVOLATILE ORGANIC COMPOUNDS WERE DETECTED									

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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HOLLAND MILL CREEK
SURFACE WATER - VOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED									

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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - WEBB CREEK
SURFACE WATER - METALS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Barium	27.00	29.00	*+ WC-SW02	28.00	34.31	32.19	2	2	100%
Calcium	40500.00	46900.00	*+ WC-SW02	43700.00	63904.80	58284.51	2	2	100%
Chromium	97.00	97.00	*+ WC-SW03	52.25	334.80	1.32E+20	1	2	50%
Iron	321.00	660.00	*+ WC-SW02	490.50	1560.72	14358.69	2	2	100%
Magnesium	29000.00	44800.00	*+ WC-SW03	36900.00	86780.60	133710.58	2	2	100%
Potassium	10900.00	136000.00	*+ WC-SW03	73450.00	468390.70	1.01E+23	2	2	100%
Sodium	202000.00	895000.00	*+ WC-SW03	548500.00	2736301.00	6.83E+11	2	2	100%

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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - WEBB CREEK
SURFACE WATER - PESTICIDES/PCBs

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)		SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Aldrin	0.04	0.04	*+	WC-SW02	0.03	0.06	0.07	1	2	50%

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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - WEBB CREEK
SURFACE WATER - SEMIVOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO SEMIVOLATILE ORGANIC COMPOUNDS WERE DETECTED									

* = THE RME IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
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MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - WEBB CREEK
SURFACE WATER - VOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED									

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Statistical Summary of
Analytical Results
(Sediment)

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HADNOT CREEK
SEDIMENT - METALS

PARAMETER	MINIMUM DETECTED VALUE (mg/kg)	MAXIMUM DETECTED VALUE (mg/kg)		SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (mg/kg)	RME (mg/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (mg/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Aluminum	780.00	14000.00	+	HC-SD03-612	5467.78	8305.91	20353.32	9	9	100%
Arsenic	0.26	1.90	*+	HC-SD02-612	1.71	2.67	8.56	6	9	67%
Barium	4.10	17.20	+	HC-SD03-612	9.75	13.11	21.84	8	9	89%
Beryllium	0.14	0.32	+	HC-SD02-612	0.16	0.24	4.60	3	6	50%
Cadmium	0.03	0.66		HC-SD03-06	0.11	0.24	0.42	7	9	78%
Calcium	1030.00	3620.00	+	HC-SD01-06	2645.56	3233.82	3840.09	9	9	100%
Chromium	1.30	41.60	+	HC-SD03-612	10.81	18.97	53.55	9	9	100%
Cobalt	4.50	5.00		HC-SD03-612	1.87	2.91	4.01	2	9	22%
Copper	0.66	1.50	*+	HC-SD02-06	1.35	1.75	2.01	6	9	67%
Iron	382.00	11100.00	+	HC-SD03-06D	3396.56	5709.65	28323.00	9	9	100%
Lead	3.70	5.30	*+	HC-SD03-06	4.50	9.55	305.02	2	2	100%
Magnesium	77.10	6540.00	+	HC-SD03-612	1977.79	3486.31	1292043.17	7	9	78%
Manganese	3.50	64.70		HC-SD03-612	16.54	29.38	62.63	9	9	100%
Mercury	0.25	0.42	*+	HC-SD03-612	0.34	0.48	11.17	3	3	100%
Nickel	1.80	12.10	+	HC-SD03-612	3.77	6.49	17.25	4	9	44%
Potassium	623.00	1840.00	+	HC-SD03-612	671.39	1079.26	2769.97	4	9	44%
Selenium	0.21	0.60		HC-SD02-06	0.30	0.39	0.48	5	9	56%
Sodium	1630.00	2750.00	+	HC-SD02-06	845.25	1750.35	183541390882.91	2	6	33%
Thallium	0.14	0.44	+	HC-SD03-612	0.23	0.31	0.46	6	9	67%
Vanadium	1.50	36.90	+	HC-SD03-612	11.11	18.54	56.26	9	9	100%
Zinc	20.80	40.00	+	HC-SD03-612	12.71	22.07	63.76	3	9	33%

* = THE RME IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
+ = THE LOG NORMAL 95% UCL IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
*+ = BOTH THE RME AND LOG NORMAL 95% UCL ARE GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HADNOT CREEK
SEDIMENT - PESTICIDES/PCBs

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
beta-BHC	1.70	1.70	*+ HC-SD04-612	1.93	2.39	2.58	1	9	11%
delta-BHC	0.64	0.64	*+ HC-SD01-06	1.82	2.35	2.91	1	9	11%
Heptachlor	0.48	2.00	*+ HC-SD04-612	1.89	2.42	3.26	2	9	22%
4,4'-DDD	1.50	4.00	HC-SD03-612	2.16	3.11	3.50	3	9	33%
4,4'-DDT	1.20	1.20	*+ HC-SD03-06D	3.23	4.23	5.08	1	9	11%
Methoxychlor	0.94	0.94	*+ HC-SD04-06	17.66	23.58	92.52	1	9	11%
Endrin aldehyde	0.59	7.10	+ HC-SD02-06	3.56	5.02	10.80	3	9	33%

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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HADNOT CREEK
SEDIMENT - SEMIVOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO SEMIVOLATILE ORGANIC COMPOUNDS WERE DETECTED									

* = THE RME IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HADNOT CREEK
SEDIMENT - VOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)		SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Acetone	70.00	70.00		HC-SD01-06	18.06	30.44	36.73	1	9	11%
Carbon Disulfide	14.00	19.00		HC-SD02-612	12.44	15.67	18.14	2	9	22%
2-Butanone	7.00	7.00	*+	HC-SD01-06	11.06	13.94	15.49	1	9	11%

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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HOLLAND MILL CREEK
SEDIMENT - METALS

PARAMETER	MINIMUM DETECTED VALUE (mg/kg)	MAXIMUM DETECTED VALUE (mg/kg)		SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (mg/kg)	RME (mg/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (mg/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Aluminum	337.00	13600.00	+	HM-SD02-06	6181.29	10282.21	655067.62	7	7	100%
Barium	11.00	18.70	+	HM-SD02-06	8.71	13.92	68.49	4	7	57%
Cadmium	0.03	0.11		HM-SD01-06D	0.06	0.08	0.10	7	7	100%
Calcium	282.00	7860.00	+	HM-SD02-612	2952.86	4844.12	22431.34	7	7	100%
Chromium	1.10	38.40	+	HM-SD02-06	19.63	32.39	2021.73	7	7	100%
Cobalt	4.00	4.40	+	HM-SD02-06	2.02	3.18	6.18	2	7	29%
Iron	225.00	32400.00	+	HM-SD02-612	12262.43	21399.01	27918943.98	7	7	100%
Lead	0.62	9.20	+	HM-SD03-06	4.35	6.94	32.96	7	7	100%
Magnesium	26.70	5700.00	+	HM-SD03-06	2576.66	4422.69	136198282.35	7	7	100%
Manganese	1.30	67.20	+	HM-SD02-06	34.14	56.82	8851.72	7	7	100%
Mercury	0.09	0.35	+	HM-SD03-06	0.23	0.30	0.38	7	7	100%
Nickel	9.60	14.20	+	HM-SD03-06	6.76	11.07	359.48	4	7	57%
Potassium	1510.00	1760.00	+	HM-SD03-612	1007.00	1596.65	13233.89	4	7	57%
Selenium	0.25	0.40		HM-SD02-06	0.21	0.29	0.39	2	7	29%
Silver	0.49	0.49	*+	HM-SD01-06	0.39	0.49	0.60	1	7	14%
Thallium	0.13	0.37	+	HM-SD02-06	0.20	0.29	0.52	4	7	57%
Vanadium	0.66	30.00	+	HM-SD02-612	16.69	27.76	18094.26	6	7	86%
Zinc	6.70	43.10	+	HM-SD02-06	23.57	34.53	65.13	7	7	100%

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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HOLLAND MILL CREEK
SEDIMENT - PESTICIDES/PCBs

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)		SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
beta-BHC	3.80	7.30		HM-SD01-06D	3.24	4.69	5.98	2	7	29%
Aldrin	0.56	0.72	*+	HM-SD01-612	1.84	2.60	4.20	2	7	29%
Dieldrin	0.58	1.50	*+	HM-SD01-612	3.55	5.13	12.37	2	7	29%
4,4'-DDE	1.00	4.30	*+	HM-SD01-612	4.01	5.37	8.82	2	7	29%
4,4'-DDD	0.87	3.10	*+	HM-SD01-612	2.85	4.16	6.44	4	7	57%
4,4'-DDT	1.70	1.70	*+	HM-SD01-612	3.79	5.13	6.75	1	7	14%
alpha-Chlordane	1.30	1.30	*+	HM-SD01-612	1.99	2.61	3.14	1	7	14%
gamma-Chlordane	3.00	3.00	+	HM-SD01-612	2.24	2.86	3.56	1	7	14%

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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HOLLAND MILL CREEK
SEDIMENT - SEMIVOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)		SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Di-n-butylphthalate	534.00	619.00	+	HM-SD02-612	423.29	573.31	766.73	3	7	43%
bis(2-Ethylhexyl)phthalate	454.00	454.00	*+	HM-SD03-612	378.64	500.04	607.73	1	7	14%

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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HOLLAND MILL CREEK
SEDIMENT - VOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED									

* = THE RME IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - WEBB CREEK
SEDIMENT - METALS

PARAMETER	MINIMUM DETECTED VALUE (mg/kg)	MAXIMUM DETECTED VALUE (mg/kg)		SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (mg/kg)	RME (mg/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (mg/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Aluminum	8200.00	14800.00	*+	WC-SD02-06	12275.00	15932.10	19239.95	4	4	100%
Barium	13.30	28.20	+	WC-SD02-06	18.83	26.76	35.92	4	4	100%
Cadmium	0.06	0.26	+	WC-SD02-06	0.13	0.24	1.11	4	4	100%
Calcium	2190.00	4060.00	*+	WC-SD02-06	3222.50	4132.21	4914.08	4	4	100%
Chromium	8.70	42.60	+	WC-SD03-612	24.93	42.26	246.57	4	4	100%
Cobalt	3.50	3.90	*+	WC-SD03-612	2.44	4.16	21.71	2	4	50%
Iron	8120.00	20700.00	+	WC-SD03-612	13980.00	20133.62	29586.84	4	4	100%
Lead	5.10	16.90	+	WC-SD02-06	9.85	16.48	51.03	4	4	100%
Magnesium	618.00	6060.00	*+	WC-SD03-612	3197.00	6127.63	817766.37	4	4	100%
Manganese	26.00	47.80	*+	WC-SD03-612	39.35	50.44	60.95	4	4	100%
Mercury	0.23	0.40	*+	WC-SD02-06	0.31	0.41	0.48	4	4	100%
Nickel	3.80	11.40	+	WC-SD03-612	7.25	11.11	21.80	4	4	100%
Potassium	1410.00	1590.00	*+	WC-SD03-612	905.88	1719.51	81148.45	2	4	50%
Thallium	0.24	0.24	+	WC-SD03-06	0.16	0.23	0.31	1	4	25%
Vanadium	11.90	31.00	+	WC-SD03-612	21.33	30.50	45.84	4	4	100%
Zinc	27.20	52.00	+	WC-SD02-06	33.83	48.09	61.59	4	4	100%

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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - WEBB CREEK
SEDIMENT - PESTICIDES/PCBs

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
delta-BHC	0.79	0.79	*+ WC-SD02-612	1.99	3.02	9.99	1	4	25%
Aldrin	1.20	1.20	*+ WC-SD02-06	1.93	2.65	3.66	1	4	25%
Dieldrin	3.70	3.70	*+ WC-SD02-06	4.00	4.79	4.98	1	4	25%
4,4'-DDE	16.00	16.00	+ WC-SD02-06	7.08	14.12	97.81	1	4	25%
4,4'-DDD	12.00	12.00	+ WC-SD02-06	6.08	10.78	28.91	1	4	25%
4,4'-DDT	0.76	2.60	*+ WC-SD02-06	2.37	4.64	91.00	3	4	75%

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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - WEBB CREEK
SEDIMENT - SEMIVOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Benzo(a)pyrene	544.00	544.00	*+ WC-SD03-612	436.25	554.81	635.17	1	4	25%

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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - WEBB CREEK
SEDIMENT - VOLATILE ORGANIC COMPOUNDS

PARAMETER	MINIMUM DETECTED VALUE (ug/kg)	MAXIMUM DETECTED VALUE (ug/kg)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/kg)	RME (ug/kg)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED									

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RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

Analytical Summary of Results
(Surface Water)

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HADNOT CREEK
SURFACE WATER - METALS

BAKER I.D.	HC-SW01		HC-SW02		HC-SW03		HC-SW03D		HC-SW04	
LABORATORY I.D.	5167-16		5162		5166		5163		5152	
DATE COLLECTED	08-MAY-1994		06-MAY-1994		06-MAY-1994		06-MAY-1994		08-MAY-1994	
UNITS	UG/L		UG/L		UG/L		UG/L		UG/L	
Aluminum	356	U	303	U	301	U	187	U	692	
Arsenic	1	U	1	UJ	20		10	UJ	1	U
Barium	19	J	20	J	26	J	24	J	9	J
Calcium	27000		36600		86600		107000		11600	
Chromium	9	U	19	U	130	J	125	J	9	U
Iron	746		528		339		291		556	
Magnesium	1450		44800		633000		613000		954	
Potassium	1670	U	14500		203000		202000		1670	U
Selenium	1	U	5	U	6	J	1	UJ	1	UJ
Sodium	6900		383000		2090000		2560000		6090	

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HADNOT CREEK
SURFACE WATER PESTICIDES AND PCBs

BAKER I.D.	HC-SW01	HC-SW02	HC-SW03	HC-SW03D	HC-SW04
LABORATORY I.D.	5167-16	5162	5166	5163	5152
DATE COLLECTED	08-MAY-1994	06-MAY-1994	06-MAY-1994	06-MAY-1994	08-MAY-1994
UNITS	ug/l	ug/l	ug/l	ug/l	ug/l

NO PESTICIDES OR PCBs WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HADNOT CREEK
SURFACE WATER - SEMIVOLATILE ORGANIC COMPOUNDS

BAKER I.D.	HC-SW01	HC-SW02	HC-SW03	HC-SW03D	HC-SW04
LABORATORY I.D.	5167-16	5162	5166	5163	5152
DATE COLLECTED	08-MAY-1994	06-MAY-1994	06-MAY-1994	06-MAY-1994	08-MAY-1994
UNITS	ug/l	ug/l	ug/l	ug/l	ug/l

NO SEMIVOLATILE ORGANIC COMPOUNDS WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HADNOT CREEK
SURFACE WATER - VOLATILE ORGANIC COMPOUNDS

BAKER I.D.	HC-SW01	HC-SW02	HC-SW03	HC-SW03D	HC-SW04
LABORATORY I.D.	5167-16	5162	5166	5163	5152
DATE COLLECTED	08-MAY-1994	06-MAY-1994	06-MAY-1994	06-MAY-1994	08-MAY-1994
UNITS	ug/l	ug/l	ug/l	ug/l	ug/l

NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HOLLAND MILL CREEK
SURFACE WATER - METALS

BAKER I.D.	HM-SW01		HM-SW02		HM-SW03	
LABORATORY I.D.	5167-18		5161		5160	
DATE COLLECTED	08-MAY-1994		06-MAY-1994		06-MAY-1994	
UNITS	UG/L		UG/L		UG/L	
Aluminum	259	U	535	J	288	U
Barium	49	J	38	J	20	J
Calcium	14100		40200		302000	
Chromium	10	U	36	J	158	J
Iron	425		559		320	
Lead	1	U	2.5	U	58.1	
Magnesium	2830		109000		754000	
Potassium	1670	U	41100		288000	
Selenium	1.5	J	5	U	41	J
Silver	10	U	17	U	37	J
Sodium	16500		739000		6750000	

MARINE CORPS BASE CAMP LEJEUNE
ANLAYTICAL SUMMARY OF RESULTS
BACKGROUND - HOLLAND MILL CREEK
SURFACE WATER - PESTICIDES AND PCBs

BAKER I.D.	HM-SW01	HM-SW02	HM-SW03
LABORATORY I.D.	5167-18	5161	5160
DATE COLLECTED	08-MAY-1994	06-MAY-1994	06-MAY-1994
UNITS	ug/l	ug/l	ug/l

NO PESTICIDES OR PCBs WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HOLLAND MILL CREEK
SURFACE WATER - SEMIVOLATILE ORGANIC COMPOUNDS

BAKER I.D.	HM-SW01	HM-SW02	HM-SW03
LABORATORY I.D.	5167-18	5161	5160
DATE COLLECTED	08-MAY-1994	06-MAY-1994	06-MAY-1994
UNITS	ug/l	ug/l	ug/l

NO SEMIVOLATILE ORGANIC COMPOUNDS WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HOLLAND MILL CREEK
SURFACE WATER - VOLATILE ORGANIC COMPOUNDS

BAKER I.D.	HM-SW01	HM-SW02	HM-SW03
LABORATORY I.D.	5167-18	5161	5160
DATE COLLECTED	08-MAY-1994	06-MAY-1994	06-MAY-1994
UNITS	ug/l	ug/l	ug/l

NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - WEBB CREEK
SURFACE WATER - METALS

BAKER I.D.	WC-SW02		WC-SW03	
LABORATORY I.D.	5167-8		5158	
DATE COLLECTED	06-MAY-1994		06-MAY-1994	
UNITS	UG/L		UG/L	
Barium	29	J	27	J
Calcium	46900		40500	
Chromium	15	U	97	J
Iron	660		321	
Magnesium	29000		44800	
Potassium	10900		136000	
Sodium	202000		895000	

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - WEBB CREEK
SURFACE WATER - PESTICIDES AND PCBs

BAKER I.D.	WC-SW02	WC-SW03
LABORATORY I.D.	5167-8	5158
DATE COLLECTED	06-MAY-1994	06-MAY-1994
UNITS	ug/l	ug/l
Aldrin	0.035 J	0.05 U

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - WEBB CREEK
SURFACE WATER - SEMIVOLATILE ORGANIC COMPOUNDS

BAKER I.D.	WC-SW02	WC-SW03
LABORATORY I.D.	5167-8	5158
DATE COLLECTED	06-MAY-1994	06-MAY-1994
UNITS	ug/l	ug/l

NO SEMIVOLATILE ORGANIC COMPOUNDS WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - WEBB CREEK
SURFACE WATER - VOLATILE ORGANIC COMPOUNDS

BAKER I.D.	WC-SW02	WC-SW03
LABORATORY I.D.	5167-8	5158
DATE COLLECTED	06-MAY-1994	06-MAY-1994
UNITS	ug/l	ug/l

NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED

Analytical Summary of Results
(Sediment)

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HADNOT CREEK
SEDIMENT - METALS

BAKER I.D.	HC-SD01-06	HC-SD01-612	HC-SD02-06	HC-SD02-612	HC-SD03-06	HC-SD03-06D	HC-SD03-612	HC-SD04-06	HC-SD04-612
LABORATORY I.D	5050	5044	5057-2	5054	5238	5237	5236	5052	5051
DATE COLLECTED	8-MAY-1994	8-MAY-1994	6-MAY-1994	6-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994	8-MAY-1994	8-MAY-1994
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	2940 J	1880 J	7820 J	10100 J	3120 J	7310 J	14000 J	780 J	1260 J
Arsenic	0.46 J	0.28 J	1.1 J	1.9 J	7.5 U	6.5 U	7.9 U	0.45 J	0.26 J
Barium	16.3 J	14.6 J	9.2 J	8.7 J	3.9 U	10.2	17.2	4.1 J	5.5 J
Beryllium	0.14 J	0.16 U	0.25 J	0.32 J	0.95 R	0.92 R	1.3 R	0.13 U	0.15 U
Cadmium	0.03 J	0.03 J	0.1 J	0.04 J	0.66	0.08	0.04 U	0.03 J	0.03 UJ
Calcium	3620 J	3330 J	2030 J	1610 J	3380 J	3350 J	3310 J	1030 J	2150 J
Chromium	2.3	3.2	6	6	16.1	18.8	41.6	2	1.3
Cobalt	1.6 U	1.8 U	2.7 U	1.8 U	3.7 U	4.5	5	1.5 U	1.6 U
Copper	1	1.1	1.5	0.81	4.9 U	4.3 U	3.5 U	0.66	0.73
Iron	648	586	3660	4630	7280 J	11100 J	1700 J	382	583
Lead	0.77 R	0.88 R	1.1 R	7.1 R	5.3	3.7	8.6 R	1 R	1.1 R
Magnesium	87.7	77.1	1450	1040	4420	4130	6540	48.2 U	62.5 U
Manganese	6.9	6.5	6.5	4.9	17.1	35.1	64.7	3.7	3.5
Mercury	0.19 R	0.13 R	0.42 R	0.24 R	0.34	0.25	0.42	0.11 R	0.08 R
Nickel	1.6 U	1.8 U	2.7 U	1.8	9.9	5.5	12.1	1.5 U	1.6 U
Potassium	349 U	396 U	623	395 U	1420	1250	1840	324 U	355 U
Selenium	0.27 J	0.34 J	0.6 J	0.47 J	0.48 UJ	0.41 UJ	0.51 UJ	0.21 J	0.2 UJ
Sodium	339 U	385 U	2750	1630	14100 R	9860 R	6620 R	315 U	344 U
Thallium	0.14	0.16	0.42	0.28	0.34 U	0.29	0.44	0.13 U	0.15 U
Vanadium	2.6	2.8	8.4	7	20.5	18.4	36.9	1.5	1.9
Zinc	4.9 U	4.5 U	9.7 U	6.6 U	20.8	34.3	40	4.5 U	8.3 U

MARINE COPRS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HADNOT CREEK
SEDIMENT - PESTICIDES AND PCBs

BAKER I.D.	HC-SD01-06	HC-SD01-612	HC-SD02-06	HC-SD02-612	HC-SD03-06	HC-SD03-06D	HC-SD03-612	HC-SD04-06	HC-SD04-612
LABORATORY I.D.	5057-7	5044	5055	5054	5238	5237	5236	5052	5051
DATE COLLECTED	8-MAY-1994	8-MAY-1994	6-MAY-1994	6-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994	8-MAY-1994	8-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
beta-BHC	2.4 U	2.8 U	4.2 U	2.8 U	5.8 U	4.9 U	6.2 U	2.3 U	1.7 J
delta-BHC	0.64 J	2.8 U	4.2 U	2.8 U	5.8 U	4.9 U	6.2 U	2.3 U	2.5 U
Heptachlor	0.48 J	2.8 U	4.2 U	2.8 U	5.8 U	4.9 U	6.2 U	2.3 U	2 J
4,4'-DDD	2.4 U	2.8 U	1.5 J	2.8 U	11 U	2 J	4 J	2.3 U	2.5 U
4,4'-DDT	4.7 U	5.4 U	8.2 U	5.3 U	11 U	1.2 J	12 U	4.4 U	4.8 U
Methoxychlor	24 U	28 U	42 U	28 U	58 U	49 U	62 U	0.94 J	25 U
Endrin aldehyde	0.59 J	5.4 U	7.1 J	0.77 J	11 U	9.6 U	12 U	4.4 U	4.8 U

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HADNOT CREEK
SEDIMENT - SEMIVOLATILE ORGANIC COMPOUNDS

BAKER I.D.	HC-SD01-06	HC-SD01-612	HC-SD02-06	HC-SD02-612	HC-SD03-06	HC-SD03-06D	HC-SD03-612	HC-SD04-06	HC-SD04-612
LABORATORY I.D.	5057-7	5044	5055	5054	5238	5237	5236	5052	5051
DATE COLLECTED	8-MAY-1994	8-MAY-1994	6-MAY-1994	6-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994	8-MAY-1994	8-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

NO SEMIVOLATILE ORGANIC COMPOUNDS WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HADNOT CREEK
SEDIMENT - VOLATILE ORGANIC COMPOUNDS

BAKER I.D.	HC-SD01-06	HC-SD01-612	HC-SD02-06	HC-SD02-612	HC-SD03-06	HC-SD03-06D	HC-SD03-612	HC-SD04-06	HC-SD04-612
LABORATORY I.D.	5057-7	5044	5055	5054	5238	5237	5236	5052	5051
DATE COLLECTED	8-MAY-1994	8-MAY-1994	6-MAY-1994	6-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994	8-MAY-1994	8-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Acetone	70 J	16 UJ	25 UJ	16 UJ	34 UJ	29 UJ	37 UJ	13 UJ	15 UJ
Carbon Disulfide	14 U	16 U	14	19 J	34 U	29 U	37 U	13 U	15 U
2-Butanone	7 J	16 UJ	25 UJ	16 UJ	34 UJ	29 UJ	37 UJ	13 UJ	15 UJ

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HOLLAND MILL CREEK
SEDIMENT - METALS

BAKER I.D.	HM-SD01-06	HM-SD01-06D	HM-SD01-612	HM-SD02-06	HM-SD02-612	HM-SD03-06	HM-SD03-612
LABORATORY I.D.	5243-18	5220	5219	5242	5241	5240	5239
DATE COLLECTED	08-MAY-1994	08-MAY-1994	08-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	457 J	337 J	505 J	13600 J	9850 J	8760 J	9760 J
Barium	3.4 U	2.1 U	3.9 U	18.7	13.7	11	12.9
Cadmium	0.03	0.11	0.03	0.08	0.06	0.05	0.03
Calcium	282 J	508 J	2850 J	4250 J	7860 J	2920 J	2000 J
Chromium	1.6	1.1	1.5	38.4	28.1	30.7	36
Cobalt	1.3 U	1.4 U	1.4 U	4.4	3.5 U	3.9 U	4
Iron	262 J	225 J	350 J	15800 J	32400 J	16900 J	19900 J
Lead	0.62 J	0.74 J	1	6	7.2	9.2	5.7
Magnesium	35.5	26.7	34.4	4940	3000	5700	4300
Manganese	1.9	1.3	1.6	67.2	55.5	50.2	61.3
Mercury	0.09	0.16	0.18	0.27	0.32	0.35	0.27
Nickel	1.3 U	1.4 U	1.4 U	11.2	9.6	14.2	10.3
Potassium	297 U	304 U	317 U	1510	1600	1720	1760
Selenium	0.17 U	0.17 U	0.25 J	0.4 J	0.45 UJ	0.5 UJ	0.37 UJ
Silver	0.49	0.37 U	0.39 U	0.85 U	0.95 U	1.1 U	0.79 U
Thallium	0.12 U	0.12 U	0.13	0.37	0.32	0.35 U	0.27
Vanadium	0.84	0.62 U	0.66	27.1	30	28.4	29.5
Zinc	9.7	6.7	8.3	43.1	33.2	34.1	29.9

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HOLLAND MILL CREEK
SEDIMENT - PESTICIDES AND PCBs

BAKER I.D.	HM-SD01-06	HM-SD01-06D	HM-SD01-612	HM-SD02-06	HM-SD02-612	HM-SD03-06	HM-SD03-612
LABORATORY I.D.	5243-18	5220	5219	5242	5241	5240	5239
DATE COLLECTED	08-MAY-1994	08-MAY-1994	08-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
beta-BHC	2.1 UJ	7.3 J	3.8	5.1 U	5.5 U	6 U	4.5 U
Aldrin	2.1 U	0.56 J	0.72 J	5.1 U	5.5 U	6 U	4.5 U
Dieldrin	4 U	0.58 J	1.5 J	9.8 U	11 U	12 U	8.8 U
4,4'-DDE	4 U	1 J	4.3	9.8 U	11 U	12 U	8.8 U
4,4'-DDD	4 U	0.87 J	3.1	9.8 U	11 U	2.5 J	1.1 J
4,4'-DDT	4 U	4.1 U	1.7 J	9.8 U	11 U	12 U	8.8 U
alpha-Chlordane	2.1 U	2.1 U	1.3 J	5.1 U	5.5 U	6 U	4.5 U
gamma-Chlordane	2.1 U	2.1 U	3	5.1 U	5.5 U	6 U	4.5 U

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HOLLAND MILL CREEK
SEDIMENT - SEMIVOLATILE ORGANIC COMPOUNDS

BAKER I.D.	HM-SD01-06	HM-SD01-06D	HM-SD01-612	HM-SD02-06	HM-SD02-612	HM-SD03-06	HM-SD03-612
LABORATORY I.D.	5243-18	5220	5219	5242	5241	5240	5239
DATE COLLECTED	08-MAY-1994	08-MAY-1994	08-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Di-n-butylphthalate	401 U	412 U	429 U	614 J	619 J	1150 U	534 J
bis(2-Ethylhexyl)phthalate	401 UJ	412 UJ	429 UJ	943 U	1058 U	1150 U	454 J

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - HOLLAND MILL CREEK
SEDIMENT - VOLATILE ORGANIC COMPOUNDS

BAKER I.D.	HM-SD01-06	HM-SD01-06D	HM-SD01-612	HM-SD02-06	HM-SD02-612	HM-SD03-06	HM-SD03-612
LABORATORY I.D.	5243-18	5220	5219	5242	5241	5240	5239
DATE COLLECTED	08-MAY-1994	08-MAY-1994	08-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994	07-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - WEBB CREEK
SEDIMENT - METALS

BAKER I.D.	WC-SD02-06	WC-SD02-612	WC-SD03-06	WC-SD03-612
LABORATORY I.D.	5243-10	5232	5235	5234
DATE COLLECTED	06-MAY-1994	06-MAY-1994	07-MAY-1994	07-MAY-1994
UNITS	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	14800 J	8200	11500 J	14600 J
Barium	28.2	13.3	14.6	19.2
Cadmium	0.26	0.12	0.06	0.07
Calcium	4060 J	3260 J	2190 J	3380 J
Chromium	18.1	8.7	30.3	42.6
Cobalt	3.5	2.3 U	2.4 U	3.9
Iron	14600 J	8120	12500 J	20700 J
Lead	16.9	11.9	5.1	5.5
Magnesium	1690	618	4420	6060
Manganese	40.2	26	43.4	47.8
Mercury	0.4	0.36	0.23	0.26
Nickel	5.7	3.8	8.1	11.4
Potassium	739 U	508 U	1410	1590
Thallium	0.3 U	0.21 U	0.24	0.32 U
Vanadium	21	11.9	21.4	31
Zinc	52	27.8	28.3	27.2

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - WEBB CREEK
SEDIMENT - PESTICIDES AND PCBs

BAKER I.D.	WC-SD02-06	WC-SD02-612	WC-SD03-06	WC-SD03-612
LABORATORY I.D.	5243-10	5232	5235	5234
DATE COLLECTED	06-MAY-1994	06-MAY-1994	07-MAY-1994	07-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg
delta-BHC	5.2 U	0.79 J	3.7 U	5.4 U
Aldrin	1.2 J	3.9 U	3.7 U	5.4 U
Dieldrin	3.7 J	7.5 U	7.1 U	10 U
4,4'-DDE	16	7.5 U	7.1 U	10 U
4,4'-DDD	12	7.5 U	7.1 U	10 U
4,4'-DDT	2.6 J	1.1 J	0.76 J	10 U

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - WEBB CREEK
SEDIMENT - SEMIVOLATILE ORGANIC COMPOUNDS

BAKER I.D.	WC-SD02-06	WC-SD02-612	WC-SD03-06	WC-SD03-612
LABORATORY I.D.	5243-10	5232	5235	5234
DATE COLLECTED	06-MAY-1994	06-MAY-1994	07-MAY-1994	07-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg
Benzo(a)pyrene	1000 U	688 U	714 U	544 J

MARINE CORPS BASE CAMP LEJEUNE
ANALYTICAL SUMMARY OF RESULTS
BACKGROUND - WEBB CREEK
SEDIMENT - VOLATILE ORGANIC COMPOUNDS

BAKER I.D.	WC-SD02-06	WC-SD02-612	WC-SD03-06	WC-SD03-612
LABORATORY I.D.	5243-10	5232	5235	5234
DATE COLLECTED	06-MAY-1994	06-MAY-1994	07-MAY-1994	07-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg

NO VOLATILE ORGANIC COMPOUNDS WERE DETECTED

Field Chemistry Results

FIELD CHEMISTRY FROM BIOLOGICAL SAMPLES
HADNOT CREEK, HOLLAND MILL CREEK, AND WEBB CREEK
MCB CAMP LEJEUNE, NORTH CAROLINA

Sample Identification	Sample Location	Salinity (ppt)	Conductivity (micromhos/cm)	DO (mg/L)	pH (S.U.)	Temperature (deg. C)
HC01-SW/SD-FS/BN	surface	0	13.5	7.7	6.89	17
	bottom	NA	NA	NA	NA	NA
HC02-SW/SD	surface	0.8	1,810	5.9	6.71	16.1
	bottom	15.5	21,900	1.0	6.73	18.2
HC02-FS/BN	surface	0.3	1,200	NA	NA	20.5
	bottom	13.1	20,900	NA	NA	22
	surface	0	720	7.3	7.2	15.5
	bottom	10.5	17,200	1	6.7	20
	surface	0	1,050	NA	NA	20.5
	bottom	16.5	22,800	NA	NA	21
HC03-SW/SD	surface	17	25,500	12	7.79	17.5
	bottom	NA	NA	NA	NA	NA
HC03-FS/BN	surface	17.9	26,500	NA	7.69	17.8
	bottom	NA	NA	NA	NA	NA
HC04-SW/SD-FS/BN	surface	0	65	5.3	6.16	17.3
	bottom	NA	NA	NA	NA	NA
HM01-SW/SD-FS/BN	surface	0	140	8.0	6.9	17.5
	bottom	NA	NA	NA	NA	NA
HM02-SW/SD	surface	24	36,000	11.8	7.9	17.2
	bottom	25	38,000	11.6	7.6	17.6
HM02-FS/BN	surface	21	29,000	7.75	NA	21
	bottom	19	27,000	7.75	NA	20
	surface	2	3,810	NA	NA	19
	bottom	3.75	6,000	NA	NA	19.5
	surface	1	2,490	5.8	6.85	15.5
	bottom	1.1	2,700	5.0	6.72	15.2
HM03-SW/SD	surface	13.5	19,000	3.4	6.81	17.8
	bottom	NA	NA	NA	NA	NA
HM03-FS/BN	surface	22	32,000	10.8	7.90	17.5
	bottom	NA	NA	NA	NA	NA

Sample Identification	Sample Location	Salinity (ppt)	Conductivity (micromhos/cm)	DO (mg/L)	pH (S.U.)	Temperature (deg. C)
WC02-SW/SD	surface	4.5	9,000	9.0	7.48	21
	bottom	5.5	9,000	7.0	7.48	20.5
	surface	0	975	5.1	7.08	17.5
	bottom	0	1,250	4.4	7.15	17.5
WC02-FS/BN	surface	0	850	5.5	6.98	20.5
	bottom	7	10,500	6.1	6.85	21
WC03-SW/SD	surface	10	16,500	10	7.33	23
	bottom	10	16,500	8.5	7.36	22.4
WC03-FS/BN	surface	12	17,200	9.1	7.43	20
	bottom	12.8	18,000	9.6	7.56	19

ppt = parts per thousand
S.U. = Standard Units
NA = Not Analyzed
Sample Location = Water surface or water bottom
DO = Dissolved Oxygen level

FS = Fish sample
BN = Benthic Macroinvertebrate sample
SW/SD = Surface water/sediment sample

Positive Detection Summary
Fish Fillet Tissue Analysis

MARINE CORPS BASE CAMP LEJEUNE
BACKGROUND - HADNOT CREEK
POSITIVE DETECTIONS SUMMARY
FISH FILLET TISSUE SAMPLES

Parameter	HC1A-RD (Red Drum) (mg/kg)	HC1A-SF (Southern Flounder) (mg/kg)	HC1A-LBA (Largemouth Bass) (mg/kg)	HC1A-LBB (Largemouth Bass) (mg/kg)	HC1A-LBC (Largemouth Bass) (mg/kg)	HC1A-BCA (Blue Crab) (mg/kg)	HC1A-BCA (Blue Crab) (mg/kg)	HC1A-GA (Longnose Gar) (mg/kg)	HC1A-GB (Longnose Gar) (mg/kg)
Volatiles									
Acetone	0.13 J	0.056 J	0.077 J	0.07 J	0.037 J	0.11 J	0.099 J	0.028 J	0.016 J
Methylene Chloride	0.041	0.013 B	0.017 B	0.016 B	0.003 B	0.011 B	0.022 B	0.004 B	0.015 B
Semivolatiles									
Phenol	ND	0.46	ND	2.1	1.6	ND	ND	ND	ND
Di-n-octyl phthalate	ND	ND	0.061 J	ND	0.085	ND	ND	0.29 J	0.5 J
Bis(2-ethylhexyl)phthalate	1.1 B	0.82 B	3.6 B	3.2 B	4.8 B	ND	ND	11 J	17 J
Pesticides/PCBs									
4,4'-DDD	ND	ND	ND	ND	ND	0.0066	0.0056	ND	ND
4,4'-DDE	ND	ND	ND	ND	ND	0.0087	0.0046	0.012	0.0097
alpha-Chlordane	ND	ND	ND	ND	0.00017 P	0.0018	0.0012	ND	ND
Aroclor-1260	ND	ND	ND	ND	ND	ND	ND	ND	ND
Inorganics									
Aluminum	ND	ND	ND	36.5	ND	ND	ND	ND	ND
Arsenic	0.7 L	0.82	0.34 L	0.37 L	0.36 K	0.68	0.39	2.5	3.9 L
Barium	ND	ND	ND	ND	ND	ND	10.1	ND	ND
Cadmium	ND	ND	ND	ND	ND	0.14	0.11 J	ND	ND
Calcium	154	271	528	684	1170	4480	32200	493	520
Chromium	0.38 L	ND	0.23 L	0.68 L	0.63 L	ND	0.52 L	0.32 L	0.21 L
Copper	0.3 J	0.18 J	0.2 J	0.24 J	0.28 J	7.9	5.8	0.46 J	0.18 J
Iron	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium	285	254	298	292	319	591	1800	286	300
Manganese	0.13	0.38	0.09 J	0.09 J	0.08 J	1.8	13.6	0.24 J	0.21 J
Mercury	0.07	0.05	0.22	0.24	0.17 K	0.08	0.02 J	0.22	0.14
Nickel	ND	ND	ND	ND	ND	ND	ND	0.45 L	ND
Potassium	3930	3700	3740	3610	4040	2170	1860	3410	3270
Sodium	1060	607	505	580	529	4060	4270	623	523
Zinc	5	5	3.9	4.4	4.6 L	25	17.9	6.5	4.6

Fish Distribution and Characterization

FISH DISTRIBUTION AND CHARACTERIZATION
BACKGROUND STATIONS - WEBB, HADNOT, AND HOLLAND MILL CREEKS

MCB CAMP LEJEUNE, NORTH CAROLINA

Common Name	Scientific Name	Length N.C. (cm)	Length Atlas (cm)	Water Type	Habitat	Spawning	Tolerance	Family	Sources
Atlantic Menhaden	Brevoortia tyrannus	20	46	Brackish or marine, enters freshwater	Rivers, streams	NA	Intermediate	Clupeidae	1,2,3,4
Spot	Leiostomas xanthurus	NA	NA	Brackish or marine, enters freshwater	NA	NA	NA	Sciaenidae	1
Stripped Mullet	Mugil cephalus	NA	23-35	Brackish or marine, enters freshwater	Rivers	NA	NA	Mugilidae	1,2
Pinfish	Lagodon rhomboides	NA	38	Marine, seldom enters freshwater	Shallow waters	NA	NA	Sparidae	1,2
Mud Catfish (Yellow Bullhead)	Ictalupus natalis	24	-38	Freshwater	Rivers Streams	April through May	Tolerant	Ictaluridae	1,2,3
Redbreast Sunfish	Lepomis auritus	18	6-15	Freshwater	Streams	April through June	NA	Centrarchidae	1,2,3
Atlantic Croaker	Micropogonias undulatus	NA	61	Estuaries, brackish-water or marine	NA	NA	NA	Sciaenidae	1,2
Pumpkinseed	Lepomis gibbosus	20	8-20	Freshwater	Streams Creeks	April through October	Moderately Tolerant	Centrarchidae	1,2,3,4
Longnose Gar	Lepisosteus osseus	80	-150	Freshwater; May enter brackish water	Rivers	April through May	Intermediate	Lepisosteidae	1,2,3
Summer Flounder	Paralichthys dentatus	NA	37	Brackish or marine, enters freshwater	Rivers	NA	NA	Bothidae	1
Flier	Centrarchus macropterus	12	7-19	Freshwater	Streams	April through May	NA	Centrarchidae	1,2,3
Chain Pickerel	Esox niger	44	38-45	Freshwater	Streams Creeks	February through March	Intermediate	Esocidae	1,2,3

FISH DISTRIBUTION AND CHARACTERIZATION
BACKGROUND STATIONS - WEBB, HADNOT, AND HOLLAND MILL CREEKS
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

Common Name	Scientific Name	Length N.C. (cm)	Length Atlas (cm)	Water Type	Habitat	Spawning	Tolerance	Family	Sources
Redear Fish	Lepomis microlophus	18	14-25	Freshwater	Streams	May through August	Intermediate	Centrarchidae	1,2,3
Warmouth	Lepomis gulosus	16	8-26	Freshwater	Rivers Streams	May through August	Intermediate	Centrarchidae	1,2,3
White Perch	Morone americana	NA	to 48	Brackish water; Freshwater	Bays and estuaries; Rivers and lakes	NA	Intermediate	Percichthyidae	3,5
Bluefish	Pomatomus saltatrix	NA	NA	Coastal waters	Surface waters; Near shore and off shore	NA	NA	Pomatomidae	2
Bluegill	Lepomis macrochirus	25	18-20	Freshwater	Rivers Streams Creeks	May through October	Intermediate	Centrarchidae	1,2,3
White Catfish	Ictalurus catus	31	-46	Freshwater	Rivers	May through June	Intermediate	Ictaluridae	1,2,3
Largemouth Bass	Micropterus salmoides	48	12-70	Freshwater	Rivers Streams Creeks	May through June	Intermediate	Centrarchidae	1,2,3
Mummichog	Fundulus heteroclitus	7	8-10	Shallow coastal waters	Rivers Streams	April through August	NA	Cyprinodontidae	1,2,3
Redfin Pickerel	Esox americanus	23	25-30	Freshwater	Streams Creeks	February through March	NA	Esocidae	1,2,3
Hog Choker	Trinectes maculatus	5	7-12	Shallow coastal waters; Occasionally enters freshwater	Rivers Streams	March through April	NA	Soleidae	1,2,3

FISH DISTRIBUTION AND CHARACTERIZATION
BACKGROUND STATIONS - WEBB, HADNOT, AND HOLLAND MILL CREEKS
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

Common Name	Scientific Name	Length N.C. (cm)	Length Atlas (cm)	Water Type	Habitat	Spawning	Tolerance	Family	Sources
Pirate Perch	Aphredoderus sayanus	9	7-14	Freshwater	Streams Creeks	January through March	Intermediate	Aphredoderidae	1,2,3
Eastern Mosquito (Mosquitofish)	Gambusia affinis	NA	NA	Fresh or brackish water	Ponds, lakes, ditches, backwaters, sluggish streams	NA	Intermediate	Poeciliidae	2,5

1 Menhinick, 1992.
2 Boschung, 1983.
3 USEPA, 1989d.
4 Raasch, 1991.
5 Kennish, 1986.
NA = Information not Available

TOTAL NUMBER AND PERCENT OF AQUATIC SPECIES IDENTIFIED PER AREA
WEBB CREEK AND HADNOT CREEK

MCB CAMP LEJEUNE, NORTH CAROLINA

SPECIES	WEBB CREEK		Total Detected	HADNOT CREEK				Total Detected
	WC02	WC03		HC01	HCO2	HC03	HC04	
FISH SPECIES								
Spot	4		4			12		12
Stripped Mullet	4		4			3		3
Pumpkinseed			0		3			3
Mudcat	3		3	3				3
Redbreast sunfish	1		1	2				2
Long-Nosed Gar	9	5	14					0
American flier			0	3				3
Chain pickerel			0	1				1
Redear fish			0	1				1
Atlantic croaker			0			5		5
Warmouth			0		1			1
Bluefish			0			3		3
Yellow Bullhead	3		3	2				2
Blue gill	4		4					0
White catfish	1		1					0
Largemouth bass	2		2					0
Summer flounder		1	1					0
Mummichog		3	3					0
Pinfish	25	24	49			5		5
Atlantic menhaden			0			2		2
Redfin pickerel			0				2	2
White perch			0			1		1
Hog choker			0			1		1
Pirate perch			0				8	8

TOTAL NUMBER AND PERCENT OF AQUATIC SPECIES IDENTIFIED PER AREA
WEBB CREEK AND HADNOT CREEK

MCB CAMP LEJEUNE, NORTH CAROLINA

SPECIES	WEBB CREEK		Total Detected	HADNOT CREEK				Total Detected
	WC02	WC03		HC01	HCO2	HC03	HC04	
NO. OF SPECIES	9	4	12	5	2	8	2	18
NO. OF INDIVIDUALS	53	33	86	10	4	32	10	56
OTHER AQUATIC SPECIES								
Grass shrimp		3	3					0
Crayfish			0				3	3
NUMBER OF SPECIES	0	1	1	0	0	0	1	1
NO. OF INDIVIDUALS	0	3	3	0	0	0	3	3

TOTAL NUMBER AND PERCENT OF AQUATIC SPECIES IDENTIFIED PER AREA
HOLLAND MILL CREEK

MCB CAMP LEJEUNE, NORTH CAROLINA

SPECIES	HOLLAND MILL CREEK (CARTWHEEL BRANCH)			Total Detected
	HM01	HM02	HM03	
Spot			8	8
Stripped Mullet		11	3	14
Pumpkinseed	16	2		18
Chain pickerel	2			2
Swamp darter	6			6
Mud sunfish	1			1
Black drum		1		1
Ligar		3		3
Gizzard Shad		2		2
Spotted sunfish		2		2
Blue gill	2	1		3
Atlantic menhaden			199	199
Largemouth bass		1		1
Hog choker			2	2
Summer flounder		1	17	18
Mummichog		6		6
Pinfish		7	4	11
Goby, freshwater	1	1		2
NUMBER OF SPECIES	6	12	6	18
NO. OF INDIVIDUALS	28	38	233	299

TOTAL NUMBER AND PERCENT OF AQUATIC SPECIES IDENTIFIED PER AREA
HOLLAND MILL CREEK

MCB CAMP LEJEUNE, NORTH CAROLINA

SPECIES	HOLLAND MILL CREEK (CARTWHEEL BRANCH)			Total Detected
	HM01	HM02	HM03	
OTHER AQUATIC SPECIES				
Unknown	1			1
Grass shrimp		13		13
Crayfish	3			3
NUMBER OF SPECIES	2	1	0	3
NO. OF INDIVIDUALS	4	13	0	17

HADNOT CREEK - BACKGROUND STATIONS

SPECIES	COC SAMPLE NO.	HC01 Fish Length (cm)	Mass Weight	Average Weight (g)	HC02 Fish Length (cm)	Mass Weight	Average Weight (g)	HC03 Fish Length (cm)	Mass Weight	Average Weight (g)	HC04 Fish Length (cm)	Mass Weight	Average Weight (g)
Stripped Mullet	HC03							15.25	45	45			
								12.5	20	20			
								12.5	20	20			
	COUNT							3		3			
	AVERAGE							13.416666667		28.333333333			
	MAXIMUM							15.25		45			
	MINIMUM							12.5		20			
								+1 collected, no length or weight					
Atlantic Menhaden	HC03							5	<5	2.5			
	COUNT							2		2			
	AVERAGE							5		2.5			
	MAXIMUM							5		2.5			
	MINIMUM							5		2.5			
Blue Fish	HC03							7	7	7			
								11	17	17			
								8	8	8			
	COUNT							3		3			
	AVERAGE							8.6666666667		10.666666667			
	MAXIMUM							11		17			
	MINIMUM							7		7			
Spot	HC03							12.5	22	22			
								5.5	<5.0	2.5			
								5.75	<5.0	2.5			
								5	<5.0	2.5			
								3.5	<5.0	2.5			
								5.5	<5.0	2.5			
								14	40	40			
								13.5	35	35			
								12	35	35			
								14	35	35			
								5.5	<5.0	2.5			
								11.5	20	20			
	COUNT							12		12			
	AVERAGE							9.0208333333		16.833333333			
	MAXIMUM							14		40			
	MINIMUM							3.5		2.5			

HADNOT CREEK - BACKGROUND STATIONS

SPECIES	COC SAMPLE NO.	HC01 Fish Length (cm)	Mass Weight	Average Weight (g)	HC02 Fish Length (cm)	Mass Weight	Average Weight (g)	HC03 Fish Length (cm)	Mass Weight	Average Weight (g)	HC04 Fish Length (cm)	Mass Weight	Average Weight (g)
White Perch	HC03							18.5	105		105		
	COUNT							1			1		
	AVERAGE							18.5			105		
	MAXIMUM							18.5			105		
	MINIMUM							18.5			105		
Hogchoker	HC03							5.5	5		5		
	COUNT							1			1		
	AVERAGE							5.5			5		
	MAXIMUM							5.5			5		
	MINIMUM							5.5			5		
Pinfish	HC03							13	35		35		
								10.8	25		25		
								11	22		22		
								10.5	25		25		
								13	37		37		
	COUNT							5			5		
	AVERAGE							11.66			26.8		
	MAXIMUM							13			37		
	MINIMUM							10.5			22		
Atlantic Croaker	HC03							11.5	20		20		
								10.5	16		16		
								9	10		10		
								10.5	14		14		
								7.5	<5		2.5		
	COUNT							5			5		
	AVERAGE							9.8			12.5		
	MAXIMUM							11.5			20		
	MINIMUM							7.5			2.5		
Redbreast Sunfish	HC01	23.5	265	265									
		20	175	175									
	COUNT	2		2									
	AVERAGE	21.75		220									
	MAXIMUM	23.5		265									
	MINIMUM	20		175									
American Flyer	HC01	16.5	65	65									
		9.5	15	15									
		+1 collected, no length or weight											
	COUNT	3		3									
	AVERAGE	13		40									
	MAXIMUM	16.5		65									
	MINIMUM	9.5		15									

HADNOT CREEK - BACKGROUND STATIONS

SPECIES	COC SAMPLE NO.	HC01 Fish Length (cm)	Mass Weight	Average Weight (g)	HC02 Fish Length (cm)	Mass Weight	Average Weight (g)	HC03 Fish Length (cm)	Mass Weight	Average Weight (g)	HC04 Fish Length (cm)	Mass Weight	Average Weight (g)
Chain Pickerel	HC01	37	290	290									
	COUNT	1		1									
	AVERAGE	37		290									
	MAXIMUM	37		290									
	MINIMUM	37		290									
Yellow Bullhead	HC01	26.5	270	270									
		26.5	275	275									
	COUNT	2		2									
	AVERAGE	26.5		272.5									
	MAXIMUM	26.5		275									
	MINIMUM	26.5		270									
Pumpkinseed	HC02				13	50	50						
					17.5	125	125						
					16	100	100						
	COUNT				3		3						
	AVERAGE				15.5		91.666667						
	MAXIMUM				17.5		125						
	MINIMUM				13		50						
Warmouth	HC02				22	250	250						
	COUNT				1		1						
	AVERAGE				22		250						
	MAXIMUM				22		250						
	MINIMUM				22		250						
Redfin Pickerel	HC04										+1 collected, no length or weight		
											17	30	30
	COUNT										2		2
	AVERAGE										17		30
	MAXIMUM										17		30
	MINIMUM										17		30
Pirate Perch	HC04										5	>5	2.5
											4.5		2.5
											+6 collected, no length or weight		
	COUNT										8		8
	AVERAGE										4.75		2.5
	MAXIMUM										5		2.5
	MINIMUM										4.5		2.5
Crayfish	HC04										6	10	3.3
											4.5		3.3
											4		3.3
	COUNT										3		3
	AVERAGE										4.8333333		3.3
	MAXIMUM										6		3.3
	MINIMUM										4		3.3
Mudcat	3 collected at HC01, no length or weight												

HOLLAND MILL CREEK - BACKGROUND STATIONS

SPECIES	COC SAMPLE NO.	HM01 Fish Length (cm)	Mass Weight	Average Weight (g)	HM02 Fish Length (cm)	Mass Weight	Average Weight (g)	HM03 Fish Length (cm)	Mass Weight	Average Weight (g)
ppet Mullet	HM02				38.5	640	640			
					39.5	600	600			
					34.5	400	400			
					34.5	400	400			
					33.5	360	360			
					34	340	340			
					37	460	460			
					35	520	520			
					33.5	410	410			
					32	320	320			
					31	370	370			
	HM03							14.5	40	40
								6.5	<5	2.5
								+1 collected, no length or weight		
	COUNT				11		11	3		3
	AVERAGE				34.81818182		438.1818182	10.5		21.25
	MAXIMUM				39.5		640	14.5		40
	MINIMUM				31		320	6.5		2.5
Atlantic Menhaden	HM03							6	24	4
								6		4
								5.7		4
								5.4		4
								5.5		4
								5.6		4
								5.7	22	2.2
								5.5		2.2
								5		2.2
								5.5		2.2
								5.5		2.2
								5.2		2.2
								5.5		2.2
								5.5		2.2
								5.6		2.2
								6.2		2.2
								6	25	2.5
								5.5		2.5
								5		2.5
								5.5		2.5
								5.5		2.5
								5.5		2.5
								6		2.5
								5		2.5
								5.5		2.5
								5.5	20	2
								5.7		2
								5		2
								5		2
								6		2
								5.5		2
								5.5		2
								6		2
								6		2
								5.5		2
								5.5	27	1.8
								5.8		1.8
								5.5		1.8
								5.7		1.8
								6		1.8
								6		1.8
								6.5		1.8
								5.5		1.8
								6.5		1.8
								5.5		1.8
								5.5		1.8
								5.5		1.8
								6		1.8
								5.5		1.8
								5.5		1.8
								5.5	20	2
								4.5		2
								5		2
								5.5		2
								5.5		2
								5.5		2
								5.5		2
								6		2
								5.5		2
								6		2
								6		2
								138 collected no length or weight		
	COUNT							199		61
	AVERAGE							5.6		2.2540984
	MAXIMUM							6.5		4
	MINIMUM							4.5		1.8

HOLLAND MILL CREEK - BACKGROUND STATIONS

SPECIES	COC SAMPLE NO.	HM01 Fish Length (cm)	Mass Weight	Average Weight (g)	HM02 Fish Length (cm)	Mass Weight	Average Weight (g)	HM03 Fish Length (cm)	Mass Weight	Average Weight (g)
Summer Flounder	HM02				29.5	250	250			
	HM03							33	400	400
								43	650	650
								20.5	90	90
								24	120	120
								+13 collected, no length or weight		
	COUNT				1		1	17		4
	AVERAGE				29.5		250	30.125		365
	MAXIMUM				29.5		250	43		650
	MINIMUM				29.5		250	20.5		90
Black Drum	HM02				28	350	350			
	COUNT				1		1			
	AVERAGE				28		350			
	MAXIMUM				28		350			
	MINIMUM				28		350			
Spotted Sunfish	HM02				15.5	65	65			
					17	110	110			
	COUNT				2		2			
	AVERAGE				16.25		87.5			
	MAXIMUM				17		110			
	MINIMUM				15.5		65			
Largemouth Bass	HM02				34	540	540			
	COUNT				1		1			
	AVERAGE				34		540			
	MAXIMUM				34		540			
	MINIMUM				34		540			
								+1 collected, no length or weight		
Hogchoker	HM03							6	10	10
	COUNT							2		1
	AVERAGE							6		10
	MAXIMUM							6		10
	MINIMUM							6		10
Spot	HM03							5	<5	2.5
								12	25	25
								5.8	20	4
								6		4
								6.2		4
								6.4		4
								6.4		4
								+1 collected, no length or weight		
	COUNT							8		7
	AVERAGE							6.82857143		6.78571429
	MAXIMUM							12		25
	MINIMUM							5		2.5
Blue Gill	HM02				17		105			
	HM01	10.5		10	10					
		+1 collected, no length or weight								
	COUNT	2		1	1		1			
	AVERAGE	10.5		10	17		105			
	MAXIMUM	10.5		10	17		105			
	MINIMUM	10.5		10	17		105			

HOLLAND MILL CREEK - BACKGROUND STATIONS

SPECIES	COC SAMPLE NO.	HM01 Fish Length (cm)	Mass Weight	Average Weight (g)	HM02 Fish Length (cm)	Mass Weight	Average Weight (g)	HM03 Fish Length (cm)	Mass Weight	Average Weight (g)
Pumpkinseed	HM02				15	50	50			
					11.5	30	30			
	HM01	7.5	45	4.5						
		6.5		4.5						
		7.5		4.5						
		7.5		4.5						
		6		4.5						
		6		4.5						
		4.5		4.5						
		8.5		4.5						
		8		4.5						
		5.5		4.5						
		8	50	8.3						
		8.5		8.3						
		6.5		8.3						
		8.5		8.3						
		11		8.3						
		7.5		8.3						
	COUNT	16		16	2		2			
	AVERAGE	7.34375		5.925	13.25		40			
	MAXIMUM	11		8.3	15		50			
	MINIMUM	4.5		4.5	11.5		30			
Long-nose Gar	HM02				73	1250	1250			
					83	2000	2000			
					72.5	1640	1640			
	COUNT				3		3			
	AVERAGE				76.16666667		1630			
	MAXIMUM				83		2000			
	MINIMUM				72.5		1250			
Pinfish	HM02				17.5	80	80			
	HM03							5 <5		2.5
					+6 collected, no length or weight			+3 collected, no length or weight		
	COUNT				7		1	4		1
	AVERAGE				17.5		80	5		2.5
	MAXIMUM				17.5		80	5		2.5
	MINIMUM				17.5		80	5		2.5
Gizzard Shad	HM02				33	480	480			
					34	460	460			
	COUNT				2		2			
	AVERAGE				33.5		470			
	MAXIMUM				34		480			
	MINIMUM				33		460			
Chain Pickerel	HM01	13	10	5						
		13.5		5						
	COUNT	2		2						
	AVERAGE	13.25		5						
	MAXIMUM	13.5		5						
	MINIMUM	13		5						
Unknown Fish	HM01	7.5 <5		2.5						
	COUNT	1		1						
	AVERAGE	7.5		2.5						
	MAXIMUM	7.5		2.5						
	MINIMUM	7.5		2.5						
Swamp Darter	HM01	6	18	3						
		6		3						
		6		3						
		6		3						
		6		3						
		6		3						
	COUNT	6		6						
	AVERAGE	6		3						
	MAXIMUM	6		3						
	MINIMUM	6		3						

HOLLAND MILL CREEK - BACKGROUND STATIONS

SPECIES	COC SAMPLE NO.	HM01 Fish Length (cm)	Mass Weight	Average Weight (g)	HM02 Fish Length (cm)	Mass Weight	Average Weight (g)	HM03 Fish Length (cm)	Mass Weight	Average Weight (g)
Crayfish	HM01	8.5		15	5					
		4.5			5					
		5.5			5					
	COUNT	3			3					
	AVERAGE	6.16666667			5					
	MAXIMUM	8.5			5					
	MINIMUM	4.5			5					

Mud Sunfish	1 collected at HM01, no length or weight
Mummichog	6 collected at HM02, no length or weight
Goby, freshwater	1 collected at HM01 and 1 collected at HM02, no length or weight
Gras shrimp	13 collected at HM02, no length or weight

WEBB CREEK - BACKGROUND STATIONS

SPECIES	COC SAMPLE NO.	WC02 Fish Length (cm)	Mass Weight	Average Weight (g)	WC03 Fish Length (cm)	Mass Weight	Average Weight (g)
Striped Mullet	WC02	39.5	500	500			
		35.5	380	380			
		41.5	700	700			
		37	600	600			
	COUNT	4		4			
	AVERAGE	38.375		545			
	MAXIMUM	41.5		700			
	MINIMUM	35.5		380			
Summer Flounder	WC03				21	60	60
	COUNT				1		1
	AVERAGE				21		60
	MAXIMUM				21		60
	MINIMUM				21		60
Largemouth Bass	WC02	34	525	525			
		34	600	600			
	COUNT	2		2			
	AVERAGE	34		562.5			
	MAXIMUM	34		600			
	MINIMUM	34		525			
Redbreast Sunfish	WC02	16	60	60			
	COUNT	1		1			
	AVERAGE	16		60			
	MAXIMUM	16		60			
	MINIMUM	16		60			
White Catfish	WC02	37	750	750			
	COUNT	1		1			
	AVERAGE	37		750			
	MAXIMUM	37		750			
	MINIMUM	37		750			
Spot	WC02	14.5	10	10			
		13	10	10			
		13	<10	5			
		+1 collected, no length or weight					
	COUNT	4		4			
	AVERAGE	13.5		8.33333333			
	MAXIMUM	14.5		10			
	MINIMUM	13		5			
Blue Gill	WC02	23	300	300			
		23.5	300	300			
		21.5	250	250			
		16.75	85	85			
	COUNT	4		4			
	AVERAGE	21.1875		233.75			
	MAXIMUM	23.5		300			
	MINIMUM	16.75		85			

WEBB CREEK - BACKGROUND STATIONS

SPECIES	COC SAMPLE NO.	WC02 Fish Length (cm)	Mass Weight	Average Weight (g)	WC03 Fish Length (cm)	Mass Weight	Average Weight (g)
Long-nose Gar	WC02	68	1100	1100			
		71.5	1220	1220			
		73.5	1350	1350			
		72.5	1220	1220			
		66.5	1120	1120			
		72.5	1260	1260			
		71.5	1340	1340			
		69.5	1240	1240			
		75	1420	1420			
	WC03				87	1900	1900
					83	1850	1850
					97	2850	2850
					71.5	1000	1000
					73	1580	1580
	COUNT	9		9	5		5
	AVERAGE	71.16667		1252.222	82.3		1836
	MAXIMUM	75		1420	97		2850
	MINIMUM	66.5		1100	71.5		1000
Pinfish	WC02	10.5	NA				
		+24 collected, no length or weight			24 collected, no length or weight		
	COUNT	25			24		
	AVERAGE	10.5					
	MAXIMUM	10.5					
	MINIMUM	10.5					
Yellow Bullhead Catfish	WC02	38.5	900	900			
		32.5	620	620			
		36.5	640	640			
	COUNT	3		3			
	AVERAGE	35.83333		720			
	MAXIMUM	38.5		900			
	MINIMUM	32.5		620			

Mudcat — 3 fish collected at WC02, no length or weight

Mummichog — 3 fish collected at WC03, no length or weight

Grass shrimp — 3 collected at WC03, no length or weight

Benthic Macroinvertebrate
Characterization and Statistics

MARINE CORPS BASE CAMP LEJEUNE
BACKGROUND - WEBB CREEK
BENTHIC MACROINVERTEBRATES

	WC02-BN			WC03-BN		
	01	02	03	01	02	03
NEMERTEA						
Anopla						
Heteronemertea						
Lineidae						
Micrura leidyl				1	2	2
ANNELIDA						
Polychaeta						
Capitellida						
Capitellidae						
Heteromestus filiformis	2					
Phyllodocida						
Nereidae						
Nereis succinea			1			
Spionida						
Spionidae						
Scolecolepides viridis						1
Terebellida						
Ampharetidae						
Hypaniola grayi		4	10			
ARTHROPODA						
Crustacea						
Amphipoda						
Gammaridae						
Gammarus tigrinus	10			1	1	
Insecta						
Diptera						
Chironomidae						
Chironomus decorus gr.	8	24	13	38	17	6
Procladius sp.	1	3		2		1
Tanytarsus sp.		2	1			
MOLLUSCA						
Bivalvia						
Veneroida						
Corbiculidae						
Polymesoda caroliniana					1	
Tellinidae						
Macoma tenta					1	
Total Taxa	4	4	4	4	5	4
Total Specimens	21	33	25	42	22	10
Replicate Specimens Average		26.33			24.67	
Standard Deviation	4.42531	10.5317	6.18466	18.3394	7.05691	2.38048
Brillouin's Diversity		0.518			0.279	
SPECIES DENSITY (#/M^2)	134	210	159	268	140	64
SPECIES DIVERSITY (Shannon-Wiener)	0.473	0.380	0.419	0.180	0.304	0.473

MARINE CORPS BASE CAMP LEJEUNE
BACKGROUND - HADNOT CREEK
BENTHIC MACROINVERTEBRATES

	HC01-BN			HC02-BN			HC03-BN			HC04-BN		
	01	02	03	01	02	03	01	02	03	01	02	03
NEMERTEA												
Anopla												
Heteronemertea												
Lineidae												
Micrura leidyi						6	5	3				
ANNELIDA												
Oligochaeta												
Lumbriculida												
Lumbriculidae												
Eclipidrilus sp.			1									
Tubificida												
Tubificidae												
Isochaetides freyi	77	42	36							21	21	8
Limnodrilus hoffmeisteri											1	
Spirosperma carolinense		3									1	3
Polychaeta												
Capitellida												
Capitellidae												
Heteromastus filiformis							14	8				
Phyllodocida												
Nereidae												
Nereis succinea							6		18			
Phyllodocidae												
Eteone heteropoda									1			
Terebellida												
Ampharetidae												
Hypaniola grayi (ampharetid worm)				18	6	46						
ARTHROPODA												
Crustacea												
Amphipoda												
Corophiidae												
Corophium lacustre									82			
Gammaridae												
Crangonyx pseudogracilis					1	1					15	20
Gammarus tigrinus												
Tanaidacea												
Tanaidae												
Leptochelia rapax									80			
Insecta												
Coleoptera												
Dytiscidae												
Hydroporus sp.			1							5	2	6
Elmidae												
Dubiraphia sp.		1										
Diptera												
Ceratopogonidae												
Palpomyia/alpheromia sp. (biting midges)	5	7	4			1						
Chironomidae												
Ablabesmyia annulata	2	7	1									
Ablabesmyia rhamphe gr.	4	7	9									
Clinotanypus pinguis											1	
Cryptochironomus fulvus gr.		2	3									
Epoicladius sp.			1									
Glyptotendipes sp.												1
Nilothauma sp.		2	1									
Parasiutertarsiella nigrohalteralis	1	5	2									
Polypedilum illinoense	3	1										
Procladius sp. (midges)		1										
Tanytarsus sp.	2	9	2									
Tribelos lucundum	4	8	8								9	8
Tipulidae												
Pseudolimnophila sp.											1	2
Ephemeroptera												
Ephemeridae												
Hexagenia bilineata	3	3	1									
Megaloptera												
Sialidae												
Sialis sp.										1		
Odonata												
Coenagrionidae												
Argia sp.		1										
Libellulidae												
Pachydiplax longipennis											1	
Trichoptera												
Polycentropodidae												
Phylocentropus sp.	1	5	7							17	13	4
MOLLUSCA												
Bivalvia												
Mytiloida												
Mytilidae												
Geukensia demissa									1			
Veneroida												
Sphaeriidae												
Pisidium casertanum		2	1								4	
Tellinidae												
Macoma tenta							5	19	1			
Total Taxa	10	17	15	1	2	4	4	3	6	4	11	6
Total Specimens	102	106	78	18	7	54	30	31	183	44	69	52
Replicate Specimens Average		95.33333			26.33333			81.33333			55	
Standard Deviation	23.30792	8.614633	8.961824	NA	3.535534	21.79449	4.358899	9.082904	39.67241	9.521905	7.128687	6.047432
Brillouin's Diversity		0.755			0.072			0.675			0.757	
SPECIES DENSITY (#/M^2)	630	676	497	115	45	344	191	198	1166	280	440	331
SPECIES DIVERSITY (Shannon-Weiner)	0.463	0.906	0.831	0.000	0.178	0.230	0.554	0.364	0.449	0.456	0.803	0.763

MARINE CORPS BASE CAMP LEJEUNE
BACKGROUND - HADNOT CREEK
BENTHIC MACROINVERTEBRATES

	HM01-BN			HM02-BN			HM03-BN		
	01	02	03	01	02	03	01	02	03
NEMERTEA									
Anopla									
Heteronemertea									
Lineidae									
Micrura leidyi							3	4	2
ANNELIDA									
Oligochaeta									
Tubificida									
Tubificidae									
Limnodrilus hoffmeisteri	3	1	3						
Polychaeta									
Ariciida									
Orbiniidae									
Scoloplos fragilis							3	20	8
Capitellida									
Capitellidae									
Heteromastus filiformis							1	1	1
Phyllodocida									
Nereidae									
Nereis succinea				7	9	6			
Spionida									
Spionidae									
Streblospio benedicti							1		
Terebellida									
Ampharetidae									
Hypaniola grayi (ampharetid worm)				3		2			
ARTHROPODA									
Crustacea									
Decapoda									
Palaemonidae									
Palaemonetes pugio						1			
Insecta									
Coleoptera									
Dytiscidae									
Hydroporus sp.	1								
Elmidae									
Dubiraphis sp.			8						
Diptera									
Chaoboridae									
Chaoborus sp.			1						
Chironomidae									
Ablabesmyia mallochi	1								
Chironomus decorus gr.	2	2	2	120	180	76	1		
Dicrotendipes nervosus	5		3						
Larsia sp.			1						
Polypedilum illinoense	12		7						
Polypedilum scalaenum	18		11						
Tanytarsus sp.	11		12						
Tribelos lucundum	50	159	31						
Megaloptera									
Sialidae									
Sialis sp.	1								
MOLLUSCA									
Bivalvia									
Veneroida									
Mactridae									
Mulinia lateralis							3		
Tellinidae									
Macoma tenta							17	23	9
Total Taxa	10	3	10	3	2	4	7	4	4
Total Specimens	104	162	79	130	189	85	29	48	20
Replicate Specimens Average		115			134.667			32.3333	
Standard Deviation	15.0864	90.934	9.06091	66.4254	120.915	36.5639	5.75698	11.1056	4.08248
Hulburt's Diversity		0.5			0.122			0.497	
SPECIES DENSITY (#/M^2)	663	1033	504	829	1205	542	185	306	127
SPECIES DIVERSITY (Shannon-Wiener)	0.695	0.045	0.793	0.138	0.083	0.186	0.593	0.436	0.480

SUMMARY STATISTICS OF BENTHIC MACROINVERTEBRATE SPECIES AT HADNOT CREEK, HOLLAND MILL CREEK, AND WEBB CREEK MCB CAMP LEJEUNE, NORTH CAROLINA

Station	Number of Species	Number of Organisms	Species Density (#/m^2)	Species Diversity (Shannon-Weiner)	Species Diversity (Brillouin's)	Macroinvertebrate Biotic Index
WC02	7	79	504	0.570	0.518	9.4
WC03	7	74	472	0.323	0.279	9.6
HC01	20	286	1,823	0.802	0.755	7.8
HC02	4	79	504	0.196	0.072	7.6
HC03	8	244	1,555	0.683	0.675	NA
HC04	13	165	1,052	0.807	0.757	7.6
HM01	13	345	2,199	0.525	0.500	6.9
HM02	4	404	2,575	0.128	0.122	9.6
HM03	7	97	618	0.538	0.497	9.6

WC = Webb Creek Stations
HC = Hadnot Creek Stations
HM = Holland Mill Creek Stations
BN = Benthic Macroinvertebrate Sample
NA = Not Applicable
Species Density (#m^2) is based on a sample area of 0.0523 m^2.

SYSTEMATIC LIST OF BENTHIC MACROINVERTEBRATE SPECIES
AT BACKGROUND STATIONS
(WEBB, HADNOT, AND HOLLAND MILL CREEKS)
MCB CAMP LEJEUNE, NORTH CAROLINA

Species	USEPA[1] Metals
NERMERTEA	Phylum
Anopla	Class
Heteronemertea	Order
Lineidae	Family
Micrura leidyl	Genus Species
ANNELIDA	Phylum
Oligochaeta	Class
Lumbriculida	Order
Lumbriculiae	Family
Eclipidrillus sp.	Genus Species
Tubificida	Order
Tubificidae	Family
Isochaetides freyi	Genus Species
Limnodrilus hoffmeisteri	Genus Species
Spirosperma carolinensis	Genus Species
Polychaeta	Class
Ariciida	Order
Orbiniidae	Family
Scoloplos fragilis	Genus Species
Capitellida	Order
Capitellidae	Family
Heteromestus filiformis	Genus Species
Phyllodocida	Order
Nereidae	Family
Nereis succinea	Genus Species
Phyliodocidae	Family
Eteone heteropoda	Genus Species
Spionida	Order
Spionidae	Family
Scolecolepides virdis	Genus Species
Streblospio benedicti	Genus Species
Terebellida	Order

SYSTEMATIC LIST OF BENTHIC MACROINVERTEBRATE SPECIES
AT BACKGROUND STATIONS
(WEBB, HADNOT, AND HOLLAND MILL CREEKS)
MCB CAMP LEJEUNE, NORTH CAROLINA

Species	USEPA[1] Metals
Ampharetidae	Family
Hypaniola grayi	Genus Species
ARTHROPODA	Phylum
Crustacea	Class
Amphipoda	Order
Corophiidae	Family
Corophium lacuatre	Genus Species
Gammaridae	Family
Crangonyx pseudogracillus	Genus Species
Gammarus tigrinus	Genus Species
Tanaidacea	Order
Tanaidae	Family
Leptochelia rapox	Genus Species
Decapoda	Order
Palaemonidae	Family
Palaemonetes pugio	Genus Species
Insecta	Class
Coleoptera	Order
Dytiscidae	Family
Hydroporus sp.	Genus Species
Elmidae	Family
Dubiraphia sp.	Genus Species
Diptera	Order
Ceratopogonidae	Family
Palpomyia/sphaeromias sp.	Genus Species
Chaoboridae	Family
Chaoborus sp.	Genus Species
Chironomidae	Family
Ablabesmyia annulata	Genus Species
Ablabesmyia mallochi	Genus Species
Ablabesmyia ramphe gr.	Genus Species
Clinotanypus pinguis	Genus Species
Chironomus decorus gr.	Genus Species

SYSTEMATIC LIST OF BENTHIC MACROINVERTEBRATE SPECIES
AT BACKGROUND STATIONS
(WEBB, HADNOT, AND HOLLAND MILL CREEKS)
MCB CAMP LEJEUNE, NORTH CAROLINA

Species	USEPA[1] Metals
Cryptochironomus fulvus gr	Genus Species
Dicrotendipes nervosus	Genus Species
Epoicladius sp.	Genus Species
Glyptotendipes sp.	Genus Species
Larsia sp.	Genus Species
Nilothauma sp.	Genus Species
Paraiauterborniella nigrohaite	Genus Species
Polypedilum illinoense	Genus Species
Polypedilum scalaenum	Genus Species
Procladius sp.	Genus Species
Tanytarsus sp.	Genus Species
Tribelos jucundum	Genus Species
Tribelos lucundum	Genus Species
Tipulidae	Family
Psuedolimnophila sp.	Genus Species
Ephemeroptera	Order
Ephemeridae	Family
Hexagenia billineata	Genus Species
Megaloptera	Order
Sialidae	Family
Sialis sp.	Genus Species
Odonata	Order
Coenagrionidae	Family
Argia sp.	Genus Species
Libelluiidae	Family
Pechydiplax longipennis	Genus Species
Trichoptera	Order
Polycentropodidae	Family
Phylacentropus sp.	Genus Species
MOLLUSCA	Phylum
Bivalvia	Class
Mytiloida	Order
Mytilldae	Family

SYSTEMATIC LIST OF BENTHIC MACROINVERTEBRATE SPECIES
AT BACKGROUND STATIONS
(WEBB, HADNOT, AND HOLLAND MILL CREEKS)
MCB CAMP LEJEUNE, NORTH CAROLINA

Species	USEPA[1] Metals
Geukensia demissa	Genus Species
Veneroida	Order
Corbiculidae	Family
Polymesoda caroliniana	Genus Species
Mactridae	Family
Mullinia lateralis	Genus Species
Sphaeriidae	Family
Pisidium casertanum	Genus Species
Tellinidae	Family
Macoma tenta	Genus Species

USEPA SENSITIVITY TO METALS AND TOLERANCE TO ORGANIC WASTE AND BIOTIC INDEX FOR BENTHIC MACROINVERTEBRATE SPECIES AT BACKGROUND STATIONS (WEBB, HADNOT, AND HOLLAND MILL CREEKS) MCB CAMP LEJEUNE, NORTH CAROLINA

Species	USEPA[1] Metals	Organics	NCDEHNR[2] Biotic Index
NERMERTEA			
Anopla			
Heteronemertea			
Lineidae			
Micrura leidyl	NA	NA	NA
ANNELIDA			
Oligochaeta			
Lumbriculida			
Lumbriculiae			
Eclipidrillus sp.	NA	NA	NA
Tubificida			
Tubificidae			
Isochaetides freyi	NA	NA	8.6
Limnodrilus hoffmeisteri	NA	5	9.4
Spirosperma carolinensis	NA	3	NA
Polychaeta			
Ariciida			
Orbiniidae			
Scoloplos fragilis	NA	NA	NA
Capitellida			
Capitellidae			
Heteromestus filiformis	NA	NA	NA
Phyllodocida			
Nereidae			
Nereis succinea	NA	NA	NA
Phyliodocidae			
Eteone heteropoda	NA	NA	NA
Spionida			
Spionidae			
Scolecolepides virdis	NA	NA	NA
Streblospio benedicti	NA	NA	NA
Terebellida			

USEPA SENSITIVITY TO METALS AND TOLERANCE TO ORGANIC WASTE AND BIOTIC INDES FOR BENTHIC MACROINVERTEBRATE SPECIES AT BACKGROUND STATIONS (WEBB, HADNOT, AND HOLLAND MILL CREEKS) MCB CAMP LEJEUNE, NORTH CAROLINA

Species	USEPA[1] Metals	Organics	NCDEHNR[2] Biotic Index
Ampharetidae			
Hypaniola grayi	NA	NA	NA
ARTHROPODA			
Crustacea			
Amphipoda			
Corophiidae			
Corophium lacuatre	NA	NA	NA
Gammaridae			
Crangonyx pseudogracillus	NA	NA	7.9
Gammarus tigrinus	NA	2	NA
Tanaidacea			
Tanaidae			
Leptochelia rapox	NA	NA	NA
Decapoda			
Palaemonidae			
Palaemonetes pugio	NA	NA	NA
Insecta			
Coleoptera			
Dytiscidae			
Hydroporus sp.	NA	NA	8.6
Elmidae			
Dubiraphia sp.	NA	NA	5.9
Diptera			
Ceratopogonidae			
Palpomyia/sphaeromias sp.	NA	NA	7.0
Chaoboridae			
Chaoborus sp.	NA	NA	8.5
Chironomidae			
Ablabesmyia annulata	NA	1	3.5
Ablabesmyia mallochi	S	2	7.2
Ablabesmyia ramphe gr.	NA	2	NA
Clinotanypus pinguis	S	3	8.7

USEPA SENSITIVITY TO METALS AND TOLERANCE TO ORGANIC WASTE AND BIOTIC INDES FOR BENTHIC MACROINVERTEBRATE SPECIES AT BACKGROUND STATIONS (WEBB, HADNOT, AND HOLLAND MILL CREEKS) MCB CAMP LEJEUNE, NORTH CAROLINA

Species	USEPA[1] Metals	Organics	NCDEHNR[2] Biotic Index
Chironomus decorus gr.	NA	NA	9.6
Cryptochironomus fulvus gr	NA	3	6.4
Dicrotendipes nervosus	S	2	9.7
Epoicladius sp.	NA	NA	0.0
Glyptotendipes sp.	NA	NA	9.4
Larsia sp.	NA	2	9.3
Nilothauma sp.	NA	NA	5.0
Paraiauterborniella nigrohaite	NA	NA	NA
Polypedilum illinoense	NA	3	9.0
Polypedilum scalaenum	NA	2	8.4
Procladius sp.	NA	NA	9.1
Tanytarsus sp.	NA	NA	6.7
Tribelos jucundum	S	1	6.3
Tribelos lucundum	NA	NA	6.3
Tipulidae			
Psuedolimnophila sp.	NA	NA	7.2
Ephemeroptera			
Ephemeridae			
Hexagenia billineata	NA	2	NA
Megaloptera			
Sialidae			
Sialis sp.	T	4	7.2
Odonata			
Coenagrionidae			
Argia sp.	NA	NA	8.2
Libelluiidae			
Pechydiplax longipennis	NA	NA	NA
Trichoptera			
Polycentropodidae			
Phylacentropus sp.	NA	NA	6.2
MOLLUSCA			
Bivalvia			

USEPA SENSITIVITY TO METALS AND TOLERANCE TO ORGANIC WASTE AND BIOTIC INDES FOR BENTHIC MACROINVERTEBRATE SPECIES AT BACKGROUND STATIONS (WEBB, HADNOT, AND HOLLAND MILL CREEKS) MCB CAMP LEJEUNE, NORTH CAROLINA

Species	USEPA[1] Metals	Organics	NCDEHNR[2] Biotic Index
Mytiloida			
Mytilldae			
Geukensia demissa	NA	NA	NA
Veneroida			
Corbiculidae			
Polymesoda caroliniana	NA	NA	NA
Mactridae			
Mullinia lateralis	NA	NA	NA
Sphaeriidae			
Pisidium casertanum	NA	4	6.5
Tellinidae			
Macoma tenta	NA	NA	NA

(1) Macroinvertebrate Field and Laboratory Methods for Evaluating the Biological Integrity of Surface Waters

(2) Lenat, 1993

NA = Not Available

S = Sensitive to heavy metals

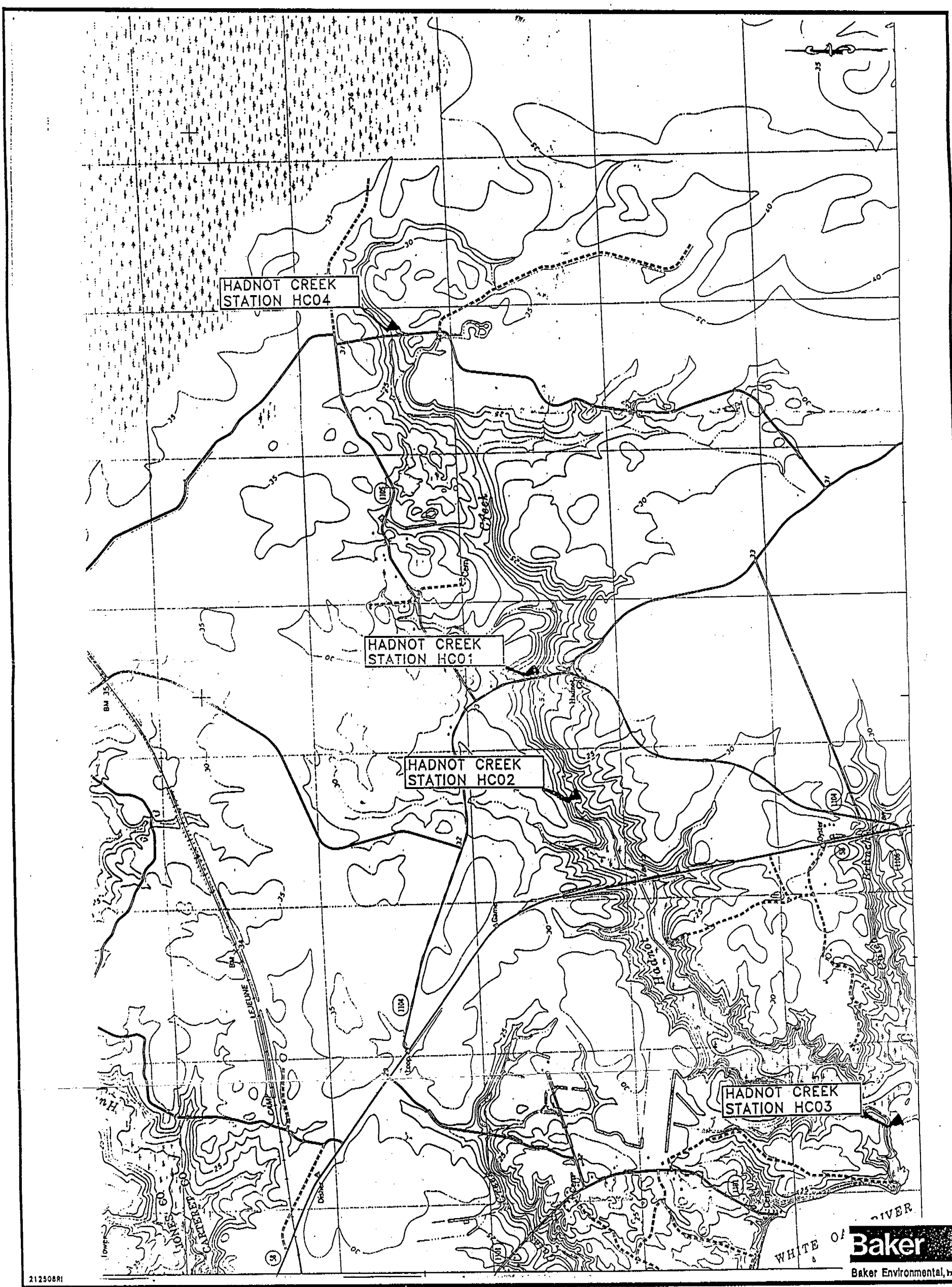
T = Tolerant to heavy metals

Organics Ranking = 0 to 5 with 0 being the least tolerant

Sampling Station
Location Maps

REFERENCE

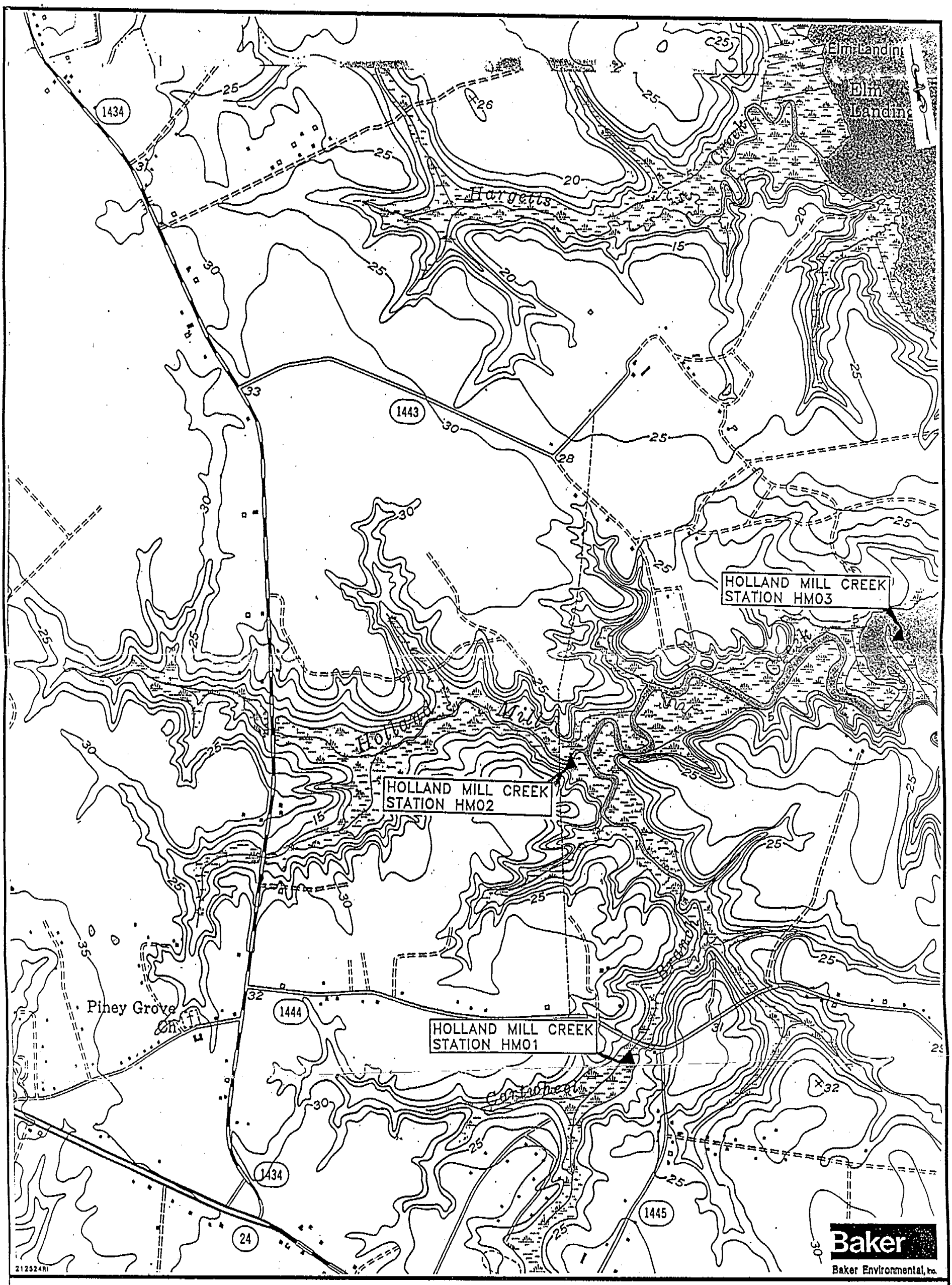
Baker, 1994. Baker Environmental Inc., 1994. "Supplemental Aquatic Survey for Wallace Creek and Bearhead Creek". Prepared for the Department of the Navy, Naval Facilities Engineering Command, Atlantic Division, Norfork, Virginia.



FISH AND BENTHIC MACROINVERTERBRATE
SAMPLING LOCATION IN HADNOT CREEK

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

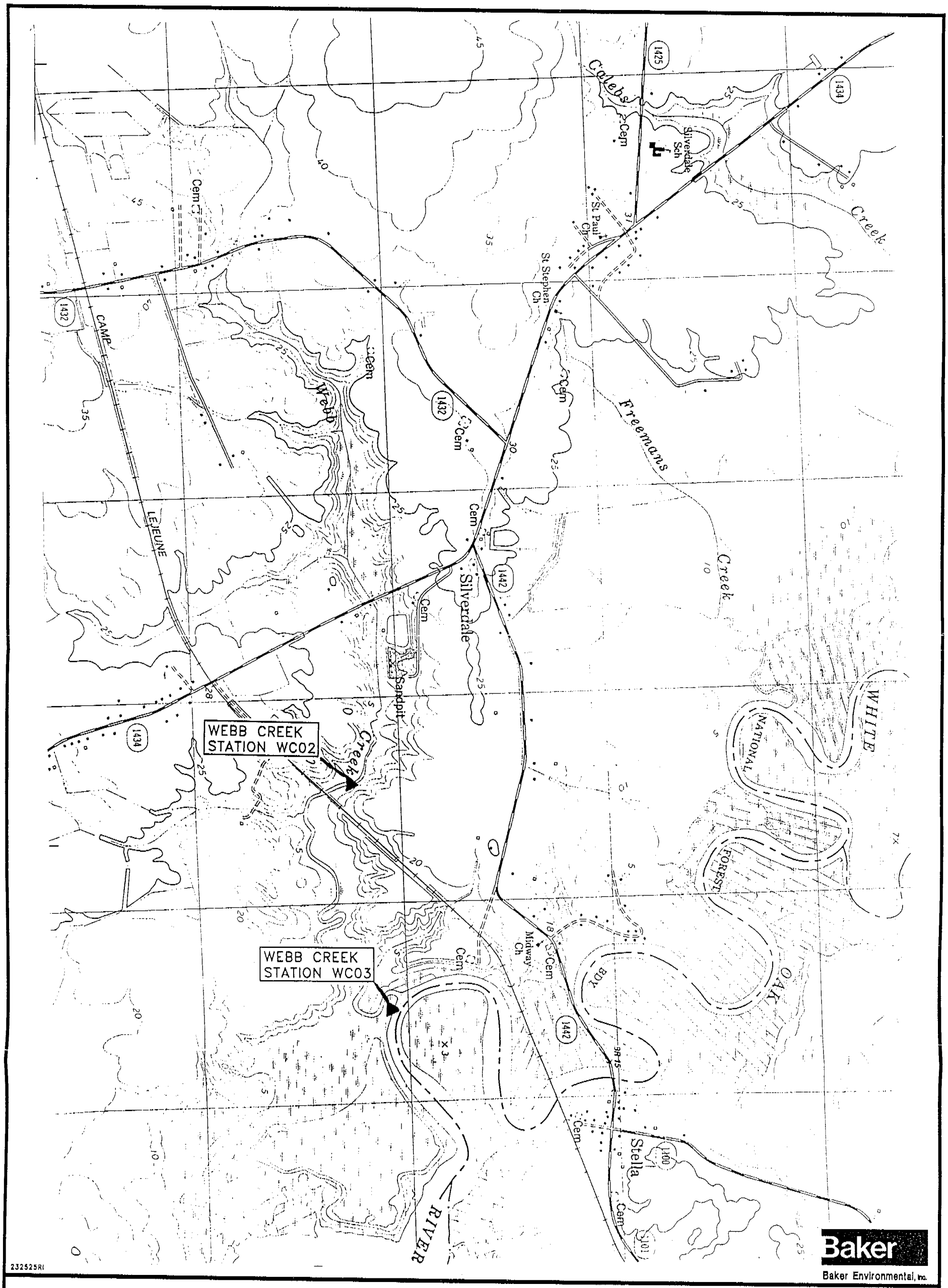
SOURCE: N.C. DIVISION OF MARINE
FIDHERIES, REPORT AFC-9, NOV. 1975.



FISH AND BENTHIC MACROINVERTERBRATE
SAMPLING LOCATION IN HOLLAND MILL CREEK

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

SOURCE: N.C. DIVISION OF MARINE
FIDHERIES, REPORT AFC-9, NOV. 1975.



FISH AND BENTHIC MACROINVERTERBRATE
SAMPLING LOCATION IN WEBB CREEK

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

SOURCE: N.C. DIVISION OF MARINE
FISHERIES, REPORT AFC-9, NOV. 1975.

APPENDIX R
TERRESTRIAL REFERENCE VALUES AND CHRONIC DAILY INTAKE CALCULATIONS

EQUATION [redacted] CALCULATE EXPOSURE FOR THE WHITETAILED DEER
SITE 63
VERONA LOOP
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA

Food Source Ingestion of Iv = vegetation If = fish Im = mammals Ie = worms If = 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 (If 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 Dw = 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	1.88E-02	1.10E+00	NA	NA	NA	1.600	45.400	454.000	5.0	0.01	$E = \frac{(Dw)(Iw) + [(Cs)(Bv)(Iv) + (Cs)(Is)] [H]}{BW}$

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
4,4'-DDE	0.020	0.00E+00	3.88E-03	NA	NA	NA	4.70E-08	1.58E-01	2.97E-07
4,4'-DDT	0.009	0.00E+00	4.00E-03	NA	NA	NA	3.00E-08	1.58E-01	1.90E-07
Dieldrin	0.032	0.00E+00	2.11E-03	NA	NA	NA	3.56E-08	6.51E-01	5.45E-08
Endosulfan Sulfate	0.625	0.00E+00	2.00E-03	NA	NA	NA	4.94E-07	1.19E-01	4.17E-06
Aluminum	0.004	6.78E-01	3.52E+03	NA	NA	NA	3.77E-02	6.51E+00	5.79E-03
Arsenic	0.040	0.00E+00	9.80E-01	NA	NA	NA	1.92E-05	3.25E-01	5.91E-05
Barium	0.150	2.64E-02	1.38E+01	NA	NA	NA	1.49E-03	1.30E-01	1.15E-02
Beryllium	0.010	0.00E+00	6.00E-02	NA	NA	NA	5.02E-07	1.07E-01	4.71E-06
Chromium	0.009	0.00E+00	4.86E+00	NA	NA	NA	3.60E-05	6.51E+00	5.53E-06
Cobalt	0.020	0.00E+00	4.30E-01	NA	NA	NA	5.27E-06	6.51E-02	8.10E-05
Copper	0.400	0.00E+00	1.91E+01	NA	NA	NA	3.06E-03	6.51E-01	4.70E-03
Iron	0.004	8.34E-01	3.63E+03	NA	NA	NA	4.21E-02	6.51E+00	6.47E-03
Lead	0.045	2.20E-03	1.60E+01	NA	NA	NA	4.04E-04	1.95E-01	2.07E-03
Manganese	0.250	1.00E-02	3.33E+01	NA	NA	NA	3.82E-03	1.30E+00	2.79E-03
Mercury	0.900	0.00E+00	3.00E-02	NA	NA	NA	1.06E-05	1.30E-02	8.16E-04
Nickel	0.060	0.00E+00	2.05E+00	NA	NA	NA	5.69E-05	3.25E-01	1.75E-04
Zinc	1.500	2.28E-03	4.51E+01	NA	NA	NA	2.85E-02	3.25E+00	8.15E-03
								SUM	4.26E-02

ND - Not Detected
NA - Not Applicable

EQUATIONS USED TO CALCULATE EXPOSURE FOR THE RED FOX
SITE 83 - VERONA LOOP DUMP
REMEDIAL INVESTIGATION, CTO 340
MCB, CAMP LEJEUNE, NORTH CAROLINA

Food Source Ingestion of: Iv = vegetation Ii = fish Im = mammals Iw = worms If = fruit	Feeding Rate (f 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 (If 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)	HI 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 Cf = constituent conc. in fruit H = ratio of home range area to site area
Small Mammals Im = 80%	0.801	0.017	0.386	NA	NA	0.481	0.1202	4.535	1245.4	5.0	0.004	$E = \frac{(Cw)(Iw) + [(Cm)(Im) + (Cs)(Bv)(Iv) + (Cs)(Is)](H)}{BW}$
Vegetation Iv = 20%	0.112 Small Mammal	0.00269 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
4,4'-DDE	0.020	0.00E+00	3.88E-03	NA	1.26E-02	6.41E-07	6.62E-08	3.41E-01	1.94E-07
4,4'-DDT	0.008	0.00E+00	4.00E-03	NA	8.31E-02	2.41E-06	6.39E-08	3.41E-01	1.88E-07
Dieldrin	0.032	0.00E+00	2.11E-03	NA	5.50E-03	1.94E-07	3.86E-08	6.51E-03	5.94E-06
Endosulfan Sulfate	0.825	0.00E+00	2.00E-03	NA	3.16E-05	1.24E-08	1.63E-07	7.42E-01	2.20E-07
Aluminum	0.004	6.78E-01	3.52E+03	NA	1.50E-03	4.47E-02	1.12E-01	1.95E+01	5.72E-03
Arsenic	0.040	0.00E+00	9.80E-01	NA	2.00E-03	3.70E-05	1.84E-05	2.37E-02	7.77E-04
Barium	0.150	2.64E-02	1.38E+01	NA	1.50E-04	1.07E-04	2.66E-03	1.07E-01	2.50E-02
Beryllium	0.010	0.00E+00	6.00E-02	NA	1.00E-03	6.14E-07	9.58E-07	2.30E-01	4.16E-06
Chromium	0.008	0.00E+00	4.86E+00	NA	5.50E-03	2.53E-04	7.84E-05	1.00E+00	7.44E-05
Cobalt	0.020	0.00E+00	4.30E-01	NA	2.00E-02	1.14E-04	7.37E-06	3.71E-01	1.98E-05
Copper	0.400	0.00E+00	1.91E+01	NA	1.00E-02	2.44E-02	1.11E-03	7.80E+00	1.42E-04
Iron	0.004	8.34E-01	3.63E+03	NA	2.00E-02	5.14E-01	1.27E-01	1.88E+01	6.82E-03
Lead	0.045	2.20E-03	1.60E+01	NA	3.00E-04	9.95E-05	5.01E-04	3.41E+00	1.47E-04
Manganese	0.250	1.00E-02	3.33E+01	NA	4.00E-04	1.10E-03	2.23E-03	3.75E+00	5.95E-04
Mercury	0.900	0.00E+00	3.00E-02	NA	2.50E-01	2.08E-03	4.21E-06	1.38E-01	3.05E-05
Nickel	0.080	0.00E+00	2.05E+00	NA	5.00E-03	3.11E-04	4.38E-05	3.25E+01	1.34E-06
Zinc	1.500	2.28E-03	4.51E+01	NA	1.00E-01	2.07E+00	8.94E-03	1.30E+00	6.87E-03
								SUM	4.82E-02

ND - Not Detected
NA - Not Applicable

EQUATIONS USED TO [redacted] E EXPOSURE FOR THE BOBWHITE QUAIL
SITE 63 - VERONA LOOP ROAD
REMEDIAL INVESTIGATION, CTO-0340
MCB CAMP LEJEUNE, NORTH CAROLINA

Food Source Ingestion of iv = vegetation if = fish im = mammals iw = 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	1.11E-03	1.91E-02	NA	NA	NA	0.013	0.174	28.242	5.0	0.191	$E = \frac{[(Cw)(Iw) + [(Cs)(BW)(Iv) + (Cs)(Is)]]\,[H]}{BW}$

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
4,4'-DDE	0.020	0.00E+00	3.88E-03	NA	NA	NA	0.000	5.80E-02	6.64E-05
4,4'-DDT	0.008	0.00E+00	4.00E-03	NA	NA	NA	0.000	5.80E-02	6.04E-05
Dieldrin	0.032	0.00E+00	2.11E-03	NA	NA	NA	0.000	5.38E-02	6.61E-05
Endosulfan Sulfate	0.625	0.00E+00	2.00E-03	NA	NA	NA	0.000	1.32E+01	1.59E-08
Aluminum	0.004	8.78E-01	3.52E+03	NA	NA	NA	4.583	1.42E+01	3.21E-01
Arsenic	0.040	0.00E+00	9.80E-01	NA	NA	NA	0.002	9.20E+00	1.88E-04
Barium	0.150	2.64E-02	1.38E+01	NA	NA	NA	0.050	1.42E+00	3.46E-02
Beryllium	0.010	0.00E+00	6.00E-02	NA	NA	NA	0.000	8.62E-01	1.20E-04
Chromium	0.008	0.00E+00	4.88E+00	NA	NA	NA	0.008	7.11E+01	9.08E-05
Cobalt	0.020	0.00E+00	4.30E-01	NA	NA	NA	0.001	7.11E-01	9.14E-04
Copper	0.400	0.00E+00	1.91E+01	NA	NA	NA	0.137	2.13E+01	6.41E-03
Iron	0.004	8.34E-01	3.83E+03	NA	NA	NA	4.712	7.11E+01	6.63E-02
Lead	0.045	2.20E-03	1.80E+01	NA	NA	NA	0.030	3.50E+00	8.66E-03
Manganese	0.250	1.00E-02	3.33E+01	NA	NA	NA	0.165	1.42E+02	1.16E-03
Mercury	0.900	0.00E+00	3.00E-02	NA	NA	NA	0.000	1.42E-01	3.07E-03
Nickel	0.080	0.00E+00	2.08E+00	NA	NA	NA	0.004	2.13E+01	2.09E-04
Zinc	1.500	2.26E-03	4.51E+01	NA	NA	NA	1.057	7.11E+01	1.49E-02
								SUM	4.59E-01

ND - Not Detected
NA - Not Applicable

EQUATIONS USED TO CALCULATE EXPOSURE FOR THE EASTERN COTTONTAIL RABBIT
SITE 83 - VERONA LOOP DUMP
REMEDIAL INVESTIGATION, CTO 0346
MCB, CAMP LEJEUNE, NORTH CAROLINA

Food Source Ingestion of fv = vegetation ff = fish fm = mammals fw = 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 (If 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 (fv) 100 percent	0.237	5.85E-03	1.15E-01	NA	NA	NA	0.237	1.189	9.297	5.0	0.539	$E = \frac{[Cw][Iw] + [[Cs][Bv][Iv] + [Cs][Is]][H]}{BW}$

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
4,4'-DDE	0.020	0.00E+00	3.88E-03	NA	NA	NA	1.85E-05	5.32E-01	3.41E-05
4,4'-DDT	0.008	0.00E+00	4.00E-03	NA	NA	NA	1.38E-05	5.32E-01	2.59E-05
Dieldrin	0.002	0.00E+00	2.11E-03	NA	NA	NA	1.26E-05	3.33E-03	3.79E-03
Endosulfan Sulfate	0.625	0.00E+00	2.00E-03	NA	NA	NA	1.38E-04	3.98E-01	3.46E-04
Aluminum	0.004	6.78E-01	3.52E+03	NA	NA	NA	1.08E+01	1.18E+01	9.16E-01
Arsenic	0.040	0.00E+00	9.60E-01	NA	NA	NA	6.56E-03	2.90E+00	2.27E-03
Barium	0.150	2.64E-02	1.38E+01	NA	NA	NA	2.55E-01	1.18E+00	2.20E-01
Beryllium	0.010	0.00E+00	6.00E-02	NA	NA	NA	2.19E-04	3.98E-01	6.09E-04
Chromium	0.008	0.00E+00	4.88E+00	NA	NA	NA	1.84E-02	5.80E+01	2.83E-04
Cobalt	0.020	0.00E+00	4.30E-01	NA	NA	NA	2.03E-03	5.80E-01	3.50E-03
Copper	0.400	0.00E+00	1.91E+01	NA	NA	NA	8.70E-01	1.18E+01	7.49E-02
Iron	0.004	8.34E-01	3.63E+03	NA	NA	NA	1.11E+01	2.90E+01	3.78E-01
Lead	0.045	2.20E-03	1.60E+01	NA	NA	NA	1.18E-01	1.74E+00	6.80E-02
Manganese	0.250	1.00E-02	3.33E+01	NA	NA	NA	9.76E-01	2.33E+01	4.22E-02
Mercury	0.900	0.00E+00	3.00E-02	NA	NA	NA	2.97E-03	1.20E-01	2.48E-02
Nickel	0.080	0.00E+00	2.05E+00	NA	NA	NA	1.85E-02	2.90E+00	6.37E-03
Zinc	1.500	2.28E-03	4.51E+01	NA	NA	NA	7.37E+00	2.90E+01	2.54E-01
								SUM	2.00E+00

ND - Not Detected
NA - Not Applicable

EQUATIONS USE[redacted]LATE EXPOSURE FOR THE RACCOON
SITE 83 - VERONA [redacted]UMP
REMEDIAL INVESTIGATION, CTO-340
MCB, CAMP LEJEUNE, NORTH CAROLINA

Food Source Ingestion of Iv = vegetation Ii = fish Im = mammals Iw = worms If = 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 (If in kg/d)	Rate of Fish Ingestion (Ii 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 Cf = constituent conc. in fruit H = ratio of home range area to site area
Vegetation V = 40% Fish F = 60%	0.214	0.020*	0.4224	NA	0.088	0.129	NA	5.120	256.884	5.0	0.019	$E = \frac{[Cw][Iw] + [Cf][If] + [(Cs)(Bv)(Iv) + (Cs)(Bs)][H]}{BW}$

Contaminant of Concern	Soil to Plant Transfer Coefficient (fruit) (Bv)	Constituent Concentration in Water (mg/l) (Cw)	Constituent Concentration in Soil (mg/kg) (Cs)	Constituent Concentration in Worms (mg/kg) (Cwo)	Fish Bioconcentration Factor (BCF)	Constituent Concentration in Fishes (mg/kg) (Cf) (=SW*BCF)	Total Exposure (mg/kg/d)	TRV	RATIO
4,4'-DDE	0.020	0.00E+00	3.88E-03	NA	53800.000	0	3.22E-07	3.27E-01	9.84E-07
4,4'-DDT	0.008	0.00E+00	4.00E-03	NA	53800.000	0	3.16E-07	3.27E-01	9.67E-07
Dieldrin	0.032	0.00E+00	2.11E-03	NA	4670.000	0	1.83E-07	2.04E-03	8.97E-05
Endosulfan Sulfate	0.825	0.00E+00	2.00E-03	NA	270.000	0	5.80E-07	2.45E-01	2.36E-06
Aluminum	0.001	6.78E-01	3.52E+03	NA	231.000	156.53092	4.26E+00	3.48E-01	1.22E+01
Arsenic	0.008	0.00E+00	9.60E-01	NA	44.000	0	7.54E-05	2.27E-02	3.31E-03
Barium	0.015	2.64E-02	1.38E+01	NA	8.000	0.2112	8.58E-03	1.02E-01	8.36E-02
Beryllium	0.002	0.00E+00	8.00E-02	NA	19.000	0	4.62E-06	2.21E-01	2.09E-05
Chromium	0.005	0.00E+00	4.88E+00	NA	18.000	0	3.79E-04	9.88E-01	3.84E-04
Cobalt	0.007	0.00E+00	4.30E-01	NA	40.000	0	3.38E-05	3.57E-01	9.50E-05
Copper	0.250	0.00E+00	1.91E+01	NA	38.000	0	3.02E-03	7.49E+00	4.04E-04
Iron	0.001	8.34E-01	3.83E+03	NA	ND	0	3.48E-01	1.78E+01	1.96E-02
Lead	0.009	2.20E-03	1.80E+01	NA	49.000	0.1078	4.18E-03	3.27E+00	1.27E-03
Manganese	0.050	1.00E-02	3.33E+01	NA	35.000	0.35	1.27E-02	3.60E+00	3.53E-03
Mercury	0.200	0.00E+00	3.00E-02	NA	5600.000	0	4.25E-06	1.31E-01	3.25E-05
Nickel	0.080	0.00E+00	2.05E+00	NA	47.000	0	1.97E-04	2.05E+00	9.60E-05
Zinc	0.900	2.28E-03	4.51E+01	NA	47.000	0.10622	1.95E-02	6.54E+01	2.98E-04
								SUM	1.23E+01

ND - Not Detected
NA - Not Applicable

DERIVATION OF TERRESTRIAL REFERENCE VALUES
SITE 63, VERONA LOOP DUMP AREA
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA

The following section discusses the procedures used to develop the terrestrial reference values (TRVs) used in the terrestrial portion of the ERA.

Most of the whitetailed deer, bobwhite quail, and cottontail rabbit TRVs for inorganic chemicals were derived from mineral tolerance values (MTLs) contained in the Mineral Tolerance of Domestic Animals (NAS, 1980). This book defines an MTL as "that dietary level that, when fed for a limited period, will not impair animal performance and should not produce unsafe residues in human food derived from the animal." (NAS, 1980) The values in this book were reported as mg mineral/kg feed. Therefore, these values were first converted to mg mineral/kg body weight-day using the following equation (Opresko et.al., 1993):

TRV = MTL * CR
where:
TRV = Terrestrial Reference Value (mg mineral/kg body weight-day)
MTL = Mineral Tolerance Value (mg mineral/kg food)
CR = consumption rate (kg food/kg body weight-day)

For the whitetailed deer TRVs derived from the cattle MTLs, a consumption rate of 0.05 kg food/kg body weight-day was used for the cow (O'Dell, 1971). Because the cattle MTL was developed primarily with cow studies that were conducted for less than 6 months, the new TRV was multiplied by 0.1 to account for subchronic to chronic uncertainty. The TRV for a cow then was adjusted to a TRV for a deer to account for differences in the body size using the following equation (Opresko et.al., 1993):

TRV (deer) = [TRV (cow)]*[bw (cow)/bw (deer)]^1/3
Where:
TRV (deer) = Deer Terrestrial Reference Value (mg mineral/kg body weight-day)
TRV (cow) = Cow Terrestrial Reference Value (mg mineral/kg body weight-day)
bw (cow) = body weight of a cow (100 kg)
bw (deer) = body weight of a deer (45.4 kg)

DERIVATION OF TERRESTRIAL REFERENCE VALUES
SITE 63, VERONA LOOP DUMP AREA
REMEDIAL INVESTIGATION, CTO-0340
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
SITE 63 - VERONA LOOP DUMP
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA

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)	3.85	(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	0.06	(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	

TOXICITY DATA USED TO CALCULATE TERRESTRIAL REFERENCE VALUES
SITE 63 - VERONA LOOP DUMP
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA

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)
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 Dove	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 Dove	NA	NA	125	(83)	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	8	(57)	NA		NA		NA
Pyrene		NA	NA	NA	NA	NA		7.5	(10)	NA		NA

TOXICITY DATA USED TO CALCULATE TERRESTRIAL REFERENCE VALUES
SITE 63 - VERONA LOOP DUMP
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA

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		NA		10	(72) Partridge	NA		0.57	(26)	0.6	(26)	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	(76) 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	(82)	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	(36)	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	(85)	NA		NA	NA	
Tetrachloroethene		NA		NA		NA		NA		1.4	(42)	NA		NA	NA	
Toluene		NA		NA		NA		NA		22.3	(38)	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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(6) Azar et.al., 1973
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(50) Ringer, 1983
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(61) USFWS, 1964
(62) Thomas and Hinsdill, 1980
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(74) Dow, 1958
(75) Villeneuve, et.al., 1972
(76) Dahlgren, et.al., 1972
(77) FAO/WHO, 1976
(78) McLane and Hughes, 1980
(79) Plekacz, 1971
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(81) NCI, 1979
(82) Jeter et.al., 1954
(83) Til et.al., 1983
(84) Lee et.al., 1976
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BODY WEIGHTS FOR TERRESTRIAL REFERENCE VALUE CALCULATION
SITE 63 - VERONA LOOP DUMP AREA
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA

Body Weight (kg)		
Cattle	100	(IT Corp, 1992)
Whitetailed Deer	45.4	(Dee, 1991)
Bobwhite Quail	0.1736	(USEPA, 1993b)
Eastern Cottontail	1.189	
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 VALUE CALCULATION
SITE 63 - VERONA LOOP DUMP AREA
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA

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)	1.42E+01 (bi)	1.16E+01 (rb)	1.95E+01 (dg)	3.48E-01 (mo)	2.33E+00 (mo)
Antimony	6.91E-03 (rt)	4.42E-02 (rt)	4.06E+00 (rb)	1.49E-02 (rt)	1.43E-02 (rt)	9.59E-02 (rt)
Arsenic	3.25E-01 (ct)	9.20E+00 (bi)	2.90E+00 (rb)	2.37E-02 (mo)	2.27E-02 (mo)	1.52E-01 (mo)
Barium	1.30E-01 (ct)	1.42E+00 (bi)	1.16E+00 (rb)	1.07E-01 (rt)	1.02E-01 (rt)	6.85E-01 (rt)
Beryllium	1.07E-01 (rt)	6.82E-01 (rt)	3.59E-01 (rt)	2.30E-01 (rt)	2.21E-01 (rt)	1.48E+00 (rt)
Cadmium	3.25E-03 (ct)	2.60E+00 (bi)	2.90E-02 (rb)	9.76E-02 (dg)	1.64E-03 (rt)	1.10E-02 (rt)
Chromium	6.51E+00 (ct)	7.11E+01 (bi)	5.80E+01 (rb)	1.03E+00 (rt)	9.86E-01 (rt)	6.60E+00 (rt)
Cobalt	6.51E-02 (ct)	7.11E-01 (bi)	5.80E-01 (rb)	3.71E-01 (rb)	3.57E-01 (rb)	2.39E+00 (rb)
Copper	6.51E-01 (ct)	2.13E+01 (bi)	1.16E+01 (rb)	7.80E+00 (mk)	7.49E+00 (mk)	5.01E+01 (mk)
Iron	6.51E+00 (ct)	7.11E+01 (bi)	2.90E+01 (rb)	1.86E+01 (rb)	1.78E+01 (rb)	1.19E+02 (rb)
Lead	1.95E-01 (ct)	3.50E+00 (bi)	1.74E+00 (rb)	3.41E+00 (rt)	3.27E+00 (rt)	2.19E+01 (rt)
Manganese	1.30E+00 (ct)	1.42E+02 (bi)	2.32E+01 (rb)	3.75E+00 (rt)	3.60E+00 (rt)	2.41E+01 (rt)
Mercury	1.30E-02 (ct)	1.42E-01 (bi)	1.20E-01 (rb)	1.36E-01 (rt)	1.31E-01 (rt)	8.77E-01 (rt)
Molybdenum	3.95E-03 (rt)	2.53E-02 (rt)	1.33E-02 (rt)	8.52E-03 (rt)	8.18E-03 (rt)	5.48E-02 (rt)
Nickel	3.25E-01 (ct)	2.13E+01 (bi)	2.90E+00 (rb)	3.25E+01 (dg)	2.05E+00 (rt)	1.37E+01 (rt)
Selenium	1.30E-02 (ct)	8.96E-01 (bi)	1.20E-01 (rb)	1.70E-02 (rt)	1.64E-02 (rt)	1.10E-01 (rt)
Silver	1.58E-02 (mo)	7.11E+00 (bi)	5.31E-02 (mo)	3.40E-02 (mo)	3.26E-02 (mo)	2.19E-01 (mo)
Thallium	4.54E-03 (rt)	2.91E-02 (rt)	1.53E-02 (rt)	9.79E-03 (rt)	9.40E-03 (rt)	6.30E-02 (rt)
Vanadium	3.25E-01 (ct)	2.04E+01 (bi)	5.80E-02 (rb)	2.77E-01 (rt)	2.66E-01 (rt)	1.78E+00 (rt)
Zinc	3.25E+00 (ct)	7.11E+01 (bi)	2.90E+01 (rb)	1.30E+00 (dg)	6.54E+01 (rt)	4.39E+02 (rt)
Cyanide	2.13E+00 (rt)	6.40E+00 (bi)	7.18E+00 (rt)	4.88E-01 (dg)	4.42E+00 (rt)	2.96E+01 (rt)

REGION IV TERRESTRIAL REFERENCE VALUE CALCULATION
SITE 63 - VERONA LOOP DUMP AREA
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA

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)
Acenaphthene	3.46E+00 (rt)	2.21E+01 (rt)	1.16E+01 (rt)	7.45E+00 (rt)	7.16E+00 (rt)	4.80E+01 (rt)
Acenaphthylene	3.46E+00 (rt)	2.21E+01 (rt)	1.16E+01 (rt)	7.45E+00 (rt)	7.16E+00 (rt)	4.80E+01 (rt)
Anthracene	8.71E+00 (mo)	5.57E+01 (mo)	2.93E+01 (mo)	1.88E+01 (mo)	1.80E+01 (mo)	1.21E+02 (mo)
Benzo(a)anthracene	8.71E-02 (mo)	5.57E-01 (mo)	2.93E-01 (mo)	1.88E-01 (mo)	1.80E-01 (mo)	1.21E+02 (mo)
Benzo(b)fluoranthene	8.71E-02 (mo)	5.57E-01 (mo)	2.93E-01 (mo)	1.88E-01 (mo)	1.80E-01 (mo)	1.21E+02 (mo)
Benzo(k)fluoranthene	8.71E-02 (mo)	5.57E-01 (mo)	2.93E-01 (mo)	1.88E-01 (mo)	1.80E-01 (mo)	1.21E+02 (mo)
Benzo(ghi)perylene	8.71E-02 (mo)	5.57E-01 (mo)	2.93E-01 (mo)	1.88E-01 (mo)	1.80E-01 (mo)	1.21E+02 (mo)
Benzo(g,h,i)perylene	8.71E-02 (mo)	5.57E-01 (mo)	2.93E-01 (mo)	1.88E-01 (mo)	1.80E-01 (mo)	1.21E+02 (mo)
Benzo(a)pyrene	8.71E-02 (mo)	5.57E-01 (mo)	2.93E-01 (mo)	1.88E-01 (mo)	1.80E-01 (mo)	1.21E+02 (mo)
beta-BHC	9.88E-01 (rt)	6.32E+00 (rt)	3.33E+00 (rt)	2.13E+00 (rt)	2.04E+00 (rt)	1.37E+01 (rt)
gamma-BHC	9.88E-01 (rt)	6.32E+00 (rt)	3.33E+00 (rt)	2.13E+00 (rt)	2.04E+00 (rt)	1.37E+01 (rt)
Bis(2-ethylhexyl)phthalate	4.89E-02 (gp)	1.07E+00 (bi)	1.65E-01 (gp)	1.05E-01 (gp)	1.01E-01 (gp)	6.78E-01 (gp)
Bis(2-chloroethyl)ether	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	3.14E+00 (rt)	2.01E+01 (rt)	1.06E+01 (rt)	6.77E+00 (rt)	6.50E+00 (rt)	4.36E+01 (rt)
Carbazole	8.71E-02 (mo)	5.57E-01 (mo)	2.93E-01 (mo)	1.88E-01 (mo)	1.80E-01 (mo)	1.21E+02 (mo)
Chrysene	8.71E-02 (mo)	5.57E-01 (mo)	2.93E-01 (mo)	1.88E-01 (mo)	1.80E-01 (mo)	1.21E+02 (mo)
Dibenzofuran	8.71E-02 (mo)	5.57E-01 (mo)	2.93E-01 (mo)	1.88E-01 (mo)	1.80E-01 (mo)	1.21E+02 (mo)
Dibenzo(a,h)anthracene	8.71E-02 (mo)	5.57E-01 (mo)	2.93E-01 (mo)	1.88E-01 (mo)	1.80E-01 (mo)	1.21E+02 (mo)
Dibenz(a,h)anthracene	8.71E-02 (mo)	5.57E-01 (mo)	2.93E-01 (mo)	1.88E-01 (mo)	1.80E-01 (mo)	1.21E+02 (mo)
Diethylphthalate	3.99E+02 (mo)	2.55E+03 (mo)	1.34E+03 (mo)	8.60E+02 (mo)	8.26E+02 (mo)	5.54E+03 (mo)
2,4-Dimethylphenol	4.36E-01 (mo)	2.79E+00 (mo)	1.47E+00 (mo)	9.39E-01 (mo)	9.01E-01 (mo)	6.04E+00 (mo)
Di-n-butylphthalate	2.47E+01 (rt)	1.06E-01 (bi)	8.32E+01 (rt)	5.32E+01 (rt)	5.11E+01 (rt)	3.43E+02 (rt)
Di-n-octylphthalate	3.46E+00 (rt)	2.21E+01 (bi)	1.16E+01 (rt)	7.45E+00 (rt)	7.16E+00 (rt)	4.80E+01 (rt)
2,6-Dinitrotoluene	2.42E-01 (dg)	1.54E+00 (dg)	8.13E-01 (dg)	5.20E-01 (dg)	5.00E-01 (dg)	3.35E+00 (dg)
Fluoranthene	1.09E+00 (mo)	6.96E+00 (mo)	3.67E+00 (mo)	2.35E+00 (mo)	2.25E+00 (mo)	1.51E+01 (mo)
Fluorene	2.47E+00 (rt)	1.58E+01 (rt)	8.32E+00 (rt)	5.32E+00 (rt)	5.11E+00 (rt)	3.43E+01 (rt)
Indeno(1,2,3-cd)pyrene	8.71E-02 (mo)	5.57E-01 (mo)	2.93E-01 (mo)	1.88E-01 (mo)	1.80E-01 (mo)	1.21E+02 (mo)
2-Methylnaphthalene	8.10E+00 (rt)	5.18E+01 (rt)	2.73E+01 (rt)	1.75E+01 (rt)	1.68E+01 (rt)	1.12E+02 (rt)
Naphthalene	8.10E+00 (rt)	5.18E+01 (rt)	2.73E+01 (rt)	1.75E+01 (rt)	1.68E+01 (rt)	1.12E+02 (rt)
Nitrobenzene	4.94E-02 (rt)	3.16E-01 (rt)	1.66E-01 (rt)	1.06E-01 (rt)	1.02E-01 (rt)	6.85E-01 (rt)
N-Nitrosodiphenylamine	9.88E+00 (rt)	6.32E+01 (rt)	3.33E+01 (rt)	2.13E+01 (rt)	2.04E+01 (rt)	1.37E+02 (rt)
Phenanthrene	8.10E+00 (rt)	5.18E+01 (rt)	2.73E+01 (rt)	1.75E+01 (rt)	1.68E+01 (rt)	1.12E+02 (rt)
Phenol	1.19E+00 (rt)	7.58E+00 (rt)	3.99E+00 (rt)	2.55E+00 (rt)	2.45E+00 (rt)	1.64E+01 (rt)
Pyrene	6.53E-01 (mo)	4.18E+00 (mo)	2.20E+00 (mo)	1.41E+00 (mo)	1.35E+00 (mo)	9.06E+00 (mo)

REGION IV TERRESTRIAL REFERENCE VALUE CALCULATION
SITE 63 - VERONA LOOP DUMP AREA
REMEDIAL INVESTIGATION, CTO-0340
MCB, CAMP LEJEUNE, NORTH CAROLINA

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)
Aldrin	6.51E-01 (ct)	3.16E-02 (rt)	1.66E-02 (rt)	3.25E-02 (dg)	1.02E-02 (rt)	6.85E-02 (rt)
Alpha-chlordane	1.30E+00 (ct)	1.53E+00 (bi)	3.66E-02 (rt)	9.76E-02 (dg)	2.25E-02 (rt)	1.51E-01 (rt)
Gamma-chlordane	1.30E+00 (ct)	1.53E+00 (bi)	3.66E-02 (rt)	9.76E-02 (dg)	2.25E-02 (rt)	1.51E-01 (rt)
Dieldrin	6.51E-01 (ct)	5.38E-02 (bi)	3.33E-03 (rt)	6.51E-03 (dg)	2.04E-03 (rt)	1.37E-02 (rt)
4,4'-DDD	1.58E-01 (rt)	8.80E-02 (bi)	5.32E-01 (rt)	3.41E-01 (rt)	3.27E-01 (rt)	2.19E+00 (rt)
4,4'-DDE	1.58E-01 (rt)	8.80E-02 (bi)	5.32E-01 (rt)	3.41E-01 (rt)	3.27E-01 (rt)	2.19E+00 (rt)
4,4'-DDT	1.58E-01 (rt)	8.80E-02 (bi)	5.32E-01 (rt)	3.41E-01 (rt)	3.27E-01 (rt)	2.19E+00 (rt)
Endosulfan	1.19E-01 (rt)	1.32E+01 (bi)	3.99E-01 (rt)	7.42E-01 (dg)	2.45E-01 (rt)	1.64E+00 (rt)
Endosulfan I	1.19E-01 (rt)	1.32E+01 (bi)	3.99E-01 (rt)	7.42E-01 (dg)	2.45E-01 (rt)	1.64E+00 (rt)
Endosulfan II	1.19E-01 (rt)	1.32E+01 (bi)	3.99E-01 (rt)	7.42E-01 (dg)	2.45E-01 (rt)	1.64E+00 (rt)
Endosulfan Sulfate	1.19E-01 (rt)	1.32E+01 (bi)	3.99E-01 (rt)	7.42E-01 (dg)	2.45E-01 (rt)	1.64E+00 (rt)
Endrin	4.94E-02 (rt)	5.37E-01 (bi)	1.66E-01 (rt)	3.25E-02 (dg)	1.02E-01 (rt)	6.85E-01 (rt)
Endrin aldehyde	4.94E-02 (rt)	5.37E-01 (bi)	1.66E-01 (rt)	3.25E-02 (dg)	1.02E-01 (rt)	6.85E-01 (rt)
Endrin ketone	4.94E-02 (rt)	5.37E-01 (bi)	1.66E-01 (rt)	3.25E-02 (dg)	1.02E-01 (rt)	6.85E-01 (rt)
Heptachlor	2.96E-02 (rt)	1.89E-01 (rt)	9.98E-02 (rt)	6.39E-02 (rt)	6.13E-02 (rt)	4.11E-01 (rt)
Heptachlor epoxide	7.55E-05 (dg)	4.83E-04 (dg)	2.54E-04 (dg)	1.63E-04 (dg)	1.56E-04 (dg)	1.05E-03 (dg)
Aroclor-1221	6.91E-01 (rt)	4.42E+00 (rt)	2.33E+00 (rt)	1.49E+00 (rt)	1.43E+00 (rt)	9.59E+00 (rt)
Aroclor-1232	2.96E-02 (rt)	4.16E-01 (bi)	9.98E-02 (rt)	6.39E-02 (rt)	6.13E-02 (rt)	4.11E-01 (rt)
Aroclor-1260	9.88E-04 (rt)	6.32E-03 (rt)	3.33E-03 (rt)	2.13E-03 (rt)	2.04E-03 (rt)	1.37E-02 (rt)
Aroclor-1254	2.80E-02 (mk)	3.23E-01 (bi)	1.00E+00 (rb)	6.40E-01 (rb)	6.15E-01 (rb)	4.12E+00 (rb)
Aroclor-1248	1.13E-02 (mo)	7.24E-02 (mo)	2.80E-01 (rb)	1.79E-01 (rb)	2.34E-02 (mo)	1.57E-01 (mo)
Methylene chloride	1.16E+00 (rt)	7.39E+00 (rt)	3.89E+00 (rt)	2.49E+00 (rt)	2.39E+00 (rt)	1.60E+01 (rt)
Carbon disulfide	3.27E-01 (rb)	2.09E+00 (rb)	1.10E+00 (rb)	7.04E-01 (rb)	6.76E-01 (rb)	4.53E+00 (rb)
1,1-Dichloroethene	5.53E+00 (rt)	3.54E+01 (rt)	1.86E+01 (rt)	1.19E+01 (rt)	1.14E+01 (rt)	7.67E+01 (rt)
1,2-Dichloroethene (total)	9.88E-01 (rt)	6.32E+00 (rt)	3.33E+00 (rt)	2.13E+00 (rt)	2.04E+00 (rt)	1.37E+01 (rt)
Chloroform	7.51E+00 (rt)	4.80E+01 (rt)	2.53E+01 (rt)	3.90E+01 (dg)	1.55E+01 (rt)	1.04E+02 (rt)
2-Butanone	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	6.71E+01 (rt)	5.57E+02 (rt)	2.93E+02 (rt)	1.88E+02 (rt)	1.80E+02 (rt)	1.21E+03 (rt)
Trichloroethene	1.98E+01 (rt)	1.26E+02 (rt)	6.65E+01 (rt)	4.26E+01 (rt)	4.09E+01 (rt)	2.74E+02 (rt)
1,1,2-Trichloroethane	3.40E-02 (mo)	2.17E-01 (mo)	1.14E-01 (mo)	7.32E-02 (mo)	7.03E-02 (mo)	4.71E-01 (mo)
Benzene	1.98E-02 (rt)	1.26E-01 (rt)	6.65E-02 (rt)	4.26E-02 (rt)	4.09E-02 (rt)	2.74E-01 (rt)
1,1,2,2-Tetrachloroethane	1.50E+01 (rt)	9.60E+01 (rt)	5.06E+01 (rt)	3.24E+01 (rt)	3.11E+01 (rt)	2.08E+02 (rt)
Tetrachloroethene	2.77E-01 (rt)	1.77E+00 (rt)	9.31E-01 (rt)	5.96E-01 (rt)	5.72E-01 (rt)	3.84E+00 (rt)
Toluene	4.41E+00 (rt)	2.82E+01 (rt)	1.48E+01 (rt)	9.49E+00 (rt)	9.12E+00 (rt)	6.11E+01 (rt)
Ethylbenzene	1.92E+00 (rt)	1.23E+01 (rt)	6.46E+00 (rt)	4.13E+00 (rt)	3.97E+00 (rt)	2.66E+01 (rt)
Xylenes	3.54E+01 (rt)	2.26E+02 (rt)	1.19E+02 (rt)	7.62E+01 (rt)	7.32E+01 (rt)	4.91E+02 (rt)
Xylenes (total)	3.54E+01 (rt)	2.26E+02 (rt)	1.19E+02 (rt)	7.62E+01 (rt)	7.32E+01 (rt)	4.91E+02 (rt)
Vinyl chloride	3.36E-02 (rt)	2.15E-01 (rt)	1.13E-01 (rt)	7.24E-02 (rt)	6.95E-02 (rt)	4.66E-01 (rt)
Acetone	1.98E+00 (rt)	1.26E+01 (rt)	6.65E+00 (rt)	4.26E+00 (rt)	4.09E+00 (rt)	2.74E+01 (rt)
2-Hexanone	NA	NA	NA	NA	NA	NA

Note: The following abbreviations indicate which species was used to develop the TRV

(ct) = cattle
(rt) = rat
(bi) = bird
(gp) = guinea pig
(rb) = rabbit
(dg) = dog
(mo) = mouse
(mk) = mink

NA - No Data Available

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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.