03.12-05/31/95-01541

APPENDIX L
RI/FS FIELD WELL DEVELOPMENT RECORDS

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: GWD-Ø1

DATE: Ø5/12/94

GEOLOGIST/ENGINEER: MD SMITH

TIME START: 143Ø

TIME FINISH: 145Ø

INITIAL WATER LEVEL (FT): 9.57'

TOTAL WELL DEPTH (TD): 62.5'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: 8.6 GAL

BOREHOLE DIAMETER (INCHES): 8.Ø"

BOREHOLE VOLUME:

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 11 MIN

AVERAGE FLOW (GPM)(B): 12.3 GPM

TOTAL ESTIMATED WITHDRAWAL AxB=: 135 GAL.

HNU/OVA READING: BACKGROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1439	35	8.29	37.0°	36Ø	24.Ø°	TURBID
1441	5Ø	8.13	21.5°	335	21.5°	TURBID
1444	75	8.14	19.9°	33Ø	22.0°	SLIGHTLY TURBID
1446	95	8.22	19.2°	325	22.0°	SLIGHTLY TURBID
1448	115	8.27	21.2°	32Ø	21.5°	CLEAR
145Ø	135	8.29	2Ø.2°	32Ø	22.0°	CLEAR
	*15Ø (TOTAL VOLUME REMOVED)					CLEAR

OBSERVATIONS/NOTES

* PUMP WAS LEFT RUNNING WHILE EQUIPMENT WAS STOWED. INITIAL TEMPERATURE INDICATES EQUIPMENT FAILURE OR OPERATOR ERROR.

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: GWD-Ø2

DATE: Ø5/Ø9/94

GEOLOGIST/ENGINEER: WM PELKEY

TIME START: 17Ø8

TIME FINISH: 1718

INITIAL WATER LEVEL (FT): SURFACE

TOTAL WELL DEPTH (TD): 62.Ø'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: 1Ø GAL

BOREHOLE DIAMETER (INCHES): 8.Ø"

BOREHOLE VOLUME: —

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 1Ø MIN.

AVERAGE FLOW (GPM)(B): 2Ø GPM

TOTAL ESTIMATED WITHDRAWAL AxB = 2ØØ GALS

HNU/OVA READING: BACKGROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
17Ø8	6Ø	6.44	21.1°	37Ø	21.Ø°	TURBID
171Ø	8Ø	8.29	19.Ø°	36Ø	21.5°	
1714	13Ø	7.94	19.3°	355	2Ø.5°	
1716	17Ø	7.87	19.2°	35Ø	20.5°	
1718	2ØØ	7.94	19.5°	35Ø	20.5°	CLEAR

OBSERVATIONS/NOTES

WATERLEVEL METER MALFUNCTIONED. SO, WATER LEVEL WAS CONSERVATIVELY ASSUMED AT THE SURFACE OF THE GROUND.

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE35, RI

CTO NO.: Ø232 WELL NO.: GWD-Ø3

DATE: Ø5/11/93

GEOLOGIST/ENGINEER: MDSMITH

TIME START: 1700

TIME FINISH: 1745

INITIAL WATER LEVEL (FT): 5.59'

TOTAL WELL DEPTH (TD): 64.4'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: 9.6 GAL

BOREHOLE DIAMETER (INCHES): 8.Ø"

BOREHOLE VOLUME: —

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 2Ø MIN

AVERAGE FLOW (GPM)(B): 5.5 GPM

TOTAL ESTIMATED WITHDRAWAL AxB = 1Ø9 GAL

HNU/OVA READING: Background

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
17Ø5	9	11.28	19.9°	825	21.Ø°	VERY TURBID
17Ø8	32	9.2Ø	19.5°	42Ø	2Ø.5	VERY TURBID
1711	46	8.86	19.5°	4ØØ	2Ø.25	SLIGHTLY TURBID
1717	68	8.46	19.3°	4ØØ	2Ø.ØØ	SLIGHTLY TURBID
1721	92	8.38	19.2°	375	2Ø.ØØ	SLIGHTLY TURBID
1725	1Ø9	8.28	19.Ø	4ØØ	2Ø.5Ø	CLEAR
*	132	STOPPED, NO READINGS TAKEN. ESTIMATED TIME 1730				CLEAR

OBSERVATIONS/NOTES

* EQUIPMENT WAS PUT AWAY AND PUT WAS LEFT RUNNING

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35 RI

CTO NO.: Ø232 WELL NO.: GWD-Ø4

DATE: Ø5/12/94

GEOLOGIST/ENGINEER: MDSMITH

TIME START: 1756

TIME FINISH: 181Ø

INITIAL WATER LEVEL (FT): 7.97'

TOTAL WELL DEPTH (TD): 53.875'

WELL DIAMETER (INCHES): 2"

CALCULATED WELL VOLUME: 7.5 GAL.

BOREHOLE DIAMETER (INCHES): 8"

BOREHOLE VOLUME:

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIR LIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 14 MIN

AVERAGE FLOW (GPM)(B): 11 GPM

TOTAL ESTIMATED WITHDRAWAL AxB= 154-155

HNU/OVA READING: Background

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1756	2Ø	9.23	18.Ø°	46Ø	20.5°	VERY TURBID
1759	45	8.Ø8	17.7°	37Ø	19.5°	TURBID
18Ø2	7Ø	7.73	18.Ø°	375	19.0°	SLIGHTLY TURBID
18Ø5	1ØØ	7.74	18.2°	38Ø	19.0°	SLIGHTLY TURBID
18Ø7	13Ø	8.Ø1	23.1°	37Ø	19.5	CLEAR
181Ø	155	7.82	17.7°	38Ø	19.5	CLEAR

OBSERVATIONS/NOTES

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35 RI

CTO NO.: Ø232 WELL NO.: GWD-Ø5

DATE: Ø5/11/94

GEOLOGIST/ENGINEER: MDSMITH

TIME START: 1325

TIME FINISH: 1342

INITIAL WATER LEVEL (FT): 6.58'

TOTAL WELL DEPTH (TD): 56.8Ø'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: 8.2 GAL.

BOREHOLE DIAMETER (INCHES): 8"

BOREHOLE VOLUME:

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIR LIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 1Ø MIN.

AVERAGE FLOW (GPM)(B): 1Ø GPM.

TOTAL ESTIMATED WITHDRAWAL AxB = 1ØØ GAL.

HNU/OVA READING: Background

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1330	Ø	1Ø.98	.3°	65Ø	2Ø.Ø°	SLIGHTLY TURBID
1335	45	7.88	19.1°	375	19.5°	SLIGHTLY TURBID
1337	75	7.84	25.9°	35Ø	19.5°	CLEAR
134Ø	1ØØ	7.85	19.1°	35Ø	19.5°	CLEAR

OBSERVATIONS/NOTES

INITIAL TEMPERATURE AND pH INDICATE POSSIBLE EQUIPMENT MALFUNCTION.
THIRD TEMPERATURE READING IS HIGH. POSSIBLE EQUIPMENT MALFUNCTION.

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE35, RI

CTO NO.: Ø232 WELL NO.: MW-26B

DATE: Ø5/15/94

GEOLOGIST/ENGINEER: MDSMITH

TIME START: ØØØØ

TIME FINISH: Ø8Ø45

INITIAL WATER LEVEL (FT): 9.Ø7'

TOTAL WELL DEPTH (TD): 43.4'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: 5.6 GAL.

BOREHOLE DIAMETER (INCHES): 8.Ø"

BOREHOLE VOLUME: —

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 35 MIN.

AVERAGE FLOW (GPM)(B): 1.7 GPM

TOTAL ESTIMATED WITHDRAWAL AxB=: 6Ø GAL

HNU/OVA READING: Background

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
Ø81Ø	7	7.52	24.9°	6ØØ	22.Ø°	VERY TURBID
Ø814	1Ø	7.63	21.9°	6ØØ	22.Ø°	VERY TURBID
Ø816	17	7.89	21.9°	65Ø	22.Ø°	TURBID
Ø825	27	8.13	22.5°	525	22.Ø°	TURBID
Ø835	4Ø	8.19	22.8°	5ØØ	22.Ø°	TURBID
Ø839	5Ø	8.32	23.1°	5ØØ	23.Ø°	SLIGHTLY TURBID
Ø842	55	8.35	22.9°	5ØØ	23.Ø	CLEAR
Ø845	6Ø	8.31	23.2°	5ØØ	23.Ø	CLEAR

OBSERVATIONS/NOTES

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW29 A

DATE: Ø4-28-94

GEOLOGIST/ENGINEER: MDSMITH

TIME START: 1Ø5Ø

TIME FINISH: 115Ø

INITIAL WATER LEVEL (FT): 8.8'

TOTAL WELL DEPTH (TD): 17.Ø'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: 1.3 GAL

BOREHOLE DIAMETER (INCHES): 8"

BOREHOLE VOLUME:

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIR LIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 60 MIN.

AVERAGE FLOW (GPM)(B): .42 GPM

TOTAL ESTIMATED WITHDRAWAL AxB=: 25 GAL

HNU/OVA READING: BACKGROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1Ø5Ø	5	5.52	2Ø.4	265	24°	VERY TURBID, CREOSOTE SMELL
–	1Ø	5.51	2Ø.4	195	24°	VERY TURBID, CREOSOTE SMELL
–	15	5.85	2Ø.4	195	24°	TURBID, CREOSOTE SMELL
–	18	6.07	2Ø.4	125	25°	SLIGHTLY, TURBID
–	2Ø	6.38	*6°	11Ø	24°	SLIGHTLY, TURBID
115Ø	25	NO FINAL READINGS TAKEN, EQUIPMENT FAILURE.				SLIGHTLY TURBID

OBSERVATIONS/NOTES

* pH METER FLASHED WITH ERROR MESSAGE

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW29B

DATE: Ø4/28/94

GEOLOGIST/ENGINEER: MDSMITH / JSCULP

TIME START: Ø83Ø

TIME FINISH: 1Ø45

INITIAL WATER LEVEL (FT): 8.8'

TOTAL WELL DEPTH (TD): 65.Ø'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: 9.2 GAL

BOREHOLE DIAMETER (INCHES): 8"

BOREHOLE VOLUME:

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 80 MIN.

AVERAGE FLOW (GPM)(B): 2.86PM

TOTAL ESTIMATED WITHDRAWAL AxB= OBSERVED-225GAL

HNU/OVA READING: BACKGROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
Ø83Ø	1 GAL	7.88	2Ø.7°	470	22°	VERY TURBID
–	15	8.03	2Ø.5°	475	21°	VERY TURBID
–	35	8.19	19.9°	450	21°	TURBID
Ø85Ø	55	8.24	2Ø.6°	450	21°	TURBID
0850 – 0945 STOPPED TEST TO						
55 GALLON DRUMS.						
Ø945	55	EQUIPMENT FAILURE				TURBID
1Ø45	225	NO READINGS TAKEN				CLEAR

OBSERVATIONS/NOTES

0-55- MDSMITH

55-225 GAL - JSCULP

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW-3ØA

DATE: Ø5/12/94

GEOLOGIST/ENGINEER: MDSMITH

TIME START: Ø845

TIME FINISH: 1Ø21

INITIAL WATER LEVEL (FT): 2.25'

TOTAL WELL DEPTH (TD): 17.86'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: 2.6 GAL

BOREHOLE DIAMETER (INCHES): 8.0"

BOREHOLE VOLUME:

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIR LIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 78 MIN

AVERAGE FLOW (GPM)(B): 1 GPM

TOTAL ESTIMATED WITHDRAWAL AxB = : 78-80 GAL

HNU/OVA READING: BACKGROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
Ø9Ø3	3	5.79	22.9°	245	21.Ø°	VERY TURBID
Ø921	13	5.72	2Ø.6°	135	22.Ø°	VERY TURBID
Ø929	25	5.99	19.8°	11Ø	21.Ø°	VERY TURBID
Ø935	3Ø	5.96	19.6°	1Ø5	21.Ø°	TURBID
Ø942	35	6.26	19.8°	1ØØ	21.5°	TURBID
Ø947	4Ø	5.57	2Ø.2°	85	21.5°	VERY TURBID
Ø953	45	6.Ø6	2Ø.8°	85	22.Ø°	TURBID
1ØØØ	5Ø	6.21	2Ø.4°	85	22.Ø°	TURBID
1Ø1Ø	6Ø	6.57	2Ø.7°	85	22Ø°	SLIGHTLY TURBID
1Ø13	7Ø	6.61	2Ø.6°	85	22.5°	CLEAR
1Ø21	8Ø	6.7Ø	2Ø.2°	85	22.5°	CLEAR

OBSERVATIONS/NOTES

WATER LEVEL WAS NOT TAKE INITIALLY TO CALCULATE WELL VOLUME. SO, CONSERVATIVELY THE WATER LEVEL WAS ASSUMED AT THE SURFACE.

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW-3Ø B

DATE: Ø5/12/94

GEOLOGIST/ENGINEER: MOSMITH

TIME START: 1Ø31

TIME FINISH: 1125

INITIAL WATER LEVEL (FT): 8.Ø2'

TOTAL WELL DEPTH (TD): 43.92'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: 5.9 GAL.

BOREHOLE DIAMETER (INCHES):

BOREHOLE VOLUME: 8.Ø"

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A):

AVERAGE FLOW (GPM)(B):

TOTAL ESTIMATED WITHDRAWAL AxB =

HNU/OVA READING:

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1Ø39	3Ø	7.47	19.6°	6ØØ	21.5°	TURBID
1Ø41	5Ø	7.42	19.1°	525	21.0°	SLIGHTLY TURBID
11ØØ	65	7.77	19.7°	55Ø	22.0°	SLIGHTLY TURBID
11Ø3	9Ø	7.7Ø	19.5°	5ØØ	21.5°	SLIGHTLY TURBID
1119	95	7.64	19.8°	51Ø	22.0°	SLIGHTLY TURBID
1123	—	7.51	19.2°	49Ø	21.5°	SLIGHTLY TURBID
1125	12Ø	7.58	19.4°	48Ø	21.5°	CLEAR

OBSERVATIONS/NOTES

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW-31A

DATE: Ø5/1Ø/94

GEOLOGIST/ENGINEER: WM PELKEY

TIME START: 1521

TIME FINISH: 1627

INITIAL WATER LEVEL (FT): 14.72'

TOTAL WELL DEPTH (TD): 1Ø.48'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: .7 GAL

BOREHOLE DIAMETER (INCHES): 8.Ø"

BOREHOLE VOLUME: —

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT AND BAIL

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): *

AVERAGE FLOW (GPM)(B): *

TOTAL ESTIMATED WITHDRAWAL AxB=: * 3 GAL.

HNU/OVA READING: BACKGROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1521	1	6.25	26.4°	27Ø	27.Ø°	TURBID
1555	2	6.13	28.0°	26Ø	28.Ø°	TURBID
1627	3	6.47	24.1°	26Ø	25.Ø°	TURBID
WELL DRY @ 1627						

OBSERVATIONS/NOTES

* AIRLIFT WAS STOPPED TWICE TO ALLOW RECHARGE. LAST VOLUME (1555-1627) WAS BAILED

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW-31B

DATE. Ø5/1Ø/94

GEOLOGIST/ENGINEER: WM PELKEY

TIME START: 145Ø

TIME FINISH: 15Ø1

INITIAL WATER LEVEL (FT): 1Ø.8Ø'

TOTAL WELL DEPTH (TD): 44.22'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: 5.5 GAL

BOREHOLE DIAMETER (INCHES): 8.Ø"

BOREHOLE VOLUME: —

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIR LIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 11 MIN.

AVERAGE FLOW (GPM)(B): 9 GPM

TOTAL ESTIMATED WITHDRAWAL AxB = : 99-100 GAL

HNU/OVA READING: BACK GROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
145Ø	1Ø	7.86	1Ø.3°	55Ø	22.Ø°	TURBID
1454	3Ø	7.88	1Ø.7°	525	21.Ø°	
1456	6Ø	8.11	19.9°	55Ø	21.Ø°	
1458	8Ø	8.Ø7	1Ø.4°	525	21.Ø°	
1459	9Ø	8.11	20.5°	525	21.5°	
15Ø1	* 1ØØ	PUMP STOPPED				CLEAR
NO READINGS TAKEN						

OBSERVATIONS/NOTES

* EQUIPMENT WAS BEING STOWED AND PUMP WAS LEFT RUNNING

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW-32A

DATE: Ø5/15/94

GEOLOGIST/ENGINEER: MDSMITH

TIME START: Ø91Ø

TIME FINISH: 1Ø47

INITIAL WATER LEVEL (FT): 8.34'

TOTAL WELL DEPTH (TD): 14.25'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: .96 GAL.

BOREHOLE DIAMETER (INCHES): 8.Ø"

BOREHOLE VOLUME: —

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 87 MIN.

AVERAGE FLOW (GPM)(B): .2 GPM

TOTAL ESTIMATED WITHDRAWAL AxB =

HNU/OVA READING: BACKGROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
Ø92Ø	Ø	5.91	23.3°	16Ø	23.5°	VERY TURBID
Ø936	2	5.72	23.3°	16Ø	24.Ø°	VERY TURBID
Ø951	1Ø	6.Ø1	23.3°	165	27.Ø°	VERY TURBID
1Ø1Ø	13	6.41	22.9°	175	29.Ø°	TURBID
1Ø24	14	6.98	2Ø.7°	18Ø	29.Ø°	SLIGHTLY TURBID
1Ø35	15	7.Ø7	21.9°	17Ø	29.Ø°	SLIGHTLY TURBID
1Ø47	16	7.17	26.4°	175	3Ø.Ø°	SLIGHTLY TURBID

DECISION WAS MADE AT 1Ø47 TO TERMINATE. WATER QUALITY HAD NOT IMPROVED SINCE 1Ø3Ø.

OBSERVATIONS/NOTES

FLOW WAS A MIST. WELL WAS SURGED AT ABOUT Ø945 AND TURBIDITY INCREASED. FIRST SIX TEMP READINGS TAKEN FROM pH PROBE ARE INVALID. PLUG FOR pH PROBE WAS NOT FULLY INSERTED.

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW-32B

DATE: Ø5/15/94

GEOLOGIST/ENGINEER: MD SMITH

TIME START	111
TIME FINISH	1145
INITIAL WATER LEVEL (FT)	9.1'
TOTAL WELL DEPTH (TD)	44.17'
WELL DIAMETER (INCHES)	2.Ø"
CALCULATED WELL VOLUME	5.7 GAL.
BOREHOLE DIAMETER (INCHES)	8.Ø"
BOREHOLE VOLUME	—
AMOUNT OF WATER ADDED DURING DRILLING	NONE
DEVELOPMENT METHOD	AIR LIFT
PUMP TYPE	AIR COMPRESSOR
TOTAL TIME (A)	25 MIN
AVERAGE FLOW (GPM)(B)	5.4 GPM
TOTAL ESTIMATED WITHDRAWAL AxB=	135 GAL
HNU/OVA READING	BACKGROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1119	1Ø	7.74	18.6	85Ø	22.Ø°	VERY TURBID
1123	35	7.86	17.7	55Ø	1Ø.5°	TURBID
1126	5Ø	7.89	17.3	5ØØ	19.5°	SLIGHTLY TURBID
1131	75	8.Ø1	17.9	5ØØ	21.5°	SLIGHTLY TURBID
1135	93	7.99	16.8	5ØØ	21.Ø°	SLIGHTLY TURBID
1144	135	8.17	16.7	5ØØ	21.Ø°	VERY SLIGHTLY TURBID

OBSERVATIONS/NOTES

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW-33A

DATE: Ø5/13/94

GEOLOGIST/ENGINEER: MD SMITH

TIME START: 113Ø

TIME FINISH: 12Ø7

INITIAL WATER LEVEL (FT): 1Ø.44'

TOTAL WELL DEPTH (TD): 15.42'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: .81 GAL.

BOREHOLE DIAMETER (INCHES): 8.Ø"

BOREHOLE VOLUME: —

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 37 MIN

AVERAGE FLOW (GPM)(B): .4-.5 GPM

TOTAL ESTIMATED WITHDRAWAL AxB=: 15-16 GAL

HNU/OVA READING: BACKGROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
113Ø	1	5.88	21.5°	24Ø	21.Ø°	TURBID
1139	3	6.19	2Ø.4°	21Ø	22.Ø°	TURBID
1141	7	6.51	2Ø.5°	185	22.Ø°	TURBID
1144	9	7.Ø2	2Ø.8°	175	22.5°	SLIGHTLY TURBID
1147	1Ø	7.ØØ	2Ø.3°	168	22.5°	SLIGHTLY TURBID
1151	11	6.88	21.7	155	23.Ø°	CLEAR
1157	13	7.Ø8	21.4	152	23.5°	CLEAR
12Ø5	14	6.53	21.7	145	23.5°	CLEAR
12Ø7	15	6.37	21.5	145	24.Ø°	CLEAR

OBSERVATIONS/NOTES

pH READINGS ON LAST 4 READINGS WOULD NOT STABILIZE. POSSIBLE EQUIPMENT MALFUNCTION.

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: 35-MW33B

DATE: Ø5/13/94

GEOLOGIST/ENGINEER: MD SMITH

TIME START: 1458

TIME FINISH: 133Ø

INITIAL WATER LEVEL (FT): 11.16'

TOTAL WELL DEPTH (TD): 45.6Ø

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: 5.6 GAL.

BOREHOLE DIAMETER (INCHES): 8.Ø"

BOREHOLE VOLUME: —

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIR LIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 32 MIN

AVERAGE FLOW (GPM)(B): 5.5 GPM

TOTAL ESTIMATED WITHDRAWAL AxB=: 175-176 GAL

HNU/OVA READING: BACKGROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1458	5	7.83	35.1°	72Ø	22.5°	VERY TURBID
15ØØ	25	7.69	37.3°	5ØØ	22.0°	VERY TURBID
15Ø2	4Ø	7.73	38.5°	5ØØ	22.0°	TURBID
15Ø5	75	7.8Ø	37.4°	45Ø	22.0°	SLIGHTLY TURBID
15Ø7	1ØØ	7.77	37.3°	5ØØ	22.0°	SLIGHTLY TURBID
151Ø	11Ø	7.78	37.4°	45Ø	22.5°	SLIGHTLY TURBID
1513	13Ø	7.83	34.6°	45Ø	21.5°	SLIGHTLY TURBID
1525	145	7.54	22.4°	45Ø	23.0°	SLIGHTLY TURBID
1527	16Ø	7.98	21.1°	45Ø	22.0°	SLIGHTLY TURBID
153Ø	175	8.Ø5	20.1°	45Ø	22.0°	VERY SLIGHT TURBIDITY

OBSERVATIONS/NOTES

"CABBAGE LIKE" ODOR.

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW-34A

DATE: Ø5/11/94

GEOLOGIST/ENGINEER: MDSMITH

TIME START: 154Ø

TIME FINISH: 1645

INITIAL WATER LEVEL (FT): 7.77

TOTAL WELL DEPTH (TD): 16.Ø9

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: 1.36 GAL

BOREHOLE DIAMETER (INCHES): 8"

BOREHOLE VOLUME:

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: BAIL

PUMP TYPE: —

TOTAL TIME (A): NA

AVERAGE FLOW (GPM)(B): NA

TOTAL ESTIMATED WITHDRAWAL AxB=: NA

HNU/OVA READING: BACKGROUND

DEVELOPMENT DATA

INITIAL DEVELOPMENT

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1552	1½	6.33	19.5	29Ø	2Ø	VERY TURBID
16Ø1	3	6.ØØ	19.6	2ØØ	2Ø	VERY TURBID
161Ø	5	5.82	2Ø.Ø	15Ø	2Ø	VERY TURBID
1615	7½	6.Ø1	18.4	22Ø	2Ø	VERY TURBID
162Ø	8	6.Ø2	19.Ø	2ØØ	2Ø	TURBID
163Ø	12	6.29	19.1	21Ø	2Ø	TURBID
1635	16	6.35	19.1	25Ø	2Ø	TURBID

OBSERVATIONS/NOTES

PROJECT GEOLOGIST JSCULP ADVISED THAT WELL BE DEVELOPED AGAIN WITH AIR.

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW-34A

DATE: Ø5/12/94

GEOLOGIST/ENGINEER: MDSMITH

TIME START: 152Ø

TIME FINISH: 163Ø

INITIAL WATER LEVEL (FT): 7.77'

TOTAL WELL DEPTH (TD): 16.83'

WELL DIAMETER (INCHES): 2"

CALCULATED WELL VOLUME: 1.8 GAL

BOREHOLE DIAMETER (INCHES): 8"

BOREHOLE VOLUME:

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 53 MIN

AVERAGE FLOW (GPM)(B): APPROX .25 GPM

TOTAL ESTIMATED WITHDRAWAL AxB=: APPROX 12 — 13 GAL

HNU/OVA READING: Background

DEVELOPMENT DATA

REDEVELOPMENT

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1537	1Ø	5.99				VERY TURBID
155Ø	11	6.06				VERY TURBID
163Ø	12	FLOW WAS SO LOW				VERY TURBID
		IT WAS IMPOSSIBLE				
		TO OBTAIN ENOUGH				
		SAMPLE TO TEST.				

OBSERVATIONS/NOTES

FLOW WAS VERY LOW AND WATER NEVER CLEARED UP. WELL WAS SURGED @ ≈ 154Ø AND 155Ø. BETWEEN 1550 AND 163Ø TURBIDITY WAS CONSTANTLY MONITORED WITH NO CHANGE. AT 163Ø FLOW WAS ACTUALLY A FINE MIST.

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW34B

DATE: Ø5/11/94

GEOLOGIST/ENGINEER: MD SMITH

TIME START: 142Ø

TIME FINISH: 151Ø

INITIAL WATER LEVEL (FT): 8.61'

TOTAL WELL DEPTH (TD): 43.25'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: 5.65 GAL

BOREHOLE DIAMETER (INCHES): 8.Ø"

BOREHOLE VOLUME:

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 32 MIN.

AVERAGE FLOW (GPM)(B): 4.85 GPM

TOTAL ESTIMATED WITHDRAWAL AxB = 155 GAL

HNU/OVA READING: BACKGROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1435	Ø	8.98	24.7°	4ØØ	24.5°	SLIGHTLY TURBID
1438	24	8.Ø7	2Ø.7°	7ØØ	21.Ø°	SLIGHTLY TURBID
1443	4Ø	8.Ø5	2Ø.5°	65Ø	20.5°	TURBID
1445	5Ø	8.Ø6	2Ø.3°	675	21.Ø°	TURBID
1447	68	8.Ø8	2Ø.1°	675	21.5°	SLIGHTLY TURBID
145Ø	83	8.Ø9	19.6°	625	21.5°	SLIGHTLY TURBID
1452	92	8.16	2Ø.4°	650	21.Ø°	SLIGHTY TURBID
1458	1Ø5	8.14	2Ø.2°	675	21.Ø°	VERY SLIGHT
15Ø3	135	8.2Ø	2Ø.4°	65Ø	21.5°	VERY SLIGHT
15Ø7	155	8.26	2Ø.1°	675	21.Ø	VERY SLIGHT

OBSERVATIONS/NOTES

LAST 50 GALLONS TURBIDITY WAS VERY SLIGHT AND CONSTANT.

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW-35A

DATE: Ø5/1Ø/94

GEOLOGIST/ENGINEER: J.S. CULP

TIME START: 1815

TIME FINISH: 183Ø

INITIAL WATER LEVEL (FT): -

TOTAL WELL DEPTH (TD): 14.Ø'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME:

BOREHOLE DIAMETER (INCHES): 8.Ø"

BOREHOLE VOLUME:

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A):

AVERAGE FLOW (GPM)(B):

TOTAL ESTIMATED WITHDRAWAL AxB =:

HNU/OVA READING:

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
-	0	—	—	—	—	TURBID
183Ø		—	—	—	—	CLEAR

OBSERVATIONS/NOTES

NO READINGS FOR pH, TEMP & SPEC. COND. DUE TO EQUIPMENT FAILURE. DEVELOPMENT WAS JUDGED TO BE COMPLETED WHEN WATER WAS CLEAR.

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW-38B

DATE: Ø5/17/94

GEOLOGIST/ENGINEER: JSCULP

TIME START: Ø935

TIME FINISH: 1ØØ5

INITIAL WATER LEVEL (FT): 7.69'

TOTAL WELL DEPTH (TD): 46.1'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: 6.3 GAL

BOREHOLE DIAMETER (INCHES): 8.Ø"

BOREHOLE VOLUME: —

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 30 MIN

AVERAGE FLOW (GPM)(B): 2.3 GPM

TOTAL ESTIMATED WITHDRAWAL AxB=: 68-69 GAL

HNU/OVA READING: BACKGROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
Ø935	0	–	–	–	–	–
–	8	7.75	2Ø.5°	6ØØ	23.Ø°	HIGH TURBIDITY
–	15	8.Ø1	2Ø.5°	46Ø	22.Ø°	LOW TURBIDITY
–	3Ø	8.16	19.6°	44Ø	21.Ø°	LOW TURBIDITY
–	55	8.Ø6	2Ø.Ø°	43Ø	22.Ø°	LOW TURBIDITY
1ØØ5	68	8.22	2Ø.6°	42Ø	22.Ø°	LOW TURBIDITY

OBSERVATIONS/NOTES

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW-38A

DATE: Ø5/17/94

GEOLOGIST/ENGINEER: JSCULP

TIME START: Ø9Ø5

TIME FINISH: Ø925

INITIAL WATER LEVEL (FT): 7.73'

TOTAL WELL DEPTH (TD): 16.9'

WELL DIAMETER (INCHES): 2.0"

CALCULATED WELL VOLUME: 1.5 GAL

BOREHOLE DIAMETER (INCHES): 8.0"

BOREHOLE VOLUME: —

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 20 MIN

AVERAGE FLOW (GPM)(B): 2.4 GPM

TOTAL ESTIMATED WITHDRAWAL AxB = 47-48 GAL

HNU/OVA READING: BACKGROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
—	5	5.75	19.Ø°	16Ø	19.Ø°	TURBID
—	1Ø	5.62	18.9	14Ø	20.0°	HIGHLY TURBID
—	25	5.82	19.Ø°	125	20.5°	TURBID
—	35	6.11	18.7°	12Ø	21.0°	LOW TURBIDITY
—	42	6.17	19.3°	115	21.0°	LOW TURBIDITY
Ø925	47	6.15	18.6°	12Ø	21.0°	LOW TURBIDITY

OBSERVATIONS/NOTES

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW-37B

DATE: Ø5/16/94

GEOLOGIST/ENGINEER: MD SMITH

TIME START: Ø954

TIME FINISH: 1Ø15

INITIAL WATER LEVEL (FT): 7.3'

TOTAL WELL DEPTH (TD): 45.6'

WELL DIAMETER (INCHES): 2.0"

CALCULATED WELL VOLUME: 6.3 GAL

BOREHOLE DIAMETER (INCHES): 8.Ø"

BOREHOLE VOLUME: —

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIR LIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 13 MIN

AVERAGE FLOW (GPM)(B): 7.7 GPM

TOTAL ESTIMATED WITHDRAWAL AxB = : 100 - 101 GAL.

HNU/OVA READING: BACKGROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
Ø954	1Ø	7.77	21.5°	7ØØ	23.Ø°	VERY TURBID
Ø957	45	7.68	2Ø.3°	495	21.5°	TURBID
1ØØØ	55	7.72	19.6°	475	21.Ø°	SLIGHTLY TURBID
1ØØ2	7Ø	7.71	19.5°	475	21.5°	SLIGHTLY TURBID
1ØØ5	9Ø	7.71	19.6°	475	21.5°	CLEAR
1ØØ7	1ØØ	7.72	19.3°	470	21.Ø°	CLEAR

OBSERVATIONS/NOTES

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE35, RI

CTO NO.: Ø232 WELL NO.: MW-37A

DATE: Ø5/16/94

GEOLOGIST/ENGINEER: MDSMITH

TIME START: ØØØØ

TIME FINISH: Ø935

INITIAL WATER LEVEL (FT): 7.Ø'

TOTAL WELL DEPTH (TD): 17.04'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: 1.6 GAL

BOREHOLE DIAMETER (INCHES): 8.Ø"

BOREHOLE VOLUME: —

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 95 MIN

AVERAGE FLOW (GPM)(B): .35 GPM

TOTAL ESTIMATED WITHDRAWAL AxB = 33 - 34 GAL

HNU/OVA READING: BACKGROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
ØØØØ	Ø	5.2Ø	19.9°	28Ø	19.5°	EXTREMELY TURBID
ØØØ5	7	4.87	17.5°	2ØØ	18.5°	EXTREMELY TURBID
Ø81Ø	8	4.81	17.5°	18Ø	19.Ø°	EXTREMELY TURBID
Ø816	11	4.81	17.9°	155	19.Ø°	EXTREMELY TURBID
Ø819	13	4.88	18.6°	19Ø	19.5°	EXTREMELY TURBID
Ø834	15	4.95	18.6°	12Ø	2Ø.Ø°	EXTREMELY TURBID
Ø841	16	5.ØØ	18.5°	1ØØ	2Ø.Ø°	TURBID
Ø9Ø4	2Ø	5.ØØ	25.6°	18Ø	2Ø.5°	TURBID
Ø9Ø8	21	5.ØØ	19.1°	18Ø	2Ø.5°	TURBID
Ø918	26	4.94	20.3°	17Ø	21.5°	SLIGHTLY TURBID
Ø92Ø	29	5.Ø6	2Ø.5°	17Ø	22.5°	CLEAR
Ø931	33	5.13	2Ø.8°	17Ø	23.Ø°	CLEAR

OBSERVATIONS/NOTES

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW-36B

DATE: Ø5/11/94

GEOLOGIST/ENGINEER: MDSMITH

TIME START: Ø955

TIME FINISH:

INITIAL WATER LEVEL (FT): 3.75'

TOTAL WELL DEPTH (TD): 36.2'

WELL DIAMETER (INCHES): 2"

CALCULATED WELL VOLUME: 5.3 GAL

BOREHOLE DIAMETER (INCHES): 8"

BOREHOLE VOLUME:

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): 23 MIN

AVERAGE FLOW (GPM)(B): 3.75 GPM

TOTAL ESTIMATED WITHDRAWAL AxB = 85 GAL

HNU/OVA READING: BACKGROUND

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1ØØØ	30	8.09	22.7°	575	2Ø.Ø°	SLIGHT TURBIDITY
1ØØ7	36	8.1Ø	19.2°	525	19.Ø°	SLIGHT TURBIDITY
1Ø11	4Ø	8.Ø8	19.4°	49Ø	19.Ø°	VERY SLIGHT TURBIDITY
1Ø15	55	8.11	19.4°	49Ø	19.5°	VERY SLIGHT TURBIDITY
1Ø19	65	8.13	19.5°	51Ø	19.Ø°	VERY SLIGHT TURBIDITY
1Ø2Ø	75	8.12	19.6°	5ØØ	19.Ø°	CLEAR
1Ø23	85	PUMP SHUT OFF				CLEAR

OBSERVATIONS/NOTES

SLIGHT SOLVENT ODOR.

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW-36A

DATE: Ø5/11/94

GEOLOGIST/ENGINEER: MD SMITH

TIME START: 1Ø4Ø

TIME FINISH: 112Ø

INITIAL WATER LEVEL (FT):

TOTAL WELL DEPTH (TD): 15.2'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME: .91

BOREHOLE DIAMETER (INCHES): 8"

BOREHOLE VOLUME:

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: BAIL

PUMP TYPE: -NA-

TOTAL TIME (A):

AVERAGE FLOW (GPM)(B):

TOTAL ESTIMATED WITHDRAWAL AxB= 10 GAL

HNU/OVA READING: Background

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
1Ø4Ø	Ø	6.35	18.6	4ØØ	18.Ø	VERY TURBID
1Ø45	1	6.24	19.2	35Ø	18.5	VERY TURBID
1Ø49	2	6.3Ø	19.9	3ØØ	19.Ø	VERY TURBID
11ØØ	6	6.23	20.9	3ØØ	2Ø.Ø	VERY TURBID
11Ø8	7	6.23	19.9	29Ø	2Ø.Ø	VERY TURBID
1114	8	6.14	19.2	3ØØ	19.9	VERY TURBID
1120	DRY WELL		@ 10 GAL			VERY TURBID

OBSERVATIONS/NOTES

WELL NEVER CLEARED UP.

FIGURE A.3

FIELD WELL DEVELOPMENT RECORD

Baker

Baker Environmental, Inc.

PROJECT: CAMP GEIGER FUEL FARM, SITE 35, RI

CTO NO.: Ø232 WELL NO.: MW-35B

DATE: Ø5/1Ø/94

GEOLOGIST/ENGINEER: JSCULP

TIME START: 18ØØ

TIME FINISH: 1815

INITIAL WATER LEVEL (FT): —

TOTAL WELL DEPTH (TD): 4Ø.Ø'

WELL DIAMETER (INCHES): 2.Ø"

CALCULATED WELL VOLUME

BOREHOLE DIAMETER (INCHES): 8.Ø"

BOREHOLE VOLUME

AMOUNT OF WATER ADDED DURING DRILLING: NONE

DEVELOPMENT METHOD: AIRLIFT

PUMP TYPE: AIR COMPRESSOR

TOTAL TIME (A): —

AVERAGE FLOW (GPM)(B): —

TOTAL ESTIMATED WITHDRAWAL AxB =

HNU/OVA READING

DEVELOPMENT DATA

TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPEC. COND. (µmhos/cm)	TEMP (°C)	COLOR AND TURBIDITY
—	0	—			—	TURBID
1815		—			—	CLEAR

OBSERVATIONS/NOTES

NO READINGS WERE TAKEN. TURBIDITY WAS CONSTANTLY MONITORED. pH AND CONDUCTIVITY METERS MALFUNCTIONED. DEVELOPMENT WAS JUDGED TO BE COMPLETE WHEN WATER WAS CLEAR.

APPENDIX M
RI/FS IDW MANAGEMENT AND DISPOSAL INFORMATION

September 1, 1994

DRAFT

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

Attention: Ms. Katherine Landman
Code 1823

Subject: Contract N62470-89-D-4814
Navy CLEAN, District III
Contract Task Order (CTO) 0232
IDW Sampling and Analysis
MCB Camp Lejeune, North Carolina

Dear Ms. Landman:

This letter describes the sample collection activities, results and recommendations for the disposal of investigative-derived waste (IDW) present at Site 35, Marine Corps Base, Camp Lejeune, North Carolina. The IDW was generated during the recently completed RI/FS field investigation.

The primary objectives of the IDW sampling were to characterize the waste (hazardous versus nonhazardous) and to determine the appropriate disposal requirements. These objectives were achieved by sampling and analysis of representative soil and liquid IDW, review of background analytical results associated with the site, and discussions with TSDF personnel.

Upon completion of the field investigation portion of the RI/FS, the IDW was contained as follows:

- Soil cuttings and drilling mud were temporarily stored in a lined roll-off box and covered.
- Drilling fluids, development water and purge water were stored in two 5,000 gallon tankers.
- Product/purge water from monitoring well MW-2, which contains petroleum product, was kept separate from other liquid IDW and contained in a 55-gallon drum.
- Equipment decontamination fluids were contained in two 55-gallon drums.

A composite sample was collected from the soil container and analyzed for TCL organics and TAL metals. Composite samples were collected from each of the tankers and drums containing liquid IDW and analyzed for TCL volatile organics (EPA method 601 and 602 [including methyl tertiary butyl ether]), TCL semivolatiles, pesticides and PCBs, and TAL metals (total and dissolved).

Based on the TCL organic and TAL metal concentrations detected in the soil IDW, Baker determined that the waste is not hazardous because the detected contaminant concentrations were deemed to be below levels that would yield contaminated leachate in excess of TCLP regulatory limits established by the EPA. Therefore, Baker recommends that the soils contained within the roll-off box be disposed of at the site and distributed across the ground surface. This does not present any additional site risk and is consistent with both EPA and LANTDIV guidance.

Results from the liquid IDW sample analyses indicate that detectable concentrations are below TCLP regulatory levels. However, various volatile organic and semi-volatile organic compounds were detected at levels above background which suggests that it would be inappropriate to discharge the liquid IDW directly to the ground surface at the site. Baker recommends the following actions be taken with respect to the liquid IDW. The two drums of equipment decontamination fluids (sample number 35-IDWDR-02), the drum containing petroleum product (sample number 35-IDWDR-01) and the two - 5,000 gallon tankers (sample numbers 35-IDWTK-01 and 35-IDWTK-02) will be hauled off site and treated/disposed by a waste subcontractor. Results of the IDW sample analyses are summarized in Table 1.

If the above recommendations are approved by LANTDIV/MCB Camp Lejeune, Baker will solicit bids and arrange for a subcontractor to dispose of the waste. We anticipate that the disposal of the IDW could begin the week of September 5, 1994. The estimated cost to dispose of the IDW should not exceed $10,500.

If you have any questions, please do not hesitate to contact me at (412)269-2063.

Sincerely,

BAKER ENVIRONMENTAL, INC.

Daniel L. Bonk
Project Manager

DLB/JSC/ldq
Attachments

cc: Mr. Neal Paul

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
FOR IDW SAMPLE ANALYSIS
SITE 35 - CAMP GEIGER AREA FUEL FARM
MCB CAMP LEJEUNE, NORTH CAROLINA

Detected Compounds	TCLP Regulatory Levels (µg/L)	Sample No: 35-IDWRB-01 Media: Soil ID: Roll-Off Box (mg/kg)	Sample No.: 35-IDWDR-01 Media: Water ID: Prod/H_2O From MW-2 (µg/L)	Sample No.: 36-IDWDR-02 Media: Water ID: Equipment Decon (µg/L)	Sample No.: 36-IDWTK-01 Media: Water ID: Development and Purge Water From Field Investigation (µg/L)	Sample No.: 35-IDWTK-0 Media: Water ID: Development and Purge Water From Field Investigation (µg/L)
Acetone	--	0.121	ND	ND	ND	ND
Butylbenzylphthalate	--	0.4	ND	ND	ND	ND
Benzo(b)fluoranthene	--	0.251	ND	ND	ND	ND
delta-BHC	--	0.00052	ND	ND	ND	ND
4,4'-DDD	--	0.0019	ND	0.13	ND	0.022
4,4'-DDT	--	0.0028	ND	0.12	ND	ND
Aluminum	--	3,600	134,000	483	60,100	180,000
Arsenic	5,000	2.2	11.2	ND	31.5	22.5
Barium	100,000	14.6	1,820	31.9	430	1,480
Beryllium	--	ND	41.0	17.2	ND	15.2
Cadmium	1,000	0.20	14.9	1.4	3.3	6.6
Calcium	--	29,100	193,000	22,900	547,000	1,180,000
Chromium	5,000	7.1	782	19.4	186	434
Cobalt	--	ND	101	9.9	19.3	70.8
Copper	--	2.6	41.5	31.5	48.2	95.6
Iron	--	3,380	136,000	7,900	39,600	193,000
Lead	5,000	16.5	5.1	20.7	38.8	108
Magnesium	--	737	12,200	1,450	14,000	33,100
Manganese	--	22.0	348	161	318	1,570
Mercury	200	0.38	0.14	ND	ND	ND
Nickel	--	ND	231	32.0	72.0	154
Potassium	--	217	8,210	30,400	8,710	33,200
Selenium	1,000	ND	13.5	1.0	ND	ND

TABLE 1 (Continued)
SUMMARY OF ANALYTICAL RESULTS
FOR IDW SAMPLE ANALYSIS
SITE 35 - CAMP GEIGER AREA FUEL FARM
MCB CAMP LEJEUNE, NORTH CAROLINA

Detected Compounds	TCLP Regulatory Levels (µg/L)	Sample No: 35-IDWRB-01 Media: Soil ID: Roll-Off Box (mg/kg)	Sample No.: 35-IDWDR-01 Media: Water ID: Prod/H_2O From MW-2 (µg/L)	Sample No.: 36-IDWDR-02 Media: Water ID: Equipment Decon (µg/L)	Sample No.: 36-IDWTK-01 Media: Water ID: Development and Purge Water From Field Investigation (µg/L)	Sample No.: 35-IDWTK-02 Media: Water ID: Development and Pur Water From Field Investigation (µg/L)
Sodium	--	239	9,400	72,400	95,900	162,000
Thallium	--	ND	1.4	ND	ND	0.20
Vanadium	--	8.0	477	15.2	173	280
Zinc	--	21.0	1,140	558	226	753
Naphthalene	--	ND	690	ND	ND	ND
2-Methylnaphthalene	--	ND	1,376	ND	ND	ND
Dibenzofuran	--	ND	126	ND	ND	ND
Fluorene	--	ND	1,199	ND	ND	ND
Phenanthrene	--	ND	307	ND	ND	ND
Alpha-BHC	--	ND	.054	ND	ND	ND
gamma-BHC	--	ND	.085	ND	ND	.011
4-4'-DDE	--	ND	0.41	ND	ND	.017
Endrin	20	ND	0.25	ND	ND	ND
Endosulfan II	--	ND	.085	ND	ND	ND
4,4'-DDD	--	ND	4.7	ND	ND	ND
Endosulfan Sulfate	--	ND	0.11	ND	ND	ND
Methoxychlor	10,000	ND	0.16	ND	ND	ND
Endrin Ketone	--	ND	.064	ND	ND	.015
Endrin aldehyde	--	ND	0.45	ND	ND	ND
beta-BHC	--	ND	ND	.016	0.12	ND
Benzene	500	ND	ND	ND	1.1/1.5	ND
Ethylbenzene	--	ND	ND	0.7/0.5	2.0/3.2	0.4/0.8
Toluene	--	ND	ND	ND	0.3/0.5	0.5/0.9
Xylenes	--	ND	ND	1.7/1.0	3.6/4.7	2.2/2.9
Chloroform	6,000	ND	ND	ND	0.3/0.2	ND

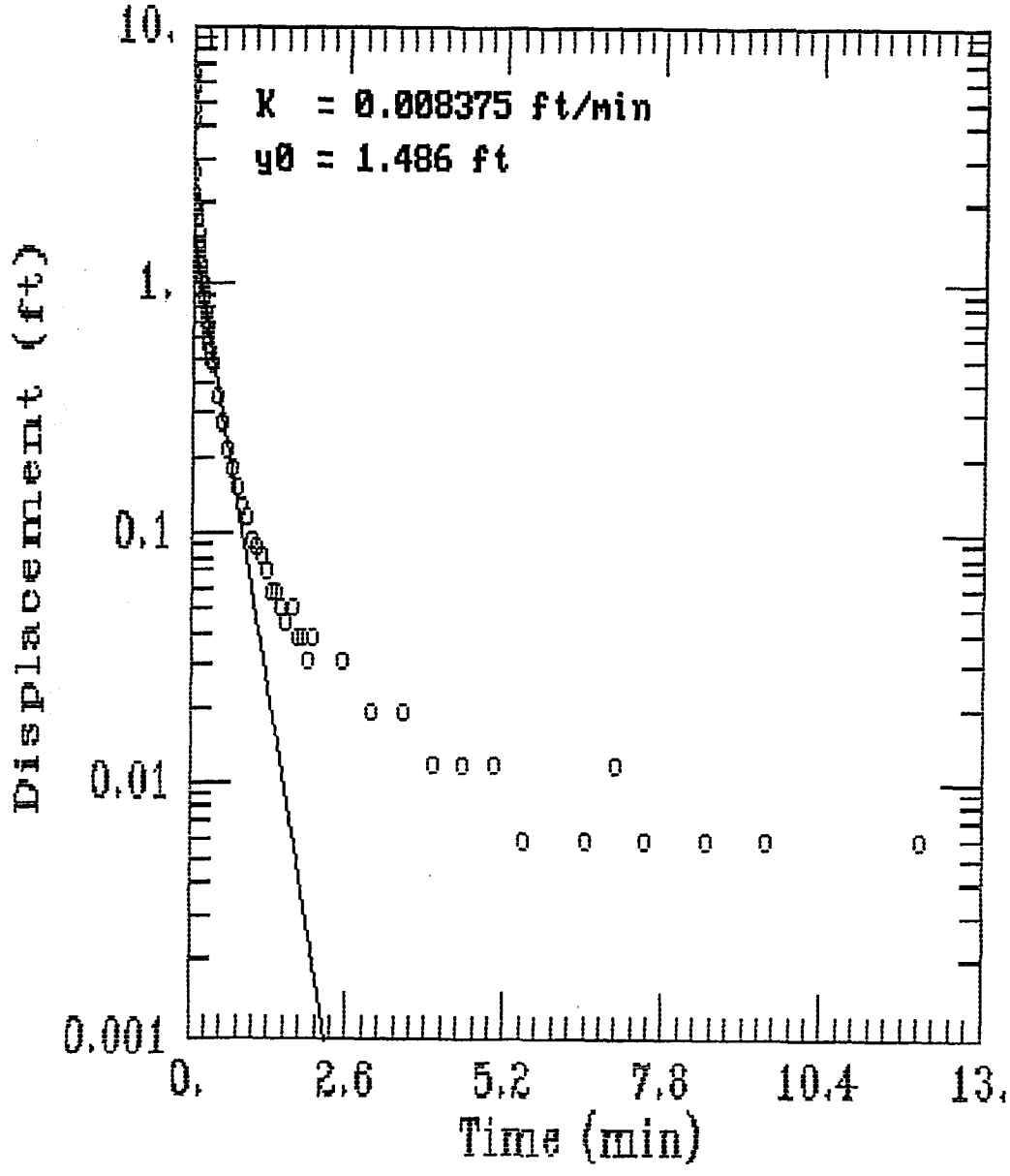
TABLE 1 (Continued)
SUMMARY OF ANALYTICAL RESULTS
FOR IDW SAMPLE ANALYSIS
SITE 35 - CAMP GEIGER AREA FUEL FARM
MCB CAMP LEJEUNE, NORTH CAROLINA

Detected Compounds	TCLP Regulatory Levels (µg/L)	Sample No: 35-IDWRB-01 Media: Soil ID: Roll-Off Box (mg/kg)	Sample No.: 35-IDWDR-01 Media: Water ID: Prod/H_2O From MW-2 (µg/L)	Sample No.: 36-IDWDR-02 Media: Water ID: Equipment Decon (µg/L)	Sample No.: 36-IDWTK-01 Media: Water ID: Development and Purge Water From Field Investigation (µg/L)	Sample No.: 35-IDWTK-02 Media: Water ID: Development and Pur Water From Field Investigation (µg/L)
cis-1,2-dichloroethene	--	ND	ND	ND	16.8/19.3	1.0/1.2
trans-1,2-dichloroethene	--	ND	ND	ND	1.2/1.4	0.8/0.6
Tetrachloroethene	--	ND	ND	ND	0.3/0.2	ND
Dieldrin	--	ND	ND	ND	ND	0.014
Silver	5,000	ND	ND	4.3	2.2	8.3

Notes: (1) Indicates that there are no TCLP regulatory levels for this compound.
(2) ND indicates that the compound was not detected during analysis.

APPENDIX N
RI/FS HYDRAULIC CONDUCTIVITY DATA

SITE 35 - 35GWD-1 RISING HEAD TEST



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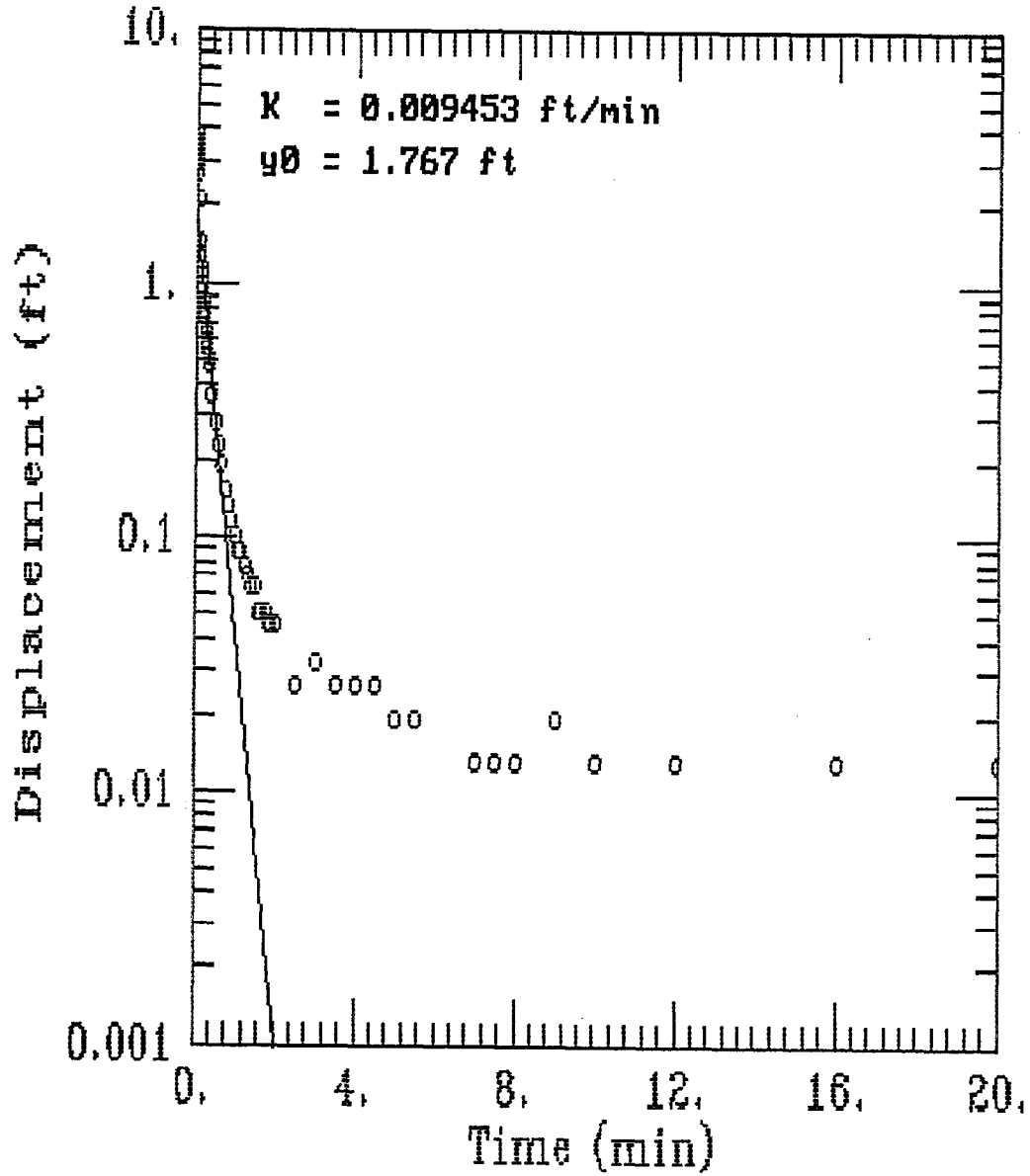
SITE 35 - 35GWD-1 FALLING HEAD TEST



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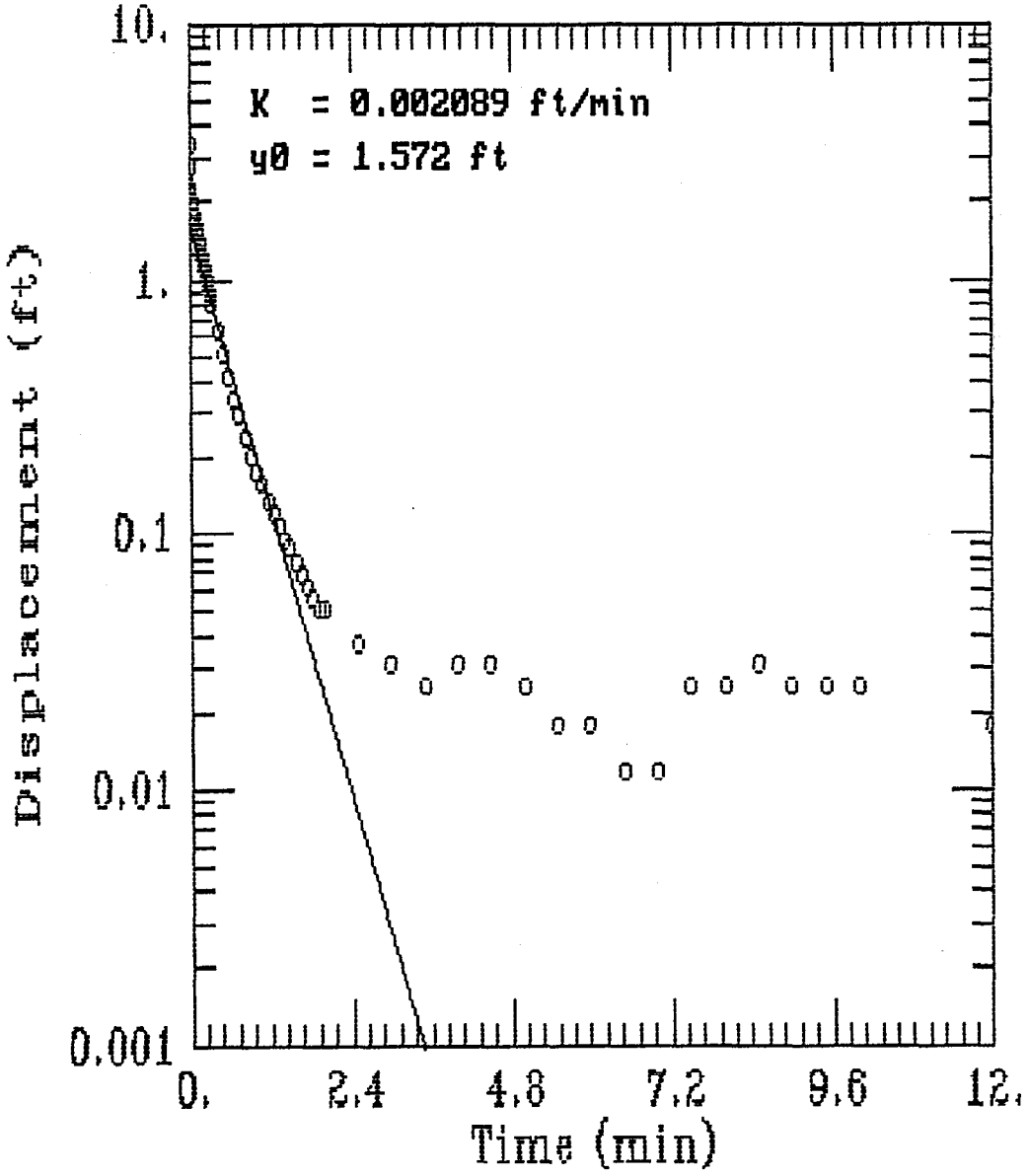
SITE 35 - 35MW-30A RISING HEAD TEST



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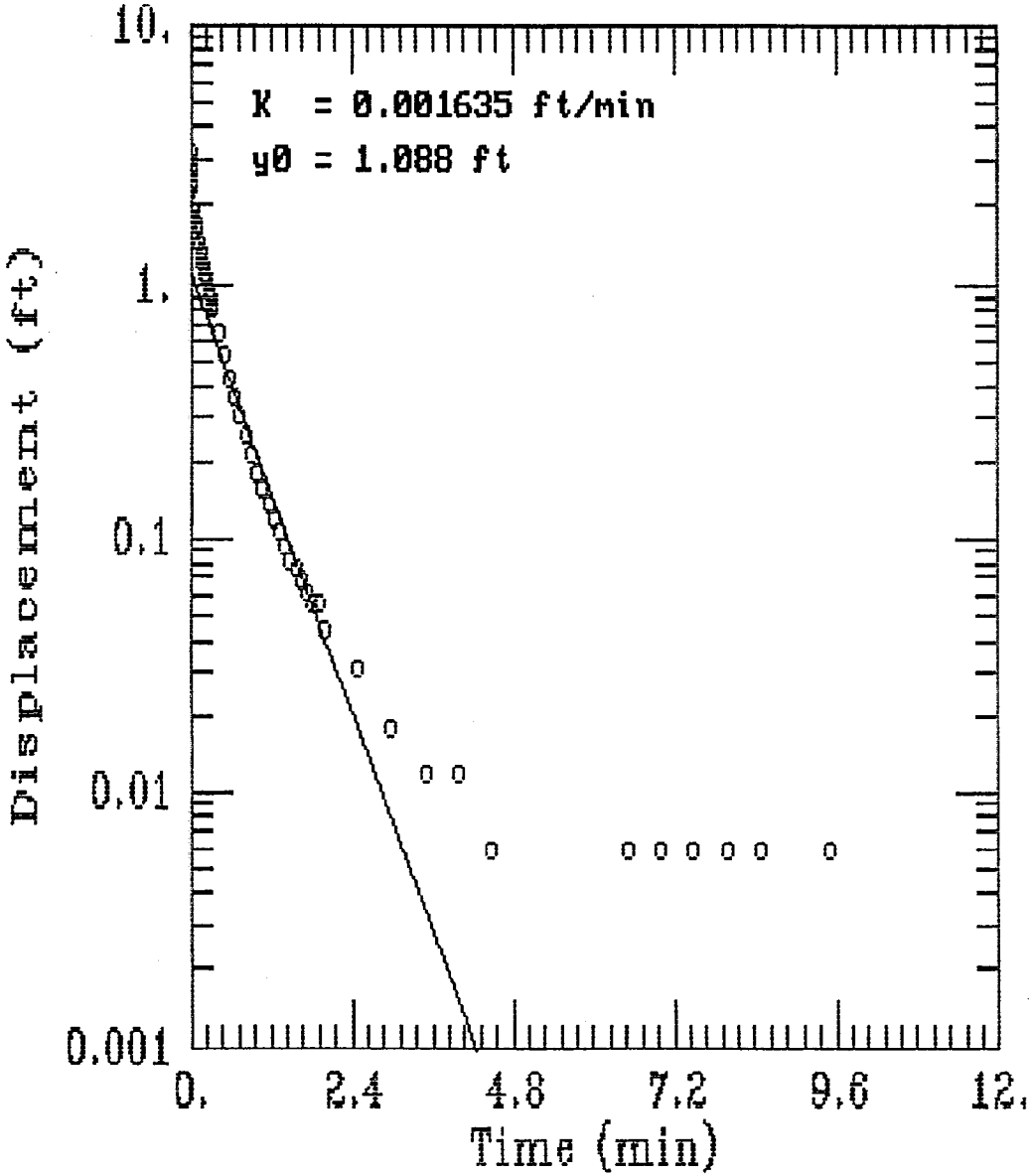
SITE 35 - 35MW-30A FALLING HEAD TEST



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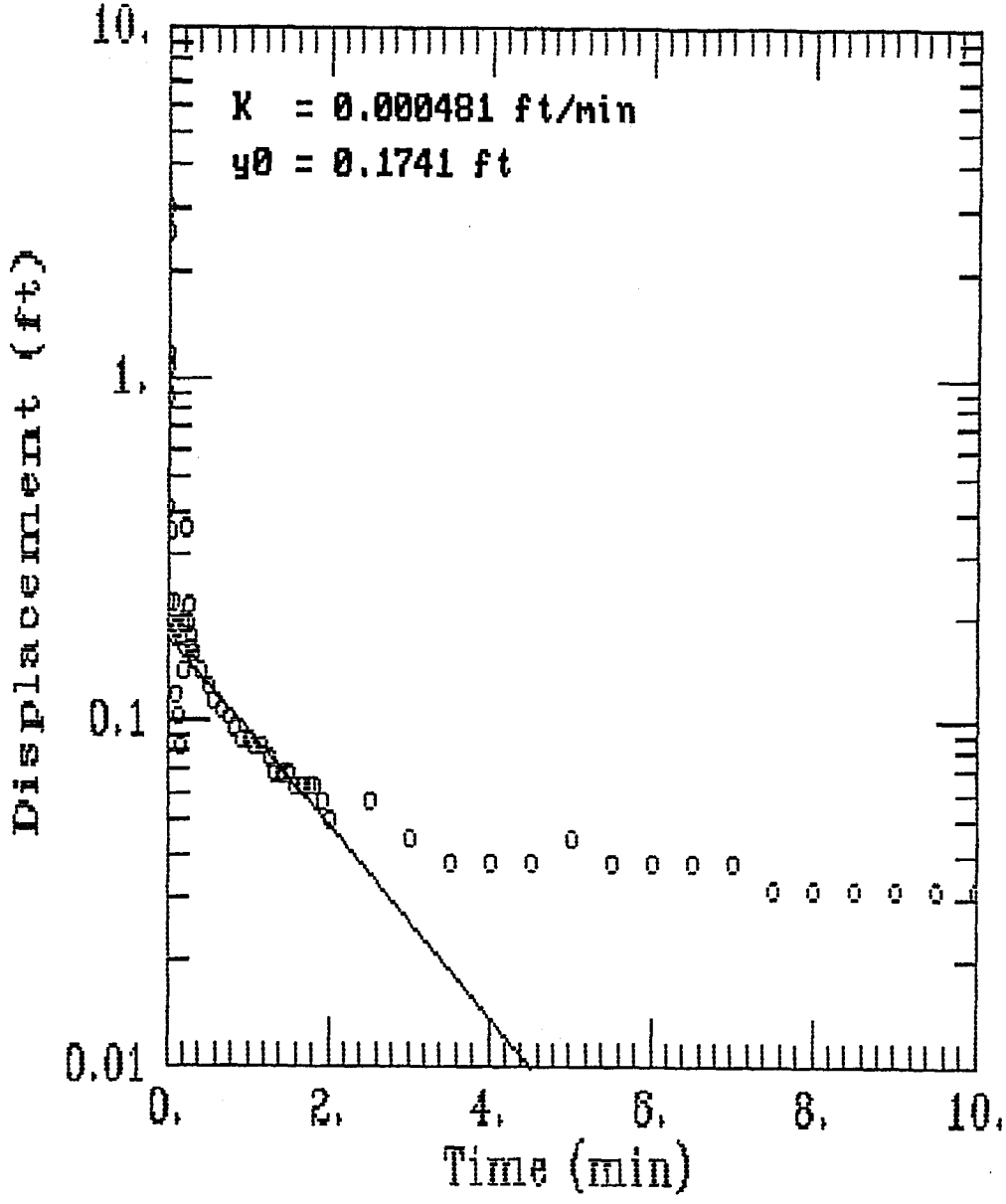
SITE 35 - 35MW-31A FALLING HEAD TEST



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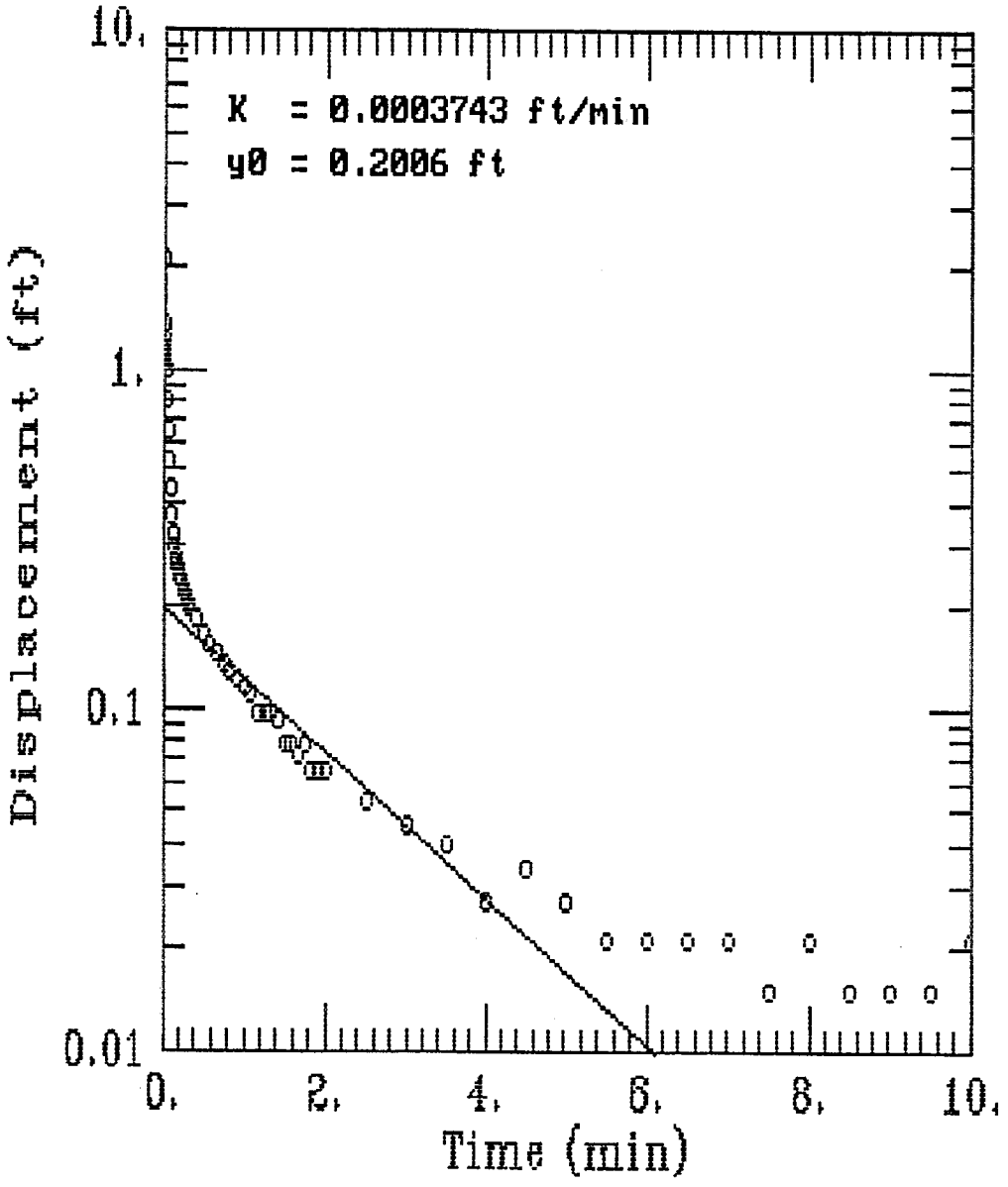
SITE 35 - 35MW-31A RISING HEAD TEST



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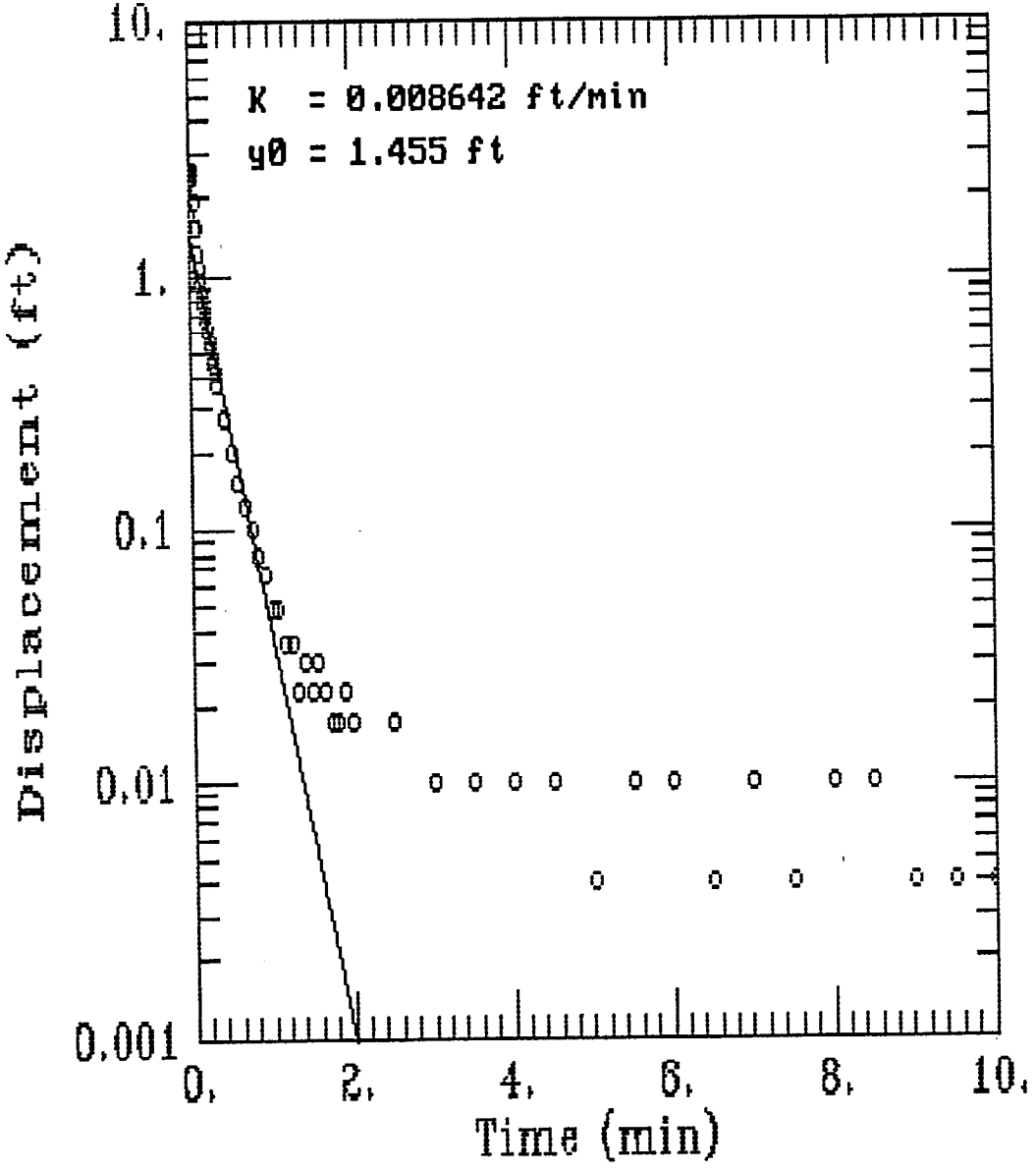
SITE 35 - 35MW-32B FALLING HEAD TEST



AQTESOLV

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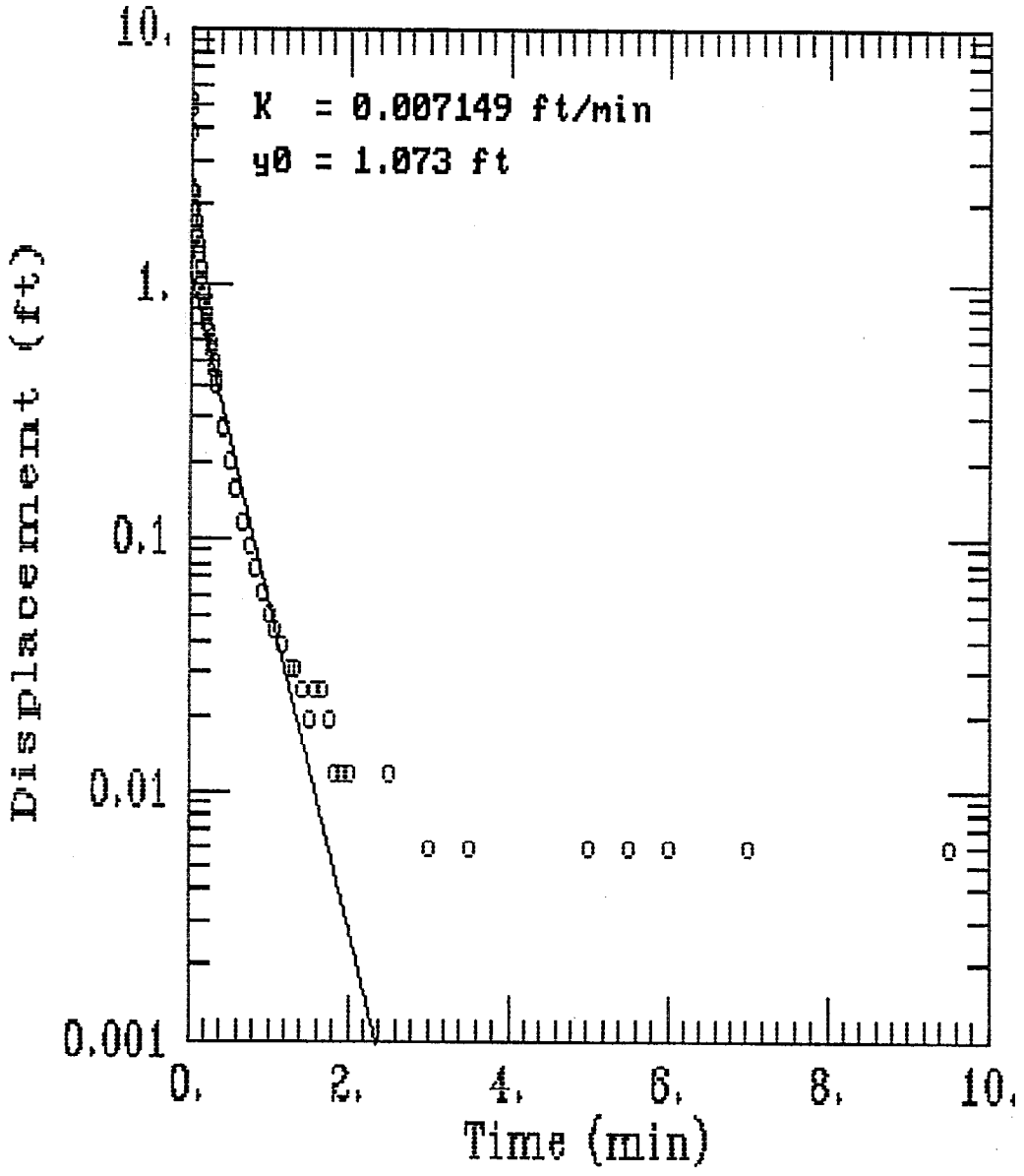
SITE 35 - 35MW-32B RISING HEAD TEST



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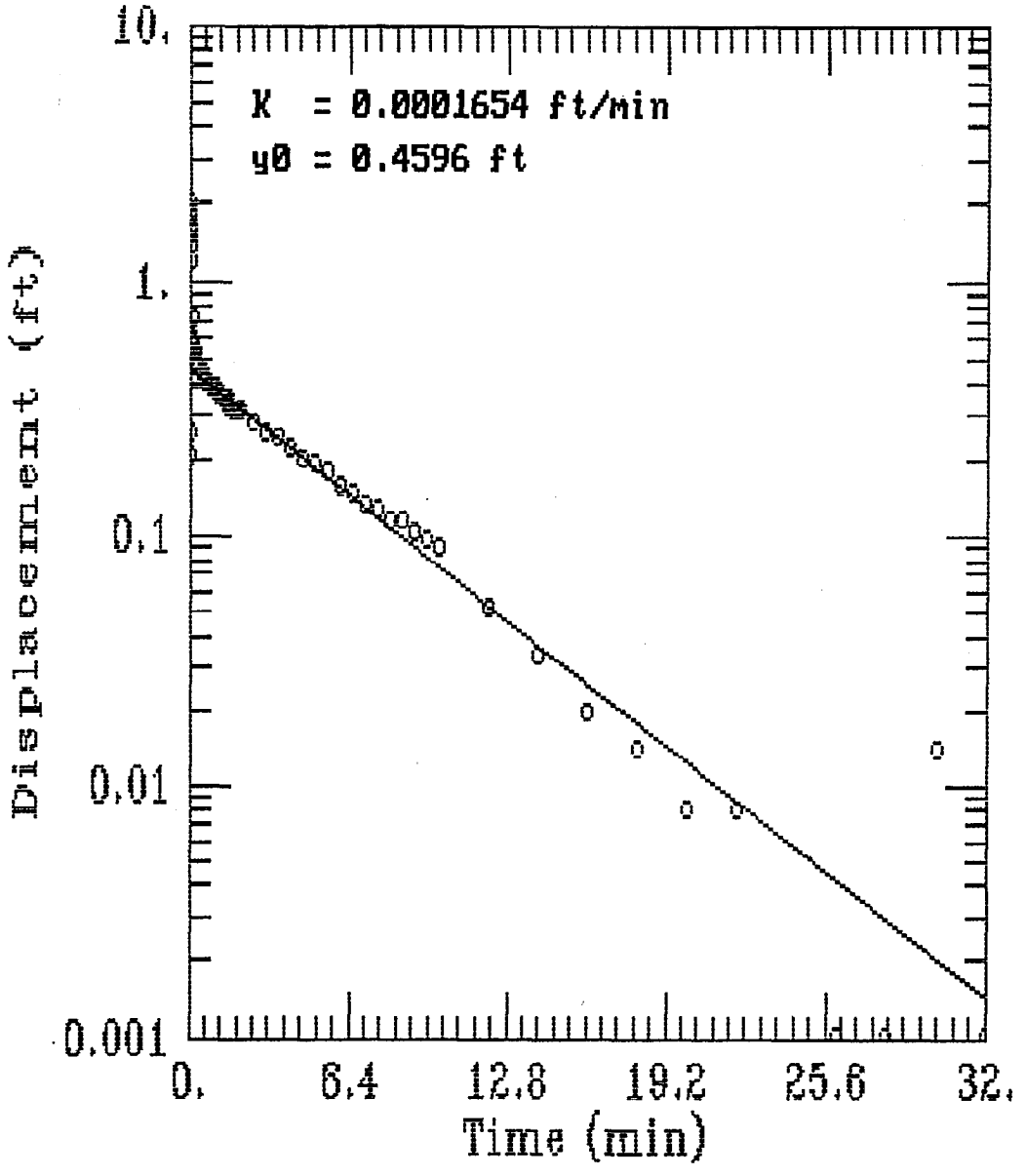
SITE 35 - 35MW-35A FALLING HEAD TEST



AQTESOLV

GERAGHTY & MILLER, INC.

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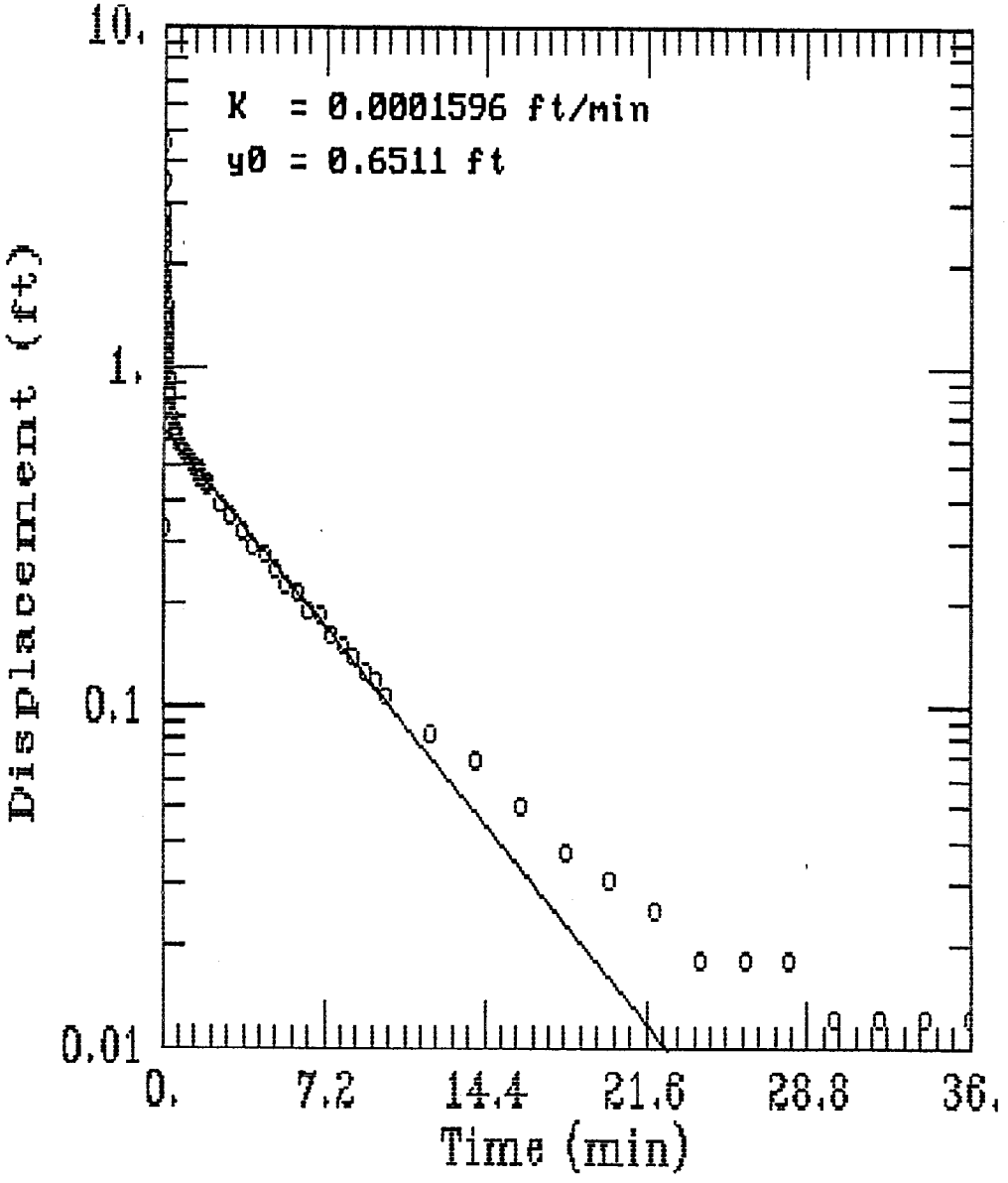
SITE 35 - 35MW-35A RISING HEAD TEST



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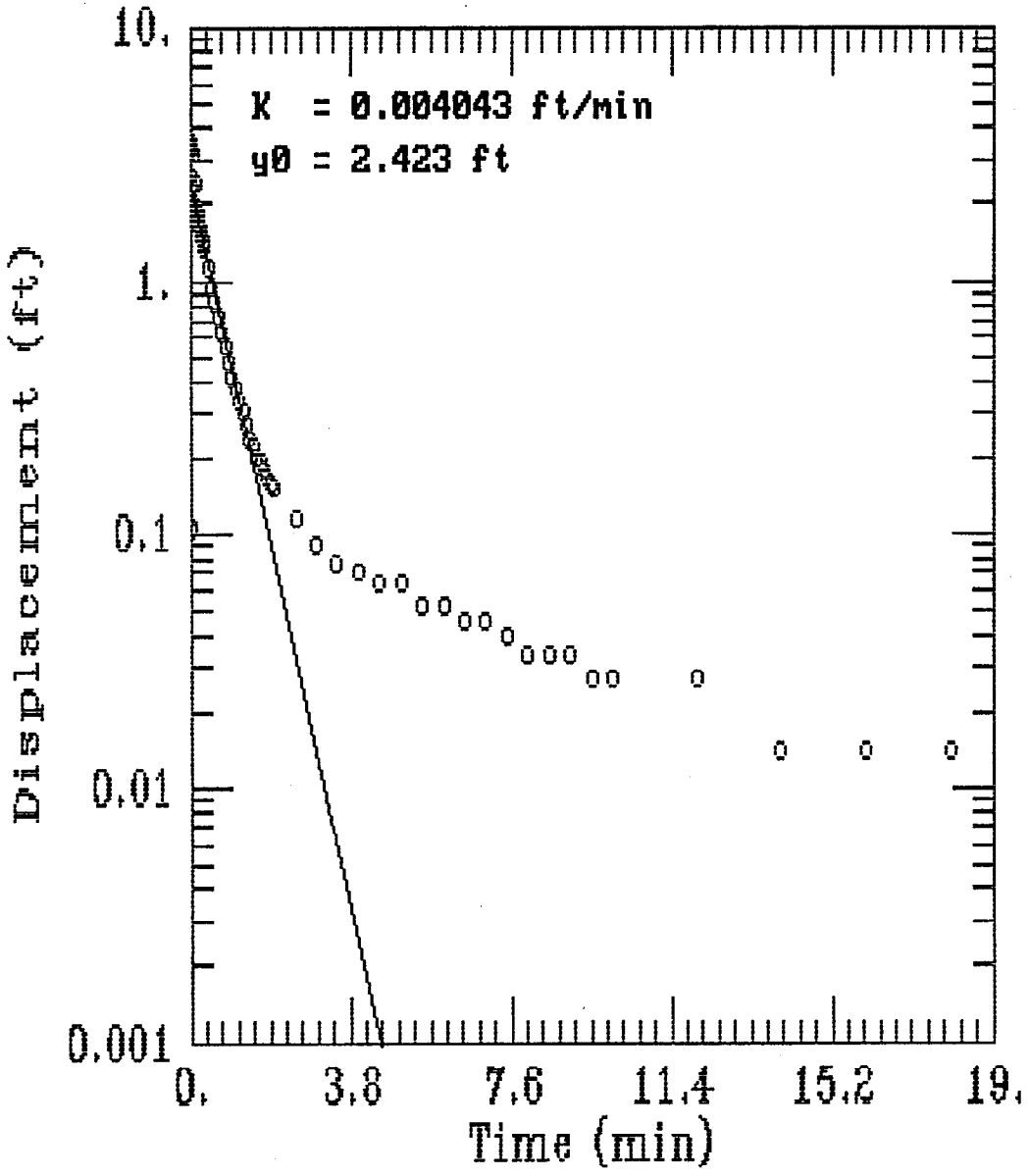
SITE 35 - 35MW-36B FALLING HEAD TEST



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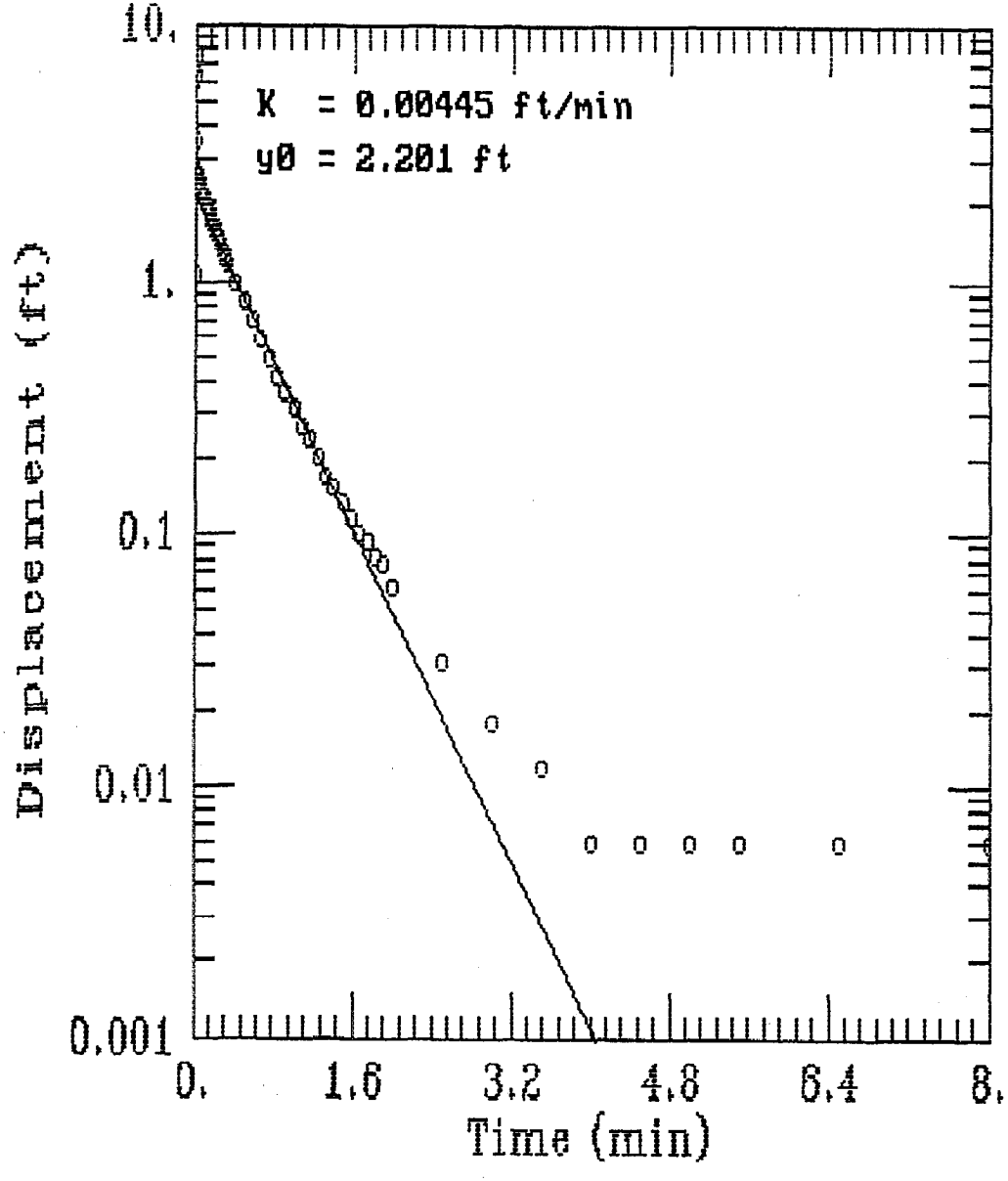
SITE35 - 35MW-36B RISING HEAD TEST



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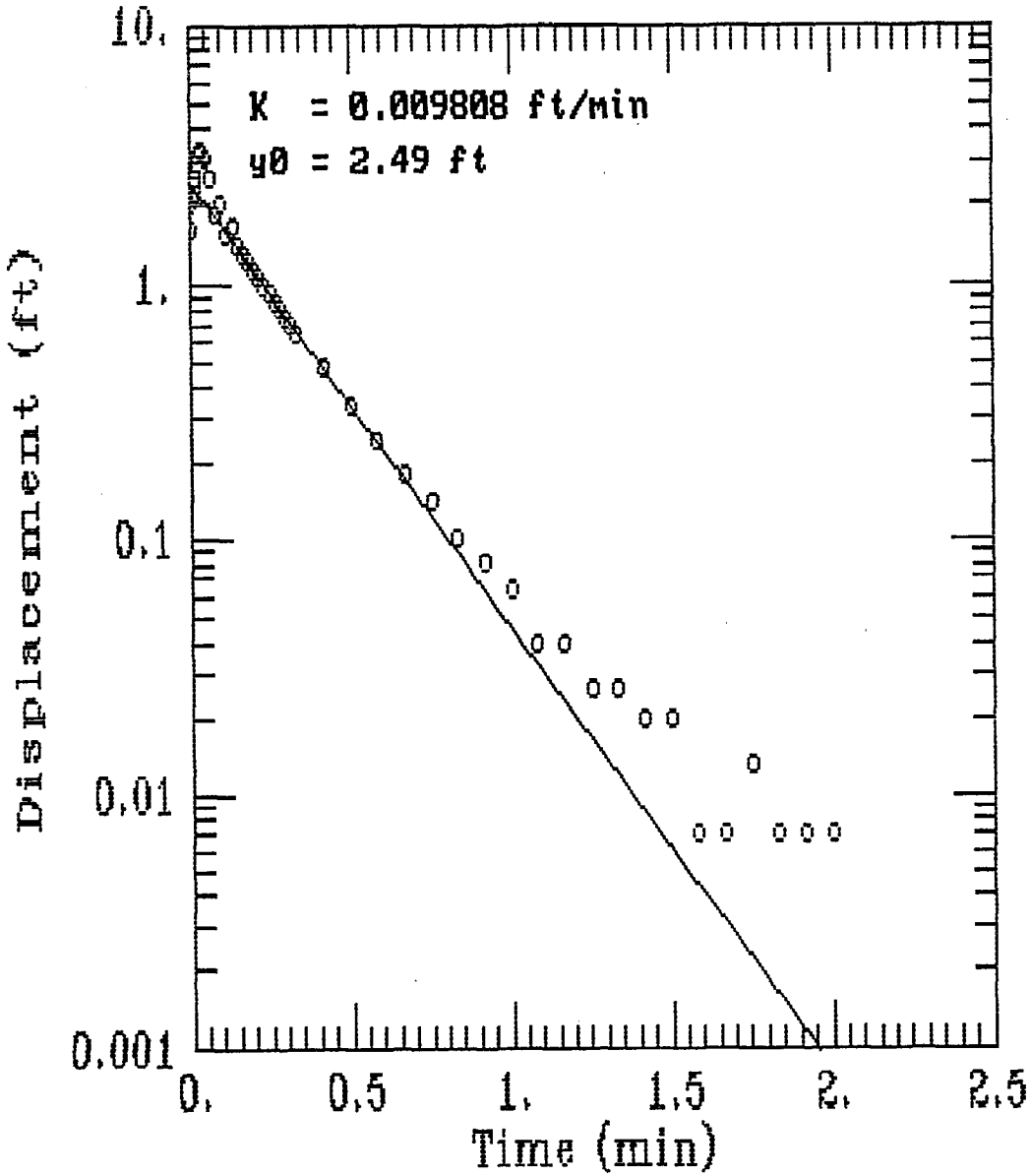
SITE 35 - 35MW-37B FALLING HEAD TEST



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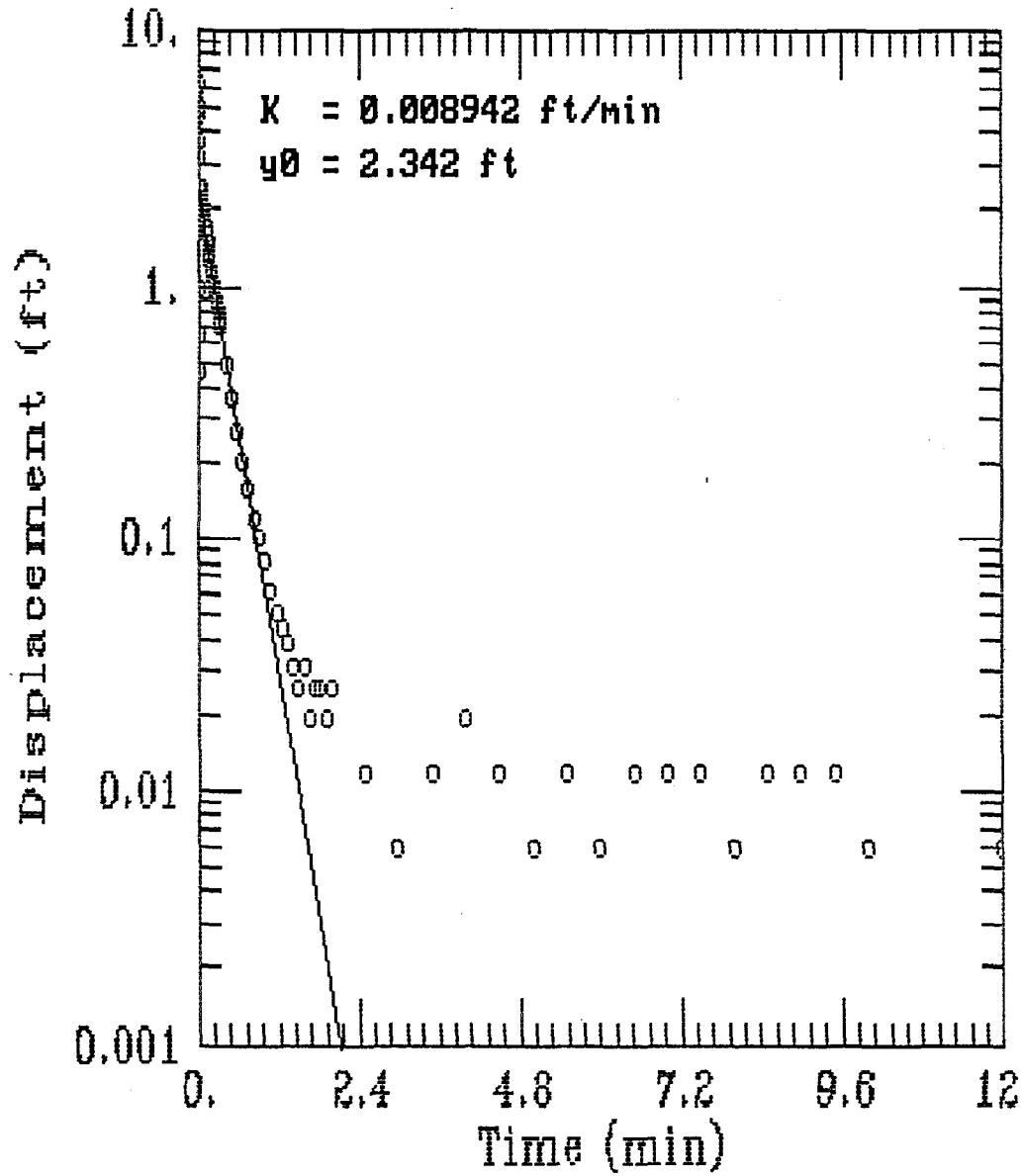
SITE 35 - 35MW-37B RISING HEAD TEST



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APPENDIX O
SUMMARY OF GROUNDWATER DATA AND AQUIFER CHARACTERISTICS AT MCB CAMP LEJEUNE

TECHNICAL MEMORANDUM

SUMMARY OF GROUNDWATER DATA AND AQUIFER CHARACTERISTICS MARINE CORPS BASE, CAMP LEJEUNE JACKSONVILLE, NORTH CAROLINA

SUMMARY

This study examines the utility of exploratory aquifer tests (pump tests) at investigation sites across Marine Corps Base, Camp Lejeune (MCB-CL). The study reviews the available information on the relevant water-bearing layers, considers the general characteristics and applicability of aquifer tests, and concludes:

- That available information is satisfactorily complete to allow appropriate designs of groundwater systems in the main operating areas of MCB-CL;
- That quantified characterization of the water-bearing layers in explored areas of MCB-CL can be extended to other areas having similar geologic terrain;
- That exploratory tests are not longer routinely required or advisable;
- That reconnaissance testing (well-head tests or slug tests) of each newly installed or otherwise uncharacterized data station is highly advisable; and,
- That performance testing of groundwater extraction systems should be the recommended form of evaluating and adjusting withdrawal systems.

BACKGROUND

This study considers the aquifer characteristics (especially, the Coefficient of Transmissivity) and the production capacities (available discharge rates) of the two water-bearing layers relevant to the studies at MCB-CL. These water-bearing layers are the (shallow or surficial) water table and the Upper Castle Hayne Aquifer.

The water table at MCB-CL occupies the water-bearing zone within 25 to 35 feet of the surface; the Castle Hayne, immediately below this. However, the separation of the water table and the Castle Hayne is not always obvious. Usually, this separation is effected only by the low permeability material of the water table transiting to the significantly more permeable material of the Upper Castle Hayne; there is rarely an aquiclude or aquitard of vertically extensive clay separating the water table from the Castle Hayne.

The data available for this summary derive from three main sources:

- Assessment of Hydrologic and Hydrogeologic Data at Camp Lejeune Marine Crops Base, North Carolina; U. S. Geological Survey, Water-Resources Investigation Report 89-4096; 1989

- Wellhead Management Program Engineering Study 91-36; Geophex, Ltd.; January 22, 1991

- Various site investigations by Baker environmental, Inc., and reported to LANTDIV and MCB-CL

DISTRIBUTION OF DATA

The data available from the various sources have been compiled on Tables 1, 2, and 3, with Table 3 summarizing the relevant flow information. The tabulated data indicate the main characteristics of each water-bearing layer are as follows:

- There is low available production from the water table.

- There is an excessive availability of production from the Castle Hayne compared to the probably acceptable levels of treatment volumes foreseeable in groundwater remediation systems.

The water table had production capacities of less than five gallons per minute (gpm) in all cases tested. The specific capacities of the discharge wells were always less than one gallon per minute per foot of drawdown (gpm/ft). The transmissivities calculated were generally near or below 1,000 gallons per day per foot of drawdown (gpd/ft); only the deeper wells, which intercepted at least part of the Castle Hayne, had transmissivities in a range indicative of an acceptably producing zone. The hydraulic conductivity values were commonly in the range of tenths of feet per day (ft/d). The low production rates, low transmissivities and low hydraulic conductivities indicate that the water table is only marginally, at best, under Darcian conditions. Calculations based on these data would, therefore, be highly unreliable. However, the available information all indicate an expectably low rate of groundwater discharge, which in turn would produce only a narrow radius of effect around an individual production well;

> The standard equation for calculation of the radius of capture around an individual well is $r_c=720Q/\pi Ti$. with a discharge rate (Q) of 3 gpm, a transmissivity (T) of 500 gpd/ft and a representative gradient of 0.005, the radius of capture would be 275 ft. However, this calculation applies only to Darcian conditions in a homogeneous medium; the water table at MCB-CL is marginally Darcian and is highly non-homogeneous. The calculation of radius must, therefore, be in some degree of error, with no more usable data or calculation possible.

The Castle Hayne has production capacities generally ranging above 200 gpm. The estimated transmissivities are at least in the range of several tens of thousands gpd/ft, with specific capacities usually about 5 to 10 gpm/ft. The calculated hydraulic conductivities are usually in the scores of feet per day. The available discharge from the Castle Hayne is, therefore, much greater than that from the water table. The limiting factor in remediation schemes for the Castle Hayne then becomes the amount of water that can be treated by an affordable system, usually less than 500 gpm; this value of 500 gpm would be available from one or two wells in the Castle Hayne. The high values of aquifer parameters, the relatively low total discharge and the low number of production wells would conspire to limit the radius of effect available to a remediation scheme:

> The standard equation for calculation of the radius of capture around an individual well is $r_c=72Q/\pi Ti$. With a Q of 500 gpm, a T of 50000 gpd/ft and a representative gradient f 0.005, the radius of capture would be only 460 ft.

COMPARABILITY OF DATA ACROSS MCB-CL

The stratigraphic sequences of MCB-CL containing the water table and the Upper Castle Hayne have been well characterized. The available information indicates that the lithology and the hydrologic conditions can be correlated stratigraphically across the base (Tables 1 and 2). From these correlations, aquifer performance can be predicted sufficiently for an engineering design whose final criteria for suitability are performance-based.

The upper water-bearing zone is a highly variable layering and intercalation of clay, silt, and sand. This variability, however, is found within recognizable limits. These limits correspond to the range of hydrologic characteristics described previously. Similar correlation is available for the lithology and hydrology of the Upper Castle Hayne.

In areas not near stations catalogued in Tables 1, 2, and 3, a reconnaissance comparison of well-head tests (slug tests) and an examination of lithologic descriptions will likely be sufficient to support the engineering evaluation of the site. There is ample demonstration that lithology has a significant influence on the hydrology of a site, and that, for a given geologic terrain, the influence is fairly consistent. The geologic terrain of MCB-CL has been broadly characterized and correlated between lithologic (stratigraphic descriptions) and hydrologic (aquifer tests and well-head tests) sequences. Lithologic descriptions can now provide a good indication of hydrologic conditions at MCB-CL in areas of similar terrain.

GENERAL APPLICABILITY OF AQUIFER TESTS

Aquifer (pump) tests are a problemsome activity at contamination sites. While the information available from aquifer tests is required for engineering design of withdrawal systems, aquifer tests should not be a reconnaissance or an initial step in the investigation. Full consideration must be made of the redistribution of contaminants expectable from the test, of the change in structural support of disposal features by relaxation or increase of hydrostatic loading, and so forth.

Consideration must also be made of alternative sources of acceptable data on the aquifer. In the case of MCB-CL, alternatives to exploratory aquifer tests are available from the tabulation and correlation of aquifer characteristics, production performance and geologic terrain presently available.

From the available information and in light of the relative consistency of the geologic terrain of MCB-CL, exploratory tests at MCB-CL are not generally required. Therefore, exploratory tests are not advisable and should not form part of the initial investigation of a site. While they may be useful in certain circumstances after the initial investigation of a site, they should not, in the general case, be part of the investigation. Sufficiently satisfactory information is presently available to allow the initial engineering design of a groundwater response.

While exploratory aquifer tests are not advisable, performance tests of a newly installed system are highly recommended. These tests, to some extent, are a normal part of the initial operation of a system. Only minor additional monitoring and modification of the system during operation would provide data directly relevant to the long-term operation of that system.

In the Coastal Plain of MCB-CL, the information from a n exploratory data station not coincident with the long-term extraction system is not fully transferable. That is, if the test station and the recovery station are not the same, the aquifer parameters and calculations based on those parameters will differ. This means that data from an exploratory station are not more reliably usable that the data presently available, unless the

exploratory station is collocated with the recovery system. However, if the exploratory and recovery stations are identical, and considering that alternate sources of acceptable data on the aquifer are available and that a performance test must be run as part of the initial operation of a recovery system, the exploratory test represents a superfluous duplication of effort.

TABLE 1
CAMP LEJEUNE PUMP TEST DATA

Well Number	Well Depth (ft,BGS)	Well Diameter (in)	Total Aquifer Thickness (ft)	Screened Length (ft)	Screened Interval (ft,BGS)	Water-level Drawdown During Pumping (ft,BGS)	Pumping Rate (Recovery wells) GPM	Duration of Pumping (min)	Specific Capacity (pumping rate/ drawdown)	T (square ft/ day)	K (ft/day)	S	Soils (ft,BGS)
013RW-01*	23	2	15	20	3-23	8.773	1	480	0.11	7.17	0.48	NA	0-10 silt/clay, 10-23 sand.
013MW-18	13	2	15	10	3-13	0.297	NA	480	NA	105.98	7.06	1.40E-02	0-7 silt/clay, 7-13 sand.
013MW-21	14	2	15	10	4-14	0.31	NA	480	NA	82.27	5.48	2.77E-02	0-4 silt/sand, 0-14 clay/silt
108RW-01*	15	2	9	9.1	2.45-11.55	6.38	0.5	485	0.08	5.30	0.59	NA	very fine sand
108MW-04		2	9				NA	485	NA	118.63	13.18	1.33E-02	
108MW-15	12.5	2	9	9.03	2.79-11.82		NA	485	NA	56.78	6.31	7.33E-03	0-8 sand/silt, 8-10 silt/clay
109MW-15		2	15			0.939	NA	460	NA	76.26	5.08	1.11E-02	
109MW-17	14.5	2	15	10	4.5-14.5	0.545	NA	460	NA	163.10	10.87	7.30E-03	0-15 fine sand
109RW-01*	15	2	15	9.5	2-11.5	6.265	3	460	0.48	7.80	0.52	NA	0-4 sand, 4-8 silt, 8-15 sand
110RW-01* (Drawdown,Theis)	21.8	2	50	19.2	2-21.2	9.53	3	475	0.31	200.02	4.00	NA	0-10.5 sand/silt, 10.5-15 sand/clay, 15-21.5 sand/clay, 21.5- sand
110RW-01* (Drawdown,Cooper)										161.86	3.24	NA	
110RW-01* Recovery(Theis)										106.06	2.12	NA	
110DW-01 (Drawdown,Theis)	30.3	2	50	4.8	24.9-29.7	0.02	3	475	NA	7080.48	142.00	4.52E-03	0-4 sand/silt, 4-10.5 clay, 10.5-15.5 sand/silt,15.5-20.5 clay, 20.5-on sand
110DW-01 (Drawdown,Cooper)									NA	7099.20	142	4.51E-03	
110DW-02 (Drawdown,Theis)	30	2	50	4.7	24.7-29.4	0.52	NA	475	NA	5398.56	108.00	1.51E-03	0-3 sand and silt with clay layers, 3-11 sand and silt, 11-30 sand with some limited clay layers
110DW-02 (Drawdown,Cooper)									NA	5400.00	108	1.51E-03	
110DW-03 (Drawdown,Theis)	30	2	50	4.9	24.5-29.4	0.47	NA	475	NA	2952.00	59.00	7.48E-02	0-6 sand and silt , 6-12 sand, 12-23 sand/clay, 23-30 sand
110DW-03 (Drawdown,Cooper)									NA	3225.60	64	5.85E-02	

T = Transmissivity
K = Hydraulic Conductivity
S = Storativity
* = Pumping well
NA - Not applicable

TABLE 2
HYDRAULIC CONDUCTIVITY TEST RESULTS (SLUG TEST)

Well Number	Well Depth (ft,BGS)	Well Diameter (in)	Saturated Aquifer Thickness* (ft)	Screened Length (ft)	Screened Interval (ft,BGS)	K Rising (ft/day)	Soils (ft,BGS)
013MW-03	14	2	1	9.8	4-13.8	0.75	0-6 clay, 6-14 silt
013MW-04	14	2	8.13	9.8	4-13.8	0.27	0-8 clay, 8-14 silt
013MW-11	16	2	9.14	10	6-16	0.37	0-4 sand/silt, 4-14 clay, 14-16 sand
013MW-21	14	2	9.2	10	4-14	0.46	0-4 silt/sand, 4-14 clay
108MW-08	12.8	2	8.83	9.7	2.7-12.4	0.59	0-8 very fine sand, 8-12 clayey peat, 12-13 sandy clay
108MW-09	12.8	2	7.81	9.7	2.8-12.5	0.53	0-13 silt/sand
108MW-13	10.8	2	NA	9.02	0.69-9.71	0.061	0-2 very fine sand, 8-9.5 sandy clay
108MW-17	13.1	2	NA	9.03	3.39-12.42	0.59	0-8 fine grained sand, 8-9 clayey peat, 9-12.5 sandy clay
109MW-17	14.5	2	9.04	10	4.5-14.5	9.00	0-15 fine sand
109MW-18	14	2	10.19	10	4.5-14.5	5.70	0-3 sand, 3-10 silt, 10-14 sand
110MW-07	11.96	2	9	9.8	1.5-11.3	0.0115	0-2 clay/silt, 2-4 clay/sand, 4-6 sand, 6-10 silt/clay, 10-14 silt /sand
110MW-09	14.2	2	9.47	9.8	3.8-13.6	0.16	0-6 sand/silt, 6-9 clay/silt, 9-12 sand/silt, 12-14 clay
110DW-03	30	6	22.04	4.9	24.5-29.4	1.07	0-3 sand, 3-4 clay, 4-10 sand/silt, 10-12 sand, 12-13 clay,13-22 silt/clay, 22-30 sand
41GW-07	20.5	2	12.03	10	10.5-20.5	1.15	1-5 silty sand, 5-9 clay, 9-10 silty sand, 10-12 fill, 12-16 silty sand with 1 ft clay layer,16-21 sand
41GW-08	15	2	9.48	10	5-15	0.14	0-1 silty sand, 1-6 sand, 6-14 clay with sand and silt, 14-16 silty sand
41GW-09	21	2	11.89	10	11-21	3.67	0-5 clay and sand, 5-21 silty sand
41GW-10	13	2	8.59	10	3-13	0.94	0-2 silty sand, 2-7 sand, 7-9 silty sand and clay, 9-12 lithified sandstone, 12-13 sand. 13-14 lithified sandstone
41GW-12	16	2	12.45	10	6-16	4.57	0-4 silty sand, 4-14 sand, 14-17 lithified sandstone
69GW-09	20.5	2	14.22	10	10.5-20.5	1.7	1-4 Sand/silt, 4-10 clay some sand, 10-21 sand/silt
69GW-10	16	2	10.5	10	6-16	0.17	1-17 sand/silt
69GW-12	12.5	2	11.27	10.5	2-12.5	0.12	0-13.5 sand/silt
69GW-02D	125	2	22.1	10	40-50	0.29	0-125 silty sand **
69GW-12D	58	2	53.83	10	48-58	6.66	0-58 silty sand **
74GW-03A	18	2	13.58	10	8-18	0.59	0-17 silty sand, 17-18.5 sandy clay
74GW-06	16.5	2	8.18	9.74	15.5-26	6.33	1-26 sand/silt
74GW-08	23	2	10.51	10	13-23	3.55	0-1 silty sand, 1-24 sand

* Values taken from AQTESOL results. (Bottom of screened interval- water level)

** Due to depth, soils were very generally described.

K = Hydraulic Conductivity

TABLE 3

3-CL5 CTO-232 CL5-1B1.wks 8SEP94 MCB-CAMP LEJEUNE

STATION	b ft	Q gpm	Sc gpm/ft	T ft-sq/d	T gpd/ft	K ft/d
013RW-01	15	1.0	0.11	7.2	54	0.5
013MW-1	15			106.0	793	7.1
013MW-2	15			82.3	615	5.5
013MW-03	1					0.8
013MW-04	8					0.3
013MW-11	9					0.4
013MW-21	8					0.5
41GW-07						1.2
41GW-08						0.1
41GW-09						3.7
41GW-10						0.9
41GW-12						4.6
69GW-09						1.7
69GW-10						0.2
69GW-12						0.1
69GW-02DW						0.3
69GW-12DW						6.7
74GW-03A						0.6
74GW-06						6.3
74GW-08						3.6
8RW-01	9	0.5	0.08	5.3	40	0.6
8MW-0	9			118.6	887	13.2
108MW-1	9			56.8	425	6.3
108MW-08	9					0.6
108MW-09	8					0.5
108MW-13	8					0.1
108MW-17	8					0.6
109MW-1	15			76.3	570	5.1
109MW-1	15			163.1	1220	10.9
109RW-01	15	3.0	0.48	7.8	58	0.5
109MW-17	15					9.0
109MW-18	15					5.7
110RW-01	50	3.0	0.31	200.0	1496	4.0
110RW-01	50	3.0	0.31	161.9	1211	3.2
110RW-01	50	3.0		106.1	793	2.1
110DW-01	50			7080	52962	142.0
110DW-01	50			7099	53102	142.0
110DW-02	50			5399	40381	108.0
110DW-02	50			5400	40392	108.0
110DW-03	50			2952	22081	59.0
110DW-03	50			3226	24127	64.0
110MW-07	9					0.1
110MW-09	9					0.2
110DW-03	22					5.8

STATION	b ft	Q gpm	Sc gpm/ft	T ft-sq/d	T gpd/ft	K ft/d
BB-43	275	170	5.0	8900	66572	32.4
BB-44	275	450	10.0	17900	133892	65.1
BB-222	275	329	9.4	10600	79288	38.5
HP-612	285	275	5.4	7900	59092	27.7
HP-614	285	323	4.9	6600	49368	23.2
HP-621	300	200	9.1	24500	183260	81.7
HP-628	320	160	3.4	6400	47872	20.0
HP-629	300	210	5.7	7900	59092	26.3
HP-634	300	163	4.5	4300	32164	14.3
HP-636	300	211	6.8	6900	51612	23.0
HP-643	295	278	5.3	9700	72556	32.9
HP-644	300	246	4.3	8100	60588	27.0
HP-646	305	304	10.6	20200	151096	66.2
HP-647	305	500	9.8	18700	139876	61.3
HP-648	310	250	2.9	5600	41888	18.1
HP-649	310	257	2.6	5000	37400	16.1
HP-651	305	270	3.8	7300	54604	23.9
HP-652	320	218	2.2	4400	32912	13.8
HP-663	325	350	4.8	6400	47872	19.7
HP-699	275	250	5.7	7700	57596	28.0
HP-700	270	250	6.8	11500	86020	42.6
HP-701	275	250	7.2	12400	92752	45.1
HP-705	295	250	9.0	13100	97988	44.4
HP-706	300	250	3.8	4700	35156	15.7
HP-709	310	200	4.4	8500	63580	27.4
HP-710	310	200	5.1	9900	74052	31.9
HP-711	320	200	6.8	10700	80036	33.4
LCH-4006	295	540	10.0	14500	108460	49.2
LCH-4007	295	275	11.8	13700	102476	46.4
M-267	260	170	7.7	10300	77044	39.6
M-628	260	70	3.0	6100	45628	23.5
RR-229	290	429	12.2	19400	145112	66.9
TT-25	280	150	5.0	7200	53856	25.7

TATION	PUMPING LEVEL	Q gpm	Sc gpm/ft
HP-602	44	154	3.5
HP-603	30	129	4.3
HP-606	38	267	7.0
HP-607	46	246	5.3
HP-608	21	208	9.9
HP-609	45	199	4.4
HP-610	14	214	15.3
HP-613	17	157	9.2
HP-616	15	178	11.9
HP-620	9	224	24.9
HP-622	55	330	6.0
HP-623	30	210	7.0
HP-628	45	172	3.8
HP-629	45	216	4.8
HP-632	21	224	10.7
HP-633	18	205	11.4
HP-634	36	219	6.1
HP-635	33	151	4.6
HP-636	35	149	4.3
HP-637	40	130	3.3
HP-638	84	201	2.4
HP-639	52	[--]	0.0
640	28	210	7.5
641	44	351	8.0
HP-642	32	[--]	0.0
HP-643	35	269	7.7
HP-644	52	230	4.4
HP-645	40	192	4.8
HP-646	11	154	14.0
HP-647	26	302	11.6
HP-648	84	263	3.1
HP-649	80	100	1.3
HP-650	75	480	6.4
HP-651	69	242	3.5
HP-652	82	216	2.6
HP-653	29	197	6.8
HP-654	30	175	5.8
HP-655		[--]	ERR
HP-660		150	ERR
HP-661	37	275	7.4
HP-662	53	148	2.8
HP-663	23	100	4.3
HP-698	33	216	6.5
HP-699	21	140	6.7

STATION	PUMPING LEVEL	Q gpm	Sc gpm/ft
HP-700	39	192	4.9
HP-701	36	236	6.6
HP-703	33	293	8.9
HP-704	38	159	4.2
HP-705	25	214	8.6
HP-706	33	214	6.5
HP-707	51	50	1.0
HP-708	42	219	5.2
HP-709	52	239	4.6
HP-710	29	115	4.0
HP-711	56	235	4.2
HP-5186	38	336	8.8
LCH-4007	34	150	4.4
LCH-4009	22	349	15.9
TT-23	36	160	4.4
TT-25	22	130	5.9
TT-26	32	127	4.0
TT-31	28	111	4.0
TT-52	18	236	13.1
TT-54	20	119	6.0
TT-67	29	119	4.1
RR-45	11	192	17.5
RR-47	5	140	28.0
RR-97	14	170	12.1
RR-229	35	[--]	0.0
BB-44	11	125	11.4
BB-47	6	341	56.8
BB-218	17	192	11.3
BB-220	13	119	9.2
BB-221	19	230	12.1
TC-325	8	100	12.5
TC-502	1	180	180.0
TC-504	35	203	5.8
TC-600	32	172	5.4
TC-604	16	137	8.6
TC-700	28	125	4.5
TC-901	37	[--]	0.0
TC-1000	25	110	4.4
TC-1001	16	160	10.0
TC-1251	6	150	25.0
TC-1253	5	128	25.6
TC-1254	3	122	40.7
TC-1255	36	104	2.9
TC-1256	48	108	2.3

STATION	PUMPING LEVEL	Q gpm	Sc gpm/ft
AS-108	8	226	28.3
AS-131	11	310	28.2
AS-190	60	220	3.7
AS-191	16	220	13.8
AS-203	19	220	11.6
AS-4140	6	110	18.3
AS-4150	10	128	12.8
AS-5001	27	185	6.9
AS-5009	53	111	2.1
BA-164	21	214	10.2
BA-190	17	303	17.8

APPENDIX P
CRITICAL SPECIES LIST - CAMP LEJEUNE ENDANGERED SPECIES AND SPECIAL - INTEREST COMMUNITIES SURVEY

Critical species list - Camp Lejeune endangered species and special-interest communities survey

Principal investigator: Richard LeBlond, 326-1440.

List current as of 9-30-91.
Replaces list of 6-30-91.

"?" = Species names followed by a "?" are less than confidently identified. They are nonetheless caught in this biological safety net, the mesh size of which errs on the side of diversity. Until identification is confirmed (most of these are represented by a specimen), these site records should be regarded as tentative.

Species sites are listed chronologically under the species name; with the 1990 month and day of discovery listed first, followed by the site's sector site number, community type and UTM grid number. Sites documented prior to the start of the current survey are indicated by the parenthetical date of discovery following the site name (see Rhexia aristosa at FD-1). Prior sites not yet relocated during the current survey are indicated by "---" in the date column (see Rhynchospora tracyi at FD-1).

Status codes. Federal status is listed first, and separated from the state status by a comma; e.g., Rhexia aristosa FC2,T (Federal Candidate level 2, state Threatened). Species with state status only are indicated by a single code without comma; e.g., Rhynchospora tracyi SR (Significantly Rare).

FE = Federal Endangered
FT = Federal Threatened
FC1 = Federal Candidate level 1. At risk. Listing warrented but precluded by higher priorities.
FC2 = Federal Candidate level 2. Vulmerable. Listing warrented but precluded by higher priorities.
F3C = Federal Candidate level 3C. More abundant and/or less threatened than previously known.
E = State Endangered
T = State Threatened
SC = State Special Concern
C = State Candidate
SR = State Significantly Rare
W = State Watch List (W1)
W3 = " " " , undocumented state occurrence prior to Lejeune site.

proposed = proposed for listing as State Candidate, Significantly Rare or Watch List based on current evidence

List of species and communities by sector - Camp Lejeune
endangered species and special-interest communities survey

List current as of 9-30-91.
Replaces list of 6-30-91.

		Status	UTM Grid
SECTOR E			
E-1	**Upper Beach**		907266-
	Amaranthus pumilus (1988)	FC2,T	949297
E-5	Brackish Marsh		860237
	Parietaria praetermissa	W	
	Solanum pseudogracile	W	
SECTOR F			
FA-1	**Depression Meadow**		878409
	Aristida palustris	SR	
	Burmannia biflora	W	
	Panicum tenerum	SR	
	Rhexia aristosa	FC2,T	
	Rhynchospora wrightiana	W	
FA-2	Road Meadow		895385
	Rhynchospora nitens	W	
	Rhynchospora pusilla	W	
FA-4	**Depression Meadow**		883407
	Aristida palustris	SR	
	Coelorachis rugosa	W	
	Dichanthelium erectifolium	SR	
	Rhexia aristosa	FC2,T	
	Rhynchospora harperi	C	
FB-1	Wet Pine Flatwoods		927413
	Amphicarpum purshii	SR	
	Lysimachia loomisii	W	
	Panicum tenerum	SR	
	Xyris difformis var. curtissii	W	
FB-2	**Road Meadow**		926409
	Rhynchospora pusilla	W	
	Rhynchospora nitens	W	
FB-3	**Wet Pine Flatwoods**		937416
	Lysimachia loomisii	W	
	Pleea tenuifolia	W	
	Scleria minor	SR	
	Tofieldia glabra	FC2,C	

(FB-3 cont.)			
	Xyris difformis var. curtissii	W	
	Xyris elliottii	SR	
FB-4	Wet Pine Flatwoods		939426
	Lysimachia loomisii	W	
	Rhynchospora harveyi	W	
	Rhynchospora pusilla	W	
	Scleria minor	SR	
FC-2	**Flatwood/Swamp Ecotone**		922413
	Anthaenantia rufa	W	
	Helianthus heterophyllus	W	
	Lysimachia loomisii	W	
	Oxypolis ternata	FC2,T	
FC-3	**Depression Meadow**		918318
	Aristida palustris	SR	
	Bartonia verna	W	
	Burmannia biflora	W	
	Dichanthelium erectifolium	SR	
	Litsea aestivalis	FC2,C	
	Muhlenbergia torreyana	F3C,E	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora cephalantha f. antrorsa	unusual/rare	
	Rhynchospora tracyi	SR	
FC-4	**Pocosin Ecotone**		919376
	Andropogon capillipes	W	
	Gentiana autumnalis	W	
FD-1	Cypress Savanna		904377
	Agalinis linifolia	SR	
	Anthaenantia rufa	W	
	Aristida palustris	SR	
	Bartonia verna	W	
	Burmannia biflora	W	
	Carex verrucosa	SR	
	Coelorachis rugosa	W	
	Dichanthelium sp. 1 =Panicum hirstii	FC2,C	
	Dichanthelium erectifolium	SR	
	Lobelia boykinii	FC2,C	
	Lysimachia loomisii	W	
	Muhlenbergia torreyana	F3C,E	
	Panicum tenerum	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora cephalantha f. antrorsa	unusual/rare	
	Rhynchospora harperi	C	
	Rhynchospora tracyi (1984)	SR	
	Rhynchospora wrightiana	W	
	Scleria georgiana	C	
	Spiranthes laciniata	C	

(FD-1 cont.)			
	Xyris baldwiniana	W	
FD-3	**Small Depression Pond**		899378
	Carex verrucosa	SR	
	Eleocharis equisetoides	SR	

SECTOR G

G-10	**Pocosin Ecotone**		929348
	Lysimachia asperulifolia	FE,E	
GA-1	**Depression Meadow, Wet Pine Flatwoods**		894359
	Agalinis linifolia	SR	
	Andropogon capillipes	W	
	Aristida palustris	SR	
	Burmannia biflora	W	
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Eleocharis melanocarpa	C	
	Gentiana autumnalis	W	
	Panicum tenerum	SR	
	Rhexia aristosa	FC2,T	
	Rhynchospora tracyi	SR	
	Scleria georgiana	C	
GA-2	Depression Meadow		896360
	Andropogon capillipes	W	
	Agalinis linifolia	SR	
	Aristida palustris	SR	
	Burmannia biflora	W	
	Dichanthelium erectifolium	SR	
	Panicum tenerum	SR	
	Pleea tenuifolia	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora wrightiana	W	
	Scleria georgiana	C	
GA-3	**Cypress Savanna**		898360
	Agalinis linifolia	SR	
	Andropogon capillipes	W	
	Aristida palustris	SR	
	Burmannia biflora	W	
	Carex verrucosa	SR	
	Coelorachis rugosa	W	
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Panicum tenerum	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora pusilla	W	
	Rhynchospora tracyi	SR	
	Scleria georgiana	C	

GA-4	**Savanna**		899349
	Asclepias pedicellata	C	
	Dichanthelium erectifolium	SR	
	Dionaea muscipula	FC2,C-SC	
	Lysimachia loomisii	W	
	Oxypolis ternata	FC2,C	
	Pleea tenuifolia	W	
	Polygala brevifolia	W	
	Polygala hookeri	C	
	Rhynchospora pallida	SR	
	Sarracenia rubra ssp. rubra	W	
	Solidago pulchra	FC2,C	
	Tofieldia glabra	FC2,C	
	Xyris baldwiniana	W	
GA-5	Depression Meadow		901361
	Agalinis linifolia	SR	
	Anthaenantia rufa	W	
	Aristida palustris	SR	
	Burmannia biflora	W	
	Carex verrucosa	SR	
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Panicum tenerum	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora inundata	W	
	Rhynchospora tracyi	SR	
	Xyris smalliana	W	
GB-1	**Wet Pine Flatwoods/Small Stream Pocosin**		908376
	Rhynchospora elliottii	W	
GB-2	**Road Meadow**		907376
	Agalinis virgata	C	
GB-3	Road Meadow		929368
	Calopogon barbatus	W	
	Dionaea muscipula	FC2,C-SC	
	Solidago pulchra	FC2,C	
GB-4	**Road Meadow**		931365
	Dionaea muscipula	FC2,C-SC	
	Rhynchospora pallida	SR	
	Solidago pulcra	FC2,C	
GB-5	Wet Pine Flatwoods		932364
	Dionaea muscipula	FC2,C-SC	
	Solidago pulchra	FC2,C	
	Tofieldia glabra	FC2,C	

GB-6	Pocosin Ecotone		935364
	Amphicarpum purshii	SR	
	Dionaea muscipula	FC2,C-SC	
	Solidago pulchra	FC2,C	
GB-7	Road Meadow		940364
	Rhexia aristosa	FC2,T	
	Solidago pulchra	FC2,C	
GB-8	**Road Meadow**		932368
	Bartonia verna	W	
	Solidago pulchra	FC2,C	
	Tofieldia glabra	FC2,C	
GB-9	Road Meadow		934362
	Juncus validus	W	
GB-10	**Road Depression Meadow**		918374
	Calopogon barbatus	W	
GC-1	**Small Depression Pond**		946360
	Agalinis linifolia	SR	
	Aristida palustris	SR	
	Coelorachis rugosa	W	
	Dichanthelium erectifolium	SR	
	Eleocharis tricostata	W	
	Panicum tenerum	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora tracyi	SR	
GC-2	**Small Depression Pond**		949357
	Agalinis linifolia	SR	
	Aristida palustris	SR	
	Burmannia biflora	W	
	Cladium mariscoides	SR	
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Ludwigia linifolia	SR	
	Panicum tenerum	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora harperi	C	
	Rhynchospora pusilla	W	
	Rhynchospora tracyi	SR	
	Scleria georgiana	C	
GC-3	Pocosin Ecotone		945342
	Amphicarpum purshii	SR	
GC-5	Depression Meadow		940345
	Eleocharis tricostata	W	
	Panicum tenerum	SR	

GC-6	**Depression Meadow**		942358
	Agalinis linifolia	SR	
	Aristida palustris	SR	
	Burmannia biflora	W	
	Coelorachis rugosa	W	
	Dichanthelium erectifolium	SR	
	Litsea aestivalis	FC2,C	
	Panicum tenerum	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora wrightiana	W	
	Scleria georgiana	C	
GC-7	Depression Meadow		942359
	Aristida palustris	SR	
	Litsea aestivalis	FC2,C	
	Panicum tenerum	SR	
	Rhexia aristosa	FC2,T	
	Rhexia cubensis	SR	
	Sarracenia rubra ssp. rubra	W	
GC-8	**Small Depression Pond**		947356
	Rhexia aristosa	FC2,T	
	Rhexia aristosa X cubensis	undescribed taxon	
	Rhexia cubensis	SR	
GC-9	Depression Meadow		949356
	Aristida palustris	SR	
	Coelorachis rugosa	W	
	Rhexia aristosa	FC2,T	
GC-10	Depression Meadow		948356
	Agalinis linifolia	SR	
	Aristida palustris	SR	
	Coelorachis rugosa	W	
	Eleocharis tricostata	W	
	Panicum tenerum	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora tracyi	SR	
	Scleria georgiana	C	
GC-11	**Flatwoods Road Meadow**		949364
	Andropogon capillipes	W	
GC-12	**Streamhead Pocosin**		944348
	Amphicarpum purshii	SR	
	Dionaea muscipula	FC2,C-SC	
	Peltandra sagittifolia	SR	
	Rhynchospora pallida	SR	
	Solidago pulchra	FC2,C	
	Tofieldia glabra	FC2,C	

GD-1	**Road Meadow**		938326
	Amphicarpum purshii	SR	
	Rhexia cubensis	SR	
GD-2	**Small Depression Pond**		938335
	Eleocharis tricostata	W	
GD-3	Small Depression Pond		937335
	Eleocharis vivipara	W	
	Litsea aestivalis	FC2,C	
	Rhexia aristosa	FC2,T	
	Xyris smalliana	W	
GD-4	Small Depression Pond		936336
	Dichanthelium erectifolium	SR	
	Eleocharis melanocarpa	C	
	Eleocharis tricostata	W	
	Rhexia aristosa	FC2,T	
GD-5	**Road Meadow**		921333
	Agalinis linifolia	SR	
	Dionaea muscipula	FC2,C-SC	
	Pleea tenuifolia	W	
	Rhynchospora pusilla	W	
	Solidago pulchra	FC2,C	
GD-6	Road Meadow		922332
	Rhexia aristosa	FC2,T	
	Rhexia aristosa X cubensis	undescribed taxon	
	Rhexia cubensis	SR	
	Rhynchospora pusilla	W	
	Xyris baldwiniana	W	
GE-1	**Flatwoods/Pocosin Ecotone**		910328
	Calamovilfa brevipilis	F3C,E	
	Carex elliottii	W	
	Dionaea muscipula (1988)	FC2,C-SC	
	Ludwigia microcarpa (1988)	W	
	Lysimachia asperulifolia (1988)	FE,E	
	Polygala brevifolia	W	
	Rhynchospora pallida	SR	
	Solidago pulchra (1988)	FC2,C	
	Tofieldia glabra	FC2,C	
GE-2	**Pocosin Ecotone**		918333
	Amphicarpum purshii	SR	
	Dionaea muscipula	FC2,C-SC	
	Oxypolis ternata	FC2,C	
	Pleea tenuifolia	W	
	Polygala brevifolia	W	
	Rhynchospora pallida	SR	
	Rhynchospora wrightiana	W	
	Solidago pulchra	FC2,C	
	Tofieldia glabra	FC2,C	

GE-3	**Road Depression Meadow**		907330
	Amphicarpum purshii	SR	
	Calamovilfa brevipilis	F3C,E	
	Dionaea muscipula	FC2,C-SC	
	Pleea tenuifolia	W	
GE-4	Small Depression Pond		907328
	Rhexia aristosa	FC2,T	
	Rhynchospora inundata	W	
GF-1	**Wet Pine Flatwoods**		**949331**
	Agalinis fasciculata	W	
	Agalinis virgata	C	
	Calopogon barbatus	W	
	Gentiana autumnalis	W	
	Tofieldia glabra	FC2,C	
GF-1	Road Meadow		**949331**
	Andropogon capillipes	W	
GF-3	Depression Meadow		906327
	Rhexia aristosa	FC2,T	
GF-5	Road Meadow		944326
	Agalinis linifolia	SR	
	Ludwigia microcarpa	W	
	Rhexia aristosa	FC2,T	
	Xyris baldwiniana	W	
GG-1	**Depression Meadow**		934317
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Panicum tenerum	SR	
	Rhexia aristosa	FC2,T	
	Rhexia cubensis	SR	
	Rhynchospora inundata	W	
	Rhynchospora tracyi	SR	
	Rhynchospora wrightiana	W	
GG-2	**Road Meadow**		943325
	Eleocharis tricostata	W	
	Ludwigia microcarpa	W	
GH-1	**Coastal Fringe Sandhill**		?
	Cladina evansii	W	
GI-1	**Coastal Fringe Sandhill**		?
	Cladina evansii	W	

SECTOR H

HA-3	**Depression Meadow**		876335
	Aristida palustris	SR	
	Burmannis biflora	W	
	Coelorachis rugosa	W	
	Dichanthelium erectifolium	SR	
	Ludwigia linifolia	SR	
	Rhexia aristosa	FC2,T	
	Rhynchospora harperi	C	
	Rhynchospora nitens	W	
	Rhynchospora wrightiana	W	
	Scleria georgiana	C	
HA-5	**Depression Meadow**		874336
	Aristida palustris	SR	
	Dichanthelium erectifolium	SR	
	Ludwigia linifolia	SR	
	Rhexia aristosa	FC2,T	
	Scleria georgiana	C	
HA-6	Small Depression Pond		873334
	Aristida palustris	SR	
	Coelorachis rugosa	W	
	Dichanthelium erectifolium	SR	
	Eleocharis tricostata	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora harperi	C	
	Rhynchospora nitens	W	
	Scleria reticularis var. reticularis	C	
HA-7	**Small Depression Pond**		872334
	Dichanthelium erectifolium	SR	
	Ludwigia linifolia	SR	
	Rhexia aristosa	FC2,T	
	Rhynchospora nitens	W	
	Scleria reticularis var. reticularis	C	
HA-8	Small Depression Pond		872333
	Coelorachis rugosa	W	
	Rhynchospora nitens	W	
	Scleria reticularis var. reticularis	C	
HA-9	**Road Meadow** (best treated as extension of HA-10)		871336
	Scleria georgiana	C	
HA-10	**Small Depression Pond**		870337
	Scleria georgiana	C	
HA-11	Small Depression Pond		869338
	Ludwigia linifolia	SR	
	Rhexia aristosa	FC2,T	
	Rhynchospora nitens	W	
	Scleria reticularis var. reticularis	C	

HB-1	**Flatwoods/Pocosin Ecotone**		876311
	Carex elliottii	W	
	Dionaea muscipula	FC2,C-SC	
	Polygala brevifolia	W	
HB-2	**Flatwoods/Pocosin Ecotone**		875317
	Amphicarpum purshii	SR	
	Lysimachia asperulifolia (P. Robinson)	FE,E	
	Polygala brevifolia	W	
	Solidago pulchra	FC2,C	
HB-3	Small Depression Pond		878328
	Agalinis linifolia	SR	
	Aristida palustris	SR	
	Burmannia biflora	W	
	Dichanthelium erectifolium	SR	
	Dionaea muscipula	FC2,C-SC	
	Ludwigia linifolia	SR	
	Oxypolis ternata	FC2,C	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora harperi	C	
	Solidago pulchra	FC2,C	
HB-5	**Wet Pine Flatwoods, Pocosin**		870320
	Asclepias pedicellata	C	
	Calopogon barbatus	W	
	Solidago pulchra	FC2,C	
	Sporopolus species 1	FC2,T	
HD-1	**Small Depression Pond/Black Gum Swamp**		878337
	Dichanthelium erectifolium	SR	
	Rhexia aristosa	FC2,T	
HD-2	**Depression Meadow/Small Depression Pond**		876339
	Aristida palustris	SR	
	Burmannia biflora	W	
	Rhexia aristosa	FC2,T	
HD-3	**Depression Meadow/Small Depression Pond**		871341
	Aristida palustris	SR	
	Burmannia biflora	W	
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Eleocharis robbinsii	C	
	Myriophyllum laxum	FC2,T	
	Panicum tenerum	SR	
	Rhexia aristosa	FC2,T	
	Rhynchospora harperi	C	
	Rhynchospora inundata	W	
	Rhynchospora nitens	W	
	Rhynchospora pleiantha	SR	
	Rhynchospora tracyi	SR	
	Scleria georgiana	C	

HE-1	Depression Meadow		893334
	Agalinis linifolia	SR	
	Aristida palustris	SR	
	Burmannia biflora	W	
	Rhexia aristosa	FC2,T	
HE-2	**Depression Meadow**		892334
	Agalinis linifolia	SR	
	Aristida palustris	SR	
	Bartonia verna	W	
	Burmannia biflora	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora wrightiana	W	
HE-3	**Depression Meadow**		889332
	Aristida palustris	SR	
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Ludwigia linifolia	SR	
	Panicum tenerum	SR	
	Rhexia aristosa	FC2,T	
	Rhynchospora harperi	C	
	Rhynchospora inundata	W	
	Rhynchospora tracyi	SR	
	Scleria reticularis var. reticularis	C	
	Xyris smalliana	W	
HE-4	Small Stream Pocosin		895331
	Rhynchospora inundata	W	
HE-5	Depression Meadow		896332
	Aristida palustris	SR	
	Burmannia biflora	W	
	Eleocharis equisetoides	SR	
	Panicum tenerum	SR	
	Rhexia aristosa	FC2,T	
	Rhynchospora harperi	C	
	Rhynchospora inundata	W	
HE-6	Small Depression Pond		882329
	Burmannia biflora	W	
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Panicum tenerum	SR	
	Rhexia aristosa	FC2,T	
	Rhexia aristosa X cubensis	undescribed taxon	
	Rhexia cubensis	SR	
	Rhynchospora scirpoides	C	
	Rhynchospora tracyi	SR	
	Rhynchospora wrightiana	W	

HE-7	**Road Meadow**		880330
	Agalinis fasciculata	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora pusilla	W	
	Rhynchospora nitens	W	
HE-8	**Pocosin Ecotone**		883329
	Dionaea muscipula	FC2,C-SC	
HE-8	Road Depression Meadow		882328
	Paspalum praecox	W	
HF-1	**Small Depression Pond/Depression Meadow**		900316
	Agalinis linifolia	SR	
	Aristida palustris	SR	
	Coelorachis rugosa	W	
	Dichanthelium erectifolium	SR	
	Eleocharis tricostata	W	
	Ludwigia linifolia	SR	
	Panicum tenerum	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora tracyi	SR	
	Rhynchospora wrightiana	W	
	Scleria georgiana	C	
	Spiranthes laciniata	C	
	Xyris smalliana	W	
HF-2	Road Meadow		899316
	Aristida palustris	SR	
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Rhexia aristosa	FC2,T	
	Rhynchospora inundata	W	
	Rhynchospora nitens	W	
	Rhynchospora pallida	SR	
	Rhynchospora wrightiana	W	
	Sagittaria graminea var. chapmanii	C	
HF-3	Small Depression Pond		898318
	Aristida palustris	SR	
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Sagittaria graminea var. chapmanii	C	
HF-3	**Road Meadow**		898318
	Amphicarpum purshii	SR	
HF-4	Road Meadow		898319
	Agalinis linifolia	SR	
	Rhexia aristosa	FC2,T	
	Rhexia cubensis	SR	

(HF-4 cont.)			
	Rhynchospora nitens	W	
	Sagittaria graminea var. chapmanii	C	
HF-5	**Flatwoods/Pocosin Ecotone**		896319
	Carex elliottii	W	
	Rhexia cubensis	SR	
	Rhynchospora pallida	SR	
HF-6	**Road Meadow**		894319
	Rhexia aristosa	FC2,T	
	Rhynchospora pallida	SR	
HF-7	**Small Depression Pond**		892318
	Eleocharis equisetoides	SR	
	Rhynchospora inundata	W	
	Xyris smalliana	W	
HF-8	Road Meadow		896311
	Amphicarpum purshii	SR	
HF-8	Small Depression Pond		896312
	Agalinis linifolia	SR	
	Aristida palustris	SR	
	Burmannia biflora	W	
	Dichanthelium erectifolium	SR	
	Eleocharis elongata	C	
	Eleocharis equisetoides	SR	
	Eleocharis tricostata	W	
	Panicum tenerum	SR	
	Rhexia aristosa	FC2,T	
	Rhexia cubensis	SR	
	Rhynchospora inundata	W	
	Rhynchospora pleiantha	C	
HF-9	**Road Meadow**		889313
	Amphicarpum purshii	SR	
HF-11	Small Depression Pond		897309
	Agalinis linifolia	SR	
	Carex verrucosa	SR	
	Coelorachis rugosa	W	
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Panicum tenerum	SR	
	Rhexia aristosa	FC2,T	
	Rhynchospora inundata	W	
	Spiranthes laciniata	C	
	Sporobolus species 1 (into HF-20)	FC2,T	
HF-12	Small Depression Pond		897308
	Eleocharis elongata	C	
	Eleocharis equisetoides	SR	

HF-13	**Small Depression Pond**		895309
	Carex verrucosa	SR	
	Panicum tenerum	SR	
	Rhexia aristosa	FC2,T	
	Rhynchospora inundata	W	
	Rhynchospora tracyi	SR	
HF-14	Pocosin Ecotone		894312
	Amphicarpum purshii	SR	
	Rhexia aristosa	FC2,T	
HF-15	**Small Depression Pond**		894310
	Eleocharis equisetoides	SR	
	Litsea aestivalis	FC2,C	
	Scirpus etuberculatus	SR	
HF-15	Pond/Flatwoods Ecotone		894310
	Asclepias pedicellata	C	
HF-16	Small Depression Pond		892308
	Eleocharis robbinsii? (too deep to wade)	C	
	Panicum tenerum	SR	
	Rhexia aristosa	FC2,T	
	Rhexia cubensis	SR	
	Rhynchospora inundata	W	
	Rhynchospora scirpoides	C	
HF-17	**Small Depression Pond**		891306
	Aristida palustris	SR	
	Burmannia biflora	W	
	Dichanthelium erectifolium	SR	
	Eleocharis equisetoides	SR	
	Eleocharis robbinsii	C	
	Panicum tenerum	SR	
	Rhexia aristosa	FC2,T	
	Rhynchospora scirpoides	C	
	Rhynchospora tracyi	SR	
	Rhynchospora wrightiana	W	
	Utricularia olivacea	T	
	Xyris smalliana	W	
HF-18	**Depression Meadow**		898308
	Agalinis linifolia	SR	
	Coelorachis rugosa	W	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
HF-19	**Small Depression Pocosin**		897307
	Amphicarpum purshii (into HF-20)	SR	
HF-20	**Flatwoods/Pocosin Ecotone**		897308
	Amphicarpum purshii	SR	
	Solidago pulchra	FC2,C	
	Sporobolus species 1	FC2,T	

HF-21	**Small Depression Pond**		899310
	Coelorachis rugosa	W	
HF-22	**Road Depression Meadow**		902306
	Juncus validus	W	
HF-23	**Small Stream Swamp**		905302
	Carex albicans var. emmonsii	W	
HF-24	Road/Pocosin Ecotone		900309
	Dionaea muscipula	FC2,C-SC	
	Rhynchospora pallida	SR	
HF-25	**Road Depression Meadow**		904310
	Andropogon capillipes	W	
	Burmannia biflora	W	
	Dichanthelium wrightianum	W	
	Dionaea muscipula	FC2,C-SC	
	Ludwigia microcarpa	W	
	Paspalum praecox	W	
	Polygala brevifolia	W	
	Rhynchospora nitens	W	
	Rhynchospora pallida	SR	
	Solidago pulchra	FC2,C	
	Xyris baldwiniana	W	

<u>SECTOR I</u>

IA-1	**Small Depression Pond**		886297
	Rhynchospora inundata	W	
	Rhynchospora scirpoides	C	
IA-2	Small Depression Pond		890296
	Burmannia biflora	W	
	Eleocharis equisetoides	SR	
	Eleocharis vivipara (?)	W	
	Panicum tenerum	SR	
	Rhyncospora inundata	W	
	Rhynchospora scirpoides	C	
IA-3	**Wet Pine Flatwoods**		887298
	Asclepias pedicellata	C	
IC-2	**Small Depression Pond**		875279
	Eleocharis equisetoides	SR	
	Rhynchospora inundata	W	
IC-3	Small Depression Pond		869280
	Eleocharis equisetoides	SR	

IC-4	Small Depression Pond		870280
	Eleocharis equisetoides	SR	
	Rhynchospora inundata	W	
	Sagittaria engelmanniana	W	
IC-6	**Coastal Fringe Sandhill**		859270
	Cladina evansii	W	
IC-7	**Small Depression Pond**		862270
	Eleocharis equisetoides	SR	
IC-8	**Coastal Fringe Sandhill**		?
	Cladina evansii	W	
IC-9	**Maritime Forest**		853258
	Cynanchum angustifolium	W	
	Iresine rhizomatosa	W	
	Sageretia minutiflora	C	
IC-10	**Coastal Fringe Evergreen Forest**		856262
	Asplenium platyneuron var. bacculum-rubrum	W	
	Cornus asperifolia	C	
	Rhynchospora miliacea	W	
IC-11	**Seepage Meadow**		867259
	Eleocharis montevidensis	proposed	
IE-2	Pocosin Ecotone		873291
	Dionaea muscipula	FC2,C-SC	

SECTOR J

JB-1	Small Stream Swamp		819305
	Carex chapmanii	FC2,T	
	Carex floridana	W	
JC-1	**Small Depression Pond**		844290
	Eleocharis melanocarpa	C	

SECTOR K

KA-1	Small Stream Swamp		797390
	Carex floridana	W	
KC-1	Wet Pine Flatwoods		772377
	Buchnera floridana	W	
	Calamovilfa brevipilis	F3C,E	
	Dionaea muscipula	FC2,C-SC	
	Pleea tenuifolia	W	
	Rhynchospora pallida	SR	
	Solidago pulchra	FC2,C	

SECTOR L

LA-1	**Road Depression Meadow**		727352-724337
	Wet Pine Flatwoods		
	Dionaea muscipula	FC2,C-SC	
	Pleea tenuifolia	W	
	Rhynchospora pusilla	W	
	Xyris elliottii	SR	
LB-1	**Road Meadow** (US 17)		725306-724337
	Savanna		
	Agalinis aphylla	C	
	Agalinis fasciculata	W	
	Agalinis virgata	C	
	Amphicarpum purshii	SR	
	Andropogon capillipes	W	
	Asclepias pedicellata	C	
	Bartonia verna	W	
	Calamovilfa brevipilis	F3C,E	
	Calopogon barbatus	W	
	Dionaea muscipula	FC2,C-SC	
	Gentiana autumnalis	W	
	Linum floridanum var. chrysocarpum	SR	
	Oxypolis ternata	FC2,C	
	Pleea tenuifolia	W	
	Polygala brevifolia	W	
	Rhynchospora nitens	W	
	Rhynchospora pallida	SR	
	Rhynchospora pusilla	W	
	Solidago pulchra	FC2,C	
	Sporobolus species 1	FC2,T	
	Tofieldia glabra	FC2,C	
	Xyris baldwiniana	W	
	Xyris elliottii	SR	
	Xyris flabelliformis	C	
LB-3	**Mesic Pine Flatwoods**		734330
	Carex chapmanii	FC2,T	
	Carex floridana	W	
LB-4	**Powerline Depression Meadow**		743296-747287
	Carex elliottii	W	
	Polygala brevifolia	W	
LC-1	**Road Meadow** (NC 210)		752270-745287
	Agalinis fasciculata	W	
	Agalinis tenella	W	
	Andropogon capillipes	W	
	Dionaea muscipula	FC2,C-SC	
	Xyris difformis var. curtissii	W	
	Xyris elliottii	SR	

LC-2	**Powerline Depression Meadow**		747287-764282
	Andropogon capillipes	W	
	Carex elliottii	W	
	Dionaea muscipula	FC2,C-SC	
	Rhexia aristosa	FC2,T	
	Rhynchospora oligantha	C	

SECTOR M

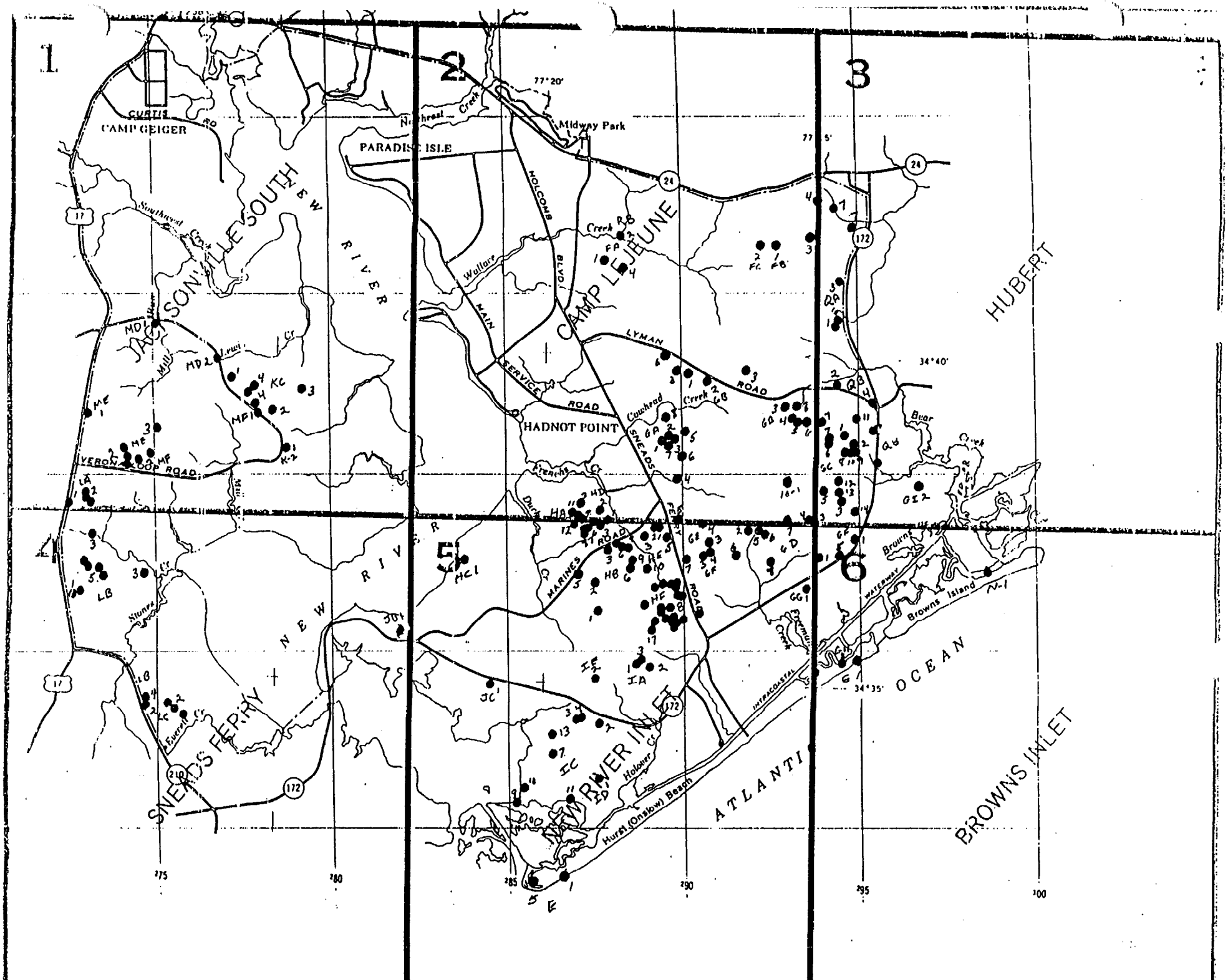
MB-1	**Mesic Pine Flatwoods**		770398
	Carex floridana	W	
MD-1	Small Stream Swamp		752393-
	Carex chapmanii	FC2,T	752372
	Carex floridana	W	
	Scirpus lineatus	C	
	Senecio glabellus	W	
ME-1	**Road Meadow (US 17)**		728353-735387
	Oxypolis ternata	FC2,C	
MF-1	**Wet Pine Flatwoods**, Pocosin Ecotone		776370
	Andropogon capillipes	C	
	Calamovilfa brevipilis	F3C,E	
	Calopogon barbatus	W	
	Carex elliottii	W	
	Dionaea muscipula	FC2,C-SC	
	Polygala brevifolia	W	
	Solidago pulchra	FC2,C	

SECTOR Q

QA-1	**Small Depression Pocosin**		943390
	Litsea aestivalis (1984)	FC2,C	
QA-2	**Small Depression Pond**		941391
QA-3	Depression Meadow		946402
	Anthaenantia rufa	W	
	Aristida palustris	SR	
	Burmannia biflora	W	
	Coelorachis rugosa	W	
	Dichanthelium erectifolium	SR	
	Dichanthelium sp. 1 =Panicum hirstii	FC2,C	
	Eleocharis equisetoides	SR	
	Lobelia boykinii	FC2,C	
	Muhlenbergia torreyana	F3C,E	
	Panicum tenerum	SR	
	Paspalum praecox	W	
	Rhexia aristosa	FC2,T	
	Rhynchospora elliottii	W	
	Rhynchospora harperi	C	

(QA-3	Depression Meadow cont.)		
	Rhynchospora tracyi	SR	
	Scleria georgiana	C	
	Spiranthes laciniata	C	
	Xyris smalliana	W	
QA-3	Pocosin Ecotone		946401
	Amphicarpum purshii	SR	
	Gentiana autumnalis	W	
	Rhynchospora nitens	W	
QA-4	Wet Pine Flatwoods		940403
	Andropogon capillipes	W	
QA-5	**Wet Pine Flatwoods**		950414
	Andropogon capillipes	W	
	Gentiana autumnalis	W	
QA-6	Depression Meadow		944392
	Aristida palustris	SR	
	Carex verrucosa	SR	
	Panicum tenerum	SR	
	Rhynchospora inundata	W	
QA-7	**Small Stream Swamp**		944424
	Carex chapmanii	FC2,T	
	Carex elliottii	W	
	Rhynchospora miliacea	W	
	Scirpus lineatus	C	
QB-1	Nonriverine Swamp Forest (Nyssa biflora variant) "Peterson's Quagmire"		953375
QB-2	**Road Meadow** (Lyman Road)		943375
	Anthaenantia rufa	W	
	Coelorachis rugosa	W	
	Dionaea muscipula	FC2,C-SC	
	Gentiana autumnalis	W	
	Paspalum praecox	W	
	Paspalum stramineum var. stramineum	proposed	
	Polygala brevifolia	W	
	Rhynchospora nitens	W	
	Rhynchospora oligantha	SR	
	Rhynchospora pallida	SR	
	Scleria georgiana	C	
	Scleria minor	SR	
	Solidago gracillima	W	
	Solidago pulchra	FC2,C	
	Tofieldia glabra	FC2,C	
	Xyris baldwiniana	W	

QB-3.	**Small Depression Pond**		954361
	Eleocharis tricostata	W	
	Rhexia cubensis	SR	
	Rhynchospora wrightiana	W	
RB-1	Road Meadow		888434
	Ludwigia microcarpa	W	


1
2
3
4
5
6
CAMP GEIGER
CURTIS
PARADISE ISLE
Northeast Creek
Midway Park
77°20'
77°5'
34°40'
34°35'
JACKSONVILLE SOUTH
NEW RIVER
CAMP LEJEUNE
HUBERT
HADNOT POINT
HOLCOMB BLVD
MAIN SERVICE ROAD
LYMAN ROAD
SNEADS FERRY ROAD
MARINES ROAD
VERONA LOOP ROAD
Wallace Creek
Cowhead Creek
Frenchs Cr
Duck Cr
Bear Creek
Brown Creek
Browns Island
WATERWAY
INTRACOASTAL
Freeman Creek
Holoker Cr
Hurst (Onslow) Beach
ATLANTIC OCEAN
BROWNS INLET
NEW RIVER INLET
SNEADS FERRY
Southwest Creek
Mill Cr
Lewis Cr
Stones Cr
Everett Cr
275
280
285
290
295
300

APPENDIX Q
RESULTS OF ENGINEERING PARAMETERS

Client Sample ID:	35-GWDS	35-SS12-0	35-SS11-00	35-SS07-0	35-SS07-0	35-SS03-0
Lab Sample ID:	D94-5617-	D94-5617-	D94-5617-6	D94-5617-	D94-5617-	D94-5617-
Date Sampled:	16-MAY-1	18-MAY-1	18-MAY-19	18-MAY-1	18-MAY-1	18-MAY-1
Other						
Analyte	Result	Result	Result	Result	Result	Result
	%	%	%	%	%	%
Total Solids	82.6	96.8	94.1	88.5	89.3	97.4

Client Sample ID:	35-GWDS4-	35-SS04-0	35-SS09-00	35-SS01-00	35-SS10-00	35-SS02-00	35-GWDS	35-SS13-0	35-GWDS
Lab Sample ID:	D94-5617-1	D94-5617-	D94-5617-16	D94-5617-17	D94-5617-18	D94-5617-1	D94-5617-	D94-5617-	D94-5617-
Date Sampled:	16-MAY-19	18-MAY-1	18-MAY-199	17-MAY-1994	17-MAY-1994	17-MAY-19	16-MAY-1	18-MAY-1	16-MAY-1
Other,									
Analyte	Result	Result	Result	Result	Result	Result	Result	Result	Result
	%	%	%	%	%	%	%	%	%
Total Solids	89.9	91.6	93.4	94.2	94.4	94.4	86.5	22.9	82.9

Client Sample ID:	35-SD07-0	35-SD01-0	36-SD03-0	36-SD02-0	36-SD01-0	36-SD05-0
Lab Sample ID:	D94-4601-	D94-4601-	D94-4601-	D94-4601-	D94-4601-	D94-4601-
Date Sampled:	14-APR-19	16-APR-19	16-APR-19	16-APR-19	16-APR-19	18-APR-19

Other

Analyte	Result	Result	Result	Result	Result	Result
	%	%	%	%	%	%
Clay/Colloids (< 0.005 mm)	8.4	13.9	12.8	11.5	25.4	1.6
Gravel & Coarse Sand (> 2.00 m	0.1	0.1	0.1	0.1	0.1	0.1
Medium & Fine Sand (0.075 to 2.	65.1	52.5	51.8	66.7	34.7	93.2
Silt (0.005 to 0.075 mm)	26.5	33.7	35.4	21.8	39.9	5.2

Client Sample ID:	36-SD06-0	36-SD07-0	36-BN03	36-BN02	36-BN01	35-SD04-0
Lab Sample ID:	D94-4601-	D94-4601-	D94-4601-	D94-4601-	D94-4601-	D94-4601-
Date Sampled:	18-APR-19	18-APR-19	19-APR-19	19-APR-19	19-APR-19	14-APR-19

Other

Analyte	Result	Result	Result	Result	Result	Result
	%	%	%	%	%	%
Clay/Colloids (< 0.005 mm)	4.6	9.1	3.1	3.1	10.5	3.1
Gravel & Coarse Sand (> 2.00 m	0.1	0.1	0.1	0.1	0.1	0.1
Medium & Fine Sand (0.075 to 2.	84.2	79.6	89.6	91.4	81.4	86.2
Silt (0.005 to 0.075 mm)	11.2	11.2	7.3	5.5	8.1	10.7

Client Sample ID:	36-SD04-0	35-SD05-06 Duplic	36-SD02-06 Duplic	35-SD03-0	35-SD06-0
Lab Sample ID:	D94-4601-	D94-4601-21	D94-4601-22	D94-4601-	D94-4601-
Date Sampled:	19-APR-19	15-APR-1994	16-APR-1994	14-APR-19	15-APR-19

Other

Analyte	Result	Result	Result	Result	Result
	%	%	%	%	%
Clay/Colloids (< 0.005 mm)	11.3	14.1	11	1.6	13.4
Gravel & Coarse Sand (> 2.00 m	0.1	0.1	0.1	0.1	0.1
Medium & Fine Sand (0.075 to 2.	62.1	48	68.6	96	55.7
Silt (0.005 to 0.075 mm)	26.7	37.9	20.4	2.4	31

Client Sample ID:	35-BN03	35-SD05-0	35-BN04	35-BN02	35-SD02-0	
Lab Sample ID:	D94-4601-	D94-4601-	D94-4601-	D94-4601-	D94-4601-	
Date Sampled:	15-APR-19	15-APR-19	16-APR-19	16-APR-19	16-APR-19	
Other						
Analyte	Result	Result	Result	Result	Result	
	%	%	%	%	%	
Clay/Colloids (< 0.005 mm)	15.6	13.3	5.5	3	0.1	U
Gravel & Coarse Sand (> 2.00 m	0.1	0.1	0.1	0.1	0.1	U
Medium & Fine Sand (0.075 to 2.	20.6	51.3	79.8	93.4	100	
Silt (0.005 to 0.075 mm)	63.8	35.4	14.7	3.6	0.1	U

Client Sample ID:	35-MW36B-	HC-SD01-6	35-MW34B-	35-SS04-00	35-SS04-00D	35-MW30B-	35-MW35B-	35-MW29B-
Lab Sample ID:	D94-5057-1	D94-5057-1	D94-5057-1	D94-5057-1	D94-5057-16	D94-5057-1	D94-5057-1	D94-5057-1
Date Sampled:	4-MAY-199	8-MAY-199	10-MAY-19	10-MAY-19	10-MAY-1994	10-MAY-19	10-MAY-19	10-MAY-19
Other,								
Analyte	Result	Result	Result	Result	Result	Result	Result	Result
	%	%	%	%	%	%	%	%
Clay/Colloids (< 0.005 mm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gravel & Coarse Sand (> 2.00 m	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Medium & Fine Sand (0.075 to 2.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Silt (0.005 to 0.075 mm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Organic Carbon	N/A	29200 D	N/A	N/A	N/A	N/A	N/A	N/A
Total Solids	86.9	61.6	77.3	23.3	23.2	87.8	88.4	88.6

Client Sample ID:	HC-SD02-06	WC-BN03	35-MW30BS-	35-MW33BS-	35-MW26BS-	35-MW32BS-	35-MW38BS-	35-MW37BS-
Lab Sample ID:	D94-5057-2	D94-5057-2	D94-5057-21	D94-5057-22	D94-5057-23	D94-5057-24	D94-5057-25	D94-5057-26
Date Sampled:	6-MAY-1994	7-MAY-199	11-MAY-199	11-MAY-199	13-MAY-199	14-MAY-199	16-MAY-199	15-MAY-199
Other								
Analyte	Result	Result	Result	Result	Result	Result	Result	Result
	%	%	%	%	%	%	%	%
Clay/Colloids (< 0.005 mm)	0.5	20.6	N/A	N/A	N/A	N/A	N/A	N/A
Gravel & Coarse Sand (> 2.00 m	0.1 U	0.1	N/A	N/A	N/A	N/A	N/A	N/A
Medium & Fine Sand (0.075 to 2.	64.8	18.2	N/A	N/A	N/A	N/A	N/A	N/A
Silt (0.005 to 0.075 mm)	34.7	61.3	N/A	N/A	N/A	N/A	N/A	N/A
Total Organic Carbon	21100	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Solids	40.3	23.5	85.2	80	85.6	80.9	85.7	82.1

Client Sample ID:	WC-BN02	HC-BN03	HC-BN02 Duplic	HM-SD01-	HM-SD01-06
Lab Sample ID:	D94-5243-15	D94-5243-1	D94-5243-17	D94-5243-	D94-5243-19
Date Sampled:	6-MAY-1994	6-MAY-199	5-MAY-1994	8-MAY-19	8-MAY-1994

Other Analyte	Result	Result	Result	Result	Result
	%	%	%	%	%
Clay/Colloids (< 0.005 mm)	21	7.4	1.6	0.6	N/A
Gravel & Coarse Sand (> 2.00 m	0.1	0.1	0.1	0.1	N/A
Medium & Fine Sand (0.075 to 2.	20.5	52.4	93.1	108	N/A
Silt (0.005 to 0.075 mm)	58.5	40.2	5.3	12.8	N/A
Total Solids	N/A	N/A	N/A	82.2	81.6

Other Analyte	Result	Result	Result	Result	Result
	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Total Organic Carbon	149000	52400	140000	127000	64500

Client Sample ID:	HM-SD02-	WC-SD02-	WC-SD02-6	HM-BN03	HC-BN02	HM-BN02
Lab Sample ID:	D94-5243-	D94-5243-	D94-5243-1	D94-5243-	D94-5243-1	D94-5243-1
Date Sampled:	7-MAY-19	6-MAY-19	6-MAY-199	5-MAY-19	5-MAY-199	5-MAY-199
Other Analyte	Result	Result	Result	Result	Result	Result
	%	%	%	%	%	%
Clay/Colloids (< 0.005 mm)	63.1	49.9	N/A	20.2	2	18.8
Gravel & Coarse Sand (> 2.00 m	0.3	0.3	N/A	0.1	0.1	0.1
Medium & Fine Sand (0.075 to 2.	31.4	101	N/A	12	93.6	17.2
Silt (0.005 to 0.075 mm)	191	152	N/A	67.7	4.4	64
Total Solids	35	33	48	N/A	N/A	N/A

Other Analyte	Result	Result	Result	Result	Result	Result
	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Total Organic Carbon	76200	55100	49000	4900	143000	31900

Client Sample ID:	HM-SD03-612	HC-SD03-	HC-SD03-0	HC-SD03-612	WC-SD03-
Lab Sample ID:	D94-5243-4	D94-5243-	D94-5243-6	D94-5243-7	D94-5243-
Date Sampled:	7-MAY-1994	7-MAY-19	7-MAY-199	7-MAY-1994	7-MAY-19
Other Analyte	Result	Result	Result	Result	Result
	%	%	%	%	%
Clay/Colloids (< 0.005 mm)	N/A	60.7	N/A	N/A	45
Gravel & Coarse Sand (> 2.00 m	N/A	0.3	N/A	N/A	0.2
Medium & Fine Sand (0.075 to 2.	N/A	95.6	N/A	N/A	57.6
Silt (0.005 to 0.075 mm)	N/A	184	N/A	N/A	114
Total Solids	37.6	29.4	34.4	27.2	46.2

Other Analyte
Total Organic Carbon

Client Sample ID:	HM-SD02-6	HM-SD01-06	HM-SD01-0	HM-SD01-6	HM-SD03-0
Lab Sample ID:	D94-5243-2	D94-5243-20	D94-5243-2	D94-5243-2	D94-5243-3
Date Sampled:	7-MAY-199	8-MAY-1994	8-MAY-199	8-MAY-199	7-MAY-199
Other Analyte	Result %	Result %	Result %	Result %	Result %
Clay/Colloids (< 0.005 mm)	N/A	N/A	N/A	N/A	64.5
Gravel & Coarse Sand (> 2.00 m	N/A	N/A	N/A	N/A	0.4
Medium & Fine Sand (0.075 to 2.	N/A	N/A	N/A	N/A	75.1
Silt (0.005 to 0.075 mm)	N/A	N/A	N/A	N/A	215
Total Solids	31.2	80.3	80.2	77	28.2

Other Analyte	Result mg/Kg	
Total Organic Carbon	104000	D

Client Sample ID:	HC-SD02-6	HC-SD04-06	HC-SD04-6	HC-SD01-06	
Lab Sample ID:	D94-5057-3	D94-5057-5	D94-5057-6	D94-5057-7	
Date Sampled:	6-MAY-199	8-MAY-1994	8-MAY-199	8-MAY-1994	
Other					
Analyte	Result	Result	Result	Result	
	%	%	%	%	
Clay/Colloids (< 0.005 mm)	N/A	1	N/A	4.2	
Gravel & Coarse Sand (> 2.00 m	N/A	0.1	N/A	0.1	U
Medium & Fine Sand (0.075 to 2.	N/A	93	N/A	84	
Silt (0.005 to 0.075 mm)	N/A	5.9	N/A	11.9	
Total Organic Carbon	41500	10700	20800	23300	D
Total Solids	61.8	75.3	68.8	70	

Client Sample ID: WC-SD03-61
Lab Sample ID: D94-5243-9
Date Sampled: 7-MAY-1994

Other Analyte	Result
	%
Clay/Colloids (< 0.005 mm)	N/A
Gravel & Coarse Sand (> 2.00 m	N/A
Medium & Fine Sand (0.075 to 2.	N/A
Silt (0.005 to 0.075 mm)	N/A
Total Solids	31.6

Other Analyte
Total Organic Carbon

Client Sample ID: WC-SD03-61
Lab Sample ID: D94-5243-9
Date Sampled: 7-MAY-1994

Other Analyte	Result
	%
Clay/Colloids (< 0.005 mm)	N/A
Gravel & Coarse Sand (> 2.00 m	N/A
Medium & Fine Sand (0.075 to 2.	N/A
Silt (0.005 to 0.075 mm)	N/A
Total Solids	31.6

Other Analyte
Total Organic Carbon

Media:		Soil	Soil
Boring Location:		35-GWD1	35-GWD3
Depth of Sample:		47-49 feet, bgs	47-49 feet, bgs
Client Sample ID:		35-ST01	35-ST01D
Lab Sample ID:		D94-5002	D94-5002
Date Sampled:		4-May-1994	4-May-1994
Analyte	Units	Result	Result
Clay/Colloids (<0.005 mm)	%	7.6	6.6
Constant Head Hydraulic Conductivity	md *	8.2	N/A
Gravel & Coarse Sand (> 2.00 mm)	%	0.1	0.1
Intrinsic Permeability	md *	1830	N/A
Liquid Limit	%	0.1	0.1
Medium & Fine Sand (0.075 to 2.00 mm)	%	71.5	70
Percent Retained on # 40 Sieve	%	0.1	0.1
Plastic Limit	%	0.1	0.1
Plasticity Index	%	0.1	0.1
Silt (0.005 to 0.075 mm)	%	20.9	23.4

* md - millidarcies

Media:	Soil
Boring Location:	35-GWD3-04
Depth of Sample:	6-8 feet, bgs
Client Sample ID:	ID: 35-GWDS-04
Lab Sample ID:	D94-5617-3
Date Sampled:	16-May-1994

Analyte	Units	Result
Reactive Cyanide	mg/Kg	12.1 U
Total Kjeldahl Nitrogen	mg/Kg	50.7 J
Phosporous	mg/Kg	12.0 U
Reactive Sulfide	mg/Kg	121 U
Total Organic Carbon	mg/Kg	12.1 U
Corosivity		Non-corrosive
Ignitability (by definition)		Not ignitable
Reactivity		Non-reactive
Total Plate Count	CFU/g	3,980

Media:	Groundwater
Client Sample ID:	35-MW21S-02
Lab Sample ID:	D94-5615-1
Date Sampled:	20-May-1994

Analyte	Units	Result
Alkalinity	mg/L CaCO3	396
Total Organic Carbon	mg/L	4960
Total Plate Count	CFU/ml	4.9

Media:	Groundwater
Client Sample ID:	35-21S-02
Lab Sample ID:	94-5715-1
Date Sampled:	20-May-1994

Analyte	Units	Results
Biochemical Oxygen Demand (BOD)	mg/L	142
Chemical Oxygen Demand (COD)	mg/L	540
Total Kjeldahl Nitrogen	mg/L	1.5
Total Disolved Solids (TDS)	mg/L	419
Total Phosporous	mg/L	0.95
Total Suspended Solids (TSS)	mg/L	2330

Client Sample ID:	35-GWDS3-04
Lab Sample ID:	D94-5617-3
Date Sampled:	16-MAY-19

TCLP

Analyte	Result mg/L
1,1-Dichloroethene	0.12
1,2-Dichloroethane	0.12
1,4-Dichlorobenzene	0.12
2,4,5-TP Silvex	0.021
2,4,5-Trichlorophenol	0.1
2,4,6-Trichlorophenol	0.1
2,4-D	0.14
2,4-Dinitrotoluene	0.1
Arsenic	1.2
Barium	0.8
Benzene	0.12
Cadmium	0.006
Carbon tetrachloride	0.12
Chlordane	0.0072
Chlorobenzene	0.12
Chloroform	0.12
Chromium	0.08
Endrin	0.0024
Heptachlor	0.0012
Heptachlor epoxide	0.0398
Hexachlorobenzene	0.1
Hexachlorobutadiene	0.1
Hexachloroethane	0.1
Lead	0.06
Lindane	0.0024
Mercury	0.001
Methoxychlor	0.0844
Methyl ethyl ketone	1.21
Nitrobenzene	0.1
Pentachlorophenol	0.6
Pyridine	0.1
Selenium	1.2
Silver	0.01
Tetrachloroethene	0.36
Toxaphene	0.116
Trichloroethene	0.12
Vinyl chloride	0.24
m,p-Cresol	0.2
o-Cresol	0.2

APPENDIX R
RI/FS FISH TISSUE RAW DATA AND STATISTICAL SUMMARIES

RAW ANALYTICAL DATA
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (WHOLE BODY)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL METALS

SAMPLE LOCATION	35-FS03-LG-WB01	35-FS3-MC-WB01	35-FS02-CF-WB01	36-FS01-SM-WB01	35-FS02-AE-WB01	35-FS02-PS-WB01	35-FSO3-PS-WB01	35-FSO2-PS-WBO2	36-FS02-WC-WB01	36-FS02-WC-WB02	36-FS03-WC-WB01
SAMPLE No.	4970-10	4970-13	4970-14	4970-18	4970-2	4970-4	4970-5	4970-6	4971-4	4971-5	4971-8
DATE COLLECTED	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	18.5 U	35.5	53.2	45.8	23.7	24.4	11.2 U	10.9 U	68.6 U	33.7 U	30.8 U
Antimony	17.9 U	17.5 U	19 U	10.4 U	13.7 U	12 U	10.5 U	11.4 U	18 U	19 U	15.4 U
Arsenic	0.45 UJ	2 UJ	0.5 UJ	0.33 UJ	2 UJ	1.9 UJ	1.7 UJ	2 UJ	1.8 U	1.7 U	1.2 U
Barium	0.39 U	1.1	3.3	5	0.89	1.6	1	1	1.3	1.2	0.94
Beryllium	0.39 U	0.38 U	0.41 U	0.23 U	0.3 U	0.26 U	0.23 U	0.25 U	0.39 U	0.41 U	0.34 U
Cadmium	0.16 U	0.12 U	0.21 U	0.08 U	0.88	0.11 U	0.19 U	0.25	0.11 U	0.15 U	0.13 U
Calcium	1910 J	20400 J	17800 J	11000 J	21600 J	35200 J	50800 J	49700 J	8070	23100	9100
Chromium	2.7 U	2.7 U	2.9 U	2.7	2.1 U	2.3	2.6	2.3	2.7 U	3.6	2.5
Cobalt	4.3 U	4.2 U	4.5 U	2.5 U	3.3 U	2.9 U	2.5 U	2.7 U	4.3 U	4.5 U	3.7 U
Copper	3.9	4.8	70.3	10.9	6.6	3.3	3.2	3.8	4.2 U	4.7 U	3.2 U
Iron	392	160	244	145	113	99.5	72	60.9	106	96.5	80.3
Lead	0.41 U	0.49 U	NZ	0.73 UJ	2.5	0.63 UJ	0.47 UJ	0.8 U	0.43 R	0.41 R	0.34 U
Magnesium	1130	1250	705	832	1100	1270	1540	1370	1100	1270	983
Manganese	1.6	7.3	11.2	3.6	2.4	4.3	3.4	4.5	9.6	10.3	5.8
Mercury	0.2 R	0.68 J	0.7 J	0.15 R	0.19 R	0.18 R	0.16 R	0.17 R	0.2 UJ	0.21 UJ	0.17 UJ
Nickel	4.3 U	4.2 U	4.5 U	2.5 U	3.3 U	2.9 U	2.5 U	2.7 U	4.3 U	4.5 U	3.7 U
Potassium	11000	11600	9970	8970	10100	9630	8970	9310	10400	12100	9480
Selenium	0.52 UJ	0.48 UJ	0.59 UJ	0.38 UJ	2.3 UJ	2.2 UJ	0.43 J	0.46 UJ	0.63 J	1 J	0.91 J
Silver	1.2 R	1.1 U	1.2 U	2.3 R	0.89 U	0.78 U	0.87 R	0.74 UJ	2.1	1.2	1
Sodium	3730	4260	7090	2710	17200	3150	3600	3460	3220 U	4050 U	2790 U
Thallium	0.22 U	0.2 U	0.25 U	0.16 U	0.2 U	0.19 U	0.17 U	0.2 U	0.39 U	0.33 U	0.2 U
Vanadium	1.9 U	1.9 U	2.1 U	1.1 U	1.5 U	1.3 U	1.1 U	1.2 U	2 U	2.1 U	1.7 U
Zinc	42.3	58.3	102	54	83.8	86.7	77.9	87.1	62.1	56.5	51.4

STATISTICAL SUMMARY OF ANALYTICAL RESULTS
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLE (WHOLE BODY)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL 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 LEVE (mg/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Aluminum	23.70	53.20		35-FS02-CF-W	24.50	33.29	48.83	5	11	45%
Barium	0.89	5.00		36-FS01-SM-W	1.59	2.34	3.31	10	11	91%
Cadmium	0.25	0.88		35-FS02-AE-W	0.16	0.29	0.29	2	11	18%
Calcium	1910.00	50800.00	+	35-FSO3-PS-W	22607.27	31540.45	60165.84	11	11	100%
Chromium	2.30	3.60		36-FS02-WC-W	2.05	2.48	2.64	6	11	55%
Copper	3.20	70.30		35-FS02-CF-W	10.26	21.23	22.03	8	11	73%
Iron	60.90	392.00		35-FS03-LG-W	142.65	195.77	207.04	11	11	100%
Lead	2.50	2.50		35-FS02-AE-W	0.55	1.08	1.88	1	8	13%
Magnesium	705.00	1540.00		35-FSO3-PS-W	1140.91	1271.44	1307.00	11	11	100%
Manganese	1.60	11.20		35-FS02-CF-W	5.82	7.63	9.48	11	11	100%
Mercury	0.68	0.70	+	35-FS02-CF-W	0.33	0.64	11.69	2	5	40%
Potassium	8970.00	12100.00		36-FS02-WC-W	10139.09	10710.36	10736.79	11	11	100%
Selenium	0.43	1.00	+	36-FS02-WC-W	0.59	0.80	1.05	4	11	36%
Silver	1.00	2.10		36-FS02-WC-W	0.83	1.23	1.47	3	8	38%
Sodium	2710.00	17200.00		35-FS02-AE-W	4566.36	7007.45	7711.16	8	11	73%
Zinc	42.30	102.00		35-FS02-CF-W	69.28	79.64	81.87	11	11	100%

* = THE RME IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
+ = THE LOG NORMAL 95% UCL IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
*+ = BOTH THE RME AND LOG NORMAL 95% UCL ARE GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

RAW ANALYTICAL DATA
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (WHOLE BODY)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
PESTICIDES AND PCBs

SAMPLE LOCATION	35-FS03-LG-WB01	35-FS03-MC-WB01	35-FS02-CF-WB01	36-FS01-SM-WB01	35-FS02-AE-WB01	35-FS03-AE-WB01	35-FS02-PS-WB01	35-FS03-PS-WB01	35-FS02-PS-WB02	36-FS02-WC-WB01	36-FS02-WC-WB02	36-FS03-WC-WB01
SAMPLE No.	4970-10	4970-13	4970-14	4970-18	4970-2	4970-3	4970-4	4970-5	4970-6	4971-4	4971-5	4971-8
DATE COLLECTED	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
alpha-BHC	16 UJ	13 UJ	15 UJ	11 UJ	13 UJ	4.4 UJ	3.7 UJ	3.7 UJ	4.4 U	13 UJ	14 UJ	11 UJ
beta-BHC	16 UJ	13 UJ	15 UJ	11 UJ	13 UJ	4.4 UJ	3.7 UJ	5.3 J	4.4 U	4.8 J	8.3 J	11 UJ
delta-BHC	16 UJ	13 UJ	15 UJ	11 UJ	13 UJ	4.4 UJ	3.7 UJ	3.7 UJ	4.4 U	13 UJ	14 UJ	11 UJ
gamma-BHC (Lindane)	16 UJ	13 UJ	15 UJ	8 J	13 UJ	4.4 UJ	3.7 UJ	3.7 UJ	4.4 U	13 UJ	14 UJ	11 UJ
Heptachlor	16 UJ	13 UJ	15 UJ	7.8 J	13 UJ	4.4 UJ	3.7 UJ	3.7 UJ	4.4 U	13 UJ	14 UJ	11 UJ
Aldrin	16 UJ	13 UJ	15 UJ	11 UJ	13 UJ	4.4 UJ	3.7 UJ	3.7 UJ	4.4 U	13 UJ	14 UJ	2.6 J
Heptachlor epoxide	16 UJ	13 UJ	15 UJ	11 UJ	13 UJ	4.4 UJ	3.7 UJ	3.7 UJ	4.4 U	13 UJ	14 UJ	11 UJ
Endosulfan I	16 UJ	13 UJ	15 UJ	11 UJ	13 UJ	4.4 UJ	3.7 UJ	3.7 UJ	4.4 U	13 UJ	14 UJ	11 UJ
Dieldrin	32 UJ	13 J	29 UJ	55 J	59 J	14 J	11 J	16 J	5 J	10 J	31 J	3.2 J
4,4'-DDE	249 J	95 J	27 J	400 J	434 J	55 J	81 J	152 J	53 J	239 J	208 J	39 J
Endrin	21 J	13 UJ	15 UJ	27 J	13 UJ	4.4 UJ	5.3 J	8.7 J	3 J	23 J	12 J	11 UJ
Endosulfan II	32 UJ	25 UJ	29 UJ	3.4 J	26 UJ	8.6 UJ	7.2 UJ	7.2 UJ	8.6 UJ	3.4 J	27 UJ	22 UJ
4,4'-DDD	52 J	53 J	5.2 J	99 J	319 J	27 J	38 J	82 J	20 J	74 J	138 J	18 J
Endosulfan sulfate	32 UJ	25 UJ	29 UJ	21 UJ	26 UJ	8.6 UJ	7.2 UJ	7.2 UJ	8.6 UJ	26 UJ	27 UJ	22 UJ
4,4'-DDT	5.8 J	6.4 J	29 UJ	17 J	58 J	6.5 J	11 UJ	19 J	7.7 J	26 UJ	27 UJ	18 UJ
Methoxychlor	165 UJ	129 UJ	148 UJ	110 UJ	13 UJ	44 UJ	37 UJ	37 UJ	44 UJ	130 UJ	140 UJ	114 UJ
Endrin ketone	32 UJ	25 UJ	29 UJ	21 UJ	14 J	8.6 UJ	7.2 UJ	7.2 UJ	3.1 J	26 UJ	27 UJ	22 UJ
Endrin aldehyde	6.5 J	25 UJ	29 UJ	21 UJ	26 UJ	8.6 UJ	7.2 UJ	3.3 J	8.6 UJ	26 UJ	27 UJ	22 UJ
alpha-Chlordane	23 J	20 J	15 UJ	60 J	32 J	3.5 J	3.7 UJ	9.6 J	2.9 J	42 J	30 J	5 J
gamma-Chlordane	16 UJ	12 J	15 UJ	22 J	13 UJ	4.4 UJ	3.7 UJ	3.7 UJ	4.4 UJ	13 UJ	14 UJ	11 UJ
Toxaphene	1650 UJ	1290 UJ	1480 UJ	1080 UJ	1320 UJ	440 UJ	371 UJ	372 UJ	441 UJ	1330 UJ	1400 UJ	1140 UJ
Aroclor-1016	320 UJ	251 UJ	288 UJ	210 UJ	257 UJ	86 UJ	72 UJ	72 UJ	86 UJ	259 UJ	273 UJ	221 UJ
Aroclor-1221	650 UJ	510 UJ	585 UJ	425 UJ	521 UJ	174 UJ	146 UJ	147 UJ	174 UJ	525 UJ	554 UJ	450 UJ
Aroclor-1232	320 UJ	251 UJ	288 UJ	210 UJ	257 UJ	86 UJ	72 UJ	72 UJ	86 UJ	259 UJ	273 UJ	221 UJ
Aroclor-1242	320 UJ	251 UJ	288 UJ	210 UJ	257 UJ	86 UJ	72 UJ	72 UJ	86 UJ	259 UJ	273 UJ	221 UJ
Aroclor-1248	320 UJ	251 UJ	288 UJ	210 UJ	257 UJ	86 UJ	72 UJ	72 UJ	86 UJ	259 UJ	273 UJ	221 UJ
Aroclor-1254	320 UJ	251 UJ	288 UJ	210 UJ	257 UJ	86 UJ	72 UJ	72 UJ	86 UJ	259 UJ	273 UJ	221 UJ
Aroclor-1260	320 UJ	251 UJ	288 UJ	210 UJ	257 UJ	86 UJ	72 UJ	72 UJ	86 UJ	259 UJ	273 UJ	221 UJ

STATISTICAL SUMMARY OF ANALYTICAL RESULTS
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (WHOLE BODY)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
PESTICIDES AND 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 LEVE (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
beta-BHC	4.80	8.30		36-FS02-WC-W	5.35	6.51	7.78	3	12	25%
gamma-BHC (Lindane)	8.00	8.00	+	36-FS01-SM-W	5.30	6.61	8.43	1	12	8%
Heptachlor	7.80	7.80	+	36-FS01-SM-W	5.28	6.58	8.39	1	12	8%
Aldrin	2.60	2.60	*+	36-FS03-WC-W	4.85	6.13	7.60	1	12	8%
Dieldrin	3.20	59.00		35-FS02-AE-W	20.64	30.15	41.43	10	12	83%
4,4'-DDE	27.00	434.00		35-FS02-AE-W	169.33	241.55	391.23	12	12	100%
Endrin	3.00	27.00		36-FS01-SM-W	10.68	15.00	19.49	7	12	58%
Endosulfan II	3.40	3.40	*+	36-FS01-SM-W	8.59	11.28	14.03	2	12	17%
4,4'-DDD	5.20	319.00		35-FS02-AE-W	77.10	121.29	219.89	12	12	100%
4,4'-DDT	5.80	58.00		35-FS02-AE-W	14.66	22.13	22.56	7	12	58%
Endrin ketone	3.10	14.00	+	35-FS02-AE-W	9.97	12.50	16.23	2	12	17%
Endrin aldehyde	3.30	6.50	*+	35-FS03-LG-W	9.17	11.45	13.77	2	12	17%
alpha-Chlordane	2.90	60.00	+	36-FS01-SM-W	19.78	29.31	63.81	10	12	83%
gamma-Chlordane	12.00	22.00		36-FS01-SM-W	6.93	9.86	12.76	2	12	17%

* = 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

RAW ANALYTICAL DATA
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (WHOLE BODY)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	35-FS01-AE-WB01	35-FS03-LG-WB01	35-FS03-MC-WB01	35-FS02-CF-WB01	36-FS01-SM-WB01	35-FS02-AE-WB01	35-FS03-AE-WB01	35-FS02-PS-WB01	35-FS03-PS-WB01	35-FS02-PS-WB02	36-FS02-WC-WB01	36-FS02-WC-WB02	36-FS03-WC-WB01
SAMPLE No.	4970-1		4970-10	4970-13	4970-14	4970-18	4970-2	4970-2	4970-3	4970-4	4971-4	4971-5	4971-8
DATE COLLECTED	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Phenol	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
bis(2-Chloroethyl)ether	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
2-Chlorophenol	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
1,3-Dichlorobenzene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
1,4-Dichlorobenzene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
1,2-Dichlorobenzene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
2-Methylphenol	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
2,2'-oxybis(1-Chloropropane)	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
4-Methylphenol	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
N-Nitroso-di-n-propylamine	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Hexachloroethane	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Nitrobenzene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Isophorone	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
2-Nitrophenol	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
2,4-Dimethylphenol	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
bis(2-Chloroethoxy)methane	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
2,4-Dichlorophenol	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
1,2,4-Trichlorobenzene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Naphthalene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
4-Chloroaniline	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Hexachlorobutadiene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
4-Chloro-3-methylphenol	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
2-Methylnaphthalene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Hexachlorocyclopentadiene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
2,4,6-Trichlorophenol	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
2,4,5-Trichlorophenol	2800 UJ	3300 UJ	3100 UJ	3300 UJ	2400 UJ	3100 UJ	3100 UJ	2800 UJ	15000 UJ	2800 UJ	3137 UJ	3306 UJ	2684 UJ
2-Chloronaphthalene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
2-Nitroaniline	2800 UJ	3300 UJ	3100 UJ	3300 UJ	2400 UJ	3100 UJ	3100 UJ	2800 UJ	15000 UJ	2800 UJ	3137 UJ	3306 UJ	2684 UJ
Dimethylphthalate	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Acenaphthylene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
2,6-Dinitrotoluene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
3-Nitroaniline	2800 UJ	3300 UJ	3100 UJ	3300 UJ	2400 UJ	3100 UJ	3100 UJ	2800 UJ	15000 UJ	2800 UJ	3137 UJ	3306 UJ	2684 UJ
Acenaphthene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
2,4-Dinitrophenol	2800 UJ	3300 UJ	3100 UJ	3300 UJ	2400 UJ	3100 UJ	3100 UJ	2800 UJ	15000 UJ	2800 UJ	3137 UJ	3306 UJ	2684 UJ
Dibenzofuran	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
4-Nitrophenol	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
2,4-Dinitrotoluene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Diethylphthalate	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Fluorene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
4-Chlorophenyl-phenylether	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
4-Nitroaniline	2800 UJ	3300 UJ	3100 UJ	3300 UJ	2400 UJ	3100 UJ	3100 UJ	2800 UJ	15000 UJ	2800 UJ	3137 UJ	3306 UJ	2684 UJ
4,6-Dinitro-2-methylphenol	2800 UJ	3300 UJ	3100 UJ	3300 UJ	2400 UJ	3100 UJ	3100 UJ	2800 UJ	15000 UJ	2800 UJ	3137 UJ	3306 UJ	2684 UJ
N-Nitrosodiphenylamine	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
4-Bromophenyl-phenylether	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Hexachlorobenzene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Pentachlorophenol	2800 UJ	3300 UJ	3100 UJ	3300 UJ	2400 UJ	3100 UJ	3100 UJ	2800 UJ	15000 UJ	2800 UJ	3137 UJ	3306 UJ	2684 UJ
Phenanthrene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Anthracene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Carbazole	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Di-n-butylphthalate	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Fluoranthene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Pyrene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Butylbenzylphthalate	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Benzo(a)anthracene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
3,3'-Dichlorobenzidine	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Chrysene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
bis(2-Ethylhexyl)phthalate	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Di-n-octylphthalate	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Benzo(b)fluoranthene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Benzo(k)fluoranthene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Benzo(a)pyrene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Indeno(1,2,3-cd)pyrene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Dibenz(a,h)anthracene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ
Benzo(g,h,i)perylene	1100 UJ	1400 UJ	1300 UJ	1400 UJ	1000 UJ	1300 UJ	1300 UJ	1200 UJ	6200 UJ	1100 UJ	1294 UJ	1364 UJ	1107 UJ

STATISTICAL SUMMARY OF ANALYTICAL RESULTS
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (WHOLE BODY)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
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 LEVE (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
No Semivolatile Organic Compounds were Detected in this Media									

* = 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

RAW ANALYTICAL DATA
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (WHOLE BODY)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	35-FS03-LG-WB01	35-FSO3-MC-WBO1	35-FSO3-PS-WB01	35-FSO2-PS-WBO2	36-FS02-WC-WB01	36-FS02-WC-WB02	36-FS03-WC-WB01
SAMPLE No.	4970-10	4970-13	4970-5	4970-6	4971-4	4971-5	4971-8
DATE COLLECTED	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
1,1,2,2-Tetrachloroethane	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
1,1,2-Trichloroethane	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
1,1-Dichloroethane	50 UJ	37 J	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
1,1-Dichloroethene	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
1,2-Dichloroethane	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
1,2-Dichloroethene (total)	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
1,2-Dichloropropane	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
2-Butanone	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
2-Hexanone	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
4-Methyl-2-Pentanone	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
Acetone	137 J	24684 J	39 J	35 UJ	1794 J	938 J	2360 J
Benzene	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
Bromodichloromethane	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
Bromoform	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
Bromomethane	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
Carbon Disulfide	469 J	1064 J	467 J	835 J	402 J	1367 J	348 J
Carbon Tetrachloride	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
Chlorobenzene	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
Chloroethane	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
Chloroform	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
Chloromethane	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
Dibromochloromethane	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
Ethylbenzene	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
Methylene Chloride	50 UJ	38 UJ	17 J	35 UJ	35 J	42 J	28 J
Styrene	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
Tetrachloroethene	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
Toluene	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	33 J
Trichloroethene	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
Vinyl Chloride	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
Xylene (total)	50 UJ	38 UJ	31 UJ	56 UJ	48 UJ	42 UJ	58 J
cis-1,3-Dichloropropene	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ
trans-1,3-Dichloropropene	50 UJ	38 UJ	31 UJ	35 UJ	48 UJ	42 UJ	42 UJ

STATISTICAL SUMMARY OF ANALYTICAL RESULTS
CAMP GIEGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (WHOLE BODY)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
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 LEVE (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
1,1-Dichloroethane	37.00	37.00	35-FSO3-MC-W	23.00	28.15	29.01	1	7	14%
Acetone	39.00	24684.00 +	35-FSO3-MC-W	4281.36	10922.56	78494499.99	6	7	86%
Carbon Disulfide	348.00	1367.00	36-FS02-WC-W	707.43	994.31	1225.59	7	7	100%
Methylene Chloride	17.00	42.00	36-FS02-WC-W	26.21	33.21	35.88	4	7	57%
Toluene	33.00	33.00	36-FS03-WC-W	22.14	26.45	27.30	1	7	14%
Xylene (total)	58.00	58.00	36-FS03-WC-W	27.21	37.63	40.29	1	7	14%

* = 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

RAW ANALYTICAL DATA
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (FILLET)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL METALS

SAMPLE LOCATION	35-FS02-MC-F01	35-FS03-MC-F01	35-FS03-WM-F01	35-FS03-SM-F01	35-FS03-BG-F01	36-FS01-SM-F01	36-FS02-SM-F01	35-FSO2-LG-FO1	35-FS03-LG-F01
SAMPLE No.	4970-11	4970-12	4970-15	4970-16	4970-17	4970-19	4970-20	4970-7	4970-8
DATE COLLECTED	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	10 U	25.9	11.9 U	27.3	20	18.5 U	24.7	25.8	22.1 U
Antimony	19.6 U	22.6 U	9.5 U	20.5 U	15.1 U	16.7 U	17.2 U	16.6 U	21.4 U
Arsenic	0.46 UJ	0.53 UJ	1.7 UJ	0.52 UJ	2.4 UJ	1.9 UJ	0.39 UJ	0.49 UJ	0.55 UJ
Barium	0.43 U	0.54	0.43	0.76	0.64	0.41	2.2	0.52	0.53
Beryllium	0.43 U	0.49 U	0.21 U	0.45 U	0.33 U	0.36 U	0.37 U	0.36 U	0.46 U
Cadmium	0.1 U	0.19 U	0.08 U	0.14 U	0.11 U	0.08 U	0.18 U	0.35	0.5
Calcium	724 UJ	925 J	13300 J	1140 J	13200 J	839 J	7070 J	878 J	995 J
Chromium	3 U	3.4 U	1.4 U	3.1 U	2.3 U	2.5 U	2.6 U	2.5 U	3.3 U
Cobalt	4.7 U	5.4 U	2.3 U	4.9 U	3.6 U	4 U	4.1 U	4 U	5.1 U
Copper	3.9	4.5	2.3	5.6	2.8	3.3	3.5	3.3	3.1
Iron	38.2	48	17 U	39.1	32.4 U	40.6	41.7	29.4 U	28.8 U
Lead	0.49 U	1.2 U	0.86 U	N/A	2 U	0.36 U	0.38 U	0.45 U	0.47 U
Magnesium	1190	1420	1000	833	1260	929	1070	1330	1230
Manganese	3.1	1.1	1.5	0.89 U	2.1	1	1.1	1.9	1.6
Mercury	0.24 R	0.25 R	0.33 J	0.18 R	0.2 R	0.18 R	0.18 R	0.98 J	0.49 J
Nickel	4.7 U	5.4 U	2.3 U	4.9 U	3.6 U	4 U	4.1 U	4 U	5.1 U
Potassium	16400	19000	9180	12500	13500	12400	12300	14200	13900
Selenium	0.54 UJ	0.62 UJ	0.51 UJ	3 UJ	0.56 UJ	0.44 UJ	0.46 UJ	0.57 UJ	0.64 UJ
Silver	1.3 R	1.5 U	0.75 R	1.3 U	0.98 U	1.1 U	1.1 R	2.9 R	1.4 U
Sodium	2770	2920	1970	21900	5720	2160	2480	2550	2900
Thallium	0.23 U	0.26 U	0.17 U	0.26 UJ	0.24 UJ	0.19 U	0.2 UJ	0.24 U	0.28 U
Vanadium	2.1 U	2.5 U	1 U	2.2 U	1.6 U	1.8 U	1.9 U	1.8 U	2.3 U
Zinc	27.5 R	33.2 R	30.2 R	28.7 R	40.5	32 R	38	32.7 R	31.7 R

RAW ANALYTICAL DATA
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (FILLET)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL METALS

SAMPLE LOCATION	35-FSO3-LG-FO2	36-FS02-BC01	36-FS03-BC01	36-FS03-BC02	36-FS03-SM-F01	36-FS03-LMB-F01	36-FS03-WM-F01	36-FS03-LG-F01	36-FS01-WC-F01
SAMPLE No.	4970-9	5896-1	5896-2	5896-3	4971-1	4971-10	4971-11	4971-12	4971-2
DATE COLLECTED	03-MAY-1994	26-MAY-1994	26-MAY-1994	26-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994
UNITS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Aluminum	17.8 U	19.3	11.7 U	10 U	21.6 U	21.7 U	18.6 U	22.3 U	31 U
Antimony	16.6 U	22.4 U	22.9 U	23 U	18.3 U	23.5 U	15.8 U	18.3 U	25.4 U
Arsenic	0.45 UJ	0.94 UJ	1.4 J	1 UJ	1.3 U	1.8 U	0.96 U	2 U	2 U
Barium	0.36 U	0.73 U	0.71 U	0.5 U	1.2	0.65	0.62	0.52	1
Beryllium	0.36 U	0.49 U	0.5 U	0.5 U	0.4 U	0.51 U	0.34 U	0.4 U	0.55 U
Cadmium	0.33	0.8	0.16	0.07 U	0.12 U	0.2 U	0.08 U	0.22 U	0.12 U
Calcium	676 J	1970 J	2170 J	1740 J	1570	1440	7060	678	939 U
Chromium	2.5 U	3.4 U	3.5 U	3.5 U	3	3.6 U	2.4 U	2.8 U	3.9 U
Cobalt	4 U	6.9	5.5 U	5.5 U	4.4 U	5.6 U	3.8 U	4.4 U	6.1 U
Copper	2.7	26.3	27.5	22.3	4 U	3.9 U	2.5 U	2.3 U	3.8 U
Iron	25.8 U	39.9	40.2	20.4	41.7	40.2	34.6	28	52
Lead	0.42 U	0.61 J	0.58 J	0.51 J	0.4 UJ	0.51 UJ	0.51 R	0.56 R	0.55 U
Magnesium	1160	1550 J	1500 J	1500 J	994	1470	981	1210	1250
Manganese	1.5	1.4 U	1.6 U	1.7	0.86	1 U	2	1.7	2.5
Mercury	0.3 J	1.3 R	0.9 R	0.9 R	0.2 UJ	1.3 J	0.17 UJ	0.29 J	0.33 J
Nickel	4 U	5.4 U	5.5 U	5.5 U	4.4 U	5.6 U	3.8 U	4.4 U	6.1 U
Potassium	12200	13500	13000	14400	14000	20200	11800	12100	18900
Selenium	0.53 UJ	0.8 J	0.72 J	0.71 UJ	2.8 UJ	5.8 J	0.48 UJ	0.6 J	0.99 J
Silver	1.1 U	1.5 U	1.5 U	1.5 U	1.2 U	1.5 U	1	1.3	1.7 U
Sodium	2660	15300	14200	14900	2270 U	3440 U	2510 U	2530 U	4010 U
Thallium	0.23 U	0.47 UJ	0.48 UJ	0.51 UJ	0.32 U	0.41 U	0.38 U	0.28 U	0.94 U
Vanadium	1.8 U	2.4 U	2.5 U	2.5 U	2 U	2.6 U	1.7	2 U	2.8 U
Zinc	18.9 R	104	130	93.8	28.8	22.9	33.1	18.2	58.3

RAW ANALYTICAL DATA
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (FILLET)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL METALS

SAMPLE LOCATION	36-FS02-WC-F01		36-FS03-WC-F01		36-FS03-WC-F02		36-FS02-LMB-F01	
SAMPLE No.	4971-3		4971-6		4971-7		4971-9	
DATE COLLECTED	3-MAY-1994		3-MAY-1994		3-MAY-1994		3-MAY-1994	
UNITS	MG/KG		MG/KG		MG/KG		MG/KG	
Aluminum	23.8	U	23.6	U	22.5	U	22.1	U
Antimony	22.2	U	22.8	U	26.4	U	21.4	U
Arsenic	1.8		1.6	U	1.5	U	1.7	U
Barium	1	U	0.86		0.79		0.6	
Beryllium	0.48	U	0.5	U	0.57	U	0.47	U
Cadmium	0.13	U	0.12	U	0.14	U	0.11	U
Calcium	821	U	1090		1590		6750	
Chromium	3.4	U	3.5	U	4	U	4	
Cobalt	5.3	U	5.4	U	6.3	U	5.1	U
Copper	3.9	U	4.2	U	3.8	U	3.2	U
Iron	45		39.8		53.6		43.3	
Lead	0.48	UJ	0.5	U	0.63	R	0.47	UJ
Magnesium	1310		1220		1380		1400	
Manganese	2.1		2.3		1.8		1.3	
Mercury	0.24	UJ	0.25	UJ	0.29	UJ	1.2	J
Nickel	5.3	U	5.4	U	6.3	U	5.1	U
Potassium	16000		17600		17900		15000	
Selenium	0.68	UJ	0.69	UJ	0.8	UJ	0.65	UJ
Silver	1.4	U	3.3		2.2		1.4	
Sodium	2990	U	3500	U	3910	U	4820	U
Thallium	0.39	U	0.4	U	0.34	U	0.37	U
Vanadium	2.4	U	2.5	U	2.9	U	2.3	U
Zinc	34.9		35.2		39		26.8	

STATISTICAL SUMMARY OF ANALYTICAL RESULTS
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (FILLET)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
TAL INORGANICS

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 LEVE (mg/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Aluminum	19.30	27.30		35-FS03-SM-F0	13.53	16.13	17.10	6	22	27%
Arsenic	1.40	1.80		36-FS02-WC-F0	0.70	0.85	0.97	2	22	9%
Barium	0.41	2.20		36-FS02-SM-F0	0.64	0.80	0.82	16	22	73%
Cadmium	0.16	0.80		36-FS02-BC01	0.15	0.22	0.21	5	22	23%
Calcium	676.00	13300.00		35-FS03-WM-F	3014.68	4452.58	5262.34	19	22	86%
Chromium	3.00	4.00		36-FS02-LMB-F	1.70	1.94	1.94	2	22	9%
Cobalt	6.90	6.90		36-FS02-BC01	2.58	2.97	2.91	1	22	5%
Copper	2.30	27.50		36-FS03-BC01	5.77	8.73	8.24	13	22	59%
Iron	20.40	53.60		36-FS03-WC-F0	34.23	39.20	44.33	17	22	77%
Lead	0.51	0.61	+	36-FS02-BC01	0.36	0.45	0.67	3	18	17%
Magnesium	833.00	1550.00		36-FS02-BC01	1235.77	1310.10	1319.54	22	22	100%
Manganese	0.86	3.10		35-FS02-MC-F0	1.53	1.78	1.95	18	22	82%
Mercury	0.29	1.30	+	36-FS03-LMB-F	0.45	0.66	1.59	8	13	62%
Potassium	9180.00	20200.00		36-FS03-LMB-F	14544.55	15570.51	15642.92	22	22	100%
Selenium	0.60	5.80		36-FS03-LMB-F	0.74	1.17	0.96	5	22	23%
Silver	1.00	3.30		36-FS03-WC-F0	1.00	1.29	1.22	5	18	28%
Sodium	1970.00	21900.00		35-FS03-SM-F0	4882.73	7038.36	7050.88	13	22	59%
Vanadium	1.70	1.70		36-FS03-WM-F	1.12	1.21	1.24	1	22	5%
Zinc	18.20	130.00	+	36-FS03-BC01	50.25	66.39	675.80	14	14	100%

* = THE RME IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
+ = THE LOG NORMAL 95% UCL IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
*+ = BOTH THE RME AND LOG NORMAL 95% UCL ARE GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

RAW ANALYTICAL DATA
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (FILLET)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
PESTICIDES AND PCBs

SAMPLE LOCATION	35-FS02-MC-F01	35-FS03-MC-F01	35-FS03-WM-F01	35-FS03-SM-F01	35-FS03-BG-F01	36-FS01-SM-F01	36-FS02-SM-F01	35-FS02-LG-F01	35-FS03-LG-F01
SAMPLE No.	4970-11	4970-12	4970-15	4970-16	4970-17	4970-19	4970-20	4970-7	4970-8
DATE COLLECTED	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
alpha-BHC	16 UJ	17 UJ	10 UJ	12 UJ	14 UJ	12 UJ	13 UJ	15 UJ	16 UJ
beta-BHC	16 UJ	17 UJ	10 UJ	12 UJ	14 UJ	12 UJ	13 UJ	15 UJ	16 UJ
delta-BHC	16 UJ	17 UJ	10 UJ	12 UJ	14 UJ	12 UJ	13 UJ	15 UJ	16 UJ
gamma-BHC (Lindane)	16 UJ	17 UJ	2.5 J	12 UJ	3.9 J	5.5 J	13 UJ	15 UJ	16 UJ
Heptachlor	16 UJ	17 UJ	10 UJ	12 UJ	4.3 J	2.8 J	13 UJ	15 UJ	16 UJ
Aldrin	16 UJ	17 UJ	10 UJ	12 UJ	14 UJ	12 UJ	13 UJ	15 UJ	16 UJ
Heptachlor epoxide	16 UJ	17 UJ	10 UJ	12 UJ	14 UJ	12 UJ	13 UJ	15 UJ	3.9 J
Endosulfan I	16 UJ	17 UJ	10 UJ	12 UJ	14 UJ	12 UJ	13 UJ	15 UJ	16 UJ
Dieldrin	12 J	22 J	31 J	12 J	4.3 J	36 J	17 J	15 UJ	31 UJ
4,4'-DDE	78 J	189 J	254 J	111 J	184 J	270 J	137 J	343 J	297 J
Endrin	3.6 J	17 UJ	10 UJ	4 J	10 J	2.5 J	13 UJ	15 UJ	26 J
Endosulfan II	32 UJ	33 UJ	20 UJ	24 UJ	27 UJ	24 UJ	25 UJ	4.6 J	3.6 J
4,4'-DDD	47 J	146 J	56 J	61 J	40 J	196 J	100 J	62 J	54 J
Endosulfan sulfate	32 UJ	33 UJ	20 UJ	24 UJ	27 UJ	24 UJ	25 UJ	30 UJ	31 UJ
4,4'-DDT	5.6 J	5 J	15 J	6 J	8.3 J	12 J	6.3 J	2.5 J	4.5 J
Methoxychlor	160 UJ	170 UJ	100 UJ	121 UJ	138 UJ	120 UJ	130 UJ	152 UJ	160 UJ
Endrin ketone	32 UJ	33 UJ	3.8 J	3.6 J	27 UJ	24 UJ	25 UJ	30 UJ	31 UJ
Endrin aldehyde	32 UJ	33 UJ	20 UJ	2.8 J	27 UJ	24 UJ	4 J	30 UJ	31 UJ
alpha-Chlordane	12 J	17 UJ	17 J	12 UJ	8.4 J	28 J	18 J	11 J	16 UJ
gamma-Chlordane	16 UJ	17 UJ	10 UJ	12 UJ	14 UJ	12 UJ	13 UJ	15 UJ	16 UJ
Toxaphene	1650 UJ	1690 UJ	1000 UJ	1210 UJ	1380 UJ	1230 UJ	1310 UJ	1520 UJ	1600 UJ
Aroclor-1016	320 UJ	328 UJ	195 UJ	236 UJ	268 UJ	239 UJ	254 UJ	296 UJ	310 UJ
Aroclor-1221	650 UJ	667 UJ	396 UJ	478 UJ	545 UJ	486 UJ	515 UJ	601 UJ	629 UJ
Aroclor-1232	320 UJ	328 UJ	195 UJ	236 UJ	268 UJ	239 UJ	254 UJ	296 UJ	310 UJ
Aroclor-1242	320 UJ	328 UJ	195 UJ	236 UJ	268 UJ	239 UJ	254 UJ	296 UJ	310 UJ
Aroclor-1248	320 UJ	328 UJ	195 UJ	236 UJ	268 UJ	239 UJ	254 UJ	296 UJ	310 UJ
Aroclor-1254	320 UJ	328 UJ	195 UJ	236 UJ	268 UJ	239 UJ	254 UJ	296 UJ	310 UJ
Aroclor-1260	320 UJ	328 UJ	195 UJ	236 UJ	268 UJ	239 UJ	254 UJ	296 UJ	310 UJ

RAW ANALYTICAL DATA
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (FILLET)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
PESTICIDES AND PCBs

SAMPLE LOCATION	35-FS03-LG-F02	36-FS02-BC01	36-FS03-BC01	36-FS03-BC02	36-FS03-SM-F01	36-FS03-LMB-F01	36-FS03-WM-F01	36-FS03-LG-F01	36-FS01-WC-F01
SAMPLE No.	4970-9	5896-1	5896-2	5896-3	4971-1	4971-10	4971-11	4971-12	4971-2
DATE COLLECTED	03-MAY-1994	26-MAY-1994	26-MAY-1994	26-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
alpha-BHC	14 UJ	8.8 UJ	8.5 UJ	8.8 UJ	14 UJ	17 UJ	14 UJ	14 UJ	19 UJ
beta-BHC	5.9 J	8.9 J	8.4 J	6.8 J	14 UJ	17 UJ	11 J	14 UJ	9.6 J
delta-BHC	14 UJ	8.8 UJ	8.5 UJ	8.8 UJ	14 UJ	17 UJ	14 UJ	14 UJ	19 UJ
gamma-BHC (Lindane)	14 UJ	3.6 J	2.1 J	8.8 UJ	14 UJ	17 UJ	4.9 J	14 UJ	19 UJ
Heptachlor	14 UJ	2.6 J	8.5 UJJ	8.8 UJ	14 UJ	17 UJ	14 UJ	14 UJ	19 UJ
Aldrin	14 UJ	8.8 UJ	2.3 J	8.8 UJ	6.6 J	17 UJ	14 UJ	14 UJ	19 UJ
Heptachlor epoxide	14 UJ	8.8 UJ	8.5 UJ	8.8 UJ	14 UJ	17 UJ	14 UJ	14 UJ	19 UJ
Endosulfan I	14 UJ	8.8 UJ	8.5 UJ	8.8 UJ	14 UJ	17 UJ	14 UJ	14 UJ	19 UJ
Dieldrin	28 UJ	9.4 J	6 J	8.8 J	48 J	5.2 J	40 J	26 UJ	7.8 J
4,4'-DDE	572 J	101 J	42 J	48 J	444 J	39 J	394 J	186 J	148 J
Endrin	52 JJ	8.8 UJ	8.5 UJ	8.8 UJ	17 J	17 UJ	4.6 J	14 UJ	8.8 J
Endosulfan II	9.6 J	17 UJ	16 UJ	17 UJ	26 UJ	34 UJ	4.5 J	26 UJ	36 UJ
4,4'-DDD	103 J	49 J	19 J	33 J	256 J	22 J	133 J	47 J	40 J
Endosulfan sulfate	28 UJ	17 UJ	16 UJ	17 UJ	26 UJ	34 UJ	26 UJ	26 UJ	36 UJ
4,4'-DDT	5.1 J	2.5 J	16 UJ	17 U	26 UJ	34 UJ	26 UJ	26 UJ	36 UJ
Methoxychlor	142 UJ	88 UJ	85 UJ	88 U	135 UJ	173 UJ	135 UJ	135 UJ	188 UJ
Endrin ketone	28 UJ	17 UJ	16 UJ	17 U	26 UJ	34 UJ	26 UJ	26 UJ	36 UJ
Endrin aldehyde	28 UJ	17 UJ	16 UJ	17 U	13 J	34 UJ	26 UJ	26 UJ	36 UJ
alpha-Chlordane	38 J	3.7 J	3.6 J	8.8 U	46 J	3.5 J	27 J	14 J	22 J
gamma-Chlordane	14 UJ	8.8 UJ	8.5 UJ	8.8 U	14 UJ	17 UJ	14 UJ	14 UJ	19 UJ
Toxaphene	1420 UJ	885 UJ	846 UJ	885 U	1350 UJ	1730 UJ	1350 UJ	1350 UJ	1880 UJ
Aroclor-1016	276 UJ	172 UJ	164 UJ	172 U	262 UJ	337 UJ	263 UJ	263 UJ	365 UJ
Aroclor-1221	561 UJ	349 UJ	333 UJ	349 U	532 UJ	684 UJ	534 UJ	534 UJ	740 UJ
Aroclor-1232	276 UJ	172 UJ	164 UJ	172 U	262 UJ	337 UJ	263 UJ	263 UJ	365 UJ
Aroclor-1242	276 UJ	172 UJ	164 UJ	172 U	262 UJ	337 UJ	263 UJ	263 UJ	365 UJ
Aroclor-1248	276 UJ	172 UJ	164 UJ	172 U	262 UJ	337 UJ	263 UJ	263 UJ	365 UJ
Aroclor-1254	276 UJ	172 UJ	164 UJ	172 U	262 UJ	337 UJ	263 UJ	263 UJ	365 UJ
Aroclor-1260	276 UJ	172 UJ	164 UJ	172 U	262 UJ	337 UJ	263 UJ	263 UJ	365 UJ

RAW ANALYTICAL DATA
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (FILLET)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
PESTICIDES AND PCBs

SAMPLE LOCATION	36-FS02-WC-F01		36-FS03-WC-F01		36-FS03-WC-F02		36-FS02-LMB-F01	
SAMPLE No.	4971-3		4971-6		4971-7		4971-9	
DATE COLLECTED	3-MAY-1994		3-MAY-1994		3-MAY-1994		3-MAY-1994	
UNITS	ug/kg		ug/kg		ug/kg		ug/kg	
alpha-BHC	16	UJ	17	UJ	19	UJ	16	UJ
beta-BHC	4.2	J	17	UJ	19	UJ	16	UJ
delta-BHC	16	UJ	17	UJ	19	UJ	16	UJ
gamma-BHC (Lindane)	16	UJ	17	UJ	19	UJ	16	UJ
Heptachlor	16	UJ	17	UJ	19	UJ	16	UJ
Aldrin	16	UJ	17	UJ	5.7	J	16	UJ
Heptachlor epoxide	16	UJ	17	UJ	19	UJ	16	UJ
Endosulfan I	16	UJ	17	UJ	19	UJ	16	UJ
Dieldrin	10	J	13	J	11	J	8	J
4,4'-DDE	72	J	110	J	80	J	45	J
Endrin	16	UJ	17	UJ	19	UJ	16	UJ
Endosulfan II	32	UJ	33	UJ	38	UJ	31	UJ
4,4'-DDD	22	J	70	J	22	J	50	J
Endosulfan sulfate	32	UJ	33	UJ	38	UJ	31	UJ
4,4'-DDT	32	UJ	33	UJ	38	UJ	31	UJ
Methoxychlor	164	UJ	168	UJ	193	UJ	158	UJ
Endrin ketone	32	UJ	33	UJ	38	UJ	31	UJ
Endrin aldehyde	32	UJ	33	UJ	38	UJ	31	UJ
alpha-Chlordane	12	J	10	J	14	J	16	UJ
gamma-Chlordane	16	UJ	17	UJ	19	UJ	16	UJ
Toxaphene	1640	UJ	1680	UJ	1930	UJ	1580	UJ
Aroclor-1016	319	UJ	327	UJ	375	UJ	307	UJ
Aroclor-1221	647	UJ	663	UJ	761	UJ	623	UJ
Aroclor-1232	319	UJ	327	UJ	375	UJ	307	UJ
Aroclor-1242	319	UJ	327	UJ	375	UJ	307	UJ
Aroclor-1248	319	UJ	327	UJ	375	UJ	307	UJ
Aroclor-1254	319	UJ	327	UJ	375	UJ	307	UJ
Aroclor-1260	319	UJ	327	UJ	375	UJ	307	UJ

STATISTICAL SUMMARY OF ANALYTICAL RESULTS
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (FILLET)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
PESTICIDES AND 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 LEVE (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
beta-BHC	4.20	11.00	36-FS03-WM-F	7.54	8.12	8.24	7	22	32%
gamma-BHC (Lindane)	2.10	5.50	*+ 36-FS01-SM-F0	6.56	7.36	7.95	6	22	27%
Heptachlor	2.60	4.30	*+ 35-FS03-BG-F0	6.72	7.46	7.88	3	22	14%
Aldrin	2.30	6.60	*+ 36-FS03-SM-F0	6.79	7.41	7.77	3	22	14%
Heptachlor epoxide	3.90	3.90	*+ 35-FS03-LG-F0	6.88	7.50	7.66	1	22	5%
Dieldrin	4.30	48.00	36-FS03-SM-F0	15.98	20.38	21.39	18	22	82%
4,4'-DDE	39.00	572.00	35-FS03-LG-F0	188.36	241.90	291.65	22	22	100%
Endrin	2.50	52.00	35-FS03-LG-F0	9.93	13.85	12.83	9	22	41%
Endosulfan II	3.60	9.60	*+ 35-FS03-LG-F0	12.17	13.83	15.13	4	22	18%
4,4'-DDD	19.00	256.00	36-FS03-SM-F0	74.00	96.22	103.85	22	22	100%
4,4'-DDT	2.50	15.00	35-FS03-WM-F	10.47	12.44	14.38	11	22	50%
Endrin ketone	3.60	3.80	*+ 35-FS03-WM-F	13.11	14.66	16.22	2	22	9%
Endrin aldehyde	2.80	13.00	*+ 36-FS03-SM-F0	12.97	14.57	16.34	3	22	14%
alpha-Chlordane	3.50	46.00	36-FS03-SM-F0	14.69	18.84	21.30	17	22	77%

* = 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

RAW ANALYTICAL DATA
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (FILLET)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	35-FS02-MC-F01	35-FS03-MC-F01	35-FS03-WM-F01	35-FS03-SM-F01	35-FS03-BG-F01	36-FS01-SM-F01	36-FS02-SM-F01	35-FSO2-LG-FO1	35-FS03-LG-F01
SAMPLE No.	4970-11	4970-12	4970-15	4970-16	4970-17	4970-19	4970-20	4970-7	4970-8
DATE COLLECTED	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Phenol	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
bis(2-Chloroethyl)ether	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
2-Chlorophenol	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
1,3-Dichlorobenzene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
1,4-Dichlorobenzene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
1,2-Dichlorobenzene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
2-Methylphenol	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
2,2'-oxybis(1-Chloropropane)	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
4-Methylphenol	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
N-Nitroso-di-n-propylamine	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Hexachloroethane	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Nitrobenzene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Isophorone	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
2-Nitrophenol	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
2,4-Dimethylphenol	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
bis(2-Chloroethoxy)methane	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
2,4-Dichlorophenol	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
1,2,4-Trichlorobenzene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Naphthalene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
4-Chloroaniline	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Hexachlorobutadiene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
4-Chloro-3-methylphenol	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
2-Methylnaphthalene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Hexachlorocyclopentadiene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
2,4,6-Trichlorophenol	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
2,4,5-Trichlorophenol	3800 UJ	3800 UJ	2400 UJ	2800 UJ	3100 UJ	2800 UJ	3100 UJ	3600 UJ	3800 UJ
2-Chloronaphthalene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
2-Nitroaniline	3800 UJ	3800 UJ	2400 UJ	2800 UJ	3100 UJ	2800 UJ	3100 UJ	3600 UJ	3800 UJ
Dimethylphthalate	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Acenaphthylene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
2,6-Dinitrotoluene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
3-Nitroaniline	3800 UJ	3800 UJ	2400 UJ	2800 UJ	3100 UJ	2800 UJ	3100 UJ	3600 UJ	3800 UJ
Acenaphthene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
2,4-Dinitrophenol	3800 UJ	3800 UJ	2400 UJ	2800 UJ	3100 UJ	2800 UJ	3100 UJ	3600 UJ	3800 UJ
Dibenzofuran	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
4-Nitrophenol	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
2,4-Dinitrotoluene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Diethylphthalate	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Fluorene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
4-Chlorophenyl-phenylether	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
4-Nitroaniline	3800 UJ	3800 UJ	2400 UJ	2800 UJ	3100 UJ	2800 UJ	3100 UJ	3600 UJ	3800 UJ
4,6-Dinitro-2-methylphenol	3800 UJ	3800 UJ	2400 UJ	2800 UJ	3100 UJ	2800 UJ	3100 UJ	3600 UJ	3800 UJ
N-Nitrosodiphenylamine	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
4-Bromophenyl-phenylether	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Hexachlorobenzene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Pentachlorophenol	3800 UJ	3800 UJ	2400 UJ	2800 UJ	3100 UJ	2800 UJ	3100 UJ	3600 UJ	3800 UJ
Phenanthrene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Anthracene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Carbazole	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Di-n-butylphthalate	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Fluoranthene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Pyrene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Butylbenzylphthalate	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Benzo(a)anthracene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
3,3'-Dichlorobenzidine	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Chrysene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
bis(2-Ethylhexyl)phthalate	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Di-n-octylphthalate	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Benzo(b)fluoranthene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Benzo(k)fluoranthene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Benzo(a)pyrene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Indeno(1,2,3-cd)pyrene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Dibenz(a,h)anthracene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ
Benzo(g,h,i)perylene	1600 UJ	1600 UJ	1000 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1500 UJ	1600 UJ

RAW ANALYTICAL DATA
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (FILLET)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	35-FS03-LG-F02	36-FS02-BC01	36-FS03-BC01	36-FS03-BC02	36-FS03-SM-F01	36-FS03-LMB-F01	36-FS03-WM-F01	36-FS03-LG-F01	36-FS01-WC-F01
SAMPLE No.	4970-9	5896-1	5896-2	5896-3	4971-1	4971-10	4971-11	4971-12	4971-2
DATE COLLECTED	03-MAY-1994	26-MAY-1994	26-MAY-1994	26-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Phenol	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
bis(2-Chloroethyl)ether	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
2-Chlorophenol	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
1,3-Dichlorobenzene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
1,4-Dichlorobenzene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
1,2-Dichlorobenzene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
2-Methylphenol	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
2,2'-oxybis(1-Chloropropane)	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
4-Methylphenol	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
N-Nitroso-di-n-propylamine	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Hexachloroethane	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Nitrobenzene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Isophorone	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
2-Nitrophenol	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
2,4-Dimethylphenol	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
bis(2-Chloroethoxy)methane	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
2,4-Dichlorophenol	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
1,2,4-Trichlorobenzene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Naphthalene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
4-Chloroaniline	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Hexachlorobutadiene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
4-Chloro-3-methylphenol	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
2-Methylnaphthalene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Hexachlorocyclopentadiene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
2,4,6-Trichlorophenol	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
2,4,5-Trichlorophenol	3300 UJ	4167 UJ	4000 UJ	4167 UJ	3175 UJ	4082 UJ	2740 UJ	3187 UJ	4420 UJ
2-Chloronaphthalene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
2-Nitroaniline	3300 UJ	4167 UJ	4000 UJ	4167 UJ	3175 UJ	4082 UJ	2740 UJ	3187 UJ	4420 UJ
Dimethylphthalate	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Acenaphthylene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
2,6-Dinitrotoluene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
3-Nitroaniline	3300 UJ	4167 UJ	4000 UJ	4167 UJ	3175 UJ	4082 UJ	2740 UJ	3187 UJ	4420 UJ
Acenaphthene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
2,4-Dinitrophenol	3300 UJ	4167 UJ	4000 UJ	4167 UJ	3175 UJ	4082 UJ	2740 UJ	3187 UJ	4420 UJ
Dibenzofuran	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
4-Nitrophenol	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
2,4-Dinitrotoluene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Diethylphthalate	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Fluorene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
4-Chlorophenyl-phenylether	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
4-Nitroaniline	3300 UJ	4167 UJ	4000 UJ	4167 UJ	3175 UJ	4082 UJ	2740 UJ	3187 UJ	4420 UJ
4,6-Dinitro-2-methylphenol	3300 UJ	4167 UJ	4000 UJ	4167 UJ	3175 UJ	4082 UJ	2740 UJ	3187 UJ	4420 UJ
N-Nitrosodiphenylamine	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
4-Bromophenyl-phenylether	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Hexachlorobenzene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Pentachlorophenol	3300 UJ	4167 UJ	4000 UJ	4167 UJ	3175 UJ	4082 UJ	2740 UJ	3187 UJ	4420 UJ
Phenanthrene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Anthracene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Carbazole	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Di-n-butylphthalate	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Fluoranthene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Pyrene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Butylbenzylphthalate	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Benzo(a)anthracene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
3,3'-Dichlorobenzidine	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Chrysene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
bis(2-Ethylhexyl)phthalate	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Di-n-octylphthalate	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Benzo(b)fluoranthene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Benzo(k)fluoranthene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Benzo(a)pyrene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Indeno(1,2,3-cd)pyrene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Dibenz(a,h)anthracene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ
Benzo(g,h,i)perylene	1400 UJ	1719 UJ	1650 UJ	1719 UJ	1310 UJ	1684 UJ	1130 UJ	1315 UJ	1823 UJ

RAW ANALYTICAL DATA
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (FILLET)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
SEMIVOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	36-FS02-WC-F01		36-FS03-WC-F01		36-FS03-WC-F02		36-FS02-LMB-F01	
SAMPLE No.	4971-3		4971-6		4971-7		4971-9	
DATE COLLECTED	3-MAY-1994		3-MAY-1994		3-MAY-1994		3-MAY-1994	
UNITS	ug/kg		ug/kg		ug/kg		ug/kg	
Phenol	1594	UJ	1634	UJ	1896	UJ	1535	UJ
bis(2-Chloroethyl)ether	1594	UJ	1634	UJ	1896	UJ	1535	UJ
2-Chlorophenol	1594	UJ	1634	UJ	1896	UJ	1535	UJ
1,3-Dichlorobenzene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
1,4-Dichlorobenzene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
1,2-Dichlorobenzene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
2-Methylphenol	1594	UJ	1634	UJ	1896	UJ	1535	UJ
2,2'-oxybis(1-Chloropropane)	1594	UJ	1634	UJ	1896	UJ	1535	UJ
4-Methylphenol	1594	UJ	1634	UJ	1896	UJ	1535	UJ
N-Nitroso-di-n-propylamine	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Hexachloroethane	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Nitrobenzene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Isophorone	1594	UJ	1634	UJ	1896	UJ	1535	UJ
2-Nitrophenol	1594	UJ	1634	UJ	1896	UJ	1535	UJ
2,4-Dimethylphenol	1594	UJ	1634	UJ	1896	UJ	1535	UJ
bis(2-Chloroethoxy)methane	1594	UJ	1634	UJ	1896	UJ	1535	UJ
2,4-Dichlorophenol	1594	UJ	1634	UJ	1896	UJ	1535	UJ
1,2,4-Trichlorobenzene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Naphthalene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
4-Chloroaniline	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Hexachlorobutadiene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
4-Chloro-3-methylphenol	1594	UJ	1634	UJ	1896	UJ	1535	UJ
2-Methylnaphthalene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Hexachlorocyclopentadiene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
2,4,6-Trichlorophenol	1594	UJ	1634	UJ	1896	UJ	1535	UJ
2,4,5-Trichlorophenol	3865	UJ	3960	UJ	4598	UJ	3721	UJ
2-Chloronaphthalene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
2-Nitroaniline	3865	UJ	3960	UJ	4598	UJ	3721	UJ
Dimethylphthalate	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Acenaphthylene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
2,6-Dinitrotoluene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
3-Nitroaniline	3865	UJ	3960	UJ	4598	UJ	3721	UJ
Acenaphthene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
2,4-Dinitrophenol	3865	UJ	3960	UJ	4598	UJ	3721	UJ
Dibenzofuran	1594	UJ	1634	UJ	1896	UJ	1535	UJ
4-Nitrophenol	1594	UJ	1634	UJ	1896	UJ	1535	UJ
2,4-Dinitrotoluene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Diethylphthalate	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Fluorene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
4-Chlorophenyl-phenylether	1594	UJ	1634	UJ	1896	UJ	1535	UJ
4-Nitroaniline	3865	UJ	3960	UJ	4598	UJ	3721	UJ
4,6-Dinitro-2-methylphenol	3865	UJ	3960	UJ	4598	UJ	3721	UJ
N-Nitrosodiphenylamine	1594	UJ	1634	UJ	1896	UJ	1535	UJ
4-Bromophenyl-phenylether	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Hexachlorobenzene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Pentachlorophenol	3865	UJ	3960	UJ	4598	UJ	3721	UJ
Phenanthrene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Anthracene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Carbazole	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Di-n-butylphthalate	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Fluoranthene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Pyrene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Butylbenzylphthalate	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Benzo(a)anthracene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
3,3'-Dichlorobenzidine	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Chrysene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
bis(2-Ethylhexyl)phthalate	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Di-n-octylphthalate	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Benzo(b)fluoranthene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Benzo(k)fluoranthene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Benzo(a)pyrene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Indeno(1,2,3-cd)pyrene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Dibenz(a,h)anthracene	1594	UJ	1634	UJ	1896	UJ	1535	UJ
Benzo(g,h,i)perylene	1594	UJ	1634	UJ	1896	UJ	1535	UJ

STATISTICAL SUMMARY OF ANALYTICAL RESULTS
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (FILLET)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
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 LEVE (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
No Semivolatile Organic Compounds were Detected in this Media.									

* = 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

RAW ANALYTICAL DATA
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (FILLET)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	35-FSO2-MC-FO1	35-FS03-MC-F01	35-FSO3-SM-FO1	36-FS01-SM-F01	35-FSO2-LG-FO1	35-FSO3-LG-FO2	36-FS02-BC01	36-FS03-BC01	36-FS03-BC02
SAMPLE No.	4970-11	4970-12	4970-16	4970-19	4970-7	4970-9	5896-1	5896-2	5896-3
DATE COLLECTED	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	03-MAY-1994	26-MAY-1994	26-MAY-1994	26-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Bromomethane	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	7 U	65 UJ	62 UJ	65 UJ
Vinyl Chloride	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
Chloroethane	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
Methylene Chloride	49 UJ	249 UJ	36 UJ	181 UJ	26 J	42 UJ	6549	7192	16317
Acetone	243 U	249 UJ	36 UJ	181 UJ	263 J	42 UJ	54320 J	95199	372323
Carbon Disulfide	850 J	196 J	1328	1006 J	502 J	424 J	65 UJ	62 UJ	65 UJ
1,1-Dichloroethene	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
1,1-Dichloroethane	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
1,2-Dichloroethene (total)	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
Chloroform	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
1,2-Dichloroethane	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
2-Butanone	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	209 U	65 UJ	62 UJ	65 UJ
1,1,1-Trichloroethane	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
Carbon Tetrachloride	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
Bromodichloromethane	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
1,2-Dichloropropane	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
cis-1,3-Dichloropropene	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
Trichloroethene	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
Dibromochloromethane	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
1,1,2-Trichloroethane	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
Benzene	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
trans-1,3-Dichloropropene	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
Bromoform	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
4-Methyl-2-Pentanone	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
2-Hexanone	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
Tetrachloroethene	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
1,1,2,2-Tetrachloroethane	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
Toluene	49 UJ	249 UJ	24 J	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
Chlorobenzene	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
Ethylbenzene	49 UJ	249 UJ	173 U	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
Styrene	49 UJ	249 UJ	173 u	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
Xylene (total)	49 UJ	249 UJ	173 u	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ
Chloromethane	49 UJ	249 UJ	36 UJ	181 UJ	45 UJ	42 UJ	65 UJ	62 UJ	65 UJ

RAW ANALYTICAL DATA
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (FILLET)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
VOLATILE ORGANIC COMPOUNDS

SAMPLE LOCATION	36-FS03-SM-F01	36-FS03-LMB-F01	36-FS03-WM-F01	36-FS03-LG-F01	36-FS01-WC-F01	36-FS02-WC-F01	36-FS03-WC-F01	36-FS03-WC-F02	36-FS02-LMB-F01
SAMPLE No.	4971-1	4971-10DL	4971-12	4971-12	4971-2	4971-3	4971-6	4971-7	4971-9
DATE COLLECTED	3-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994	3-MAY-1994
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Bromomethane	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Vinyl Chloride	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Chloroethane	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Methylene Chloride	40 UJ	250 UJ	200 UJ	40 UJ	28 J	48 UJ	50 J	33 U	48 U
Acetone	40 UJ	2788 J	200 UJ	58 J	312 J	198 J	413 J	255 J	1550 J
Carbon Disulfide	579 J	752 J	796 J	752 J	875 J	456 J	348 J	278 J	1145 J
1,1-Dichloroethene	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
1,1-Dichloroethane	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
1,2-Dichloroethene (total)	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Chloroform	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
1,2-Dichloroethane	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
2-Butanone	40 UJ	5108 J	200 UJ	63 J	56 UJ	48 UJ	50 UJ	9 U	48 U
1,1,1-Trichloroethane	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Carbon Tetrachloride	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Bromodichloromethane	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
1,2-Dichloropropane	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
cis-1,3-Dichloropropene	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Trichloroethene	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Dibromochloromethane	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
1,1,2-Trichloroethane	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Benzene	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
trans-1,3-Dichloropropene	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Bromoform	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
4-Methyl-2-Pentanone	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
2-Hexanone	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Tetrachloroethene	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
1,1,2,2-Tetrachloroethane	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Toluene	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Chlorobenzene	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Ethylbenzene	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Styrene	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Xylene (total)	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U
Chloromethane	40 UJ	250 UJ	200 UJ	40 UJ	56 UJ	48 UJ	50 UJ	33 U	48 U

STATISTICAL SUMMARY OF ANALYTICAL RESULTS
CAMP GEIGER AREA FUEL FARM (SITE 35)
TISSUE SAMPLES (FILLET)
REMEDIAL INVESTIGATION, CTO-232
MCB CAMP LEJEUNE, NORTH CAROLINA
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 LEVE (ug/kg)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
Methylene Chloride	26.00	16317.00		36-FS03-BC02	1709.44	3456.02	13195.22	6	18	33%
Acetone	58.00	372323.00	+	36-FS03-BC02	29343.03	65910.68	1669683.06	11	18	61%
Carbon Disulfide	196.00	1328.00	+	35-FSO3-SM-F	576.83	736.14	1796.35	15	18	83%
2-Butanone	63.00	5108.00		36-FS03-LMB-F	326.50	816.12	369.06	2	18	11%
Toluene	24.00	24.00	*+	35-FSO3-SM-F	43.64	59.01	60.31	1	18	6%

* = 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

— OLD PAGES follow —

APPENDIX R
RI/FS FISH TISSUE STATISTICAL SUMMARIES

STATISTICAL SUMMARY OF ANALYTICAL RESULTS - FILLET SAMPLES
CLP VOLATILE ORGANIC COMPOUNDS
SITES 35 AND 36
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

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
Methylene Chloride	26.00	16317.00	+	36-FS03-BC02	3373.61	6897.63	56,647,004.52	4	9	44%
Acetone	263.00	372323.00	+	36-FS03-BC02	58053.39	134084.41	10,214,403,223,298.30	4	9	44%
Carbon Disulfide	196.00	1328.00	+	35-FSO3-SM-FO1	489.11	784.70	19,021.99	6	9	67%
Toluene	24.00	24.00	*+	35-FSO3-SM-FO1	44.78	67.60	80.72	1	9	11%

* = 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

STATISTICAL SUMMARY OF ANALYTICAL RESULTS - WHOLE BODY SAMPLES
CLP VOLATILE ORGANIC COMPOUNDS
SITES 35 AND 36
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

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
Vinyl Chloride	31.00	31.00	*+	35-FSO3-PS-WB01	23.13	30.38	35.31	1	4	25%
Methylene Chloride	17.00	17.00	*+	35-FSO3-PS-WB01	19.63	23.96	25.11	1	4	25%
Carbon Disulfide	467.00	1064.00	+	35-FSO3-MC-WBO1	708.75	1053.81	1864.47	4	4	100%
1,1-Dichloroethane	37.00	37.00	+	35-FSO3-MC-WBO1	23.75	35.20	50.47	1	4	25%
Xylene (total)	56.00	56.00	+	35-FSO2-PS-WBO2	28.88	50.64	138.10	1	4	25%

* = 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

STATISTICAL SUMMARY OF ANALYTICAL RESULTS - FILLET SAMPLES
CLP PESTICIDES
SITES 35 AND 36
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

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	5.90	8.90	36-FS02-BC01	7.12	7.71	7.79	4	13	31%
gamma-BHC (Lindane)	2.10	5.50	*+ 36-FS01-SM-F01	5.65	6.73	7.53	5	13	38%
Heptachlor	2.60	4.30	*+ 35-FS03-BG-F01	5.76	6.75	7.25	3	13	23%
Aldrin	2.30	2.30	*+ 36-FS03-BC01	6.20	7.08	7.67	1	13	8%
Heptachlor epoxide	3.90	3.90	*+ 35-FS03-LG-F01	6.03	6.79	6.96	1	13	8%
Dieldrin	4.30	36.00	36-FS01-SM-F01	15.04	19.75	22.89	10	13	77%
4,4'-DDE	42.00	572.00	35-FS03-LG-F02	202.00	274.89	363.38	13	13	100%
Endrin	2.50	52.00	35-FS03-LG-F02	10.67	17.49	18.44	6	13	46%
Endosulfan II	3.60	9.60	*+ 35-FS03-LG-F02	10.41	12.33	13.79	3	13	23%
4,4'-DDD	19.00	196.00	36-FS01-SM-F01	74.31	98.95	113.38	13	13	100%
4,4'-DDT	2.50	15.00	35-FS03-WM-F01	6.87	8.63	9.65	11	13	85%
Endrin ketone	3.60	3.80	*+ 35-FS03-WM-F01	11.34	13.53	16.10	2	13	15%
Endrin aldehyde	2.80	4.00	*+ 36-FS02-SM-F01	11.10	13.34	16.21	2	13	15%
alpha-Chlordane	3.60	38.00	35-FS03-LG-F02	12.82	17.88	21.80	9	13	69%

* = 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

STATISTICAL SUMMARY OF ANALYTICAL RESULTS - WHOLE BODY SAMPLES
CLP PESTICIDES
SITES 35 AND 36
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

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	5.30	5.30	*+	35-FS03-PS-WB01	5.06	6.54	8.76	1	9	11%
gamma-BHC (Lindane)	8.00	8.00	+	36-FS01-SM-WB01	4.96	6.71	9.89	1	9	11%
Heptachlor	7.80	7.80	+	36-FS01-SM-WB01	4.93	6.67	9.81	1	9	11%
Dieldrin	5.00	59.00		35-FS02-AE-WB01	22.61	34.89	50.60	7	9	78%
4,4'-DDE	27.00	434.00	+	35-FS02-AE-WB01	171.78	267.34	591.82	9	9	100%
Endrin	3.00	27.00		36-FS01-SM-WB01	9.74	15.00	24.69	5	9	56%
Endosulfan II	3.40	3.40	*+	36-FS01-SM-WB01	8.36	11.73	16.53	1	9	11%
4,4'-DDD	5.20	319.00	+	35-FS02-AE-WB01	77.24	136.35	386.60	9	9	100%
4,4'-DDT	5.80	58.00		35-FS02-AE-WB01	15.60	25.98	34.05	7	9	78%
Endrin ketone	3.10	14.00	+	35-FS02-AE-WB01	9.12	12.47	19.68	2	9	22%
Endrin aldehyde	3.30	6.50	*+	35-FS03-LG-WB01	8.06	10.87	14.61	2	9	22%
alpha-Chlordane	2.90	60.00	+	36-FS01-SM-WB01	17.82	29.56	97.75	7	9	78%
gamma-Chlordane	12.00	22.00	+	36-FS01-SM-WB01	7.12	11.23	22.77	2	9	22%

* = 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

STATISTICAL SUMMARY OF ANALYTICAL RESULTS - FILLET SAMPLES
CLP INORGANIC COMPOUNDS
SITES 35 AND 36
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

PARAMETER	MINIMUM DETECTE 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	19.30	27.30	*+	35-FS03-SM-F01	15.37	19.63	23.87	6	13	46%
Arsenic	1.40	1.40		36-FS03-BC01	0.54	0.75	0.89	1	13	8%
Barium	0.41	2.20		36-FS02-SM-F01	0.57	0.82	0.84	8	13	62%
Cadmium	0.16	0.80		36-FS02-BC01	0.20	0.32	0.50	5	13	38%
Calcium	676.00	13300.00		35-FS03-WM-F01	3481.92	5783.94	8825.20	12	13	92%
Cobalt	6.90	6.90		36-FS02-BC01	2.57	3.25	3.19	1	13	8%
Copper	2.30	27.50		36-FS03-BC01	8.55	13.34	16.74	13	13	100%
Iron	20.40	48.00		35-FS03-MC-F01	28.83	35.85	42.80	8	13	62%
Lead	0.00	0.61	+	36-FS02-BC01	0.39	0.52	0.71	3	13	31%
Magnesium	833.00	1550.00		36-FS02-BC01	1228.62	1341.71	1359.87	13	13	100%
Manganese	1.00	3.10		35-FS02-MC-F01	1.43	1.77	1.99	10	13	77%
Mercury	0.30	0.98	+	35-FSO1-LG-FO1	0.53	0.90	2.46	4	4	100%
Potassium	9180.00	19000.00		35-FS03-MC-F01	13575.38	14719.44	14821.93	13	13	100%
Selenium	0.72	0.80		36-FS02-BC01	0.45	0.63	0.62	2	13	15%
Sodium	1970.00	21900.00		35-FS03-SM-F01	7110.00	10503.65	13801.44	13	13	100%
Zinc	38.00	130.00	+	36-FS03-BC01	81.26	119.94	1673706.35	5	5	100%

* = THE RME IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
+ = THE LOG NORMAL 95% UCL IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
*+ = BOTH THE RME AND LOG NORMAL 95% UCL ARE GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

STATISTICAL SUMMARY OF ANALYTICAL RESULTS - WHOLE BODY SAMPLES
CLP INORGANIC COMPOUNDS
SITES 35 AND 36
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

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	23.70	53.20	*+	35-FS02-CF-WB01	25.36	37.63	92.75	5	8	63%
Barium	0.89	5.00	+	36-FS01-SM-WB01	1.76	2.83	6.89	7	8	88%
Cadmium	0.25	0.88		35-FS02-AE-WB01	0.20	0.39	0.67	2	8	25%
Calcium	1910.00	50800.00	+	35-FSO3-PS-WB01	26051.25	37887.25	144075.42	8	8	100%
Chromium	2.30	2.70		36-FS01-SM-WB01	1.89	2.32	2.55	4	8	50%
Copper	3.20	70.30		35-FS02-CF-WB01	13.35	28.86	48.53	8	8	100%
Iron	60.90	392.00		35-FS03-LG-WB01	160.80	234.43	304.81	8	8	100%
Lead	2.50	2.50		35-FS02-AE-WB01	0.61	1.22	1.92	1	7	14%
Magnesium	705.00	1540.00		35-FSO3-PS-WB01	1149.63	1333.45	1406.44	8	8	100%
Manganese	1.60	11.20		35-FS02-CF-WB01	4.79	6.86	9.02	8	8	100%
Mercury	0.68	0.70	*+	35-FS02-CF-WB01	0.69	0.75	1.48	2	2	100%
Potassium	8970.00	11600.00		35-FS3-MC-WB01	9943.75	10578.36	10631.15	8	8	100%
Selenium	0.43	0.43	*+	35-FSO3-PS-WB01	0.49	0.76	1.07	1	8	13%
Sodium	2710.00	17200.00		35-FS02-AE-WB01	5650.00	8902.67	10172.05	8	8	100%
Zinc	42.30	102.00		35-FS02-CF-WB01	74.01	87.60	94.95	8	8	100%

* = THE RME IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
+ = THE LOG NORMAL 95% UCL IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
*+ = BOTH THE RME AND LOG NORMAL 95% UCL ARE GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE

APPENDIX S
WHITE OAK RIVER BASIN REFERENCE DATA

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
*+ = BOTH THE RME AND LOG NORMAL 95% UCL ARE GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
RME = REASONABLE MAXIMUM EXPOSURE
NA = NOT APPLICABLE

MARINE CORPS BASE CAMP LEJEUNE
STATISTICAL SUMMARY OF ANALYTICAL RESULTS
BACKGROUND - HADNOT CREEK
SURFACE WATER - PESTICIDES/PCBs

PARAMETER	MINIMUM DETECTED VALUE (ug/L)	MAXIMUM DETECTED VALUE (ug/L)	SAMPLE No. OF MAXIMUM DETECTED VALUE	ARITHMETIC AVERAGE (ug/L)	RME (ug/L)	LOG NORMAL UPPER 95% CONFIDENCE LEVEL (ug/L)	No. OF TIMES DETECTED	No. OF TIMES ANALYZED	FREQUENCY OF DETECTION
NO PESTICIDES/PCBs WERE DETECTED									

* = THE RME IS GREATER THAN THE MAXIMUM DETECTED VALUE; THEREFORE, THE MAXIMUM VALUE IS USED TO CALCULATE CHRONIC DAILY INTAKE
+ = 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 - 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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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									

* = 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 - 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									

* = 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 - 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									

* = 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

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%

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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 - 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									

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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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*+ = 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 - 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 heterclitus	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)
Strippet 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		28.8			
	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										6		6
	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)
Strippet 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	850	850
								20.5	90	90
								24	120	120
								+13 collected, no length or weight		
	COUNT				1		1	17		4
	AVERAGE				29.5		250	30.125		365
	MAXIMUM				29.5		250	43		850
	MINIMUM				29.5		250	20.5		90
Black Drum	HM02				28	350	350			
	COUNT				1		1			
	AVERAGE				28		350			
	MAXIMUM				28		350			
	MINIMUM				28		350			
Spotted Sunfish	HM02				15.5	65	65			
					17	110	110			
	COUNT				2		2			
	AVERAGE				16.25		87.5			
	MAXIMUM				17		110			
	MINIMUM				15.5		65			
[illegible]mouth 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

CIES	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)
Strippet 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
[illegible] fish	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
ERTEA												
Anopla												
Heteronemertea												
Lineidae												
Micrura leidyi						6	3	3				
ANNELIDA												
Oligochaeta												
Lumbriculida												
Lumbriculidae												
Eclipidrillus sp.			1									
Tubificida												
Tubificidae												
Isochaetides freyi	77	42	36							21	21	8
Limnodrilus hoffmeisteri											1	
Spirosperma carolinensis		3									1	3
Polychaeta												
Capitellida												
Capitellidae												
Heteromastus filiformis							14	9				
Phyllodocida												
Nereidae												
Nereis succinea							6		18			
Phyllodocidae												
Eteone heteropoda									1			
Terebellida												
Ampharetidae												
Hypaniola grayi (ampharetid worm)				16	6	48						
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/sphaeromias sp. (biting midges)	5	7	4			1						
Chironomidae												
Ablabesmyia annulata	2	7	1									
Ablabesmyia ramphe gr.	4	7	9									
Clinotanypus pinguis											1	
Cryptochironomus fulvus gr.		2	3									
Epoicladius sp.			1									
Glyptotendipes sp.												1
Nilothauma sp.		2	1									
Paralauterborniella nigrohalteralis	1	5	2									
Polypedilum illinoense	3	1										
Procladius sp. (midges)		1										
Tanytarsus sp.	2	9	2									
Tribelos lucundum	4	6	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			
otal Taxa	10	17	15	1	2	4	4	3	6	4	11	8
l Specimens	102	106	78	18	7	54	30	31	183	44	69	32
icate Specimens Average		35.33333			26.33333			81.33333			35	
andard Deviation	23.50792	9.614633	8.961824	NA	3.535534	21.79449	4.358899	8.082904	39.67241	9.321905	7.128687	6.047432
Brillouin's Diversity		0.755			0.072			0.675			0.757	
SPECIES DENSITY (#/M^2)	650	676	497	115	45	344	191	198	1166	280	440	331
SPECIES DIVERSITY (Shannon-Wiener)	0.463	0.956	0.831	0.000	0.178	0.230	0.554	0.384	0.449	0.458	0.803	0.783

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									
Scolopios 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 pugic						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									
Mullinia 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
Brillouin'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

APPENDIX T
RI/FS COPC SELECTION WORKSHEETS

Surface Soil

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	twice avg. BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	Residential (mg/kg) RBC	ARAR	COPC
VOCs (ug/kg)												
Carbon Disulfide	33	17.9	1/10							780		
Toluene	19J	11.1	1/13	0.6						1600		
Xylenes, total	43	11.7	1/13	1.4						16000		
SVOCs (ug/kg)												
Phenol	3,071	1,720.5	1/13							47000		
Acenaphthene	196J	748.1	1/13							470		
Phenanthrene	191J-1,186	1060.7	2/13							—		X
Carbazole	183J	NA	1/13							32		
Fluoranthene	423-1567	1395.1	2/13							310		
Pyrene	895J-1173	1078.1	2/13							230		
Butyl benzyl phthalate	295J	769.2	1/13							1600		
Benzo(a) anthracene	566	884.6	1/13							0.88		
Chrysene	204J-683	922.1	2/13							88		
BEHP	279J	764.7	1/13	56						46		
Benzo(b) fluoranthene	337J-1186	1093.8	2/13							0.88		X
Benzo(a) pyrene	625	902.3	1/13							0.088		
Indeno(1,2,3-cd) pyrene	381	828.6	1/13							0.88		
Dibenz(a,h) anthracene	184J	746.5	1/13							0.088		
Benzo(g,h,i) perylene	208J-366	792	2/13							—		X
PNPs												
beta-BHC	0.53J-1.6J	29.5	2/10							0.35		
Dieldrin	0.35J-212	315.2	4/10							0.04		X
4,4'-DDE	1.6J-1570	3542.7	10/10							1.9		
Endrin	0.68J-7.9	33	3/10							23		

Surface Soil

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	twice AVG BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	Residential (mg/kg) RBC	ARAR	COPC
Endosulfan II	0.42J-2.9J	76.2	2/10							—		X
4,4'-DDD	0.56J-3240	29283	9/10							2.7		X
4,4'-DDT	1.6J-262	2048.1	10/10							1.9		
Endrin Ketone	1.2J	56.1	1/10							—		X
Endrin Aldehyde	0.37J-1.6J	81.2	2/10	0.11J						—		X
α-Chlordane	4.1-36	75.6	2/10							0.49		
γ-Chlordane	27	64.6	1/10							0.49		
Inorganics (mg/kg)												
Aluminum	2020-7870	4639.7	13/13		4209			X		(78000)		
Antimony	7.4J-8J	7.1	2/10		4.81					31		
Arsenic	0.29J-66.1J	18	11/13		0.77					0.37		X
Barium	6.2-86	41.2	13/13		14.2					550		
Beryllium	0.22	0.1	1/12		0.22					0.15		
Cadmium	0.04J-15J	18.2	10/10		0.61					39		
Calcium	604J-49500J	91842.6	13/13		1069			X		—		
Chromium	1.9-98.1	26.3	11/13		4.77					390		
Cobalt	1.3-4.3	1.9	3/13		2.35					470		
Copper	2-58.3	26.4	12/13		9.02					290		
Iron	1250-29900J	10654	13/13		2515			X		—		
Lead	7.2-71J	53.7	13/13		24.2					—		X
Manganese	4.1-66 [redacted]	82.7	13/13		14.1					39		X
Magnesium	58.7-951	807.9	13/13		169			X		—		
Nickel	1.3-17.2	5.8	10/13		3.09					160		
Selenium	0.94J-1.2J	0.5	2/13		0.74					39		
Thallium	0.06-0.53J	0.3	11/13		0.8					—		
Vanadium	3.6-20.7	14.7	13/13		6.54					55		
Zinc	138-430	NA	2/2		9.84					2300		

Subsurface Soil

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	twice Avg. BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	Residential (mg/kg) RBC	ARAR	COPC
VOCs (ug/kg)												
Methylene Chloride	7J	6.5	5/19	5J						85		
Acetone	11J-144J	44.1	5/19	43J						780		
Tetrachloroethene	8-60	12.5	4/19							12		
SVOCs (ug/kg)												
Pyrene	283J	229.5	1/8							230		
Benzo(b) fluoranthene	425	278.8	1/8							0.088		X
no PnP												
Inorganics (mg/kg)												
Aluminum	1870J-6210	6065.1	8/8		7127					(78000)		
Arsenic	0.19J-2.7J	4.2	7/8		0.76					0.37		X
Barium	4.8-25	19.8	8/8		11.3					550		
Cadmium	0.035-0.49J	1.0	6/6		0.74					39		
Calcium	360J-2120J	7558.7	6/8		554			X		—		
Chromium	3.1-14.4J	11.5	7/8		8.37					390		
Cobalt	1.4	0.92	1/8		1.12					470		
Copper	1.2-8.5	7.4	6/8		2.15					290		
Iron	422J-10500J	10417.5	8/8		2133			X		—		
Lead	4J-144	126	8/8		7.27					—		X
Magnesium	63.5-403	503.2	7/8		212			X		—		
Manganese	1.5-7.5	8.4	8/8		7.07					39		
Nickel	1.2-2	1.7	4/8		2.61					1160		
Potassium	562	293.3	1/8		238			X		—		

Subsurface Soil

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
Selenium	0.17J-0.67J	0.51	4/8		0.79					160		
Silver	0.39J	0.77	1/8		1.05					39		
Thallium	0.1-2.1	4.5	4/8		0.67					—		X
Vanadium	3J-19.9J	15.4	8/8		9.53					55		
Zinc	16.3	9723.2	1/3		4.32					2300		

Groundwater

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	ug/L RBC	ARAR	COPC
1,1,2,2-Tetrachloroethane	20.5-64.7	2.9	2/50							0.052c		
1,1,2-Trichloroethane	1-1.9	1.2	2/50							0.19c		
1,1-Dichloroethane	2.5-7.6	1.8	3/50							81 n		
1,1-Dichloroethene	0.8-6.9	2.7	4/50							0.044c		X
Chloroform	0.6	1.0	1/50	8						0.15c		
Tetrachloroethene	1.9	1.1	1/50							1.1c		
cis-1,2-Dichloroethene	3.2-973	98463.3	22/50							6.1n		X
trans-1,2-Dichloroethene	0.4-176	367.6	18/50							12 n		X
Trichloroethene	0.4-900	8102.1	20/50							1.6c		X
Benzene	0.2-1660	84.1	29/50							0.36c		X
Toluene	0.3-984	56.8	42/50							75 n		X
Ethylbenzene	0.3-824	96	42/50							130 n		X
Methyl Tertiary Butyl Ether	6.6J-319	52	15/50							18 n		X
Xylenes	0.6-1700	247.7	45/50							12,00 n		X
Phenol	11-23	6.7	2/24							22,00 n		
2-Methylphenol	17	6	1/24							18a n		
4-Methylphenol	6J	5.2	1/24							18 n		
2,4-Dimethylphenol	74	8.3	1/24							73 n		
Naphthalene	7J-499	68.5	6/24									X
2-Methylnaphthalene	70-668	80.6	5/24									X
Dibenzofuran	8J-23	7.1	3/24							15 n		X
Fluorene	8J-22	7.6	3/24							150 n		
Phenanthrene	10J-52	9.6	3/24									X
Anthracene	7J	5.3	1/24							1100 n		
Carbazole	12-13	6.2	2/24							3.4		

Groundwater

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
beta-BHC	0.022J-0.023J	0.025	3/7							0.037		
delta-BHC	0.05J	0.036	1/7							—		X
Heptachlor	0.011J-0.013J	0.03	2/7							0.0023		X
Aldrin	0.013J-0.017J	0.028	2/7							0.004C		
4,4'-DDD	0.21J	0.129	1/7							0.28		
4,4'-DDT	0.014J	0.076	1/7							0.2		
Aluminum	215-380,000	3430315.1	23/24					X				
Antimony	3.8J-10.2J	34	2/10							15 n		X
Arsenic	1.9J-165J	60.6	21/23							0.038C		X
Barium	20.7-3440	2802.7	24/24							260 n		X
Beryllium	0.14J-63.5	57.1	22/24							0.016C		X
Calcium	13,510-2,050,000	1241149	24/24					X				
Chromium	4.6-1540	2167.5	22/24							180 n		X
Cadmium	0.31-340	41.4	22/24							18 n		X
Cobalt	12J-281	118.2	13/24							220 n		X
Copper	2-140	77.2	23/24							140 n		
Iron	67.7-255,000	1606400	24/24					X				
Lead	1.2J-64	40.3	21/24									X
Magnesium	2560-42,600	20333	24/24					X				
Manganese	13.3-1420	787.9	24/24							18 n		X
Mercury	0.15J-0.84J	0.2	5/24							14 n		
Nickel	13.4-524	293.3	19/24							73 n		X
Potassium	2740-22,300	11343.9	17/24					X				
Selenium	1.4J-13.5J	6.4	8/16							18 n		
Silver	4-20	2.8	3/24							18 n		X
Sodium	4470-68,200	19042.6	23/24					X		—		
Thallium	0.9-5	2.8	15/24							—		X
Vanadium	8J-886	1013.7	22/24							26 n		X
Zinc	41.9-1850	4708.8	16/							1100 n		X

Surface Water

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	twice Avg ref. station BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
no Organics Detected												
Inorganics (ug/L)												
Aluminum	1-6580	268905.4	4/10		6666.3			X				
Antimony	1.5-3.9	12.4	4/10		ND							X
Arsenic	2.7J	1.5	4/10		ND							X
Barium	16.7-48.5J	28.4	7/10		51.4							
Calcium	41700-63900	60378.8	10/10		35132			X				
Chromium	1J-1.2J	3.2	2/10		ND							X
Cobalt	9J-16.8J	11.1	4/10		ND							X
Iron	764J-9500	3378.3	10/10		1151.4			X				
Lead	1.4-97J	46.6	5/10		ND							X
Magnesium	2380-17900	12408.7	10/10		3489.4			X				
Manganese	24.5-113	64.8	10/10		ND							X
Mercury	3J-3.2J	4.8	2/10		ND							X
Potassium	2170-8210	6245.8	10/10		ND			X				
Selenium	1.3J	1.1	1/10		1.66							
Sodium	42600-192000	117760.6	10/10		19660			X				
Thallium	1J	0.6	4/10		ND							X
Vanadium	4.5-14.8J	11.6	4/10		ND							X
Zinc	129J	1122.2	1/10		ND							X

Sediment

(1)

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	2X Ave. BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
Acetone	128J	217.9	1/20	48	NE							
Toluene	8J	169.8	1/20	0.6	NE							
Diethylphthalate	352J-2135J	703.2	4/20		NE							X
Di-n-butylphthalate	218J	520.6	1/20		NE							
Bis-(2-ethylhexyl)phthalate	469J-704J	600.7	3/20	56	NE							
beta-BHC	0.59J	15.0	1/20		5.02							
delta-BHC	0.92J-1.J	14.7	2/20		1.28							
Heptachlor	0.91J-2.3J	13.6	2/20		2.36							
Heptachlor epoxide	0.43J-1.4J	18.9	7/20		ND							X
Dieldrin	1.4J-52	32.0	7/20		3.0							X
4,4'-DDD		971.7	17/20		3.14							X
4,4'-DDT	0.66J-46J	22.8	15/20		4.40							X
4,4'-DDE	1J-1200	835.6	17/20		4.84							X
Endrin	0.44J-0.85J	19.4	5/20		ND							X
Endosulfan II	0.84J-3.5J	39.5	8/20		ND							X
Methoxychlor	0.49J-3.4J	931.5	6/20		1.88							X
Endrin aldehyde	1J-7.6J	35.4	5/20		1.18							X
Endrin ketone	2.8J-3.1J	27.6	2/20		ND							X
alpha-Chlordane	0.51J-13.J	18.5	10/20		2.40							X
gamma-Chlordane	3.6-9.7	15.8	6/20		2.88							X
Aluminum	484-37,300	27,603	20/20		2,331.2			X				
Arsenic	0.34J-3.7J	2.3	15/16		0.74							X
Barium	2.4-129	69.4	20/20		12.9							X
Beryllium	0.27-1.1	0.5	4/14		0.18							X
Calcium	301J-17500J	15,144	19/20		3934.2			X				

Sediment

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	2 x Ave. BACKGROUND	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
Chromium	2.4-28.6	27.8	17/20		3.72							X
Cobalt	1.4-7.8	4.2	9/20		ND							X
Copper	3.4-24.8	24.3	16/20		1.50							X
Iron	1050J-15900	13,686	20/20		867.4			X				
Lead	4.7-15,100	1418.5	18/18		1.58							X
Magnesium	88.1-3830	2022	20/20		90.5			X				
Manganese	3.2J-62.8	34.6	20/20		7.26							X
Mercury	0.07J	NA	1/1		0.28							
Nickel	2.1B-13.6B	6.7	12/20		ND							X
Potassium	498-2610	588.4	3/20		ND			X				
Selenium	0.73J-1.6J	0.9	4/20		0.38							X
Sodium	461-4980	1845	11/20		ND			X				
Thallium	0.15-0.96	0.7	14/20		0.20							X
Vanadium	0.94J-39.3	30.3	20/20		3.04							X
Zinc	60.4J-104J	226.2	3/3		10.22							X

Fish Fillet

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	Detected in SW ~~BACKGROUND~~	Detected in SD ~~BACKGROUND~~	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
VOCs (ug/kg)													
Methylene Chloride	26 - 16,317	13,195	6/18		N	N							
Acetone	58 - 372,323	1,669,683	11/18		N	Y							X
Carbon Disulfide	196 - 1328	1796	15/18		N	N							
2-Butanone	63 - 5108	369	2/18		N	N							
Toluene	24	59	1/18		N	Y							
No SVOCs detected													
Pnps (ug/kg)													
beta - BHC	4.2 - 11	8.24	7/22		N	Y							X
gamma - BHC	2.1 - 5.5	7.95	6/22		N	N							
Heptachlor	2.6 - 4.3	7.88	3/22		N	Y							X
Aldrin	2.3 - 6.6	7.77	3/22		N	N							
Heptachlor Epoxide	3.9	7.66	1/22		N	Y							
Dieldrin	4.3 - 48	21.39	18/22		N	Y							X
4,4'-DDE	39 - 572	241.9	22/22		N	Y							X
Endrin	2.5 - 52	12.83	9/22		N	Y							X
Endosulfan II	3.6 - 9.6	15.13	4/22		N	Y							X
4,4'-DDD	19 - 256	103.85	22/22		N	Y							X
4,4'-DDT	2.5 - 15	14.38	11/22		N	Y							X
Endrin Ketone	3.6 - 3.8	16.22	2/22		N	Y							X
Endrin Aldehyde	2.8 - 13	16.34	3/22		N	Y							X
α-Chlordane	3.5 - 46	21.3	7/22		N	Y							X

Fish Fillet

CONTAMINANT	RANGE	95% UCL	FREQUENCY	BLANK	Detected in SW ~~BACKGROUND~~	Detected in SD ~~BACKGROUND~~	HISTORY	ANTHROPOGENIC	NUTRIENT	TOXICITY	RBC	ARAR	COPC
Aluminum	19.3-27.3	17.10	6/22		Y	Y							X
Arsenic	1.4-1.8	0.97	2/22		Y	Y							
Barium	0.41-22	0.82	16/22		Y	Y							X
Cadmium	0.16-0.8	0.21	5/22		N	N							
Calcium	676-13300	5262	19/22		Y	Y			X				
Chromium	3-4	1.94	2/22		Y	Y							
Cobalt	6.9	2.91	1/22		Y	Y							
Copper	23-27.5	8.24	13/22		N	Y							X
Iron	20.4-53.6	44.3	17/22		Y	Y			X				
Lead	0.51-0.61	0.67	3/18		Y	Y							X
Magnesium	833-1550	1319.5	22/22		Y	Y			X				
Manganese	0.86-3.1	1.95	18/22		Y	Y							X
Mercury	0.29-1.3	1.59	8/13		Y	Y							X
Potassium	9180-20200	15642.9	22/22		Y	Y			X				
Selenium	0.6-5.8	0.96	5/22		Y	Y							X
Silver	1-3.3	1.22	5/18		N	N							
Sodium	1970-21900	7050.88	13/22		Y	Y			X				
Vanadium	1.7	1.24	1/22		Y	Y							
Zinc	18.2-130	675.8	14/14		Y	Y							X

APPENDIX U
RI/FS DATA AND FREQUENCY SUMMARIES

APPENDIX U.1
SURFACE SOIL ORGANICS

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS01-00	35-SS02-00	35-SS03-00	35-SS04-00	35-SS05-00	35-SS06-00
Lab Sample ID:		5617-17	5617-19	5617-9	5617-10	4585-22	4585-21
Date Sampled:		17-MAY-1994	17-MAY-1994	18-MAY-1994	10-MAY-1994	29-APR-1994	29-APR-1994
	UNITS						
VOLATILES							
Chloromethane	UG/KG	11 UJ	11 U	10 U	11 UJ	10 UJ	11 UJ
Bromomethane	UG/KG	11 U	11 U	10 U	11 UJ	10 U	11 U
Vinyl Chloride	UG/KG	11 U	11 U	10 U	11 UJ	10 U	11 U
Chloroethane	UG/KG	11 U	11 U	10 U	11 UJ	10 U	11 U
Methylene Chloride	UG/KG	11 U	11 U	10 U	11 UJ	10 U	11 U
Acetone	UG/KG	11 U	11 U	10 UJ	11 UJ	10 U	11 U
Carbon Disulfide	UG/KG	11 U	11 U	36 R	11 UJ	10 U	11 U
1,1-Dichloroethene	UG/KG	11 U	11 U	10 U	11 UJ	10 U	11 U
1,1-Dichloroethane	UG/KG	11 U	11 U	10 U	11 UJ	10 U	11 U
1,2-Dichloroethene (total)	UG/KG	11 U	11 U	10 U	11 UJ	10 U	11 U
Chloroform	UG/KG	11 U	11 U	10 U	11 UJ	10 U	11 U
1,2-Dichloroethane	UG/KG	11 U	11 U	10 U	11 UJ	10 U	11 U
2-Butanone	UG/KG	11 U	11 U	10 U	11 UJ	10 U	11 U
1,1,1-Trichloroethane	UG/KG	11 U	11 U	10 U	11 UJ	10 UJ	11 U
Carbon Tetrachloride	UG/KG	11 U	11 U	10 U	11 UJ	10 UJ	11 UJ
Bromodichloromethane	UG/KG	11 U	11 U	10 U	11 UJ	10 UJ	11 U
1,2-Dichloropropane	UG/KG	11 U	11 U	10 U	11 UJ	10 UJ	11 U
cis-1,3-Dichloropropene	UG/KG	11 U	11 U	10 U	11 UJ	10 UJ	11 U
Trichloroethene	UG/KG	11 U	11 U	10 U	11 UJ	10 UJ	11 U
Dibromochloromethane	UG/KG	11 U	11 U	10 U	11 UJ	10 UJ	11 U
1,1,2-Trichloroethane	UG/KG	11 U	11 U	10 U	11 UJ	10 UJ	11 U
Benzene	UG/KG	11 U	11 U	10 U	11 UJ	10 UJ	11 U
trans-1,3-Dichloropropene	UG/KG	11 U	11 U	10 U	11 UJ	10 UJ	11 U
Bromoform	UG/KG	11 U	11 U	10 U	11 UJ	10 UJ	11 U
4-Methyl-2-Pentanone	UG/KG	11 UJ	11 U	10 U	11 UJ	10 UJ	11 UJ
2-Hexanone	UG/KG	11 UJ	11 U	10 U	11 UJ	10 UJ	11 UJ
Tetrachloroethene	UG/KG	11 UJ	11 U	10 U	11 UJ	10 UJ	11 UJ
1,1,2,2-Tetrachloroethane	UG/KG	11 UJ	11 U	10 U	11 UJ	10 UJ	11 UJ
Toluene	UG/KG	11 UJ	11 U	10 U	11 UJ	19 J	11 UJ
Chlorobenzene	UG/KG	11 UJ	11 U	10 U	11 UJ	10 UJ	11 UJ
Ethylbenzene	UG/KG	11 UJ	11 U	10 U	11 UJ	10 UJ	11 UJ
Styrene	UG/KG	11 UJ	11 U	10 UJ	11 UJ	10 UJ	11 UJ
Xylene (total)	UG/KG	11 UJ	11 U	10 U	11 UJ	10 UJ	11 UJ

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS01-00	35-SS02-00	35-SS03-00	35-SS04-00	35-SS05-00	35-SS06-00
Lab Sample ID:		5617-17	5617-19	5617-9	5617-10	4585-22	4585-21
Date Sampled:		17-MAY-1994	17-MAY-1994	18-MAY-1994	10-MAY-1994	29-APR-1994	29-APR-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
bis(2-Chloroethyl)ether	UG/KG	350 UJ	350 UJ	339 UJ	360 UJ	341 U	349 U
2-Chlorophenol	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
1,3-Dichlorobenzene	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
1,4-Dichlorobenzene	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
1,2-Dichlorobenzene	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
2-Methylphenol	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
2,2'-oxybis(1-Chloropropane)	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
4-Methylphenol	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
N-Nitroso-di-n-propylamine	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
Hexachloroethane	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
Nitrobenzene	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
Isophorone	UG/KG	350 UJ	350 UJ	339 UJ	360 UJ	341 U	349 U
2-Nitrophenol	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
2,4-Dimethylphenol	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
bis(2-Chloroethoxy)methane	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
2,4-Dichlorophenol	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
1,2,4-Trichlorobenzene	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
Naphthalene	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
4-Chloroaniline	UG/KG	350 UJ	350 UJ	339 UJ	360 UJ	341 UJ	349 UJ
Hexachlorobutadiene	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
4-Chloro-3-methylphenol	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
2-Methylnaphthalene	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
Hexachlorocyclopentadiene	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
2,4,6-Trichlorophenol	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
2,4,5-Trichlorophenol	UG/KG	849 U	847 U	821 U	873 U	826 U	846 U
2-Chloronaphthalene	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
2-Nitroaniline	UG/KG	849 U	847 U	821 U	873 U	826 U	846 U
Dimethylphthalate	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
Acenaphthylene	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
2,6-Dinitrotoluene	UG/KG	350 UJ	350 UJ	339 UJ	360 UJ	341 UJ	349 UJ
3-Nitroaniline	UG/KG	849 UJ	847 UJ	821 UJ	873 UJ	826 UJ	846 UJ
Acenaphthene	UG/KG	350 U	350 U	339 U	360 U	196 J	349 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS01-00	35-SS02-00	35-SS03-00	35-SS04-00	35-SS05-00	35-SS06-00
Lab Sample ID:		5617-17	5617-19	5617-9	5617-10	4585-22	4585-21
Date Sampled:		17-MAY-1994	17-MAY-1994	18-MAY-1994	10-MAY-1994	29-APR-1994	29-APR-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	849 UJ	847 UJ	821 UJ	873 UJ	826 UJ	846 UJ
Dibenzofuran	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
4-Nitrophenol	UG/KG	350 U	350 U	339 U	360 U	341 UJ	349 UJ
2,4-Dinitrotoluene	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
Diethylphthalate	UG/KG	350 UJ	350 UJ	339 UJ	360 UJ	341 U	349 U
Fluorene	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
4-Chlorophenyl-phenylether	UG/KG	350 U	350 U	339 U	360 U	341 U	349 U
4-Nitroaniline	UG/KG	849 UJ	847 UJ	821 UJ	873 UJ	826 UJ	846 UJ
4,6-Dinitro-2-methylphenol	UG/KG	849 UJ	847 UJ	821 UJ	873 UJ	826 U	846 U
N-Nitrosodiphenylamine	UG/KG	350 U	350 U	339 U	360 UJ	341 U	349 U
4-Bromophenyl-phenylether	UG/KG	350 U	350 U	339 U	360 UJ	341 U	349 U
Hexachlorobenzene	UG/KG	350 U	350 U	339 U	360 UJ	341 U	349 U
Pentachlorophenol	UG/KG	849 U	847 U	821 U	873 UJ	826 U	846 U
Phenanthrene	UG/KG	350 U	350 U	339 U	360 UJ	1186	349 U
Anthracene	UG/KG	350 U	350 U	339 U	360 UJ	341 U	349 U
Carbazole	UG/KG	350 UJ	350 UJ	339 UJ	360 UJ	183 J	349 U
Di-n-butylphthalate	UG/KG	350 U	350 U	339 U	360 UJ	341 U	349 U
Fluoranthene	UG/KG	350 U	350 U	339 U	360 UJ	1567	349 U
Pyrene	UG/KG	350 U	350 U	339 U	360 UJ	1173	349 U
Butylbenzylphthalate	UG/KG	350 U	350 U	339 U	360 UJ	341 U	349 U
Benzo(a)anthracene	UG/KG	350 U	350 U	339 U	360 UJ	566	349 U
3,3'-Dichlorobenzidine	UG/KG	350 U	350 U	339 U	360 UJ	341 UJ	349 UJ
Chrysene	UG/KG	350 U	350 U	339 U	360 UJ	683	349 U
bis(2-Ethylhexyl)phthalate	UG/KG	350 UJ	350 UJ	339 UJ	279 J	341 UJ	349 UJ
Di-n-octylphthalate	UG/KG	350 UJ	350 U	339 U	360 UJ	341 U	349 U
Benzo(b)fluoranthene	UG/KG	350 UJ	350 U	339 U	360 UJ	1186	349 U
Benzo(k)fluoranthene	UG/KG	350 UJ	350 U	339 U	360 UJ	341 U	349 U
Benzo(a)pyrene	UG/KG	350 UJ	350 U	339 U	360 UJ	625	349 U
Indeno(1,2,3-cd)pyrene	UG/KG	350 UJ	350 U	339 U	360 UJ	381	349 U
Dibenz(a,h)anthracene	UG/KG	350 UJ	350 U	339 U	360 UJ	184 J	349 U
Benzo(g,h,i)perylene	UG/KG	350 UJ	350 U	339 U	208 J	366	349 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS01-00	35-SS02-00	35-SS03-00	35-SS04-00	35-SS05-00	35-SS06-00
Lab Sample ID:		5617-17	5617-19	5617-9	5617-10	4585-22	4585-21
Date Sampled:		17-MAY-1994	17-MAY-1994	18-MAY-1994	10-MAY-1994	29-APR-1994	29-APR-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/KG	1.8 U	1.8 U	1.7 U	1.9 U	NA	NA
beta-BHC	UG/KG	1.8 U	1.8 U	1.7 U	0.53 J	NA	NA
delta-BHC	UG/KG	1.8 U	1.8 U	1.7 U	1.9 U	NA	NA
gamma-BHC (Lindane)	UG/KG	1.8 U	1.8 U	1.7 U	1.9 U	NA	NA
Heptachlor	UG/KG	1.8 U	1.8 U	1.7 U	1.9 U	NA	NA
Aldrin	UG/KG	1.8 U	1.8 U	1.7 U	1.9 U	NA	NA
Heptachlor epoxide	UG/KG	1.8 U	1.8 U	1.7 U	1.9 U	NA	NA
Endosulfan I	UG/KG	1.8 U	1.8 U	1.7 U	1.9 U	NA	NA
Dieldrin	UG/KG	3.5 U	3.5 U	0.35 J	2.9 J	NA	NA
4,4'-DDE	UG/KG	12	1.6 J	20	8.7	NA	NA
Endrin	UG/KG	1.8 U	1.8 U	1.7 U	7.9	NA	NA
Endosulfan II	UG/KG	3.5 U	3.5 U	3.4 U	2.9 J	NA	NA
4,4'-DDD	UG/KG	1.2 J	0.56 J	0.86 J	11	NA	NA
Endosulfan sulfate	UG/KG	3.5 U	3.5 U	3.4 U	3.6 U	NA	NA
4,4'-DDT	UG/KG	19	1.6 J	8.9	48	NA	NA
Methoxychlor	UG/KG	18 U	18 U	17 U	19 U	NA	NA
Endrin ketone	UG/KG	3.5 U	3.5 U	3.4 U	1.2 J	NA	NA
Endrin aldehyde	UG/KG	3.5 U	0.37 J	3.4 U	1.6 J	NA	NA
alpha-Chlordane	UG/KG	1.8 U	1.8 U	1.7 U	4.1	NA	NA
gamma-Chlordane	UG/KG	1.8 U	1.8 U	1.7 U	1.9 U	NA	NA
Toxaphene	UG/KG	180 U	180 U	174 U	186 U	NA	NA
Aroclor-1016	UG/KG	35 U	35 U	34 U	36 U	NA	NA
Aroclor-1221	UG/KG	71 U	71 U	69 U	73 U	NA	NA
Aroclor-1232	UG/KG	35 U	35 U	34 U	36 U	NA	NA
Aroclor-1242	UG/KG	35 U	35 U	34 U	36 U	NA	NA
Aroclor-1248	UG/KG	35 U	35 U	34 U	36 U	NA	NA
Aroclor-1254	UG/KG	35 U	35 U	34 U	36 U	NA	NA
Aroclor-1260	UG/KG	35 U	35 U	34 U	36 U	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS07-00	35-SS08-00	35-SS09-00	35-SS10-00	35-SS11-00	35-SS12-00
Lab Sample ID:		5617-8	4585-20	5617-16	5617-18	5617-6	5617-5
Date Sampled:		18-MAY-1994	29-APR-1994	18-MAY-1994	17-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
VOLATILES							
Chloromethane	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
Bromomethane	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
Vinyl Chloride	UG/KG	11 U	22 U	11 U	11 U	11 U	11 U
Chloroethane	UG/KG	11 U	22 U	11 U	11 U	11 U	11 U
Methylene Chloride	UG/KG	11 U	22 U	11 U	11 U	11 U	11 U
Acetone	UG/KG	11 UJ	22 UJ	11 UJ	11 U	11 UJ	11 UJ
Carbon Disulfide	UG/KG	33	22 U	37 R	11 U	11 U	39 R
1,1-Dichloroethene	UG/KG	33 R	22 U	11 U	11 U	11 U	11 U
1,1-Dichloroethane	UG/KG	11 U	22 U	11 U	11 U	11 U	11 U
1,2-Dichloroethene (total)	UG/KG	11 U	22 U	11 U	11 U	11 U	11 U
Chloroform	UG/KG	11 U	22 U	11 U	11 U	11 U	11 U
1,2-Dichloroethane	UG/KG	11 U	22 U	11 U	11 U	11 U	11 U
2-Butanone	UG/KG	11 U	22 UJ	11 U	11 U	11 UJ	11 U
1,1,1-Trichloroethane	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
Carbon Tetrachloride	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
Bromodichloromethane	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
1,2-Dichloropropane	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
cis-1,3-Dichloropropene	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
Trichloroethene	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
Dibromochloromethane	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
1,1,2-Trichloroethane	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
Benzene	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
trans-1,3-Dichloropropene	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
Bromoform	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
4-Methyl-2-Pentanone	UG/KG	11 U	22 UJ	11 U	11 U	11 UJ	11 U
2-Hexanone	UG/KG	11 U	22 UJ	11 U	11 U	11 UJ	11 U
Tetrachloroethene	UG/KG	11 U	22 U	11 UJ	11 U	11 UJ	11 U
1,1,2,2-Tetrachloroethane	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
Toluene	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
Chlorobenzene	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
Ethylbenzene	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U
Styrene	UG/KG	11 UJ	22 U	11 U	11 U	11 UJ	11 UJ
Xylene (total)	UG/KG	11 U	22 U	11 U	11 U	11 UJ	11 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS07-00	35-SS08-00	35-SS09-00	35-SS10-00	35-SS11-00	35-SS12-00
Lab Sample ID:		5617-8	4585-20	5617-16	5617-18	5617-6	5617-5
Date Sampled:		18-MAY-1994	29-APR-1994	18-MAY-1994	17-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	370 U	7350 UJ	3071	350 U	351 U	341 U
bis(2-Chloroethyl)ether	UG/KG	370 UJ	7350 UJ	350 U	350 UJ	351 UJ	341 UJ
2-Chlorophenol	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
1,3-Dichlorobenzene	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
1,4-Dichlorobenzene	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
1,2-Dichlorobenzene	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
2-Methylphenol	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
2,2'-oxybis(1-Chloropropane)	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
4-Methylphenol	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
N-Nitroso-di-n-propylamine	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
Hexachloroethane	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
Nitrobenzene	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
Isophorone	UG/KG	370 UJ	7350 UJ	350 UJ	350 UJ	351 UJ	341 UJ
2-Nitrophenol	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
2,4-Dimethylphenol	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
bis(2-Chloroethoxy)methane	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
2,4-Dichlorophenol	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
1,2,4-Trichlorobenzene	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
Naphthalene	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
4-Chloroaniline	UG/KG	370 UJ	7350 UJ	350 UJ	350 UJ	351 UJ	341 UJ
Hexachlorobutadiene	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
4-Chloro-3-methylphenol	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
2-Methylnaphthalene	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
Hexachlorocyclopentadiene	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
2,4,6-Trichlorophenol	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
2,4,5-Trichlorophenol	UG/KG	896 U	17820 UJ	849 U	847 U	850 U	826 U
2-Chloronaphthalene	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
2-Nitroaniline	UG/KG	896 U	17820 UJ	849 U	847 U	850 U	826 U
Dimethylphthalate	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
Acenaphthylene	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
2,6-Dinitrotoluene	UG/KG	370 UJ	7350 UJ	350 UJ	350 UJ	351 UJ	341 UJ
3-Nitroaniline	UG/KG	896 UJ	17820 UJ	849 UJ	847 UJ	850 UJ	826 UJ
Acenaphthene	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS07-00	35-SS08-00	35-SS09-00	35-SS10-00	35-SS11-00	35-SS12-00
Lab Sample ID:		5617-8	4585-20	5617-16	5617-18	5617-6	5617-5
Date Sampled:		18-MAY-1994	29-APR-1994	18-MAY-1994	17-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	896 UJ	17820 UJ	849 UJ	847 UJ	850 UJ	826 UJ
Dibenzofuran	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
4-Nitrophenol	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
2,4-Dinitrotoluene	UG/KG	370 U	7350 UJ	350 UJ	350 U	351 U	341 U
Diethylphthalate	UG/KG	370 UJ	7350 UJ	350 UJ	350 UJ	351 UJ	341 UJ
Fluorene	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
4-Chlorophenyl-phenylether	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
4-Nitroaniline	UG/KG	896 UJ	17820 UJ	849 U	847 UJ	850 UJ	826 UJ
4,6-Dinitro-2-methylphenol	UG/KG	896 UJ	17820 UJ	849 U	847 UJ	850 UJ	826 UJ
N-Nitrosodiphenylamine	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
4-Bromophenyl-phenylether	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
Hexachlorobenzene	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
Pentachlorophenol	UG/KG	896 U	17820 UJ	849 U	847 U	850 U	826 U
Phenanthrene	UG/KG	370 U	7350 UJ	350 U	350 U	191 J	341 U
Anthracene	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
Carbazole	UG/KG	370 UJ	7350 UJ	350 UJ	350 UJ	351 UJ	341 UJ
Di-n-butylphthalate	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
Fluoranthene	UG/KG	370 U	7350 UJ	350 U	350 U	423	341 U
Pyrene	UG/KG	370 U	7350 UJ	350 U	350 U	295 J	341 U
Butylbenzylphthalate	UG/KG	370 U	7350 UJ	350 U	350 U	295 J	341 U
Benzo(a)anthracene	UG/KG	370 U	7350 UJ	350 U	350 U	351 U	341 U
3,3'-Dichlorobenzidine	UG/KG	370 U	7350 UJ	350 UJ	350 U	351 U	341 U
Chrysene	UG/KG	370 U	7350 UJ	350 U	350 U	204 J	341 U
bis(2-Ethylhexyl)phthalate	UG/KG	370 UJ	7350 UJ	350 U	350 UJ	351 UJ	341 UJ
Di-n-octylphthalate	UG/KG	370 U	7350 UJ	350 U	350 UJ	351 U	341 U
Benzo(b)fluoranthene	UG/KG	370 U	7350 UJ	350 U	350 UJ	337 J	341 U
Benzo(k)fluoranthene	UG/KG	370 U	7350 UJ	350 U	350 UJ	351 U	341 U
Benzo(a)pyrene	UG/KG	370 U	7350 UJ	350 U	350 UJ	351 U	341 U
Indeno(1,2,3-cd)pyrene	UG/KG	370 U	7350 UJ	350 U	350 UJ	351 U	341 U
Dibenz(a,h)anthracene	UG/KG	370 U	7350 UJ	350 U	350 UJ	351 U	341 U
Benzo(g,h,i)perylene	UG/KG	370 U	7350 UJ	350 U	350 UJ	351 U	341 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS07-00	35-SS08-00	35-SS09-00	35-SS10-00	35-SS11-00	35-SS12-00
Lab Sample ID:		5617-8	4585-20	5617-16	5617-18	5617-6	5617-5
Date Sampled:		18-MAY-1994	29-APR-1994	18-MAY-1994	17-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/KG	1.9 U	NA	9.1 U	9 U	3.6 U	8.8 U
beta-BHC	UG/KG	1.9 U	NA	9.1 U	9 U	1.6 J	8.8 U
delta-BHC	UG/KG	1.9 U	NA	9.1 U	9 U	3.6 U	8.8 U
gamma-BHC (Lindane)	UG/KG	1.9 U	NA	9.1 U	9 U	3.6 U	8.8 U
Heptachlor	UG/KG	1.9 U	NA	9.1 U	9 U	3.6 U	8.8 U
Aldrin	UG/KG	2.3 U	NA	9.1 U	9 U	3.6 U	8.8 U
Heptachlor epoxide	UG/KG	1.9 U	NA	9.1 U	9 U	3.6 U	8.8 U
Endosulfan I	UG/KG	1.9 U	NA	9.1 U	9 U	3.6 U	8.8 U
Dieldrin	UG/KG	11	NA	18 U	18 U	7 U	17 U
4,4'-DDE	UG/KG	14	NA	261	204	125	127
Endrin	UG/KG	0.68 J	NA	2 J	9 U	3.6 U	8.8 U
Endosulfan II	UG/KG	0.42 J	NA	18 U	18 U	7 U	17 U
4,4'-DDD	UG/KG	2.5	NA	7.3 J	18	3.5 J	8.8 U
Endosulfan sulfate	UG/KG	3.8 U	NA	18 U	18 U	7 U	17 U
4,4'-DDT	UG/KG	3.2 J	NA	262	76	113	67
Methoxychlor	UG/KG	20 U	NA	91 U	90 U	36 U	88 U
Endrin ketone	UG/KG	3.8 U	NA	18 U	18 U	7 U	17 U
Endrin aldehyde	UG/KG	3.8 U	NA	18 U	18 U	7 U	17 U
alpha-Chlordane	UG/KG	1.9 U	NA	9.1 U	9 U	36	8.8 U
gamma-Chlordane	UG/KG	1.9 U	NA	9.1 U	9 U	27	8.8 U
Toxaphene	UG/KG	195 U	NA	910 U	900 U	361 U	880 U
Aroclor-1016	UG/KG	38 U	NA	177 U	175 U	70 U	171 U
Aroclor-1221	UG/KG	77 U	NA	359 U	355 U	142 U	347 U
Aroclor-1232	UG/KG	38 U	NA	177 U	175 U	70 U	171 U
Aroclor-1242	UG/KG	38 U	NA	177 U	175 U	70 U	171 U
Aroclor-1248	UG/KG	38 U	NA	177 U	175 U	70 U	171 U
Aroclor-1254	UG/KG	38 U	NA	177 U	175 U	70 U	171 U
Aroclor-1260	UG/KG	38 U	NA	177 U	175 U	70 U	171 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:	35-SS13-00
Lab Sample ID:	5617-20
Date Sampled:	18-MAY-1994

VOLATILES	UNITS	
Chloromethane	UG/KG	43 U
Bromomethane	UG/KG	43 U
Vinyl Chloride	UG/KG	43 U
Chloroethane	UG/KG	43 U
Methylene Chloride	UG/KG	43 U
Acetone	UG/KG	43 U
Carbon Disulfide	UG/KG	43 U
1,1-Dichloroethene	UG/KG	43 U
1,1-Dichloroethane	UG/KG	43 U
1,2-Dichloroethene (total)	UG/KG	43 U
Chloroform	UG/KG	43 U
1,2-Dichloroethane	UG/KG	43 U
2-Butanone	UG/KG	43 U
1,1,1-Trichloroethane	UG/KG	43 U
Carbon Tetrachloride	UG/KG	43 UJ
Bromodichloromethane	UG/KG	43 U
1,2-Dichloropropane	UG/KG	43 U
cis-1,3-Dichloropropene	UG/KG	43 U
Trichloroethene	UG/KG	43 U
Dibromochloromethane	UG/KG	43 U
1,1,2-Trichloroethane	UG/KG	43 U
Benzene	UG/KG	43 U
trans-1,3-Dichloropropene	UG/KG	43 U
Bromoform	UG/KG	43 U
4-Methyl-2-Pentanone	UG/KG	43 U
2-Hexanone	UG/KG	43 U
Tetrachloroethene	UG/KG	43 U
1,1,2,2-Tetrachloroethane	UG/KG	43 U
Toluene	UG/KG	43 U
Chlorobenzene	UG/KG	43 U
Ethylbenzene	UG/KG	43 U
Styrene	UG/KG	43 U
Xylene (total)	UG/KG	43

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:	35-SS13-00
Lab Sample ID:	5617-20
Date Sampled:	18-MAY-1994

SEMIVOLATILES	UNITS	
Phenol	UG/KG	1441 U
bis(2-Chloroethyl)ether	UG/KG	1441 U
2-Chlorophenol	UG/KG	1441 U
1,3-Dichlorobenzene	UG/KG	1441 U
1,4-Dichlorobenzene	UG/KG	1441 U
1,2-Dichlorobenzene	UG/KG	1441 U
2-Methylphenol	UG/KG	1441 U
2,2'-oxybis(1-Chloropropane)	UG/KG	1441 U
4-Methylphenol	UG/KG	1441 U
N-Nitroso-di-n-propylamine	UG/KG	1441 U
Hexachloroethane	UG/KG	1441 U
Nitrobenzene	UG/KG	1441 U
Isophorone	UG/KG	1441 U
2-Nitrophenol	UG/KG	1441 U
2,4-Dimethylphenol	UG/KG	1441 U
bis(2-Chloroethoxy)methane	UG/KG	1441 U
2,4-Dichlorophenol	UG/KG	1441 U
1,2,4-Trichlorobenzene	UG/KG	1441 UJ
Naphthalene	UG/KG	1441 U
4-Chloroaniline	UG/KG	1441 U
Hexachlorobutadiene	UG/KG	1441 U
4-Chloro-3-methylphenol	UG/KG	1441 U
2-Methylnaphthalene	UG/KG	1441 U
Hexachlorocyclopentadiene	UG/KG	1441 U
2,4,6-Trichlorophenol	UG/KG	1441 U
2,4,5-Trichlorophenol	UG/KG	3493 U
2-Chloronaphthalene	UG/KG	1441 U
2-Nitroaniline	UG/KG	3493 U
Dimethylphthalate	UG/KG	1441 U
Acenaphthylene	UG/KG	1441 U
2,6-Dinitrotoluene	UG/KG	1441 U
3-Nitroaniline	UG/KG	3493 U
Acenaphthene	UG/KG	1441 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:	35-SS13-00
Lab Sample ID:	5617-20
Date Sampled:	18-MAY-1994

	UNITS		
SEMIVOLATILES Cont.			
2,4-Dinitrophenol	UG/KG	3493	U
Dibenzofuran	UG/KG	1441	U
4-Nitrophenol	UG/KG	1441	U
2,4-Dinitrotoluene	UG/KG	1441	U
Diethylphthalate	UG/KG	1441	U
Fluorene	UG/KG	1441	U
4-Chlorophenyl-phenylether	UG/KG	1441	U
4-Nitroaniline	UG/KG	3493	U
4,6-Dinitro-2-methylphenol	UG/KG	3493	U
N-Nitrosodiphenylamine	UG/KG	1441	U
4-Bromophenyl-phenylether	UG/KG	1441	U
Hexachlorobenzene	UG/KG	1441	U
Pentachlorophenol	UG/KG	3493	U
Phenanthrene	UG/KG	1441	U
Anthracene	UG/KG	1441	U
Carbazole	UG/KG	1441	U
Di-n-butylphthalate	UG/KG	1441	U
Fluoranthene	UG/KG	1441	U
Pyrene	UG/KG	1441	U
Butylbenzylphthalate	UG/KG	1441	U
Benzo(a)anthracene	UG/KG	1441	U
3,3'-Dichlorobenzidine	UG/KG	1441	U
Chrysene	UG/KG	1441	U
bis(2-Ethylhexyl)phthalate	UG/KG	1441	U
Di-n-octylphthalate	UG/KG	1441	U
Benzo(b)fluoranthene	UG/KG	1441	U
Benzo(k)fluoranthene	UG/KG	1441	U
Benzo(a)pyrene	UG/KG	1441	U
Indeno(1,2,3-cd)pyrene	UG/KG	1441	U
Dibenz(a,h)anthracene	UG/KG	1441	U
Benzo(g,h,i)perylene	UG/KG	1441	U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS13-00
Lab Sample ID:		5617-20
Date Sampled:		18-MAY-1994
	UNITS	
PESTICIDE/PCBs		
alpha-BHC	UG/KG	75 U
beta-BHC	UG/KG	75 U
delta-BHC	UG/KG	75 U
gamma-BHC (Lindane)	UG/KG	75 U
Heptachlor	UG/KG	75 U
Aldrin	UG/KG	75 U
Heptachlor epoxide	UG/KG	75 U
Endosulfan I	UG/KG	75 U
Dieldrin	UG/KG	212
4,4'-DDE	UG/KG	1570
Endrin	UG/KG	75 U
Endosulfan II	UG/KG	146 U
4,4'-DDD	UG/KG	3240
Endosulfan sulfate	UG/KG	146 U
4,4'-DDT	UG/KG	154
Methoxychlor	UG/KG	750 U
Endrin ketone	UG/KG	146 U
Endrin aldehyde	UG/KG	146 U
alpha-Chlordane	UG/KG	75 U
gamma-Chlordane	UG/KG	75 U
Toxaphene	UG/KG	7520 U
Aroclor-1016	UG/KG	1460 U
Aroclor-1221	UG/KG	2960 U
Aroclor-1232	UG/KG	1460 U
Aroclor-1242	UG/KG	1460 U
Aroclor-1248	UG/KG	1460 U
Aroclor-1254	UG/KG	1460 U
Aroclor-1260	UG/KG	1460 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
VOLATILES							
Chloromethane	UG/KG	10 U	43 U	ND	ND		0/13
Bromomethane	UG/KG	10 U	43 U	ND	ND		0/13
Vinyl Chloride	UG/KG	10 U	43 U	ND	ND		0/13
Chloroethane	UG/KG	10 U	43 U	ND	ND		0/13
Methylene Chloride	UG/KG	10 U	43 U	ND	ND		0/13
Acetone	UG/KG	10 UJ	43 U	ND	ND		0/13
Carbon Disulfide	UG/KG	10 U	43 U	33	39 R	35-SS12-00	4/13
1,1-Dichloroethene	UG/KG	10 U	43 U	33 R	33 R	35-SS07-00	1/13
1,1-Dichloroethane	UG/KG	10 U	43 U	ND	ND		0/13
1,2-Dichloroethene (total)	UG/KG	10 U	43 U	ND	ND		0/13
Chloroform	UG/KG	10 U	43 U	ND	ND		0/13
1,2-Dichloroethane	UG/KG	10 U	43 U	ND	ND		0/13
2-Butanone	UG/KG	10 U	43 U	ND	ND		0/13
1,1,1-Trichloroethane	UG/KG	10 U	43 U	ND	ND		0/13
Carbon Tetrachloride	UG/KG	10 U	43 UJ	ND	ND		0/13
Bromodichloromethane	UG/KG	10 U	43 U	ND	ND		0/13
1,2-Dichloropropane	UG/KG	10 U	43 U	ND	ND		0/13
cis-1,3-Dichloropropene	UG/KG	10 U	43 U	ND	ND		0/13
Trichloroethene	UG/KG	10 U	43 U	ND	ND		0/13
Dibromochloromethane	UG/KG	10 U	43 U	ND	ND		0/13
1,1,2-Trichloroethane	UG/KG	10 U	43 U	ND	ND		0/13
Benzene	UG/KG	10 U	43 U	ND	ND		0/13
trans-1,3-Dichloropropene	UG/KG	10 U	43 U	ND	ND		0/13
Bromoform	UG/KG	10 U	43 U	ND	ND		0/13
4-Methyl-2-Pentanone	UG/KG	10 U	43 U	ND	ND		0/13
2-Hexanone	UG/KG	10 U	43 U	ND	ND		0/13
Tetrachloroethene	UG/KG	10 U	43 U	ND	ND		0/13
1,1,2,2-Tetrachloroethane	UG/KG	10 U	43 U	ND	ND		0/13
Toluene	UG/KG	10 U	43 U	19 J	19 J	35-SS05-00	1/13
Chlorobenzene	UG/KG	10 U	43 U	ND	ND		0/13
Ethylbenzene	UG/KG	10 U	43 U	ND	ND		0/13
Styrene	UG/KG	10 UJ	43 U	ND	ND		0/13
Xylene (total)	UG/KG	10 U	22 U	43	43	35-SS13-00	1/13

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES							
Phenol	UG/KG	339 U	7350 UJ	3071	3071	35-SS09-00	1/13
bis(2-Chloroethyl)ether	UG/KG	339 UJ	7350 UJ	ND	ND		0/13
2-Chlorophenol	UG/KG	339 U	7350 UJ	ND	ND		0/13
1,3-Dichlorobenzene	UG/KG	339 U	7350 UJ	ND	ND		0/13
1,4-Dichlorobenzene	UG/KG	339 U	7350 UJ	ND	ND		0/13
1,2-Dichlorobenzene	UG/KG	339 U	7350 UJ	ND	ND		0/13
2-Methylphenol	UG/KG	339 U	7350 UJ	ND	ND		0/13
2,2'-oxybis(1-Chloropropane)	UG/KG	339 U	7350 UJ	ND	ND		0/13
4-Methylphenol	UG/KG	339 U	7350 UJ	ND	ND		0/13
N-Nitroso-di-n-propylamine	UG/KG	339 U	7350 UJ	ND	ND		0/13
Hexachloroethane	UG/KG	339 U	7350 UJ	ND	ND		0/13
Nitrobenzene	UG/KG	339 U	7350 UJ	ND	ND		0/13
Isophorone	UG/KG	339 UJ	7350 UJ	ND	ND		0/13
2-Nitrophenol	UG/KG	339 U	7350 UJ	ND	ND		0/13
2,4-Dimethylphenol	UG/KG	339 U	7350 UJ	ND	ND		0/13
bis(2-Chloroethoxy)methane	UG/KG	339 U	7350 UJ	ND	ND		0/13
2,4-Dichlorophenol	UG/KG	339 U	7350 UJ	ND	ND		0/13
1,2,4-Trichlorobenzene	UG/KG	339 U	7350 UJ	ND	ND		0/13
Naphthalene	UG/KG	339 U	7350 UJ	ND	ND		0/13
4-Chloroaniline	UG/KG	339 UJ	7350 UJ	ND	ND		0/13
Hexachlorobutadiene	UG/KG	339 U	7350 UJ	ND	ND		0/13
4-Chloro-3-methylphenol	UG/KG	339 U	7350 UJ	ND	ND		0/13
2-Methylnaphthalene	UG/KG	339 U	7350 UJ	ND	ND		0/13
Hexachlorocyclopentadiene	UG/KG	339 U	7350 UJ	ND	ND		0/13
2,4,6-Trichlorophenol	UG/KG	339 U	7350 UJ	ND	ND		0/13
2,4,5-Trichlorophenol	UG/KG	821 U	17820 UJ	ND	ND		0/13
2-Chloronaphthalene	UG/KG	339 U	7350 UJ	ND	ND		0/13
2-Nitroaniline	UG/KG	821 U	17820 UJ	ND	ND		0/13
Dimethylphthalate	UG/KG	339 U	7350 UJ	ND	ND		0/13
Acenaphthylene	UG/KG	339 U	7350 UJ	ND	ND		0/13
2,6-Dinitrotoluene	UG/KG	339 UJ	7350 UJ	ND	ND		0/13
3-Nitroaniline	UG/KG	821 UJ	17820 UJ	ND	ND		0/13
Acenaphthene	UG/KG	339 U	7350 UJ	196 J	196 J	35-SS05-00	1/13

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	821 UJ	17820 UJ	ND	ND		0/13
Dibenzofuran	UG/KG	339 U	7350 UJ	ND	ND		0/13
4-Nitrophenol	UG/KG	339 U	7350 UJ	ND	ND		0/13
2,4-Dinitrotoluene	UG/KG	339 U	7350 UJ	ND	ND		0/13
Diethylphthalate	UG/KG	339 UJ	7350 UJ	ND	ND		0/13
Fluorene	UG/KG	339 U	7350 UJ	ND	ND		0/13
4-Chlorophenyl-phenylether	UG/KG	339 U	7350 UJ	ND	ND		0/13
4-Nitroaniline	UG/KG	821 UJ	17820 UJ	ND	ND		0/13
4,6-Dinitro-2-methylphenol	UG/KG	821 UJ	17820 UJ	ND	ND		0/13
N-Nitrosodiphenylamine	UG/KG	339 U	7350 UJ	ND	ND		0/13
4-Bromophenyl-phenylether	UG/KG	339 U	7350 UJ	ND	ND		0/13
Hexachlorobenzene	UG/KG	339 U	7350 UJ	ND	ND		0/13
Pentachlorophenol	UG/KG	821 U	17820 UJ	ND	ND		0/13
Phenanthrene	UG/KG	339 U	7350 UJ	191 J	1186	35-SS05-00	2/13
Anthracene	UG/KG	339 U	7350 UJ	ND	ND		0/13
Carbazole	UG/KG	339 UJ	7350 UJ	183 J	183 J	35-SS05-00	1/13
Di-n-butylphthalate	UG/KG	339 U	7350 UJ	ND	ND		0/13
Fluoranthene	UG/KG	339 U	7350 UJ	423	1567	35-SS05-00	2/13
Pyrene	UG/KG	339 U	7350 UJ	295 J	1173	35-SS05-00	2/13
Butylbenzylphthalate	UG/KG	339 U	7350 UJ	295 J	295 J	35-SS11-00	1/13
Benzo(a)anthracene	UG/KG	339 U	7350 UJ	566	566	35-SS05-00	1/13
3,3'-Dichlorobenzidine	UG/KG	339 U	7350 UJ	ND	ND		0/13
Chrysene	UG/KG	339 U	7350 UJ	204 J	683	35-SS05-00	2/13
bis(2-Ethylhexyl)phthalate	UG/KG	339 UJ	7350 UJ	279 J	279 J	35-SS04-00	1/13
Di-n-octylphthalate	UG/KG	339 U	7350 UJ	ND	ND		0/13
Benzo(b)fluoranthene	UG/KG	339 U	7350 UJ	337 J	1186	35-SS05-00	2/13
Benzo(k)fluoranthene	UG/KG	339 U	7350 UJ	ND	ND		0/13
Benzo(a)pyrene	UG/KG	339 U	7350 UJ	625	625	35-SS05-00	1/13
Indeno(1,2,3-cd)pyrene	UG/KG	339 U	7350 UJ	381	381	35-SS05-00	1/13
Dibenz(a,h)anthracene	UG/KG	339 U	7350 UJ	184 J	184 J	35-SS05-00	1/13
Benzo(g,h,i)perylene	UG/KG	339 U	7350 UJ	208 J	366	35-SS05-00	2/13

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:		MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/KG	1.7 U	75 U	ND	ND		0/10
beta-BHC	UG/KG	1.7 U	75 U	0.53 J	1.6 J	35-SS11-00	2/10
delta-BHC	UG/KG	1.7 U	75 U	ND	ND		0/10
gamma-BHC (Lindane)	UG/KG	1.7 U	75 U	ND	ND		0/10
Heptachlor	UG/KG	1.7 U	75 U	ND	ND		0/10
Aldrin	UG/KG	1.7 U	75 U	ND	ND		0/10
Heptachlor epoxide	UG/KG	1.7 U	75 U	ND	ND		0/10
Endosulfan I	UG/KG	1.7 U	75 U	ND	ND		0/10
Dieldrin	UG/KG	3.5 U	18 U	0.35 J	212	35-SS13-00	4/10
4,4'-DDE	UG/KG	NA	NA	1.6 J	1570	35-SS13-00	10/10
Endrin	UG/KG	1.7 U	75 U	0.68 J	7.9	35-SS04-00	3/10
Endosulfan II	UG/KG	3.4 U	146 U	0.42 J	2.9 J	35-SS04-00	2/10
4,4'-DDD	UG/KG	8.8 U	8.8 U	0.56 J	3240	35-SS13-00	9/10
Endosulfan sulfate	UG/KG	3.4 U	146 U	ND	ND		0/10
4,4'-DDT	UG/KG	NA	NA	1.6 J	262	35-SS09-00	10/10
Methoxychlor	UG/KG	17 U	750 U	ND	ND		0/10
Endrin ketone	UG/KG	3.4 U	146 U	1.2 J	1.2 J	35-SS04-00	1/10
Endrin aldehyde	UG/KG	3.4 U	146 U	0.37 J	1.6 J	35-SS04-00	2/10
alpha-Chlordane	UG/KG	1.7 U	75 U	4.1	36	35-SS11-00	2/10
gamma-Chlordane	UG/KG	1.7 U	75 U	27	27	35-SS11-00	1/10
Toxaphene	UG/KG	174 U	7520 U	ND	ND		0/10
Aroclor-1016	UG/KG	34 U	1460 U	ND	ND		0/10
Aroclor-1221	UG/KG	69 U	2960 U	ND	ND		0/10
Aroclor-1232	UG/KG	34 U	1460 U	ND	ND		0/10
Aroclor-1242	UG/KG	34 U	1460 U	ND	ND		0/10
Aroclor-1248	UG/KG	34 U	1460 U	ND	ND		0/10
Aroclor-1254	UG/KG	34 U	1460 U	ND	ND		0/10
Aroclor-1260	UG/KG	34 U	1460 U	ND	ND		0/10

APPENDIX U.2
SURFACE SOIL INORGANICS

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-SS01-00	35-SS02-00	35-SS03-00	35-SS04-00	35-SS05-00	35-SS06-00
Lab Sample ID:		5617-17	5617-19	5617-9	5617-10	4585-22	4585-21
Date Sampled:		17-MAY-1994	17-MAY-1994	18-MAY-1994	10-MAY-1994	29-APR-1994	29-APR-1994
	UNITS						
Aluminum	MG/KG	2220	2420	2390	2330	3550	6510
Antimony	MG/KG	4.9 UJ	4.9 UJ	4.7 UJ	8 J	7.5 R	10.5 R
Arsenic	MG/KG	0.13 UJ	0.44 J	0.32 J	0.13 UJ	0.74 J	0.89 J
Barium	MG/KG	15.6	6.2	7.9	79.5	13.5	13.6
Beryllium	MG/KG	0.11 U	0.11 U	0.1 U	0.11 U	0.1 U	0.12 R
Cadmium	MG/KG	0.04 J	0.06 J	0.14 J	15 J	0.52 R	0.53 R
Calcium	MG/KG	605 J	604 J	5420 J	27700 J	3030 J	1330 J
Chromium	MG/KG	1.9	1.9	2.9	98.1	5.1 U	8.6 J
Cobalt	MG/KG	1.2 U	1.2 U	1.9	4.3	1.1 U	1.2 U
Copper	MG/KG	3.9	2	2.6	43	4.1	2 U
Iron	MG/KG	1250	1670	2890	4400	1950 J	3470 J
Lead	MG/KG	7.2 J	7.3 J	10.7 J	71 J	67.6 J	13.2 J
Magnesium	MG/KG	71.6	58.7	212	675	241	255
Manganese	MG/KG	5.5	4.1	17.8	35.6	13.1 J	6.7 J
Mercury	MG/KG	0.13 R	0.11 R	0.24 R	0.23 R	0.05 R	0.05 R
Nickel	MG/KG	1.3	1.9	1.6	6.8	2.2 U	1.2 U
Potassium	MG/KG	259 U	258 U	251 U	4240 U	252 U	258 U
Selenium	MG/KG	0.15 UJ	0.15 UJ	0.14 UJ	0.15 UJ	0.14 UJ	0.15 UJ
Silver	MG/KG	0.32 U	0.32 U	0.31 U	0.33 U	0.02 U	0.02 U
Sodium	MG/KG	252 U	251 U	243 U	961 U	245 U	251 U
Thallium	MG/KG	0.06	0.08	0.07 J	0.07 U	0.12	0.14
Vanadium	MG/KG	3.6	3.6	5.3	14.2	6.1 J	12.5 J
Zinc	MG/KG	14.8 R	12.9 R	16.7 R	430	15.6 R	12.5 R

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-SS07-00	35-SS08-00	35-SS09-00	35-SS10-00	35-SS11-00	35-SS12-00
Lab Sample ID:		5617-8	4585-20	5617-16	5617-18	5617-6	5617-5
Date Sampled:		18-MAY-1994	29-APR-1994	18-MAY-1994	17-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
Aluminum	MG/KG	7870	3600	2570	3230	2400	2020
Antimony	MG/KG	7.4 J	10.2 R	4.9 UJ	4.9 UJ	4.9 UJ	4.8 UJ
Arsenic	MG/KG	0.5 J	66.1 J	0.29 J	0.78 J	0.55 J	0.39 J
Barium	MG/KG	15.4	20	8.9	17.8	9.8	8.7
Beryllium	MG/KG	0.22	0.22 U	0.11 U	0.11 U	0.11 U	0.1 U
Cadmium	MG/KG	0.16 J	1.1 R	0.79 J	0.18 J	0.4 J	0.26 J
Calcium	MG/KG	4680 J	621 J	13500 J	49500 J	5650 J	24000 J
Chromium	MG/KG	13	7.9 U	5.1	5.8	3.1	3.6
Cobalt	MG/KG	1.2 U	2.4 U	1.2 U	1.2 U	1.3	1.1 U
Copper	MG/KG	3.2 J	4	4.5	3.3	3.8	4.8
Iron	MG/KG	10000 J	29900 J	2200	2010	1740	1720
Lead	MG/KG	17.1 J	36.1 J	35.8 J	16.2 J	30.9 J	26.1 J
Magnesium	MG/KG	346	194	399	951	184	545
Manganese	MG/KG	6.6	32.9 J	12.5	11.1	11.3	13.9
Mercury	MG/KG	0.13 R	0.11 R	0.17 R	0.14 R	0.26 R	0.18 R
Nickel	MG/KG	2.4	2.4 U	2.8	2.2	1.5	2
Potassium	MG/KG	273 U	543 U	261 U	17100 U	259 U	2200 U
Selenium	MG/KG	0.16 UJ	0.94 J	0.15 UJ	0.15 UJ	0.15 UJ	0.14 UJ
Silver	MG/KG	0.34 U	0.04 U	0.32 U	0.32 U	0.32 U	0.31 U
Sodium	MG/KG	265 U	528 U	254 U	583 U	252 U	981 U
Thallium	MG/KG	0.2	0.53 J	0.07	0.08	0.1 J	0.06 U
Vanadium	MG/KG	18.8	15 J	6.1	7.1	5.1	4
Zinc	MG/KG	18.4 R	24.9 R	138	12.5 R	24.5 R	16.2 R

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:	35-SS13-00
Lab Sample ID:	5617-20
Date Sampled:	18-MAY-1994

	UNITS		
Aluminum	MG/KG	5160	
Antimony	MG/KG	20.1	UJ
Arsenic	MG/KG	0.79	J
Barium	MG/KG	86	
Beryllium	MG/KG	0.44	U
Cadmium	MG/KG	0.77	J
Calcium	MG/KG	7360	J
Chromium	MG/KG	9.7	
Cobalt	MG/KG	4.8	U
Copper	MG/KG	58.3	
Iron	MG/KG	8280	
Lead	MG/KG	43.2	J
Magnesium	MG/KG	883	
Manganese	MG/KG	66.7	
Mercury	MG/KG	0.7	R
Nickel	MG/KG	17.2	
Potassium	MG/KG	1070	U
Selenium	MG/KG	1.2	J
Silver	MG/KG	1.3	U
Sodium	MG/KG	1030	U
Thallium	MG/KG	0.48	
Vanadium	MG/KG	20.7	
Zinc	MG/KG	67.5	R

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID: Lab Sample ID: Date Sampled:		MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	UNITS						
Aluminum	MG/KG	NA	NA	2020	7870	35-SS07-00	13/13
Antimony	MG/KG	4.7 UJ	20.1 UJ	7.4 J	10.5 R	35-SS06-00	5/13
Arsenic	MG/KG	0.13 UJ	0.13 UJ	0.29 J	66.1 J	35-SS08-00	11/13
Barium	MG/KG	NA	NA	6.2	86	35-SS13-00	13/13
Beryllium	MG/KG	0.1 U	0.44 U	0.12 R	0.22	35-SS07-00	12/13
Cadmium	MG/KG	NA	NA	0.04 J	15 J	35-SS04-00	10/13
Calcium	MG/KG	NA	NA	604 J	49500 J	35-SS10-00	13/13
Chromium	MG/KG	5.1 U	7.9 U	1.9	98.1	35-SS04-00	11/13
Cobalt	MG/KG	1.1 U	4.8 U	1.3	4.3	35-SS04-00	3/13
Copper	MG/KG	2 U	2 U	2	58.3	35-SS13-00	12/13
Iron	MG/KG	NA	NA	1250	29900 J	35-SS08-00	13/13
Lead	MG/KG	NA	NA	7.2 J	71 J	35-SS04-00	13/13
Magnesium	MG/KG	NA	NA	58.7	951	35-SS10-00	13/13
Manganese	MG/KG	NA	NA	4.1	66.7	35-SS13-00	13/13
Mercury	MG/KG	NA	NA	0.05 R	0.7 R	35-SS13-00	13/13
Nickel	MG/KG	1.2 U	2.4 U	1.3	17.2	35-SS13-00	10/13
Potassium	MG/KG	251 U	17100 U	ND	ND		0/13
Selenium	MG/KG	0.14 UJ	0.16 UJ	0.94 J	1.2 J	35-SS13-00	2/13
Silver	MG/KG	0.02 U	1.3 U	ND	ND		0/13
Sodium	MG/KG	243 U	1030 U	ND	ND		0/13
Thallium	MG/KG	0.06 U	0.07 U	0.06	0.53 J	35-SS08-00	11/13
Vanadium	MG/KG	NA	NA	3.6	20.7	35-SS13-00	13/13
Zinc	MG/KG	NA	NA	12.5 R	430	35-SS04-00	13/13

APPENDIX U.3
SUBSURFACE SOIL ORGANICS

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-GWDS01-03	35-GWDS2-03	35-GWDS3-03	35-GWDS4-02	35-GWDS05-03	35-MW26BS-04
Lab Sample ID:		4585-15	5617-4	5617-2	5617-1	4585-17	5057-23
Date Sampled:		26-APR-1994	16-MAY-1994	16-MAY-1994	16-MAY-1994	28-APR-1994	13-MAY-1994
	UNITS						
VOLATILES							
Chloromethane	UG/KG	12 U	12 UJ	12 U	11 U	14 U	12 UJ
Bromomethane	UG/KG	12 U	12 UJ	12 UJ	11 UJ	14 U	12 UJ
Vinyl Chloride	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 U
Chloroethane	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 U
Methylene Chloride	UG/KG	12 U	7 J	12 U	11 UJ	14 U	12 U
Acetone	UG/KG	12 U	12 UJ	12 UJ	67 J	14 U	12 UJ
Carbon Disulfide	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 UJ
1,1-Dichloroethene	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 U
1,1-Dichloroethane	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 U
1,2-Dichloroethene (total)	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 U
Chloroform	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 U
1,2-Dichloroethane	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 U
2-Butanone	UG/KG	12 U	12 UJ	12 UJ	11 UJ	14 U	12 UJ
1,1,1-Trichloroethane	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 U
Carbon Tetrachloride	UG/KG	12 UJ	12 U	12 U	11 UJ	14 UJ	12 U
Bromodichloromethane	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 U
1,2-Dichloropropane	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 U
cis-1,3-Dichloropropene	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 U
Trichloroethene	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 U
Dibromochloromethane	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 U
1,1,2-Trichloroethane	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 U
Benzene	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 U
trans-1,3-Dichloropropene	UG/KG	12 U	12 U	12 U	11 UJ	14 U	12 U
Bromoform	UG/KG	12 U	12 U	12 UJ	11 UJ	14 U	12 U
4-Methyl-2-Pentanone	UG/KG	12 U	12 UJ	12 UJ	11 UJ	14 U	12 UJ
2-Hexanone	UG/KG	12 U	12 UJ	12 UJ	11 U	14 U	12 UJ
Tetrachloroethene	UG/KG	12 U	12 U	12 U	11 U	14 U	12 U
1,1,2,2-Tetrachloroethane	UG/KG	12 U	12 U	12 U	11 U	14 U	12 U
Toluene	UG/KG	12 U	12 U	12 U	11 U	14 U	12 U
Chlorobenzene	UG/KG	12 U	12 U	12 U	11 U	14 U	12 U
Ethylbenzene	UG/KG	12 U	12 U	12 U	11 U	14 U	12 U
Styrene	UG/KG	12 U	12 U	12 U	11 U	14 U	12 U
Xylene (total)	UG/KG	12 U	12 U	12 U	11 U	14 U	12 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-GWDS01-03	35-GWDS2-03	35-GWDS3-03	35-GWDS4-02	35-GWDS05-03	35-MW26BS-04
Lab Sample ID:		4585-15	5617-4	5617-2	5617-1	4585-17	5057-23
Date Sampled:		26-APR-1994	16-MAY-1994	16-MAY-1994	16-MAY-1994	28-APR-1994	13-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	392 U	398 U	382 U	371 U	443 UJ	NA
bis(2-Chloroethyl)ether	UG/KG	392 U	398 UJ	382 UJ	371 UJ	443 U	NA
2-Chlorophenol	UG/KG	392 U	398 U	382 U	371 U	443 UJ	NA
1,3-Dichlorobenzene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
1,4-Dichlorobenzene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
1,2-Dichlorobenzene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
2-Methylphenol	UG/KG	392 U	398 U	382 U	371 U	443 UJ	NA
2,2'-oxybis(1-Chloropropane)	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
4-Methylphenol	UG/KG	392 U	398 U	382 U	371 U	443 UJ	NA
N-Nitroso-di-n-propylamine	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
Hexachloroethane	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
Nitrobenzene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
Isophorone	UG/KG	392 U	398 UJ	382 UJ	371 UJ	443 U	NA
2-Nitrophenol	UG/KG	392 U	398 U	382 U	371 U	443 UJ	NA
2,4-Dimethylphenol	UG/KG	392 U	398 U	382 U	371 U	443 UJ	NA
bis(2-Chloroethoxy)methane	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
2,4-Dichlorophenol	UG/KG	392 U	398 U	382 U	371 U	443 UJ	NA
1,2,4-Trichlorobenzene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
Naphthalene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
4-Chloroaniline	UG/KG	392 UJ	398 UJ	382 UJ	371 UJ	443 UJ	NA
Hexachlorobutadiene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
4-Chloro-3-methylphenol	UG/KG	392 U	398 U	382 U	371 U	443 UJ	NA
2-Methylnaphthalene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
Hexachlorocyclopentadiene	UG/KG	392 U	398 U	382 U	371 UJ	443 U	NA
2,4,6-Trichlorophenol	UG/KG	392 U	398 U	382 U	371 UJ	443 UJ	NA
2,4,5-Trichlorophenol	UG/KG	951 U	964 U	925 U	899 U	1074 UJ	NA
2-Chloronaphthalene	UG/KG	392 U	398 U	382 U	371 UJ	443 U	NA
2-Nitroaniline	UG/KG	951 U	964 U	925 U	899 UJ	1074 U	NA
Dimethylphthalate	UG/KG	392 U	398 U	382 U	371 UJ	443 U	NA
Acenaphthylene	UG/KG	392 U	398 U	382 U	371 UJ	443 U	NA
2,6-Dinitrotoluene	UG/KG	392 UJ	398 UJ	382 UJ	371 UJ	443 UJ	NA
3-Nitroaniline	UG/KG	951 UJ	964 UJ	925 UJ	899 UJ	1074 UJ	NA
Acenaphthene	UG/KG	392 U	398 U	382 U	371 UJ	443 U	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-GWDS01-03	35-GWDS2-03	35-GWDS3-03	35-GWDS4-02	35-GWDS05-03	35-MW26BS-04
Lab Sample ID:		4585-15	5617-4	5617-2	5617-1	4585-17	5057-23
Date Sampled:		26-APR-1994	16-MAY-1994	16-MAY-1994	16-MAY-1994	28-APR-1994	13-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	951 UJ	964 UJ	925 UJ	899 UJ	1074 UJ	NA
Dibenzofuran	UG/KG	392 U	398 U	382 U	371 UJ	443 U	NA
4-Nitrophenol	UG/KG	392 UJ	398 U	382 U	371 UJ	443 UJ	NA
2,4-Dinitrotoluene	UG/KG	392 U	398 U	382 U	371 UJ	443 U	NA
Diethylphthalate	UG/KG	392 U	398 UJ	382 UJ	371 UJ	443 U	NA
Fluorene	UG/KG	392 U	398 U	382 U	371 UJ	443 U	NA
4-Chlorophenyl-phenylether	UG/KG	392 U	398 U	382 U	371 UJ	443 U	NA
4-Nitroaniline	UG/KG	951 UJ	964 UJ	925 UJ	899 UJ	1074 UJ	NA
4,6-Dinitro-2-methylphenol	UG/KG	951 U	964 UJ	925 UJ	899 UJ	1074 UJ	NA
N-Nitrosodiphenylamine	UG/KG	392 U	398 U	382 U	371 UJ	443 U	NA
4-Bromophenyl-phenylether	UG/KG	392 U	398 U	382 U	371 UJ	443 U	NA
Hexachlorobenzene	UG/KG	392 U	398 U	382 U	371 UJ	443 U	NA
Pentachlorophenol	UG/KG	951 U	964 U	925 U	899 UJ	1074 UJ	NA
Phenanthrene	UG/KG	392 U	398 U	382 U	371 UJ	443 U	NA
Anthracene	UG/KG	392 U	398 U	382 U	371 UJ	443 U	NA
Carbazole	UG/KG	392 U	398 UJ	382 UJ	371 UJ	443 U	NA
Di-n-butylphthalate	UG/KG	392 U	398 U	382 U	371 UJ	443 U	NA
Fluoranthene	UG/KG	392 U	398 U	382 U	371 UJ	443 U	NA
Pyrene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
Butylbenzylphthalate	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
Benzo(a)anthracene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
3,3'-Dichlorobenzidine	UG/KG	392 UJ	398 U	382 U	371 U	443 UJ	NA
Chrysene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
bis(2-Ethylhexyl)phthalate	UG/KG	392 UJ	398 UJ	382 UJ	371 UJ	443 UJ	NA
Di-n-octylphthalate	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
Benzo(b)fluoranthene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
Benzo(k)fluoranthene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
Benzo(a)pyrene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
Indeno(1,2,3-cd)pyrene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
Dibenz(a,h)anthracene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA
Benzo(g,h,i)perylene	UG/KG	392 U	398 U	382 U	371 U	443 U	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-MW29B-01	35-MW29B-03	35-MW30B-01	35-MW30BS-04	35-MW31-03	35-MW32BS-03
Lab Sample ID:		5057-19	4585-16	5057-17	5057-21	4585-25	5057-24
Date Sampled:		10-MAY-1994	26-APR-1994	10-MAY-1994	11-MAY-1994	30-APR-1994	14-MAY-1994
	UNITS						
VOLATILES							
Chloromethane	UG/KG	11 U	12 U	11 U	12 UJ	12 U	12 UJ
Bromomethane	UG/KG	11 U	12 U	11 U	12 UJ	12 U	12 UJ
Vinyl Chloride	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
Chloroethane	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
Methylene Chloride	UG/KG	11 U	12 U	11 U	7 J	12 U	12 U
Acetone	UG/KG	11 UJ	12 U	11 UJ	12 UJ	11 J	12 UJ
Carbon Disulfide	UG/KG	11 U	12 U	11 U	12 UJ	12 U	12 UJ
1,1-Dichloroethene	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
1,1-Dichloroethane	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
1,2-Dichloroethene (total)	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
Chloroform	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
1,2-Dichloroethane	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
2-Butanone	UG/KG	11 UJ	12 U	11 UJ	12 UJ	12 U	12 UJ
1,1,1-Trichloroethane	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
Carbon Tetrachloride	UG/KG	11 U	12 UJ	11 U	12 U	12 UJ	12 U
Bromodichloromethane	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
1,2-Dichloropropane	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
cis-1,3-Dichloropropene	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
Trichloroethene	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
Dibromochloromethane	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
1,1,2-Trichloroethane	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
Benzene	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
trans-1,3-Dichloropropene	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
Bromoform	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
4-Methyl-2-Pentanone	UG/KG	11 UJ	12 U	11 UJ	12 UJ	12 U	12 UJ
2-Hexanone	UG/KG	11 UJ	12 U	11 UJ	12 UJ	12 U	12 UJ
Tetrachloroethene	UG/KG	11 U	12 U	11 U	60	12 U	10
1,1,2,2-Tetrachloroethane	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
Toluene	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
Chlorobenzene	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
Ethylbenzene	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
Styrene	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U
Xylene (total)	UG/KG	11 U	12 U	11 U	12 U	12 U	12 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-MW29B-01	35-MW29B-03	35-MW30B-01	35-MW30BS-04	35-MW31-03	35-MW32BS-03
Lab Sample ID:		5057-19	4585-16	5057-17	5057-21	4585-25	5057-24
Date Sampled:		10-MAY-1994	26-APR-1994	10-MAY-1994	11-MAY-1994	30-APR-1994	14-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	372 U	NA	376 U	NA	NA	NA
bis(2-Chloroethyl)ether	UG/KG	372 UJ	NA	376 UJ	NA	NA	NA
2-Chlorophenol	UG/KG	372 U	NA	376 U	NA	NA	NA
1,3-Dichlorobenzene	UG/KG	372 U	NA	376 U	NA	NA	NA
1,4-Dichlorobenzene	UG/KG	372 U	NA	376 U	NA	NA	NA
1,2-Dichlorobenzene	UG/KG	372 U	NA	376 U	NA	NA	NA
2-Methylphenol	UG/KG	372 U	NA	376 U	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/KG	372 U	NA	376 U	NA	NA	NA
4-Methylphenol	UG/KG	372 U	NA	376 U	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	372 U	NA	376 U	NA	NA	NA
Hexachloroethane	UG/KG	372 U	NA	376 U	NA	NA	NA
Nitrobenzene	UG/KG	372 U	NA	376 U	NA	NA	NA
Isophorone	UG/KG	372 UJ	NA	376 UJ	NA	NA	NA
2-Nitrophenol	UG/KG	372 U	NA	376 U	NA	NA	NA
2,4-Dimethylphenol	UG/KG	372 U	NA	376 U	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/KG	372 U	NA	376 U	NA	NA	NA
2,4-Dichlorophenol	UG/KG	372 U	NA	376 U	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	372 U	NA	376 U	NA	NA	NA
Naphthalene	UG/KG	372 U	NA	376 U	NA	NA	NA
4-Chloroaniline	UG/KG	372 UJ	NA	376 UJ	NA	NA	NA
Hexachlorobutadiene	UG/KG	372 U	NA	376 U	NA	NA	NA
4-Chloro-3-methylphenol	UG/KG	372 U	NA	376 U	NA	NA	NA
2-Methylnaphthalene	UG/KG	372 U	NA	376 U	NA	NA	NA
Hexachlorocyclopentadiene	UG/KG	372 U	NA	376 U	NA	NA	NA
2,4,6-Trichlorophenol	UG/KG	372 U	NA	376 U	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	903 U	NA	911 U	NA	NA	NA
2-Chloronaphthalene	UG/KG	372 U	NA	376 U	NA	NA	NA
2-Nitroaniline	UG/KG	903 U	NA	911 U	NA	NA	NA
Dimethylphthalate	UG/KG	372 U	NA	376 U	NA	NA	NA
Acenaphthylene	UG/KG	372 U	NA	376 U	NA	NA	NA
2,6-Dinitrotoluene	UG/KG	372 UJ	NA	376 UJ	NA	NA	NA
3-Nitroaniline	UG/KG	903 UJ	NA	911 UJ	NA	NA	NA
Acenaphthene	UG/KG	372 U	NA	376 U	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-MW29B-01	35-MW29B-03	35-MW30B-01	35-MW30BS-04	35-MW31-03	35-MW32BS-03
Lab Sample ID:		5057-19	4585-16	5057-17	5057-21	4585-25	5057-24
Date Sampled:		10-MAY-1994	26-APR-1994	10-MAY-1994	11-MAY-1994	30-APR-1994	14-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	903 UJ	NA	911 UJ	NA	NA	NA
Dibenzofuran	UG/KG	372 U	NA	376 U	NA	NA	NA
4-Nitrophenol	UG/KG	372 U	NA	376 U	NA	NA	NA
2,4-Dinitrotoluene	UG/KG	372 U	NA	376 U	NA	NA	NA
Diethylphthalate	UG/KG	372 U	NA	376 U	NA	NA	NA
Fluorene	UG/KG	372 U	NA	376 U	NA	NA	NA
4-Chlorophenyl-phenylether	UG/KG	372 U	NA	376 U	NA	NA	NA
4-Nitroaniline	UG/KG	903 U	NA	911 U	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	903 U	NA	911 U	NA	NA	NA
N-Nitrosodiphenylamine	UG/KG	372 U	NA	376 U	NA	NA	NA
4-Bromophenyl-phenylether	UG/KG	372 U	NA	376 U	NA	NA	NA
Hexachlorobenzene	UG/KG	372 U	NA	376 U	NA	NA	NA
Pentachlorophenol	UG/KG	903 U	NA	911 U	NA	NA	NA
Phenanthrene	UG/KG	372 U	NA	376 U	NA	NA	NA
Anthracene	UG/KG	372 U	NA	376 U	NA	NA	NA
Carbazole	UG/KG	372 UJ	NA	376 UJ	NA	NA	NA
Di-n-butylphthalate	UG/KG	372 U	NA	376 U	NA	NA	NA
Fluoranthene	UG/KG	372 U	NA	376 U	NA	NA	NA
Pyrene	UG/KG	372 U	NA	376 U	NA	NA	NA
Butylbenzylphthalate	UG/KG	372 U	NA	376 U	NA	NA	NA
Benzo(a)anthracene	UG/KG	372 U	NA	376 U	NA	NA	NA
3,3'-Dichlorobenzidine	UG/KG	372 U	NA	376 U	NA	NA	NA
Chrysene	UG/KG	372 U	NA	376 U	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	372 U	NA	376 U	NA	NA	NA
Di-n-octylphthalate	UG/KG	372 U	NA	376 U	NA	NA	NA
Benzo(b)fluoranthene	UG/KG	372 U	NA	376 U	NA	NA	NA
Benzo(k)fluoranthene	UG/KG	372 U	NA	376 U	NA	NA	NA
Benzo(a)pyrene	UG/KG	372 U	NA	376 U	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/KG	372 U	NA	376 U	NA	NA	NA
Dibenz(a,h)anthracene	UG/KG	372 U	NA	376 U	NA	NA	NA
Benzo(g,h,i)perylene	UG/KG	372 U	NA	376 U	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-MW33BS-05	35-MW34B-03	35-MW35B-01	35-MW35-02	35-MW36B-03	35-MW37BS-03
Lab Sample ID:		5057-22	5057-14	5057-18	4565-26	5057-1	5057-26
Date Sampled:		11-MAY-1994	10-MAY-1994	10-MAY-1994	30-APR-1994	4-MAY-1994	15-MAY-1994
	UNITS						
VOLATILES							
Chloromethane	UG/KG	12 UJ	13 U	11 U	12 UJ	12 U	12 UJ
Bromomethane	UG/KG	12 UJ	13 U	11 U	12 U	12 U	12 UJ
Vinyl Chloride	UG/KG	12 U	13 U	11 U	12 U	12 U	12 U
Chloroethane	UG/KG	12 U	13 U	11 U	12 U	12 U	12 U
Methylene Chloride	UG/KG	7	13 U	11 U	12 U	12 U	7 J
Acetone	UG/KG	12 UJ	144 J	11 UJ	31	119 J	12 UJ
Carbon Disulfide	UG/KG	12 UJ	13 U	11 U	12 U	12 U	12 UJ
1,1-Dichloroethene	UG/KG	12 U	13 U	11 U	12 U	12 U	12 U
1,1-Dichloroethane	UG/KG	12 U	13 U	11 U	12 U	12 U	12 U
1,2-Dichloroethene (total)	UG/KG	12 U	13 U	11 U	12 U	12 U	12 U
Chloroform	UG/KG	12 U	13 U	11 U	12 U	12 U	12 U
1,2-Dichloroethane	UG/KG	12 U	13 U	11 U	12 U	12 U	12 U
2-Butanone	UG/KG	12 UJ	13 UJ	11 U	12 U	12 UJ	12 UJ
1,1,1-Trichloroethane	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U
Carbon Tetrachloride	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U
Bromodichloromethane	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U
1,2-Dichloropropane	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U
cis-1,3-Dichloropropene	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U
Trichloroethene	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U
Dibromochloromethane	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U
1,1,2-Trichloroethane	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U
Benzene	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U
trans-1,3-Dichloropropene	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U
Bromoform	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U
4-Methyl-2-Pentanone	UG/KG	12 UJ	13 UJ	11 UJ	12 UJ	12 UJ	12 UJ
2-Hexanone	UG/KG	12 UJ	13 UJ	11 UJ	12 UJ	12 UJ	12 UJ
Tetrachloroethene	UG/KG	8	13 U	11 U	12 UJ	12 U	23 J
1,1,2,2-Tetrachloroethane	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U
Toluene	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U
Chlorobenzene	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U
Ethylbenzene	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U
Styrene	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U
Xylene (total)	UG/KG	12 U	13 U	11 U	12 UJ	12 U	12 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-MW33BS-05	35-MW34B-03	35-MW35B-01	35-MW35-02	35-MW36B-03	35-MW37BS-03
Lab Sample ID:		5057-22	5057-14	5057-18	4585-26	5057-1	5057-26
Date Sampled:		11-MAY-1994	10-MAY-1994	10-MAY-1994	30-APR-1994	4-MAY-1994	15-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	NA	NA	373 U	NA	NA	NA
bis(2-Chloroethyl)ether	UG/KG	NA	NA	373 U	NA	NA	NA
2-Chlorophenol	UG/KG	NA	NA	373 U	NA	NA	NA
1,3-Dichlorobenzene	UG/KG	NA	NA	373 U	NA	NA	NA
1,4-Dichlorobenzene	UG/KG	NA	NA	373 U	NA	NA	NA
1,2-Dichlorobenzene	UG/KG	NA	NA	373 U	NA	NA	NA
2-Methylphenol	UG/KG	NA	NA	373 U	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/KG	NA	NA	373 U	NA	NA	NA
4-Methylphenol	UG/KG	NA	NA	373 U	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	NA	NA	373 U	NA	NA	NA
Hexachloroethane	UG/KG	NA	NA	373 U	NA	NA	NA
Nitrobenzene	UG/KG	NA	NA	373 U	NA	NA	NA
Isophorone	UG/KG	NA	NA	373 U	NA	NA	NA
2-Nitrophenol	UG/KG	NA	NA	373 U	NA	NA	NA
2,4-Dimethylphenol	UG/KG	NA	NA	373 U	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/KG	NA	NA	373 U	NA	NA	NA
2,4-Dichlorophenol	UG/KG	NA	NA	373 U	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	NA	NA	373 U	NA	NA	NA
Naphthalene	UG/KG	NA	NA	373 U	NA	NA	NA
4-Chloroaniline	UG/KG	NA	NA	373 U	NA	NA	NA
Hexachlorobutadiene	UG/KG	NA	NA	373 U	NA	NA	NA
4-Chloro-3-methylphenol	UG/KG	NA	NA	373 U	NA	NA	NA
2-Methylnaphthalene	UG/KG	NA	NA	373 U	NA	NA	NA
Hexachlorocyclopentadiene	UG/KG	NA	NA	373 U	NA	NA	NA
2,4,6-Trichlorophenol	UG/KG	NA	NA	373 U	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	NA	NA	905 U	NA	NA	NA
2-Chloronaphthalene	UG/KG	NA	NA	373 U	NA	NA	NA
2-Nitroaniline	UG/KG	NA	NA	905 U	NA	NA	NA
Dimethylphthalate	UG/KG	NA	NA	373 U	NA	NA	NA
Acenaphthylene	UG/KG	NA	NA	373 U	NA	NA	NA
2,6-Dinitrotoluene	UG/KG	NA	NA	373 U	NA	NA	NA
3-Nitroaniline	UG/KG	NA	NA	905 U	NA	NA	NA
Acenaphthene	UG/KG	NA	NA	373 U	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-MW33BS-05	35-MW34B-03	35-MW35B-01	35-MW35-02	35-MW36B-03	35-MW37BS-03
Lab Sample ID:		5057-22	5057-14	5057-18	4585-26	5057-1	5057-26
Date Sampled:		11-MAY-1994	10-MAY-1994	10-MAY-1994	30-APR-1994	4-MAY-1994	15-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	NA	NA	905 U	NA	NA	NA
Dibenzofuran	UG/KG	NA	NA	373 U	NA	NA	NA
4-Nitrophenol	UG/KG	NA	NA	373 U	NA	NA	NA
2,4-Dinitrotoluene	UG/KG	NA	NA	373 U	NA	NA	NA
Diethylphthalate	UG/KG	NA	NA	373 U	NA	NA	NA
Fluorene	UG/KG	NA	NA	373 U	NA	NA	NA
4-Chlorophenyl-phenylether	UG/KG	NA	NA	373 U	NA	NA	NA
4-Nitroaniline	UG/KG	NA	NA	905 U	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	NA	NA	905 U	NA	NA	NA
N-Nitrosodiphenylamine	UG/KG	NA	NA	373 U	NA	NA	NA
4-Bromophenyl-phenylether	UG/KG	NA	NA	373 U	NA	NA	NA
Hexachlorobenzene	UG/KG	NA	NA	373 U	NA	NA	NA
Pentachlorophenol	UG/KG	NA	NA	905 U	NA	NA	NA
Phenanthrene	UG/KG	NA	NA	373 U	NA	NA	NA
Anthracene	UG/KG	NA	NA	373 U	NA	NA	NA
Carbazole	UG/KG	NA	NA	373 U	NA	NA	NA
Di-n-butylphthalate	UG/KG	NA	NA	373 U	NA	NA	NA
Fluoranthene	UG/KG	NA	NA	373 U	NA	NA	NA
Pyrene	UG/KG	NA	NA	283 J	NA	NA	NA
Butylbenzylphthalate	UG/KG	NA	NA	373 U	NA	NA	NA
Benzo(a)anthracene	UG/KG	NA	NA	373 U	NA	NA	NA
3,3'-Dichlorobenzidine	UG/KG	NA	NA	373 U	NA	NA	NA
Chrysene	UG/KG	NA	NA	373 U	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	NA	NA	373 U	NA	NA	NA
Di-n-octylphthalate	UG/KG	NA	NA	373 U	NA	NA	NA
Benzo(b)fluoranthene	UG/KG	NA	NA	425	NA	NA	NA
Benzo(k)fluoranthene	UG/KG	NA	NA	373 U	NA	NA	NA
Benzo(a)pyrene	UG/KG	NA	NA	373 U	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/KG	NA	NA	373 U	NA	NA	NA
Dibenz(a,h)anthracene	UG/KG	NA	NA	373 U	NA	NA	NA
Benzo(g,h,i)perylene	UG/KG	NA	NA	373 U	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:	35-MW38BS-03
Lab Sample ID:	5057-25
Date Sampled:	16-MAY-1994

VOLATILES	UNITS	
Chloromethane	UG/KG	12 UJ
Bromomethane	UG/KG	12 UJ
Vinyl Chloride	UG/KG	12 U
Chloroethane	UG/KG	12 U
Methylene Chloride	UG/KG	7 J
Acetone	UG/KG	12 UJ
Carbon Disulfide	UG/KG	12 UJ
1,1-Dichloroethene	UG/KG	12 U
1,1-Dichloroethane	UG/KG	12 U
1,2-Dichloroethene (total)	UG/KG	12 U
Chloroform	UG/KG	12 U
1,2-Dichloroethane	UG/KG	12 U
2-Butanone	UG/KG	12 UJ
1,1,1-Trichloroethane	UG/KG	12 U
Carbon Tetrachloride	UG/KG	12 U
Bromodichloromethane	UG/KG	12 U
1,2-Dichloropropane	UG/KG	12 U
cis-1,3-Dichloropropene	UG/KG	12 U
Trichloroethene	UG/KG	12 U
Dibromochloromethane	UG/KG	12 U
1,1,2-Trichloroethane	UG/KG	12 U
Benzene	UG/KG	12 U
trans-1,3-Dichloropropene	UG/KG	12 U
Bromoform	UG/KG	12 U
4-Methyl-2-Pentanone	UG/KG	12 UJ
2-Hexanone	UG/KG	12 UJ
Tetrachloroethene	UG/KG	12 U
1,1,2,2-Tetrachloroethane	UG/KG	12 U
Toluene	UG/KG	12 U
Chlorobenzene	UG/KG	12 U
Ethylbenzene	UG/KG	12 U
Styrene	UG/KG	12 U
Xylene (total)	UG/KG	12 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:	35-MW38BS-03
Lab Sample ID:	5057-25
Date Sampled:	16-MAY-1994

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

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:	35-MW38BS-03
Lab Sample ID:	5057-25
Date Sampled:	16-MAY-1994

	UNITS	
SEMIVOLATILES Cont.		
2,4-Dinitrophenol	UG/KG	NA
Dibenzofuran	UG/KG	NA
4-Nitrophenol	UG/KG	NA
2,4-Dinitrotoluene	UG/KG	NA
Diethylphthalate	UG/KG	NA
Fluorene	UG/KG	NA
4-Chlorophenyl-phenylether	UG/KG	NA
4-Nitroaniline	UG/KG	NA
4,6-Dinitro-2-methylphenol	UG/KG	NA
N-Nitrosodiphenylamine	UG/KG	NA
4-Bromophenyl-phenylether	UG/KG	NA
Hexachlorobenzene	UG/KG	NA
Pentachlorophenol	UG/KG	NA
Phenanthrene	UG/KG	NA
Anthracene	UG/KG	NA
Carbazole	UG/KG	NA
Di-n-butylphthalate	UG/KG	NA
Fluoranthene	UG/KG	NA
Pyrene	UG/KG	NA
Butylbenzylphthalate	UG/KG	NA
Benzo(a)anthracene	UG/KG	NA
3,3'-Dichlorobenzidine	UG/KG	NA
Chrysene	UG/KG	NA
bis(2-Ethylhexyl)phthalate	UG/KG	NA
Di-n-octylphthalate	UG/KG	NA
Benzo(b)fluoranthene	UG/KG	NA
Benzo(k)fluoranthene	UG/KG	NA
Benzo(a)pyrene	UG/KG	NA
Indeno(1,2,3-cd)pyrene	UG/KG	NA
Dibenz(a,h)anthracene	UG/KG	NA
Benzo(g,h,i)perylene	UG/KG	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
VOLATILES							
Chloromethane	UG/KG	11 U	14 U	ND	ND		0/19
Bromomethane	UG/KG	11 UJ	14 U	ND	ND		0/19
Vinyl Chloride	UG/KG	11 UJ	14 U	ND	ND		0/19
Chloroethane	UG/KG	11 UJ	14 U	ND	ND		0/19
Methylene Chloride	UG/KG	11 UJ	14 U	7 J	7 J	35-MW38BS-03	5/19
Acetone	UG/KG	11 UJ	14 U	11 J	144 J	35-MW34B-03	5/19
Carbon Disulfide	UG/KG	11 UJ	14 U	ND	ND		0/19
1,1-Dichloroethene	UG/KG	11 UJ	14 U	ND	ND		0/19
1,1-Dichloroethane	UG/KG	11 UJ	14 U	ND	ND		0/19
1,2-Dichloroethene (total)	UG/KG	11 UJ	14 U	ND	ND		0/19
Chloroform	UG/KG	11 UJ	14 U	ND	ND		0/19
1,2-Dichloroethane	UG/KG	11 UJ	14 U	ND	ND		0/19
2-Butanone	UG/KG	11 UJ	14 U	ND	ND		0/19
1,1,1-Trichloroethane	UG/KG	11 UJ	14 U	ND	ND		0/19
Carbon Tetrachloride	UG/KG	11 UJ	14 UJ	ND	ND		0/19
Bromodichloromethane	UG/KG	11 UJ	14 U	ND	ND		0/19
1,2-Dichloropropane	UG/KG	11 UJ	14 U	ND	ND		0/19
cis-1,3-Dichloropropene	UG/KG	11 UJ	14 U	ND	ND		0/19
Trichloroethene	UG/KG	11 UJ	14 U	ND	ND		0/19
Dibromochloromethane	UG/KG	11 UJ	14 U	ND	ND		0/19
1,1,2-Trichloroethane	UG/KG	11 UJ	14 U	ND	ND		0/19
Benzene	UG/KG	11 UJ	14 U	ND	ND		0/19
trans-1,3-Dichloropropene	UG/KG	11 UJ	14 U	ND	ND		0/19
Bromoform	UG/KG	11 UJ	14 U	ND	ND		0/19
4-Methyl-2-Pentanone	UG/KG	11 UJ	14 U	ND	ND		0/19
2-Hexanone	UG/KG	11 U	14 U	ND	ND		0/19
Tetrachloroethene	UG/KG	11 U	14 U	8	60	35-MW30BS-04	4/19
1,1,2,2-Tetrachloroethane	UG/KG	11 U	14 U	ND	ND		0/19
Toluene	UG/KG	11 U	14 U	ND	ND		0/19
Chlorobenzene	UG/KG	11 U	14 U	ND	ND		0/19
Ethylbenzene	UG/KG	11 U	14 U	ND	ND		0/19
Styrene	UG/KG	11 U	14 U	ND	ND		0/19
Xylene (total)	UG/KG	11 U	14 U	ND	ND		0/19

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES							
Phenol	UG/KG	371 U	443 UJ	ND	ND		0/8
bis(2-Chloroethyl)ether	UG/KG	371 UJ	443 U	ND	ND		0/8
2-Chlorophenol	UG/KG	371 U	443 UJ	ND	ND		0/8
1,3-Dichlorobenzene	UG/KG	371 U	443 U	ND	ND		0/8
1,4-Dichlorobenzene	UG/KG	371 U	443 U	ND	ND		0/8
1,2-Dichlorobenzene	UG/KG	371 U	443 U	ND	ND		0/8
2-Methylphenol	UG/KG	371 U	443 UJ	ND	ND		0/8
2,2'-oxybis(1-Chloropropane)	UG/KG	371 U	443 U	ND	ND		0/8
4-Methylphenol	UG/KG	371 U	443 UJ	ND	ND		0/8
N-Nitroso-di-n-propylamine	UG/KG	371 U	443 U	ND	ND		0/8
Hexachloroethane	UG/KG	371 U	443 U	ND	ND		0/8
Nitrobenzene	UG/KG	371 U	443 U	ND	ND		0/8
Isophorone	UG/KG	371 UJ	443 U	ND	ND		0/8
2-Nitrophenol	UG/KG	371 U	443 UJ	ND	ND		0/8
2,4-Dimethylphenol	UG/KG	371 U	443 UJ	ND	ND		0/8
bis(2-Chloroethoxy)methane	UG/KG	371 U	443 U	ND	ND		0/8
2,4-Dichlorophenol	UG/KG	371 U	443 UJ	ND	ND		0/8
1,2,4-Trichlorobenzene	UG/KG	371 U	443 U	ND	ND		0/8
Naphthalene	UG/KG	371 U	443 U	ND	ND		0/8
4-Chloroaniline	UG/KG	371 UJ	443 UJ	ND	ND		0/8
Hexachlorobutadiene	UG/KG	371 U	443 U	ND	ND		0/8
4-Chloro-3-methylphenol	UG/KG	371 U	443 UJ	ND	ND		0/8
2-Methylnaphthalene	UG/KG	371 U	443 U	ND	ND		0/8
Hexachlorocyclopentadiene	UG/KG	371 UJ	443 U	ND	ND		0/8
2,4,6-Trichlorophenol	UG/KG	371 UJ	443 UJ	ND	ND		0/8
2,4,5-Trichlorophenol	UG/KG	899 U	1074 UJ	ND	ND		0/8
2-Chloronaphthalene	UG/KG	371 UJ	443 U	ND	ND		0/8
2-Nitroaniline	UG/KG	899 UJ	1074 U	ND	ND		0/8
Dimethylphthalate	UG/KG	371 UJ	443 U	ND	ND		0/8
Acenaphthylene	UG/KG	371 UJ	443 U	ND	ND		0/8
2,6-Dinitrotoluene	UG/KG	371 UJ	443 UJ	ND	ND		0/8
3-Nitroaniline	UG/KG	899 UJ	1074 UJ	ND	ND		0/8
Acenaphthene	UG/KG	371 UJ	443 U	ND	ND		0/8

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	899 UJ	1074 UJ	ND	ND		0/8
Dibenzofuran	UG/KG	371 UJ	443 U	ND	ND		0/8
4-Nitrophenol	UG/KG	371 UJ	443 UJ	ND	ND		0/8
2,4-Dinitrotoluene	UG/KG	371 UJ	443 U	ND	ND		0/8
Diethylphthalate	UG/KG	371 UJ	443 U	ND	ND		0/8
Fluorene	UG/KG	371 UJ	443 U	ND	ND		0/8
4-Chlorophenyl-phenylether	UG/KG	371 UJ	443 U	ND	ND		0/8
4-Nitroaniline	UG/KG	899 UJ	1074 UJ	ND	ND		0/8
4,6-Dinitro-2-methylphenol	UG/KG	899 UJ	1074 UJ	ND	ND		0/8
N-Nitrosodiphenylamine	UG/KG	371 UJ	443 U	ND	ND		0/8
4-Bromophenyl-phenylether	UG/KG	371 UJ	443 U	ND	ND		0/8
Hexachlorobenzene	UG/KG	371 UJ	443 U	ND	ND		0/8
Pentachlorophenol	UG/KG	899 UJ	1074 UJ	ND	ND		0/8
Phenanthrene	UG/KG	371 UJ	443 U	ND	ND		0/8
Anthracene	UG/KG	371 UJ	443 U	ND	ND		0/8
Carbazole	UG/KG	371 UJ	443 U	ND	ND		0/8
Di-n-butylphthalate	UG/KG	371 UJ	443 U	ND	ND		0/8
Fluoranthene	UG/KG	371 UJ	443 U	ND	ND		0/8
Pyrene	UG/KG	371 U	443 U	283 J	283 J	35-MW35B-01	1/8
Butylbenzylphthalate	UG/KG	371 U	443 U	ND	ND		0/8
Benzo(a)anthracene	UG/KG	371 U	443 U	ND	ND		0/8
3,3'-Dichlorobenzidine	UG/KG	371 U	443 UJ	ND	ND		0/8
Chrysene	UG/KG	371 U	443 U	ND	ND		0/8
bis(2-Ethylhexyl)phthalate	UG/KG	371 UJ	443 UJ	ND	ND		0/8
Di-n-octylphthalate	UG/KG	371 U	443 U	ND	ND		0/8
Benzo(b)fluoranthene	UG/KG	371 U	443 U	425	425	35-MW35B-01	1/8
Benzo(k)fluoranthene	UG/KG	371 U	443 U	ND	ND		0/8
Benzo(a)pyrene	UG/KG	371 U	443 U	ND	ND		0/8
Indeno(1,2,3-cd)pyrene	UG/KG	371 U	443 U	ND	ND		0/8
Dibenz(a,h)anthracene	UG/KG	371 U	443 U	ND	ND		0/8
Benzo(g,h,i)perylene	UG/KG	371 U	443 U	ND	ND		0/8

APPENDIX U.4
SUBSURFACE SOIL INORGANICS

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-GWDS01-03	35-GWDS2-03	35-GWDS3-03	35-GWDS4-02	35-GWDS05-03	35-MW29B-01
Lab Sample ID:		4585-15	5617-4	5617-2	5617-1	4585-17	5057-19
Date Sampled:		26-APR-1994	16-MAY-1994	16-MAY-1994	16-MAY-1994	28-APR-1994	10-MAY-1994
	UNITS						
Aluminum	MG/KG	2910	6190	3070	5650	6210	2860 J
Antimony	MG/KG	5.5 R	5.6 UJ	5.3 UJ	5.1 UJ	6.7 R	5.2 UJ
Arsenic	MG/KG	0.24 UJ	0.19 J	0.39	1.2 J	2.7 J	0.68 J
Barium	MG/KG	5.5	10.7	4.8	25	15.8	8.6 J
Beryllium	MG/KG	0.12 U	0.12 U	0.12 U	0.11 U	0.13 U	0.11 U
Cadmium	MG/KG	0.59 R	0.49 J	0.13 J	0.03 J	0.67 R	0.07 J
Calcium	MG/KG	456 J	664 J	197 U	189 U	1040 J	1990 J
Chromium	MG/KG	4.4 U	5.9	3.1	10	14.4 J	3.6
Cobalt	MG/KG	1.3 U	1.4	1.3 U	1.2 U	1.5 U	1.2 U
Copper	MG/KG	1.1 U	2.7	1.9	2.3	2.2 U	2.9
Iron	MG/KG	442 J	2560	1110	4030	10500 J	1390
Lead	MG/KG	8.1 J	15.4 J	4 J	6.5 J	16.7 J	144
Magnesium	MG/KG	63.5	149	93.3	217	403	188
Manganese	MG/KG	5.6 J	6.4	1.5	3.2	3.8 J	7.1
Mercury	MG/KG	0.06 R	0.16 R	0.18 R	0.16 R	0.07 R	0.16 R
Nickel	MG/KG	2.1 U	1.4	1.5	2	1.7 U	1.2 U
Potassium	MG/KG	290 U	295 U	282 U	271 U	562	275 U
Selenium	MG/KG	0.17 UJ	0.17 UJ	0.16 UJ	0.23 J	0.67 J	0.17 J
Silver	MG/KG	0.39 J	0.36 U	0.35 U	0.33 U	0.03 U	0.34 U
Sodium	MG/KG	282 U	287 U	274 U	264 U	318 U	267 U
Thallium	MG/KG	0.12 U	0.1	0.07 U	2.1	0.51	0.11 U
Vanadium	MG/KG	3 J	7.6	4.4	13.2	19.9 J	5.5
Zinc	MG/KG	5.2 R	4.9 R	3.2 R	5.8 R	9 R	16.3

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-MW30B-01	35-MW35B-01
Lab Sample ID:		5057-17	5057-18
Date Sampled:		10-MAY-1994	10-MAY-1994
	UNITS		
Aluminum	MG/KG	3510 J	1870 J
Antimony	MG/KG	5.2 UJ	5.2 UJ
Arsenic	MG/KG	0.82 J	0.4 J
Barium	MG/KG	12.5 J	5.4 J
Beryllium	MG/KG	0.11 U	0.11 U
Cadmium	MG/KG	0.09 J	0.04 J
Calcium	MG/KG	2420 J	361 J
Chromium	MG/KG	4	3.4
Cobalt	MG/KG	1.3 U	1.2 U
Copper	MG/KG	8.5	1.2
Iron	MG/KG	1850	1170
Lead	MG/KG	11	10
Magnesium	MG/KG	200	58.3 U
Manganese	MG/KG	7.5	3.2
Mercury	MG/KG	0.14 R	0.14 R
Nickel	MG/KG	1.3 U	1.2
Potassium	MG/KG	278 U	276 U
Selenium	MG/KG	0.28 J	0.16 UJ
Silver	MG/KG	0.34 U	0.34 U
Sodium	MG/KG	270 U	268 U
Thallium	MG/KG	0.15	0.11 U
Vanadium	MG/KG	5.5	4.4
Zinc	MG/KG	10.8 U	6.3 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	MG/KG	NA	NA	1870 J	6210	35-GWDS05-03	8/8
Antimony	MG/KG	5.1 UJ	5.6 UJ	5.5 R	6.7 R	35-GWDS05-03	2/8
Arsenic	MG/KG	0.24 UJ	0.24 UJ	0.19 J	2.7 J	35-GWDS05-03	7/8
Barium	MG/KG	NA	NA	4.8	25	35-GWDS4-02	8/8
Beryllium	MG/KG	0.11 U	0.13 U	ND	ND		0/8
Cadmium	MG/KG	NA	NA	0.03 J	0.67 R	35-GWDS05-03	8/8
Calcium	MG/KG	189 U	197 U	361 J	2420 J	35-MW30B-01	6/8
Chromium	MG/KG	4.4 U	4.4 U	3.1	14.4 J	35-GWDS05-03	7/8
Cobalt	MG/KG	1.2 U	1.5 U	1.4	1.4	35-GWDS2-03	1/8
Copper	MG/KG	1.1 U	2.2 U	1.2	8.5	35-MW30B-01	6/8
Iron	MG/KG	NA	NA	442 J	10500 J	35-GWDS05-03	8/8
Lead	MG/KG	NA	NA	4 J	144	35-MW29B-01	8/8
Magnesium	MG/KG	58.3 U	58.3 U	63.5	403	35-GWDS05-03	7/8
Manganese	MG/KG	NA	NA	1.5	7.5	35-MW30B-01	8/8
Mercury	MG/KG	NA	NA	0.06 R	0.18 R	35-GWDS3-03	8/8
Nickel	MG/KG	1.2 U	2.1 U	1.2	2	35-GWDS4-02	4/8
Potassium	MG/KG	271 U	295 U	562	562	35-GWDS05-03	1/8
Selenium	MG/KG	0.16 UJ	0.17 UJ	0.17 J	0.67 J	35-GWDS05-03	4/8
Silver	MG/KG	0.03 U	0.36 U	0.39 J	0.39 J	35-GWDS01-03	1/8
Sodium	MG/KG	264 U	318 U	ND	ND		0/8
Thallium	MG/KG	0.07 U	0.12 U	0.1	2.1	35-GWDS4-02	4/8
Vanadium	MG/KG	NA	NA	3 J	19.9 J	35-GWDS05-03	8/8
Zinc	MG/KG	6.3 U	10.8 U	3.2 R	16.3	35-MW29B-01	6/8

APPENDIX U.5
GROUNDWATER ORGANICS

S = Shallow surficial aquifer
D = Deep surficial aquifer
CH = top of Castle Hayne

3+4+3+3+3+3+3+3+1 = 26
3+3+3+3+3+3+1 = 19
2 = 5
TOTAL = 50

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

		S	S	S	CH	CH	CH
Client Sample ID:		35-EMW03-03	35-EMW05-03	35-EMW7-03	35-GWDW1-01	35-GWDW2-01	35-GWDW3-01
Lab Sample ID:		D94-5361-5	D94-5361-1	D94-5361-10	D94-5361-6	D94-5529-1	D94-5529-2
Date Sampled:		14-MAY-1994	14-MAY-1994	14-MAY-1994	14-MAY-1994	14-MAY-1994	15-MAY-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	5 U	5 U	125 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
1,1,2-Trichloroethane	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
1,1-Dichloroethane	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
1,1-Dichloroethene	UG/L	0.2 U	0.2 U	5 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	UG/L	0.2 U	0.2 U	5 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	UG/L	0.3 U	0.3 U	8 U	0.3 U	0.3 U	0.3 U
1,2-Dichloropropane	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
1,3-Dichlorobenzene	UG/L	0.4 U	0.4 U	10 U	0.4 U	0.4 U	0.4 U
1,4-Dichlorobenzene	UG/L	1 U	1 U	25 U	1 U	1 U	1 U
Bromodichloromethane	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
Bromoform	UG/L	0.2 U	0.2 U	5 U	0.2 U	0.2 U	0.2 U
Bromomethane	UG/L	1.2 U	1.2 U	30 U	1.2 U	1.2 U	1.2 U
Carbon tetrachloride	UG/L	0.2 U	0.2 U	5 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	UG/L	0.3 U	0.3 U	8 U	0.3 U	0.3 U	0.3 U
Chloroethane	UG/L	0.6 U	0.6 U	15 U	0.6 U	0.6 U	0.6 U
Chloroform	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
Chloromethane	UG/L	0.5 U	0.5 U	13 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
Dichlorodifluoromethane	UG/L	2 U	2 U	50 U	2 U	2 U	2 U
Methylene chloride	UG/L	5 U	5 U	125 U	5 U	5 U	5 U
Tetrachloroethene	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
Trichloroethene	UG/L	23.4	13.8	137	0.1 U	0.1 U	0.1 U
Trichlorofluoromethane	UG/L	0.5 U	0.5 U	13 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	UG/L	0.5 U	0.5 U	13 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	UG/L	90.5	35.4	353	0.1 U	0.1 U	0.1 U
cis-1,3-Dichloropropene	UG/L	0.2 U	0.2 U	5 U	0.2 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	UG/L	6.4	3.4	44	0.1 U	0.1 U	0.1 U
trans-1,3-Dichloropropene	UG/L	0.2 U	0.2 U	5 U	0.2 U	0.2 U	0.2 U
Benzene	UG/L	0.3	0.6	16	0.2 U	0.7	0.7
Chlorobenzene	UG/L	0.2 U	0.2 U	5 U	0.2 U	0.2 U	0.2 U
Ethyl benzene	UG/L	0.4	0.7	11	0.9	1.4	2
Methyl Tertiary Butyl Ether	UG/L	12.7	10 U	86.8	10 U	10 U	10 U
Toluene	UG/L	0.4	0.5	9	0.2 U	0.9	1
Xylenes	UG/L	1.5	1.9	40	2.1	4.5	4.7

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-EMW03-03	35-EMW05-03	35-EMW7-03	35-GWDW1-01	35-GWDW2-01	35-GWDW3-01
Lab Sample ID:		D94-5361-5	D94-5361-1	D94-5361-10	D94-5361-6	D94-5529-1	D94-5529-2
Date Sampled:		14-MAY-1994	14-MAY-1994	14-MAY-1994	14-MAY-1994	14-MAY-1994	15-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	10 U	10 U	10 U	NA	NA	NA
bis(2-Chloroethyl)ether	UG/L	10 U	10 U	10 U	NA	NA	NA
2-Chlorophenol	UG/L	10 U	10 U	10 U	NA	NA	NA
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	NA	NA	NA
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	NA	NA	NA
1,2-Dichlorobenzene	UG/L	10 U	10 U	10 U	NA	NA	NA
2-Methylphenol	UG/L	10 U	10 U	10 U	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/L	10 U	10 U	10 U	NA	NA	NA
4-Methylphenol	UG/L	10 U	10 U	10 U	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	10 U	NA	NA	NA
Hexachloroethane	UG/L	10 U	10 U	10 U	NA	NA	NA
Nitrobenzene	UG/L	10 U	10 U	10 U	NA	NA	NA
Isophorone	UG/L	10 U	10 U	10 U	NA	NA	NA
2-Nitrophenol	UG/L	10 U	10 U	10 U	NA	NA	NA
2,4-Dimethylphenol	UG/L	10 U	10 U	10 U	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/L	10 U	10 U	10 U	NA	NA	NA
2,4-Dichlorophenol	UG/L	10 U	10 U	10 U	NA	NA	NA
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	10 U	NA	NA	NA
Naphthalene	UG/L	10 U	7 J	10 U	NA	NA	NA
4-Chloroaniline	UG/L	10 U	10 U	10 U	NA	NA	NA
Hexachlorobutadiene	UG/L	10 U	10 U	10 U	NA	NA	NA
4-Chloro-3-methylphenol	UG/L	10 U	10 U	10 U	NA	NA	NA
2-Methylnaphthalene	UG/L	10 U	10 U	10 U	NA	NA	NA
Hexachlorocyclopentadiene	UG/L	10 U	10 U	10 U	NA	NA	NA
2,4,6-Trichlorophenol	UG/L	10 U	10 U	10 U	NA	NA	NA
2,4,5-Trichlorophenol	UG/L	25 U	25 U	25 U	NA	NA	NA
2-Chloronaphthalene	UG/L	10 U	10 U	10 U	NA	NA	NA
2-Nitroaniline	UG/L	25 U	25 U	25 U	NA	NA	NA
Dimethylphthalate	UG/L	10 U	10 U	10 U	NA	NA	NA
Acenaphthylene	UG/L	10 U	10 U	10 U	NA	NA	NA
2,6-Dinitrotoluene	UG/L	10 U	10 U	10 U	NA	NA	NA
3-Nitroaniline	UG/L	25 UJ	25 UJ	25 UJ	NA	NA	NA
Acenaphthene	UG/L	10 U	10 U	10 U	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-EMW03-03	35-EMW05-03	35-EMW7-03	35-GWDW1-01	35-GWDW2-01	35-GWDW3-01
Lab Sample ID:		D94-5361-5	D94-5361-1	D94-5361-10	D94-5361-6	D94-5529-1	D94-5529-2
Date Sampled:		14-MAY-1994	14-MAY-1994	14-MAY-1994	14-MAY-1994	14-MAY-1994	15-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 U	25 U	25 U	NA	NA	NA
Dibenzofuran	UG/L	10 U	10 U	10 U	NA	NA	NA
4-Nitrophenol	UG/L	10 UJ	10 UJ	10 UJ	NA	NA	NA
2,4-Dinitrotoluene	UG/L	10 U	10 U	10 U	NA	NA	NA
Diethylphthalate	UG/L	10 U	10 U	10 U	NA	NA	NA
Fluorene	UG/L	10 U	10 U	10 U	NA	NA	NA
4-Chlorophenyl-phenylether	UG/L	10 U	10 U	10 U	NA	NA	NA
4-Nitroaniline	UG/L	25 UJ	25 UJ	25 UJ	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	25 U	NA	NA	NA
N-Nitrosodiphenylamine	UG/L	10 U	10 U	10 U	NA	NA	NA
4-Bromophenyl-phenylether	UG/L	10 U	10 U	10 U	NA	NA	NA
Hexachlorobenzene	UG/L	10 U	10 U	10 U	NA	NA	NA
Pentachlorophenol	UG/L	25 U	25 U	25 U	NA	NA	NA
Phenanthrene	UG/L	10 U	10 U	10 U	NA	NA	NA
Anthracene	UG/L	10 U	10 U	10 U	NA	NA	NA
Carbazole	UG/L	10 U	10 U	10 U	NA	NA	NA
Di-n-butylphthalate	UG/L	10 U	10 U	10 U	NA	NA	NA
Fluoranthene	UG/L	10 U	10 U	10 U	NA	NA	NA
Pyrene	UG/L	10 U	10 U	10 U	NA	NA	NA
Butylbenzylphthalate	UG/L	10 UJ	10 UJ	10 UJ	NA	NA	NA
Benzo(a)anthracene	UG/L	10 U	10 U	10 U	NA	NA	NA
3,3'-Dichlorobenzidine	UG/L	10 U	10 U	10 U	NA	NA	NA
Chrysene	UG/L	10 U	10 U	10 U	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	10 UJ	10 UJ	10 UJ	NA	NA	NA
Di-n-octylphthalate	UG/L	10 U	10 U	10 U	NA	NA	NA
Benzo(b)fluoranthene	UG/L	10 U	10 U	10 U	NA	NA	NA
Benzo(k)fluoranthene	UG/L	10 U	10 U	10 U	NA	NA	NA
Benzo(a)pyrene	UG/L	10 U	10 U	10 U	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/L	10 U	10 U	10 U	NA	NA	NA
Dibenz(a,h)anthracene	UG/L	10 U	10 U	10 U	NA	NA	NA
Benzo(g,h,i)perylene	UG/L	10 U	10 U	10 U	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-EMW03-03	35-EMW05-03	35-EMW7-03	35-GWDW1-01	35-GWDW2-01	35-GWDW3-01
Lab Sample ID:		D94-5361-5	D94-5361-1	D94-5361-10	D94-5361-6	D94-5529-1	D94-5529-2
Date Sampled:		14-MAY-1994	14-MAY-1994	14-MAY-1994	14-MAY-1994	14-MAY-1994	15-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	NA	NA	NA	NA	NA	NA
beta-BHC	UG/L	NA	NA	NA	NA	NA	NA
delta-BHC	UG/L	NA	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	UG/L	NA	NA	NA	NA	NA	NA
Heptachlor	UG/L	NA	NA	NA	NA	NA	NA
Aldrin	UG/L	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan I	UG/L	NA	NA	NA	NA	NA	NA
Dieldrin	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDE	UG/L	NA	NA	NA	NA	NA	NA
Endrin	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan II	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDD	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDT	UG/L	NA	NA	NA	NA	NA	NA
Methoxychlor	UG/L	NA	NA	NA	NA	NA	NA
Endrin ketone	UG/L	NA	NA	NA	NA	NA	NA
Endrin aldehyde	UG/L	NA	NA	NA	NA	NA	NA
alpha-Chlordane	UG/L	NA	NA	NA	NA	NA	NA
gamma-Chlordane	UG/L	NA	NA	NA	NA	NA	NA
Toxaphene	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1016	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1221	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1232	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1242	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1248	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1254	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1260	UG/L	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

		CH	CH	S	S	S	S
Client Sample ID:		35-GWDW4-01	35-GWDW5-01	35-MW02S-02	35-MW04S-02	35-MW06S-02	35-MW09S-02
Lab Sample ID:		D94-5361-14	D94-5361-13	D94-4917-3	D94-4917-5	D94-4917-1	D94-5296-5
Date Sampled:		15-MAY-1994	15-MAY-1994	26-APR-1994	26-APR-1994	26-APR-1994	10-MAY-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	5 U	5 U	125 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
1,1,2-Trichloroethane	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
1,1-Dichloroethane	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
1,1-Dichloroethene	UG/L	0.2 U	0.2 U	5 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	UG/L	0.2 U	0.2 U	5 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	UG/L	0.3 U	0.3 U	8 U	0.3 U	0.3 U	0.3 U
1,2-Dichloropropane	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
1,3-Dichlorobenzene	UG/L	0.4 U	0.4 U	10 U	0.4 U	0.4 U	0.4 U
1,4-Dichlorobenzene	UG/L	1 U	1 U	25 U	1 U	1 U	1 U
Bromodichloromethane	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
Bromoform	UG/L	0.2 U	0.2 U	5 U	0.2 U	0.2 U	0.2 U
Bromomethane	UG/L	1.2 U	1.2 U	30 U	1.2 U	1.2 U	1.2 U
Carbon tetrachloride	UG/L	0.2 U	0.2 U	5 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	UG/L	0.3 U	0.3 U	8 U	0.3 U	0.3 U	0.3 U
Chloroethane	UG/L	0.6 U	0.6 U	15 U	0.6 U	0.6 U	0.6 U
Chloroform	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
Chloromethane	UG/L	0.5 U	0.5 U	13 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
Dichlorodifluoromethane	UG/L	2 U	2 U	50 U	2 U	2 U	2 U
Methylene chloride	UG/L	5 U	5 U	125 U	5 U	5 U	5 U
Tetrachloroethene	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
Trichloroethene	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
Trichlorofluoromethane	UG/L	0.5 U	0.5 U	13 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	UG/L	0.5 U	0.5 U	13 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
cis-1,3-Dichloropropene	UG/L	0.2 U	0.2 U	5 U	0.2 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	UG/L	0.1 U	0.1 U	3 U	0.1 U	0.1 U	0.1 U
trans-1,3-Dichloropropene	UG/L	0.2 U	0.2 U	5 U	0.2 U	0.2 U	0.2 U
Benzene	UG/L	0.2 U	0.2 U	6	0.2	0.2 U	0.2 U
Chlorobenzene	UG/L	0.2 U	0.2 U	5 U	0.2 U	0.2 U	0.2 U
Ethyl benzene	UG/L	0.7	1	44	0.2 U	0.2 U	0.7
Methyl Tertiary Butyl Ether	UG/L	10 U	10 U	100 U	10 U	10 U	10 U
Toluene	UG/L	1	0.8	12	0.4	0.2 U	0.3
Xylenes	UG/L	1.8	1.6	50	0.6	1	2

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-GWDW4-01	35-GWDW5-01	35-MW02S-02	35-MW04S-02	35-MW06S-02	35-MW09S-02
Lab Sample ID:		D94-5361-14	D94-5361-13	D94-4917-3	D94-4917-5	D94-4917-1	D94-5296-5
Date Sampled:		15-MAY-1994	15-MAY-1994	26-APR-1994	26-APR-1994	26-APR-1994	10-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	NA	10 U	NA	NA	NA	10 U
bis(2-Chloroethyl)ether	UG/L	NA	10 U	NA	NA	NA	10 U
2-Chlorophenol	UG/L	NA	10 U	NA	NA	NA	10 U
1,3-Dichlorobenzene	UG/L	NA	10 U	NA	NA	NA	10 U
1,4-Dichlorobenzene	UG/L	NA	10 U	NA	NA	NA	10 U
1,2-Dichlorobenzene	UG/L	NA	10 U	NA	NA	NA	10 U
2-Methylphenol	UG/L	NA	10 U	NA	NA	NA	10 U
2,2'-oxybis(1-Chloropropane)	UG/L	NA	10 U	NA	NA	NA	10 U
4-Methylphenol	UG/L	NA	10 U	NA	NA	NA	10 U
N-Nitroso-di-n-propylamine	UG/L	NA	10 U	NA	NA	NA	10 U
Hexachloroethane	UG/L	NA	10 U	NA	NA	NA	10 U
Nitrobenzene	UG/L	NA	10 U	NA	NA	NA	10 U
Isophorone	UG/L	NA	10 U	NA	NA	NA	10 U
2-Nitrophenol	UG/L	NA	10 U	NA	NA	NA	10 U
2,4-Dimethylphenol	UG/L	NA	10 U	NA	NA	NA	10 U
bis(2-Chloroethoxy)methane	UG/L	NA	10 U	NA	NA	NA	10 U
2,4-Dichlorophenol	UG/L	NA	10 U	NA	NA	NA	10 U
1,2,4-Trichlorobenzene	UG/L	NA	10 U	NA	NA	NA	10 U
Naphthalene	UG/L	NA	10 U	NA	NA	NA	10 U
4-Chloroaniline	UG/L	NA	10 U	NA	NA	NA	10 UJ
Hexachlorobutadiene	UG/L	NA	10 U	NA	NA	NA	10 U
4-Chloro-3-methylphenol	UG/L	NA	10 U	NA	NA	NA	10 U
2-Methylnaphthalene	UG/L	NA	10 U	NA	NA	NA	10 U
Hexachlorocyclopentadiene	UG/L	NA	10 U	NA	NA	NA	10 U
2,4,6-Trichlorophenol	UG/L	NA	10 U	NA	NA	NA	10 U
2,4,5-Trichlorophenol	UG/L	NA	25 U	NA	NA	NA	25 U
2-Chloronaphthalene	UG/L	NA	10 U	NA	NA	NA	10 U
2-Nitroaniline	UG/L	NA	25 U	NA	NA	NA	25 U
Dimethylphthalate	UG/L	NA	10 U	NA	NA	NA	10 U
Acenaphthylene	UG/L	NA	10 U	NA	NA	NA	10 U
2,6-Dinitrotoluene	UG/L	NA	10 U	NA	NA	NA	10 U
3-Nitroaniline	UG/L	NA	25 UJ	NA	NA	NA	25 UJ
Acenaphthene	UG/L	NA	10 U	NA	NA	NA	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-GWDW4-01	35-GWDW5-01	35-MW02S-02	35-MW04S-02	35-MW06S-02	35-MW09S-02
Lab Sample ID:		D94-5361-14	D94-5361-13	D94-4917-3	D94-4917-5	D94-4917-1	D94-5296-5
Date Sampled:		15-MAY-1994	15-MAY-1994	26-APR-1994	26-APR-1994	26-APR-1994	10-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	NA	25 U	NA	NA	NA	25 UJ
Dibenzofuran	UG/L	NA	10 U	NA	NA	NA	10 U
4-Nitrophenol	UG/L	NA	10 UJ	NA	NA	NA	10 UJ
2,4-Dinitrotoluene	UG/L	NA	10 U	NA	NA	NA	10 U
Diethylphthalate	UG/L	NA	10 U	NA	NA	NA	10 U
Fluorene	UG/L	NA	10 U	NA	NA	NA	10 U
4-Chlorophenyl-phenylether	UG/L	NA	10 U	NA	NA	NA	10 U
4-Nitroaniline	UG/L	NA	25 UJ	NA	NA	NA	25 U
4,6-Dinitro-2-methylphenol	UG/L	NA	25 U	NA	NA	NA	25 U
N-Nitrosodiphenylamine	UG/L	NA	10 U	NA	NA	NA	10 U
4-Bromophenyl-phenylether	UG/L	NA	10 U	NA	NA	NA	10 U
Hexachlorobenzene	UG/L	NA	10 U	NA	NA	NA	10 U
Pentachlorophenol	UG/L	NA	25 U	NA	NA	NA	25 U
Phenanthrene	UG/L	NA	10 U	NA	NA	NA	10 U
Anthracene	UG/L	NA	10 U	NA	NA	NA	10 U
Carbazole	UG/L	NA	10 U	NA	NA	NA	10 U
Di-n-butylphthalate	UG/L	NA	10 U	NA	NA	NA	10 U
Fluoranthene	UG/L	NA	10 U	NA	NA	NA	10 U
Pyrene	UG/L	NA	10 U	NA	NA	NA	10 U
Butylbenzylphthalate	UG/L	NA	10 UJ	NA	NA	NA	10 U
Benzo(a)anthracene	UG/L	NA	10 U	NA	NA	NA	10 U
3,3'-Dichlorobenzidine	UG/L	NA	10 U	NA	NA	NA	10 UJ
Chrysene	UG/L	NA	10 U	NA	NA	NA	10 U
bis(2-Ethylhexyl)phthalate	UG/L	NA	10 UJ	NA	NA	NA	10 U
Di-n-octylphthalate	UG/L	NA	10 U	NA	NA	NA	10 UJ
Benzo(b)fluoranthene	UG/L	NA	10 U	NA	NA	NA	10 UJ
Benzo(k)fluoranthene	UG/L	NA	10 U	NA	NA	NA	10 UJ
Benzo(a)pyrene	UG/L	NA	10 U	NA	NA	NA	10 UJ
Indeno(1,2,3-cd)pyrene	UG/L	NA	10 U	NA	NA	NA	10 UJ
Dibenz(a,h)anthracene	UG/L	NA	10 U	NA	NA	NA	10 UJ
Benzo(g,h,i)perylene	UG/L	NA	10 U	NA	NA	NA	10 UJ

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-GWDW4-01	35-GWDW5-01	35-MW02S-02	35-MW04S-02	35-MW06S-02	35-MW09S-02
Lab Sample ID:		D94-5361-14	D94-5361-13	D94-4917-3	D94-4917-5	D94-4917-1	D94-5296-5
Date Sampled:		15-MAY-1994	15-MAY-1994	26-APR-1994	26-APR-1994	26-APR-1994	10-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	NA	0.05 U	NA	NA	NA	NA
beta-BHC	UG/L	NA	0.05 U	NA	NA	NA	NA
delta-BHC	UG/L	NA	0.05 U	NA	NA	NA	NA
gamma-BHC (Lindane)	UG/L	NA	0.05 U	NA	NA	NA	NA
Heptachlor	UG/L	NA	0.05 U	NA	NA	NA	NA
Aldrin	UG/L	NA	0.05 U	NA	NA	NA	NA
Heptachlor epoxide	UG/L	NA	0.05 U	NA	NA	NA	NA
Endosulfan I	UG/L	NA	0.05 U	NA	NA	NA	NA
Dieldrin	UG/L	NA	0.1 U	NA	NA	NA	NA
4,4'-DDE	UG/L	NA	0.1 U	NA	NA	NA	NA
Endrin	UG/L	NA	0.1 U	NA	NA	NA	NA
Endosulfan II	UG/L	NA	0.1 U	NA	NA	NA	NA
4,4'-DDD	UG/L	NA	0.1 U	NA	NA	NA	NA
Endosulfan sulfate	UG/L	NA	0.1 U	NA	NA	NA	NA
4,4'-DDT	UG/L	NA	0.1 U	NA	NA	NA	NA
Methoxychlor	UG/L	NA	0.5 U	NA	NA	NA	NA
Endrin ketone	UG/L	NA	0.1 U	NA	NA	NA	NA
Endrin aldehyde	UG/L	NA	0.1 U	NA	NA	NA	NA
alpha-Chlordane	UG/L	NA	0.05 U	NA	NA	NA	NA
gamma-Chlordane	UG/L	NA	0.05 U	NA	NA	NA	NA
Toxaphene	UG/L	NA	5 U	NA	NA	NA	NA
Aroclor-1016	UG/L	NA	1 U	NA	NA	NA	NA
Aroclor-1221	UG/L	NA	2 U	NA	NA	NA	NA
Aroclor-1232	UG/L	NA	1 U	NA	NA	NA	NA
Aroclor-1242	UG/L	NA	1 U	NA	NA	NA	NA
Aroclor-1248	UG/L	NA	1 U	NA	NA	NA	NA
Aroclor-1254	UG/L	NA	1 U	NA	NA	NA	NA
Aroclor-1260	UG/L	NA	1 U	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW09D-02	35-MW10S-02	35-MW10D-02	35-MW14S-02	35-MW14D-02	35-MW16S-02
Lab Sample ID:		D94-5296-6	D94-5296-13	D94-5296-8	D94-5296-10	D94-5296-11	D94-5296-16
Date Sampled:		11-MAY-1994	12-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	5 U	5 U	250 U	125 U	50 U	125 U
1,1,2,2-Tetrachloroethane	UG/L	0.1 U	0.1 U	5 U	3 U	1 U	3 U
1,1,2-Trichloroethane	UG/L	0.1 U	0.1 U	5 U	3 U	1 U	3 U
1,1-Dichloroethane	UG/L	0.1 U	0.1 U	5 U	3 U	1 U	3 U
1,1-Dichloroethene	UG/L	0.2 U	0.2 U	10 U	5 U	2 U	5 U
1,2-Dichlorobenzene	UG/L	0.2 U	0.2 U	10 U	5 U	2 U	5 U
1,2-Dichloroethane	UG/L	0.3 U	0.3 U	15 U	8 U	3 U	8 U
1,2-Dichloropropane	UG/L	0.1 U	0.1 U	5 U	3 U	1 U	3 U
1,3-Dichlorobenzene	UG/L	0.4 U	0.4 U	20 U	10 U	4 U	10 U
1,4-Dichlorobenzene	UG/L	1 U	1 U	50 U	25 U	10 U	25 U
Bromodichloromethane	UG/L	0.1 U	0.1 U	5 U	3 U	1 U	3 U
Bromoform	UG/L	0.2 U	0.2 U	10 U	5 U	2 U	5 U
Bromomethane	UG/L	1.2 U	1.2 U	60 U	30 U	12 U	30 U
Carbon tetrachloride	UG/L	0.2 U	0.2 U	10 U	5 U	2 U	5 U
Chlorobenzene	UG/L	0.3 U	0.3 U	15 U	8 U	3 U	8 U
Chloroethane	UG/L	0.6 U	0.6 U	30 U	15 U	6 U	15 U
Chloroform	UG/L	0.1 U	0.1 U	5 U	3 U	1 U	3 U
Chloromethane	UG/L	0.5 U	0.5 U	25 U	13 U	5 U	13 U
Dibromochloromethane	UG/L	0.1 U	0.1 U	5 U	3 U	1 U	3 U
Dichlorodifluoromethane	UG/L	2 U	2 U	100 U	50 U	20 U	50 U
Methylene chloride	UG/L	5 U	5 U	250 U	125 U	50 U	125 U
Tetrachloroethene	UG/L	0.1 U	0.1 U	5 U	3 U	1 U	3 U
Trichloroethene	UG/L	6.1	3.8	649	299	180	3 U
Trichlorofluoromethane	UG/L	0.5 U	0.5 U	25 U	13 U	5 U	13 U
Vinyl chloride	UG/L	0.5 U	0.5 U	25 U	13 U	5 U	13 U
cis-1,2-Dichloroethene	UG/L	3.3	32	973	682	185	3 U
cis-1,3-Dichloropropene	UG/L	0.2 U	0.2 U	10 U	5 U	2 U	5 U
trans-1,2-Dichloroethene	UG/L	0.1 U	2.6	102	47	18	3 U
trans-1,3-Dichloropropene	UG/L	0.2 U	0.2 U	10 U	5 U	2 U	5 U
Benzene	UG/L	1.2	3.4	10 U	5 U	2 U	698
Chlorobenzene	UG/L	0.2 U	0.2 U	10 U	5 U	2 U	5 U
Ethyl benzene	UG/L	1.6	0.9	36	18	6	420
Methyl Tertiary Butyl Ether	UG/L	10 U	6.6 J	241	92.5	43.9	34.1
Toluene	UG/L	1.2	0.6	59	17	12	984
Xylenes	UG/L	3.3	2.3	135	54	19	1700

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW09D-02	35-MW10S-02	35-MW10D-02	35-MW14S-02	35-MW14D-02	35-MW16S-02
Lab Sample ID:		D94-5296-6	D94-5296-13	D94-5296-8	D94-5296-10	D94-5296-11	D94-5296-16
Date Sampled:		11-MAY-1994	12-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	10 U	10 U	10 U	11 U	11 U	11
bis(2-Chloroethyl)ether	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
2-Chlorophenol	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
1,2-Dichlorobenzene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
2-Methylphenol	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
2,2'-oxybis(1-Chloropropane)	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
4-Methylphenol	UG/L	10 U	10 U	10 U	11 U	11 U	6 J
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Hexachloroethane	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Nitrobenzene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Isophorone	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
2-Nitrophenol	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
2,4-Dimethylphenol	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
bis(2-Chloroethoxy)methane	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
2,4-Dichlorophenol	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Naphthalene	UG/L	10 U	10 U	10 U	11 U	11 U	75
4-Chloroaniline	UG/L	10 UJ	10 UJ	10 UJ	11 UJ	11 UJ	10 UJ
Hexachlorobutadiene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
4-Chloro-3-methylphenol	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
2-Methylnaphthalene	UG/L	10 U	10 U	10 U	11 U	11 U	70
Hexachlorocyclopentadiene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
2,4,6-Trichlorophenol	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
2,4,5-Trichlorophenol	UG/L	25 U	25 U	25 U	28 U	28 U	25 U
2-Chloronaphthalene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
2-Nitroaniline	UG/L	25 U	25 U	25 U	28 U	28 U	25 U
Dimethylphthalate	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Acenaphthylene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
2,6-Dinitrotoluene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
3-Nitroaniline	UG/L	25 UJ	25 UJ	25 UJ	28 UJ	28 UJ	25 UJ
Acenaphthene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW09D-02	35-MW10S-02	35-MW10D-02	35-MW14S-02	35-MW14D-02	35-MW16S-02
Lab Sample ID:		D94-5296-6	D94-5296-13	D94-5296-8	D94-5296-10	D94-5296-11	D94-5296-16
Date Sampled:		11-MAY-1994	12-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 UJ	25 UJ	25 UJ	28 UJ	28 UJ	25 UJ
Dibenzofuran	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
4-Nitrophenol	UG/L	10 UJ	10 UJ	10 UJ	11 UJ	11 UJ	10 UJ
2,4-Dinitrotoluene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Diethylphthalate	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Fluorene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
4-Chlorophenyl-phenylether	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
4-Nitroaniline	UG/L	25 U	25 U	25 U	28 U	28 U	25 U
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	25 U	28 U	28 U	25 U
N-Nitrosodiphenylamine	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
4-Bromophenyl-phenylether	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Hexachlorobenzene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Pentachlorophenol	UG/L	25 U	25 U	25 U	28 U	28 U	25 U
Phenanthrene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Anthracene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Carbazole	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Di-n-butylphthalate	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Fluoranthene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Pyrene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Butylbenzylphthalate	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Benzo(a)anthracene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
3,3'-Dichlorobenzidine	UG/L	10 UJ	10 UJ	10 UJ	11 UJ	11 UJ	10 UJ
Chrysene	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	10 U	10 U	10 U	11 U	11 U	10 U
Di-n-octylphthalate	UG/L	10 UJ	10 U	10 U	11 U	11 U	10 U
Benzo(b)fluoranthene	UG/L	10 UJ	10 U	10 U	11 U	11 U	10 U
Benzo(k)fluoranthene	UG/L	10 UJ	10 U	10 U	11 U	11 U	10 U
Benzo(a)pyrene	UG/L	10 UJ	10 U	10 U	11 U	11 U	10 U
Indeno(1,2,3-cd)pyrene	UG/L	10 UJ	10 U	10 U	11 U	11 U	10 U
Dibenz(a,h)anthracene	UG/L	10 UJ	10 U	10 U	11 U	11 U	10 U
Benzo(g,h,i)perylene	UG/L	10 UJ	10 U	10 U	11 U	11 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW09D-02	35-MW10S-02	35-MW10D-02	35-MW14S-02	35-MW14D-02	35-MW16S-02
Lab Sample ID:		D94-5296-6	D94-5296-13	D94-5296-8	D94-5296-10	D94-5296-11	D94-5296-16
Date Sampled:		11-MAY-1994	12-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	NA	NA	NA	NA	NA	NA
beta-BHC	UG/L	NA	NA	NA	NA	NA	NA
delta-BHC	UG/L	NA	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	UG/L	NA	NA	NA	NA	NA	NA
Heptachlor	UG/L	NA	NA	NA	NA	NA	NA
Aldrin	UG/L	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan I	UG/L	NA	NA	NA	NA	NA	NA
Dieldrin	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDE	UG/L	NA	NA	NA	NA	NA	NA
Endrin	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan II	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDD	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDT	UG/L	NA	NA	NA	NA	NA	NA
Methoxychlor	UG/L	NA	NA	NA	NA	NA	NA
Endrin ketone	UG/L	NA	NA	NA	NA	NA	NA
Endrin aldehyde	UG/L	NA	NA	NA	NA	NA	NA
alpha-Chlordane	UG/L	NA	NA	NA	NA	NA	NA
gamma-Chlordane	UG/L	NA	NA	NA	NA	NA	NA
Toxaphene	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1016	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1221	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1232	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1242	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1248	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1254	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1260	UG/L	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

		D	S	D	S	D	S
Client Sample ID:		35-MW16D-02	35-MW19S-02	35-MW19D-02	35-MW21S-02	35-MW21D-02	35-MW22S-02
Lab Sample ID:		D94-5296-12	D94-5296-17	D94-5296-22	D94-5296-23	D94-5296-24	D94-5361-17
Date Sampled:		12-MAY-1994	12-MAY-1994	12-MAY-1994	13-MAY-1994	13-MAY-1994	13-MAY-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	5 U	5 U	125 U	250 U	5 U	125 U
1,1,2,2-Tetrachloroethane	UG/L	0.1 U	0.1 U	3 U	5 U	0.1 U	3 U
1,1,2-Trichloroethane	UG/L	0.1 U	0.1 U	3 U	5 U	0.1 U	3 U
1,1-Dichloroethane	UG/L	0.1 U	0.1 U	3 U	5 U	0.1 U	3 U
1,1-Dichloroethene	UG/L	0.2 U	0.2 U	5 U	10 U	0.2 U	5 U
1,2-Dichlorobenzene	UG/L	0.2 U	0.2 U	5 U	10 U	0.2 U	5 U
1,2-Dichloroethane	UG/L	0.3 U	0.3 U	8 U	15 U	0.3 U	8 U
1,2-Dichloropropane	UG/L	0.1 U	0.1 U	3 U	5 U	0.1 U	3 U
1,3-Dichlorobenzene	UG/L	0.4 U	0.4 U	10 U	20 U	0.4 U	10 U
1,4-Dichlorobenzene	UG/L	1 U	1 U	25 U	50 U	1 U	25 U
Bromodichloromethane	UG/L	0.1 U	0.1 U	3 U	5 U	0.1 U	3 U
Bromoform	UG/L	0.2 U	0.2 U	5 U	10 U	0.2 U	5 U
Bromomethane	UG/L	1.2 U	1.2 U	30 U	60 U	1.2 U	30 U
Carbon tetrachloride	UG/L	0.2 U	0.2 U	5 U	10 U	0.2 U	5 U
Chlorobenzene	UG/L	0.3 U	0.3 U	8 U	15 U	0.3 U	8 U
Chloroethane	UG/L	0.6 U	0.6 U	15 U	30 U	0.6 U	15 U
Chloroform	UG/L	0.1 U	0.1 U	3 U	5 U	0.1 U	3 U
Chloromethane	UG/L	0.5 U	0.5 U	13 U	25 U	0.5 U	13 U
Dibromochloromethane	UG/L	0.1 U	0.1 U	3 U	5 U	0.1 U	3 U
Dichlorodifluoromethane	UG/L	2 U	2 U	50 U	50 U	2 U	50 U
Methylene chloride	UG/L	5 U	5 U	125 U	250 U	5 U	125 U
Tetrachloroethene	UG/L	0.1 U	0.1 U	3 U	5 U	0.1 U	3 U
Trichloroethene	UG/L	0.1 U	26.8	900	5 U	8.3	3 U
Trichlorofluoromethane	UG/L	0.5 U	0.5 U	13 U	25 U	0.5 U	13 U
Vinyl chloride	UG/L	0.5 U	0.5 U	13 U	25 U	0.5 U	13 U
cis-1,2-Dichloroethene	UG/L	0.1 U	26	664	5 U	13.9	3 U
cis-1,3-Dichloropropene	UG/L	0.2 U	0.2 U	5 U	10 U	0.2 U	5 U
trans-1,2-Dichloroethene	UG/L	0.1 U	6	176	5 U	1.5	3 U
trans-1,3-Dichloropropene	UG/L	0.2 U	0.2 U	5 U	10 U	0.2 U	5 U
Benzene	UG/L	0.5	0.2 U	5 U	210	0.2 U	1660
Chlorobenzene	UG/L	0.2 U	0.2 U	5 U	10 U	0.2 U	5 U
Ethyl benzene	UG/L	1.1	0.8	29	824	0.7	96
Methyl Tertiary Butyl Ether	UG/L	10 U	10 U	319	10 U	10 U	13.4
Toluene	UG/L	1	0.6	12	45	0.6	86
Xylenes	UG/L	2.5	1.8	50	1320	2.1	100

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW16D-02	35-MW19S-02	35-MW19D-02	35-MW21S-02	35-MW21D-02	35-MW22S-02
Lab Sample ID:		D94-5296-12	D94-5296-17	D94-5296-22	D94-5296-23	D94-5296-24	D94-5361-17
Date Sampled:		12-MAY-1994	12-MAY-1994	12-MAY-1994	13-MAY-1994	13-MAY-1994	13-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	10 U	10 U	10 U	10 U	10 U	23
bis(2-Chloroethyl)ether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis(1-Chloropropane)	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	UG/L	10 U	10 U	10 U	499	10 U	118
4-Chloroaniline	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 U
Hexachlorobutadiene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	UG/L	10 U	10 U	10 U	668	10 U	152
Hexachlorocyclopentadiene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 UJ	10 UJ	10 U
3-Nitroaniline	UG/L	25 UJ	25 UJ	25 UJ	25 U	25 U	25 U
Acenaphthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW16D-02	35-MW19S-02	35-MW19D-02	35-MW21S-02	35-MW21D-02	35-MW22S-02
Lab Sample ID:		D94-5296-12	D94-5296-17	D94-5296-22	D94-5296-23	D94-5296-24	D94-5361-17
Date Sampled:		12-MAY-1994	12-MAY-1994	12-MAY-1994	13-MAY-1994	13-MAY-1994	13-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 UJ	25 UJ	25 U	25 U	25 U	25 U
Dibenzofuran	UG/L	10 U	10 U	10 U	23	10 U	14
4-Nitrophenol	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
2,4-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	UG/L	10 U	10 U	10 U	22	10 U	21
4-Chlorophenyl-phenylether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	UG/L	25 U	25 U	25 UJ	25 UJ	25 UJ	25 U
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	UG/L	10 U	10 U	10 U	52	10 U	31
Anthracene	UG/L	10 U	10 U	10 U	7 J	10 U	10 U
Carbazole	UG/L	10 U	10 U	10 U	12	10 U	13
Di-n-butylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Chrysene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Di-n-octylphthalate	UG/L	10 U	10 UJ	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	UG/L	10 U	10 UJ	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	UG/L	10 U	10 UJ	10 U	10 U	10 U	10 U
Benzo(a)pyrene	UG/L	10 U	10 UJ	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	UG/L	10 U	10 UJ	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	UG/L	10 U	10 UJ	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	UG/L	10 U	10 UJ	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW16D-02	35-MW19S-02	35-MW19D-02	35-MW21S-02	35-MW21D-02	35-MW22S-02
Lab Sample ID:		D94-5296-12	D94-5296-17	D94-5296-22	D94-5296-23	D94-5296-24	D94-5361-17
Date Sampled:		12-MAY-1994	12-MAY-1994	12-MAY-1994	13-MAY-1994	13-MAY-1994	13-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
beta-BHC	UG/L	NA	NA	NA	0.023 J	0.05 U	NA
delta-BHC	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
gamma-BHC (Lindane)	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
Heptachlor	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
Aldrin	UG/L	NA	NA	NA	0.013 J	0.05 U	NA
Heptachlor epoxide	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
Endosulfan I	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
Dieldrin	UG/L	NA	NA	NA	0.1 U	0.1 U	NA
4,4'-DDE	UG/L	NA	NA	NA	0.1 U	0.1 U	NA
Endrin	UG/L	NA	NA	NA	0.1 U	0.1 U	NA
Endosulfan II	UG/L	NA	NA	NA	0.1 U	0.1 U	NA
4,4'-DDD	UG/L	NA	NA	NA	0.1 U	0.1 U	NA
Endosulfan sulfate	UG/L	NA	NA	NA	0.1 U	0.1 U	NA
4,4'-DDT	UG/L	NA	NA	NA	0.1 U	0.1 U	NA
Methoxychlor	UG/L	NA	NA	NA	0.5 U	0.5 U	NA
Endrin ketone	UG/L	NA	NA	NA	0.1 U	0.1 U	NA
Endrin aldehyde	UG/L	NA	NA	NA	0.1 U	0.1 U	NA
alpha-Chlordane	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
gamma-Chlordane	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
Toxaphene	UG/L	NA	NA	NA	5 U	5 U	NA
Aroclor-1016	UG/L	NA	NA	NA	1 U	1 U	NA
Aroclor-1221	UG/L	NA	NA	NA	2 U	2 U	NA
Aroclor-1232	UG/L	NA	NA	NA	1 U	1 U	NA
Aroclor-1242	UG/L	NA	NA	NA	1 U	1 U	NA
Aroclor-1248	UG/L	NA	NA	NA	1 U	1 U	NA
Aroclor-1254	UG/L	NA	NA	NA	1 U	1 U	NA
Aroclor-1260	UG/L	NA	NA	NA	1 U	1 U	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW22D-02	35-MW25S-02	35-MW25D-02	35-MW26AW-02	35-MW26BW-01	35-MW26S-02
Lab Sample ID:		D94-5361-2	D94-5361-4	D94-5361-18	D94-5529-8	D94-5529-17	D94-4917-4
Date Sampled:		13-MAY-1994	13-MAY-1994	13-MAY-1994	17-MAY-1994	20-MAY-1994	26-APR-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	5 U	50 U	5 U	5 U	50 U	5 U
1,1,2,2-Tetrachloroethane	UG/L	0.1 U	1 U	0.1 U	0.1 U	1 U	0.1 U
1,1,2-Trichloroethane	UG/L	0.1 U	1 U	0.1 U	0.1 U	1 U	0.1 U
1,1-Dichloroethane	UG/L	0.1 U	1 U	0.1 U	0.1 U	1 U	0.1 U
1,1-Dichloroethene	UG/L	0.2 U	2 U	0.2 U	0.2 U	2 U	0.2 U
1,2-Dichlorobenzene	UG/L	0.2 U	2 U	0.2 U	0.2 U	2 U	0.2 U
1,2-Dichloroethane	UG/L	0.3 U	3 U	0.3 U	0.3 U	3 U	0.3 U
1,2-Dichloropropane	UG/L	0.1 U	1 U	0.1 U	0.1 U	1 U	0.1 U
1,3-Dichlorobenzene	UG/L	0.4 U	4 U	0.4 U	0.4 U	4 U	0.4 U
1,4-Dichlorobenzene	UG/L	1 U	10 U	1 U	1 U	10 U	1 U
Bromodichloromethane	UG/L	0.1 U	1 U	0.1 U	0.1 U	1 U	0.1 U
Bromoform	UG/L	0.2 U	2 U	0.2 U	0.2 U	2 U	0.2 U
Bromomethane	UG/L	1.2 U	12 U	1.2 U	1.2 U	12 U	1.2 U
Carbon tetrachloride	UG/L	0.2 U	2 U	0.2 U	0.2 U	2 U	0.2 U
Chlorobenzene	UG/L	0.3 U	3 U	0.3 U	0.3 U	3 U	0.3 U
Chloroethane	UG/L	0.6 U	6 U	0.6 U	0.6 U	6 U	0.6 U
Chloroform	UG/L	0.1 U	1 U	0.1 U	0.1 U	1 U	0.1 U
Chloromethane	UG/L	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
Dibromochloromethane	UG/L	0.1 U	1 U	0.1 U	0.1 U	1 U	0.1 U
Dichlorodifluoromethane	UG/L	2 U	20 U	2 U	2 U	20 U	2 U
Methylene chloride	UG/L	5 U	50 U	5 U	5 U	50 U	5 U
Tetrachloroethene	UG/L	0.1 U	1 U	0.1 U	0.1 U	1 U	0.1 U
Trichloroethene	UG/L	0.4	1 U	0.1 U	0.1 U	1 U	0.1 U
Trichlorofluoromethane	UG/L	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
Vinyl chloride	UG/L	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
cis-1,2-Dichloroethene	UG/L	38.3	1 U	0.1 U	0.1 U	260	0.1 U
cis-1,3-Dichloropropene	UG/L	0.2 U	2 U	0.2 U	0.2 U	2 U	0.2 U
trans-1,2-Dichloroethene	UG/L	0.1 U	1 U	0.1 U	0.1 U	1 U	0.1 U
trans-1,3-Dichloropropene	UG/L	0.2 U	2 U	0.2 U	0.2 U	2 U	0.2 U
Benzene	UG/L	1.7	25	0.3	0.7	2 U	0.2 U
Chlorobenzene	UG/L	0.2 U	2 U	0.2 U	0.2 U	2 U	0.2 U
Ethyl benzene	UG/L	0.5	259	0.6	1.8	2 U	0.8
Methyl Tertiary Butyl Ether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	UG/L	0.5	122	0.7	1.3	2 U	0.9
Xylenes	UG/L	1.4	561	1.6	3.7	2 U	2

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW22D-02	35-MW25S-02	35-MW25D-02	35-MW26AW-02	35-MW26BW-01	35-MW26S-02
Lab Sample ID:		D94-5361-2	D94-5361-4	D94-5361-18	D94-5529-8	D94-5529-17	D94-4917-4
Date Sampled:		13-MAY-1994	13-MAY-1994	13-MAY-1994	17-MAY-1994	20-MAY-1994	26-APR-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	10 U	10 U	10 U	NA	NA	NA
bis(2-Chloroethyl)ether	UG/L	10 U	10 U	10 U	NA	NA	NA
2-Chlorophenol	UG/L	10 U	10 U	10 U	NA	NA	NA
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	NA	NA	NA
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	NA	NA	NA
1,2-Dichlorobenzene	UG/L	10 U	10 U	10 U	NA	NA	NA
2-Methylphenol	UG/L	10 U	10 U	10 U	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/L	10 U	10 U	10 U	NA	NA	NA
4-Methylphenol	UG/L	10 U	10 U	10 U	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	10 U	NA	NA	NA
Hexachloroethane	UG/L	10 U	10 U	10 U	NA	NA	NA
Nitrobenzene	UG/L	10 U	10 U	10 U	NA	NA	NA
Isophorone	UG/L	10 U	10 U	10 U	NA	NA	NA
2-Nitrophenol	UG/L	10 U	10 U	10 U	NA	NA	NA
2,4-Dimethylphenol	UG/L	10 U	10 U	10 U	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/L	10 U	10 U	10 U	NA	NA	NA
2,4-Dichlorophenol	UG/L	10 U	10 U	10 U	NA	NA	NA
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	10 U	NA	NA	NA
Naphthalene	UG/L	10 U	123	10 U	NA	NA	NA
4-Chloroaniline	UG/L	10 U	10 U	10 U	NA	NA	NA
Hexachlorobutadiene	UG/L	10 U	10 U	10 U	NA	NA	NA
4-Chloro-3-methylphenol	UG/L	10 U	10 U	10 U	NA	NA	NA
2-Methylnaphthalene	UG/L	10 U	131	10 U	NA	NA	NA
Hexachlorocyclopentadiene	UG/L	10 U	10 U	10 U	NA	NA	NA
2,4,6-Trichlorophenol	UG/L	10 U	10 U	10 U	NA	NA	NA
2,4,5-Trichlorophenol	UG/L	25 U	25 U	25 U	NA	NA	NA
2-Chloronaphthalene	UG/L	10 U	10 U	10 U	NA	NA	NA
2-Nitroaniline	UG/L	25 U	25 U	25 U	NA	NA	NA
Dimethylphthalate	UG/L	10 U	10 U	10 U	NA	NA	NA
Acenaphthylene	UG/L	10 U	10 U	10 U	NA	NA	NA
2,6-Dinitrotoluene	UG/L	10 U	10 U	10 U	NA	NA	NA
3-Nitroaniline	UG/L	25 UJ	25 UJ	25 UJ	NA	NA	NA
Acenaphthene	UG/L	10 U	10 U	10 U	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW22D-02	35-MW25S-02	35-MW25D-02	35-MW26AW-02	35-MW26BW-01	35-MW26S-02
Lab Sample ID:		D94-5361-2	D94-5361-4	D94-5361-18	D94-5529-8	D94-5529-17	D94-4917-4
Date Sampled:		13-MAY-1994	13-MAY-1994	13-MAY-1994	17-MAY-1994	20-MAY-1994	26-APR-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 U	25 U	25 U	NA	NA	NA
Dibenzofuran	UG/L	10 U	8 J	10 U	NA	NA	NA
4-Nitrophenol	UG/L	10 UJ	10 UJ	10 UJ	NA	NA	NA
2,4-Dinitrotoluene	UG/L	10 U	10 U	10 U	NA	NA	NA
Diethylphthalate	UG/L	10 U	10 U	10 U	NA	NA	NA
Fluorene	UG/L	10 U	8 J	10 U	NA	NA	NA
4-Chlorophenyl-phenylether	UG/L	10 U	10 U	10 U	NA	NA	NA
4-Nitroaniline	UG/L	25 UJ	25 UJ	25 UJ	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	25 U	NA	NA	NA
N-Nitrosodiphenylamine	UG/L	10 U	10 U	10 U	NA	NA	NA
4-Bromophenyl-phenylether	UG/L	10 U	10 U	10 U	NA	NA	NA
Hexachlorobenzene	UG/L	10 U	10 U	10 U	NA	NA	NA
Pentachlorophenol	UG/L	25 U	25 U	25 U	NA	NA	NA
Phenanthrene	UG/L	10 U	10 J	10 U	NA	NA	NA
Anthracene	UG/L	10 U	10 U	10 U	NA	NA	NA
Carbazole	UG/L	10 U	10 U	10 U	NA	NA	NA
Di-n-butylphthalate	UG/L	10 U	10 U	10 U	NA	NA	NA
Fluoranthene	UG/L	10 U	10 U	10 U	NA	NA	NA
Pyrene	UG/L	10 U	10 U	10 U	NA	NA	NA
Butylbenzylphthalate	UG/L	10 UJ	10 UJ	10 UJ	NA	NA	NA
Benzo(a)anthracene	UG/L	10 U	10 U	10 U	NA	NA	NA
3,3'-Dichlorobenzidine	UG/L	10 U	10 U	10 U	NA	NA	NA
Chrysene	UG/L	10 U	10 U	10 U	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	10 UJ	10 UJ	10 UJ	NA	NA	NA
Di-n-octylphthalate	UG/L	10 U	10 U	10 U	NA	NA	NA
Benzo(b)fluoranthene	UG/L	10 U	10 U	10 U	NA	NA	NA
Benzo(k)fluoranthene	UG/L	10 U	10 U	10 U	NA	NA	NA
Benzo(a)pyrene	UG/L	10 U	10 U	10 U	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/L	10 U	10 U	10 U	NA	NA	NA
Dibenz(a,h)anthracene	UG/L	10 U	10 U	10 U	NA	NA	NA
Benzo(g,h,i)perylene	UG/L	10 U	10 U	10 U	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW22D-02	35-MW25S-02	35-MW25D-02	35-MW26AW-02	35-MW26BW-01	35-MW26S-02
Lab Sample ID:		D94-5361-2	D94-5361-4	D94-5361-18	D94-5529-8	D94-5529-17	D94-4917-4
Date Sampled:		13-MAY-1994	13-MAY-1994	13-MAY-1994	17-MAY-1994	20-MAY-1994	26-APR-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	NA	NA	NA	NA	NA	NA
beta-BHC	UG/L	NA	NA	NA	NA	NA	NA
delta-BHC	UG/L	NA	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	UG/L	NA	NA	NA	NA	NA	NA
Heptachlor	UG/L	NA	NA	NA	NA	NA	NA
Aldrin	UG/L	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan I	UG/L	NA	NA	NA	NA	NA	NA
Dieldrin	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDE	UG/L	NA	NA	NA	NA	NA	NA
Endrin	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan II	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDD	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDT	UG/L	NA	NA	NA	NA	NA	NA
Methoxychlor	UG/L	NA	NA	NA	NA	NA	NA
Endrin ketone	UG/L	NA	NA	NA	NA	NA	NA
Endrin aldehyde	UG/L	NA	NA	NA	NA	NA	NA
alpha-Chlordane	UG/L	NA	NA	NA	NA	NA	NA
gamma-Chlordane	UG/L	NA	NA	NA	NA	NA	NA
Toxaphene	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1016	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1221	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1232	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1242	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1248	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1254	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1260	UG/L	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

		S	D	S	D	S	D
Client Sample ID:		35-MW29A-01	35-MW29BW-01	35-MW30AW-01	35-MW30BW-01	35-MW31AW-01	35-MW31BW-01
Lab Sample ID:		D94-5296-1	D94-5296-4	D94-5529-4	D94-5361-11	D94-5715-3	D94-5361-15
Date Sampled:		10-MAY-1994	10-MAY-1994	16-MAY-1994	15-MAY-1994	19-MAY-1994	14-MAY-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	5 U	50 U	5 U	125 U	5 U	125 U
1,1,2,2-Tetrachloroethane	UG/L	0.1 U	1 U	0.1 U	3 U	0.1 U	3 U
1,1,2-Trichloroethane	UG/L	0.1 U	1 U	0.1 U	3 U	0.1 U	3 U
1,1-Dichloroethane	UG/L	0.1 U	1 U	0.1 U	3 U	0.1 U	3 U
1,1-Dichloroethene	UG/L	0.2 U	2 U	0.2 U	5 U	0.2 U	5 U
1,2-Dichlorobenzene	UG/L	0.2 U	2 U	0.2 U	5 U	0.2 U	5 U
1,2-Dichloroethane	UG/L	0.3 U	3 U	0.3 U	8 U	0.3 U	8 U
1,2-Dichloropropane	UG/L	0.1 U	1 U	0.1 U	3 U	0.1 U	3 U
1,3-Dichlorobenzene	UG/L	0.4 U	4 U	0.4 U	10 U	0.4 U	10 U
1,4-Dichlorobenzene	UG/L	1 U	10 U	1 U	25 U	1 U	25 U
Bromodichloromethane	UG/L	0.1 U	1 U	0.1 U	3 U	0.1 U	3 U
Bromoform	UG/L	0.2 U	2 U	0.2 U	5 U	0.2 U	5 U
Bromomethane	UG/L	1.2 U	12 U	1.2 U	30 U	1.2 U	30 U
Carbon tetrachloride	UG/L	0.2 U	2 U	0.2 U	5 U	0.2 U	5 U
Chlorobenzene	UG/L	0.3 U	3 U	0.3 U	8 U	0.3 U	8 U
Chloroethane	UG/L	0.6 U	6 U	0.6 U	15 U	0.6 U	15 U
Chloroform	UG/L	0.1 U	1 U	0.1 U	3 U	0.1 U	3 U
Chloromethane	UG/L	0.5 U	5 U	0.5 U	13 U	0.5 U	13 U
Dibromochloromethane	UG/L	0.1 U	1 U	0.1 U	3 U	0.1 U	3 U
Dichlorodifluoromethane	UG/L	2 U	20 U	2 U	50 U	2 U	50 U
Methylene chloride	UG/L	5 U	50 U	5 U	125 U	5 U	125 U
Tetrachloroethene	UG/L	0.1 U	1 U	0.1 U	3 U	0.1 U	3 U
Trichloroethene	UG/L	0.1 U	255	0.1 U	217	0.1 U	3 U
Trichlorofluoromethane	UG/L	0.5 U	5 U	0.5 U	13 U	0.5 U	13 U
Vinyl chloride	UG/L	0.5 U	5 U	0.5 U	13 U	0.5 U	13 U
cis-1,2-Dichloroethene	UG/L	0.1 U	53	0.1 U	485	0.1 U	234
cis-1,3-Dichloropropene	UG/L	0.2 U	2 U	0.2 U	5 U	0.2 U	5 U
trans-1,2-Dichloroethene	UG/L	0.1 U	6	0.1 U	115	0.1 U	26
trans-1,3-Dichloropropene	UG/L	0.2 U	2 U	0.2 U	5 U	0.2 U	5 U
Benzene	UG/L	4.1	2.5	0.2 U	16	0.2 U	15
Chlorobenzene	UG/L	0.2 U	0.2 U	0.2 U	5 U	0.2 U	5 U
Ethyl benzene	UG/L	2.4	0.9	0.9	11	0.2 U	21
Methyl Tertiary Butyl Ether	UG/L	10 U	22.3	10 U	223	10 U	76.3
Toluene	UG/L	2.2	1.6	1.3	15	0.2 U	14
Xylenes	UG/L	6.6	1.9	1.7	40	0.2 U	66

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW29A-01	35-MW29BW-01	35-MW30AW-01	35-MW30BW-01	35-MW31AW-01	35-MW31BW-01
Lab Sample ID:		D94-5296-1	D94-5296-4	D94-5529-4	D94-5361-11	D94-5715-3	D94-5361-15
Date Sampled:		10-MAY-1994	10-MAY-1994	16-MAY-1994	15-MAY-1994	19-MAY-1994	14-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	10 U	10 U	NA	NA	NA	NA
bis(2-Chloroethyl)ether	UG/L	10 U	10 U	NA	NA	NA	NA
2-Chlorophenol	UG/L	10 U	10 U	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/L	10 U	10 U	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/L	10 U	10 U	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/L	10 U	10 U	NA	NA	NA	NA
2-Methylphenol	UG/L	17	10 UJ	NA	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/L	10 UJ	10 U	NA	NA	NA	NA
4-Methylphenol	UG/L	10 U	10 U	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/L	10 UJ	10 UJ	NA	NA	NA	NA
Hexachloroethane	UG/L	10 U	10 U	NA	NA	NA	NA
Nitrobenzene	UG/L	10 U	10 U	NA	NA	NA	NA
Isophorone	UG/L	10 U	10 U	NA	NA	NA	NA
2-Nitrophenol	UG/L	10 U	10 U	NA	NA	NA	NA
2,4-Dimethylphenol	UG/L	74	10 U	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/L	10 U	10 U	NA	NA	NA	NA
2,4-Dichlorophenol	UG/L	10 U	10 U	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	NA	NA	NA	NA
Naphthalene	UG/L	71	10 U	NA	NA	NA	NA
4-Chloroaniline	UG/L	10 U	10 U	NA	NA	NA	NA
Hexachlorobutadiene	UG/L	10 UJ	10 UJ	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/L	10 U	10 U	NA	NA	NA	NA
2-Methylnaphthalene	UG/L	81 J	10 U	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/L	10 UJ	10 UJ	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/L	10 U	10 U	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/L	25 U	25 U	NA	NA	NA	NA
2-Chloronaphthalene	UG/L	10 U	10 U	NA	NA	NA	NA
2-Nitroaniline	UG/L	25 U	25 U	NA	NA	NA	NA
Dimethylphthalate	UG/L	10 U	10 U	NA	NA	NA	NA
Acenaphthylene	UG/L	10 U	10 U	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/L	10 U	10 U	NA	NA	NA	NA
3-Nitroaniline	UG/L	25 U	25 U	NA	NA	NA	NA
Acenaphthene	UG/L	10 U	10 U	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW29A-01	35-MW29BW-01	35-MW30AW-01	35-MW30BW-01	35-MW31AW-01	35-MW31BW-01
Lab Sample ID:		D94-5296-1	D94-5296-4	D94-5529-4	D94-5361-11	D94-5715-3	D94-5361-15
Date Sampled:		10-MAY-1994	10-MAY-1994	16-MAY-1994	15-MAY-1994	19-MAY-1994	14-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 U	25 U	NA	NA	NA	NA
Dibenzofuran	UG/L	10 U	10 U	NA	NA	NA	NA
4-Nitrophenol	UG/L	10 UJ	10 UJ	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/L	10 U	10 U	NA	NA	NA	NA
Diethylphthalate	UG/L	10 UJ	10 UJ	NA	NA	NA	NA
Fluorene	UG/L	10 U	10 U	NA	NA	NA	NA
4-Chlorophenyl-phenylether	UG/L	10 U	10 U	NA	NA	NA	NA
4-Nitroaniline	UG/L	25 U	25 U	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	NA	NA	NA	NA
N-Nitrosodiphenylamine	UG/L	10 U	10 U	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/L	10 U	10 U	NA	NA	NA	NA
Hexachlorobenzene	UG/L	10 U	10 U	NA	NA	NA	NA
Pentachlorophenol	UG/L	25 U	25 U	NA	NA	NA	NA
Phenanthrene	UG/L	10 U	10 U	NA	NA	NA	NA
Anthracene	UG/L	10 U	10 U	NA	NA	NA	NA
Carbazole	UG/L	10 U	10 U	NA	NA	NA	NA
Di-n-butylphthalate	UG/L	10 U	10 U	NA	NA	NA	NA
Fluoranthene	UG/L	10 U	10 U	NA	NA	NA	NA
Pyrene	UG/L	10 U	10 U	NA	NA	NA	NA
Butylbenzylphthalate	UG/L	10 UJ	10 UJ	NA	NA	NA	NA
Benzo(a)anthracene	UG/L	10 U	10 U	NA	NA	NA	NA
3,3'-Dichlorobenzidine	UG/L	10 UJ	10 UJ	NA	NA	NA	NA
Chrysene	UG/L	10 U	10 U	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	10 UJ	10 UJ	NA	NA	NA	NA
Di-n-octylphthalate	UG/L	10 UJ	10 UJ	NA	NA	NA	NA
Benzo(b)fluoranthene	UG/L	10 U	10 U	NA	NA	NA	NA
Benzo(k)fluoranthene	UG/L	10 U	10 U	NA	NA	NA	NA
Benzo(a)pyrene	UG/L	10 U	10 U	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/L	10 U	10 U	NA	NA	NA	NA
Dibenz(a,h)anthracene	UG/L	10 U	10 U	NA	NA	NA	NA
Benzo(g,h,i)perylene	UG/L	10 U	10 U	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW29A-01	35-MW29BW-01	35-MW30AW-01	35-MW30BW-01	35-MW31AW-01	35-MW31BW-01
Lab Sample ID:		D94-5296-1	D94-5296-4	D94-5529-4	D94-5361-11	D94-5715-3	D94-5361-15
Date Sampled:		10-MAY-1994	10-MAY-1994	16-MAY-1994	15-MAY-1994	19-MAY-1994	14-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
beta-BHC	UG/L	0.022 J	0.05 U	NA	NA	NA	NA
delta-BHC	UG/L	0.05 U	0.05 J	NA	NA	NA	NA
gamma-BHC (Lindane)	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
Heptachlor	UG/L	0.011 J	0.05 U	NA	NA	NA	NA
Aldrin	UG/L	0.017 J	0.05 U	NA	NA	NA	NA
Heptachlor epoxide	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
Endosulfan I	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
Dieldrin	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
4,4'-DDE	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
Endrin	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
Endosulfan II	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
4,4'-DDD	UG/L	0.1 U	0.21 J	NA	NA	NA	NA
Endosulfan sulfate	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
4,4'-DDT	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
Methoxychlor	UG/L	0.5 U	0.5 U	NA	NA	NA	NA
Endrin ketone	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
Endrin aldehyde	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
alpha-Chlordane	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
gamma-Chlordane	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
Toxaphene	UG/L	5 U	5 U	NA	NA	NA	NA
Aroclor-1016	UG/L	1 U	1 U	NA	NA	NA	NA
Aroclor-1221	UG/L	2 U	2 U	NA	NA	NA	NA
Aroclor-1232	UG/L	1 U	1 U	NA	NA	NA	NA
Aroclor-1242	UG/L	1 U	1 U	NA	NA	NA	NA
Aroclor-1248	UG/L	1 U	1 U	NA	NA	NA	NA
Aroclor-1254	UG/L	1 U	1 U	NA	NA	NA	NA
Aroclor-1260	UG/L	1 U	1 U	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		S 35-MW32AW-01	D 35-MW32BW-01	S 35-MW33AW-01	D 35-MW33BW-01	S 35-MW34AW-01	D 35-MW34BW-01
Lab Sample ID:		D94-5529-15	D94-5715-6	D94-5529-14	D94-5529-7	D94-5361-8	D94-5361-7
Date Sampled:		19-MAY-1994	19-MAY-1994	19-MAY-1994	17-MAY-1994	16-MAY-1994	16-MAY-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	5 U	125 U	5 U	125 U	5 U	5 U
1,1,2,2-Tetrachloroethane	UG/L	20.5	3 U	0.1 U	3 U	0.1 U	0.1 U
1,1,2-Trichloroethane	UG/L	1.9	3 U	0.1 U	3 U	0.1 U	0.1 U
1,1-Dichloroethane	UG/L	0.1 U	3 U	0.1 U	3 U	0.1 U	0.1 U
1,1-Dichloroethene	UG/L	0.2 U	5 U	0.2 U	5 U	0.2 U	0.2 U
1,2-Dichlorobenzene	UG/L	0.2 U	5 U	0.2 U	5 U	0.2 U	0.2 U
1,2-Dichloroethane	UG/L	0.3 U	8 U	0.3 U	8 U	0.3 U	0.3 U
1,2-Dichloropropane	UG/L	0.1 U	3 U	0.1 U	3 U	0.1 U	0.1 U
1,3-Dichlorobenzene	UG/L	0.4 U	10 U	0.4 U	10 U	0.4 U	0.4 U
1,4-Dichlorobenzene	UG/L	1 U	25 U	1 U	25 U	1 U	1 U
Bromodichloromethane	UG/L	0.1 U	3 U	0.1 U	3 U	0.1 U	0.1 U
Bromoform	UG/L	0.2 U	5 U	0.2 U	5 U	0.2 U	0.2 U
Bromomethane	UG/L	1.2 U	30 U	1.2 U	30 U	1.2 U	1.2 U
Carbon tetrachloride	UG/L	0.2 U	5 U	0.2 U	5 U	0.2 U	0.2 U
Chlorobenzene	UG/L	0.3 U	8 U	0.3 U	8 U	0.3 U	0.3 U
Chloroethane	UG/L	0.6 U	15 U	0.6 U	15 U	0.6 U	0.6 U
Chloroform	UG/L	0.1 U	3 U	0.1 U	3 U	0.1 U	0.1 U
Chloromethane	UG/L	0.5 U	13 U	0.5 U	13 U	0.5 U	0.5 U
Dibromochloromethane	UG/L	0.1 U	3 U	0.1 U	3 U	0.1 U	0.1 U
Dichlorodifluoromethane	UG/L	2 U	50 U	2 U	50 U	2 U	2 U
Methylene chloride	UG/L	5 U	125 U	5 U	125 U	5 U	5 U
Tetrachloroethene	UG/L	0.1 U	3 U	0.1 U	3 U	0.1 U	0.1 U
Trichloroethene	UG/L	25.8	197	0.1 U	574	0.1 U	0.6
Trichlorofluoromethane	UG/L	0.5 U	13 U	0.5 U	13 U	0.5 U	0.5 U
Vinyl chloride	UG/L	0.5 U	13 U	0.5 U	13 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	UG/L	96.2	594	0.1 U	788	0.1 U	11.6
cis-1,3-Dichloropropene	UG/L	0.2 U	5 U	0.2 U	5 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	UG/L	39.8	102	0.1 U	130	0.1 U	0.1 U
trans-1,3-Dichloropropene	UG/L	0.2 U	5 U	0.2 U	5 U	0.2 U	0.2 U
Benzene	UG/L	1	3 J	0.2 U	22	0.2 U	0.4
Chlorobenzene	UG/L	0.2 U	5 U	0.2 U	5 U	0.2 U	0.2 U
Ethyl benzene	UG/L	1.3	3 J	1.1	41	0.2 U	0.6
Methyl Tertiary Butyl Ether	UG/L	72.9	172	10 U	265	10 U	10 U
Toluene	UG/L	1.1	3 J	1.7	30	0.2 U	0.4
Xylenes	UG/L	4.2	9	3.9	95	1.7	1.8

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW32AW-01	35-MW32BW-01	35-MW33AW-01	35-MW33BW-01	35-MW34AW-01	35-MW34BW-01
Lab Sample ID:		D94-5529-15	D94-5715-6	D94-5529-14	D94-5529-7	D94-5361-8	D94-5361-7
Date Sampled:		19-MAY-1994	19-MAY-1994	19-MAY-1994	17-MAY-1994	16-MAY-1994	16-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	NA	NA	10 U	10 U	NA	NA
bis(2-Chloroethyl)ether	UG/L	NA	NA	10 U	10 U	NA	NA
2-Chlorophenol	UG/L	NA	NA	10 U	10 U	NA	NA
1,3-Dichlorobenzene	UG/L	NA	NA	10 U	10 U	NA	NA
1,4-Dichlorobenzene	UG/L	NA	NA	10 U	10 U	NA	NA
1,2-Dichlorobenzene	UG/L	NA	NA	10 U	10 U	NA	NA
2-Methylphenol	UG/L	NA	NA	10 U	10 U	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/L	NA	NA	10 U	10 U	NA	NA
4-Methylphenol	UG/L	NA	NA	10 U	10 U	NA	NA
N-Nitroso-di-n-propylamine	UG/L	NA	NA	10 U	10 U	NA	NA
Hexachloroethane	UG/L	NA	NA	10 U	10 U	NA	NA
Nitrobenzene	UG/L	NA	NA	10 U	10 U	NA	NA
Isophorone	UG/L	NA	NA	10 U	10 U	NA	NA
2-Nitrophenol	UG/L	NA	NA	10 U	10 U	NA	NA
2,4-Dimethylphenol	UG/L	NA	NA	10 U	10 U	NA	NA
bis(2-Chloroethoxy)methane	UG/L	NA	NA	10 U	10 U	NA	NA
2,4-Dichlorophenol	UG/L	NA	NA	10 U	10 U	NA	NA
1,2,4-Trichlorobenzene	UG/L	NA	NA	10 U	10 U	NA	NA
Naphthalene	UG/L	NA	NA	10 UJ	10 U	NA	NA
4-Chloroaniline	UG/L	NA	NA	10 U	10 U	NA	NA
Hexachlorobutadiene	UG/L	NA	NA	10 U	10 U	NA	NA
4-Chloro-3-methylphenol	UG/L	NA	NA	10 U	10 U	NA	NA
2-Methylnaphthalene	UG/L	NA	NA	10 U	10 U	NA	NA
Hexachlorocyclopentadiene	UG/L	NA	NA	10 U	10 U	NA	NA
2,4,6-Trichlorophenol	UG/L	NA	NA	10 U	10 U	NA	NA
2,4,5-Trichlorophenol	UG/L	NA	NA	25 U	25 U	NA	NA
2-Chloronaphthalene	UG/L	NA	NA	10 U	10 U	NA	NA
2-Nitroaniline	UG/L	NA	NA	25 U	25 U	NA	NA
Dimethylphthalate	UG/L	NA	NA	10 U	10 U	NA	NA
Acenaphthylene	UG/L	NA	NA	10 U	10 U	NA	NA
2,6-Dinitrotoluene	UG/L	NA	NA	10 UJ	10 UJ	NA	NA
3-Nitroaniline	UG/L	NA	NA	25 UJ	25 U	NA	NA
Acenaphthene	UG/L	NA	NA	10 U	10 U	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW32AW-01	35-MW32BW-01	35-MW33AW-01	35-MW33BW-01	35-MW34AW-01	35-MW34BW-01
Lab Sample ID:		D94-5529-15	D94-5715-6	D94-5529-14	D94-5529-7	D94-5361-8	D94-5361-7
Date Sampled:		19-MAY-1994	19-MAY-1994	19-MAY-1994	17-MAY-1994	16-MAY-1994	16-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	NA	NA	25 UJ	25 U	NA	NA
Dibenzofuran	UG/L	NA	NA	10 U	10 U	NA	NA
4-Nitrophenol	UG/L	NA	NA	10 UJ	10 UJ	NA	NA
2,4-Dinitrotoluene	UG/L	NA	NA	10 U	10 UJ	NA	NA
Diethylphthalate	UG/L	NA	NA	10 U	10 U	NA	NA
Fluorene	UG/L	NA	NA	10 U	10 U	NA	NA
4-Chlorophenyl-phenylether	UG/L	NA	NA	10 U	10 U	NA	NA
4-Nitroaniline	UG/L	NA	NA	25 U	25 U	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	NA	NA	25 U	25 U	NA	NA
N-Nitrosodiphenylamine	UG/L	NA	NA	10 U	10 U	NA	NA
4-Bromophenyl-phenylether	UG/L	NA	NA	10 UJ	10 U	NA	NA
Hexachlorobenzene	UG/L	NA	NA	10 U	10 U	NA	NA
Pentachlorophenol	UG/L	NA	NA	25 U	25 U	NA	NA
Phenanthrene	UG/L	NA	NA	10 U	10 U	NA	NA
Anthracene	UG/L	NA	NA	10 U	10 U	NA	NA
Carbazole	UG/L	NA	NA	10 U	10 U	NA	NA
Di-n-butylphthalate	UG/L	NA	NA	10 U	10 U	NA	NA
Fluoranthene	UG/L	NA	NA	10 U	10 U	NA	NA
Pyrene	UG/L	NA	NA	10 U	10 U	NA	NA
Butylbenzylphthalate	UG/L	NA	NA	10 UJ	10 U	NA	NA
Benzo(a)anthracene	UG/L	NA	NA	10 U	10 U	NA	NA
3,3'-Dichlorobenzidine	UG/L	NA	NA	10 UJ	10 U	NA	NA
Chrysene	UG/L	NA	NA	10 U	10 U	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	NA	NA	10 UJ	10 UJ	NA	NA
Di-n-octylphthalate	UG/L	NA	NA	10 UJ	10 UJ	NA	NA
Benzo(b)fluoranthene	UG/L	NA	NA	10 U	10 UJ	NA	NA
Benzo(k)fluoranthene	UG/L	NA	NA	10 U	10 UJ	NA	NA
Benzo(a)pyrene	UG/L	NA	NA	10 U	10 UJ	NA	NA
Indeno(1,2,3-cd)pyrene	UG/L	NA	NA	10 U	10 UJ	NA	NA
Dibenz(a,h)anthracene	UG/L	NA	NA	10 U	10 UJ	NA	NA
Benzo(g,h,i)perylene	UG/L	NA	NA	10 U	10 UJ	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW32AW-01	35-MW32BW-01	35-MW33AW-01	35-MW33BW-01	35-MW34AW-01	35-MW34BW-01
Lab Sample ID:		D94-5529-15	D94-5715-6	D94-5529-14	D94-5529-7	D94-5361-8	D94-5361-7
Date Sampled:		19-MAY-1994	19-MAY-1994	19-MAY-1994	17-MAY-1994	16-MAY-1994	16-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	NA	NA	0.05 U	0.05 U	NA	NA
beta-BHC	UG/L	NA	NA	0.05 U	0.022 J	NA	NA
delta-BHC	UG/L	NA	NA	0.05 U	0.05 U	NA	NA
gamma-BHC (Lindane)	UG/L	NA	NA	0.05 U	0.05 U	NA	NA
Heptachlor	UG/L	NA	NA	0.05 U	0.013 J	NA	NA
Aldrin	UG/L	NA	NA	0.05 U	0.05 U	NA	NA
Heptachlor epoxide	UG/L	NA	NA	0.05 U	0.05 U	NA	NA
Endosulfan I	UG/L	NA	NA	0.05 U	0.05 U	NA	NA
Dieldrin	UG/L	NA	NA	0.1 U	0.1 U	NA	NA
4,4'-DDE	UG/L	NA	NA	0.1 U	0.1 U	NA	NA
Endrin	UG/L	NA	NA	0.1 U	0.1 U	NA	NA
Endosulfan II	UG/L	NA	NA	0.1 U	0.1 U	NA	NA
4,4'-DDD	UG/L	NA	NA	0.1 U	0.1 U	NA	NA
Endosulfan sulfate	UG/L	NA	NA	0.1 U	0.1 U	NA	NA
4,4'-DDT	UG/L	NA	NA	0.1 U	0.014 J	NA	NA
Methoxychlor	UG/L	NA	NA	0.5 U	0.5 U	NA	NA
Endrin ketone	UG/L	NA	NA	0.1 U	0.1 U	NA	NA
Endrin aldehyde	UG/L	NA	NA	0.1 U	0.024 U	NA	NA
alpha-Chlordane	UG/L	NA	NA	0.05 U	0.05 U	NA	NA
gamma-Chlordane	UG/L	NA	NA	0.05 U	0.05 U	NA	NA
Toxaphene	UG/L	NA	NA	5 U	5 U	NA	NA
Aroclor-1016	UG/L	NA	NA	1 U	1 U	NA	NA
Aroclor-1221	UG/L	NA	NA	2 U	2 U	NA	NA
Aroclor-1232	UG/L	NA	NA	1 U	1 U	NA	NA
Aroclor-1242	UG/L	NA	NA	1 U	1 U	NA	NA
Aroclor-1248	UG/L	NA	NA	1 U	1 U	NA	NA
Aroclor-1254	UG/L	NA	NA	1 U	1 U	NA	NA
Aroclor-1260	UG/L	NA	NA	1 U	1 U	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		S 35-MW35AW-01	D 35-MW35BW-01	S 35-MW36AW-01	D 35-MW36BW-01	S 35-MW37AW-01	D 35-MW37BW-01
Lab Sample ID:		D94-5529-3	D94-5361-16	D94-5361-19	D94-5361-3	D94-5715-7	D94-5715-4
Date Sampled:		14-MAY-1994	15-MAY-1994	15-MAY-1994	15-MAY-1994	19-MAY-1994	19-MAY-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	UG/L	64.7	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1,2-Trichloroethane	UG/L	1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1-Dichloroethane	UG/L	0.1 U	3.4	2.5	7.6	0.1 U	0.1 U
1,1-Dichloroethene	UG/L	0.8	5.7	2.1	6.9	0.2 U	0.2 U
1,2-Dichlorobenzene	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	UG/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichloropropane	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,3-Dichlorobenzene	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
1,4-Dichlorobenzene	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Bromoform	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromomethane	UG/L	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Carbon tetrachloride	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	UG/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Chloroethane	UG/L	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Chloroform	UG/L	0.6	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chloromethane	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dichlorodifluoromethane	UG/L	2 U	2 U	2 U	2 U	2 U	2 U
Methylene chloride	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	UG/L	1.9	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Trichloroethene	UG/L	79	0.6	0.1 U	0.1 U	0.1 U	0.1 U
Trichlorofluoromethane	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	UG/L	14.8	3.2	0.1 U	0.1 U	0.1 U	0.1 U
cis-1,3-Dichloropropene	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	UG/L	3.7	0.4	0.1 U	0.1 U	0.1 U	0.1 U
trans-1,3-Dichloropropene	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Benzene	UG/L	0.4	0.2 U	1.7	0.5	0.2 U	5.3
Chlorobenzene	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Ethyl benzene	UG/L	0.7	0.8	0.8	0.6	0.2 U	0.3
Methyl Tertiary Butyl Ether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	UG/L	1.1	0.5	0.8	0.7	0.2 U	2.2
Xylenes	UG/L	1.7	1.9	3	1.9	0.2 U	0.6

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW35AW-01	35-MW35BW-01	35-MW36AW-01	35-MW36BW-01	35-MW37AW-01	35-MW37BW-01
Lab Sample ID:		D94-5529-3	D94-5361-16	D94-5361-19	D94-5361-3	D94-5715-7	D94-5715-4
Date Sampled:		14-MAY-1994	15-MAY-1994	15-MAY-1994	15-MAY-1994	19-MAY-1994	19-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	UG/L	NA	NA	NA	NA	NA	NA
2-Chlorophenol	UG/L	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/L	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/L	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/L	NA	NA	NA	NA	NA	NA
2-Methylphenol	UG/L	NA	NA	NA	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/L	NA	NA	NA	NA	NA	NA
4-Methylphenol	UG/L	NA	NA	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/L	NA	NA	NA	NA	NA	NA
Hexachloroethane	UG/L	NA	NA	NA	NA	NA	NA
Nitrobenzene	UG/L	NA	NA	NA	NA	NA	NA
Isophorone	UG/L	NA	NA	NA	NA	NA	NA
2-Nitrophenol	UG/L	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	UG/L	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/L	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	UG/L	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/L	NA	NA	NA	NA	NA	NA
Naphthalene	UG/L	NA	NA	NA	NA	NA	NA
4-Chloroaniline	UG/L	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	UG/L	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/L	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	UG/L	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/L	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/L	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/L	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	UG/L	NA	NA	NA	NA	NA	NA
2-Nitroaniline	UG/L	NA	NA	NA	NA	NA	NA
Dimethylphthalate	UG/L	NA	NA	NA	NA	NA	NA
Acenaphthylene	UG/L	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/L	NA	NA	NA	NA	NA	NA
3-Nitroaniline	UG/L	NA	NA	NA	NA	NA	NA
Acenaphthene	UG/L	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW35AW-01	35-MW35BW-01	35-MW36AW-01	35-MW36BW-01	35-MW37AW-01	35-MW37BW-01
Lab Sample ID:		D94-5529-3	D94-5361-16	D94-5361-19	D94-5361-3	D94-5715-7	D94-5715-4
Date Sampled:		14-MAY-1994	15-MAY-1994	15-MAY-1994	15-MAY-1994	19-MAY-1994	19-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	NA	NA	NA	NA	NA	NA
Dibenzofuran	UG/L	NA	NA	NA	NA	NA	NA
4-Nitrophenol	UG/L	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/L	NA	NA	NA	NA	NA	NA
Diethylphthalate	UG/L	NA	NA	NA	NA	NA	NA
Fluorene	UG/L	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	UG/L	NA	NA	NA	NA	NA	NA
4-Nitroaniline	UG/L	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	UG/L	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/L	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	UG/L	NA	NA	NA	NA	NA	NA
Pentachlorophenol	UG/L	NA	NA	NA	NA	NA	NA
Phenanthrene	UG/L	NA	NA	NA	NA	NA	NA
Anthracene	UG/L	NA	NA	NA	NA	NA	NA
Carbazole	UG/L	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	UG/L	NA	NA	NA	NA	NA	NA
Fluoranthene	UG/L	NA	NA	NA	NA	NA	NA
Pyrene	UG/L	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	UG/L	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	UG/L	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	UG/L	NA	NA	NA	NA	NA	NA
Chrysene	UG/L	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	UG/L	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	UG/L	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	UG/L	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	UG/L	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/L	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	UG/L	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	UG/L	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW35AW-01	35-MW35BW-01	35-MW36AW-01	35-MW36BW-01	35-MW37AW-01	35-MW37BW-01
Lab Sample ID:		D94-5529-3	D94-5361-16	D94-5361-19	D94-5361-3	D94-5715-7	D94-5715-4
Date Sampled:		14-MAY-1994	15-MAY-1994	15-MAY-1994	15-MAY-1994	19-MAY-1994	19-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	NA	NA	NA	NA	NA	NA
beta-BHC	UG/L	NA	NA	NA	NA	NA	NA
delta-BHC	UG/L	NA	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	UG/L	NA	NA	NA	NA	NA	NA
Heptachlor	UG/L	NA	NA	NA	NA	NA	NA
Aldrin	UG/L	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan I	UG/L	NA	NA	NA	NA	NA	NA
Dieldrin	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDE	UG/L	NA	NA	NA	NA	NA	NA
Endrin	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan II	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDD	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDT	UG/L	NA	NA	NA	NA	NA	NA
Methoxychlor	UG/L	NA	NA	NA	NA	NA	NA
Endrin ketone	UG/L	NA	NA	NA	NA	NA	NA
Endrin aldehyde	UG/L	NA	NA	NA	NA	NA	NA
alpha-Chlordane	UG/L	NA	NA	NA	NA	NA	NA
gamma-Chlordane	UG/L	NA	NA	NA	NA	NA	NA
Toxaphene	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1016	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1221	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1232	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1242	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1248	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1254	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1260	UG/L	NA	NA	NA	NA	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW38AW-01	35-MW38BW-01
Lab Sample ID:		D94-5715-8	D94-5529-16
Date Sampled:		20-MAY-1994	20-MAY-1994
	UNITS		
VOLATILES			
1,1,1-Trichloroethane	UG/L	5 U	5 U
1,1,2,2-Tetrachloroethane	UG/L	0.1 U	0.1 U
1,1,2-Trichloroethane	UG/L	0.1 U	0.1 U
1,1-Dichloroethane	UG/L	0.1 U	0.1 U
1,1-Dichloroethene	UG/L	0.2 U	0.2 U
1,2-Dichlorobenzene	UG/L	0.2 U	0.2 U
1,2-Dichloroethane	UG/L	0.3 U	0.3 U
1,2-Dichloropropane	UG/L	0.1 U	0.1 U
1,3-Dichlorobenzene	UG/L	0.4 U	0.4 U
1,4-Dichlorobenzene	UG/L	1 U	1 U
Bromodichloromethane	UG/L	0.1 U	0.1 U
Bromoform	UG/L	0.2 U	0.2 U
Bromomethane	UG/L	1.2 U	1.2 U
Carbon tetrachloride	UG/L	0.2 U	0.2 U
Chlorobenzene	UG/L	0.3 U	0.3 U
Chloroethane	UG/L	0.6 U	0.6 U
Chloroform	UG/L	0.1 U	0.1 U
Chloromethane	UG/L	0.5 U	0.5 U
Dibromochloromethane	UG/L	0.1 U	0.1 U
Dichlorodifluoromethane	UG/L	2 U	2 U
Methylene chloride	UG/L	5 U	5 U
Tetrachloroethene	UG/L	0.1 U	0.1 U
Trichloroethene	UG/L	0.1 U	0.1 U
Trichlorofluoromethane	UG/L	0.5 U	0.5 U
Vinyl chloride	UG/L	0.5 U	0.5 U
cis-1,2-Dichloroethene	UG/L	0.1 U	0.1 U
cis-1,3-Dichloropropene	UG/L	0.2 U	0.2 U
trans-1,2-Dichloroethene	UG/L	0.1 U	0.1 U
trans-1,3-Dichloropropene	UG/L	0.2 U	0.2 U
Benzene	UG/L	0.2 U	0.2 U
Chlorobenzene	UG/L	0.2 U	0.2 U
Ethyl benzene	UG/L	0.2 U	0.2 U
Methyl Tertiary Butyl Ether	UG/L	10 U	10 U
Toluene	UG/L	0.2 U	0.2 U
Xylenes	UG/L	0.2 U	0.2 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW38AW-01	35-MW38BW-01
Lab Sample ID:		D94-5715-8	D94-5529-16
Date Sampled:		20-MAY-1994	20-MAY-1994
	UNITS		
SEMIVOLATILES			
Phenol	UG/L	NA	NA
bis(2-Chloroethyl)ether	UG/L	NA	NA
2-Chlorophenol	UG/L	NA	NA
1,3-Dichlorobenzene	UG/L	NA	NA
1,4-Dichlorobenzene	UG/L	NA	NA
1,2-Dichlorobenzene	UG/L	NA	NA
2-Methylphenol	UG/L	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/L	NA	NA
4-Methylphenol	UG/L	NA	NA
N-Nitroso-di-n-propylamine	UG/L	NA	NA
Hexachloroethane	UG/L	NA	NA
Nitrobenzene	UG/L	NA	NA
Isophorone	UG/L	NA	NA
2-Nitrophenol	UG/L	NA	NA
2,4-Dimethylphenol	UG/L	NA	NA
bis(2-Chloroethoxy)methane	UG/L	NA	NA
2,4-Dichlorophenol	UG/L	NA	NA
1,2,4-Trichlorobenzene	UG/L	NA	NA
Naphthalene	UG/L	NA	NA
4-Chloroaniline	UG/L	NA	NA
Hexachlorobutadiene	UG/L	NA	NA
4-Chloro-3-methylphenol	UG/L	NA	NA
2-Methylnaphthalene	UG/L	NA	NA
Hexachlorocyclopentadiene	UG/L	NA	NA
2,4,6-Trichlorophenol	UG/L	NA	NA
2,4,5-Trichlorophenol	UG/L	NA	NA
2-Chloronaphthalene	UG/L	NA	NA
2-Nitroaniline	UG/L	NA	NA
Dimethylphthalate	UG/L	NA	NA
Acenaphthylene	UG/L	NA	NA
2,6-Dinitrotoluene	UG/L	NA	NA
3-Nitroaniline	UG/L	NA	NA
Acenaphthene	UG/L	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW38AW-01	35-MW38BW-01
Lab Sample ID:		D94-5715-8	D94-5529-16
Date Sampled:		20-MAY-1994	20-MAY-1994
	UNITS		
SEMIVOLATILES Cont.			
2,4-Dinitrophenol	UG/L	NA	NA
Dibenzofuran	UG/L	NA	NA
4-Nitrophenol	UG/L	NA	NA
2,4-Dinitrotoluene	UG/L	NA	NA
Diethylphthalate	UG/L	NA	NA
Fluorene	UG/L	NA	NA
4-Chlorophenyl-phenylether	UG/L	NA	NA
4-Nitroaniline	UG/L	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	NA	NA
N-Nitrosodiphenylamine	UG/L	NA	NA
4-Bromophenyl-phenylether	UG/L	NA	NA
Hexachlorobenzene	UG/L	NA	NA
Pentachlorophenol	UG/L	NA	NA
Phenanthrene	UG/L	NA	NA
Anthracene	UG/L	NA	NA
Carbazole	UG/L	NA	NA
Di-n-butylphthalate	UG/L	NA	NA
Fluoranthene	UG/L	NA	NA
Pyrene	UG/L	NA	NA
Butylbenzylphthalate	UG/L	NA	NA
Benzo(a)anthracene	UG/L	NA	NA
3,3'-Dichlorobenzidine	UG/L	NA	NA
Chrysene	UG/L	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	NA	NA
Di-n-octylphthalate	UG/L	NA	NA
Benzo(b)fluoranthene	UG/L	NA	NA
Benzo(k)fluoranthene	UG/L	NA	NA
Benzo(a)pyrene	UG/L	NA	NA
Indeno(1,2,3-cd)pyrene	UG/L	NA	NA
Dibenz(a,h)anthracene	UG/L	NA	NA
Benzo(g,h,i)perylene	UG/L	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW38AW-01	35-MW38BW-01
Lab Sample ID:		D94-5715-8	D94-5529-16
Date Sampled:		20-MAY-1994	20-MAY-1994
	UNITS		
PESTICIDE/PCBs			
alpha-BHC	UG/L	NA	NA
beta-BHC	UG/L	NA	NA
delta-BHC	UG/L	NA	NA
gamma-BHC (Lindane)	UG/L	NA	NA
Heptachlor	UG/L	NA	NA
Aldrin	UG/L	NA	NA
Heptachlor epoxide	UG/L	NA	NA
Endosulfan I	UG/L	NA	NA
Dieldrin	UG/L	NA	NA
4,4'-DDE	UG/L	NA	NA
Endrin	UG/L	NA	NA
Endosulfan II	UG/L	NA	NA
4,4'-DDD	UG/L	NA	NA
Endosulfan sulfate	UG/L	NA	NA
4,4'-DDT	UG/L	NA	NA
Methoxychlor	UG/L	NA	NA
Endrin ketone	UG/L	NA	NA
Endrin aldehyde	UG/L	NA	NA
alpha-Chlordane	UG/L	NA	NA
gamma-Chlordane	UG/L	NA	NA
Toxaphene	UG/L	NA	NA
Aroclor-1016	UG/L	NA	NA
Aroclor-1221	UG/L	NA	NA
Aroclor-1232	UG/L	NA	NA
Aroclor-1242	UG/L	NA	NA
Aroclor-1248	UG/L	NA	NA
Aroclor-1254	UG/L	NA	NA
Aroclor-1260	UG/L	NA	NA

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
VOLATILES							
1,1,1-Trichloroethane	UG/L	5 U	250 U	ND	ND		0/50
1,1,2,2-Tetrachloroethane	UG/L	0.1 U	5 U	20.5	64.7	35-MW35AW-01	2/50
1,1,2-Trichloroethane	UG/L	0.1 U	5 U	1	1.9	35-MW32AW-01	2/50
1,1-Dichloroethane	UG/L	0.1 U	5 U	2.5	7.6	35-MW36BW-01	3/50
1,1-Dichloroethene	UG/L	0.2 U	10 U	0.8	6.9	35-MW36BW-01	4/50
1,2-Dichlorobenzene	UG/L	0.2 U	10 U	ND	ND		0/50
1,2-Dichloroethane	UG/L	0.3 U	15 U	ND	ND		0/50
1,2-Dichloropropane	UG/L	0.1 U	5 U	ND	ND		0/50
1,3-Dichlorobenzene	UG/L	0.4 U	20 U	ND	ND		0/50
1,4-Dichlorobenzene	UG/L	1 U	50 U	ND	ND		0/50
Bromodichloromethane	UG/L	0.1 U	5 U	ND	ND		0/50
Bromoform	UG/L	0.2 U	10 U	ND	ND		0/50
Bromomethane	UG/L	1.2 U	60 U	ND	ND		0/50
Carbon tetrachloride	UG/L	0.2 U	10 U	ND	ND		0/50
Chlorobenzene	UG/L	0.3 U	15 U	ND	ND		0/50
Chloroethane	UG/L	0.6 U	30 U	ND	ND		0/50
Chloroform	UG/L	0.1 U	5 U	0.6	0.6	35-MW35AW-01	1/50
Chloromethane	UG/L	0.5 U	25 U	ND	ND		0/50
Dibromochloromethane	UG/L	0.1 U	5 U	ND	ND		0/50
Dichlorodifluoromethane	UG/L	2 U	100 U	ND	ND		0/50
Methylene chloride	UG/L	5 U	250 U	ND	ND		0/50
Tetrachloroethene	UG/L	0.1 U	5 U	1.9	1.9	35-MW35AW-01	1/50
Trichloroethene	UG/L	0.1 U	5 U	0.4	900	35-MW19D-02	20/50
Trichlorofluoromethane	UG/L	0.5 U	25 U	ND	ND		0/50
Vinyl chloride	UG/L	0.5 U	25 U	ND	ND		0/50
cis-1,2-Dichloroethene	UG/L	0.1 U	5 U	3.2	973	35-MW10D-02	22/50
cis-1,3-Dichloropropene	UG/L	0.2 U	10 U	ND	ND		0/50
trans-1,2-Dichloroethene	UG/L	0.1 U	5 U	0.4	176	35-MW19D-02	18/50
trans-1,3-Dichloropropene	UG/L	0.2 U	10 U	ND	ND		0/50
Benzene	UG/L	0.2 U	10 U	0.2	1660	35-MW22S-02	29/50
Chlorobenzene	UG/L	0.2 U	10 U	ND	ND		0/50
Ethyl benzene	UG/L	0.2 U	2 U	0.3	824	35-MW21S-02	42/50
Methyl Tertiary Butyl Ether	UG/L	10 U	100 U	6.6 J	319	35-MW19D-02	15/50
Toluene	UG/L	0.2 U	2 U	0.3	984	35-MW16S-02	42/50
Xylenes	UG/L	0.2 U	2 U	0.6	1700	35-MW16S-02	45/50

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES							
Phenol	UG/L	10 U	11 U	11	23	35-MW22S-02	2/24
bis(2-Chloroethyl)ether	UG/L	10 U	11 U	ND	ND		0/24
2-Chlorophenol	UG/L	10 U	11 U	ND	ND		0/24
1,3-Dichlorobenzene	UG/L	10 U	11 U	ND	ND		0/24
1,4-Dichlorobenzene	UG/L	10 U	11 U	ND	ND		0/24
1,2-Dichlorobenzene	UG/L	10 U	11 U	ND	ND		0/24
2-Methylphenol	UG/L	10 U	11 U	17	17	35-MW29A-01	1/24
2,2'-oxybis(1-Chloropropane)	UG/L	10 U	11 U	ND	ND		0/24
4-Methylphenol	UG/L	10 U	11 U	6 J	6 J	35-MW16S-02	1/24
N-Nitroso-di-n-propylamine	UG/L	10 U	11 U	ND	ND		0/24
Hexachloroethane	UG/L	10 U	11 U	ND	ND		0/24
Nitrobenzene	UG/L	10 U	11 U	ND	ND		0/24
Isophorone	UG/L	10 U	11 U	ND	ND		0/24
2-Nitrophenol	UG/L	10 U	11 U	ND	ND		0/24
2,4-Dimethylphenol	UG/L	10 U	11 U	74	74	35-MW29A-01	1/24
bis(2-Chloroethoxy)methane	UG/L	10 U	11 U	ND	ND		0/24
2,4-Dichlorophenol	UG/L	10 U	11 U	ND	ND		0/24
1,2,4-Trichlorobenzene	UG/L	10 U	11 U	ND	ND		0/24
Naphthalene	UG/L	10 U	11 U	7 J	499	35-MW21S-02	6/24
4-Chloroaniline	UG/L	10 U	11 UJ	ND	ND		0/24
Hexachlorobutadiene	UG/L	10 U	11 U	ND	ND		0/24
4-Chloro-3-methylphenol	UG/L	10 U	11 U	ND	ND		0/24
2-Methylnaphthalene	UG/L	10 U	11 U	70	668	35-MW21S-02	5/24
Hexachlorocyclopentadiene	UG/L	10 U	11 U	ND	ND		0/24
2,4,6-Trichlorophenol	UG/L	10 U	11 U	ND	ND		0/24
2,4,5-Trichlorophenol	UG/L	25 U	28 U	ND	ND		0/24
2-Chloronaphthalene	UG/L	10 U	11 U	ND	ND		0/24
2-Nitroaniline	UG/L	25 U	28 U	ND	ND		0/24
Dimethylphthalate	UG/L	10 U	11 U	ND	ND		0/24
Acenaphthylene	UG/L	10 U	11 U	ND	ND		0/24
2,6-Dinitrotoluene	UG/L	10 U	11 U	ND	ND		0/24
3-Nitroaniline	UG/L	25 UJ	28 UJ	ND	ND		0/24
Acenaphthene	UG/L	10 U	11 U	ND	ND		0/24

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 U	28 UJ	ND	ND		0/24
Dibenzofuran	UG/L	10 U	11 U	8 J	23	35-MW21S-02	3/24
4-Nitrophenol	UG/L	10 UJ	11 UJ	ND	ND		0/24
2,4-Dinitrotoluene	UG/L	10 U	11 U	ND	ND		0/24
Diethylphthalate	UG/L	10 U	11 U	ND	ND		0/24
Fluorene	UG/L	10 U	11 U	8 J	22	35-MW21S-02	3/24
4-Chlorophenyl-phenylether	UG/L	10 U	11 U	ND	ND		0/24
4-Nitroaniline	UG/L	25 UJ	28 U	ND	ND		0/24
4,6-Dinitro-2-methylphenol	UG/L	25 U	28 U	ND	ND		0/24
N-Nitrosodiphenylamine	UG/L	10 U	11 U	ND	ND		0/24
4-Bromophenyl-phenylether	UG/L	10 U	11 U	ND	ND		0/24
Hexachlorobenzene	UG/L	10 U	11 U	ND	ND		0/24
Pentachlorophenol	UG/L	25 U	28 U	ND	ND		0/24
Phenanthrene	UG/L	10 U	11 U	10 J	52	35-MW21S-02	3/24
Anthracene	UG/L	10 U	11 U	7 J	7 J	35-MW21S-02	1/24
Carbazole	UG/L	10 U	11 U	12	13	35-MW22S-02	2/24
Di-n-butylphthalate	UG/L	10 U	11 U	ND	ND		0/24
Fluoranthene	UG/L	10 U	11 U	ND	ND		0/24
Pyrene	UG/L	10 U	11 U	ND	ND		0/24
Butylbenzylphthalate	UG/L	10 UJ	11 U	ND	ND		0/24
Benzo(a)anthracene	UG/L	10 U	11 U	ND	ND		0/24
3,3'-Dichlorobenzidine	UG/L	10 U	11 UJ	ND	ND		0/24
Chrysene	UG/L	10 U	11 U	ND	ND		0/24
bis(2-Ethylhexyl)phthalate	UG/L	10 UJ	11 U	ND	ND		0/24
Di-n-octylphthalate	UG/L	10 U	11 U	ND	ND		0/24
Benzo(b)fluoranthene	UG/L	10 U	11 U	ND	ND		0/24
Benzo(k)fluoranthene	UG/L	10 U	11 U	ND	ND		0/24
Benzo(a)pyrene	UG/L	10 U	11 U	ND	ND		0/24
Indeno(1,2,3-cd)pyrene	UG/L	10 U	11 U	ND	ND		0/24
Dibenz(a,h)anthracene	UG/L	10 U	11 U	ND	ND		0/24
Benzo(g,h,i)perylene	UG/L	10 U	11 U	ND	ND		0/24

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
PESTICIDE/PCBs							
alpha-BHC	UG/L	0.05 U	0.05 U	ND	ND		0/7
beta-BHC	UG/L	0.05 U	0.05 U	0.022 J	0.023 J	35-MW21S-02	3/7
delta-BHC	UG/L	0.05 U	0.05 U	0.05 J	0.05 J	35-MW29BW-01	1/7
gamma-BHC (Lindane)	UG/L	0.05 U	0.05 U	ND	ND		0/7
Heptachlor	UG/L	0.05 U	0.05 U	0.011 J	0.013 J	35-MW33BW-01	2/7
Aldrin	UG/L	0.05 U	0.05 U	0.013 J	0.017 J	35-MW29A-01	2/7
Heptachlor epoxide	UG/L	0.05 U	0.05 U	ND	ND		0/7
Endosulfan I	UG/L	0.05 U	0.05 U	ND	ND		0/7
Dieldrin	UG/L	0.1 U	0.1 U	ND	ND		0/7
4,4'-DDE	UG/L	0.1 U	0.1 U	ND	ND		0/7
Endrin	UG/L	0.1 U	0.1 U	ND	ND		0/7
Endosulfan II	UG/L	0.1 U	0.1 U	ND	ND		0/7
4,4'-DDD	UG/L	0.1 U	0.1 U	0.21 J	0.21 J	35-MW29BW-01	1/7
Endosulfan sulfate	UG/L	0.1 U	0.1 U	ND	ND		0/7
4,4'-DDT	UG/L	0.1 U	0.1 U	0.014 J	0.014 J	35-MW33BW-01	1/7
Methoxychlor	UG/L	0.5 U	0.5 U	ND	ND		0/7
Endrin ketone	UG/L	0.1 U	0.1 U	ND	ND		0/7
Endrin aldehyde	UG/L	0.024 U	0.1 U	ND	ND		0/7
alpha-Chlordane	UG/L	0.05 U	0.05 U	ND	ND		0/7
gamma-Chlordane	UG/L	0.05 U	0.05 U	ND	ND		0/7
Toxaphene	UG/L	5 U	5 U	ND	ND		0/7
Aroclor-1016	UG/L	1 U	1 U	ND	ND		0/7
Aroclor-1221	UG/L	2 U	2 U	ND	ND		0/7
Aroclor-1232	UG/L	1 U	1 U	ND	ND		0/7
Aroclor-1242	UG/L	1 U	1 U	ND	ND		0/7
Aroclor-1248	UG/L	1 U	1 U	ND	ND		0/7
Aroclor-1254	UG/L	1 U	1 U	ND	ND		0/7
Aroclor-1260	UG/L	1 U	1 U	ND	ND		0/7

APPENDIX U.6a
GROUNDWATER TOTAL INORGANICS

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TOTAL METALS

Client Sample ID:		35-EMW03-03	35-EMW05-03	35-EMW7-03	35-GWDW5-01	35-MW09S-02	35-MW09D-02
Lab Sample ID:		5361-5	5361-1	5361-10	5361-13	5296-5	5296-6
Date Sampled:		14-MAY-1994	14-MAY-1994	14-MAY-1994	15-MAY-1994	10-MAY-1994	11-MAY-1994
	UNITS						
Aluminum	UG/L	4960	43800	81000	215	93000	10800
Antimony	UG/L	46 U	46 U	46 U	46 U	46 R	46 R
Arsenic	UG/L	3.5	23.4	10.7	2.6	86.5 J	7.8 J
Barium	UG/L	60.4 J	114	1410	20.7	706	132
Beryllium	UG/L	1.5	2.5	16.7	1 U	14	3
Cadmium	UG/L	1.6	1.8	4.7	0.3 U	4.4 J	1.3 J
Calcium	UG/L	215000	47400	834000	49300	256000	202000
Chromium	UG/L	25.6	91.4	283	7 U	451	96
Cobalt	UG/L	26	11 U	67.9	11 U	19	11 U
Copper	UG/L	5	20.4	32.8	2.7	41	15
Iron	UG/L	10400	36500	81000	310	55300	10200
Lead	UG/L	2.7	35.6 R	22.3 R	1.6	35.7	10.7 J
Magnesium	UG/L	4880	5990	20500	2560	13200	5180
Manganese	UG/L	45.7	75.8	281	13.3	273	49
Mercury	UG/L	0.1 U	0.1 U	0.17 J	0.46 J	0.1 UJ	0.1 UJ
Nickel	UG/L	28.8	18.8	104	11 U	62	18
Potassium	UG/L	2440 U	4540	7370	5730	9140	2440 U
Selenium	UG/L	1.4 UJ	1.4 U	7 UJ	1.4 UJ	2.1 J	1.7
Silver	UG/L	3 U	3 U	3 U	3 U	3 U	3 U
Sodium	UG/L	6930	12300	7750	33900	68200	9450
Thallium	UG/L	1 UJ	2 J	1.3	1 UJ	2.3	1 U
Vanadium	UG/L	35.5	92.6	185	5 U	246	37
Zinc	UG/L	81.1	148	383	11 U	867	91 R

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TOTAL METALS

Client Sample ID:		35-MW10S-02	35-MW10D-02	35-MW14S-02	35-MW14D-02	35-MW16S-02	35-MW16D-02
Lab Sample ID:		5296-13	5296-8	5296-10	5296-11	5296-16	5296-12
Date Sampled:		12-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
Aluminum	UG/L	218000	24600	114000	5110	158000	8870
Antimony	UG/L	46 R	46 R	46 R	46 R	46 R	46 R
Arsenic	UG/L	165 J	20.3 J	30.2 J	2.9 J	6 J	1.2 R
Barium	UG/L	2230	271	2210	118	870	82
Beryllium	UG/L	40	6	30	1	34	4
Cadmium	UG/L	19.7 R	3.6 J	6.8 J	1.1 J	8.2 J	1.3 J
Calcium	UG/L	2050000	443000	896000	164000	886000	131000
Chromium	UG/L	1120	206	743	64	735	81
Cobalt	UG/L	60	11 U	17	11 U	33	11 U
Copper	UG/L	140	25	78	12	70	16
Iron	UG/L	111000	20900	77700	5530	137000	31300
Lead	UG/L	57.6	9.7 J	23.6	4.4 J	29.9	5.3 J
Magnesium	UG/L	42600	9690	25300	3970	27200	5390
Manganese	UG/L	462	83	195	32	408	344
Mercury	UG/L	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
Nickel	UG/L	221	29	85	11 U	127	30
Potassium	UG/L	12800	4670	5590	3090	8300	24400 U
Selenium	UG/L	7 R	7 R	13.5 J	2 J	7 R	1.4 R
Silver	UG/L	20	3 U	4	3 U	4	3 U
Sodium	UG/L	45400	9070	10500	8450	4470	7540
Thallium	UG/L	4.8 J	1.1	3.3	1 U	2.5	1
Vanadium	UG/L	537	90	302	26	466	48
Zinc	UG/L	947	147 R	493 R	151 R	689	138 R

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TOTAL METALS

Client Sample ID:		35-MW19S-02	35-MW19D-02	35-MW21S-02	35-MW21D-02	35-MW22S-02	35-MW22D-02
Lab Sample ID:		5296-17	5296-22	5296-23	5296-24	5361-17	5361-2
Date Sampled:		12-MAY-1994	12-MAY-1994	13-MAY-1994	13-MAY-1994	13-MAY-1994	13-MAY-1994
	UNITS						
Aluminum	UG/L	101000	23000	119000	4350	380000	34100
Antimony	UG/L	46 R	46 R	46 R	46 R	46 U	46 U
Arsenic	UG/L	6.3 J	4.5 J	103 J	1.9 J	26.2	2.6 J
Barium	UG/L	287	99	1400	77	2280	300
Beryllium	UG/L	11	12	29	1	63.5	11.8
Cadmium	UG/L	10.2 J	15	11.1	1 J	340	6.1
Calcium	UG/L	104000	210000	1200000	330000	787000	825000
Chromium	UG/L	301	201	1050	81	1540	268
Cobalt	UG/L	168	118	32	11 U	281	56.1
Copper	UG/L	38	21	83	11	94.7	26.4
Iron	UG/L	139000	63300	255000	9730	239000	57500
Lead	UG/L	64	13.1	31	3.2 J	6.9	14.9 R
Magnesium	UG/L	9650	10200	33300	8590	35400	16700
Manganese	UG/L	684	1420	121	65	497	299
Mercury	UG/L	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.15 J	0.84 J
Nickel	UG/L	174	148	138	11 U	524	119
Potassium	UG/L	10900	24400 U	9000	2440 U	22300	7150
Selenium	UG/L	1.4 J	7 R	7 J	7 R	11.5 J	1.4 UJ
Silver	UG/L	3 U	3 U	3 U	3 U	3 U	3 U
Sodium	UG/L	14600	23700 U	10900	23100	5030	7960
Thallium	UG/L	2.8	1.6	4.5	1 U	2.7	1 U
Vanadium	UG/L	228	99	447	33	886	141
Zinc	UG/L	714	707	622	42 R	1850	424

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TOTAL METALS

Client Sample ID:		35-MW25S-02	35-MW25D-02	35-MW29A-01	35-MW29BW-01	35-MW33AW-01	35-MW33BW-01
Lab Sample ID:		5361-4	5361-18	5296-1	5296-4	5529-14	5529-7
Date Sampled:		13-MAY-1994	13-MAY-1994	10-MAY-1994	10-MAY-1994	19-MAY-1994	17-MAY-1994
	UNITS						
Aluminum	UG/L	7810	8880	113822	1880	78200	25.3 U
Antimony	UG/L	46 U	46 U	10.2 J	3.8 J	83.5 R	49 R
Arsenic	UG/L	6.1	3.7 J	14.9 J	2.9 J	2 UJ	2 UJ
Barium	UG/L	150	205	3440	93	898	43.9
Beryllium	UG/L	2.3	3.9	3.8 J	0.14 J	3.5	1 U
Cadmium	UG/L	0.56	0.96	11	0.31	0.31 J	0.49 J
Calcium	UG/L	138000 J	262000 J	18900	132000	13510	92100
Chromium	UG/L	40.1 J	74.2 J	292	4.6	194	7 U
Cobalt	UG/L	11 U	11 U	168 J	12 J	11 U	11 U
Copper	UG/L	2	7.7	38 J	4 J	13.4	7.4 U
Iron	UG/L	65900 J	9820 J	117000	2260	70100	67.7
Lead	UG/L	2.2	2	4.2 J	3.9 J	18.2 J	1.2 J
Magnesium	UG/L	6220	4960	10700	3210	8260	2650
Manganese	UG/L	735 J	55 J	662	52 J	58.8	23.3
Mercury	UG/L	0.44 J	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U
Nickel	UG/L	11 U	13.4	294	28 J	34.1	11 U
Potassium	UG/L	2440 U	4050	8880	2440 U	5690	2740
Selenium	UG/L	1.4 UJ	1.4 UJ	1.4 R	1.4 R	1.8 J	1.4 UJ
Silver	UG/L	3 U	3 U	1.2 U	1.1 U	3 U	3 U
Sodium	UG/L	10700	7140	14200	8450	8070	10800
Thallium	UG/L	1.5 J	1 U	5	1 U	0.9	0.6 U
Vanadium	UG/L	25.1	32.4	425	8 J	176	5 U
Zinc	UG/L	43.6	41.9	415	42 J	65.8	11 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TOTAL METALS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	UG/L	25.3 U	25.3 U	215	380000	35-MW22S-02	23/24
Antimony	UG/L	46 U	46 U	3.8 J	83.5 R	35-MW33AW-01	16/24
Arsenic	UG/L	2 UJ	2 UJ	1.2 R	165 J	35-MW10S-02	22/24
Barium	UG/L	NA	NA	20.7	3440	35-MW29A-01	24/24
Beryllium	UG/L	1 U	1 U	0.14 J	63.5	35-MW22S-02	22/24
Cadmium	UG/L	0.3 U	0.3 U	0.31	340	35-MW22S-02	23/24
Calcium	UG/L	NA	NA	13510	2050000	35-MW10S-02	24/24
Chromium	UG/L	7 U	7 U	4.6	1540	35-MW22S-02	22/24
Cobalt	UG/L	11 U	11 U	12 J	281	35-MW22S-02	13/24
Copper	UG/L	7.4 U	7.4 U	2	140	35-MW10S-02	23/24
Iron	UG/L	NA	NA	67.7	255000	35-MW21S-02	24/24
Lead	UG/L	NA	NA	1.2 J	64	35-MW19S-02	24/24
Magnesium	UG/L	NA	NA	2560	42600	35-MW10S-02	24/24
Manganese	UG/L	NA	NA	13.3	1420	35-MW19D-02	24/24
Mercury	UG/L	0.1 U	0.1 U	0.15 J	0.84 J	35-MW22D-02	5/24
Nickel	UG/L	11 U	11 U	13.4	524	35-MW22S-02	19/24
Potassium	UG/L	2440 U	24400 U	2740	22300	35-MW22S-02	17/24
Selenium	UG/L	1.4 UJ	7 UJ	1.4 R	13.5 J	35-MW14S-02	16/24
Silver	UG/L	1.1 U	3 U	4	20	35-MW10S-02	3/24
Sodium	UG/L	23700 U	23700 U	4470	68200	35-MW09S-02	23/24
Thallium	UG/L	0.6 U	1 UJ	0.9	5	35-MW29A-01	15/24
Vanadium	UG/L	5 U	5 U	8 J	886	35-MW22S-02	22/24
Zinc	UG/L	11 U	11 U	41.9	1850	35-MW22S-02	22/24

APPENDIX U.6b
GROUNDWATER DISSOLVED INORGANICS

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
DISSOLVED METALS

Client Sample ID:		35-EMW03D-03	35-EMW05D-03	35-EMW7D-03	35-GWDW5D-01	35-MW09SD-02	35-MW09DD-02
Lab Sample ID:		D94-5361-5	D94-5361-1	D94-5361-10	D94-5361-13	D94-5296-5	D94-5296-6
Date Sampled:		14-MAY-1994	14-MAY-1994	14-MAY-1994	15-MAY-1994	10-MAY-1994	11-MAY-1994
	UNITS						
Aluminum	UG/L	100 U	100 U	100 U	100 U	100 U	100 U
Antimony	UG/L	60 U	60 U	60 U	60 U	60 U	60 U
Arsenic	UG/L	5 U	16	5 U	5 U	6	5 U
Barium	UG/L	20 U	20 U	20	20 U	46	20
Beryllium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Calcium	UG/L	95000	46100	93900	53200	94700	91600
Chromium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Cobalt	UG/L	50 U	50 U	50 U	50 U	50 U	50 U
Copper	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Iron	UG/L	50 U	16400	50 U	50 U	50 U	278
Lead	UG/L	2 U	2 U	2 U	2 U	2 U	2 U
Magnesium	UG/L	2210	3240	3850	2450	3720	2300
Manganese	UG/L	19	47	19	11	42	24
Mercury	UG/L	0.7	0.5	0.6	0.8	2.9	1.4
Nickel	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Potassium	UG/L	2500 U	2500 U	2500 U	2500 U	4000 U	4000 U
Selenium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Silver	UG/L	2 U	2 U	2 U	2 U	2 U	2 U
Sodium	UG/L	6710	12500	6200	36100	72200	8460
Thallium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Vanadium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Zinc	UG/L	5 U	5 U	6	5 U	5 U	5 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
DISSOLVED METALS

Client Sample ID:		35-MW10SD-02	35-MW10DD-02	35-MW14SD-02	35-MW14DD-02	35-MW16SD-02	35-MW16DD-02
Lab Sample ID:		D94-5296-13	D94-5296-8	D94-5296-10	D94-5296-11	D94-5296-16	D94-5296-12
Date Sampled:		12-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
Aluminum	UG/L	100 U	100 U	100 U	100 U	100 U	100 U
Antimony	UG/L	60 U	60 U	60 U	60 U	60 U	60 U
Arsenic	UG/L	22	5 U	10	5 U	7	5 U
Barium	UG/L	44	20 U	38	34	29	20 U
Beryllium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Calcium	UG/L	117000	109000	154000	113000	113000	85700
Chromium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Cobalt	UG/L	50 U	50 U	50 U	50 U	50 U	50 U
Copper	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Iron	UG/L	2600	306	4330	5830	10300	222
Lead	UG/L	2 U	2 U	2 U	2 U	2 U	2 U
Magnesium	UG/L	3180	2380	5970	2400	3750	3300
Manganese	UG/L	47	17	73	22	89	244
Mercury	UG/L	0.2 U	0.2 U	0.7	5.2	0.2 U	0.3
Nickel	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Potassium	UG/L	4000 U	4000 U	4000 U	4000 U	4000 U	4000 U
Selenium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Silver	UG/L	2 U	2 U	2 U	2 U	2 U	2 U
Sodium	UG/L	39700	7170	7830	7550	2570	7000
Thallium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Vanadium	UG/L	12	10 U	10 U	10 U	10 U	10 U
Zinc	UG/L	5 U	5 U	5 U	5 U	5 U	5 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
DISSOLVED METALS

Client Sample ID:		35-MW19SD-02	35-MW19DD-02	35-MW21SD-02	35-MW21DD-02	35-MW22SD-02	35-MW22DD-02
Lab Sample ID:		D94-5296-17	D94-5296-22	D94-5296-23	D94-5296-24	D94-5361-17	D94-5361-2
Date Sampled:		12-MAY-1994	12-MAY-1994	13-MAY-1994	13-MAY-1994	13-MAY-1994	13-MAY-1994
	UNITS						
Aluminum	UG/L	372	100 U	100 U	100 U	444	5850
Antimony	UG/L	60 U	60 U	60 U	60 U	60 U	60 U
Arsenic	UG/L	5 U	5 U	64	5 U	5 U	13
Barium	UG/L	23	20 U	20 U	26	71	53
Beryllium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	UG/L	1 U	1 U	1 U	1 U	3	1 U
Calcium	UG/L	44400	107000	100000	132000	674000	122000
Chromium	UG/L	10 U	10 U	10 U	10 U	10 U	24
Cobalt	UG/L	50 U	50 U	50 U	50 U	50 U	50 U
Copper	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Iron	UG/L	254	50 U	90600	1730	1530	17400
Lead	UG/L	2	2 U	2 U	2 U	2 U	2
Magnesium	UG/L	2140	4710	4260	4380	8520	3450
Manganese	UG/L	157	34	36	44	186	87
Mercury	UG/L	1.6	0.2	0.2	0.3	0.8	0.7
Nickel	UG/L	10 U	10 U	10 U	10 U	10 U	10
Potassium	UG/L	4000 U	4000 U	4000 U	4000 U	2500 U	2500 U
Selenium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Silver	UG/L	2 U	2 U	2 U	2 U	2 U	2 U
Sodium	UG/L	13800	9770	8220	21900	8150	3620
Thallium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Vanadium	UG/L	10 U	10 U	10 U	10 U	10 U	19
Zinc	UG/L	5 U	5 U	10	5 U	36	42

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
DISSOLVED METALS

Client Sample ID:		35-MW25SD-02	35-MW25DD-02	35-MW29AD-01	35-MW29BWD-01	35-MW33AWD-01	35-MW33BWD-01
Lab Sample ID:		D94-5361-4	D94-5361-18	D94-5296-1	D94-5296-4	D94-5529-14	D94-5529-7
Date Sampled:		13-MAY-1994	13-MAY-1994	10-MAY-1994	10-MAY-1994	19-MAY-1994	17-MAY-1994
	UNITS						
Aluminum	UG/L	100 U	100 U	288	100 U	117	100 U
Antimony	UG/L	60 U	60 U	60 U	60 U	60 U	60 U
Arsenic	UG/L	5 U	5 U	17	5 U	5 U	5 U
Barium	UG/L	20 U	21	145	79	77	44
Beryllium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Calcium	UG/L	107000	77900	7160	82900	10600	93300 D
Chromium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Cobalt	UG/L	50 U	50 U	50 U	50 U	50 U	50 U
Copper	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Iron	UG/L	35000	50 U	4330	102	50 U	50 U
Lead	UG/L	2 U	3	2 U	2 U	2 U	2
Magnesium	UG/L	5040	1640	2120	2670	4330	2630
Manganese	UG/L	733	22	56	42	25	24
Mercury	UG/L	0.5	0.5	5.6	6	2.2	3.7
Nickel	UG/L	10 U	10 U	28	10 U	10 UD	10 U
Potassium	UG/L	2500 U	2500 U	4000 U	4000 U	2500 U	2500 U
Selenium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Silver	UG/L	2 U	2 U	2 U	2 U	2 U	2 U
Sodium	UG/L	11100	6720	14200	8760	7960	11200
Thallium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Vanadium	UG/L	10 U	10 U	11	10 U	10 U	10 U
Zinc	UG/L	5 U	5 U	8	5 U	10	5 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
DISSOLVED METALS

Client Sample ID: Lab Sample ID: Date Sampled:		MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	UNITS						
Aluminum	UG/L	100 U	100 U	117	5850	35-MW22DD-02	5/24
Antimony	UG/L	60 U	60 U	ND	ND		0/24
Arsenic	UG/L	5 U	5 U	6	64	35-MW21SD-02	8/24
Barium	UG/L	20 U	20 U	20	145	35-MW29AD-01	16/24
Beryllium	UG/L	5 U	5 U	ND	ND		0/24
Cadmium	UG/L	1 U	1 U	3	3	35-MW22SD-02	1/24
Calcium	UG/L	NA	NA	7160	674000	35-MW22SD-02	24/24
Chromium	UG/L	10 U	10 U	24	24	35-MW22DD-02	1/24
Cobalt	UG/L	50 U	50 U	ND	ND		0/24
Copper	UG/L	10 U	10 U	ND	ND		0/24
Iron	UG/L	50 U	50 U	102	90600	35-MW21SD-02	16/24
Lead	UG/L	2 U	2 U	2	3	35-MW25DD-02	4/24
Magnesium	UG/L	NA	NA	1640	8520	35-MW22SD-02	24/24
Manganese	UG/L	NA	NA	11	733	35-MW25SD-02	24/24
Mercury	UG/L	0.2 U	0.2 U	0.2	6	35-MW29BWD-01	21/24
Nickel	UG/L	10 U	10 U	10	28	35-MW29AD-01	3/24
Potassium	UG/L	2500 U	4000 U	ND	ND		0/24
Selenium	UG/L	5 U	5 U	ND	ND		0/24
Silver	UG/L	2 U	2 U	ND	ND		0/24
Sodium	UG/L	NA	NA	2570	72200	35-MW09SD-02	24/24
Thallium	UG/L	10 U	10 U	ND	ND		0/24
Vanadium	UG/L	10 U	10 U	11	19	35-MW22DD-02	3/24
Zinc	UG/L	5 U	5 U	6	42	35-MW22DD-02	6/24

APPENDIX U.7
SURFACE WATER ORGANICS

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW01	35-SW02	35-SW03	35-SW04	35-SW05	35-SW06
Lab Sample ID:		4120-12	4120-13	4120-1	4120-2	4120-3	4120-4
Date Sampled:		12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994
	UNITS						
VOLATILES							
Chloromethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,1-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	UG/L	10 U	10 U	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW01	35-SW02	35-SW03	35-SW04	35-SW05	35-SW06
Lab Sample ID:		4120-12	4120-13	4120-1	4120-2	4120-3	4120-4
Date Sampled:		12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
2-Chlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
1,2-Dichlorobenzene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
2-Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis(1-Chloropropane)	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
4-Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Hexachloroethane	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Nitrobenzene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Isophorone	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
2-Nitrophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
2,4-Dichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Naphthalene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
4-Chloroaniline	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Hexachlorobutadiene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
4-Chloro-3-methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Hexachlorocyclopentadiene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
2,4,6-Trichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
2-Nitroaniline	UG/L	25 U	25 U	25 UJ	25 U	25 U	25 U
Dimethylphthalate	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Acenaphthylene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
2,6-Dinitrotoluene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
3-Nitroaniline	UG/L	25 U	25 U	25 UJ	25 U	25 U	25 U
Acenaphthene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW01	35-SW02	35-SW03	35-SW04	35-SW05	35-SW06
Lab Sample ID:		4120-12	4120-13	4120-1	4120-2	4120-3	4120-4
Date Sampled:		12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Dibenzofuran	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
4-Nitrophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Diethylphthalate	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Fluorene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
4-Chlorophenyl-phenylether	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
4-Nitroaniline	UG/L	25 U	25 U	25 UJ	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
4-Bromophenyl-phenylether	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Hexachlorobenzene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Pentachlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Anthracene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Carbazole	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Di-n-butylphthalate	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Fluoranthene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Pyrene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Butylbenzylphthalate	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Benzo(a)anthracene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
3,3'-Dichlorobenzidine	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Chrysene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Di-n-octylphthalate	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Benzo(b)fluoranthene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Benzo(k)fluoranthene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Benzo(a)pyrene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Dibenz(a,h)anthracene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U
Benzo(g,h,i)perylene	UG/L	10 U	10 U	10 UJ	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW01	35-SW02	35-SW03	35-SW04	35-SW05	35-SW06
Lab Sample ID:		4120-12	4120-13	4120-1	4120-2	4120-3	4120-4
Date Sampled:		12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994
	UNITS						
PESTCIDE/PCBs							
alpha-BHC	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
beta-BHC	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
delta-BHC	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
gamma-BHC (Lindane)	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aldrin	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Heptachlor epoxide	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan I	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dieldrin	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDE	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan II	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDD	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan sulfate	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDT	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Methoxychlor	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Endrin ketone	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin aldehyde	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
alpha-Chlordane	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-Chlordane	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Toxaphene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Aroclor-1016	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1221	UG/L	2 U	2 U	2 U	2 U	2 U	2 U
Aroclor-1232	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1242	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1248	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1254	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1260	UG/L	1 U	1 U	1 U	1 U	1 U	1 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW07	36-SW05	36-SW06	36-SW07
Lab Sample ID:		4581-1	4375-9	4375-11	4375-10
Date Sampled:		20-APR-1994	18-APR-1994	18-APR-1994	18-APR-1994
	UNITS				
VOLATILES					
Chloromethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Bromomethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Vinyl Chloride	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Chloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Methylene Chloride	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Acetone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Carbon Disulfide	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
1,1-Dichloroethene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
1,1-Dichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
1,2-Dichloroethene (total)	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Chloroform	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
1,2-Dichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
2-Butanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
1,1,1-Trichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Carbon Tetrachloride	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Bromodichloromethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
1,2-Dichloropropane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
cis-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Trichloroethene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Dibromochloromethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
1,1,2-Trichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Benzene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
trans-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Bromoform	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
4-Methyl-2-Pentanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
2-Hexanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Tetrachloroethene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
1,1,2,2-Tetrachloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Toluene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Chlorobenzene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Ethylbenzene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Styrene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Xylene (total)	UG/L	10 UJ	10 UJ	10 UJ	10 UJ

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW07	36-SW05	36-SW06	36-SW07
Lab Sample ID:		4581-1	4375-9	4375-11	4375-10
Date Sampled:		20-APR-1994	18-APR-1994	18-APR-1994	18-APR-1994
	UNITS				
SEMIVOLATILES					
Phenol	UG/L	10 U	10 UJ	10 UJ	11 UJ
bis(2-Chloroethyl)ether	UG/L	10 UJ	10 UJ	10 U	11 U
2-Chlorophenol	UG/L	10 U	10 U	10 U	11 U
1,3-Dichlorobenzene	UG/L	10 U	10 UJ	10 U	11 U
1,4-Dichlorobenzene	UG/L	10 U	10 UJ	10 U	11 U
1,2-Dichlorobenzene	UG/L	10 U	10 UJ	10 U	11 U
2-Methylphenol	UG/L	10 U	10 U	10 U	11 U
2,2'-oxybis(1-Chloropropane)	UG/L	10 UJ	10 UJ	10 U	11 U
4-Methylphenol	UG/L	10 U	10 U	10 U	11 U
N-Nitroso-di-n-propylamine	UG/L	10 UJ	10 UJ	10 U	11 U
Hexachloroethane	UG/L	10 U	10 UJ	10 U	11 U
Nitrobenzene	UG/L	10 U	10 UJ	10 U	11 U
Isophorone	UG/L	10 U	10 UJ	10 U	11 U
2-Nitrophenol	UG/L	10 U	10 U	10 U	11 U
2,4-Dimethylphenol	UG/L	10 U	10 U	10 U	11 U
bis(2-Chloroethoxy)methane	UG/L	10 U	10 UJ	10 U	11 U
2,4-Dichlorophenol	UG/L	10 U	10 U	10 U	11 U
1,2,4-Trichlorobenzene	UG/L	10 U	10 UJ	10 U	11 U
Naphthalene	UG/L	10 U	10 UJ	10 U	11 U
4-Chloroaniline	UG/L	10 U	10 UJ	10 U	11 U
Hexachlorobutadiene	UG/L	10 U	10 UJ	10 U	11 U
4-Chloro-3-methylphenol	UG/L	10 U	10 U	10 U	11 U
2-Methylnaphthalene	UG/L	10 U	10 UJ	10 U	11 U
Hexachlorocyclopentadiene	UG/L	10 U	10 UJ	10 U	11 U
2,4,6-Trichlorophenol	UG/L	10 U	10 U	10 U	11 U
2,4,5-Trichlorophenol	UG/L	25 U	25 U	25 U	28 U
2-Chloronaphthalene	UG/L	10 U	10 UJ	10 U	11 U
2-Nitroaniline	UG/L	25 U	25 UJ	25 U	28 U
Dimethylphthalate	UG/L	10 U	10 UJ	10 UJ	11 UJ
Acenaphthylene	UG/L	10 U	10 UJ	10 U	11 U
2,6-Dinitrotoluene	UG/L	10 U	10 UJ	10 U	11 U
3-Nitroaniline	UG/L	25 UJ	25 UJ	25 U	28 U
Acenaphthene	UG/L	10 U	10 UJ	10 U	11 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW07	36-SW05	36-SW06	36-SW07
Lab Sample ID:		4581-1	4375-9	4375-11	4375-10
Date Sampled:		20-APR-1994	18-APR-1994	18-APR-1994	18-APR-1994
	UNITS				
SEMIVOLATILES Cont.					
2,4-Dinitrophenol	UG/L	25 UJ	25 UJ	25 U	28 U
Dibenzofuran	UG/L	10 U	10 UJ	10 U	11 U
4-Nitrophenol	UG/L	10 U	10 U	10 UJ	11 UJ
2,4-Dinitrotoluene	UG/L	10 U	10 UJ	10 U	11 U
Diethylphthalate	UG/L	10 U	10 UJ	10 U	11 U
Fluorene	UG/L	10 U	10 UJ	10 U	11 U
4-Chlorophenyl-phenylether	UG/L	10 U	10 UJ	10 U	11 U
4-Nitroaniline	UG/L	25 U	25 UJ	25 U	28 U
4,6-Dinitro-2-methylphenol	UG/L	25 UJ	25 U	25 U	28 U
N-Nitrosodiphenylamine	UG/L	10 U	10 UJ	10 UJ	11 UJ
4-Bromophenyl-phenylether	UG/L	10 U	10 UJ	10 U	11 U
Hexachlorobenzene	UG/L	10 U	10 UJ	10 U	11 U
Pentachlorophenol	UG/L	25 U	25 U	25 U	28 U
Phenanthrene	UG/L	10 U	10 UJ	10 U	11 U
Anthracene	UG/L	10 U	10 UJ	10 U	11 U
Carbazole	UG/L	10 U	10 UJ	10 U	11 U
Di-n-butylphthalate	UG/L	10 U	10 UJ	10 U	11 U
Fluoranthene	UG/L	10 U	10 UJ	10 U	11 U
Pyrene	UG/L	10 U	10 UJ	10 U	11 U
Butylbenzylphthalate	UG/L	10 U	10 UJ	10 UJ	11 UJ
Benzo(a)anthracene	UG/L	10 U	10 UJ	10 U	11 U
3,3'-Dichlorobenzidine	UG/L	10 U	10 UJ	10 U	11 U
Chrysene	UG/L	10 U	10 UJ	10 UJ	11 UJ
bis(2-Ethylhexyl)phthalate	UG/L	10 U	10 UJ	10 UJ	11 UJ
Di-n-octylphthalate	UG/L	10 U	10 UJ	10 U	11 U
Benzo(b)fluoranthene	UG/L	10 U	10 UJ	10 U	11 U
Benzo(k)fluoranthene	UG/L	10 U	10 UJ	10 U	11 U
Benzo(a)pyrene	UG/L	10 U	10 UJ	10 U	11 U
Indeno(1,2,3-cd)pyrene	UG/L	10 U	10 UJ	10 U	11 U
Dibenz(a,h)anthracene	UG/L	10 U	10 UJ	10 U	11 U
Benzo(g,h,i)perylene	UG/L	10 U	10 UJ	10 U	11 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW07	36-SW05	36-SW06	36-SW07
Lab Sample ID:		4581-1	4375-9	4375-11	4375-10
Date Sampled:		20-APR-1994	18-APR-1994	18-APR-1994	18-APR-1994
	UNITS				
PESTCIDE/PCBs					
alpha-BHC	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
beta-BHC	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
delta-BHC	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
gamma-BHC (Lindane)	UG/L	0.5 U	0.05 UJ	0.05 UJ	0.05 UJ
Heptachlor	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
Aldrin	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
Heptachlor epoxide	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
Endosulfan I	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
Dieldrin	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
4,4'-DDE	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
Endrin	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
Endosulfan II	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
4,4'-DDD	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
Endosulfan sulfate	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
4,4'-DDT	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
Methoxychlor	UG/L	0.59 UJ	0.05 U	0.50 U	0.50 U
Endrin ketone	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
Endrin aldehyde	UG/L	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ
alpha-Chlordane	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
gamma-Chlordane	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
Toxaphene	UG/L	5 U	5 UJ	5 UJ	5 UJ
Aroclor-1016	UG/L	1 U	1 UJ	1 UJ	1 UJ
Aroclor-1221	UG/L	2 U	2 UJ	2 UJ	2 UJ
Aroclor-1232	UG/L	1 U	1 UJ	1 UJ	1 UJ
Aroclor-1242	UG/L	1 U	1 UJ	1 UJ	1 UJ
Aroclor-1248	UG/L	1 U	1 UJ	1 UJ	1 UJ
Aroclor-1254	UG/L	1 U	1 UJ	1 UJ	1 UJ
Aroclor-1260	UG/L	1 U	1 UJ	1 UJ	1 UJ

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
VOLATILES							
Chloromethane	UG/L	10 U	10 U	ND	ND		0/10
Bromomethane	UG/L	10 U	10 U	ND	ND		0/10
Vinyl Chloride	UG/L	10 U	10 U	ND	ND		0/10
Chloroethane	UG/L	10 U	10 U	ND	ND		0/10
Methylene Chloride	UG/L	10 U	10 U	ND	ND		0/10
Acetone	UG/L	10 U	10 U	ND	ND		0/10
Carbon Disulfide	UG/L	10 U	10 U	ND	ND		0/10
1,1-Dichloroethene	UG/L	10 U	10 U	ND	ND		0/10
1,1-Dichloroethane	UG/L	10 U	10 U	ND	ND		0/10
1,2-Dichloroethene (total)	UG/L	10 U	10 U	ND	ND		0/10
Chloroform	UG/L	10 U	10 U	ND	ND		0/10
1,2-Dichloroethane	UG/L	10 U	10 U	ND	ND		0/10
2-Butanone	UG/L	10 UJ	10 UJ	ND	ND		0/10
1,1,1-Trichloroethane	UG/L	10 U	10 U	ND	ND		0/10
Carbon Tetrachloride	UG/L	10 U	10 U	ND	ND		0/10
Bromodichloromethane	UG/L	10 U	10 U	ND	ND		0/10
1,2-Dichloropropane	UG/L	10 U	10 U	ND	ND		0/10
cis-1,3-Dichloropropene	UG/L	10 U	10 U	ND	ND		0/10
Trichloroethene	UG/L	10 U	10 U	ND	ND		0/10
Dibromochloromethane	UG/L	10 U	10 U	ND	ND		0/10
1,1,2-Trichloroethane	UG/L	10 U	10 U	ND	ND		0/10
Benzene	UG/L	10 U	10 U	ND	ND		0/10
trans-1,3-Dichloropropene	UG/L	10 U	10 U	ND	ND		0/10
Bromoform	UG/L	10 U	10 U	ND	ND		0/10
4-Methyl-2-Pentanone	UG/L	10 U	10 U	ND	ND		0/10
2-Hexanone	UG/L	10 U	10 U	ND	ND		0/10
Tetrachloroethene	UG/L	10 U	10 U	ND	ND		0/10
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	ND	ND		0/10
Toluene	UG/L	10 U	10 U	ND	ND		0/10
Chlorobenzene	UG/L	10 U	10 U	ND	ND		0/10
Ethylbenzene	UG/L	10 U	10 U	ND	ND		0/10
Styrene	UG/L	10 U	10 U	ND	ND		0/10
Xylene (total)	UG/L	10 U	10 U	ND	ND		0/10

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES							
Phenol	UG/L	10 U	11 UJ	ND	ND		0/10
bis(2-Chloroethyl)ether	UG/L	10 U	11 U	ND	ND		0/10
2-Chlorophenol	UG/L	10 U	11 U	ND	ND		0/10
1,3-Dichlorobenzene	UG/L	10 U	11 U	ND	ND		0/10
1,4-Dichlorobenzene	UG/L	10 U	11 U	ND	ND		0/10
1,2-Dichlorobenzene	UG/L	10 U	11 U	ND	ND		0/10
2-Methylphenol	UG/L	10 U	11 U	ND	ND		0/10
2,2'-oxybis(1-Chloropropane)	UG/L	10 U	11 U	ND	ND		0/10
4-Methylphenol	UG/L	10 U	11 U	ND	ND		0/10
N-Nitroso-di-n-propylamine	UG/L	10 U	11 U	ND	ND		0/10
Hexachloroethane	UG/L	10 U	11 U	ND	ND		0/10
Nitrobenzene	UG/L	10 U	11 U	ND	ND		0/10
Isophorone	UG/L	10 U	11 U	ND	ND		0/10
2-Nitrophenol	UG/L	10 U	11 U	ND	ND		0/10
2,4-Dimethylphenol	UG/L	10 U	11 U	ND	ND		0/10
bis(2-Chloroethoxy)methane	UG/L	10 U	11 U	ND	ND		0/10
2,4-Dichlorophenol	UG/L	10 U	11 U	ND	ND		0/10
1,2,4-Trichlorobenzene	UG/L	10 U	11 U	ND	ND		0/10
Naphthalene	UG/L	10 U	11 U	ND	ND		0/10
4-Chloroaniline	UG/L	10 U	11 U	ND	ND		0/10
Hexachlorobutadiene	UG/L	10 U	11 U	ND	ND		0/10
4-Chloro-3-methylphenol	UG/L	10 U	11 U	ND	ND		0/10
2-Methylnaphthalene	UG/L	10 U	11 U	ND	ND		0/10
Hexachlorocyclopentadiene	UG/L	10 U	11 U	ND	ND		0/10
2,4,6-Trichlorophenol	UG/L	10 U	11 U	ND	ND		0/10
2,4,5-Trichlorophenol	UG/L	25 U	28 U	ND	ND		0/10
2-Chloronaphthalene	UG/L	10 U	11 U	ND	ND		0/10
2-Nitroaniline	UG/L	25 U	28 U	ND	ND		0/10
Dimethylphthalate	UG/L	10 U	11 UJ	ND	ND		0/10
Acenaphthylene	UG/L	10 U	11 U	ND	ND		0/10
2,6-Dinitrotoluene	UG/L	10 U	11 U	ND	ND		0/10
3-Nitroaniline	UG/L	25 U	28 U	ND	ND		0/10
Acenaphthene	UG/L	10 U	11 U	ND	ND		0/10

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 U	28 U	ND	ND		0/10
Dibenzofuran	UG/L	10 U	11 U	ND	ND		0/10
4-Nitrophenol	UG/L	10 U	11 UJ	ND	ND		0/10
2,4-Dinitrotoluene	UG/L	10 U	11 U	ND	ND		0/10
Diethylphthalate	UG/L	10 U	11 U	ND	ND		0/10
Fluorene	UG/L	10 U	11 U	ND	ND		0/10
4-Chlorophenyl-phenylether	UG/L	10 U	11 U	ND	ND		0/10
4-Nitroaniline	UG/L	25 U	28 U	ND	ND		0/10
4,6-Dinitro-2-methylphenol	UG/L	25 U	28 U	ND	ND		0/10
N-Nitrosodiphenylamine	UG/L	10 U	11 UJ	ND	ND		0/10
4-Bromophenyl-phenylether	UG/L	10 U	11 U	ND	ND		0/10
Hexachlorobenzene	UG/L	10 U	11 U	ND	ND		0/10
Pentachlorophenol	UG/L	25 U	28 U	ND	ND		0/10
Phenanthrene	UG/L	10 U	11 U	ND	ND		0/10
Anthracene	UG/L	10 U	11 U	ND	ND		0/10
Carbazole	UG/L	10 U	11 U	ND	ND		0/10
Di-n-butylphthalate	UG/L	10 U	11 U	ND	ND		0/10
Fluoranthene	UG/L	10 U	11 U	ND	ND		0/10
Pyrene	UG/L	10 U	11 U	ND	ND		0/10
Butylbenzylphthalate	UG/L	10 U	11 UJ	ND	ND		0/10
Benzo(a)anthracene	UG/L	10 U	11 U	ND	ND		0/10
3,3'-Dichlorobenzidine	UG/L	10 U	11 U	ND	ND		0/10
Chrysene	UG/L	10 U	11 UJ	ND	ND		0/10
bis(2-Ethylhexyl)phthalate	UG/L	10 UJ	11 UJ	ND	ND		0/10
Di-n-octylphthalate	UG/L	10 UJ	11 U	ND	ND		0/10
Benzo(b)fluoranthene	UG/L	10 U	11 U	ND	ND		0/10
Benzo(k)fluoranthene	UG/L	10 U	11 U	ND	ND		0/10
Benzo(a)pyrene	UG/L	10 U	11 U	ND	ND		0/10
Indeno(1,2,3-cd)pyrene	UG/L	10 U	11 U	ND	ND		0/10
Dibenz(a,h)anthracene	UG/L	10 U	11 U	ND	ND		0/10
Benzo(g,h,i)perylene	UG/L	10 U	11 U	ND	ND		0/10

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
PESTCIDE/PCBs							
alpha-BHC	UG/L	0.05 U	0.1 U	ND	ND		0/10
beta-BHC	UG/L	0.05 U	0.1 U	ND	ND		0/10
delta-BHC	UG/L	0.05 U	0.1 U	ND	ND		0/10
gamma-BHC (Lindane)	UG/L	0.05 U	0.5 U	ND	ND		0/10
Heptachlor	UG/L	0.05 U	0.1 U	ND	ND		0/10
Aldrin	UG/L	0.05 U	0.1 U	ND	ND		0/10
Heptachlor epoxide	UG/L	0.05 U	0.1 U	ND	ND		0/10
Endosulfan I	UG/L	0.05 U	0.1 U	ND	ND		0/10
Dieldrin	UG/L	0.1 U	0.1 U	ND	ND		0/10
4,4'-DDE	UG/L	0.1 U	0.1 U	ND	ND		0/10
Endrin	UG/L	0.1 U	0.1 U	ND	ND		0/10
Endosulfan II	UG/L	0.1 U	0.1 U	ND	ND		0/10
4,4'-DDD	UG/L	0.1 U	0.1 U	ND	ND		0/10
Endosulfan sulfate	UG/L	0.1 U	0.1 U	ND	ND		0/10
4,4'-DDT	UG/L	0.1 U	0.1 U	ND	ND		0/10
Methoxychlor	UG/L	0.05 U	0.59 UJ	ND	ND		0/10
Endrin ketone	UG/L	0.1 U	0.1 U	ND	ND		0/10
Endrin aldehyde	UG/L	0.1 U	0.1 U	ND	ND		0/10
alpha-Chlordane	UG/L	0.05 U	0.05 U	ND	ND		0/10
gamma-Chlordane	UG/L	0.05 U	0.05 U	ND	ND		0/10
Toxaphene	UG/L	5 U	5 U	ND	ND		0/10
Aroclor-1016	UG/L	1 U	1 U	ND	ND		0/10
Aroclor-1221	UG/L	2 U	2 U	ND	ND		0/10
Aroclor-1232	UG/L	1 U	1 U	ND	ND		0/10
Aroclor-1242	UG/L	1 U	1 U	ND	ND		0/10
Aroclor-1248	UG/L	1 U	1 U	ND	ND		0/10
Aroclor-1254	UG/L	1 U	1 U	ND	ND		0/10
Aroclor-1260	UG/L	1 U	1 U	ND	ND		0/10

APPENDIX U.8
SURFACE WATER INORGANICS

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-SW01	35-SW02	35-SW03	35-SW04	35-SW05	35-SW06
Lab Sample ID:		4120-12	4120-13	4120-1	4120-2	4120-3	4120-4
Date Sampled:		12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994
	UNITS						
Aluminum	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1.2 UJ
Antimony	UG/L	1 U	1 U	1.8	1.5	1 U	1 U
Arsenic	UG/L	2 U	2 U	2 U	2 U	2 U	2 U
Barium	UG/L	16.9	16.7	19.5	19	18.2	23.3
Beryllium	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Cadmium	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Calcium	UG/L	58000	58100	59500	59300	58800	63900
Chromium	UG/L	1 U	1 U	1 J	1 U	1 U	1.2 J
Cobalt	UG/L	9 U	9 U	9.5 J	11.7 J	16.8 J	9 U
Copper	UG/L	6.5 U	4.4 U	6.3 U	6.6 U	3.4 U	10.4 U
Iron	UG/L	764 J	850 J	1060 J	1230 J	842 J	1750 J
Lead	UG/L	1 U	1.4	2.1	2.1	1 U	2.4
Magnesium	UG/L	2380	2390	3120	3140	3470	5180
Manganese	UG/L	30.1	29.1	36.9	44.9	38.7	77.4
Mercury	UG/L	3 J	0.2 U	0.2 U	3.2 J	0.2 U	0.2 U
Nickel	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Potassium	UG/L	2460	2170	3210	2760	2810	3840
Selenium	UG/L	1 UJ	1 UJ	1 UJ	1.3 J	1 UJ	1 UJ
Silver	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Sodium	UG/L	47000	42600	57000	59100	57300	68800
Thallium	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Vanadium	UG/L	4 U	4 U	4 U	4 U	4 U	4 U
Zinc	UG/L	18.3 R	17.9 R	19.8 R	14 R	19.1 R	26.3 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-SW07	36-SW05	36-SW06	36-SW07
Lab Sample ID:		4581-1	4375-9	4375-11	4375-10
Date Sampled:		20-APR-1994	18-APR-1994	18-APR-1994	18-APR-1994
	UNITS				
Aluminum	UG/L	6580	1.3	1.2 J	1
Antimony	UG/L	39 U	3.9	1 U	2.4 J
Arsenic	UG/L	2.7 J	2.4 U	1 U	1 U
Barium	UG/L	48.5 J	19.6 U	18.2 U	18.3 U
Beryllium	UG/L	5 U	1 U	1 U	1 U
Cadmium	UG/L	1 U	1 U	1 U	1 U
Calcium	UG/L	58500	41700	44000	48800
Chromium	UG/L	17 U	1.7 U	1.9 U	2.7 U
Cobalt	UG/L	9 J	9 U	9 U	9 U
Copper	UG/L	19.2 U	7 U	8 U	5.3 U
Iron	UG/L	9500	967 J	1070 J	1380 J
Lead	UG/L	97 J	3.3 U	3.1 U	2.9 U
Magnesium	UG/L	4610 J	17900	13200	9300
Manganese	UG/L	113	31.9	29.5	24.5
Mercury	UG/L	0.1 UJ	0.17 U	0.35 U	0.33 U
Nickel	UG/L	10 U	10 U	10 U	10 U
Potassium	UG/L	4780 J	8210	7490	5920
Selenium	UG/L	4.3 U	1 U	1 UJ	1 U
Silver	UG/L	4 U	1 U	1 U	1 U
Sodium	UG/L	59800	192000	136000	103000
Thallium	UG/L	1 J	1 UJ	1 UJ	1 UJ
Vanadium	UG/L	14.8 J	11.2	9	4.5
Zinc	UG/L	129 J	28.1 U	14.6 U	16.3 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID: / Lab Sample ID: / Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	UG/L	1 UJ	1.2 UJ	1	6580	35-SW07	4/10
Antimony	UG/L	1 U	39 U	1.5	3.9	36-SW05	4/10
Arsenic	UG/L	1 U	2.4 U	2.7 J	2.7 J	35-SW07	1/10
Barium	UG/L	18.2 U	19.6 U	16.7	48.5 J	35-SW07	7/10
Beryllium	UG/L	1 UJ	5 U	ND	ND		0/10
Cadmium	UG/L	1 UJ	1 UJ	ND	ND		0/10
Calcium	UG/L	NA	NA	41700	63900	35-SW06	10/10
Chromium	UG/L	1 U	17 U	1 J	1.2 J	35-SW06	2/10
Cobalt	UG/L	9 U	9 U	9 J	16.8 J	35-SW05	4/10
Copper	UG/L	3.4 U	19.2 U	ND	ND		0/10
Iron	UG/L	NA	NA	764 J	9500	35-SW07	10/10
Lead	UG/L	1 U	3.3 U	1.4	97 J	35-SW07	5/10
Magnesium	UG/L	NA	NA	2380	17900	36-SW05	10/10
Manganese	UG/L	NA	NA	24.5	113	35-SW07	10/10
Mercury	UG/L	0.1 UJ	0.35 U	3 J	3.2 J	35-SW04	2/10
Nickel	UG/L	10 U	10 U	ND	ND		0/10
Potassium	UG/L	NA	NA	2170	8210	36-SW05	10/10
Selenium	UG/L	1 UJ	4.3 U	1.3 J	1.3 J	35-SW04	1/10
Silver	UG/L	1 U	4 U	ND	ND		0/10
Sodium	UG/L	NA	NA	42600	192000	36-SW05	10/10
Thallium	UG/L	1 U	1 U	1 J	1 J	35 ~~36~~-SW07	1/10
Vanadium	UG/L	4 U	4 U	4.5	14.8 J	35-SW07	4/10
Zinc	UG/L	14.6 U	28.1 U	14 R	129 J	35-SW07	6/10

APPENDIX U.9
SEDIMENT ORGANICS

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD01-06	35-SD01-612	35-SD02-06	35-SD02-612	35-SD03-06	35-SD03-612
Lab Sample ID:		4585-4	4585-5	4585-6	4585-8	5608-1	5608-2
Date Sampled:		20-APR-1994	20-APR-1994	20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994
	UNITS						
VOLATILES							
Chloromethane	UG/KG	19 UJ	15 U	13 U	121 U	14 UJ	15 U
Bromomethane	UG/KG	19 U	15 U	13 U	121 U	14 UJ	15 U
Vinyl Chloride	UG/KG	19 U	15 U	13 U	121 U	14 U	15 U
Chloroethane	UG/KG	19 U	15 U	13 U	121 U	14 U	15 U
Methylene Chloride	UG/KG	19 U	15 U	13 U	121 U	14 U	15 U
Acetone	UG/KG	19 U	128 J	13 UJ	121 U	14 UJ	15 U
Carbon Disulfide	UG/KG	19 U	15 U	13 U	121 U	14 U	15 U
1,1-Dichloroethene	UG/KG	19 U	15 U	13 U	121 U	14 U	15 U
1,1-Dichloroethane	UG/KG	19 U	15 U	13 U	121 U	14 U	15 U
1,2-Dichloroethene (total)	UG/KG	19 U	15 U	13 U	121 U	14 U	15 U
Chloroform	UG/KG	19 U	15 U	13 U	121 U	14 U	15 U
1,2-Dichloroethane	UG/KG	19 U	15 U	13 U	121 U	14 U	15 U
2-Butanone	UG/KG	19 U	15 UJ	13 UJ	121 U	14 UJ	15 U
1,1,1-Trichloroethane	UG/KG	19 UJ	15 U	13 U	121 U	14 U	15 U
Carbon Tetrachloride	UG/KG	19 UJ	15 U	13 U	121 U	14 U	15 U
Bromodichloromethane	UG/KG	19 UJ	15 U	13 U	121 U	14 U	15 U
1,2-Dichloropropane	UG/KG	19 UJ	15 U	13 U	121 U	14 U	15 U
cis-1,3-Dichloropropene	UG/KG	19 UJ	15 U	13 U	121 U	14 U	15 U
Trichloroethene	UG/KG	19 UJ	15 U	13 U	121 U	14 U	15 U
Dibromochloromethane	UG/KG	19 UJ	15 U	13 U	121 U	14 U	15 U
1,1,2-Trichloroethane	UG/KG	19 UJ	15 U	13 U	121 U	14 U	15 U
Benzene	UG/KG	19 UJ	15 U	13 U	121 U	14 U	15 U
trans-1,3-Dichloropropene	UG/KG	19 UJ	15 U	13 U	121 U	14 U	15 U
Bromoform	UG/KG	19 UJ	15 UJ	13 UJ	121 U	14 U	15 U
4-Methyl-2-Pentanone	UG/KG	19 UJ	15 UJ	13 UJ	121 U	14 UJ	15 U
2-Hexanone	UG/KG	19 UJ	15 UJ	13 UJ	121 U	14 UJ	15 U
Tetrachloroethene	UG/KG	19 UJ	15 U	13 U	121 U	14 UJ	15 U
1,1,2,2-Tetrachloroethane	UG/KG	19 UJ	15 U	13 U	121 U	14 UJ	15 U
Toluene	UG/KG	19 UJ	15 U	13 U	121 U	8 J	15 U
Chlorobenzene	UG/KG	19 UJ	15 U	13 U	121 U	14 UJ	15 U
Ethylbenzene	UG/KG	19 UJ	15 U	13 U	121 U	14 UJ	15 U
Styrene	UG/KG	19 UJ	15 U	13 U	121 U	14 UJ	15 U
Xylene (total)	UG/KG	19 UJ	15 U	13 U	121 U	14 UJ	15 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD01-06	35-SD01-612	35-SD02-06	35-SD02-612	35-SD03-06	35-SD03-612
Lab Sample ID:		4585-4	4585-5	4585-6	4585-8	5608-1	5608-2
Date Sampled:		20-APR-1994	20-APR-1994	20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
bis(2-Chloroethyl)ether	UG/KG	640 U	489 U	421 U	400 U	452 UJ	485 UJ
2-Chlorophenol	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
1,3-Dichlorobenzene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
1,4-Dichlorobenzene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
1,2-Dichlorobenzene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
2-Methylphenol	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
2,2'-oxybis(1-Chloropropane)	UG/KG	640 U	489 UJ	421 UJ	400 UJ	452 U	485 U
4-Methylphenol	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
N-Nitroso-di-n-propylamine	UG/KG	640 U	489 UJ	421 UJ	400 UJ	452 U	485 U
Hexachloroethane	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Nitrobenzene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Isophorone	UG/KG	640 U	489 U	421 U	400 U	452 UJ	485 UJ
2-Nitrophenol	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
2,4-Dimethylphenol	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
bis(2-Chloroethoxy)methane	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
2,4-Dichlorophenol	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
1,2,4-Trichlorobenzene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Naphthalene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
4-Chloroaniline	UG/KG	640 U	489 U	421 U	400 U	452 UJ	485 UJ
Hexachlorobutadiene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
4-Chloro-3-methylphenol	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
2-Methylnaphthalene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Hexachlorocyclopentadiene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
2,4,6-Trichlorophenol	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
2,4,5-Trichlorophenol	UG/KG	1550 U	1185 U	1022 U	971 U	1096 U	1176 U
2-Chloronaphthalene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
2-Nitroaniline	UG/KG	1550 U	1185 U	1022 U	971 U	1096 U	1176 U
Dimethylphthalate	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Acenaphthylene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
2,6-Dinitrotoluene	UG/KG	640 U	489 U	421 U	400 U	452 UJ	485 UJ
3-Nitroaniline	UG/KG	1550 UJ	1185 UJ	1022 UJ	971 UJ	1096 UJ	1176 UJ
Acenaphthene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD01-06	35-SD01-612	35-SD02-06	35-SD02-612	35-SD03-06	35-SD03-612
Lab Sample ID:		4585-4	4585-5	4585-6	4585-8	5608-1	5608-2
Date Sampled:		20-APR-1994	20-APR-1994	20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	1550 U	1185 UJ	1022 UJ	971 UJ	1096 U	1176 U
Dibenzofuran	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
4-Nitrophenol	UG/KG	640 UJ	489 UJ	421 UJ	400 UJ	452 UJ	485 UJ
2,4-Dinitrotoluene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Diethylphthalate	UG/KG	640 U	489 U	421 U	400 U	352 J	896
Fluorene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
4-Chlorophenyl-phenylether	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
4-Nitroaniline	UG/KG	1550 UJ	1185 UJ	1022 UJ	971 UJ	1096 U	1176 U
4,6-Dinitro-2-methylphenol	UG/KG	1550 U	1185 U	1022 U	971 U	1096 U	1176 U
N-Nitrosodiphenylamine	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
4-Bromophenyl-phenylether	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Hexachlorobenzene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Pentachlorophenol	UG/KG	1550 U	1185 U	1022 U	971 U	1096 U	1176 U
Phenanthrene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Anthracene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Carbazole	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Di-n-butylphthalate	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Fluoranthene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Pyrene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Butylbenzylphthalate	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Benzo(a)anthracene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
3,3'-Dichlorobenzidine	UG/KG	640 UJ	489 UJ	421 UJ	400 UJ	452 U	485 U
Chrysene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
bis(2-Ethylhexyl)phthalate	UG/KG	640 UJ	489 UJ	421 UJ	400 UJ	452 UJ	485 UJ
Di-n-octylphthalate	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Benzo(b)fluoranthene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Benzo(k)fluoranthene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Benzo(a)pyrene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Indeno(1,2,3-cd)pyrene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Dibenz(a,h)anthracene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U
Benzo(g,h,i)perylene	UG/KG	640 U	489 U	421 U	400 U	452 U	485 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD01-06	35-SD01-612	35-SD02-06	35-SD02-612	35-SD03-06	35-SD03-612
Lab Sample ID:		4585-4	4585-5	4585-6	4585-8	5608-1	5608-2
Date Sampled:		20-APR-1994	20-APR-1994	20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/KG	3.3 U	2.5 U	2.2 U	2.1 U	12 U	12 U
beta-BHC	UG/KG	3.3 U	2.5 U	2.2 U	2.1 U	12 U	12 U
delta-BHC	UG/KG	3.3 U	2.5 U	2.2 U	2.1 U	12 U	12 U
gamma-BHC (Lindane)	UG/KG	3.3 U	2.5 U	2.2 U	2.1 U	12 U	12 U
Heptachlor	UG/KG	3.3 U	2.5 U	2.2 U	2.1 U	2.3 J	12 U
Aldrin	UG/KG	3.3 U	2.5 U	2.2 U	2.1 U	12 U	12 U
Heptachlor epoxide	UG/KG	0.74 J	2.5 U	0.43 J	1.2 J	12 U	12 U
Endosulfan I	UG/KG	3.3 U	2.5 U	2.2 U	2.1 U	12 U	12 U
Dieldrin	UG/KG	6.4 U	4.9 U	4.2 U	1.7 J	23 U	24 U
4,4'-DDE	UG/KG	6.4 U	1 J	1.8 J	38	23 U	24 U
Endrin	UG/KG	3.3 U	2.5 U	2.2 U	0.44 J	12 U	12 U
Endosulfan II	UG/KG	6.4 U	4.9 U	4.2 U	1.4 J	23 U	24 U
4,4'-DDD	UG/KG	3.3 U	1.1 J	2.3 J	40	23 U	12 U
Endosulfan sulfate	UG/KG	6.4 U	4.9 U	4.2 U	4 U	23 U	24 U
4,4'-DDT	UG/KG	6.4 U	0.73 J	0.66 J	1.6 J	23 U	24 U
Methoxychlor	UG/KG	2.7 J	0.65 J	0.49 J	2.2 J	116 U	124 U
Endrin ketone	UG/KG	6.4 U	4.9 U	4.2 U	4 U	23 U	24 U
Endrin aldehyde	UG/KG	6.4 U	4.9 U	4.2 U	4 U	23 U	24 U
alpha-Chlordane	UG/KG	3.3 U	2.5 U	0.51 J	6	12 U	12 U
gamma-Chlordane	UG/KG	3.3 U	2.5 U	2.2 UJ	6.7	12 U	12 U
Toxaphene	UG/KG	329 U	252 U	217 U	206 U	1160 U	1240 U
Aroclor-1016	UG/KG	64 U	49 U	42 U	40 U	226 U	242 U
Aroclor-1221	UG/KG	130 U	100 U	86 U	81 U	459 U	490 U
Aroclor-1232	UG/KG	64 U	49 U	42 U	40 U	226 U	242 U
Aroclor-1242	UG/KG	64 U	49 U	42 U	40 U	226 U	242 U
Aroclor-1248	UG/KG	64 U	49 U	42 U	40 U	226 U	242 U
Aroclor-1254	UG/KG	64 U	49 U	42 U	40 U	226 U	242 U
Aroclor-1260	UG/KG	64 U	49 U	42 U	40 U	226 U	242 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD04-06	35-SD04-612	35-SD05-06	35-SD05-612	35-SD06-06	35-SD06-612
Lab Sample ID:		4585-1	4585-3	5608-3	5608-4	5608-5	5608-6
Date Sampled:		20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994
	UNITS						
VOLATILES							
Chloromethane	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
Bromomethane	UG/KG	879 U	781 UJ	29 UJ	15 UJ	21 U	83 U
Vinyl Chloride	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
Chloroethane	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
Methylene Chloride	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
Acetone	UG/KG	879 UJ	781 UJ	29 UJ	15 UJ	21 U	83 U
Carbon Disulfide	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
1,1-Dichloroethene	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
1,1-Dichloroethane	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
1,2-Dichloroethene (total)	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
Chloroform	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
1,2-Dichloroethane	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
2-Butanone	UG/KG	879 UJ	781 UJ	29 UJ	15 UJ	21 U	83 U
1,1,1-Trichloroethane	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
Carbon Tetrachloride	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
Bromodichloromethane	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
1,2-Dichloropropane	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
cis-1,3-Dichloropropene	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
Trichloroethene	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
Dibromochloromethane	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
1,1,2-Trichloroethane	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
Benzene	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
trans-1,3-Dichloropropene	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
Bromoform	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
4-Methyl-2-Pentanone	UG/KG	879 UJ	781 UJ	29 UJ	15 UJ	21 U	83 U
2-Hexanone	UG/KG	879 UJ	781 UJ	29 UJ	15 UJ	21 U	83 U
Tetrachloroethene	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
1,1,2,2-Tetrachloroethane	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
Toluene	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
Chlorobenzene	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
Ethylbenzene	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
Styrene	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U
Xylene (total)	UG/KG	879 U	781 UJ	29 UJ	15 U	21 U	83 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD04-06	35-SD04-612	35-SD05-06	35-SD05-612	35-SD06-06	35-SD06-612
Lab Sample ID:		4585-1	4585-3	5608-3	5608-4	5608-5	5608-6
Date Sampled:		20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
bis(2-Chloroethyl)ether	UG/KG	580 U	516 U	943 UJ	500 UJ	702 U	550 UJ
2-Chlorophenol	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
1,3-Dichlorobenzene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
1,4-Dichlorobenzene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
1,2-Dichlorobenzene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
2-Methylphenol	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
2,2'-oxybis(1-Chloropropane)	UG/KG	580 UJ	516 UJ	943 U	500 U	702 U	550 U
4-Methylphenol	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
N-Nitroso-di-n-propylamine	UG/KG	580 UJ	516 UJ	943 U	500 U	702 U	550 U
Hexachloroethane	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
Nitrobenzene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
Isophorone	UG/KG	580 U	516 U	943 UJ	500 UJ	702 U	550 UJ
2-Nitrophenol	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
2,4-Dimethylphenol	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
bis(2-Chloroethoxy)methane	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
2,4-Dichlorophenol	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
1,2,4-Trichlorobenzene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
Naphthalene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
4-Chloroaniline	UG/KG	580 U	516 U	943 UJ	500 UJ	702 UJ	550 UJ
Hexachlorobutadiene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
4-Chloro-3-methylphenol	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
2-Methylnaphthalene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
Hexachlorocyclopentadiene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
2,4,6-Trichlorophenol	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
2,4,5-Trichlorophenol	UG/KG	1406 U	1250 U	2286 U	1212 U	1702 U	1333 U
2-Chloronaphthalene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
2-Nitroaniline	UG/KG	1406 U	1250 U	2286 U	1212 U	1702 U	1333 U
Dimethylphthalate	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
Acenaphthylene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
2,6-Dinitrotoluene	UG/KG	580 U	516 U	943 UJ	500 UJ	702 UJ	550 UJ
3-Nitroaniline	UG/KG	1406 UJ	1250 UJ	2286 UJ	1212 UJ	1702 UJ	1333 UJ
Acenaphthene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD04-06	35-SD04-612	35-SD05-06	35-SD05-612	35-SD06-06	35-SD06-612
Lab Sample ID:		4585-1	4585-3	5608-3	5608-4	5608-5	5608-6
Date Sampled:		20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	1406 UJ	1250 UJ	2286 U	1212 U	1702 UJ	1333 U
Dibenzofuran	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
4-Nitrophenol	UG/KG	580 UJ	516 UJ	943 UJ	500 UJ	702 UJ	550 UJ
2,4-Dinitrotoluene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
Diethylphthalate	UG/KG	580 U	516 U	943 U	500 U	702 U	398 J
Fluorene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
4-Chlorophenyl-phenylether	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
4-Nitroaniline	UG/KG	1406 UJ	1250 UJ	2286 U	1212 U	1702 U	1333 U
4,6-Dinitro-2-methylphenol	UG/KG	1406 U	1250 U	2286 U	1212 UJ	1702 U	1333 U
N-Nitrosodiphenylamine	UG/KG	580 U	516 U	943 U	500 UJ	702 U	550 U
4-Bromophenyl-phenylether	UG/KG	580 U	516 U	943 U	500 UJ	702 U	550 U
Hexachlorobenzene	UG/KG	580 U	516 U	943 U	500 UJ	702 U	550 U
Pentachlorophenol	UG/KG	1406 U	1250 U	2286 U	1212 UJ	1702 U	1333 U
Phenanthrene	UG/KG	580 U	516 U	943 U	500 UJ	702 U	550 U
Anthracene	UG/KG	580 U	516 U	943 U	500 UJ	702 U	550 U
Carbazole	UG/KG	580 U	516 U	943 U	500 UJ	702 U	550 U
Di-n-butylphthalate	UG/KG	580 U	516 U	943 U	500 UJ	702 U	550 U
Fluoranthene	UG/KG	580 U	516 U	943 U	500 UJ	702 U	550 U
Pyrene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
Butylbenzylphthalate	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
Benzo(a)anthracene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
3,3'-Dichlorobenzidine	UG/KG	580 UJ	516 UJ	943 U	500 U	702 UJ	550 U
Chrysene	UG/KG	580 U	516 U	943 U	500 U	702 U	550 U
bis(2-Ethylhexyl)phthalate	UG/KG	580 UJ	625 J	704 J	469 J	702 U	550 U
Di-n-octylphthalate	UG/KG	580 U	516 U	943 U	500 UJ	702 U	550 U
Benzo(b)fluoranthene	UG/KG	580 U	516 U	943 U	500 UJ	702 U	550 U
Benzo(k)fluoranthene	UG/KG	580 U	516 U	943 U	500 UJ	702 U	550 U
Benzo(a)pyrene	UG/KG	580 U	516 U	943 U	500 UJ	702 U	550 U
Indeno(1,2,3-cd)pyrene	UG/KG	580 U	516 U	943 U	500 UJ	702 U	550 U
Dibenz(a,h)anthracene	UG/KG	580 U	516 U	943 U	500 UJ	702 U	550 U
Benzo(g,h,i)perylene	UG/KG	580 U	516 U	943 U	500 UJ	702 U	550 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD04-06	35-SD04-612	35-SD05-06	35-SD05-612	35-SD06-06	35-SD06-612
Lab Sample ID:		4585-1	4585-3	5608-3	5608-4	5608-5	5608-6
Date Sampled:		20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/KG	2.9 U	2.7 U	4.9 U	2.6 U	3.6 U	2.8 U
beta-BHC	UG/KG	2.9 U	2.7 U	4.9 U	2.6 U	3.6 U	2.8 U
delta-BHC	UG/KG	2.9 U	2.7 U	4.9 U	2.6 U	1 J	2.8 U
gamma-BHC (Lindane)	UG/KG	2.9 U	2.7 U	4.9 U	2.6 U	3.6 U	2.8 U
Heptachlor	UG/KG	2.9 U	2.7 U	4.9 U	2.6 U	3.6 U	2.8 U
Aldrin	UG/KG	2.9 U	2.7 U	4.9 U	2.6 U	3.6 U	2.8 U
Heptachlor epoxide	UG/KG	2.9 U	1.2 J	4.9 U	0.72 J	3.6 U	2.8 U
Endosulfan I	UG/KG	2.9 U	2.7 U	4.9 U	2.6 U	3.6 U	2.8 U
Dieldrin	UG/KG	1.6 J	3.1 J	9.5 U	5 U	7 U	5.5 U
4,4'-DDE	UG/KG	31 J	82	80	46	115	7.7
Endrin	UG/KG	2.9 U	0.59 J	4.9 U	0.85 J	0.77 J	2.8 U
Endosulfan II	UG/KG	1.3 J	3.5 J	1.6 J	0.84 J	2.2 J	5.5 U
4,4'-DDD	UG/KG	43	111	43	28	39	5.9
Endosulfan sulfate	UG/KG	5.6 U	5.2 U	9.5 U	5 U	7 U	5.5 U
4,4'-DDT	UG/KG	4.9 J	5.2	3.7 J	1.3 J	1.7 J	5.5 U
Methoxychlor	UG/KG	0.86 J	27 U	49 U	26 U	36 U	28 U
Endrin ketone	UG/KG	5.6 U	2.8 J	3.1 J	5 U	7 U	5.5 U
Endrin aldehyde	UG/KG	5.6 U	5.2 U	1.5 J	1.1 J	2.2 J	1 J
alpha-Chlordane	UG/KG	4	5.6	9.3	4.8	3.6 U	2.8 U
gamma-Chlordane	UG/KG	3.6	7.6	4.9 U	5	3.6 U	2.8 U
Toxaphene	UG/KG	289 U	266 U	488 U	258 U	360 U	283 U
Aroclor-1016	UG/KG	56 U	52 U	95 U	50 U	70 U	55 U
Aroclor-1221	UG/KG	114 U	105 U	192 U	102 U	142 U	112 U
Aroclor-1232	UG/KG	56 U	52 U	95 U	50 U	70 U	55 U
Aroclor-1242	UG/KG	56 U	52 U	95 U	50 U	70 U	55 U
Aroclor-1248	UG/KG	56 U	52 U	95 U	50 U	70 U	55 U
Aroclor-1254	UG/KG	56 U	52 U	95 U	50 U	70 U	55 U
Aroclor-1260	UG/KG	56 U	52 U	95 U	50 U	70 U	55 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD07-06	35-SD07-612	36-SD05-06	36-SD05-612	36-SD06-06	36-SD06-612
Lab Sample ID:		4585-9	4585-10	5608-13	5608-18	5608-19	5608-20
Date Sampled:		20-APR-1994	20-APR-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
VOLATILES							
Chloromethane	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
Bromomethane	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
Vinyl Chloride	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
Chloroethane	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
Methylene Chloride	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
Acetone	UG/KG	16 UJ	500 UJ	53 UJ	17 U	11 UJ	12 UJ
Carbon Disulfide	UG/KG	16 U	500 UJ	146 R	17 U	35 R	12 UJ
1,1-Dichloroethene	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
1,1-Dichloroethane	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
1,2-Dichloroethene (total)	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
Chloroform	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
1,2-Dichloroethane	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
2-Butanone	UG/KG	16 UJ	500 UJ	53 UJ	17 U	11 U	12 UJ
1,1,1-Trichloroethane	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
Carbon Tetrachloride	UG/KG	16 U	500 UJ	53 UJ	17 UJ	11 U	12 UJ
Bromodichloromethane	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
1,2-Dichloropropane	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
cis-1,3-Dichloropropene	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
Trichloroethene	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
Dibromochloromethane	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
1,1,2-Trichloroethane	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
Benzene	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
trans-1,3-Dichloropropene	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
Bromoform	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
4-Methyl-2-Pentanone	UG/KG	16 UJ	500 UJ	53 UJ	17 U	11 U	12 UJ
2-Hexanone	UG/KG	16 UJ	500 UJ	53 UJ	17 U	11 U	12 UJ
Tetrachloroethene	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
1,1,2,2-Tetrachloroethane	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
Toluene	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
Chlorobenzene	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
Ethylbenzene	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ
Styrene	UG/KG	16 U	500 UJ	53 UJ	17 U	11 UJ	12 UJ
Xylene (total)	UG/KG	16 U	500 UJ	53 UJ	17 U	11 U	12 UJ

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD07-06	35-SD07-612	36-SD05-06	36-SD05-612	36-SD06-06	36-SD06-612
Lab Sample ID:		4585-9	4585-10	5608-13	5608-18	5608-19	5608-20
Date Sampled:		20-APR-1994	20-APR-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
bis(2-Chloroethyl)ether	UG/KG	520 U	568 U	1737 UJ	1650 UJ	425 UJ	411 UJ
2-Chlorophenol	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
1,3-Dichlorobenzene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
1,4-Dichlorobenzene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
1,2-Dichlorobenzene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
2-Methylphenol	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
2,2'-oxybis(1-Chloropropane)	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
4-Methylphenol	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
N-Nitroso-di-n-propylamine	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
Hexachloroethane	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
Nitrobenzene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
Isophorone	UG/KG	520 U	568 U	1737 UJ	1650 UJ	425 UJ	411 UJ
2-Nitrophenol	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
2,4-Dimethylphenol	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
bis(2-Chloroethoxy)methane	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
2,4-Dichlorophenol	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
1,2,4-Trichlorobenzene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
Naphthalene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
4-Chloroaniline	UG/KG	520 U	568 U	1737 UJ	1650 UJ	425 UJ	411 UJ
Hexachlorobutadiene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
4-Chloro-3-methylphenol	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
2-Methylnaphthalene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
Hexachlorocyclopentadiene	UG/KG	520 U	568 U	1737 U	1650 U	425 UJ	411 U
2,4,6-Trichlorophenol	UG/KG	520 U	568 U	1737 U	1650 U	425 UJ	411 U
2,4,5-Trichlorophenol	UG/KG	1260 U	1377 U	4210 U	4000 U	1030 UJ	996 U
2-Chloronaphthalene	UG/KG	520 U	568 U	1737 U	1650 U	425 UJ	411 U
2-Nitroaniline	UG/KG	1260 U	1377 U	4210 U	4000 U	1030 UJ	996 U
Dimethylphthalate	UG/KG	520 U	568 U	1737 U	1650 U	425 UJ	411 U
Acenaphthylene	UG/KG	520 U	568 U	1737 U	1650 U	425 UJ	411 U
2,6-Dinitrotoluene	UG/KG	520 U	568 U	1737 UJ	1650 UJ	425 UJ	411 UJ
3-Nitroaniline	UG/KG	1260 UJ	1377 UJ	4210 UJ	4000 UJ	1030 UJ	996 UJ
Acenaphthene	UG/KG	520 U	568 U	1737 U	1650 U	425 UJ	411 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD07-06	35-SD07-612	36-SD05-06	36-SD05-612	36-SD06-06	36-SD06-612
Lab Sample ID:		4585-9	4585-10	5608-13	5608-18	5608-19	5608-20
Date Sampled:		20-APR-1994	20-APR-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	1260 U	1377 U	4210 UJ	4000 UJ	1030 UJ	996 UJ
Dibenzofuran	UG/KG	520 U	568 U	1737 U	1650 U	425 UJ	411 U
4-Nitrophenol	UG/KG	520 UJ	568 UJ	1737 UJ	1650 UJ	425 UJ	411 UJ
2,4-Dinitrotoluene	UG/KG	520 U	568 U	1737 U	1650 U	425 UJ	411 U
Diethylphthalate	UG/KG	520 U	568 U	2135 J	1650 U	425 UJ	411 U
Fluorene	UG/KG	520 U	568 U	1737 U	1650 U	425 UJ	411 U
4-Chlorophenyl-phenylether	UG/KG	520 U	568 U	1737 U	1650 U	425 UJ	411 U
4-Nitroaniline	UG/KG	1260 UJ	1377 UJ	4210 UJ	4000 UJ	1030 UJ	996 UJ
4,6-Dinitro-2-methylphenol	UG/KG	1260 U	1377 U	4210 UJ	4000 U	1030 UJ	996 U
N-Nitrosodiphenylamine	UG/KG	520 U	568 U	1737 UJ	1650 U	425 UJ	411 U
4-Bromophenyl-phenylether	UG/KG	520 U	568 U	1737 UJ	1650 U	425 UJ	411 U
Hexachlorobenzene	UG/KG	520 U	568 U	1737 UJ	1650 U	425 UJ	411 U
Pentachlorophenol	UG/KG	1260 U	1377 U	4210 UJ	4000 U	1030 UJ	996 U
Phenanthrene	UG/KG	520 U	568 U	1737 UJ	1650 U	425 UJ	411 U
Anthracene	UG/KG	520 U	568 U	1737 UJ	1650 U	425 UJ	411 U
Carbazole	UG/KG	520 U	568 U	1737 UJ	1650 U	425 UJ	411 U
Di-n-butylphthalate	UG/KG	520 U	568 U	1737 UJ	1650 U	425 UJ	218 J
Fluoranthene	UG/KG	520 U	568 U	1737 UJ	1650 U	425 UJ	411 U
Pyrene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
Butylbenzylphthalate	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
Benzo(a)anthracene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
3,3'-Dichlorobenzidine	UG/KG	520 UJ	568 UJ	1737 UJ	1650 UJ	425 UJ	411 UJ
Chrysene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
bis(2-Ethylhexyl)phthalate	UG/KG	520 UJ	318 UJ	1737 UJ	1650 UJ	425 UJ	411 UJ
Di-n-octylphthalate	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
Benzo(b)fluoranthene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
Benzo(k)fluoranthene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
Benzo(a)pyrene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
Indeno(1,2,3-cd)pyrene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
Dibenz(a,h)anthracene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U
Benzo(g,h,i)perylene	UG/KG	520 U	568 U	1737 U	1650 U	425 U	411 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD07-06	35-SD07-612	36-SD05-06	36-SD05-612	36-SD06-06	36-SD06-612
Lab Sample ID:		4585-9	4585-10	5608-13	5608-18	5608-19	5608-20
Date Sampled:		20-APR-1994	20-APR-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/KG	2.7 U	2.9 U	8.9 U	120 U	24 U	24 U
beta-BHC	UG/KG	0.59 J	2.9 U	8.9 U	120 U	24 U	24 U
delta-BHC	UG/KG	2.7 U	0.92 J	8.9 U	120 U	24 U	24 U
gamma-BHC (Lindane)	UG/KG	2.7 U	2.9 U	8.9 U	120 U	24 U	24 U
Heptachlor	UG/KG	0.91 J	2.9 U	8.9 U	120 U	24 U	24 U
Aldrin	UG/KG	2.7 U	2.9 U	8.9 U	120 U	24 U	24 U
Heptachlor epoxide	UG/KG	0.78 J	1.4 J	8.9 U	120 U	24 U	24 U
Endosulfan I	UG/KG	2.7 U	2.9 U	8.9 U	120 U	24 U	24 U
Dieldrin	UG/KG	1.4 J	2.6 J	17 U	232 U	52	46 U
4,4'-DDE	UG/KG	34	57	242 J	1200	249	179
Endrin	UG/KG	2.7 U	0.7 J	8.9 U	120 U	24 U	24 U
Endosulfan II	UG/KG	1.3 J	0.88 J	17 U	232 U	47 U	46 U
4,4'-DDD	UG/KG	40	60	223 J	1140	221	159
Endosulfan sulfate	UG/KG	5.2 U	5.7 U	17 U	232 U	47 U	46 U
4,4'-DDT	UG/KG	2.3 J	2.1 J	31 J	46 J	14 J	8 J
Methoxychlor	UG/KG	27 U	3.4 J	90 U	1200 U	240 U	239 U
Endrin ketone	UG/KG	5.2 U	5.7 U	17 U	232 U	47 U	46 U
Endrin aldehyde	UG/KG	5.2 U	5.7 U	7.6 J	232 U	47 U	46 U
alpha-Chlordane	UG/KG	7	8.5	8.9 U	120 U	24 U	24 U
gamma-Chlordane	UG/KG	6.1	9.7	8.9 U	120 U	24 U	24 U
Toxaphene	UG/KG	268 U	292 U	895 U	12000 U	2430 U	2390 U
Aroclor-1016	UG/KG	52 U	57 U	174 U	2320 U	471 U	465 U
Aroclor-1221	UG/KG	106 U	115 U	353 U	4720 U	957 U	944 U
Aroclor-1232	UG/KG	52 U	57 U	174 U	2320 U	471 U	465 U
Aroclor-1242	UG/KG	52 U	57 U	174 U	2320 U	471 U	465 U
Aroclor-1248	UG/KG	52 U	57 U	174 U	2320 U	471 U	465 U
Aroclor-1254	UG/KG	52 U	57 U	174 U	2320 U	471 U	465 U
Aroclor-1260	UG/KG	52 U	57 U	174 U	2320 U	471 U	465 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		36-SD07-06	36-SD07-612
Lab Sample ID:		5608-21	5608-22
Date Sampled:		18-MAY-1994	18-MAY-1994
	UNITS		
VOLATILES			
Chloromethane	UG/KG	11 U	45 U
Bromomethane	UG/KG	11 U	45 U
Vinyl Chloride	UG/KG	11 U	45 U
Chloroethane	UG/KG	11 U	45 U
Methylene Chloride	UG/KG	11 U	45 U
Acetone	UG/KG	11 U	45 UJ
Carbon Disulfide	UG/KG	11 U	156 R
1,1-Dichloroethene	UG/KG	11 U	45 U
1,1-Dichloroethane	UG/KG	11 U	45 U
1,2-Dichloroethene (total)	UG/KG	11 U	45 U
Chloroform	UG/KG	11 U	45 U
1,2-Dichloroethane	UG/KG	11 U	45 U
2-Butanone	UG/KG	11 U	45 U
1,1,1-Trichloroethane	UG/KG	11 U	45 U
Carbon Tetrachloride	UG/KG	11 UJ	45 U
Bromodichloromethane	UG/KG	11 U	45 U
1,2-Dichloropropane	UG/KG	11 U	45 U
cis-1,3-Dichloropropene	UG/KG	11 U	45 U
Trichloroethene	UG/KG	11 U	45 U
Dibromochloromethane	UG/KG	11 U	45 U
1,1,2-Trichloroethane	UG/KG	11 U	45 U
Benzene	UG/KG	11 U	45 U
trans-1,3-Dichloropropene	UG/KG	11 U	45 U
Bromoform	UG/KG	11 U	45 U
4-Methyl-2-Pentanone	UG/KG	11 U	45 U
2-Hexanone	UG/KG	11 U	45 U
Tetrachloroethene	UG/KG	11 U	45 U
1,1,2,2-Tetrachloroethane	UG/KG	11 U	45 U
Toluene	UG/KG	11 U	45 U
Chlorobenzene	UG/KG	11 U	45 U
Ethylbenzene	UG/KG	11 U	45 U
Styrene	UG/KG	11 U	45 UJ
Xylene (total)	UG/KG	11 U	45 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		36-SD07-06	36-SD07-612
Lab Sample ID:		5608-21	5608-22
Date Sampled:		18-MAY-1994	18-MAY-1994
	UNITS		
SEMIVOLATILES			
Phenol	UG/KG	2640 U	1480 U
bis(2-Chloroethyl)ether	UG/KG	2640 UJ	1480 UJ
2-Chlorophenol	UG/KG	2640 U	1480 U
1,3-Dichlorobenzene	UG/KG	2640 U	1480 U
1,4-Dichlorobenzene	UG/KG	2640 U	1480 U
1,2-Dichlorobenzene	UG/KG	2640 U	1480 U
2-Methylphenol	UG/KG	2640 U	1480 U
2,2'-oxybis(1-Chloropropane)	UG/KG	2640 U	1480 U
4-Methylphenol	UG/KG	2640 U	1480 U
N-Nitroso-di-n-propylamine	UG/KG	2640 U	1480 U
Hexachloroethane	UG/KG	2640 U	1480 U
Nitrobenzene	UG/KG	2640 U	1480 U
Isophorone	UG/KG	2640 UJ	1480 UJ
2-Nitrophenol	UG/KG	2640 U	1480 U
2,4-Dimethylphenol	UG/KG	2640 U	1480 U
bis(2-Chloroethoxy)methane	UG/KG	2640 U	1480 U
2,4-Dichlorophenol	UG/KG	2640 U	1480 U
1,2,4-Trichlorobenzene	UG/KG	2640 U	1480 U
Naphthalene	UG/KG	2640 U	1480 U
4-Chloroaniline	UG/KG	2640 UJ	1480 UJ
Hexachlorobutadiene	UG/KG	2640 U	1480 U
4-Chloro-3-methylphenol	UG/KG	2640 U	1480 U
2-Methylnaphthalene	UG/KG	2640 U	1480 U
Hexachlorocyclopentadiene	UG/KG	2640 U	1480 U
2,4,6-Trichlorophenol	UG/KG	2640 U	1480 U
2,4,5-Trichlorophenol	UG/KG	6400 U	3587 U
2-Chloronaphthalene	UG/KG	2640 U	1480 U
2-Nitroaniline	UG/KG	6400 U	3587 U
Dimethylphthalate	UG/KG	2640 U	1480 U
Acenaphthylene	UG/KG	2640 U	1480 U
2,6-Dinitrotoluene	UG/KG	2640 UJ	1480 UJ
3-Nitroaniline	UG/KG	6400 UJ	3587 UJ
Acenaphthene	UG/KG	2640 U	1480 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		36-SD07-06	36-SD07-612
Lab Sample ID:		5608-21	5608-22
Date Sampled:		18-MAY-1994	18-MAY-1994
	UNITS		
SEMIVOLATILES Cont.			
2,4-Dinitrophenol	UG/KG	6400 UJ	3587 UJ
Dibenzofuran	UG/KG	2640 U	1480 U
4-Nitrophenol	UG/KG	2640 UJ	1480 UJ
2,4-Dinitrotoluene	UG/KG	2640 U	1480 U
Diethylphthalate	UG/KG	2640 U	1480 U
Fluorene	UG/KG	2640 U	1480 U
4-Chlorophenyl-phenylether	UG/KG	2640 U	1480 U
4-Nitroaniline	UG/KG	6400 UJ	3587 UJ
4,6-Dinitro-2-methylphenol	UG/KG	6400 U	3587 U
N-Nitrosodiphenylamine	UG/KG	2640 U	1480 U
4-Bromophenyl-phenylether	UG/KG	2640 U	1480 U
Hexachlorobenzene	UG/KG	2640 U	1480 U
Pentachlorophenol	UG/KG	6400 U	3587 U
Phenanthrene	UG/KG	2640 U	1480 U
Anthracene	UG/KG	2640 U	1480 U
Carbazole	UG/KG	2640 U	1480 U
Di-n-butylphthalate	UG/KG	2640 U	1480 U
Fluoranthene	UG/KG	2640 U	1480 U
Pyrene	UG/KG	2640 U	1480 U
Butylbenzylphthalate	UG/KG	2640 U	1480 U
Benzo(a)anthracene	UG/KG	2640 U	1480 U
3,3'-Dichlorobenzidine	UG/KG	2640 UJ	1480 UJ
Chrysene	UG/KG	2640 U	1480 U
bis(2-Ethylhexyl)phthalate	UG/KG	2640 UJ	1480 UJ
Di-n-octylphthalate	UG/KG	2640 U	1480 U
Benzo(b)fluoranthene	UG/KG	2640 U	1480 U
Benzo(k)fluoranthene	UG/KG	2640 U	1480 U
Benzo(a)pyrene	UG/KG	2640 U	1480 U
Indeno(1,2,3-cd)pyrene	UG/KG	2640 U	1480 U
Dibenz(a,h)anthracene	UG/KG	2640 U	1480 U
Benzo(g,h,i)perylene	UG/KG	2640 U	1480 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		36-SD07-06	36-SD07-612
Lab Sample ID:		5608-21	5608-22
Date Sampled:		18-MAY-1994	18-MAY-1994
	UNITS		
PESTICIDE/PCBs			
alpha-BHC	UG/KG	25 U	24 U
beta-BHC	UG/KG	25 U	24 U
delta-BHC	UG/KG	25 U	24 U
gamma-BHC (Lindane)	UG/KG	25 U	24 U
Heptachlor	UG/KG	25 U	24 U
Aldrin	UG/KG	25 U	24 U
Heptachlor epoxide	UG/KG	25 U	24 U
Endosulfan I	UG/KG	25 U	24 U
Dieldrin	UG/KG	48 U	14 J
4,4'-DDE	UG/KG	51	32 J
Endrin	UG/KG	25 U	24 U
Endosulfan II	UG/KG	48 U	47 U
4,4'-DDD	UG/KG	74	41
Endosulfan sulfate	UG/KG	48 U	47 U
4,4'-DDT	UG/KG	48 U	5.7 J
Methoxychlor	UG/KG	246 U	243 U
Endrin ketone	UG/KG	48 U	47 U
Endrin aldehyde	UG/KG	48 U	47 U
alpha-Chlordane	UG/KG	13 J	6.5 J
gamma-Chlordane	UG/KG	25 U	24 U
Toxaphene	UG/KG	2460 U	2430 U
Aroclor-1016	UG/KG	478 U	471 U
Aroclor-1221	UG/KG	971 U	957 U
Aroclor-1232	UG/KG	478 U	471 U
Aroclor-1242	UG/KG	478 U	471 U
Aroclor-1248	UG/KG	478 U	471 U
Aroclor-1254	UG/KG	478 U	471 U
Aroclor-1260	UG/KG	478 U	471 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
VOLATILES							
Chloromethane	UG/KG	11 U	879 U	ND	ND		0/20
Bromomethane	UG/KG	11 U	879 U	ND	ND		0/20
Vinyl Chloride	UG/KG	11 U	879 U	ND	ND		0/20
Chloroethane	UG/KG	11 U	879 U	ND	ND		0/20
Methylene Chloride	UG/KG	11 U	879 U	ND	ND		0/20
Acetone	UG/KG	11 UJ	879 UJ	128 J	128 J	35-SD01-612	1/20
Carbon Disulfide	UG/KG	11 U	879 U	35 R	156 R	36-SD07-612	3/20
1,1-Dichloroethene	UG/KG	11 U	879 U	ND	ND		0/20
1,1-Dichloroethane	UG/KG	11 U	879 U	ND	ND		0/20
1,2-Dichloroethene (total)	UG/KG	11 U	879 U	ND	ND		0/20
Chloroform	UG/KG	11 U	879 U	ND	ND		0/20
1,2-Dichloroethane	UG/KG	11 U	879 U	ND	ND		0/20
2-Butanone	UG/KG	11 U	879 UJ	ND	ND		0/20
1,1,1-Trichloroethane	UG/KG	11 U	879 U	ND	ND		0/20
Carbon Tetrachloride	UG/KG	11 U	879 U	ND	ND		0/20
Bromodichloromethane	UG/KG	11 U	879 U	ND	ND		0/20
1,2-Dichloropropane	UG/KG	11 U	879 U	ND	ND		0/20
cis-1,3-Dichloropropene	UG/KG	11 U	879 U	ND	ND		0/20
Trichloroethene	UG/KG	11 U	879 U	ND	ND		0/20
Dibromochloromethane	UG/KG	11 U	879 U	ND	ND		0/20
1,1,2-Trichloroethane	UG/KG	11 U	879 U	ND	ND		0/20
Benzene	UG/KG	11 U	879 U	ND	ND		0/20
trans-1,3-Dichloropropene	UG/KG	11 U	879 U	ND	ND		0/20
Bromoform	UG/KG	11 U	879 U	ND	ND		0/20
4-Methyl-2-Pentanone	UG/KG	11 U	879 UJ	ND	ND		0/20
2-Hexanone	UG/KG	11 U	879 UJ	ND	ND		0/20
Tetrachloroethene	UG/KG	11 U	879 U	ND	ND		0/20
1,1,2,2-Tetrachloroethane	UG/KG	11 U	879 U	ND	ND		0/20
Toluene	UG/KG	11 U	879 U	8 J	8 J	35-SD03-06	1/20
Chlorobenzene	UG/KG	11 U	879 U	ND	ND		0/20
Ethylbenzene	UG/KG	11 U	879 U	ND	ND		0/20
Styrene	UG/KG	11 UJ	879 U	ND	ND		0/20
Xylene (total)	UG/KG	11 U	879 U	ND	ND		0/20

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES							
Phenol	UG/KG	400 U	2640 U	ND	ND		0/20
bis(2-Chloroethyl)ether	UG/KG	400 U	2640 UJ	ND	ND		0/20
2-Chlorophenol	UG/KG	400 U	2640 U	ND	ND		0/20
1,3-Dichlorobenzene	UG/KG	400 U	2640 U	ND	ND		0/20
1,4-Dichlorobenzene	UG/KG	400 U	2640 U	ND	ND		0/20
1,2-Dichlorobenzene	UG/KG	400 U	2640 U	ND	ND		0/20
2-Methylphenol	UG/KG	400 U	2640 U	ND	ND		0/20
2,2'-oxybis(1-Chloropropane)	UG/KG	400 UJ	2640 U	ND	ND		0/20
4-Methylphenol	UG/KG	400 U	2640 U	ND	ND		0/20
N-Nitroso-di-n-propylamine	UG/KG	400 UJ	2640 U	ND	ND		0/20
Hexachloroethane	UG/KG	400 U	2640 U	ND	ND		0/20
Nitrobenzene	UG/KG	400 U	2640 U	ND	ND		0/20
Isophorone	UG/KG	400 U	2640 UJ	ND	ND		0/20
2-Nitrophenol	UG/KG	400 U	2640 U	ND	ND		0/20
2,4-Dimethylphenol	UG/KG	400 U	2640 U	ND	ND		0/20
bis(2-Chloroethoxy)methane	UG/KG	400 U	2640 U	ND	ND		0/20
2,4-Dichlorophenol	UG/KG	400 U	2640 U	ND	ND		0/20
1,2,4-Trichlorobenzene	UG/KG	400 U	2640 U	ND	ND		0/20
Naphthalene	UG/KG	400 U	2640 U	ND	ND		0/20
4-Chloroaniline	UG/KG	400 U	2640 UJ	ND	ND		0/20
Hexachlorobutadiene	UG/KG	400 U	2640 U	ND	ND		0/20
4-Chloro-3-methylphenol	UG/KG	400 U	2640 U	ND	ND		0/20
2-Methylnaphthalene	UG/KG	400 U	2640 U	ND	ND		0/20
Hexachlorocyclopentadiene	UG/KG	400 U	2640 U	ND	ND		0/20
2,4,6-Trichlorophenol	UG/KG	400 U	2640 U	ND	ND		0/20
2,4,5-Trichlorophenol	UG/KG	971 U	6400 U	ND	ND		0/20
2-Chloronaphthalene	UG/KG	400 U	2640 U	ND	ND		0/20
2-Nitroaniline	UG/KG	971 U	6400 U	ND	ND		0/20
Dimethylphthalate	UG/KG	400 U	2640 U	ND	ND		0/20
Acenaphthylene	UG/KG	400 U	2640 U	ND	ND		0/20
2,6-Dinitrotoluene	UG/KG	400 U	2640 UJ	ND	ND		0/20
3-Nitroaniline	UG/KG	971 UJ	6400 UJ	ND	ND		0/20
Acenaphthene	UG/KG	400 U	2640 U	ND	ND		0/20

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	971 UJ	6400 UJ	ND	ND		0/20
Dibenzofuran	UG/KG	400 U	2640 U	ND	ND		0/20
4-Nitrophenol	UG/KG	400 UJ	2640 UJ	ND	ND		0/20
2,4-Dinitrotoluene	UG/KG	400 U	2640 U	ND	ND		0/20
Diethylphthalate	UG/KG	400 U	2640 U	352 J	2135 J	36-SD05-06	4/20
Fluorene	UG/KG	400 U	2640 U	ND	ND		0/20
4-Chlorophenyl-phenylether	UG/KG	400 U	2640 U	ND	ND		0/20
4-Nitroaniline	UG/KG	971 UJ	6400 UJ	ND	ND		0/20
4,6-Dinitro-2-methylphenol	UG/KG	971 U	6400 U	ND	ND		0/20
N-Nitrosodiphenylamine	UG/KG	400 U	2640 U	ND	ND		0/20
4-Bromophenyl-phenylether	UG/KG	400 U	2640 U	ND	ND		0/20
Hexachlorobenzene	UG/KG	400 U	2640 U	ND	ND		0/20
Pentachlorophenol	UG/KG	971 U	6400 U	ND	ND		0/20
Phenanthrene	UG/KG	400 U	2640 U	ND	ND		0/20
Anthracene	UG/KG	400 U	2640 U	ND	ND		0/20
Carbazole	UG/KG	400 U	2640 U	ND	ND		0/20
Di-n-butylphthalate	UG/KG	400 U	2640 U	218 J	218 J	36-SD06-612	1/20
Fluoranthene	UG/KG	400 U	2640 U	ND	ND		0/20
Pyrene	UG/KG	400 U	2640 U	ND	ND		0/20
Butylbenzylphthalate	UG/KG	400 U	2640 U	ND	ND		0/20
Benzo(a)anthracene	UG/KG	400 U	2640 U	ND	ND		0/20
3,3'-Dichlorobenzidine	UG/KG	400 UJ	2640 UJ	ND	ND		0/20
Chrysene	UG/KG	400 U	2640 U	ND	ND		0/20
bis(2-Ethylhexyl)phthalate	UG/KG	318 UJ	2640 UJ	469 J	704 J	35-SD05-06	3/20
Di-n-octylphthalate	UG/KG	400 U	2640 U	ND	ND		0/20
Benzo(b)fluoranthene	UG/KG	400 U	2640 U	ND	ND		0/20
Benzo(k)fluoranthene	UG/KG	400 U	2640 U	ND	ND		0/20
Benzo(a)pyrene	UG/KG	400 U	2640 U	ND	ND		0/20
Indeno(1,2,3-cd)pyrene	UG/KG	400 U	2640 U	ND	ND		0/20
Dibenz(a,h)anthracene	UG/KG	400 U	2640 U	ND	ND		0/20
Benzo(g,h,i)perylene	UG/KG	400 U	2640 U	ND	ND		0/20

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
PESTICIDE/PCBs							
alpha-BHC	UG/KG	2.1 U	120 U	ND	ND		0/20
beta-BHC	UG/KG	2.1 U	120 U	0.59 J	0.59 J	35-SD07-06	1/20
delta-BHC	UG/KG	2.1 U	120 U	0.92 J	1 J	35-SD06-06	2/20
gamma-BHC (Lindane)	UG/KG	2.1 U	120 U	ND	ND		0/20
Heptachlor	UG/KG	2.1 U	120 U	0.91 J	2.3 J	35-SD03-06	2/20
Aldrin	UG/KG	2.1 U	120 U	ND	ND		0/20
Heptachlor epoxide	UG/KG	2.5 U	120 U	0.43 J	1.4 J	35-SD07-612	7/20
Endosulfan I	UG/KG	2.1 U	120 U	ND	ND		0/20
Dieldrin	UG/KG	4.2 U	232 U	1.4 J	52	36-SD06-06	7/20
4,4'-DDE	UG/KG	6.4 U	24 U	1 J	1200	36-SD05-612	17/20
Endrin	UG/KG	2.2 U	120 U	0.44 J	0.85 J	35-SD05-612	5/20
Endosulfan II	UG/KG	4.2 U	232 U	0.84 J	3.5 J	35-SD04-612	8/20
4,4'-DDD	UG/KG	3.3 U	23 U	1.1 J	1140	36-SD05-612	17/20
Endosulfan sulfate	UG/KG	4 U	232 U	ND	ND		0/20
4,4'-DDT	UG/KG	5.5 U	48 U	0.66 J	46 J	36-SD05-612	15/20
Methoxychlor	UG/KG	26 U	1200 U	0.49 J	3.4 J	35-SD07-612	6/20
Endrin ketone	UG/KG	4 U	232 U	2.8 J	3.1 J	35-SD05-06	2/20
Endrin aldehyde	UG/KG	4 U	232 U	1 J	7.6 J	36-SD05-06	5/20
alpha-Chlordane	UG/KG	2.5 U	120 U	0.51 J	13 J	36-SD07-06	10/20
gamma-Chlordane	UG/KG	2.2 UJ	120 U	3.6	9.7	35-SD07-612	6/20
Toxaphene	UG/KG	206 U	12000 U	ND	ND		0/20
Aroclor-1016	UG/KG	40 U	2320 U	ND	ND		0/20
Aroclor-1221	UG/KG	81 U	4720 U	ND	ND		0/20
Aroclor-1232	UG/KG	40 U	2320 U	ND	ND		0/20
Aroclor-1242	UG/KG	40 U	2320 U	ND	ND		0/20
Aroclor-1248	UG/KG	40 U	2320 U	ND	ND		0/20
Aroclor-1254	UG/KG	40 U	2320 U	ND	ND		0/20
Aroclor-1260	UG/KG	40 U	2320 U	ND	ND		0/20

APPENDIX U.10
SEDIMENT INORGANICS

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-SD01-06	35-SD01-612	35-SD02-06	35-SD02-612	35-SD03-06	35-SD03-612
Lab Sample ID:		4585-4	4585-5	4585-6	4585-8	5608-1	5608-2
Date Sampled:		20-APR-1994	20-APR-1994	20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994
	UNITS						
Aluminum	MG/KG	37300	19200	484	903	1160	2010
Antimony	MG/KG	8.9 R	6.8 R	5.9 R	5.7 R	6.3 UJ	6.7 UJ
Arsenic	MG/KG	2.3 J	1.5 UJ	0.46 J	0.34 J	0.27 R	0.69 R
Barium	MG/KG	129	58.8	3.8	6.5	7.8	10.9
Beryllium	MG/KG	1.6 R	1 R	0.18 R	0.12 U	0.14 U	0.15 U
Cadmium	MG/KG	0.97 R	0.74 R	0.64 R	0.61 R	0.1 U	0.13 U
Calcium	MG/KG	5040 J	3160 J	3831 J	4970 J	795 J	1360
Chromium	MG/KG	28.4 J	17 J	1.7 U	3.3 U	2.5	3.7
Cobalt	MG/KG	6.6	3.2	1.8	1.3 U	1.5 U	1.6 U
Copper	MG/KG	4.1	0.98 U	1.2 U	24.8	1.8 U	2.5 U
Iron	MG/KG	10400 J	6210 J	1050 J	1970 J	1130	2530
Lead	MG/KG	21.1 J	12.4 J	4.7 J	26.3 J	5.2	77.9
Magnesium	MG/KG	685	480	88.1	145	148	334
Manganese	MG/KG	29.7 J	13.1 J	3.2 J	5.2 J	4.1	6.6
Mercury	MG/KG	0.1 R	0.07 R	0.07 J	0.06 R	0.24 R	0.25 R
Nickel	MG/KG	9.5 U	5.3 U	1.4 U	1.6 U	2.2	2.1 B
Potassium	MG/KG	498	362 U	312 U	296 U	334 U	357 U
Selenium	MG/KG	1.6 J	1 UJ	0.23 J	0.17 UJ	0.41 U	0.6 U
Silver	MG/KG	0.04 U	0.03 U	0.03 U	0.02 U	0.41 U	0.44 U
Sodium	MG/KG	458 U	352 U	303 U	287 U	325 U	347 U
Thallium	MG/KG	0.66 J	0.43 J	0.13 U	0.12 U	0.15	0.15 U
Vanadium	MG/KG	24.2 J	14.5 J	0.94 J	1.9 J	2.1	3
Zinc	MG/KG	21.3 R	14.2 R	17.3 R	17.7 R	21 R	31.3 R

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-SD04-06	35-SD04-612	35-SD05-06	35-SD05-612	35-SD06-06	35-SD06-612
Lab Sample ID:		4585-1	4585-3	5608-3	5608-4	5608-5	5608-6
Date Sampled:		20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994
	UNITS						
Aluminum	MG/KG	1950 J	4240	11300	2580	16000	8430
Antimony	MG/KG	8.1 R	10.3 R	13.2 UJ	7 UJ	9.7 UJ	7.7 UJ
Arsenic	MG/KG	0.97 J	1 J	2.3 J	0.91 J	3.7 J	0.33 R
Barium	MG/KG	10	30.1	43.7	15.8	36.7	19.2
Beryllium	MG/KG	0.18 U	0.16 R	0.4	0.15 U	0.59	0.27
Cadmium	MG/KG	0.88 R	0.78 R	0.51 U	0.22 U	0.92 U	0.17 U
Calcium	MG/KG	4940 J	4110 J	6490 J	5780 J	4500 J	4100 J
Chromium	MG/KG	5.7 U	14.8 J	16.3	4.3	20.9	9.1
Cobalt	MG/KG	1.9 U	1.7 U	3.2	1.7 U	2.9	4
Copper	MG/KG	4.2	8.4	18.1	5.2	21.2	4.6
Iron	MG/KG	3560 J	7110 J	13400	3910	10900	8350
Lead	MG/KG	32 J	34.4 J	92	54.2	82.6	19.8 R
Magnesium	MG/KG	260	405	1070	446	1140	715
Manganese	MG/KG	11 J	15.9 J	25.2	10.9	24.3	23.4
Mercury	MG/KG	0.09 R	0.08 R	0.53 R	0.31 R	1.2 R	0.4 R
Nickel	MG/KG	2.4 U	3.8 U	5.5	2.2	6.4	2.6
Potassium	MG/KG	429 U	381 U	701 U	370 U	812	407 U
Selenium	MG/KG	0.25 UJ	0.22 UJ	0.98 U	0.46 U	0.59 U	0.45 U
Silver	MG/KG	0.04 U	0.03 U	0.86 U	0.46 U	0.64 U	0.5 U
Sodium	MG/KG	518	461	729	360 U	706	712
Thallium	MG/KG	0.18 U	0.22 J	0.63	0.2	0.47	0.35
Vanadium	MG/KG	4.8 J	8.8 J	21.2	4.7	23.9	10.9
Zinc	MG/KG	45 R	101 J	124 R	48.2 R	139 R	35 R

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-SD07-06	35-SD07-612	36-SD05-06	36-SD05-612	36-SD06-06	36-SD06-612
Lab Sample ID:		4585-9	4585-10	5608-13	5608-18	5608-19	5608-20
Date Sampled:		20-APR-1994	20-APR-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
Aluminum	MG/KG	3960	8820	11100	17200	2150	1560
Antimony	MG/KG	7.2 R	8.4 R	24.2 UJ	22.8 UJ	5.9 UJ	5.7 UJ
Arsenic	MG/KG	1.2 J	2.3 J	9 R	2.8 J	0.67 J	0.7 J
Barium	MG/KG	19.5	48.6	25.7	31.6	3.4	2.4
Beryllium	MG/KG	0.2 R	0.4 R	0.53 U	0.5 U	0.13 U	0.12 U
Cadmium	MG/KG	0.79 R	4.3 R	0.88 U	0.2 U	0.05 U	0.04 U
Calcium	MG/KG	2530 J	3800 J	5670 J	8340 J	301 J	212 U
Chromium	MG/KG	7.1 J	20 J	19.4	14.6	3.1	2.4
Cobalt	MG/KG	7.8	3.2	5.8 U	5.4 U	1.4	1.4 U
Copper	MG/KG	9.4	10.6	24.4	6.8	4.4	3.4
Iron	MG/KG	5340 J	7220 J	14900	15900	1860	1090
Lead	MG/KG	42 J	79 J	115	15.9 R	15100	7.1
Magnesium	MG/KG	227	359	2750	2940	305	201
Manganese	MG/KG	28.8 J	37 J	36.8	62.8	5.6	4.9
Mercury	MG/KG	0.08 R	0.08 R	1.4 R	1.2 R	0.41 R	0.45 R
Nickel	MG/KG	6.4 U	7.3 U	13.6 B	7.8	2.1	2.6
Potassium	MG/KG	384 U	420 U	1280 U	1210 U	314 U	304 U
Selenium	MG/KG	0.25 J	0.28 J	3.7 UJ	1.5 U	0.21 U	0.22 U
Silver	MG/KG	0.14 U	0.03 U	1.6 U	1.5 U	0.39 U	0.37 U
Sodium	MG/KG	373 U	408 U	4980	1860	548	514
Thallium	MG/KG	0.22 J	0.38	0.89	0.59	0.13 U	0.12 U
Vanadium	MG/KG	8.7 J	15.9 J	39.3	19.6	4.6	3.2
Zinc	MG/KG	60.4 J	104 J	145 R	32.9 R	25.9 R	16.6 R

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		36-SD07-06	36-SD07-612
Lab Sample ID:		5608-21	5608-22
Date Sampled:		18-MAY-1994	18-MAY-1994
	UNITS		
Aluminum	MG/KG	31500	10800
Antimony	MG/KG	36.8 UJ	20.6 UJ
Arsenic	MG/KG	2 J	1.7 J
Barium	MG/KG	60.9	19.9
Beryllium	MG/KG	1.1	0.45 U
Cadmium	MG/KG	0.31 U	0.49 U
Calcium	MG/KG	17500 J	8610 J
Chromium	MG/KG	28.6	10.4
Cobalt	MG/KG	8.8 U	4.9 U
Copper	MG/KG	14.4	5.1
Iron	MG/KG	13100	9710
Lead	MG/KG	44.9	17
Magnesium	MG/KG	3830	1830
Manganese	MG/KG	29.2	15.3
Mercury	MG/KG	8 R	3.9 R
Nickel	MG/KG	10	7.3
Potassium	MG/KG	2610	1090 U
Selenium	MG/KG	2.6 U	1.3 U
Silver	MG/KG	2.4 U	1.3 U
Sodium	MG/KG	4320	1180
Thallium	MG/KG	0.96	0.54
Vanadium	MG/KG	28.6	12.4
Zinc	MG/KG	50.9 R	29.2 R

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID: Lab Sample ID: Date Sampled:		MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	UNITS						
Aluminum	MG/KG	NA	NA	484	37300	35-SD01-06	20/20
Antimony	MG/KG	5.7 UJ	36.8 UJ	5.7 R	10.3 R	35-SD04-612	8/20
Arsenic	MG/KG	1.5 UJ	1.5 UJ	0.27 R	9 R	36-SD05-06	19/20
Barium	MG/KG	NA	NA	2.4	129	35-SD01-06	20/20
Beryllium	MG/KG	0.12 U	0.53 U	0.16 R	1.6 R	35-SD01-06	10/20
Cadmium	MG/KG	0.04 U	0.92 U	0.61 R	4.3 R	35-SD07-612	8/20
Calcium	MG/KG	212 U	212 U	301 J	17500 J	36-SD07-06	19/20
Chromium	MG/KG	1.7 U	5.7 U	2.4	28.6	36-SD07-06	17/20
Cobalt	MG/KG	1.3 U	8.8 U	1.4	7.8	35-SD07-06	9/20
Copper	MG/KG	0.98 U	2.5 U	3.4	24.8	35-SD02-612	16/20
Iron	MG/KG	NA	NA	1050 J	15900	36-SD05-612	20/20
Lead	MG/KG	NA	NA	4.7 J	15100	36-SD06-06	20/20
Magnesium	MG/KG	NA	NA	88.1	3830	36-SD07-06	20/20
Manganese	MG/KG	NA	NA	3.2 J	62.8	36-SD05-612	20/20
Mercury	MG/KG	NA	NA	0.06 R	8 R	36-SD07-06	20/20
Nickel	MG/KG	1.4 U	9.5 U	2.1 B	13.6 B	36-SD05-06	12/20
Potassium	MG/KG	296 U	1280 U	498	2610	36-SD07-06	3/20
Selenium	MG/KG	0.17 UJ	3.7 UJ	0.23 J	1.6 J	35-SD01-06	4/20
Silver	MG/KG	0.02 U	2.4 U	ND	ND		0/20
Sodium	MG/KG	287 U	458 U	461	4980	36-SD05-06	11/20
Thallium	MG/KG	0.12 U	0.18 U	0.15	0.96	36-SD07-06	14/20
Vanadium	MG/KG	NA	NA	0.94 J	39.3	36-SD05-06	20/20
Zinc	MG/KG	NA	NA	14.2 R	145 R	36-SD05-06	20/20

APPENDIX V
RI/FS STATISTICAL SUMMARIES

APPENDIX V.1
SURFACE SOIL ORGANICS

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS01-00	35-SS02-00	35-SS03-00	35-SS04-00	35-SS05-00	35-SS06-00
Lab Sample ID:		5617-17	5617-19	5617-9	5617-10	4585-22	4585-21
Date Sampled:		17-MAY-1994	17-MAY-1994	18-MAY-1994	10-MAY-1994	29-APR-1994	29-APR-1994
	UNITS						
VOLATILES							
Chloromethane	UG/KG	5.5 UJ	5.5 U	5 U	5.5 UJ	5 UJ	5.5 UJ
Bromomethane	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 U	5.5 U
Vinyl Chloride	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 U	5.5 U
Chloroethane	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 U	5.5 U
Methylene Chloride	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 U	5.5 U
Acetone	UG/KG	5.5 U	5.5 U	5 UJ	5.5 UJ	5 U	5.5 U
Carbon Disulfide	UG/KG	5.5 U	5.5 U		5.5 UJ	5 U	5.5 U
1,1-Dichloroethene	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 U	5.5 U
1,1-Dichloroethane	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 U	5.5 U
1,2-Dichloroethene (total)	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 U	5.5 U
Chloroform	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 U	5.5 U
1,2-Dichloroethane	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 U	5.5 U
2-Butanone	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 U	5.5 U
1,1,1-Trichloroethane	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 UJ	5.5 U
Carbon Tetrachloride	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 UJ	5.5 UJ
Bromodichloromethane	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 UJ	5.5 U
1,2-Dichloropropane	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 UJ	5.5 U
cis-1,3-Dichloropropene	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 UJ	5.5 U
Trichloroethene	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 UJ	5.5 U
Dibromochloromethane	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 UJ	5.5 U
1,1,2-Trichloroethane	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 UJ	5.5 U
Benzene	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 UJ	5.5 U
trans-1,3-Dichloropropene	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 UJ	5.5 U
Bromoform	UG/KG	5.5 U	5.5 U	5 U	5.5 UJ	5 UJ	5.5 U
4-Methyl-2-Pentanone	UG/KG	5.5 UJ	5.5 U	5 U	5.5 UJ	5 UJ	5.5 UJ
2-Hexanone	UG/KG	5.5 UJ	5.5 U	5 U	5.5 UJ	5 UJ	5.5 UJ
Tetrachloroethene	UG/KG	5.5 UJ	5.5 U	5 U	5.5 UJ	5 UJ	5.5 UJ
1,1,2,2-Tetrachloroethane	UG/KG	5.5 UJ	5.5 U	5 U	5.5 UJ	5 UJ	5.5 UJ
Toluene	UG/KG	5.5 UJ	5.5 U	5 U	5.5 UJ	19 J	5.5 UJ
Chlorobenzene	UG/KG	5.5 UJ	5.5 U	5 U	5.5 UJ	5 UJ	5.5 UJ
Ethylbenzene	UG/KG	5.5 UJ	5.5 U	5 U	5.5 UJ	5 UJ	5.5 UJ
Styrene	UG/KG	5.5 UJ	5.5 U	5 UJ	5.5 UJ	5 UJ	5.5 UJ
Xylene (total)	UG/KG	5.5 UJ	5.5 U	5 U	5.5 UJ	5 UJ	5.5 UJ

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS01-00	35-SS02-00	35-SS03-00	35-SS04-00	35-SS05-00	35-SS06-00
Lab Sample ID:		5617-17	5617-19	5617-9	5617-10	4585-22	4585-21
Date Sampled:		17-MAY-1994	17-MAY-1994	18-MAY-1994	10-MAY-1994	29-APR-1994	29-APR-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
bis(2-Chloroethyl)ether	UG/KG	175 UJ	175 UJ	169.5 UJ	180 UJ	170.5 U	174.5 U
2-Chlorophenol	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
1,3-Dichlorobenzene	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
1,4-Dichlorobenzene	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
1,2-Dichlorobenzene	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
2-Methylphenol	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
2,2'-oxybis(1-Chloropropane)	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
4-Methylphenol	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
N-Nitroso-di-n-propylamine	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
Hexachloroethane	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
Nitrobenzene	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
Isophorone	UG/KG	175 UJ	175 UJ	169.5 UJ	180 UJ	170.5 U	174.5 U
2-Nitrophenol	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
2,4-Dimethylphenol	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
bis(2-Chloroethoxy)methane	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
2,4-Dichlorophenol	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
1,2,4-Trichlorobenzene	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
Naphthalene	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
4-Chloroaniline	UG/KG	175 UJ	175 UJ	169.5 UJ	180 UJ	170.5 UJ	174.5 UJ
Hexachlorobutadiene	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
4-Chloro-3-methylphenol	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
2-Methylnaphthalene	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
Hexachlorocyclopentadiene	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
2,4,6-Trichlorophenol	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
2,4,5-Trichlorophenol	UG/KG	424.5 U	423.5 U	410.5 U	436.5 U	413 U	423 U
2-Chloronaphthalene	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
2-Nitroaniline	UG/KG	424.5 U	423.5 U	410.5 U	436.5 U	413 U	423 U
Dimethylphthalate	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
Acenaphthylene	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
2,6-Dinitrotoluene	UG/KG	175 UJ	175 UJ	169.5 UJ	180 UJ	170.5 UJ	174.5 UJ
3-Nitroaniline	UG/KG	424.5 UJ	423.5 UJ	410.5 UJ	436.5 UJ	413 UJ	423 UJ
Acenaphthene	UG/KG	175 U	175 U	169.5 U	180 U	196 J	174.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS01-00	35-SS02-00	35-SS03-00	35-SS04-00	35-SS05-00	35-SS06-00
Lab Sample ID:		5617-17	5617-19	5617-9	5617-10	4585-22	4585-21
Date Sampled:		17-MAY-1994	17-MAY-1994	18-MAY-1994	10-MAY-1994	29-APR-1994	29-APR-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	424.5 UJ	423.5 UJ	410.5 UJ	436.5 UJ	413 UJ	423 UJ
Dibenzofuran	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
4-Nitrophenol	UG/KG	175 U	175 U	169.5 U	180 U	170.5 UJ	174.5 UJ
2,4-Dinitrotoluene	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
Diethylphthalate	UG/KG	175 UJ	175 UJ	169.5 UJ	180 UJ	170.5 U	174.5 U
Fluorene	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
4-Chlorophenyl-phenylether	UG/KG	175 U	175 U	169.5 U	180 U	170.5 U	174.5 U
4-Nitroaniline	UG/KG	424.5 UJ	423.5 UJ	410.5 UJ	436.5 UJ	413 UJ	423 UJ
4,6-Dinitro-2-methylphenol	UG/KG	424.5 UJ	423.5 UJ	410.5 UJ	436.5 UJ	413 U	423 U
N-Nitrosodiphenylamine	UG/KG	175 U	175 U	169.5 U	180 UJ	170.5 U	174.5 U
4-Bromophenyl-phenylether	UG/KG	175 U	175 U	169.5 U	180 UJ	170.5 U	174.5 U
Hexachlorobenzene	UG/KG	175 U	175 U	169.5 U	180 UJ	170.5 U	174.5 U
Pentachlorophenol	UG/KG	424.5 U	423.5 U	410.5 U	436.5 UJ	413 U	423 U
Phenanthrene	UG/KG	175 U	175 U	169.5 U	180 UJ	1186	174.5 U
Anthracene	UG/KG	175 U	175 U	169.5 U	180 UJ	170.5 U	174.5 U
Carbazole	UG/KG	175 UJ	175 UJ	169.5 UJ	180 UJ	183 J	174.5 U
Di-n-butylphthalate	UG/KG	175 U	175 U	169.5 U	180 UJ	170.5 U	174.5 U
Fluoranthene	UG/KG	175 U	175 U	169.5 U	180 UJ	1567	174.5 U
Pyrene	UG/KG	175 U	175 U	169.5 U	180 UJ	1173	174.5 U
Butylbenzylphthalate	UG/KG	175 U	175 U	169.5 U	180 UJ	170.5 U	174.5 U
Benzo(a)anthracene	UG/KG	175 U	175 U	169.5 U	180 UJ	566	174.5 U
3,3'-Dichlorobenzidine	UG/KG	175 U	175 U	169.5 U	180 UJ	170.5 UJ	174.5 UJ
Chrysene	UG/KG	175 U	175 U	169.5 U	180 UJ	683	174.5 U
bis(2-Ethylhexyl)phthalate	UG/KG	175 UJ	175 UJ	169.5 UJ	279 J	170.5 UJ	174.5 UJ
Di-n-octylphthalate	UG/KG	175 UJ	175 U	169.5 U	180 UJ	170.5 U	174.5 U
Benzo(b)fluoranthene	UG/KG	175 UJ	175 U	169.5 U	180 UJ	1186	174.5 U
Benzo(k)fluoranthene	UG/KG	175 UJ	175 U	169.5 U	180 UJ	170.5 U	174.5 U
Benzo(a)pyrene	UG/KG	175 UJ	175 U	169.5 U	180 UJ	625	174.5 U
Indeno(1,2,3-cd)pyrene	UG/KG	175 UJ	175 U	169.5 U	180 UJ	381	174.5 U
Dibenz(a,h)anthracene	UG/KG	175 UJ	175 U	169.5 U	180 UJ	184 J	174.5 U
Benzo(g,h,i)perylene	UG/KG	175 UJ	175 U	169.5 U	208 J	366	174.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS01-00	35-SS02-00	35-SS03-00	35-SS04-00	35-SS05-00	35-SS06-00
Lab Sample ID:		5617-17	5617-19	5617-9	5617-10	4585-22	4585-21
Date Sampled:		17-MAY-1994	17-MAY-1994	18-MAY-1994	10-MAY-1994	29-APR-1994	29-APR-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/KG	0.9 U	0.9 U	0.85 U	0.95 U	NA	NA
beta-BHC	UG/KG	0.9 U	0.9 U	0.85 U	0.53 J	NA	NA
delta-BHC	UG/KG	0.9 U	0.9 U	0.85 U	0.95 U	NA	NA
gamma-BHC (Lindane)	UG/KG	0.9 U	0.9 U	0.85 U	0.95 U	NA	NA
Heptachlor	UG/KG	0.9 U	0.9 U	0.85 U	0.95 U	NA	NA
Aldrin	UG/KG	0.9 U	0.9 U	0.85 U	0.95 U	NA	NA
Heptachlor epoxide	UG/KG	0.9 U	0.9 U	0.85 U	0.95 U	NA	NA
Endosulfan I	UG/KG	0.9 U	0.9 U	0.85 U	0.95 U	NA	NA
Dieldrin	UG/KG	1.75 U	1.75 U	0.35 J	2.9 J	NA	NA
4,4'-DDE	UG/KG	12	1.6 J	20	8.7	NA	NA
Endrin	UG/KG	0.9 U	0.9 U	0.85 U	7.9	NA	NA
Endosulfan II	UG/KG	1.75 U	1.75 U	1.7 U	2.9 J	NA	NA
4,4'-DDD	UG/KG	1.2 J	0.56 J	0.86 J	11	NA	NA
Endosulfan sulfate	UG/KG	1.75 U	1.75 U	1.7 U	1.8 U	NA	NA
4,4'-DDT	UG/KG	19	1.6 J	8.9	48	NA	NA
Methoxychlor	UG/KG	9 U	9 U	8.5 U	9.5 U	NA	NA
Endrin ketone	UG/KG	1.75 U	1.75 U	1.7 U	1.2 J	NA	NA
Endrin aldehyde	UG/KG	1.75 U	0.37 J	1.7 U	1.6 J	NA	NA
alpha-Chlordane	UG/KG	0.9 U	0.9 U	0.85 U	4.1	NA	NA
gamma-Chlordane	UG/KG	0.9 U	0.9 U	0.85 U	0.95 U	NA	NA
Toxaphene	UG/KG	90 U	90 U	87 U	93 U	NA	NA
Aroclor-1016	UG/KG	17.5 U	17.5 U	17 U	18 U	NA	NA
Aroclor-1221	UG/KG	35.5 U	35.5 U	34.5 U	36.5 U	NA	NA
Aroclor-1232	UG/KG	17.5 U	17.5 U	17 U	18 U	NA	NA
Aroclor-1242	UG/KG	17.5 U	17.5 U	17 U	18 U	NA	NA
Aroclor-1248	UG/KG	17.5 U	17.5 U	17 U	18 U	NA	NA
Aroclor-1254	UG/KG	17.5 U	17.5 U	17 U	18 U	NA	NA
Aroclor-1260	UG/KG	17.5 U	17.5 U	17 U	18 U	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS07-00	35-SS08-00	35-SS09-00	35-SS10-00	35-SS11-00	35-SS12-00
Lab Sample ID:		5617-8	4585-20	5617-16	5617-18	5617-6	5617-5
Date Sampled:		18-MAY-1994	29-APR-1994	18-MAY-1994	17-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
VOLATILES							
Chloromethane	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
Bromomethane	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
Vinyl Chloride	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 U	5.5 U
Chloroethane	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 U	5.5 U
Methylene Chloride	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 U	5.5 U
Acetone	UG/KG	5.5 UJ	11 UJ	5.5 UJ	5.5 U	5.5 UJ	5.5 UJ
Carbon Disulfide	UG/KG	33	11 U		5.5 U	5.5 U	
1,1-Dichloroethene	UG/KG		11 U	5.5 U	5.5 U	5.5 U	5.5 U
1,1-Dichloroethane	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 U	5.5 U
1,2-Dichloroethene (total)	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 U	5.5 U
Chloroform	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 U	5.5 U
1,2-Dichloroethane	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 U	5.5 U
2-Butanone	UG/KG	5.5 U	11 UJ	5.5 U	5.5 U	5.5 UJ	5.5 U
1,1,1-Trichloroethane	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
Carbon Tetrachloride	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
Bromodichloromethane	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
1,2-Dichloropropane	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
cis-1,3-Dichloropropene	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
Trichloroethene	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
Dibromochloromethane	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
1,1,2-Trichloroethane	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
Benzene	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
trans-1,3-Dichloropropene	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
Bromoform	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
4-Methyl-2-Pentanone	UG/KG	5.5 U	11 UJ	5.5 U	5.5 U	5.5 UJ	5.5 U
2-Hexanone	UG/KG	5.5 U	11 UJ	5.5 U	5.5 U	5.5 UJ	5.5 U
Tetrachloroethene	UG/KG	5.5 U	11 U	5.5 UJ	5.5 U	5.5 UJ	5.5 U
1,1,2,2-Tetrachloroethane	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
Toluene	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
Chlorobenzene	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
Ethylbenzene	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U
Styrene	UG/KG	5.5 UJ	11 U	5.5 U	5.5 U	5.5 UJ	5.5 UJ
Xylene (total)	UG/KG	5.5 U	11 U	5.5 U	5.5 U	5.5 UJ	5.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS07-00	35-SS08-00	35-SS09-00	35-SS10-00	35-SS11-00	35-SS12-00
Lab Sample ID:		5617-8	4585-20	5617-16	5617-18	5617-6	5617-5
Date Sampled:		18-MAY-1994	29-APR-1994	18-MAY-1994	17-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	185 U	3675 UJ	3071	175 U	175.5 U	170.5 U
bis(2-Chloroethyl)ether	UG/KG	185 UJ	3675 UJ	175 U	175 UJ	175.5 UJ	170.5 UJ
2-Chlorophenol	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
1,3-Dichlorobenzene	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
1,4-Dichlorobenzene	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
1,2-Dichlorobenzene	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
2-Methylphenol	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
2,2'-oxybis(1-Chloropropane)	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
4-Methylphenol	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
N-Nitroso-di-n-propylamine	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
Hexachloroethane	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
Nitrobenzene	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
Isophorone	UG/KG	185 UJ	3675 UJ	175 UJ	175 UJ	175.5 UJ	170.5 UJ
2-Nitrophenol	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
2,4-Dimethylphenol	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
bis(2-Chloroethoxy)methane	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
2,4-Dichlorophenol	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
1,2,4-Trichlorobenzene	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
Naphthalene	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
4-Chloroaniline	UG/KG	185 UJ	3675 UJ	175 UJ	175 UJ	175.5 UJ	170.5 UJ
Hexachlorobutadiene	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
4-Chloro-3-methylphenol	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
2-Methylnaphthalene	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
Hexachlorocyclopentadiene	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
2,4,6-Trichlorophenol	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
2,4,5-Trichlorophenol	UG/KG	448 U	8910 UJ	424.5 U	423.5 U	425 U	413 U
2-Chloronaphthalene	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
2-Nitroaniline	UG/KG	448 U	8910 UJ	424.5 U	423.5 U	425 U	413 U
Dimethylphthalate	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
Acenaphthylene	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
2,6-Dinitrotoluene	UG/KG	185 UJ	3675 UJ	175 UJ	175 UJ	175.5 UJ	170.5 UJ
3-Nitroaniline	UG/KG	448 UJ	8910 UJ	424.5 UJ	423.5 UJ	425 UJ	413 UJ
Acenaphthene	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS07-00	35-SS08-00	35-SS09-00	35-SS10-00	35-SS11-00	35-SS12-00
Lab Sample ID:		5617-8	4585-20	5617-16	5617-18	5617-6	5617-5
Date Sampled:		18-MAY-1994	29-APR-1994	18-MAY-1994	17-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	448 UJ	8910 UJ	424.5 UJ	423.5 UJ	425 UJ	413 UJ
Dibenzofuran	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
4-Nitrophenol	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
2,4-Dinitrotoluene	UG/KG	185 U	3675 UJ	175 UJ	175 U	175.5 U	170.5 U
Diethylphthalate	UG/KG	185 UJ	3675 UJ	175 UJ	175 UJ	175.5 UJ	170.5 UJ
Fluorene	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
4-Chlorophenyl-phenylether	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
4-Nitroaniline	UG/KG	448 UJ	8910 UJ	424.5 U	423.5 UJ	425 UJ	413 UJ
4,6-Dinitro-2-methylphenol	UG/KG	448 UJ	8910 UJ	424.5 U	423.5 UJ	425 UJ	413 UJ
N-Nitrosodiphenylamine	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
4-Bromophenyl-phenylether	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
Hexachlorobenzene	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
Pentachlorophenol	UG/KG	448 U	8910 UJ	424.5 U	423.5 U	425 U	413 U
Phenanthrene	UG/KG	185 U	3675 UJ	175 U	175 U	191 J	170.5 U
Anthracene	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
Carbazole	UG/KG	185 UJ	3675 UJ	175 UJ	175 UJ	175.5 UJ	170.5 UJ
Di-n-butylphthalate	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
Fluoranthene	UG/KG	185 U	3675 UJ	175 U	175 U	423	170.5 U
Pyrene	UG/KG	185 U	3675 UJ	175 U	175 U	295 J	170.5 U
Butylbenzylphthalate	UG/KG	185 U	3675 UJ	175 U	175 U	295 J	170.5 U
Benzo(a)anthracene	UG/KG	185 U	3675 UJ	175 U	175 U	175.5 U	170.5 U
3,3'-Dichlorobenzidine	UG/KG	185 U	3675 UJ	175 UJ	175 U	175.5 U	170.5 U
Chrysene	UG/KG	185 U	3675 UJ	175 U	175 U	204 J	170.5 U
bis(2-Ethylhexyl)phthalate	UG/KG	185 UJ	3675 UJ	175 U	175 UJ	175.5 UJ	170.5 UJ
Di-n-octylphthalate	UG/KG	185 U	3675 UJ	175 U	175 UJ	175.5 U	170.5 U
Benzo(b)fluoranthene	UG/KG	185 U	3675 UJ	175 U	175 UJ	337 J	170.5 U
Benzo(k)fluoranthene	UG/KG	185 U	3675 UJ	175 U	175 UJ	175.5 U	170.5 U
Benzo(a)pyrene	UG/KG	185 U	3675 UJ	175 U	175 UJ	175.5 U	170.5 U
Indeno(1,2,3-cd)pyrene	UG/KG	185 U	3675 UJ	175 U	175 UJ	175.5 U	170.5 U
Dibenz(a,h)anthracene	UG/KG	185 U	3675 UJ	175 U	175 UJ	175.5 U	170.5 U
Benzo(g,h,i)perylene	UG/KG	185 U	3675 UJ	175 U	175 UJ	175.5 U	170.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS07-00	35-SS08-00	35-SS09-00	35-SS10-00	35-SS11-00	35-SS12-00
Lab Sample ID:		5617-8	4585-20	5617-16	5617-18	5617-6	5617-5
Date Sampled:		18-MAY-1994	29-APR-1994	18-MAY-1994	17-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/KG	0.95 U	NA	4.55 U	4.5 U	1.8 U	4.4 U
beta-BHC	UG/KG	0.95 U	NA	4.55 U	4.5 U	1.6 J	4.4 U
delta-BHC	UG/KG	0.95 U	NA	4.55 U	4.5 U	1.8 U	4.4 U
gamma-BHC (Lindane)	UG/KG	0.95 U	NA	4.55 U	4.5 U	1.8 U	4.4 U
Heptachlor	UG/KG	0.95 U	NA	4.55 U	4.5 U	1.8 U	4.4 U
Aldrin	UG/KG	1.15 U	NA	4.55 U	4.5 U	1.8 U	4.4 U
Heptachlor epoxide	UG/KG	0.95 U	NA	4.55 U	4.5 U	1.8 U	4.4 U
Endosulfan I	UG/KG	0.95 U	NA	4.55 U	4.5 U	1.8 U	4.4 U
Dieldrin	UG/KG	11	NA	9 U	9 U	3.5 U	8.5 U
4,4'-DDE	UG/KG	14	NA	261	204	125	127
Endrin	UG/KG	0.68 J	NA	2 J	4.5 U	1.8 U	4.4 U
Endosulfan II	UG/KG	0.42 J	NA	9 U	9 U	3.5 U	8.5 U
4,4'-DDD	UG/KG	2.5	NA	7.3 J	18	3.5 J	4.4 U
Endosulfan sulfate	UG/KG	1.9 U	NA	9 U	9 U	3.5 U	8.5 U
4,4'-DDT	UG/KG	3.2 J	NA	262	76	113	67
Methoxychlor	UG/KG	10 U	NA	45.5 U	45 U	18 U	44 U
Endrin ketone	UG/KG	1.9 U	NA	9 U	9 U	3.5 U	8.5 U
Endrin aldehyde	UG/KG	1.9 U	NA	9 U	9 U	3.5 U	8.5 U
alpha-Chlordane	UG/KG	0.95 U	NA	4.55 U	4.5 U	36	4.4 U
gamma-Chlordane	UG/KG	0.95 U	NA	4.55 U	4.5 U	27	4.4 U
Toxaphene	UG/KG	97.5 U	NA	455 U	450 U	180.5 U	440 U
Aroclor-1016	UG/KG	19 U	NA	88.5 U	87.5 U	35 U	85.5 U
Aroclor-1221	UG/KG	38.5 U	NA	179.5 U	177.5 U	71 U	173.5 U
Aroclor-1232	UG/KG	19 U	NA	88.5 U	87.5 U	35 U	85.5 U
Aroclor-1242	UG/KG	19 U	NA	88.5 U	87.5 U	35 U	85.5 U
Aroclor-1248	UG/KG	19 U	NA	88.5 U	87.5 U	35 U	85.5 U
Aroclor-1254	UG/KG	19 U	NA	88.5 U	87.5 U	35 U	85.5 U
Aroclor-1260	UG/KG	19 U	NA	88.5 U	87.5 U	35 U	85.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:	35-SS13-00
Lab Sample ID:	5617-20
Date Sampled:	18-MAY-1994

VOLATILES	UNITS	
Chloromethane	UG/KG	21.5 U
Bromomethane	UG/KG	21.5 U
Vinyl Chloride	UG/KG	21.5 U
Chloroethane	UG/KG	21.5 U
Methylene Chloride	UG/KG	21.5 U
Acetone	UG/KG	21.5 U
Carbon Disulfide	UG/KG	21.5 U
1,1-Dichloroethene	UG/KG	21.5 U
1,1-Dichloroethane	UG/KG	21.5 U
1,2-Dichloroethene (total)	UG/KG	21.5 U
Chloroform	UG/KG	21.5 U
1,2-Dichloroethane	UG/KG	21.5 U
2-Butanone	UG/KG	21.5 U
1,1,1-Trichloroethane	UG/KG	21.5 U
Carbon Tetrachloride	UG/KG	21.5 UJ
Bromodichloromethane	UG/KG	21.5 U
1,2-Dichloropropane	UG/KG	21.5 U
cis-1,3-Dichloropropene	UG/KG	21.5 U
Trichloroethene	UG/KG	21.5 U
Dibromochloromethane	UG/KG	21.5 U
1,1,2-Trichloroethane	UG/KG	21.5 U
Benzene	UG/KG	21.5 U
trans-1,3-Dichloropropene	UG/KG	21.5 U
Bromoform	UG/KG	21.5 U
4-Methyl-2-Pentanone	UG/KG	21.5 U
2-Hexanone	UG/KG	21.5 U
Tetrachloroethene	UG/KG	21.5 U
1,1,2,2-Tetrachloroethane	UG/KG	21.5 U
Toluene	UG/KG	21.5 U
Chlorobenzene	UG/KG	21.5 U
Ethylbenzene	UG/KG	21.5 U
Styrene	UG/KG	21.5 U
Xylene (total)	UG/KG	43

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:	35-SS13-00
Lab Sample ID:	5617-20
Date Sampled:	18-MAY-1994

SEMIVOLATILES	UNITS	
Phenol	UG/KG	720.5 U
bis(2-Chloroethyl)ether	UG/KG	720.5 U
2-Chlorophenol	UG/KG	720.5 U
1,3-Dichlorobenzene	UG/KG	720.5 U
1,4-Dichlorobenzene	UG/KG	720.5 U
1,2-Dichlorobenzene	UG/KG	720.5 U
2-Methylphenol	UG/KG	720.5 U
2,2'-oxybis(1-Chloropropane)	UG/KG	720.5 U
4-Methylphenol	UG/KG	720.5 U
N-Nitroso-di-n-propylamine	UG/KG	720.5 U
Hexachloroethane	UG/KG	720.5 U
Nitrobenzene	UG/KG	720.5 U
Isophorone	UG/KG	720.5 U
2-Nitrophenol	UG/KG	720.5 U
2,4-Dimethylphenol	UG/KG	720.5 U
bis(2-Chloroethoxy)methane	UG/KG	720.5 U
2,4-Dichlorophenol	UG/KG	720.5 U
1,2,4-Trichlorobenzene	UG/KG	720.5 UJ
Naphthalene	UG/KG	720.5 U
4-Chloroaniline	UG/KG	720.5 U
Hexachlorobutadiene	UG/KG	720.5 U
4-Chloro-3-methylphenol	UG/KG	720.5 U
2-Methylnaphthalene	UG/KG	720.5 U
Hexachlorocyclopentadiene	UG/KG	720.5 U
2,4,6-Trichlorophenol	UG/KG	720.5 U
2,4,5-Trichlorophenol	UG/KG	1746.5 U
2-Chloronaphthalene	UG/KG	720.5 U
2-Nitroaniline	UG/KG	1746.5 U
Dimethylphthalate	UG/KG	720.5 U
Acenaphthylene	UG/KG	720.5 U
2,6-Dinitrotoluene	UG/KG	720.5 U
3-Nitroaniline	UG/KG	1746.5 U
Acenaphthene	UG/KG	720.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:	35-SS13-00
Lab Sample ID:	5617-20
Date Sampled:	18-MAY-1994

SEMIVOLATILES Cont.	UNITS	
2,4-Dinitrophenol	UG/KG	1746.5 U
Dibenzofuran	UG/KG	720.5 U
4-Nitrophenol	UG/KG	720.5 U
2,4-Dinitrotoluene	UG/KG	720.5 U
Diethylphthalate	UG/KG	720.5 U
Fluorene	UG/KG	720.5 U
4-Chlorophenyl-phenylether	UG/KG	720.5 U
4-Nitroaniline	UG/KG	1746.5 U
4,6-Dinitro-2-methylphenol	UG/KG	1746.5 U
N-Nitrosodiphenylamine	UG/KG	720.5 U
4-Bromophenyl-phenylether	UG/KG	720.5 U
Hexachlorobenzene	UG/KG	720.5 U
Pentachlorophenol	UG/KG	1746.5 U
Phenanthrene	UG/KG	720.5 U
Anthracene	UG/KG	720.5 U
Carbazole	UG/KG	720.5 U
Di-n-butylphthalate	UG/KG	720.5 U
Fluoranthene	UG/KG	720.5 U
Pyrene	UG/KG	720.5 U
Butylbenzylphthalate	UG/KG	720.5 U
Benzo(a)anthracene	UG/KG	720.5 U
3,3'-Dichlorobenzidine	UG/KG	720.5 U
Chrysene	UG/KG	720.5 U
bis(2-Ethylhexyl)phthalate	UG/KG	720.5 U
Di-n-octylphthalate	UG/KG	720.5 U
Benzo(b)fluoranthene	UG/KG	720.5 U
Benzo(k)fluoranthene	UG/KG	720.5 U
Benzo(a)pyrene	UG/KG	720.5 U
Indeno(1,2,3-cd)pyrene	UG/KG	720.5 U
Dibenz(a,h)anthracene	UG/KG	720.5 U
Benzo(g,h,i)perylene	UG/KG	720.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:	35-SS13-00
Lab Sample ID:	5617-20
Date Sampled:	18-MAY-1994

PESTICIDE/PCBs	UNITS	
alpha-BHC	UG/KG	37.5 U
beta-BHC	UG/KG	37.5 U
delta-BHC	UG/KG	37.5 U
gamma-BHC (Lindane)	UG/KG	37.5 U
Heptachlor	UG/KG	37.5 U
Aldrin	UG/KG	37.5 U
Heptachlor epoxide	UG/KG	37.5 U
Endosulfan I	UG/KG	37.5 U
Dieldrin	UG/KG	212
4,4'-DDE	UG/KG	1570
Endrin	UG/KG	37.5 U
Endosulfan II	UG/KG	73 U
4,4'-DDD	UG/KG	3240
Endosulfan sulfate	UG/KG	73 U
4,4'-DDT	UG/KG	154
Methoxychlor	UG/KG	375 U
Endrin ketone	UG/KG	73 U
Endrin aldehyde	UG/KG	73 U
alpha-Chlordane	UG/KG	37.5 U
gamma-Chlordane	UG/KG	37.5 U
Toxaphene	UG/KG	3760 U
Aroclor-1016	UG/KG	730 U
Aroclor-1221	UG/KG	1480 U
Aroclor-1232	UG/KG	730 U
Aroclor-1242	UG/KG	730 U
Aroclor-1248	UG/KG	730 U
Aroclor-1254	UG/KG	730 U
Aroclor-1260	UG/KG	730 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
VOLATILES						
Chloromethane	UG/KG	ND	NA	NA	NA	NA
Bromomethane	UG/KG	ND	NA	NA	NA	NA
Vinyl Chloride	UG/KG	ND	NA	NA	NA	NA
Chloroethane	UG/KG	ND	NA	NA	NA	NA
Methylene Chloride	UG/KG	ND	NA	NA	NA	NA
Acetone	UG/KG	ND	NA	NA	NA	NA
Carbon Disulfide	UG/KG	39 R	10.4	9.5	15.8	17.9
1,1-Dichloroethene	UG/KG	33 R	NA	NA	NA	NA
1,1-Dichloroethane	UG/KG	ND	NA	NA	NA	NA
1,2-Dichloroethene (total)	UG/KG	ND	NA	NA	NA	NA
Chloroform	UG/KG	ND	NA	NA	NA	NA
1,2-Dichloroethane	UG/KG	ND	NA	NA	NA	NA
2-Butanone	UG/KG	ND	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/KG	ND	NA	NA	NA	NA
Carbon Tetrachloride	UG/KG	ND	NA	NA	NA	NA
Bromodichloromethane	UG/KG	ND	NA	NA	NA	NA
1,2-Dichloropropane	UG/KG	ND	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/KG	ND	NA	NA	NA	NA
Trichloroethene	UG/KG	ND	NA	NA	NA	NA
Dibromochloromethane	UG/KG	ND	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/KG	ND	NA	NA	NA	NA
Benzene	UG/KG	ND	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/KG	ND	NA	NA	NA	NA
Bromoform	UG/KG	ND	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/KG	ND	NA	NA	NA	NA
2-Hexanone	UG/KG	ND	NA	NA	NA	NA
Tetrachloroethene	UG/KG	ND	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/KG	ND	NA	NA	NA	NA
Toluene	UG/KG	19 J	8.2	5.6	10.9	11.1
Chlorobenzene	UG/KG	ND	NA	NA	NA	NA
Ethylbenzene	UG/KG	ND	NA	NA	NA	NA
Styrene	UG/KG	ND	NA	NA	NA	NA
Xylene (total)	UG/KG	43	8.7	10.4	13.9	11.7

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
SEMIVOLATILES						
Phenol	UG/KG	3071	709.0	1198.2	1301.2	1720.5
bis(2-Chloroethyl)ether	UG/KG	ND	NA	NA	NA	NA
2-Chlorophenol	UG/KG	ND	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/KG	ND	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/KG	ND	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/KG	ND	NA	NA	NA	NA
2-Methylphenol	UG/KG	ND	NA	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/KG	ND	NA	NA	NA	NA
4-Methylphenol	UG/KG	ND	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	ND	NA	NA	NA	NA
Hexachloroethane	UG/KG	ND	NA	NA	NA	NA
Nitrobenzene	UG/KG	ND	NA	NA	NA	NA
Isophorone	UG/KG	ND	NA	NA	NA	NA
2-Nitrophenol	UG/KG	ND	NA	NA	NA	NA
2,4-Dimethylphenol	UG/KG	ND	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/KG	ND	NA	NA	NA	NA
2,4-Dichlorophenol	UG/KG	ND	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	ND	NA	NA	NA	NA
Naphthalene	UG/KG	ND	NA	NA	NA	NA
4-Chloroaniline	UG/KG	ND	NA	NA	NA	NA
Hexachlorobutadiene	UG/KG	ND	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/KG	ND	NA	NA	NA	NA
2-Methylnaphthalene	UG/KG	ND	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/KG	ND	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/KG	ND	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	ND	NA	NA	NA	NA
2-Chloronaphthalene	UG/KG	ND	NA	NA	NA	NA
2-Nitroaniline	UG/KG	ND	NA	NA	NA	NA
Dimethylphthalate	UG/KG	ND	NA	NA	NA	NA
Acenaphthylene	UG/KG	ND	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/KG	ND	NA	NA	NA	NA
3-Nitroaniline	UG/KG	ND	NA	NA	NA	NA
Acenaphthene	UG/KG	196 J	488.2	969.2	967.2	748.1

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
SEMIVOLATILES Cont.						
2,4-Dinitrophenol	UG/KG	ND	NA	NA	NA	NA
Dibenzofuran	UG/KG	ND	NA	NA	NA	NA
4-Nitrophenol	UG/KG	ND	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/KG	ND	NA	NA	NA	NA
Diethylphthalate	UG/KG	ND	NA	NA	NA	NA
Fluorene	UG/KG	ND	NA	NA	NA	NA
4-Chlorophenyl-phenylether	UG/KG	ND	NA	NA	NA	NA
4-Nitroaniline	UG/KG	ND	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	ND	NA	NA	NA	NA
N-Nitrosodiphenylamine	UG/KG	ND	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/KG	ND	NA	NA	NA	NA
Hexachlorobenzene	UG/KG	ND	NA	NA	NA	NA
Pentachlorophenol	UG/KG	ND	NA	NA	NA	NA
Phenanthrene	UG/KG	1186	565.5	982.7	1051.2	1060.7
Anthracene	UG/KG	ND	NA	NA	NA	NA
Carbazole	UG/KG	183 J	487.2	969.6	966.4	746.4
Di-n-butylphthalate	UG/KG	ND	NA	NA	NA	NA
Fluoranthene	UG/KG	1567	612.7	1002.3	1108.1	1395.1
Pyrene	UG/KG	1173	572.5	979.1	1056.4	1078.1
Butylbenzylphthalate	UG/KG	295 J	495.4	967.3	973.5	769.2
Benzo(a)anthracene	UG/KG	566	516.7	965.4	993.8	884.6
3,3'-Dichlorobenzidine	UG/KG	ND	NA	NA	NA	NA
Chrysene	UG/KG	683	527.8	965.6	1005.1	922.1
bis(2-Ethylhexyl)phthalate	UG/KG	279 J	493.8	967.7	972.1	764.7
Di-n-octylphthalate	UG/KG	ND	NA	NA	NA	NA
Benzo(b)fluoranthene	UG/KG	1186	576.8	978.8	1060.6	1093.8
Benzo(k)fluoranthene	UG/KG	ND	NA	NA	NA	NA
Benzo(a)pyrene	UG/KG	625	521.2	965.8	998.5	902.3
Indeno(1,2,3-cd)pyrene	UG/KG	381	502.4	965.9	979.8	828.6
Dibenz(a,h)anthracene	UG/KG	184 J	487.3	969.5	966.5	746.5
Benzo(g,h,i)perylene	UG/KG	366	503.4	965.4	980.5	792.0

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
PESTICIDE/PCBs						
alpha-BHC	UG/KG	ND	NA	NA	NA	NA
beta-BHC	UG/KG	1.6 J	5.7	11.3	12.2	29.5
delta-BHC	UG/KG	ND	NA	NA	NA	NA
gamma-BHC (Lindane)	UG/KG	ND	NA	NA	NA	NA
Heptachlor	UG/KG	ND	NA	NA	NA	NA
Aldrin	UG/KG	ND	NA	NA	NA	NA
Heptachlor epoxide	UG/KG	ND	NA	NA	NA	NA
Endosulfan I	UG/KG	ND	NA	NA	NA	NA
Dieldrin	UG/KG	212	26.0	65.5	63.9	315.2
4,4'-DDE	UG/KG	1570	234.3	478.2	511.5	35442.7
Endrin	UG/KG	7.9	6.1	11.3	12.7	33.0
Endosulfan II	UG/KG	2.9 J	11.2	22.0	23.9	76.2
4,4'-DDD	UG/KG	3240	328.9	1022.9	921.8	29283.0
Endosulfan sulfate	UG/KG	ND	NA	NA	NA	NA
4,4'-DDT	UG/KG	262	75.3	82.7	123.2	2048.1
Methoxychlor	UG/KG	ND	NA	NA	NA	NA
Endrin ketone	UG/KG	1.2 J	11.1	22.0	23.9	56.1
Endrin aldehyde	UG/KG	1.6 J	11.0	22.0	23.8	81.2
alpha-Chlordane	UG/KG	36	9.5	14.5	17.9	75.6
gamma-Chlordane	UG/KG	27	8.3	13.0	15.8	64.6
Toxaphene	UG/KG	ND	NA	NA	NA	NA
Aroclor-1016	UG/KG	ND	NA	NA	NA	NA
Aroclor-1221	UG/KG	ND	NA	NA	NA	NA
Aroclor-1232	UG/KG	ND	NA	NA	NA	NA
Aroclor-1242	UG/KG	ND	NA	NA	NA	NA
Aroclor-1248	UG/KG	ND	NA	NA	NA	NA
Aroclor-1254	UG/KG	ND	NA	NA	NA	NA
Aroclor-1260	UG/KG	ND	NA	NA	NA	NA

APPENDIX V.2
SURFACE SOIL INORGANICS

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-SS01-00	35-SS02-00	35-SS03-00	35-SS04-00	35-SS05-00	35-SS06-00
Lab Sample ID:		5617-17	5617-19	5617-9	5617-10	4585-22	4585-21
Date Sampled:		17-MAY-1994	17-MAY-1994	18-MAY-1994	10-MAY-1994	29-APR-1994	29-APR-1994
	UNITS						
Aluminum	MG/KG	2220	2420	2390	2330	3550	6510
Antimony	MG/KG	2.45 UJ	2.45 UJ	2.35 UJ	8 J		
Arsenic	MG/KG	0.065 UJ	0.44 J	0.32 J	0.065 UJ	0.74 J	0.89 J
Barium	MG/KG	15.6	6.2	7.9	79.5	13.5	13.6
Beryllium	MG/KG	0.055 U	0.055 U	0.05 U	0.055 U	0.05 U	
Cadmium	MG/KG	0.04 J	0.06 J	0.14 J	15 J		
Calcium	MG/KG	605 J	604 J	5420 J	27700 J	3030 J	1330 J
Chromium	MG/KG	1.9	1.9	2.9	98.1	2.55 U	8.6 J
Cobalt	MG/KG	0.6 U	0.6 U	1.9	4.3	0.55 U	0.6 U
Copper	MG/KG	3.9	2	2.6	43	4.1	1 U
Iron	MG/KG	1250	1670	2890	4400	1950 J	3470 J
Lead	MG/KG	7.2 J	7.3 J	10.7 J	71 J	67.6 J	13.2 J
Magnesium	MG/KG	71.6	58.7	212	675	241	255
Manganese	MG/KG	5.5	4.1	17.8	35.6	13.1 J	6.7 J
Mercury	MG/KG						
Nickel	MG/KG	1.3	1.9	1.6	6.8	1.1 U	0.6 U
Potassium	MG/KG	129.5 U	129 U	125.5 U	2120 U	126 U	129 U
Selenium	MG/KG	0.075 UJ	0.075 UJ	0.07 UJ	0.075 UJ	0.07 UJ	0.075 UJ
Silver	MG/KG	0.16 U	0.16 U	0.155 U	0.165 U	0.01 U	0.01 U
Sodium	MG/KG	126 U	125.5 U	121.5 U	480.5 U	122.5 U	125.5 U
Thallium	MG/KG	0.06	0.08	0.07 J	0.035 U	0.12	0.14
Vanadium	MG/KG	3.6	3.6	5.3	14.2	6.1 J	12.5 J
Zinc	MG/KG				430		

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-SS07-00	35-SS08-00	35-SS09-00	35-SS10-00	35-SS11-00	35-SS12-00
Lab Sample ID:		5617-8	4585-20	5617-16	5617-18	5617-6	5617-5
Date Sampled:		18-MAY-1994	29-APR-1994	18-MAY-1994	17-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
Aluminum	MG/KG	7870	3600	2570	3230	2400	2020
Antimony	MG/KG	7.4 J		2.45 UJ	2.45 UJ	2.45 UJ	2.4 UJ
Arsenic	MG/KG	0.5 J	66.1 J	0.29 J	0.78 J	0.55 J	0.39 J
Barium	MG/KG	15.4	20	8.9	17.8	9.8	8.7
Beryllium	MG/KG	0.22	0.11 U	0.055 U	0.055 U	0.055 U	0.05 U
Cadmium	MG/KG	0.16 J		0.79 J	0.18 J	0.4 J	0.26 J
Calcium	MG/KG	4680 J	621 J	13500 J	49500 J	5650 J	24000 J
Chromium	MG/KG	13	3.95 U	5.1	5.8	3.1	3.6
Cobalt	MG/KG	0.6 U	1.2 U	0.6 U	0.6 U	1.3	0.55 U
Copper	MG/KG	3.2 J	4	4.5	3.3	3.8	4.8
Iron	MG/KG	10000 J	29900 J	2200	2010	1740	1720
Lead	MG/KG	17.1 J	36.1 J	35.8 J	16.2 J	30.9 J	26.1 J
Magnesium	MG/KG	346	194	399	951	184	545
Manganese	MG/KG	6.6	32.9 J	12.5	11.1	11.3	13.9
Mercury	MG/KG						
Nickel	MG/KG	2.4	1.2 U	2.8	2.2	1.5	2
Potassium	MG/KG	136.5 U	271.5 U	130.5 U	8550 U	129.5 U	1100 U
Selenium	MG/KG	0.08 UJ	0.94 J	0.075 UJ	0.075 UJ	0.075 UJ	0.07 UJ
Silver	MG/KG	0.17 U	0.02 U	0.16 U	0.16 U	0.16 U	0.155 U
Sodium	MG/KG	132.5 U	264 U	127 U	291.5 U	126 U	490.5 U
Thallium	MG/KG	0.2	0.53 J	0.07	0.08	0.1 J	0.03 U
Vanadium	MG/KG	18.8	15 J	6.1	7.1	5.1	4
Zinc	MG/KG			138			

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:	35-SS13-00
Lab Sample ID:	5617-20
Date Sampled:	18-MAY-1994

	UNITS	
Aluminum	MG/KG	5160
Antimony	MG/KG	10.05 UJ
Arsenic	MG/KG	0.79 J
Barium	MG/KG	86
Beryllium	MG/KG	0.22 U
Cadmium	MG/KG	0.77 J
Calcium	MG/KG	7360 J
Chromium	MG/KG	9.7
Cobalt	MG/KG	2.4 U
Copper	MG/KG	58.3
Iron	MG/KG	8280
Lead	MG/KG	43.2 J
Magnesium	MG/KG	883
Manganese	MG/KG	66.7
Mercury	MG/KG	
Nickel	MG/KG	17.2
Potassium	MG/KG	535 U
Selenium	MG/KG	1.2 J
Silver	MG/KG	0.65 U
Sodium	MG/KG	515 U
Thallium	MG/KG	0.48
Vanadium	MG/KG	20.7
Zinc	MG/KG	

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
Aluminum	MG/KG	7870	3559.2	1839.9	4468.6	4639.7
Antimony	MG/KG	10.5 R	4.2	3.0	6.0	7.1
Arsenic	MG/KG	66.1 J	5.5	18.2	14.5	18.0
Barium	MG/KG	86	23.3	26.7	36.5	41.2
Beryllium	MG/KG	0.22	0.1	0.1	0.1	0.1
Cadmium	MG/KG	15 J	1.8	4.7	4.5	18.2
Calcium	MG/KG	49500 J	11076.9	14520.5	18253.5	91842.6
Chromium	MG/KG	98.1	12.3	26.0	25.2	26.3
Cobalt	MG/KG	4.3	1.2	1.1	1.8	1.9
Copper	MG/KG	58.3	10.7	18.1	19.6	26.4
Iron	MG/KG	29900 J	5498.5	7811.9	9359.4	10654.0
Lead	MG/KG	71 J	29.4	21.2	39.9	53.7
Magnesium	MG/KG	951	385.8	292.8	530.5	807.9
Manganese	MG/KG	66.7	18.3	17.5	26.9	32.7
Mercury	MG/KG	0.7 R	NA	NA	NA	NA
Nickel	MG/KG	17.2	3.3	4.5	5.5	5.8
Potassium	MG/KG	ND	NA	NA	NA	NA
Selenium	MG/KG	1.2 J	0.2	0.4	0.4	0.5
Silver	MG/KG	ND	NA	NA	NA	NA
Sodium	MG/KG	ND	NA	NA	NA	NA
Thallium	MG/KG	0.53 J	0.2	0.2	0.2	0.3
Vanadium	MG/KG	20.7	9.4	6.0	12.4	14.7
Zinc	MG/KG	430	284.0	206.5	1205.8	NA

APPENDIX V.3
SUBSURFACE SOIL ORGANICS

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-GWDS01-03	35-GWDS2-03	35-GWDS3-03	35-GWDS4-02	35-GWDS05-03	35-MW26BS-04
Lab Sample ID:		4585-15	5617-4	5617-2	5617-1	4585-17	5057-23
Date Sampled:		26-APR-1994	16-MAY-1994	16-MAY-1994	16-MAY-1994	28-APR-1994	13-MAY-1994
	UNITS						
VOLATILES							
Chloromethane	UG/KG	6 U	6 UJ	6 U	5.5 U	7 U	6 UJ
Bromomethane	UG/KG	6 U	6 UJ	6 UJ	5.5 UJ	7 U	6 UJ
Vinyl Chloride	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 U
Chloroethane	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 U
Methylene Chloride	UG/KG	6 U	7 J	6 U	5.5 UJ	7 U	6 U
Acetone	UG/KG	6 U	6 UJ	6 UJ	67 J	7 U	6 UJ
Carbon Disulfide	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 UJ
1,1-Dichloroethene	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 U
1,1-Dichloroethane	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 U
1,2-Dichloroethene (total)	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 U
Chloroform	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 U
1,2-Dichloroethane	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 U
2-Butanone	UG/KG	6 U	6 UJ	6 UJ	5.5 UJ	7 U	6 UJ
1,1,1-Trichloroethane	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 U
Carbon Tetrachloride	UG/KG	6 UJ	6 U	6 U	5.5 UJ	7 UJ	6 U
Bromodichloromethane	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 U
1,2-Dichloropropane	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 U
cis-1,3-Dichloropropene	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 U
Trichloroethene	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 U
Dibromochloromethane	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 U
1,1,2-Trichloroethane	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 U
Benzene	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 U
trans-1,3-Dichloropropene	UG/KG	6 U	6 U	6 U	5.5 UJ	7 U	6 U
Bromoform	UG/KG	6 U	6 U	6 UJ	5.5 UJ	7 U	6 U
4-Methyl-2-Pentanone	UG/KG	6 U	6 UJ	6 UJ	5.5 UJ	7 U	6 UJ
2-Hexanone	UG/KG	6 U	6 UJ	6 UJ	5.5 U	7 U	6 UJ
Tetrachloroethene	UG/KG	6 U	6 U	6 U	5.5 U	7 U	6 U
1,1,2,2-Tetrachloroethane	UG/KG	6 U	6 U	6 U	5.5 U	7 U	6 U
Toluene	UG/KG	6 U	6 U	6 U	5.5 U	7 U	6 U
Chlorobenzene	UG/KG	6 U	6 U	6 U	5.5 U	7 U	6 U
Ethylbenzene	UG/KG	6 U	6 U	6 U	5.5 U	7 U	6 U
Styrene	UG/KG	6 U	6 U	6 U	5.5 U	7 U	6 U
Xylene (total)	UG/KG	6 U	6 U	6 U	5.5 U	7 U	6 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-GWDS01-03	35-GWDS2-03	35-GWDS3-03	35-GWDS4-02	35-GWDS05-03	35-MW26BS-04
Lab Sample ID:		4585-15	5617-4	5617-2	5617-1	4585-17	5057-23
Date Sampled:		26-APR-1994	16-MAY-1994	16-MAY-1994	16-MAY-1994	28-APR-1994	13-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	196 U	199 U	191 U	185.5 U	221.5 UJ	NA
bis(2-Chloroethyl)ether	UG/KG	196 U	199 UJ	191 UJ	185.5 UJ	221.5 U	NA
2-Chlorophenol	UG/KG	196 U	199 U	191 U	185.5 U	221.5 UJ	NA
1,3-Dichlorobenzene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
1,4-Dichlorobenzene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
1,2-Dichlorobenzene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
2-Methylphenol	UG/KG	196 U	199 U	191 U	185.5 U	221.5 UJ	NA
2,2'-oxybis(1-Chloropropane)	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
4-Methylphenol	UG/KG	196 U	199 U	191 U	185.5 U	221.5 UJ	NA
N-Nitroso-di-n-propylamine	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
Hexachloroethane	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
Nitrobenzene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
Isophorone	UG/KG	196 U	199 UJ	191 UJ	185.5 UJ	221.5 U	NA
2-Nitrophenol	UG/KG	196 U	199 U	191 U	185.5 U	221.5 UJ	NA
2,4-Dimethylphenol	UG/KG	196 U	199 U	191 U	185.5 U	221.5 UJ	NA
bis(2-Chloroethoxy)methane	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
2,4-Dichlorophenol	UG/KG	196 U	199 U	191 U	185.5 U	221.5 UJ	NA
1,2,4-Trichlorobenzene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
Naphthalene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
4-Chloroaniline	UG/KG	196 UJ	199 UJ	191 UJ	185.5 UJ	221.5 UJ	NA
Hexachlorobutadiene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
4-Chloro-3-methylphenol	UG/KG	196 U	199 U	191 U	185.5 U	221.5 UJ	NA
2-Methylnaphthalene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
Hexachlorocyclopentadiene	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 U	NA
2,4,6-Trichlorophenol	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 UJ	NA
2,4,5-Trichlorophenol	UG/KG	475.5 U	482 U	462.5 U	449.5 U	537 UJ	NA
2-Chloronaphthalene	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 U	NA
2-Nitroaniline	UG/KG	475.5 U	482 U	462.5 U	449.5 UJ	537 U	NA
Dimethylphthalate	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 U	NA
Acenaphthylene	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 U	NA
2,6-Dinitrotoluene	UG/KG	196 UJ	199 UJ	191 UJ	185.5 UJ	221.5 UJ	NA
3-Nitroaniline	UG/KG	475.5 UJ	482 UJ	462.5 UJ	449.5 UJ	537 UJ	NA
Acenaphthene	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 U	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-GWDS01-03	35-GWDS2-03	35-GWDS3-03	35-GWDS4-02	35-GWDS05-03	35-MW26BS-04
Lab Sample ID:		4585-15	5617-4	5617-2	5617-1	4585-17	5057-23
Date Sampled:		26-APR-1994	16-MAY-1994	16-MAY-1994	16-MAY-1994	28-APR-1994	13-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	475.5 UJ	482 UJ	462.5 UJ	449.5 UJ	537 UJ	NA
Dibenzofuran	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 U	NA
4-Nitrophenol	UG/KG	196 UJ	199 U	191 U	185.5 UJ	221.5 UJ	NA
2,4-Dinitrotoluene	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 U	NA
Diethylphthalate	UG/KG	196 U	199 UJ	191 UJ	185.5 UJ	221.5 U	NA
Fluorene	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 U	NA
4-Chlorophenyl-phenylether	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 U	NA
4-Nitroaniline	UG/KG	475.5 UJ	482 UJ	462.5 UJ	449.5 UJ	537 UJ	NA
4,6-Dinitro-2-methylphenol	UG/KG	475.5 U	482 UJ	462.5 UJ	449.5 UJ	537 UJ	NA
N-Nitrosodiphenylamine	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 U	NA
4-Bromophenyl-phenylether	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 U	NA
Hexachlorobenzene	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 U	NA
Pentachlorophenol	UG/KG	475.5 U	482 U	462.5 U	449.5 UJ	537 UJ	NA
Phenanthrene	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 U	NA
Anthracene	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 U	NA
Carbazole	UG/KG	196 U	199 UJ	191 UJ	185.5 UJ	221.5 U	NA
Di-n-butylphthalate	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 U	NA
Fluoranthene	UG/KG	196 U	199 U	191 U	185.5 UJ	221.5 U	NA
Pyrene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
Butylbenzylphthalate	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
Benzo(a)anthracene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
3,3'-Dichlorobenzidine	UG/KG	196 UJ	199 U	191 U	185.5 U	221.5 UJ	NA
Chrysene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
bis(2-Ethylhexyl)phthalate	UG/KG	196 UJ	199 UJ	191 UJ	185.5 UJ	221.5 UJ	NA
Di-n-octylphthalate	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
Benzo(b)fluoranthene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
Benzo(k)fluoranthene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
Benzo(a)pyrene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
Indeno(1,2,3-cd)pyrene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
Dibenz(a,h)anthracene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA
Benzo(g,h,i)perylene	UG/KG	196 U	199 U	191 U	185.5 U	221.5 U	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-MW29B-01	35-MW29B-03	35-MW30B-01	35-MW30BS-04	35-MW31-03	35-MW32BS-03
Lab Sample ID:		5057-19	4585-16	5057-17	5057-21	4585-25	5057-24
Date Sampled:		10-MAY-1994	26-APR-1994	10-MAY-1994	11-MAY-1994	30-APR-1994	14-MAY-1994
	UNITS						
VOLATILES							
Chloromethane	UG/KG	5.5 U	6 U	5.5 U	6 UJ	6 U	6 UJ
Bromomethane	UG/KG	5.5 U	6 U	5.5 U	6 UJ	6 U	6 UJ
Vinyl Chloride	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
Chloroethane	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
Methylene Chloride	UG/KG	5.5 U	6 U	5.5 U	7 J	6 U	6 U
Acetone	UG/KG	5.5 UJ	6 U	5.5 UJ	6 UJ	11 J	6 UJ
Carbon Disulfide	UG/KG	5.5 U	6 U	5.5 U	6 UJ	6 U	6 UJ
1,1-Dichloroethene	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
1,1-Dichloroethane	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
1,2-Dichloroethene (total)	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
Chloroform	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
1,2-Dichloroethane	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
2-Butanone	UG/KG	5.5 UJ	6 U	5.5 UJ	6 UJ	6 U	6 UJ
1,1,1-Trichloroethane	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
Carbon Tetrachloride	UG/KG	5.5 U	6 UJ	5.5 U	6 U	6 UJ	6 U
Bromodichloromethane	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
1,2-Dichloropropane	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
cis-1,3-Dichloropropene	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
Trichloroethene	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
Dibromochloromethane	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
1,1,2-Trichloroethane	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
Benzene	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
trans-1,3-Dichloropropene	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
Bromoform	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
4-Methyl-2-Pentanone	UG/KG	5.5 UJ	6 U	5.5 UJ	6 UJ	6 U	6 UJ
2-Hexanone	UG/KG	5.5 UJ	6 U	5.5 UJ	6 UJ	6 U	6 UJ
Tetrachloroethene	UG/KG	5.5 U	6 U	5.5 U	60	6 U	10
1,1,2,2-Tetrachloroethane	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
Toluene	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
Chlorobenzene	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
Ethylbenzene	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
Styrene	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U
Xylene (total)	UG/KG	5.5 U	6 U	5.5 U	6 U	6 U	6 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-MW29B-01	35-MW29B-03	35-MW30B-01	35-MW30BS-04	35-MW31-03	35-MW32BS-03
Lab Sample ID:		5057-19	4585-16	5057-17	5057-21	4585-25	5057-24
Date Sampled:		10-MAY-1994	26-APR-1994	10-MAY-1994	11-MAY-1994	30-APR-1994	14-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	186 U	NA	188 U	NA	NA	NA
bis(2-Chloroethyl)ether	UG/KG	186 UJ	NA	188 UJ	NA	NA	NA
2-Chlorophenol	UG/KG	186 U	NA	188 U	NA	NA	NA
1,3-Dichlorobenzene	UG/KG	186 U	NA	188 U	NA	NA	NA
1,4-Dichlorobenzene	UG/KG	186 U	NA	188 U	NA	NA	NA
1,2-Dichlorobenzene	UG/KG	186 U	NA	188 U	NA	NA	NA
2-Methylphenol	UG/KG	186 U	NA	188 U	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/KG	186 U	NA	188 U	NA	NA	NA
4-Methylphenol	UG/KG	186 U	NA	188 U	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	186 U	NA	188 U	NA	NA	NA
Hexachloroethane	UG/KG	186 U	NA	188 U	NA	NA	NA
Nitrobenzene	UG/KG	186 U	NA	188 U	NA	NA	NA
Isophorone	UG/KG	186 UJ	NA	188 UJ	NA	NA	NA
2-Nitrophenol	UG/KG	186 U	NA	188 U	NA	NA	NA
2,4-Dimethylphenol	UG/KG	186 U	NA	188 U	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/KG	186 U	NA	188 U	NA	NA	NA
2,4-Dichlorophenol	UG/KG	186 U	NA	188 U	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	186 U	NA	188 U	NA	NA	NA
Naphthalene	UG/KG	186 U	NA	188 U	NA	NA	NA
4-Chloroaniline	UG/KG	186 UJ	NA	188 UJ	NA	NA	NA
Hexachlorobutadiene	UG/KG	186 U	NA	188 U	NA	NA	NA
4-Chloro-3-methylphenol	UG/KG	186 U	NA	188 U	NA	NA	NA
2-Methylnaphthalene	UG/KG	186 U	NA	188 U	NA	NA	NA
Hexachlorocyclopentadiene	UG/KG	186 U	NA	188 U	NA	NA	NA
2,4,6-Trichlorophenol	UG/KG	186 U	NA	188 U	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	451.5 U	NA	455.5 U	NA	NA	NA
2-Chloronaphthalene	UG/KG	186 U	NA	188 U	NA	NA	NA
2-Nitroaniline	UG/KG	451.5 U	NA	455.5 U	NA	NA	NA
Dimethylphthalate	UG/KG	186 U	NA	188 U	NA	NA	NA
Acenaphthylene	UG/KG	186 U	NA	188 U	NA	NA	NA
2,6-Dinitrotoluene	UG/KG	186 UJ	NA	188 UJ	NA	NA	NA
3-Nitroaniline	UG/KG	451.5 UJ	NA	455.5 UJ	NA	NA	NA
Acenaphthene	UG/KG	186 U	NA	188 U	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-MW29B-01	35-MW29B-03	35-MW30B-01	35-MW30BS-04	35-MW31-03	35-MW32BS-03
Lab Sample ID:		5057-19	4585-16	5057-17	5057-21	4585-25	5057-24
Date Sampled:		10-MAY-1994	26-APR-1994	10-MAY-1994	11-MAY-1994	30-APR-1994	14-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	451.5 UJ	NA	455.5 UJ	NA	NA	NA
Dibenzofuran	UG/KG	186 U	NA	188 U	NA	NA	NA
4-Nitrophenol	UG/KG	186 U	NA	188 U	NA	NA	NA
2,4-Dinitrotoluene	UG/KG	186 U	NA	188 U	NA	NA	NA
Diethylphthalate	UG/KG	186 U	NA	188 U	NA	NA	NA
Fluorene	UG/KG	186 U	NA	188 U	NA	NA	NA
4-Chlorophenyl-phenylether	UG/KG	186 U	NA	188 U	NA	NA	NA
4-Nitroaniline	UG/KG	451.5 U	NA	455.5 U	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	451.5 U	NA	455.5 U	NA	NA	NA
N-Nitrosodiphenylamine	UG/KG	186 U	NA	188 U	NA	NA	NA
4-Bromophenyl-phenylether	UG/KG	186 U	NA	188 U	NA	NA	NA
Hexachlorobenzene	UG/KG	186 U	NA	188 U	NA	NA	NA
Pentachlorophenol	UG/KG	451.5 U	NA	455.5 U	NA	NA	NA
Phenanthrene	UG/KG	186 U	NA	188 U	NA	NA	NA
Anthracene	UG/KG	186 U	NA	188 U	NA	NA	NA
Carbazole	UG/KG	186 UJ	NA	188 UJ	NA	NA	NA
Di-n-butylphthalate	UG/KG	186 U	NA	188 U	NA	NA	NA
Fluoranthene	UG/KG	186 U	NA	188 U	NA	NA	NA
Pyrene	UG/KG	186 U	NA	188 U	NA	NA	NA
Butylbenzylphthalate	UG/KG	186 U	NA	188 U	NA	NA	NA
Benzo(a)anthracene	UG/KG	186 U	NA	188 U	NA	NA	NA
3,3'-Dichlorobenzidine	UG/KG	186 U	NA	188 U	NA	NA	NA
Chrysene	UG/KG	186 U	NA	188 U	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	186 U	NA	188 U	NA	NA	NA
Di-n-octylphthalate	UG/KG	186 U	NA	188 U	NA	NA	NA
Benzo(b)fluoranthene	UG/KG	186 U	NA	188 U	NA	NA	NA
Benzo(k)fluoranthene	UG/KG	186 U	NA	188 U	NA	NA	NA
Benzo(a)pyrene	UG/KG	186 U	NA	188 U	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/KG	186 U	NA	188 U	NA	NA	NA
Dibenz(a,h)anthracene	UG/KG	186 U	NA	188 U	NA	NA	NA
Benzo(g,h,i)perylene	UG/KG	186 U	NA	188 U	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-MW33BS-05	35-MW34B-03	35-MW35B-01	35-MW35-02	35-MW36B-03	35-MW37BS-03
Lab Sample ID:		5057-22	5057-14	5057-18	4585-26	5057-1	5057-26
Date Sampled:		11-MAY-1994	10-MAY-1994	10-MAY-1994	30-APR-1994	4-MAY-1994	15-MAY-1994
	UNITS						
VOLATILES							
Chloromethane	UG/KG	6 UJ	6.5 U	5.5 U	6 UJ	6 U	6 UJ
Bromomethane	UG/KG	6 UJ	6.5 U	5.5 U	6 U	6 U	6 UJ
Vinyl Chloride	UG/KG	6 U	6.5 U	5.5 U	6 U	6 U	6 U
Chloroethane	UG/KG	6 U	6.5 U	5.5 U	6 U	6 U	6 U
Methylene Chloride	UG/KG	7	6.5 U	5.5 U	6 U	6 U	7 J
Acetone	UG/KG	6 UJ	144 J	5.5 UJ	31	119 J	6 UJ
Carbon Disulfide	UG/KG	6 UJ	6.5 U	5.5 U	6 U	6 U	6 UJ
1,1-Dichloroethene	UG/KG	6 U	6.5 U	5.5 U	6 U	6 U	6 U
1,1-Dichloroethane	UG/KG	6 U	6.5 U	5.5 U	6 U	6 U	6 U
1,2-Dichloroethene (total)	UG/KG	6 U	6.5 U	5.5 U	6 U	6 U	6 U
Chloroform	UG/KG	6 U	6.5 U	5.5 U	6 U	6 U	6 U
1,2-Dichloroethane	UG/KG	6 U	6.5 U	5.5 U	6 U	6 U	6 U
2-Butanone	UG/KG	6 UJ	6.5 UJ	5.5 U	6 U	6 UJ	6 UJ
1,1,1-Trichloroethane	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U
Carbon Tetrachloride	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U
Bromodichloromethane	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U
1,2-Dichloropropane	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U
cis-1,3-Dichloropropene	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U
Trichloroethene	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U
Dibromochloromethane	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U
1,1,2-Trichloroethane	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U
Benzene	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U
trans-1,3-Dichloropropene	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U
Bromoform	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U
4-Methyl-2-Pentanone	UG/KG	6 UJ	6.5 UJ	5.5 UJ	6 UJ	6 UJ	6 UJ
2-Hexanone	UG/KG	6 UJ	6.5 UJ	5.5 UJ	6 UJ	6 UJ	6 UJ
Tetrachloroethene	UG/KG	8	6.5 U	5.5 U	6 UJ	6 U	23 J
1,1,2,2-Tetrachloroethane	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U
Toluene	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U
Chlorobenzene	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U
Ethylbenzene	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U
Styrene	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U
Xylene (total)	UG/KG	6 U	6.5 U	5.5 U	6 UJ	6 U	6 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-MW33BS-05	35-MW34B-03	35-MW35B-01	35-MW35-02	35-MW36B-03	35-MW37BS-03
Lab Sample ID:		5057-22	5057-14	5057-18	4585-26	5057-1	5057-26
Date Sampled:		11-MAY-1994	10-MAY-1994	10-MAY-1994	30-APR-1994	4-MAY-1994	15-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	NA	NA	186.5 U	NA	NA	NA
bis(2-Chloroethyl)ether	UG/KG	NA	NA	186.5 U	NA	NA	NA
2-Chlorophenol	UG/KG	NA	NA	186.5 U	NA	NA	NA
1,3-Dichlorobenzene	UG/KG	NA	NA	186.5 U	NA	NA	NA
1,4-Dichlorobenzene	UG/KG	NA	NA	186.5 U	NA	NA	NA
1,2-Dichlorobenzene	UG/KG	NA	NA	186.5 U	NA	NA	NA
2-Methylphenol	UG/KG	NA	NA	186.5 U	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/KG	NA	NA	186.5 U	NA	NA	NA
4-Methylphenol	UG/KG	NA	NA	186.5 U	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	NA	NA	186.5 U	NA	NA	NA
Hexachloroethane	UG/KG	NA	NA	186.5 U	NA	NA	NA
Nitrobenzene	UG/KG	NA	NA	186.5 U	NA	NA	NA
Isophorone	UG/KG	NA	NA	186.5 U	NA	NA	NA
2-Nitrophenol	UG/KG	NA	NA	186.5 U	NA	NA	NA
2,4-Dimethylphenol	UG/KG	NA	NA	186.5 U	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/KG	NA	NA	186.5 U	NA	NA	NA
2,4-Dichlorophenol	UG/KG	NA	NA	186.5 U	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	NA	NA	186.5 U	NA	NA	NA
Naphthalene	UG/KG	NA	NA	186.5 U	NA	NA	NA
4-Chloroaniline	UG/KG	NA	NA	186.5 U	NA	NA	NA
Hexachlorobutadiene	UG/KG	NA	NA	186.5 U	NA	NA	NA
4-Chloro-3-methylphenol	UG/KG	NA	NA	186.5 U	NA	NA	NA
2-Methylnaphthalene	UG/KG	NA	NA	186.5 U	NA	NA	NA
Hexachlorocyclopentadiene	UG/KG	NA	NA	186.5 U	NA	NA	NA
2,4,6-Trichlorophenol	UG/KG	NA	NA	186.5 U	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	NA	NA	452.5 U	NA	NA	NA
2-Chloronaphthalene	UG/KG	NA	NA	186.5 U	NA	NA	NA
2-Nitroaniline	UG/KG	NA	NA	452.5 U	NA	NA	NA
Dimethylphthalate	UG/KG	NA	NA	186.5 U	NA	NA	NA
Acenaphthylene	UG/KG	NA	NA	186.5 U	NA	NA	NA
2,6-Dinitrotoluene	UG/KG	NA	NA	186.5 U	NA	NA	NA
3-Nitroaniline	UG/KG	NA	NA	452.5 U	NA	NA	NA
Acenaphthene	UG/KG	NA	NA	186.5 U	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-MW33BS-05	35-MW34B-03	35-MW35B-01	35-MW35-02	35-MW36B-03	35-MW37BS-03
Lab Sample ID:		5057-22	5057-14	5057-18	4585-26	5057-1	5057-26
Date Sampled:		11-MAY-1994	10-MAY-1994	10-MAY-1994	30-APR-1994	4-MAY-1994	15-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	NA	NA	452.5 U	NA	NA	NA
Dibenzofuran	UG/KG	NA	NA	186.5 U	NA	NA	NA
4-Nitrophenol	UG/KG	NA	NA	186.5 U	NA	NA	NA
2,4-Dinitrotoluene	UG/KG	NA	NA	186.5 U	NA	NA	NA
Diethylphthalate	UG/KG	NA	NA	186.5 U	NA	NA	NA
Fluorene	UG/KG	NA	NA	186.5 U	NA	NA	NA
4-Chlorophenyl-phenylether	UG/KG	NA	NA	186.5 U	NA	NA	NA
4-Nitroaniline	UG/KG	NA	NA	452.5 U	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	NA	NA	452.5 U	NA	NA	NA
N-Nitrosodiphenylamine	UG/KG	NA	NA	186.5 U	NA	NA	NA
4-Bromophenyl-phenylether	UG/KG	NA	NA	186.5 U	NA	NA	NA
Hexachlorobenzene	UG/KG	NA	NA	186.5 U	NA	NA	NA
Pentachlorophenol	UG/KG	NA	NA	452.5 U	NA	NA	NA
Phenanthrene	UG/KG	NA	NA	186.5 U	NA	NA	NA
Anthracene	UG/KG	NA	NA	186.5 U	NA	NA	NA
Carbazole	UG/KG	NA	NA	186.5 U	NA	NA	NA
Di-n-butylphthalate	UG/KG	NA	NA	186.5 U	NA	NA	NA
Fluoranthene	UG/KG	NA	NA	186.5 U	NA	NA	NA
Pyrene	UG/KG	NA	NA	283 J	NA	NA	NA
Butylbenzylphthalate	UG/KG	NA	NA	186.5 U	NA	NA	NA
Benzo(a)anthracene	UG/KG	NA	NA	186.5 U	NA	NA	NA
3,3'-Dichlorobenzidine	UG/KG	NA	NA	186.5 U	NA	NA	NA
Chrysene	UG/KG	NA	NA	186.5 U	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	NA	NA	186.5 U	NA	NA	NA
Di-n-octylphthalate	UG/KG	NA	NA	186.5 U	NA	NA	NA
Benzo(b)fluoranthene	UG/KG	NA	NA	425	NA	NA	NA
Benzo(k)fluoranthene	UG/KG	NA	NA	186.5 U	NA	NA	NA
Benzo(a)pyrene	UG/KG	NA	NA	186.5 U	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/KG	NA	NA	186.5 U	NA	NA	NA
Dibenz(a,h)anthracene	UG/KG	NA	NA	186.5 U	NA	NA	NA
Benzo(g,h,i)perylene	UG/KG	NA	NA	186.5 U	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:	35-MW38BS-03
Lab Sample ID:	5057-25
Date Sampled:	16-MAY-1994

VOLATILES	UNITS	
Chloromethane	UG/KG	6 UJ
Bromomethane	UG/KG	6 UJ
Vinyl Chloride	UG/KG	6 U
Chloroethane	UG/KG	6 U
Methylene Chloride	UG/KG	7 J
Acetone	UG/KG	6 UJ
Carbon Disulfide	UG/KG	6 UJ
1,1-Dichloroethene	UG/KG	6 U
1,1-Dichloroethane	UG/KG	6 U
1,2-Dichloroethene (total)	UG/KG	6 U
Chloroform	UG/KG	6 U
1,2-Dichloroethane	UG/KG	6 U
2-Butanone	UG/KG	6 UJ
1,1,1-Trichloroethane	UG/KG	6 U
Carbon Tetrachloride	UG/KG	6 U
Bromodichloromethane	UG/KG	6 U
1,2-Dichloropropane	UG/KG	6 U
cis-1,3-Dichloropropene	UG/KG	6 U
Trichloroethene	UG/KG	6 U
Dibromochloromethane	UG/KG	6 U
1,1,2-Trichloroethane	UG/KG	6 U
Benzene	UG/KG	6 U
trans-1,3-Dichloropropene	UG/KG	6 U
Bromoform	UG/KG	6 U
4-Methyl-2-Pentanone	UG/KG	6 UJ
2-Hexanone	UG/KG	6 UJ
Tetrachloroethene	UG/KG	6 U
1,1,2,2-Tetrachloroethane	UG/KG	6 U
Toluene	UG/KG	6 U
Chlorobenzene	UG/KG	6 U
Ethylbenzene	UG/KG	6 U
Styrene	UG/KG	6 U
Xylene (total)	UG/KG	6 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:	35-MW38BS-03
Lab Sample ID:	5057-25
Date Sampled:	16-MAY-1994

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

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:	35-MW38BS-03
Lab Sample ID:	5057-25
Date Sampled:	16-MAY-1994

SEMIVOLATILES Cont.	UNITS	
2,4-Dinitrophenol	UG/KG	NA
Dibenzofuran	UG/KG	NA
4-Nitrophenol	UG/KG	NA
2,4-Dinitrotoluene	UG/KG	NA
Diethylphthalate	UG/KG	NA
Fluorene	UG/KG	NA
4-Chlorophenyl-phenylether	UG/KG	NA
4-Nitroaniline	UG/KG	NA
4,6-Dinitro-2-methylphenol	UG/KG	NA
N-Nitrosodiphenylamine	UG/KG	NA
4-Bromophenyl-phenylether	UG/KG	NA
Hexachlorobenzene	UG/KG	NA
Pentachlorophenol	UG/KG	NA
Phenanthrene	UG/KG	NA
Anthracene	UG/KG	NA
Carbazole	UG/KG	NA
Di-n-butylphthalate	UG/KG	NA
Fluoranthene	UG/KG	NA
Pyrene	UG/KG	NA
Butylbenzylphthalate	UG/KG	NA
Benzo(a)anthracene	UG/KG	NA
3,3'-Dichlorobenzidine	UG/KG	NA
Chrysene	UG/KG	NA
bis(2-Ethylhexyl)phthalate	UG/KG	NA
Di-n-octylphthalate	UG/KG	NA
Benzo(b)fluoranthene	UG/KG	NA
Benzo(k)fluoranthene	UG/KG	NA
Benzo(a)pyrene	UG/KG	NA
Indeno(1,2,3-cd)pyrene	UG/KG	NA
Dibenz(a,h)anthracene	UG/KG	NA
Benzo(g,h,i)perylene	UG/KG	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
VOLATILES						
Chloromethane	UG/KG	ND	NA	NA	NA	NA
Bromomethane	UG/KG	ND	NA	NA	NA	NA
Vinyl Chloride	UG/KG	ND	NA	NA	NA	NA
Chloroethane	UG/KG	ND	NA	NA	NA	NA
Methylene Chloride	UG/KG	7 J	6.2	0.6	6.5	6.5
Acetone	UG/KG	144 J	24.0	40.9	40.2	44.1
Carbon Disulfide	UG/KG	ND	NA	NA	NA	NA
1,1-Dichloroethene	UG/KG	ND	NA	NA	NA	NA
1,1-Dichloroethane	UG/KG	ND	NA	NA	NA	NA
1,2-Dichloroethene (total)	UG/KG	ND	NA	NA	NA	NA
Chloroform	UG/KG	ND	NA	NA	NA	NA
1,2-Dichloroethane	UG/KG	ND	NA	NA	NA	NA
2-Butanone	UG/KG	ND	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/KG	ND	NA	NA	NA	NA
Carbon Tetrachloride	UG/KG	ND	NA	NA	NA	NA
Bromodichloromethane	UG/KG	ND	NA	NA	NA	NA
1,2-Dichloropropane	UG/KG	ND	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/KG	ND	NA	NA	NA	NA
Trichloroethene	UG/KG	ND	NA	NA	NA	NA
Dibromochloromethane	UG/KG	ND	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/KG	ND	NA	NA	NA	NA
Benzene	UG/KG	ND	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/KG	ND	NA	NA	NA	NA
Bromoform	UG/KG	ND	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/KG	ND	NA	NA	NA	NA
2-Hexanone	UG/KG	ND	NA	NA	NA	NA
Tetrachloroethene	UG/KG	60	10.0	12.7	15.1	12.5
1,1,2,2-Tetrachloroethane	UG/KG	ND	NA	NA	NA	NA
Toluene	UG/KG	ND	NA	NA	NA	NA
Chlorobenzene	UG/KG	ND	NA	NA	NA	NA
Ethylbenzene	UG/KG	ND	NA	NA	NA	NA
Styrene	UG/KG	ND	NA	NA	NA	NA
Xylene (total)	UG/KG	ND	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
SEMIVOLATILES						
Phenol	UG/KG	ND	NA	NA	NA	NA
bis(2-Chloroethyl)ether	UG/KG	ND	NA	NA	NA	NA
2-Chlorophenol	UG/KG	ND	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/KG	ND	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/KG	ND	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/KG	ND	NA	NA	NA	NA
2-Methylphenol	UG/KG	ND	NA	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/KG	ND	NA	NA	NA	NA
4-Methylphenol	UG/KG	ND	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	ND	NA	NA	NA	NA
Hexachloroethane	UG/KG	ND	NA	NA	NA	NA
Nitrobenzene	UG/KG	ND	NA	NA	NA	NA
Isophorone	UG/KG	ND	NA	NA	NA	NA
2-Nitrophenol	UG/KG	ND	NA	NA	NA	NA
2,4-Dimethylphenol	UG/KG	ND	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/KG	ND	NA	NA	NA	NA
2,4-Dichlorophenol	UG/KG	ND	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	ND	NA	NA	NA	NA
Naphthalene	UG/KG	ND	NA	NA	NA	NA
4-Chloroaniline	UG/KG	ND	NA	NA	NA	NA
Hexachlorobutadiene	UG/KG	ND	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/KG	ND	NA	NA	NA	NA
2-Methylnaphthalene	UG/KG	ND	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/KG	ND	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/KG	ND	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	ND	NA	NA	NA	NA
2-Chloronaphthalene	UG/KG	ND	NA	NA	NA	NA
2-Nitroaniline	UG/KG	ND	NA	NA	NA	NA
Dimethylphthalate	UG/KG	ND	NA	NA	NA	NA
Acenaphthylene	UG/KG	ND	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/KG	ND	NA	NA	NA	NA
3-Nitroaniline	UG/KG	ND	NA	NA	NA	NA
Acenaphthene	UG/KG	ND	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
SEMIVOLATILES Cont.						
2,4-Dinitrophenol	UG/KG	ND	NA	NA	NA	NA
Dibenzofuran	UG/KG	ND	NA	NA	NA	NA
4-Nitrophenol	UG/KG	ND	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/KG	ND	NA	NA	NA	NA
Diethylphthalate	UG/KG	ND	NA	NA	NA	NA
Fluorene	UG/KG	ND	NA	NA	NA	NA
4-Chlorophenyl-phenylether	UG/KG	ND	NA	NA	NA	NA
4-Nitroaniline	UG/KG	ND	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	ND	NA	NA	NA	NA
N-Nitrosodiphenylamine	UG/KG	ND	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/KG	ND	NA	NA	NA	NA
Hexachlorobenzene	UG/KG	ND	NA	NA	NA	NA
Pentachlorophenol	UG/KG	ND	NA	NA	NA	NA
Phenanthrene	UG/KG	ND	NA	NA	NA	NA
Anthracene	UG/KG	ND	NA	NA	NA	NA
Carbazole	UG/KG	ND	NA	NA	NA	NA
Di-n-butylphthalate	UG/KG	ND	NA	NA	NA	NA
Fluoranthene	UG/KG	ND	NA	NA	NA	NA
Pyrene	UG/KG	283 J	206.3	33.1	228.5	229.5
Butylbenzylphthalate	UG/KG	ND	NA	NA	NA	NA
Benzo(a)anthracene	UG/KG	ND	NA	NA	NA	NA
3,3'-Dichlorobenzidine	UG/KG	ND	NA	NA	NA	NA
Chrysene	UG/KG	ND	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	ND	NA	NA	NA	NA
Di-n-octylphthalate	UG/KG	ND	NA	NA	NA	NA
Benzo(b)fluoranthene	UG/KG	425	224.0	82.1	279.0	278.8
Benzo(k)fluoranthene	UG/KG	ND	NA	NA	NA	NA
Benzo(a)pyrene	UG/KG	ND	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/KG	ND	NA	NA	NA	NA
Dibenz(a,h)anthracene	UG/KG	ND	NA	NA	NA	NA
Benzo(g,h,i)perylene	UG/KG	ND	NA	NA	NA	NA

APPENDIX V.4
SUBSURFACE SOIL INORGANICS

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-GWDS01-03	35-GWDS2-03	35-GWDS3-03	35-GWDS4-02	35-GWDS05-03	35-MW29B-01
Lab Sample ID:		4585-15	5617-4	5617-2	5617-1	4585-17	5057-19
Date Sampled:		26-APR-1994	16-MAY-1994	16-MAY-1994	16-MAY-1994	28-APR-1994	10-MAY-1994
	UNITS						
Aluminum	MG/KG	2910	6190	3070	5650	6210	2860 J
Antimony	MG/KG		2.8 UJ	2.65 UJ	2.55 UJ		2.6 UJ
Arsenic	MG/KG	0.12 UJ	0.19 J	0.39	1.2 J	2.7 J	0.68 J
Barium	MG/KG	5.5	10.7	4.8	25	15.8	8.6 J
Beryllium	MG/KG	0.06 U	0.06 U	0.06 U	0.055 U	0.065 U	0.055 U
Cadmium	MG/KG		0.49 J	0.13 J	0.03 J		0.07 J
Calcium	MG/KG	456 J	664 J	98.5 U	94.5 U	1040 J	1990 J
Chromium	MG/KG	2.2 U	5.9	3.1	10	14.4 J	3.6
Cobalt	MG/KG	0.65 U	1.4	0.65 U	0.6 U	0.75 U	0.6 U
Copper	MG/KG	0.55 U	2.7	1.9	2.3	1.1 U	2.9
Iron	MG/KG	442 J	2560	1110	4030	10500 J	1390
Lead	MG/KG	8.1 J	15.4 J	4 J	6.5 J	16.7 J	144
Magnesium	MG/KG	63.5	149	93.3	217	403	188
Manganese	MG/KG	5.6 J	6.4	1.5	3.2	3.8 J	7.1
Mercury	MG/KG						
Nickel	MG/KG	1.05 U	1.4	1.5	2	0.85 U	0.6 U
Potassium	MG/KG	145 U	147.5 U	141 U	135.5 U	562	137.5 U
Selenium	MG/KG	0.085 UJ	0.085 UJ	0.08 UJ	0.23 J	0.67 J	0.17 J
Silver	MG/KG	0.39 J	0.18 U	0.175 U	0.165 U	0.015 U	0.17 U
Sodium	MG/KG	141 U	143.5 U	137 U	132 U	159 U	133.5 U
Thallium	MG/KG	0.06 U	0.1	0.035 U	2.1	0.51	0.055 U
Vanadium	MG/KG	3 J	7.6	4.4	13.2	19.9 J	5.5
Zinc	MG/KG						16.3

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-MW30B-01	35-MW35B-01
Lab Sample ID:		5057-17	5057-18
Date Sampled:		10-MAY-1994	10-MAY-1994
	UNITS		
Aluminum	MG/KG	3510 J	1870 J
Antimony	MG/KG	2.6 UJ	2.6 UJ
Arsenic	MG/KG	0.82 J	0.4 J
Barium	MG/KG	12.5 J	5.4 J
Beryllium	MG/KG	0.055 U	0.055 U
Cadmium	MG/KG	0.09 J	0.04 J
Calcium	MG/KG	2420 J	361 J
Chromium	MG/KG	4	3.4
Cobalt	MG/KG	0.65 U	0.6 U
Copper	MG/KG	8.5	1.2
Iron	MG/KG	1850	1170
Lead	MG/KG	11	10
Magnesium	MG/KG	200	29.15 U
Manganese	MG/KG	7.5	3.2
Mercury	MG/KG		
Nickel	MG/KG	0.65 U	1.2
Potassium	MG/KG	139 U	138 U
Selenium	MG/KG	0.28 J	0.08 UJ
Silver	MG/KG	0.17 U	0.17 U
Sodium	MG/KG	135 U	134 U
Thallium	MG/KG	0.15	0.055 U
Vanadium	MG/KG	5.5	4.4
Zinc	MG/KG	5.4 U	3.15 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOILS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
Aluminum	MG/KG	6210	4033.8	1712.3	5180.9	6065.1
Antimony	MG/KG	6.7 R	NA	NA	NA	NA
Arsenic	MG/KG	2.7 J	0.8	0.8	1.4	4.2
Barium	MG/KG	25	11.0	6.8	15.6	19.8
Beryllium	MG/KG	ND	NA	NA	NA	NA
Cadmium	MG/KG	0.67 R	0.1	0.2	0.3	1.0
Calcium	MG/KG	2420 J	890.5	874.4	1476.3	7558.7
Chromium	MG/KG	14.4 J	5.8	4.2	8.7	11.5
Cobalt	MG/KG	1.4	0.74	0.27	0.92	0.92
Copper	MG/KG	8.5	2.6	2.5	4.3	7.4
Iron	MG/KG	10500 J	2881.5	3268.3	5071.2	10417.8
Lead	MG/KG	144	27.0	47.5	58.8	126.0
Magnesium	MG/KG	403	167.9	116.6	246.0	503.2
Manganese	MG/KG	7.5	4.8	2.2	6.2	8.4
Mercury	MG/KG	0.18 R	NA	NA	NA	NA
Nickel	MG/KG	2	1.2	0.5	1.5	1.7
Potassium	MG/KG	562	193.2	149.1	293.1	293.3
Selenium	MG/KG	0.67 J	0.21	0.20	0.34	0.51
Silver	MG/KG	0.39 J	0.18	0.10	0.25	0.77
Sodium	MG/KG	ND	NA	NA	NA	NA
Thallium	MG/KG	2.1	0.4	0.7	0.9	4.5
Vanadium	MG/KG	19.9 J	7.9	5.8	11.8	15.4
Zinc	MG/KG	16.3	8.3	7.0	20.1	9723.2

APPENDIX V.5
GROUNDWATER ORGANICS

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-EMW03-03	35-EMW05-03	35-EMW7-03	35-GWDW1-01	35-GWDW2-01	35-GWDW3-01
Lab Sample ID:		D94-5361-5	D94-5361-1	D94-5361-10	D94-5361-6	D94-5529-1	D94-5529-2
Date Sampled:		14-MAY-1994	14-MAY-1994	14-MAY-1994	14-MAY-1994	14-MAY-1994	15-MAY-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	2.5 U	2.5 U	62.5 U	2.5 U	2.5 U	2.5 U
1,1,2,2-Tetrachloroethane	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethene	UG/L	0.1 U	0.1 U	2.5 U	0.1 U	0.1 U	0.1 U
1,2-Dichlorobenzene	UG/L	0.1 U	0.1 U	2.5 U	0.1 U	0.1 U	0.1 U
1,2-Dichloroethane	UG/L	0.15 U	0.15 U	4 U	0.15 U	0.15 U	0.15 U
1,2-Dichloropropane	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
1,3-Dichlorobenzene	UG/L	0.2 U	0.2 U	5 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	UG/L	0.5 U	0.5 U	12.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
Bromoform	UG/L	0.1 U	0.1 U	2.5 U	0.1 U	0.1 U	0.1 U
Bromomethane	UG/L	0.6 U	0.6 U	15 U	0.6 U	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0.1 U	0.1 U	2.5 U	0.1 U	0.1 U	0.1 U
Chlorobenzene	UG/L	0.15 U	0.15 U	4 U	0.15 U	0.15 U	0.15 U
Chloroethane	UG/L	0.3 U	0.3 U	7.5 U	0.3 U	0.3 U	0.3 U
Chloroform	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
Chloromethane	UG/L	0.25 U	0.25 U	6.5 U	0.25 U	0.25 U	0.25 U
Dibromochloromethane	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
Dichlorodifluoromethane	UG/L	1 U	1 U	25 U	1 U	1 U	1 U
Methylene chloride	UG/L	2.5 U	2.5 U	62.5 U	2.5 U	2.5 U	2.5 U
Tetrachloroethene	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
Trichloroethene	UG/L	23.4	13.8	137	0.05 U	0.05 U	0.05 U
Trichlorofluoromethane	UG/L	0.25 U	0.25 U	6.5 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	UG/L	0.25 U	0.25 U	6.5 U	0.25 U	0.25 U	0.25 U
cis-1,2-Dichloroethene	UG/L	90.5	35.4	353	0.05 U	0.05 U	0.05 U
cis-1,3-Dichloropropene	UG/L	0.1 U	0.1 U	2.5 U	0.1 U	0.1 U	0.1 U
trans-1,2-Dichloroethene	UG/L	6.4	3.4	44	0.05 U	0.05 U	0.05 U
trans-1,3-Dichloropropene	UG/L	0.1 U	0.1 U	2.5 U	0.1 U	0.1 U	0.1 U
Benzene	UG/L	0.3	0.6	16	0.1 U	0.7	0.7
Chlorobenzene	UG/L	0.1 U	0.1 U	2.5 U	0.1 U	0.1 U	0.1 U
Ethyl benzene	UG/L	0.4	0.7	11	0.9	1.4	2
Methyl Tertiary Butyl Ether	UG/L	12.7	5 U	86.8	5 U	5 U	5 U
Toluene	UG/L	0.4	0.5	9	0.1 U	0.9	1
Xylenes	UG/L	1.5	1.9	40	2.1	4.5	4.7

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-EMW03-03	35-EMW05-03	35-EMW7-03	35-GWDW1-01	35-GWDW2-01	35-GWDW3-01
Lab Sample ID:		D94-5361-5	D94-5361-1	D94-5361-10	D94-5361-6	D94-5529-1	D94-5529-2
Date Sampled:		14-MAY-1994	14-MAY-1994	14-MAY-1994	14-MAY-1994	14-MAY-1994	15-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	5 U	5 U	5 U	NA	NA	NA
bis(2-Chloroethyl)ether	UG/L	5 U	5 U	5 U	NA	NA	NA
2-Chlorophenol	UG/L	5 U	5 U	5 U	NA	NA	NA
1,3-Dichlorobenzene	UG/L	5 U	5 U	5 U	NA	NA	NA
1,4-Dichlorobenzene	UG/L	5 U	5 U	5 U	NA	NA	NA
1,2-Dichlorobenzene	UG/L	5 U	5 U	5 U	NA	NA	NA
2-Methylphenol	UG/L	5 U	5 U	5 U	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/L	5 U	5 U	5 U	NA	NA	NA
4-Methylphenol	UG/L	5 U	5 U	5 U	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/L	5 U	5 U	5 U	NA	NA	NA
Hexachloroethane	UG/L	5 U	5 U	5 U	NA	NA	NA
Nitrobenzene	UG/L	5 U	5 U	5 U	NA	NA	NA
Isophorone	UG/L	5 U	5 U	5 U	NA	NA	NA
2-Nitrophenol	UG/L	5 U	5 U	5 U	NA	NA	NA
2,4-Dimethylphenol	UG/L	5 U	5 U	5 U	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/L	5 U	5 U	5 U	NA	NA	NA
2,4-Dichlorophenol	UG/L	5 U	5 U	5 U	NA	NA	NA
1,2,4-Trichlorobenzene	UG/L	5 U	5 U	5 U	NA	NA	NA
Naphthalene	UG/L	5 U	7 J	5 U	NA	NA	NA
4-Chloroaniline	UG/L	5 U	5 U	5 U	NA	NA	NA
Hexachlorobutadiene	UG/L	5 U	5 U	5 U	NA	NA	NA
4-Chloro-3-methylphenol	UG/L	5 U	5 U	5 U	NA	NA	NA
2-Methylnaphthalene	UG/L	5 U	5 U	5 U	NA	NA	NA
Hexachlorocyclopentadiene	UG/L	5 U	5 U	5 U	NA	NA	NA
2,4,6-Trichlorophenol	UG/L	5 U	5 U	5 U	NA	NA	NA
2,4,5-Trichlorophenol	UG/L	12.5 U	12.5 U	12.5 U	NA	NA	NA
2-Chloronaphthalene	UG/L	5 U	5 U	5 U	NA	NA	NA
2-Nitroaniline	UG/L	12.5 U	12.5 U	12.5 U	NA	NA	NA
Dimethylphthalate	UG/L	5 U	5 U	5 U	NA	NA	NA
Acenaphthylene	UG/L	5 U	5 U	5 U	NA	NA	NA
2,6-Dinitrotoluene	UG/L	5 U	5 U	5 U	NA	NA	NA
3-Nitroaniline	UG/L	12.5 UJ	12.5 UJ	12.5 UJ	NA	NA	NA
Acenaphthene	UG/L	5 U	5 U	5 U	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-EMW03-03	35-EMW05-03	35-EMW7-03	35-GWDW1-01	35-GWDW2-01	35-GWDW3-01
Lab Sample ID:		D94-5361-5	D94-5361-1	D94-5361-10	D94-5361-6	D94-5529-1	D94-5529-2
Date Sampled:		14-MAY-1994	14-MAY-1994	14-MAY-1994	14-MAY-1994	14-MAY-1994	15-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	12.5 U	12.5 U	12.5 U	NA	NA	NA
Dibenzofuran	UG/L	5 U	5 U	5 U	NA	NA	NA
4-Nitrophenol	UG/L	5 UJ	5 UJ	5 UJ	NA	NA	NA
2,4-Dinitrotoluene	UG/L	5 U	5 U	5 U	NA	NA	NA
Diethylphthalate	UG/L	5 U	5 U	5 U	NA	NA	NA
Fluorene	UG/L	5 U	5 U	5 U	NA	NA	NA
4-Chlorophenyl-phenylether	UG/L	5 U	5 U	5 U	NA	NA	NA
4-Nitroaniline	UG/L	12.5 UJ	12.5 UJ	12.5 UJ	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	12.5 U	12.5 U	12.5 U	NA	NA	NA
N-Nitrosodiphenylamine	UG/L	5 U	5 U	5 U	NA	NA	NA
4-Bromophenyl-phenylether	UG/L	5 U	5 U	5 U	NA	NA	NA
Hexachlorobenzene	UG/L	5 U	5 U	5 U	NA	NA	NA
Pentachlorophenol	UG/L	12.5 U	12.5 U	12.5 U	NA	NA	NA
Phenanthrene	UG/L	5 U	5 U	5 U	NA	NA	NA
Anthracene	UG/L	5 U	5 U	5 U	NA	NA	NA
Carbazole	UG/L	5 U	5 U	5 U	NA	NA	NA
Di-n-butylphthalate	UG/L	5 U	5 U	5 U	NA	NA	NA
Fluoranthene	UG/L	5 U	5 U	5 U	NA	NA	NA
Pyrene	UG/L	5 U	5 U	5 U	NA	NA	NA
Butylbenzylphthalate	UG/L	5 UJ	5 UJ	5 UJ	NA	NA	NA
Benzo(a)anthracene	UG/L	5 U	5 U	5 U	NA	NA	NA
3,3'-Dichlorobenzidine	UG/L	5 U	5 U	5 U	NA	NA	NA
Chrysene	UG/L	5 U	5 U	5 U	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	5 UJ	5 UJ	5 UJ	NA	NA	NA
Di-n-octylphthalate	UG/L	5 U	5 U	5 U	NA	NA	NA
Benzo(b)fluoranthene	UG/L	5 U	5 U	5 U	NA	NA	NA
Benzo(k)fluoranthene	UG/L	5 U	5 U	5 U	NA	NA	NA
Benzo(a)pyrene	UG/L	5 U	5 U	5 U	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/L	5 U	5 U	5 U	NA	NA	NA
Dibenz(a,h)anthracene	UG/L	5 U	5 U	5 U	NA	NA	NA
Benzo(g,h,i)perylene	UG/L	5 U	5 U	5 U	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-EMW03-03	35-EMW05-03	35-EMW7-03	35-GWDW1-01	35-GWDW2-01	35-GWDW3-01
Lab Sample ID:		D94-5361-5	D94-5361-1	D94-5361-10	D94-5361-6	D94-5529-1	D94-5529-2
Date Sampled:		14-MAY-1994	14-MAY-1994	14-MAY-1994	14-MAY-1994	14-MAY-1994	15-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	NA	NA	NA	NA	NA	NA
beta-BHC	UG/L	NA	NA	NA	NA	NA	NA
delta-BHC	UG/L	NA	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	UG/L	NA	NA	NA	NA	NA	NA
Heptachlor	UG/L	NA	NA	NA	NA	NA	NA
Aldrin	UG/L	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan I	UG/L	NA	NA	NA	NA	NA	NA
Dieldrin	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDE	UG/L	NA	NA	NA	NA	NA	NA
Endrin	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan II	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDD	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDT	UG/L	NA	NA	NA	NA	NA	NA
Methoxychlor	UG/L	NA	NA	NA	NA	NA	NA
Endrin ketone	UG/L	NA	NA	NA	NA	NA	NA
Endrin aldehyde	UG/L	NA	NA	NA	NA	NA	NA
alpha-Chlordane	UG/L	NA	NA	NA	NA	NA	NA
gamma-Chlordane	UG/L	NA	NA	NA	NA	NA	NA
Toxaphene	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1016	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1221	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1232	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1242	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1248	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1254	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1260	UG/L	NA	NA	NA	NA	NA	NA

SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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)	24
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	24
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2) Adult	Adherence Factor (mg/cm2)	Fraction Absorbed (%)	Exposure Frequency (events/yr) Adult	Exposure Duration (yrs) Adult	Body Weight (kg) Adult	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Phenanthrene	1.08	1E-06	5800	1	0.01	350	24	70	70	365	2.89E-07			
Benzo(b)fluoranthene	1.09	1E-06	5800	1	0.01	350	24	70	70	365	2.97E-07	7.30E-01	2.17E-07	2.18
Benzo(g,h,i)perylene	0.366	1E-06	5800	1	0.01	350	24	70	70	365	9.97E-08			
Dieldrin	0.212	1E-06	5800	1	0.01	350	24	70	70	365	5.78E-08	1.60E+01	9.24E-07	9.30
Endosulfan II	0.0029	1E-06	5800	1	0.01	350	24	70	70	365	7.90E-10			
4,4'-DDD	3.24	1E-06	5800	1	0.01	350	24	70	70	365	8.83E-07	2.40E-01	2.12E-07	2.13
Endrin Ketone	0.0012	1E-06	5800	1	0.01	350	24	70	70	365	3.27E-10			
Endrin Aldehyde	0.0016	1E-06	5800	1	0.01	350	24	70	70	365	4.36E-10			
Arsenic	18	1E-06	5800	1	0.01	350	24	70	70	365	4.90E-06	1.75E+00	8.58E-06	86.38
Lead	53.7	1E-06	5800	1	0.01	350	24	70	70	365	1.46E-05			
Manganese	32.7	1E-06	5800	1	0.01	350	24	70	70	365	8.91E-06			
TOTAL													9.93E-06	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Phenanthrene	1.08	1E-06	5800	1	0.01	350	24	70	24	365	8.42E-07			
Benzo(b)fluoranthene	1.09	1E-06	5800	1	0.01	350	24	70	24	365	8.66E-07			
Benzo(g,h,i)perylene	0.366	1E-06	5800	1	0.01	350	24	70	24	365	2.91E-07			
Dieldrin	0.212	1E-06	5800	1	0.01	350	24	70	24	365	1.68E-07	5.00E-05	3.37E-03	37.42
Endosulfan II	0.0029	1E-06	5800	1	0.01	350	24	70	24	365	2.30E-09			
4,4'-DDD	3.24	1E-06	5800	1	0.001	350	24	70	24	365	2.57E-07			
Endrin Ketone	0.0012	1E-06	5800	1	0.001	350	24	70	24	365	9.53E-11			
Endrin Aldehyde	0.0016	1E-06	5800	1	0.001	350	24	70	24	365	1.27E-10			
Arsenic	18	1E-06	5800	1	0.001	350	24	70	24	365	1.43E-06	3.00E-04	4.77E-03	52.96
Lead	53.7	1E-06	5800	1	0.001	350	24	70	24	365	4.27E-06			
Manganese	32.7	1E-06	5800	1	0.001	350	24	70	24	365	2.60E-06	3.00E-03	8.66E-04	9.62
TOTAL													9.00E-03	100.00

File Name: SDC.WQ2

SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (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 (years)	Days per year (day/year)	Carc Dose (mg/kg/day) Child	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child
Phenanthrene	1.06	1E-06	2300	1	0.01	350	6	15	70	365	1.34E-07			
Benzo(b)fluoranthene	1.09	1E-06	2300	1	0.01	350	6	15	70	365	1.37E-07	7.30E-01	1.00E-07	2.18
Benzo(g,h,i)perylene	0.366	1E-06	2300	1	0.01	350	6	15	70	365	4.61E-08			
Dieldrin	0.212	1E-06	2300	1	0.01	350	6	15	70	365	2.67E-08	1.60E+01	4.27E-07	9.30
Endosulfan II	0.0029	1E-06	2300	1	0.01	350	6	15	70	365	3.65E-10			
4,4'-DDD	3.24	1E-06	2300	1	0.01	350	6	15	70	365	4.08E-07	2.40E-01	9.80E-08	2.13
Endrin Ketone	0.0012	1E-06	2300	1	0.01	350	6	15	70	365	1.51E-10			
Endrin Aldehyde	0.0016	1E-06	2300	1	0.01	350	6	15	70	365	2.02E-10			
Arsenic	18	1E-06	2300	1	0.01	350	6	15	70	365	2.27E-06	1.75E+00	3.97E-06	86.38
Lead	53.7	1E-06	2300	1	0.01	350	6	15	70	365	6.77E-06			
Manganese	32.7	1E-06	2300	1	0.01	350	6	15	70	365	4.12E-06			
TOTAL													4.60E-06	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day) Child	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk Child
Phenanthrene	1.06	1E-06	2300	1	0.01	350	6	15	6	365	1.56E-06			
Benzo(b)fluoranthene	1.09	1E-06	2300	1	0.01	350	6	15	6	365	1.60E-06			
Benzo(g,h,i)perylene	0.366	1E-06	2300	1	0.01	350	6	15	6	365	5.38E-07			
Dieldrin	0.212	1E-06	2300	1	0.01	350	6	15	6	365	3.12E-07	5.00E-05	6.23E-03	37.42
Endosulfan II	0.0029	1E-06	2300	1	0.01	350	6	15	6	365	4.26E-09			
4,4'-DDD	3.24	1E-06	2300	1	0.001	350	6	15	6	365	4.76E-07			
Endrin Ketone	0.0012	1E-06	2300	1	0.001	350	6	15	6	365	1.76E-10			
Endrin Aldehyde	0.0016	1E-06	2300	1	0.001	350	6	15	6	365	2.35E-10			
Arsenic	18	1E-06	2300	1	0.001	350	6	15	6	365	2.65E-06	3.00E-04	8.82E-03	52.96
Lead	53.7	1E-06	2300	1	0.001	350	6	15	6	365	7.90E-06			
Manganese	32.7	1E-06	2300	1	0.001	350	6	15	6	365	4.81E-06	3.00E-03	1.60E-03	9.62
TOTAL													1.67E-02	100.00

File Name: SDC.WQ1

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE DERMAL CONTACT WITH SOIL CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from dermal contact with soil

$$Intake\ (mg/kg{\cdot}day) = \frac{C \times CF \times SA \times AF \times Abs \times EF \times ED}{BW \times AT}$$

Where:			
	C	=	Contaminant concentration in soil (mg/kg)
	CF	=	Conversion factor (kg/mg)
	SA	=	Surface available for contact (cm^2/event)
	AF	=	Soil to skin adherence factor (mg/cm^2)
	Abs	=	Fraction absorbed (percent)
	EF	=	Exposure frequency (days/year)
	ED	=	Exposure duration (years)
	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: 4,4-DDD

$$Intake\ (mg/kg{\cdot}day) = \frac{3.24\ mg/kg \times 1.0E\text{-}06\ kg/mg \times 5{,}800\ cm^2/event \times 1\% \times 1\ mg/cm^2 \times 350\ event/yr \times 24\ yrs}{70\ kg \times 25{,}550\ days}$$

= 9E-07

Risk = 9E-07 mg/kg·day x 2.4E-01 $mg/kg{\cdot}day^{-1}$ = 2E-07

Example Noncarcinogen: 4,4-DDT

$$Intake\ (mg/kg{\cdot}day) = \frac{0.262\ mg/kg \times 1.0E\text{-}06\ kg/mg \times 5{,}800\ cm^2/event \times 1\ mg/cm^2 \times 1\% \times 350\ event/yr \times 24\ yrs}{70\ kg \times 8{,}760\ days}$$

= 2E-07

$$Risk = \frac{2E\text{-}07\ mg/kg{\cdot}day}{5E\text{-}04\ mg/kg{\cdot}day} = 4E\text{-}04$$

Re: Site 35 Future Residential Adult

SOIL INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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)	350
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

Note: Inputs are scenario and site specific

Contaminant	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 (years)	Days per year (days/yr)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Phenanthrene	1.06	350	4	1E-06	100	70	70	365	8.30E-08			
Benzo(b)fluoranthene	1.09	350	4	1E-06	100	70	70	365	8.53E-08	7.30E-01	6.23E-08	2.18
Benzo(g,h,i)perylene	0.366	350	4	1E-06	100	70	70	365	2.86E-08			
Dieldrin	0.212	350	4	1E-06	100	70	70	365	1.66E-08	1.60E+01	2.66E-07	9.30
Endosulfan II	0.0029	350	4	1E-06	100	70	70	365	2.27E-10			
4,4'-DDD	3.24	350	4	1E-06	100	70	70	365	2.54E-07	2.40E-01	6.09E-08	2.13
Endrin Ketone	0.0012	350	4	1E-06	100	70	70	365	9.39E-11			
Endrin Aldehyde	0.0016	350	4	1E-06	100	70	70	365	1.25E-10			
Arsenic	18	350	4	1E-06	100	70	70	365	1.41E-06	1.75E+00	2.47E-06	86.38
Lead	53.7	350	4	1E-06	100	70	70	365	4.20E-06			
Manganese	32.7	350	4	1E-06	100	70	70	365	2.56E-06			
TOTAL											2.85E-06	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Phenanthrene	1.06	350	4	1E-06	100	70	4	365	1.45E-06			
Benzo(b)fluoranthene	1.09	350	4	1E-06	100	70	4	365	1.49E-06			
Benzo(g,h,i)perylene	0.366	350	4	1E-06	100	70	4	365	5.01E-07			
Dieldrin	0.212	350	4	1E-06	100	70	4	365	2.90E-07	5.00E-05	5.81E-03	5.99
Endosulfan II	0.0029	350	4	1E-06	100	70	4	365	3.97E-09			
4,4'-DDD	3.24	350	4	1E-06	100	70	4	365	4.44E-06			
Endrin Ketone	0.0012	350	4	1E-06	100	70	4	365	1.64E-09			
Endrin Aldehyde	0.0016	350	4	1E-06	100	70	4	365	2.19E-09			
Arsenic	18	350	4	1E-06	100	70	4	365	2.47E-05	3.00E-04	8.22E-02	84.77
Lead	53.7	350	4	1E-06	100	70	4	365	7.36E-05			
Manganese	32.7	350	4	1E-06	100	70	4	365	4.48E-05	5.00E-03	8.96E-03	9.24
TOTAL											9.70E-02	100.00

File Name: SI.WQ3

SOIL INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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

Note: Inputs are scenario and site specific

Contaminant	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 (years)	Days per year (days/yr)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Benzo(b)fluoranthene	0.2788	90	1	1E-06	480	70	70	365	6.73E-09	7.30E-01	4.92E-09	4.13
Arsenic	2.7	90	1	1E-06	480	70	70	365	6.52E-08	1.75E+00	1.14E-07	95.87
Lead	126	90	1	1E-06	480	70	70	365	3.04E-06			
Thallium	2.1	90	1	1E-06	480	70	70	365	5.07E-08			
TOTAL											1.19E-07	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Benzo(b)fluoranthene	0.2788	90	1	1E-06	480	70	1	365	4.71E-07			
Arsenic	2.7	90	1	1E-06	480	70	1	365	4.57E-06	3.00E-04	1.52E-02	100.00
Lead	126	90	1	1E-06	480	70	1	365	2.13E-04			
Thallium	2.1	90	1	1E-06	480	70	1	365	3.55E-06			
TOTAL											1.52E-02	100.00

File Name: SI.WQ4

SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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)	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)	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

Contaminant	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 (years)	Days per year (day/year)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Phenanthrene	1.08	1E-06	5800	1	0.01	350	4	70	70	365	4.81E-08			
Benzo(b)fluoranthene	1.09	1E-06	5800	1	0.01	350	4	70	70	365	4.95E-08	7.30E-01	3.61E-08	2.18
Benzo(g,h,i)perylene	0.368	1E-06	5800	1	0.01	350	4	70	70	365	1.66E-08			
Dieldrin	0.212	1E-06	5800	1	0.01	350	4	70	70	365	9.63E-09	1.60E+01	1.54E-07	9.30
Endosulfan II	0.0029	1E-06	5800	1	0.01	350	4	70	70	365	1.32E-10			
4,4'-DDD	3.24	1E-06	5800	1	0.01	350	4	70	70	365	1.47E-07	2.40E-01	3.53E-08	2.13
Endrin Ketone	0.0012	1E-06	5800	1	0.01	350	4	70	70	365	5.45E-11			
Endrin Aldehyde	0.0016	1E-06	5800	1	0.01	350	4	70	70	365	7.26E-11			
Arsenic	18	1E-06	5800	1	0.01	350	4	70	70	365	8.17E-07	1.75E+00	1.43E-06	86.38
Lead	53.7	1E-06	5800	1	0.01	350	4	70	70	365	2.44E-06			
Manganese	32.7	1E-06	5800	1	0.01	350	4	70	70	365	1.48E-06			
TOTAL													1.66E-06	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Phenanthrene	1.08	1E-06	5800	1	0.01	350	4	70	4	365	8.42E-07			
Benzo(b)fluoranthene	1.09	1E-06	5800	1	0.01	350	4	70	4	365	8.66E-07			
Benzo(g,h,i)perylene	0.368	1E-06	5800	1	0.01	350	4	70	4	365	2.91E-07			
Dieldrin	0.212	1E-06	5800	1	0.01	350	4	70	4	365	1.68E-07	5.00E-05	3.37E-03	37.42
Endosulfan II	0.0029	1E-06	5800	1	0.01	350	4	70	4	365	2.30E-09			
4,4'-DDD	3.24	1E-06	5800	1	0.001	350	4	70	4	365	2.57E-07			
Endrin Ketone	0.0012	1E-06	5800	1	0.001	350	4	70	4	365	9.53E-11			
Endrin Aldehyde	0.0016	1E-06	5800	1	0.001	350	4	70	4	365	1.27E-10			
Arsenic	18	1E-06	5800	1	0.001	350	4	70	4	365	1.43E-06	3.00E-04	4.77E-03	52.96
Lead	53.7	1E-06	5800	1	0.001	350	4	70	4	365	4.27E-06			
Manganese	32.7	1E-06	5800	1	0.001	350	4	70	4	365	2.60E-06	3.00E-03	8.66E-04	9.62
TOTAL													9.00E-03	100.00

File Name: SDC.WQ3

SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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

Note: Inputs are scenario and site specific

Contaminant	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 (years)	Days per year (day/year)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Benzo(b)fluoranthene	0.2788	1E-06	4300	1	0.01	90	1	70	70	365	6.03E-10	7.30E-01	4.40E-10	4.13
Arsenic	2.7	1E-06	4300	1	0.01	90	1	70	70	365	5.84E-09	1.75E+00	1.02E-08	95.87
Lead	126	1E-06	4300	1	0.001	90	1	70	70	365	2.73E-08			
Thallium	2.1	1E-06	4300	1	0.001	90	1	70	70	365	4.54E-10			
TOTAL													1.07E-08	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Benzo(b)fluoranthene	0.2788	1E-06	4300	1	0.001	90	1	70	1	365	4.22E-09			
Arsenic	2.7	1E-06	4300	1	0.001	90	1	70	1	365	4.09E-08	3.00E-04	1.36E-04	100.00
Lead	126	1E-06	4300	1	0.001	90	1	70	1	365	1.91E-06			
Thallium	2.1	1E-06	4300	1	0.001	90	1	70	1	365	3.18E-08			
TOTAL													1.36E-04	100.00

File Name: SDC.WQ4

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE INHALATION OF PARTICULATES CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from the inhalation of soil particulates

$$Intake\ (mg/kg{\cdot}day) = \frac{C\ x\ IR\ x\ EF\ x\ ED\ x\ 1/PEF}{BW\ x\ AT}$$

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: 4,4-DDT

$$Intake\ (mg/kg{\cdot}day) = \frac{0.262\ mg/kg\ x\ 20\ m^3/day\ x\ 350\ days/yr\ x\ 24\ yrs\ x\ 1/4.6E{+}09\ m^3/kg}{70\ kg\ x\ 25{,}550\ days}$$

= 5.4E-12

Risk = 5.4E-12 mg/kg·day x 3.4E-01 $mg/kg{\cdot}day^{-1}$ = 2E-12

Example Noncarcinogen: Manganese

$$Intake\ (mg/kg{\cdot}day) = \frac{32.7\ mg/kg\ x\ 20\ m^3/day\ x\ 350\ days/yr\ x\ 24\ yrs\ x\ 1/4.6E{+}09\ m^3/kg}{70\ kg\ x\ 8{,}760\ days}$$

= 2E-09

$$Risk = \frac{2E{-}09\ mg/kg{\cdot}day}{4E{-}04\ mg/kg{\cdot}day} = 5E{-}06$$

Re: Site 35 Future Residential Adult

PARTICULATE INHALATION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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)	24
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	24
DY = day per year (day/yr)	365
PEF = particulate emission factor (m3/kg)	4.63E+09

Note: inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk
Phenanthrene	1.06	4.6E+09	350	20	24	70	70	365	2.15E-11			
Benzo(b)fluoranthene	1.09	4.6E+09	350	20	24	70	70	365	2.21E-11	6.10E-01	1.35E-11	0.24
Benzo(g,h,i)perylene	0.366	4.6E+09	350	20	24	70	70	365	7.43E-12			
Dieldrin	0.212	4.6E+09	350	20	24	70	70	365	4.30E-12	1.61E+01	6.92E-11	1.24
Endosulfan II	0.0029	4.6E+09	350	20	24	70	70	365	5.88E-14			
4,4'-DDD	3.24	4.6E+09	350	20	24	70	70	365	6.57E-11			
Endrin Ketone	0.0012	4.6E+09	350	20	24	70	70	365	2.43E-14			
Endrin Aldehyde	0.0016	4.6E+09	350	20	24	70	70	365	3.25E-14			
Arsenic	18	4.6E+09	350	20	24	70	70	365	3.65E-10	1.51E+01	5.51E-09	98.52
Lead	53.7	4.6E+09	350	20	24	70	70	365	1.09E-09			
Manganese	32.7	4.6E+09	350	20	24	70	70	365	6.63E-10			
TOTAL											5.60E-09	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Manganese	32.7	4.6E+09	350	20	24	70	70	365	6.63E-10	1.43E-05	9.49E-15	100.00
Total											9.49E-15	100

File Name: PI.WQ2

PARTICULATE INHALATION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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)	10
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)	4.63E+09

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk
Phenanthrene	1.06	4.6E+09	350	10	6	15	70	365	1.25E-11			
Benzo(b)fluoranthene	1.09	4.6E+09	350	10	6	15	70	365	1.29E-11	6.10E-01	7.87E-12	0.24
Benzo(g,h,i)perylene	0.366	4.6E+09	350	10	6	15	70	365	4.33E-12			
Dieldrin	0.212	4.6E+09	350	10	6	15	70	365	2.51E-12	1.61E+01	4.04E-11	1.24
Endosulfan II	0.0029	4.6E+09	350	10	6	15	70	365	3.43E-14			
4,4'-DDD	3.24	4.6E+09	350	10	6	15	70	365	3.83E-11			
Endrin Ketone	0.0012	4.6E+09	350	10	6	15	70	365	1.42E-14			
Endrin Aldehyde	0.0016	4.6E+09	350	10	6	15	70	365	1.89E-14			
Arsenic	18	4.6E+09	350	10	6	15	70	365	2.13E-10	1.51E+01	3.22E-09	98.52
Lead	53.7	4.6E+09	350	10	6	15	70	365	6.36E-10			
Manganese	32.7	4.6E+09	350	10	6	15	70	365	3.87E-10			
TOTAL											3.26E-09	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Manganese	32.7	4.6E+09	350	10	6	15	70	365	3.87E-10	1.43E-05	5.53E-15	100.00
TOTAL											5.53E-15	100.00

File Name: PI.WQ1

PARTICULATE INHALATION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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)	350
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)	4.63E+09

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk
Phenanthrene	1.06	4.6E+09	350	20	4	70	70	365	3.58E-12			
Benzo(b)fluoranthene	1.09	4.6E+09	350	20	4	70	70	365	3.69E-12	6.10E-01	2.25E-12	0.24
Benzo(g,h,i)perylene	0.366	4.6E+09	350	20	4	70	70	365	1.24E-12			
Dieldrin	0.212	4.6E+09	350	20	4	70	70	365	7.17E-13	1.61E+01	1.15E-11	1.24
Endosulfan II	0.0029	4.6E+09	350	20	4	70	70	365	9.81E-15			
4,4'-DDD	3.24	4.6E+09	350	20	4	70	70	365	1.10E-11			
Endrin Ketone	0.0012	4.6E+09	350	20	4	70	70	365	4.06E-15			
Endrin Aldehyde	0.0016	4.6E+09	350	20	4	70	70	365	5.41E-15			
Arsenic	18	4.6E+09	350	20	4	70	70	365	6.09E-11	1.51E+01	9.19E-10	98.52
Lead	53.7	4.6E+09	350	20	4	70	70	365	1.82E-10			
Manganese	32.7	4.6E+09	350	20	4	70	70	365	1.11E-10			
TOTAL											9.33E-10	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Manganese	3.3E+01	4.6E+09	350	20	4	70	4	365	1.93E-09	1.43E-05	2.77E-14	100.00
TOTAL											2.77E-14	100

File Name: PI.WQ3

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE GROUNDWATER INGESTION CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

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: Trichloroethene

$$Intake\ (mg/kg{\cdot}day) = \frac{0.9\ mg/L \times 2\ L/day \times 350\ days/yr \times 30\ yrs}{70\ kg \times 25{,}550\ days}$$

= 1.1E-02

Risk = 1.1E-02 mg/kg·day x 1.1E-02 $mg/kg{\cdot}day^{-1}$ = 1.0E-04

Example Noncarcinogen: Trichloroethene

$$Intake\ (mg/kg{\cdot}day) = \frac{0.9\ mg/L \times 2\ L/day \times 350\ days/yr \times 30\ yrs}{70\ kg \times 10{,}950\ days}$$

= 2.5E-02

$$Risk = \frac{2.5E\text{-}02\ mg/kg{\cdot}day}{6E\text{-}03\ mg/kg{\cdot}day} = 4$$

Re: Site 35 Future Residential Adult

GROUNDWATER INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 1.0 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/l)	Ingestion Rate (L/day) Adult	Exposure Frequency (day/year) Adult	Exposure Duration (year) Adult	Body Weight (kg) Adult	Average Carc Time (years)	Days per year (day/yr)	Carc Dose (mg/kg-day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
1,1-Dichloroethene	0.0027	2	350	30	70	70	365	3.17E-05	6.00E-01	1.90E-05	0.443
cis-1,2-Dichloroethene	0.973	2	350	30	70	70	365	1.14E-02			
trans-1,2-Dichloroethene	0.176	2	350	30	70	70	365	2.07E-03			
Ethylbenzene	0.096	2	350	30	70	70	365	1.13E-03			
Methyl tertiary butyl ether	0.052	2	350	30	70	70	365	6.11E-04			
Trichloroethene	0.9	2	350	30	70	70	365	1.06E-02	1.10E-02	1.16E-04	2.708
Benzene	0.0841	2	350	30	70	70	365	9.87E-04	2.90E-02	2.86E-05	0.667
Toluene	0.0568	2	350	30	70	70	365	6.67E-04			
Xylenes, total	0.247	2	350	30	70	70	365	2.90E-03			
Dibenzofuran	0.0071	2	350	30	70	70	365	8.34E-05			
Naphthalene	0.0685	2	350	30	70	70	365	8.04E-04			
2-Methylnaphthalene	0.0806	2	350	30	70	70	365	9.46E-04			
Phenanthrene	0.0096	2	350	30	70	70	365	1.13E-04			
beta-BHC	3.6E-05	2	350	30	70	70	365	4.23E-07			
Heptachlor	1.3E-05	2	350	30	70	70	365	1.53E-07	4.50E+00	6.87E-07	0.016
Antimony	0.0102	2	350	30	70	70	365	1.20E-04			
Arsenic	0.0606	2	350	30	70	70	365	7.12E-04	1.75E+00	1.25E-03	29.007
Barium	2.3	2	350	30	70	70	365	2.70E-02			
Beryllium	0.0571	2	350	30	70	70	365	6.70E-04	4.30E+00	2.88E-03	67.159
Chromium	1.54	2	350	30	70	70	365	1.81E-02			
Cadmium	0.0414	2	350	30	70	70	365	4.86E-04			
Cobalt	0.1182	2	350	30	70	70	365	1.39E-03			
Lead	0.0403	2	350	30	70	70	365	4.73E-04			
Manganese	0.7879	2	350	30	70	70	365	9.25E-03			
Nickel	0.2933	2	350	30	70	70	365	3.44E-03			
Silver	0.0028	2	350	30	70	70	365	3.29E-05			
Thallium	0.0028	2	350	30	70	70	365	3.29E-05			
Vanadium	0.886	2	350	30	70	70	365	1.04E-02			
Zinc	1.85	2	350	30	70	70	365	2.17E-02			
										4.26E-03	100.00

Contaminant	Concentration Noncarcinogen (mg/l)	Ingestion Rate (L/day) Adult	Exposure Frequency (day/year) Adult	Exposure Duration (year) Adult	Body Weight (kg) Adult	Average Noncarc Time (years)	Days per year (day/yr)	Noncarc Dose (mg/kg-day) Adult	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
1,1-Dichloroethene	0.0027	2	350	30	70	30	365	7.40E-05	9.00E-03	8.22E-03	0.02
cis-1,2-Dichloroethene	0.973	2	350	30	70	30	365	2.67E-02	1.00E-02	2.67E+00	6.16
trans-1,2-Dichloroethene	0.176	2	350	30	70	30	365	4.82E-03	2.00E-02	2.41E-01	0.56
Ethylbenzene	0.096	2	350	30	70	30	365	2.63E-03	1.00E-01	2.63E-02	0.06
Methyl tertiary butyl ether	0.052	2	350	30	70	30	365	1.42E-03	5.00E-03	2.86E-01	0.66
Trichloroethene	0.9	2	350	30	70	30	365	2.47E-02	6.00E-03	4.11E+00	9.49
Benzene	0.0841	2	350	30	70	30	365	2.30E-03	3.00E-04	7.68E+00	17.74
Toluene	0.0568	2	350	30	70	30	365	1.56E-03	2.00E-01	7.78E-03	0.02
Xylenes	0.2477	2	350	30	70	30	365	6.79E-03	2.00E+00	3.39E-03	0.01
Dibenzofuran	0.0071	2	350	30	70	30	365	1.95E-04	4.00E-03	4.88E-02	0.11
Naphthalene	0.0685	2	350	30	70	30	365	1.88E-03			
2-Methylnaphthalene	0.0806	2	350	30	70	30	365	2.21E-03			
Phenanthrene	0.0096	2	350	30	70	30	365	2.63E-04			
beta-BHC	3.6E-05	2	350	30	70	30	365	9.86E-07			
Heptachlor	1.3E-05	2	350	30	70	30	365	3.56E-07	5.00E-04	7.12E-04	0.00
Antimony	0.034	2	350	30	70	30	365	9.32E-04	4.00E-04	2.33E+00	5.38
Arsenic	0.0606	2	350	30	70	30	365	1.66E-03	3.00E-04	5.53E+00	12.79
Barium	2.3	2	350	30	70	30	365	6.30E-02	7.00E-02	9.00E-01	2.08
Beryllium	0.0571	2	350	30	70	30	365	1.56E-03	5.00E-03	3.13E-01	0.72
Chromium	1.54	2	350	30	70	30	365	4.22E-02	5.00E-03	8.44E+00	19.49
Cadmium	0.0414	2	350	30	70	30	365	1.13E-03	5.00E-04	2.27E+00	5.24
Cobalt	0.1182	2	350	30	70	30	365	3.24E-03	6.00E-02	5.40E-02	0.12
Lead	0.0403	2	350	30	70	30	365	1.10E-03			
Manganese	0.7879	2	350	30	70	30	365	2.16E-02	5.00E-03	4.32E+00	9.97
Nickel	0.2933	2	350	30	70	30	365	8.04E-03	2.00E-02	4.02E-01	0.93
Silver	0.0028	2	350	30	70	30	365	7.67E-05	5.00E-03	1.53E-02	0.04
Thallium	0.0028	2	350	30	70	30	365	7.67E-05			
Vanadium	0.886	2	350	30	70	30	365	2.43E-02	7.00E-03	3.47E+00	8.01
Zinc	1.85	2	350	30	70	30	365	5.07E-02	3.00E-01	1.69E-01	0.39
TOTAL										43.3	100.00

File Name: GWI.WQ2

GROUNDWATER INGESTION EXPOSURE ASSESSMENT (revised 2/15/95)
OPERABLE UNIT NO. 10 (SITE 25)
REMEDIAL INVESTIGATION CTO-0232
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

Note: Inputs are scenario and site specific

Contaminant	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 (years)	Days per year (day/yr)	Carc Dose (mg/kg-day) Child	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child
1,1-Dichloroethene	0.0027	1	350	6	15	70	365	1.48E-05	6.00E-01	8.88E-06	0.443
cis-1,2-Dichloroethene	0.973	1	350	6	15	70	365	5.33E-03			
trans-1,2-Dichloroethene	0.176	1	350	6	15	70	365	9.64E-04			
Ethylbenzene	0.096	1	350	6	15	70	365	5.26E-04			
Methyl tertiary butyl ether	0.052	1	350	6	15	70	365	2.86E-04			
Trichloroethene	0.9	1	350	6	15	70	365	4.93E-03	1.10E-02	5.42E-05	2.708
Benzene	0.0841	1	350	6	15	70	365	4.61E-04	2.90E-02	1.34E-05	0.667
Toluene	0.0568	1	350	6	15	70	365	3.11E-04			
Xylenes	0.2477	1	350	6	15	70	365	1.36E-03			
Dibenzofuran	0.0071	1	350	6	15	70	365	3.89E-05			
Naphthalene	0.0685	1	350	6	15	70	365	3.75E-04			
2-Methylnaphthalene	0.0808	1	350	6	15	70	365	4.42E-04			
Phenanthrene	0.0096	1	350	6	15	70	365	5.26E-05			
Delta-BHC	3.6E-05	1	350	6	15	70	365	1.97E-07			
Heptachlor	1.3E-05	1	350	6	15	70	365	7.12E-08	4.50E+00	3.21E-07	0.016
Antimony	0.034	1	350	6	15	70	365	1.86E-04			
Arsenic	0.0606	1	350	6	15	70	365	3.32E-04	1.75E+00	5.81E-04	29.007
Barium	2.3	1	350	6	15	70	365	1.26E-02			
Beryllium	0.0571	1	350	6	15	70	365	3.13E-04	4.30E+00	1.35E-03	67.159
Cobalt	0.1182	1	350	6	15	70	365	6.48E-04			
Chromium	1.54	1	350	6	15	70	365	8.44E-03			
Cadmium	0.0414	1	350	6	15	70	365	2.27E-04			
Lead	0.0403	1	350	6	15	70	365	2.21E-04			
Manganese	0.7879	1	350	6	15	70	365	4.32E-03			
Nickel	0.293	1	350	6	15	70	365	1.61E-03			
Silver	0.0028	1	350	6	15	70	365	1.53E-05			
Thallium	0.0028	1	350	6	15	70	365	1.53E-05			
Vanadium	0.886	1	350	6	15	70	365	4.85E-03			
Zinc	1.85	1	350	6	15	70	365	1.01E-02			
										2.00E-03	100.00

Contaminant	Concentration Noncarcinogen (mg/l)	Ingestion Rate (L/day) Child	Exposure Frequency (day/year) Child	Exposure Duration (year) Child	Body Weight (kg) Child	Average Noncarc Time (years)	Days per year (day/yr)	Noncarc Dose (mg/kg-day) Child	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk Child
1,1-Dichloroethene	0.0027	1	350	6	15	6	365	1.73E-04	9.00E-03	1.92E-02	0.02
cis-1,2-Dichloroethene	0.973	1	350	6	15	6	365	6.22E-02	1.00E-02	6.22E+00	6.18
trans-1,2-Dichloroethene	0.176	1	350	6	15	6	365	1.13E-02	2.00E-02	5.63E-01	0.56
Ethylbenzene	0.096	1	350	6	15	6	365	6.14E-03	1.00E-01	6.14E-02	0.06
Methyl tertiary butyl ether	0.052	1	350	6	15	6	365	3.32E-03	5.00E-03	6.65E-01	0.66
Trichloroethene	0.9	1	350	6	15	6	365	5.75E-02	6.00E-03	9.58E+00	9.49
Benzene	0.0841	1	350	6	15	6	365	5.38E-03	3.00E-04	1.79E+01	17.74
Toluene	0.0568	1	350	6	15	6	365	3.63E-03	2.00E-01	1.82E-02	0.02
Xylenes	0.2477	1	350	6	15	6	365	1.58E-02	2.00E+00	7.92E-03	0.01
Dibenzofuran	0.0071	1	350	6	15	6	365	4.54E-04	4.00E-03	1.13E-01	0.11
Naphthalene	0.0685	1	350	6	15	6	365	4.38E-03			
2-Methylnaphthalene	0.0808	1	350	6	15	6	365	5.16E-03			
Phenanthrene	0.0096	1	350	6	15	6	365	6.14E-04			
Delta-BHC	3.6E-05	1	350	6	15	6	365	2.30E-06			
Heptachlor	1.3E-05	1	350	6	15	6	365	8.31E-07	5.00E-04	1.66E-03	0.00
Antimony	0.034	1	350	6	15	6	365	2.17E-03	4.00E-04	5.43E+00	5.38
Arsenic	0.0606	1	350	6	15	6	365	3.87E-03	3.00E-04	1.29E+01	12.79
Barium	2.3	1	350	6	15	6	365	1.47E-01	7.00E-02	2.10E+00	2.08
Beryllium	0.0571	1	350	6	15	6	365	3.65E-03	5.00E-03	7.30E-01	0.72
Cobalt	0.1182	1	350	6	15	6	365	7.56E-03	6.00E-02	1.26E-01	0.12
Chromium	1.54	1	350	6	15	6	365	9.84E-02	5.00E-03	1.97E+01	19.49
Cadmium	0.0414	1	350	6	15	6	365	2.65E-03	5.00E-04	5.29E+00	5.24
Lead	0.0403	1	350	6	15	6	365	2.58E-03			
Manganese	0.7879	1	350	6	15	6	365	5.04E-02	5.00E-03	1.01E+01	9.97
Nickel	0.2933	1	350	6	15	6	365	1.87E-02	2.00E-02	9.37E-01	0.93
Silver	0.0028	1	350	6	15	6	365	1.79E-04	5.00E-03	3.58E-02	0.04
Thallium	0.0028	1	350	6	15	6	365	1.79E-04			
Vanadium	0.886	1	350	6	15	6	365	5.66E-02	7.00E-03	8.09E+00	8.01
Zinc	1.85	1	350	6	15	6	365	1.18E-01	3.00E-01	3.94E-01	0.39
TOTAL										101.0	100.00

File Name: GWI.WQ1

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE DERMAL CONTACT WITH GROUNDWATER CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from dermal contact with groundwater

$$Intake\ (mg/kg{\cdot}day) = \frac{C \times SA \times PC \times ET \times EF \times ED \times CF}{BW \times AT}$$

Where:			
	C	=	Contaminant concentration in groundwater (mg/L)
	SA	=	Exposed skin surface available for contact (cm^2)
	PC	=	Permeability constant (cm/hr)
	ET	=	Exposure time (hr/day)
	EF	=	Exposure frequency (days/year)
	ED	=	Exposure duration (years)
	CF	=	Conversion factor (1 L/1,000 cm^3)
	BW	=	Body weight (kg)
	AT_c	=	Averaging time carcinogen (days)
	AT_{nc}	=	Averaging time noncarcinogen (days)

Risks:

Carcinogens = Intake (mg/kg·day) x CSF $(mg/kg{\cdot}day)^{-1}$
Noncarcinogens = Intake (mg/kg·day)/RfD (mg/kg·day)

Example Carcinogen: Trichloroethene

$$Intake\ (mg/kg{\cdot}day) = \frac{0.9\ mg/L \times 23{,}000\ cm^2 \times 1.6E\text{-}02\ cm/hr \times 0.25\ hr/day \times 350\ days/yr \times 30\ yrs \times 1\ L/1{,}000\ cm^3}{70\ kg \times 25{,}550\ days}$$

= 4.9E-04

Risk = 4.9E-04 mg/kg·day x 1.1E-02 $mg/kg{\cdot}day^{-1}$ = 5.3E-06

Example Noncarcinogen: Trichloroethene

$$Intake\ (mg/kg{\cdot}day) = \frac{0.9\ mg/L \times 23{,}000\ cm^2/hr \times 1.6E\text{-}02\ cm/hr \times 0.25\ hr/day \times 350\ days/yr \times 30\ yrs \times 1\ L/1{,}000\ cm^3}{70\ kg \times 10{,}950\ days}$$

= 1.1E-03

$$Risk = \frac{1.1E\text{-}03\ mg/kg{\cdot}day}{6E\text{-}03\ mg/kg{\cdot}day} = 1.9E\text{-}01$$

Re: Site 35 Future Residential Adult

GROUNDWATER DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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 permeability (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 = child body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	30
DY = days per year (days)	365

Note: Inputs are site and scenario specific

Contaminant	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)	Days per Year (days)	Carc Dose (mg/kg-day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
1,1-Dichloroethene	0.0027	23000	1.60E-02	0.25	350	30	0.001	70	70	365	1.48E-06	6.00E-01	8.79E-07	4.40
cis-1,2-Dichloroethene	0.973	23000	2.10E-02	0.25	350	30	0.001	70	70	365	6.90E-04			
trans-1,2-Dichloroethene	0.176	23000	1.00E-03	0.25	350	30	0.001	70	70	365	5.94E-06			
Ethylbenzene	0.096	23000	2.10E-02	0.25	350	30	0.001	70	70	365	6.81E-05			
Methyl tertiary butyl ether	0.052	23000	1.00E-03	0.25	350	30	0.001	70	70	365	1.78E-06			
Trichloroethene	0.9	23000	2.10E-02	0.25	350	30	0.001	70	70	365	6.39E-04	1.10E-02	7.02E-06	35.29
Benzene	0.0841	23000	1.00E-03	0.25	350	30	0.001	70	70	365	2.84E-06	2.90E-02	8.23E-08	0.41
Toluene	0.0568	23000	2.10E-02	0.25	350	30	0.001	70	70	365	4.03E-05			
Xylenes	0.2477	23000	1.00E-03	0.25	350	30	0.001	70	70	365	8.36E-06			
Dibenzofuran	0.0071	23000	2.10E-02	0.25	350	30	0.001	70	70	365	5.03E-06			
Naphthalene	0.0685	23000	1.00E-03	0.25	350	30	0.001	70	70	365	2.31E-06			
2-Methylnaphthalene	0.0808	23000	2.10E-02	0.25	350	30	0.001	70	70	365	5.71E-05			
Phenanthrene	0.0096	23000	1.00E-03	0.25	350	30	0.001	70	70	365	3.24E-07			
beta-BHC	3.6E-06	23000	1.00E-03	0.25	350	30	0.001	70	70	365	1.22E-09			
Heptachlor	1.3E-05	23000	2.10E-02	0.25	350	30	0.001	70	70	365	9.22E-09	4.50E+00	4.15E-08	0.21
Antimony	0.034	23000	2.10E-02	0.25	350	30	0.001	70	70	365	2.41E-05			
Arsenic	0.0808	23000	1.00E-03	0.25	350	30	0.001	70	70	365	2.05E-06	1.75E+00	3.58E-06	18.00
Barium	2.3	23000	2.10E-02	0.25	350	30	0.001	70	70	365	1.63E-03			
Beryllium	0.0571	23000	1.00E-03	0.25	350	30	0.001	70	70	365	1.93E-06	4.30E+00	8.29E-06	41.66
Cobalt	0.1182	23000	1.00E-03	0.25	350	30	0.001	70	70	365	3.99E-06			
Chromium	1.54	23000	2.10E-02	0.25	350	30	0.001	70	70	365	1.09E-03			
Cadmium	0.0414	23000	1.00E-03	0.25	350	30	0.001	70	70	365	1.40E-06			
Lead	0.0403	23000	2.10E-02	0.25	350	30	0.001	70	70	365	2.86E-05			
Manganese	0.7879	23000	1.00E-03	0.25	350	30	0.001	70	70	365	2.66E-05			
Nickel	0.2933	23000	2.10E-02	0.25	350	30	0.001	70	70	365	2.08E-04			
Silver	0.0028	23000	1.00E-03	0.25	350	30	0.001	70	70	365	9.46E-08			
Thallium	0.0028	23000	2.10E-02	0.25	350	30	0.001	70	70	365	1.98E-06			
Vanadium	0.886	23000	1.00E-03	0.25	350	30	0.001	70	70	365	2.99E-05			
Zinc	1.85	23000	1.00E-03	0.25	350	30	0.001	70	70	365	6.25E-05			
TOTAL													1.99E-05	100.00

	Concentration Noncarcinogen (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	Average Noncarc Time (years)	Days per Year (days)	Noncarc Dose (mg/kg-day) Adult	Reference Dose (mg/kg-day)	Noncarc Risk Adult	Percent Noncarcinogenic Risk Adult
1,1-Dichloroethene	0.0027	23000	1.60E-02	0.25	350	30	0.001	70	30	365	3.70E-06	9.00E-03	3.78E-04	0.04
cis-1,2-Dichloroethene	0.973	23000	1.55E-03	0.25	350	30	0.001	70	30	365	1.19E-04	1.00E-02	1.19E-02	1.18
trans-1,2-Dichloroethene	0.176	23000	1.00E-02	0.25	350	30	0.001	70	30	365	1.39E-04	2.00E-02	6.93E-03	0.69
Ethylbenzene	0.096	23000	1.55E-03	0.25	350	30	0.001	70	30	365	1.17E-05	1.00E-01	1.17E-04	0.01
Methy tertiary butyl ether	0.052	23000	1.00E-02	0.25	350	30	0.001	70	30	365	4.10E-05	5.00E-03	8.19E-03	0.80
Trichloroethene	0.9	23000	7.40E-02	0.25	350	30	0.001	70	30	365	5.25E-03	6.00E-03	8.74E-01	85.34
Benzene	0.0841	23000	1.55E-03	0.25	350	30	0.001	70	30	365	1.03E-05	3.00E-04	3.42E-02	3.34
Toluene	0.0568	23000	4.50E-02	0.25	350	30	0.001	70	30	365	2.01E-04	2.00E-01	1.01E-03	0.10
Xylenes	0.2477	23000	1.55E-03	0.25	350	30	0.001	70	30	365	3.02E-05	2.00E+00	1.51E-05	0.00
Dibenzofuran	0.0071	23000	4.50E-02	0.25	350	30	0.001	70	30	365	2.52E-05	4.00E-03	6.29E-03	0.61
Naphthalene	0.0685	23000	8.00E-02	0.25	350	30	0.001	70	30	365	4.32E-04			
2-Methylnaphthalene	0.0808	23000	8.90E-02	0.25	350	30	0.001	70	30	365	4.38E-04			
Phenanthrene	0.0096	23000	1.00E-03	0.25	350	30	0.001	70	30	365	7.56E-07			
beta-BHC	3.6E-05	23000	1.00E-03	0.25	350	30	0.001	70	30	365	2.84E-09			
Heptachlor	1.3E-05	23000	1.00E-03	0.25	350	30	0.001	70	30	365	1.02E-09	5.00E-04	2.05E-06	0.00
Antimony	0.034	23000	1.00E-03	0.25	350	30	0.001	70	30	365	2.68E-06	4.00E-04	6.70E-03	0.65
Arsenic	0.0808	23000	1.00E-03	0.25	350	30	0.001	70	30	365	4.77E-06	3.00E-04	1.59E-02	1.55
Barium	2.3	23000	1.00E-03	0.25	350	30	0.001	70	30	365	1.81E-04	7.00E-02	2.59E-03	0.25
Beryllium	0.0571	23000	1.00E-03	0.25	350	30	0.001	70	30	365	4.50E-06	5.00E-03	9.00E-04	0.09
Cobalt	0.1182	23000	1.00E-03	0.25	350	30	0.001	70	30	365	9.31E-06	6.00E-02	1.55E-04	0.02
Chromium	1.54	23000	1.00E-03	0.25	350	30	0.001	70	30	365	1.21E-04	5.00E-03	2.43E-02	2.37
Cadmium	0.0414	23000	1.00E-03	0.25	350	30	0.001	70	30	365	3.26E-06	5.00E-04	6.52E-03	0.64
Lead	0.0403	23000	1.00E-03	0.25	350	30	0.001	70	30	365	3.17E-06			
Manganese	0.7879	23000	1.00E-03	0.25	350	30	0.001	70	30	365	6.21E-05	5.00E-03	1.24E-02	1.21
Nickel	0.2933	23000	1.00E-03	0.25	350	30	0.001	70	30	365	2.31E-05	2.00E-02	1.16E-03	0.11
Silver	0.0028	23000	1.00E-03	0.25	350	30	0.001	70	30	365	2.21E-07	5.00E-03	4.41E-05	0.00
Thallium	0.0028	23000	1.00E-03	0.25	350	30	0.001	70	30	365	2.21E-07			
Vanadium	0.886	23000	1.00E-03	0.25	350	30	0.001	70	30	365	6.98E-05	7.00E-03	9.97E-03	0.97
Zinc	1.85	23000	1.00E-03	0.25	350	30	0.001	70	30	365	1.46E-04	3.00E-01	4.86E-04	0.05
													1.02E+00	100.00

File Name: GWDC.WQ2

GROUNDWATER DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 36)
REMEDIAL INVESTIGATION CTO-0232
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 permeability (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

Note: Inputs are site and scenario specific

Contaminant	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 (years)	Days per Year (days)	Carc Dose (mg/kg-day) Child	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child
1,1-Dichloroethene	0.0027	10000	1.60E-02	0.25	350	6	0.001	15	70	365	5.92E-07	6.00E-01	3.55E-07	0.34
cis-1,2-Dichloroethene	0.973	10000	2.10E-02	0.25	350	6	0.001	15	70	365	2.80E-04			
trans-1,2-Dichloroethene	0.178	10000	2.10E-02	0.25	350	6	0.001	15	70	365	5.06E-05			
Ethylbenzene	0.096	10000	2.10E-02	0.25	350	6	0.001	15	70	365	2.76E-05			
Methyl tertiary butyl ether	0.052	10000	2.10E-02	0.25	350	6	0.001	15	70	365	1.50E-05			
Trichloroethene	0.9	10000	2.10E-02	0.25	350	6	0.001	15	70	365	2.59E-04	1.10E-02	2.85E-06	2.71
Benzene	0.0841	10000	2.10E-02	0.25	350	6	0.001	15	70	365	2.42E-05	2.90E-02	7.02E-07	0.67
Toluene	0.0568	10000	2.10E-02	0.25	350	6	0.001	15	70	365	1.63E-05			
Xylenes	0.2477	10000	2.10E-02	0.25	350	6	0.001	15	70	365	7.13E-05			
Dibenzofuran	0.0071	10000	2.10E-02	0.25	350	6	0.001	15	70	365	2.04E-06			
Naphthalene	0.0685	10000	2.10E-02	0.25	350	6	0.001	15	70	365	1.97E-05			
2-Methylnaphthalene	0.0808	10000	2.10E-02	0.25	350	6	0.001	15	70	365	2.32E-05			
Phenanthrene	0.0096	10000	2.10E-02	0.25	350	6	0.001	15	70	365	2.76E-06			
Delta-BHC	3.6E-06	10000	2.10E-02	0.25	350	6	0.001	15	70	365	1.04E-09			
Heptachlor	1.3E-05	10000	2.10E-02	0.25	350	6	0.001	15	70	365	3.74E-09	4.50E+00	1.68E-08	0.02
Antimony	0.034	10000	2.10E-02	0.25	350	6	0.001	15	70	365	9.78E-09			
Arsenic	0.0808	10000	2.10E-02	0.25	350	6	0.001	15	70	365	1.74E-05	1.75E+00	3.05E-05	29.04
Barium	2.3	10000	2.10E-02	0.25	350	6	0.001	15	70	365	6.62E-04			
Beryllium	0.0571	10000	2.10E-02	0.25	350	6	0.001	15	70	365	1.64E-05	4.30E+00	7.06E-05	67.23
Cobalt	0.1182	10000	2.10E-02	0.25	350	6	0.001	15	70	365	3.40E-05			
Chromium	1.54	10000	2.10E-02	0.25	350	6	0.001	15	70	365	4.43E-04			
Cadmium	0.0414	10000	2.10E-02	0.25	350	6	0.001	15	70	365	1.19E-05			
Lead	0.0403	10000	2.10E-02	0.25	350	6	0.001	15	70	365	1.16E-05			
Manganese	0.7879	10000	2.10E-02	0.25	350	6	0.001	15	70	365	2.27E-04			
Nickel	0.2933	10000	2.10E-02	0.25	350	6	0.001	15	70	365	8.44E-05			
Silver	0.0028	10000	2.10E-02	0.25	350	6	0.001	15	70	365	8.05E-07			
Thallium	0.0028	10000	1.00E-03	0.25	350	6	0.001	15	70	365	3.84E-08			
Vanadium	0.886	10000	1.00E-03	0.25	350	6	0.001	15	70	365	1.21E-05			
Zinc	1.85	10000	1.00E-03	0.25	350	6	0.001	15	70	365	2.53E-05			
TOTAL													1.05E-04	100.00

	Concentration Noncarcinogen (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	Average Noncarc Time (years)	Days per Year (days)	Noncarc Dose (mg/kg-day) Child	Reference Dose (mg/kg-day)	Noncarc Risk Child	Percent Noncarcinogenic Risk Child
1,1-Dichloroethene	0.0027	10000	1.60E-02	0.25	350	6	0.001	15	6	365	8.92E-06	9.00E-03	7.67E-04	0.04
cis-1,2-Dichloroethene	0.973	10000	1.55E-03	0.25	350	6	0.001	15	6	365	2.41E-04	1.00E-02	2.41E-02	1.16
trans-1,2-Dichloroethene	0.178	10000	1.00E-02	0.25	350	6	0.001	15	6	365	2.81E-04	2.00E-02	1.41E-02	0.68
Ethylbenzene	0.096	10000	1.55E-03	0.25	350	6	0.001	15	6	365	2.38E-05	1.00E-01	2.38E-04	0.01
Methyl tertiary butyl ether	0.052	10000	1.00E-02	0.25	350	6	0.001	15	6	365	8.31E-05	5.00E-03	1.66E-02	0.80
Trichloroethene	0.9	10000	7.40E-02	0.25	350	6	0.001	15	6	365	1.08E-02	6.00E-03	1.77E+00	85.34
Benzene	0.0841	10000	1.55E-03	0.25	350	6	0.001	15	6	365	2.08E-05	3.00E-04	6.94E-02	3.34
Toluene	0.0568	10000	4.50E-02	0.25	350	6	0.001	15	6	365	4.08E-04	2.00E-01	2.04E-03	0.10
Xylenes	0.247	10000	1.55E-03	0.25	350	6	0.001	15	6	365	6.12E-05	2.00E+00	3.06E-05	0.00
Dibenzofuran	0.0071	10000	4.50E-02	0.25	350	6	0.001	15	6	365	5.11E-05	4.00E-03	1.28E-02	0.61
Naphthalene	0.0685	10000	8.00E-02	0.25	350	6	0.001	15	6	365	8.76E-04			
2-Methylnaphthalene	0.0808	10000	6.90E-02	0.25	350	6	0.001	15	6	365	8.89E-04			
Phenanthrene	0.0096	10000	1.00E-03	0.25	350	6	0.001	15	6	365	1.53E-06			
Delta-BHC	3.6E-06	10000	1.00E-03	0.25	350	6	0.001	15	6	365	5.75E-09			
Heptachlor	1.3E-05	10000	1.00E-03	0.25	350	6	0.001	15	6	365	2.08E-09	5.00E-04	4.16E-06	0.00
Antimony	0.034	10000	1.00E-03	0.25	350	6	0.001	15	6	365	5.43E-08	4.00E-04	1.36E-02	0.65
Arsenic	0.0808	10000	1.00E-03	0.25	350	6	0.001	15	6	365	9.66E-08	3.00E-04	3.22E-02	1.55
Barium	2.3	10000	1.00E-03	0.25	350	6	0.001	15	6	365	3.68E-04	7.00E-02	5.25E-03	0.25
Beryllium	0.0571	10000	1.00E-03	0.25	350	6	0.001	15	6	365	9.13E-06	5.00E-03	1.83E-03	0.09
Cobalt	0.1182	10000	1.00E-03	0.25	350	6	0.001	15	6	365	1.89E-05	6.00E-02	3.15E-04	0.02
Chromium	1.54	10000	1.00E-03	0.25	350	6	0.001	15	6	365	2.46E-04	5.00E-03	4.92E-02	2.37
Cadmium	0.0414	10000	1.00E-03	0.25	350	6	0.001	15	6	365	6.62E-06	5.00E-04	1.32E-02	0.64
Lead	0.0403	10000	1.00E-03	0.25	350	6	0.001	15	6	365	6.44E-06			
Manganese	0.7879	10000	1.00E-03	0.25	350	6	0.001	15	6	365	1.26E-04	5.00E-03	2.52E-02	1.21
Nickel	0.2933	10000	1.00E-03	0.25	350	6	0.001	15	6	365	4.69E-05	2.00E-02	2.34E-03	0.11
Silver	0.0028	10000	1.00E-03	0.25	350	6	0.001	15	6	365	4.47E-07	5.00E-03	8.95E-05	0.00
Thallium	0.0028	10000	1.00E-03	0.25	350	6	0.001	15	6	365	4.47E-07			
Vanadium	0.886	10000	1.00E-03	0.25	350	6	0.001	15	6	365	1.42E-04	7.00E-03	2.02E-02	0.97
Zinc	1.85	10000	1.00E-03	0.25	350	6	0.001	15	6	365	2.96E-04	3.00E-01	9.86E-04	0.05
													2.08E+00	100.00

File Name: GWDC.WQ1

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE INHALATION OF VOLATILE ORGANICS CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from the inhalation of volatile organics

$$Intake\ (mg/kg{\cdot}day) = \frac{Cs\ x\ IR\ x\ ET\ x\ EF\ x\ ED\ x\ 1.0}{BW\ x\ AT}$$

Where:			
	Cs	=	Shower air concentration (mg/m^3)
	IR	=	Inhalation rate (m^3/hr)
	ET	=	Exposure time (hrs/day)
	EF	=	Exposure frequency (days/year)
	ED	=	Exposure duration (years)
	1.0	=	Absorbed fraction
	BW	=	Body weight (kg)
	AT	=	Averaging time (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: Trichloroethene

$$Intake\ (mg/kg{\cdot}day) = \frac{1.54\ mg/m^3\ x\ 0.6\ m^3/hr\ x\ 0.25\ hrs/d\ x\ 350\ days/yr\ x\ 30\ yrs\ x\ 1.0}{70\ kg\ x\ 25{,}550\ days}$$

= 1.35E-03

Risk = 1.35E-03 mg/kg·day x 6E-03 $mg/kg{\cdot}day^{-1}$ = 8.1E-06

Example Noncarcinogen: Ethylbenzene

$$Intake\ (mg/kg{\cdot}day) = \frac{0.12\ mg/m^3\ x\ 0.6\ m^3/hr\ x\ 0.25\ hrs/d\ x\ 350\ days/yr\ x\ 30\ yrs\ x\ 1.0}{70\ kg\ x\ 10{,}950\ days}$$

= 2.5E-04

$$Risk = \frac{2.5E\text{-}04\ mg/kg{\cdot}day}{2.9E\text{-}01\ mg/kg{\cdot}day} = 8.6E\text{-}04$$

VOLATILE INHALATION EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULTS AND CHILD

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PURPOSE: TO ESTABLISH AIR CONCENTRATIONS OF VOLATILE ORGANIC CONSTITUENTS (VOCs) ASSOCIATED WITH SHOWERING AND THE SUBSEQUENT FUTURE HYPOTHETICAL INHALATION EXPOSURE OF ADULTS AND ADOLESCENTS.

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PERTINANT EQUATIONS:

Cs = Cinf[1+(1/(kts))(exp(-kts)-1)]
where:
Cs = SHOWER AIR CONCENTRATION (mg/m^3)
Cinf = ASSYMPTOTIC CONCENTRATION IN AIR (mg/m^3)
ts = SHOWERING TIME (min)
k = RATE CONSTANT (min^-1)

Cinf = [(E)(Fw)(Ct/1000)]/Fa
where:
E = THE EFFICIENCY OF RELEASE - WATER TO AIR
Fw = THE FLOW RATE OF WATER IN THE SHOWER (L/min)
Ct = CONSTITUENT CONCENTRATION IN SHOWER WATER (ug/L)
Fa = FLOW RATE OF AIR IN THE SHOWER (m^3/min)

k = Fa/Vb
where:
Vb = THE VOLUME OF AN AVERAGE BATHROOM (m^3)

EI = (Etce)(HI)/(Htce)
where:
EI = THE RELATIVE EFFICIENCY OF RELEASE OF CHEMICAL I vs. TCE
Etce = THE EFFICIENCY OF RELEASE OF TCE
HI = THE HENRY's CONSTANT FOR CHEMICAL I (m^3 atm/mol)
Htce = THE HENRY's CONSTANT FOR TCE (m^3 atm/mol)

CDI = (Cs)(IR)(ET)(EF)(ED)(1.0) / (BW)(AT)
where:
IR = The inhalation rate (m^3/hr)
ET = The exposure time (hrs/d)
EF = Exposure frequency (d/yr)
ED = Exposure duration (yrs)
1.0 = Absorbed fraction
BW = Body weight (Kg)
AT = The averaging time (d)

ICR = CDI * CSF
where;
CSF = The carcinogenic slope factor (Kg*d/

HI = CDI / RfC
where:
RfC = The reference concentration (mg/Kg*

ADULT AND CHILD EXPOSURE TO VOCs WHILE SHOWERING

CONSTITUENTS	Etce	Htce	Hi
		(m^3 atm/mol)	(m^3 atm/mol)
1,1-dichloroethene	0.6	9.10E-03	1.90E-01
trichloroethene	0.6	9.10E-03	9.10E-03
benzene	0.6	9.10E-03	5.50E-03
toluene	0.6	9.10E-03	6.60E-03
ethylbenzene	0.6	9.10E-03	6.60E-03
methyl tertiary butyl ether *	0.6	9.10E-03	5.90E-03
heptachlor	0.6	9.10E-03	6.60E-03

CONSTITUENTS	IR*	IR	ET	EF
	(m^3/hr)	(m^3/hr)	(hrs/d)	(d/yrs)
1,1-dichloroethene	0.39	0.83	0.25	350
trichloroethene	0.39	0.83	0.25	350
benzene	0.39	0.83	0.25	350
toluene	0.39	0.83	0.25	350
ethylbenzene	0.39	0.83	0.25	350
methyl tertiary butyl ether *	0.39	0.83	0.25	350
heptachlor	0.39	0.83	0.25	350

* Henry's Constant (Hi) is derived using equation 5.6 of EPA 440/4-81-014

ADULT AND CHILD EXPOSURE TO VOCs WHILE SHOWERING

CONSTITUENTS	Ei	Fa	Vb	k
		(m^3/min)	(m^3)	(min^-1)
1,1-dichloroethene	12.5275	2.4	12	0.2
trichloroethene	0.6000	2.4	12	0.2
benzene	0.3626	2.4	12	0.2
toluene	0.4352	2.4	12	0.2
ethylbenzene	0.4352	2.4	12	0.2
methyl tertiary butyl ether *	0.3890	2.4	12	0.2
heptachlor	0.4352	2.4	12	0.2

CONSTITUENTS	ED	ED*	BW	BW*
	(yrs)	(yrs)	(Kg)	(Kg)
1,1-dichloroethene	30	6	70	15
trichloroethene	30	6	70	15
benzene	30	6	70	15
toluene	30	6	70	15
ethylbenzene	30	6	70	15
methyl tertiary butyl ether *	30	6	70	15
heptachlor	30	6	70	15

* Henry's Constant (Hi) is derived using equation 5.6 of EPA 440/4-81-014

ADULT AND CHILD EXPOSURE TO VOCs WHILE SHOWERING

CONSTITUENTS	Ct (ug/L)	Fw (L/min)	Cinf (mg/m^3)	ts (min)
1,1-dichloroethene	2.7	10	0.141	15
trichloroethene	900	10	2.250	15
benzene	84	10	0.127	15
toluene	56.8	10	0.103	15
ethylbenzene	96	10	0.174	15
methyl tertiary butyl ether *	52	10	0.084	15
heptachlor	0.013	10	0.000	15

CONSTITUENTS	AT (CARC) (Kg)	AT (NCARC) (Kg)	AT* (NCARC) (Kg)	DOSE (CARC) (mg/Kg d)
1,1-dichloroethene	25550	10950	2190	1.17E-04
trichloroethene	25550	10950	2190	1.87E-03
benzene	25550	10950	2190	1.06E-04
toluene	25550	10950	2190	8.57E-05
ethylbenzene	25550	10950	2190	1.45E-04
methyl tertiary butyl ether *	25550	10950	2190	7.02E-05
heptachlor	25550	10950	2190	1.96E-08

* Henry's Constant (Hi) is derived using equation 5.6 of EPA 440/4-81-014

ADULT AND CHILD EXPOSURE TO VOCs WHILE SHOWERING

CONSTITUENTS	Cs (mg/m^3)
1,1-dichloroethene	0.09630
trichloroethene	1.53735
benzene	0.08672
toluene	0.07037
ethylbenzene	0.11893
methyl tertiary butyl ether *	0.05759
heptachlor	0.00002

CONSTITUENTS	DOSE (NCARC) (mg/Kg d)	DOSE* (CARC) (mg/Kg d)	DOSE* (NCARC) (mg/Kg d)	CSF (mg/Kg d)-1
1,1-dichloroethene	2.74E-04	5.14E-05	6.00E-04	0.17
trichloroethene	4.37E-03	8.21E-04	9.58E-03	
benzene	2.47E-04	4.63E-05	5.41E-04	0.029
toluene	2.00E-04	3.76E-05	4.39E-04	
ethylbenzene	3.38E-04	6.35E-05	7.41E-04	
methyl tertiary butyl ether *	1.64E-04	3.08E-05	3.59E-04	
heptachlor	4.58E-08	8.60E-09	1.00E-07	

* Henry's Constant (Hi) is derived using equation 5.6 of EPA 440/4-81-014

ADULT AND CHILD EXPOSURE TO VOCs WHILE SHOWERING

CONSTITUENTS

1,1-dichloroethene
trichloroethene
benzene
toluene
ethylbenzene
methyl tertiary butyl ether *
heptachlor

CONSTITUENTS	RfC (mg/Kg d)	ICR	ICR*	HI	HI*
1,1-dichloroethene		1.99E-05	8.75E-06	0.00000	0.00000
trichloroethene	0.006	0.00E+00	0.00E+00	0.00003	0.00006
benzene	0.006	3.06E-06	1.34E-06	0.00000	0.00000
toluene	0.114	0.00E+00	0.00E+00	0.00002	0.00005
ethylbenzene	0.286	0.00E+00	0.00E+00	0.00010	0.00021
methyl tertiary butyl ether *	0.857	0.00E+00	0.00E+00	0.00014	0.00031
heptachlor	4.55	0.00E+00	0.00E+00	0.00000	0.00000
		2.3E-05	1.0E-05	2.9E-03	6.3E-04

* Henry's Constant (Hi) is derived using equation 5.6 of EPA 440/4-81-014

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE INGESTION OF SURFACE WATER CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from ingestion of surface water

$$Intake\ (mg/kg{\cdot}day) = \frac{C \times IR \times ET \times EF \times ED}{BW \times AT \times DY}$$

Where:	C	=	Contaminant concentration in surface water (mg/L)
	CR	=	Contact rate (L/hr)
	ET	=	Exposure time (hrs/event)
	EF	=	Exposure frequency (events/year)
	ED	=	Exposure duration (years)
	BW	=	Body weight (kg)
	AT	=	Averaging time (years)
	DY	=	Days per year (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: Antimony

$$Intake\ (mg/kg{\cdot}day) = \frac{0.0039\ mg/L \times 0.05\ L/hr \times 2.6\ hrs/event \times 20\ events/yr \times 30\ years}{70\ kg \times 30\ years \times 365\ days/yr}$$

$$= 3.97E\text{-}07$$

$$Risk = \frac{3.97E\text{-}07\ mg/kg{\cdot}day}{4.0E\text{-}04\ mg/kg{\cdot}day} = 9.9E\text{-}04$$

Re: Site 35 Current Residential Adult

SURFACE WATER INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT RECREATIONAL ADULT

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)		
IR = ingestion rate (Liter/hour)		0.05
ET = adult exposure time (hours/event)		2.6
EF = adult exposure frequency (events/yr)		20
ED = adult exposure duration (yrs)		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 (days)		365
CSF = cancer slope factor (mg/kg-day)-1	specific	
RfD = reference dose (mg/kg-day)	specific	

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/l)	Contact Rate (l/hour)	Exposure Time (hrs/event) Adult	Exposure Frequency (events/yr) Adult	Exposure Duration (years) Adult	Body Weight (kg) Adult	Average Carc Time (years)	Days per Year (days)	Carc Dose (mg/kg-day) Adult	Cancer Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Antimony	0.0039	0.05	2.6	20	30	70	70	365	1.70E-07			
Arsenic	0.0015	0.05	2.6	20	30	70	70	365	6.54E-08	1.75E+00	1.14E-07	100.000
Chromium	0.0012	0.05	2.6	20	30	70	70	365	5.23E-08			
Cobalt	0.0111	0.05	2.6	20	30	70	70	365	4.84E-07			
Lead	0.0466	0.05	2.6	20	30	70	70	365	2.03E-06			
Manganese	0.0648	0.05	2.6	20	30	70	70	365	2.83E-06			
Mercury	0.0032	0.05	2.6	20	30	70	70	365	1.40E-07			
Thallium	0.0006	0.05	2.6	20	30	70	70	365	2.62E-08			
Vanadium	0.0116	0.05	2.6	20	30	70	70	365	5.06E-07			
Zinc	0.129	0.05	2.6	20	30	70	70	365	5.63E-06			
TOTAL											1.14E-07	100.00

Contaminant	Concentration Noncarcinogen (mg/l)	Contact Rate (l/hour)	Exposure Time (hrs/event) Adult	Exposure Frequency (events/yr) Adult	Exposure Duration (years) Adult	Body Weight (kg) Adult	Average Noncarc (years)	Days per Year (days)	Noncarc Dose (mg/kg-day) Adult	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Antimony	0.0039	0.05	2.6	20	30	70	30	365	3.97E-07	4.00E-04	9.92E-04	24.85
Arsenic	0.0015	0.05	2.6	20	30	70	30	365	1.53E-07	3.00E-04	5.09E-04	12.74
Chromium	0.0012	0.05	2.6	20	30	70	30	365	1.22E-07	5.00E-03	2.44E-05	0.61
Cobalt	0.0111	0.05	2.6	20	30	70	30	365	1.13E-06	6.00E-02	1.88E-05	0.47
Lead	0.0466	0.05	2.6	20	30	70	30	365	4.74E-06			
Manganese	0.0648	0.05	2.6	20	30	70	30	365	6.59E-06	5.00E-03	1.32E-03	33.03
Mercury	0.0032	0.05	2.6	20	30	70	30	365	3.26E-07	3.00E-04	1.09E-03	27.19
Thallium	0.0006	0.05	2.6	20	30	70	30	365	6.11E-08			
Vanadium	0.0116	0.05	2.6	20	30	70	30	365	1.18E-06	7.00E-03		
Zinc	0.129	0.05	2.6	20	30	70	30	365	1.31E-05	3.00E-01	4.38E-05	1.10
TOTAL											3.99E-03	100.00

FILE NAME: SWI.WQ2

SURFACE WATER INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT RECREATIONAL CHILD

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)		
IR = ingestion rate (Liter/hour)		0.05
ET = child exposure time (hours/event)		2.6
EF = child exposure frequency (events/yr)		20
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	

Note: Inputs are scenario and site specific

Contaminant	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	Average Carc Time (years)	Days per Year (days)	Carc Dose (mg/kg-day) Child	Cancer Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child
Antimony	0.0039	0.05	2.6	20	6	15	70	365	1.59E-07			
Arsenic	0.0015	0.05	2.6	20	6	15	70	365	6.11E-08	1.75E+00	1.07E-07	100.000
Chromium	0.0012	0.05	2.6	20	6	15	70	365	4.88E-08			
Cobalt	0.0111	0.05	2.6	20	6	15	70	365	4.52E-07			
Lead	0.0486	0.05	2.6	20	6	15	70	365	1.90E-06			
Manganese	0.0648	0.05	2.6	20	6	15	70	365	2.64E-06			
Mercury	0.0032	0.05	2.6	20	6	15	70	365	1.30E-07			
Thallium	0.0006	0.05	2.6	20	6	15	70	365	2.44E-08			
Vanadium	0.0116	0.05	2.6	20	6	15	70	365	4.72E-07			
Zinc	0.129	0.05	2.6	20	6	15	70	365	5.25E-06			
TOTAL											1.07E-07	100.00

Contaminant	Concentration Noncarcinogen (mg/l)	Contact Rate (l/hour)	Exposure Time (hrs/event) Child	Exposure Frequency (events/yr) Child	Exposure Duration (years) Child	Body Weight (kg) Child	Average Noncarc (years)	Days per Year (days)	Noncarc Dose (mg/kg-day) Child	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk Child
Antimony	0.0039	0.05	2.6	20	6	15	6	365	1.85E-06	4.00E-04	4.63E-03	62.48
Arsenic	0.0015	0.05	2.6	20	6	15	6	365	7.12E-07	3.00E-04	2.37E-03	32.04
Chromium	0.0012	0.05	2.6	20	6	15	6	365	5.70E-07	5.00E-03	1.14E-04	1.54
Cobalt	0.0111	0.05	2.6	20	6	15	6	365	5.27E-06	6.00E-02	8.79E-05	1.19
Lead	0.0486	0.05	2.6	20	6	15	6	365	2.21E-05		0.00E+00	0.00
Manganese	0.0648	0.05	2.6	20	6	15	6	365	3.08E-05	5.00E-03		
Mercury	0.0032	0.05	2.6	20	6	15	6	365	1.52E-06	3.00E-04		
Thallium	0.0006	0.05	2.6	20	6	15	6	365	2.85E-07			
Vanadium	0.0116	0.05	2.6	20	6	15	6	365	5.51E-06	7.00E-03		
Zinc	0.129	0.05	2.6	20	6	15	6	365	6.13E-05	3.00E-01	2.04E-04	2.76
TOTAL											7.41E-03	100.00

FILE NAME: SWI.WQ1

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE DERMAL CONTACT WITH SURFACE WATER CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from dermal contact with surface water

$$Intake\ (mg/kg\cdot day) = \frac{C \times SA \times PC \times ET \times EF \times ED \times CF}{BW \times AT}$$

Where:			
	C	=	Contaminant concentration in groundwater (mg/L)
	SA	=	Exposed skin surface available for contact (cm^2)
	PC	=	Permeability constant (cm/hr)
	ET	=	Exposure time (hr/day)
	EF	=	Exposure frequency (days/year)
	ED	=	Exposure duration (years)
	CF	=	Conversion factor (1 L/1,000 cm^3)
	BW	=	Body weight (kg)
	AT_c	=	Averaging time carcinogen (days)
	AT_{nc}	=	Averaging time noncarcinogen (days)

Risks:

Carcinogens = Intake (mg/kg·day) x CSF $(mg/kg\cdot day)^{-1}$
Noncarcinogens = Intake (mg/kg·day)/RfD (mg/kg·day)

Example Carcinogen: No Carcinogenic COPCs in Surface Water

Example Noncarcinogen: Antimony

$$Intake\,(mg/kg\cdot day) = \frac{0.0039\,mg/L \times 11{,}500\,cm^2 \times 1.0E\text{-}03\,cm\,hr \times 2.6\,hr/day \times 20\,days/yr \times 30\,yrs \times 1\,L/1{,}000\,cm^3}{70\,kg \times 10{,}950\,days}$$

$$= 9.1E\text{-}08$$

$$Risk = \frac{9.1E\text{-}08\ mg/kg\cdot day}{4.0E\text{-}04\ mg/kg\cdot day} = 2.3E\text{-}04$$

Re: Site 35 Current Residential Adult

SURFACE WATER DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION - CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT RECREATIONAL ADULT

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 = adult skin surface available for contact (cm2)	11500
PC = contaminant specific dermal permability (cm/hr)	Specific
ET = adult exposure time (hours/day)	2.6
EF = adult exposure frequency (days/yr)	20
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
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are site and scenario specific

Contaminant	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)	Days per Year (days)	Carc Dose (mg/kg-day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Antimony	0.0039	11500	1.0E-03	2.6	20	30	0.001	70	70	365	3.91E-08			
Arsenic	0.0015	11500	1.0E-03	2.6	20	30	0.001	70	70	365	1.50E-08	1.75E+00	8.60E-09	100.00
Chromium	0.0012	11500	1.0E-03	2.6	20	30	0.001	70	70	365	1.20E-08			
Cobalt	0.0111	11500	1.0E-03	2.6	20	30	0.001	70	70	365	1.11E-07			
Lead	0.0466	11500	1.0E-03	2.6	20	30	0.001	70	70	365	4.67E-07			
Manganese	0.0648	11500	1.0E-03	2.6	20	30	0.001	70	70	365	6.50E-07			
Mercury	0.0032	11500	1.0E-03	2.6	20	30	0.001	70	70	365	3.21E-08			
Thallium	0.0006	11500	1.0E-03	2.6	20	30	0.001	70	70	365	6.02E-09			
Vanadium	0.0116	11500	1.0E-03	2.6	20	30	0.001	70	70	365	1.16E-07			
Zinc	0.129	11500	1.0E-03	2.6	20	30	0.001	70	70	365	1.29E-06			
TOTAL													8.60E-09	100.00

Contaminant	Concentration Noncarcinogen (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	Average Noncarc Time (years) Adult	Days per Year (days)	Noncarc Dose (mg/kg-day) Adult	Reference Dose (mg/kg-day)	Noncarc Risk Adult	Percent Noncarcinogenic Risk Adult
Antimony	0.0039	11500	1.0E-03	2.6	20	30	0.001	70	30	365	9.13E-08	4.00E-04	2.28E-04	23.85
Arsenic	0.0015	11500	1.0E-03	2.6	20	30	0.001	70	30	365	3.51E-08	3.00E-04	1.17E-04	12.23
Chromium	0.0012	11500	1.0E-03	2.6	20	30	0.001	70	30	365	2.81E-08	5.00E-03	5.62E-06	0.59
Cobalt	0.0111	11500	1.0E-03	2.6	20	30	0.001	70	30	365	2.60E-07	6.00E-02	4.33E-06	0.45
Lead	0.0466	11500	1.0E-03	2.6	20	30	0.001	70	30	365	1.09E-06			
Manganese	0.0648	11500	1.0E-03	2.6	20	30	0.001	70	30	365	1.52E-06	5.00E-03	3.03E-04	31.70
Mercury	0.0032	11500	1.0E-03	2.6	20	30	0.001	70	30	365	7.49E-08	3.00E-04	2.50E-04	26.09
Thallium	0.0006	11500	1.0E-03	2.6	20	30	0.001	70	30	365	1.40E-08			
Vanadium	0.0116	11500	1.0E-03	2.6	20	30	0.001	70	30	365	2.71E-07	7.00E-03	3.88E-05	4.05
Zinc	0.129	11500	1.0E-03	2.6	20	30	0.001	70	30	365	3.02E-06	3.00E-01	1.01E-05	1.05
TOTAL													9.57E-04	100.00

File Name: SWDC.WQ2

SURFACE WATER DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION - CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT RECREATIONAL CHILD

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)	4600
PC = contaminant specific dermal permability (cm/hr)	Specific
ET = child exposure time (hours/day)	2.6
EF = child exposure frequency (days/yr)	20
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

Note: Inputs are site and scenario specific

Contaminant	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 (years)	Days per Year (days)	Carc Dose (mg/kg-day) Child	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child
Antimony	0.0039	4600	1.0E-03	2.6	20	6	0.001	15	70	365	1.46E-08			
Arsenic	0.0015	4600	1.0E-03	2.6	20	6	0.001	15	70	365	5.62E-09	1.75E+00	3.21E-09	100.00
Chromium	0.0012	4600	1.0E-03	2.6	20	6	0.001	15	70	365	4.49E-09			
Cobalt	0.0111	4600	1.0E-03	2.6	20	6	0.001	15	70	365	4.16E-08			
Lead	0.0466	4600	1.0E-03	2.6	20	6	0.001	15	70	365	1.75E-07			
Manganese	0.0648	4600	1.0E-03	2.6	20	6	0.001	15	70	365	2.43E-07			
Mercury	0.0032	4600	1.0E-03	2.6	20	6	0.001	15	70	365	1.20E-08			
Thallium	0.0006	4600	1.0E-03	2.6	20	6	0.001	15	70	365	2.25E-09			
Vanadium	0.0116	4600	1.0E-03	2.6	20	6	0.001	15	70	365	4.34E-08			
Zinc	0.129	4600	1.0E-03	2.6	20	6	0.001	15	70	365	4.83E-07			
TOTAL													3.21E-09	100.00

Contaminant	Concentration Noncarcinogen (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	Average Noncarc Time (years)	Days per Year (days)	Noncarc Dose (mg/kg-day) Child	Reference Dose (mg/kg-day)	Noncarc Risk Child	Percent Noncarcinogenic Risk Child
Antimony	0.0039	4600	1.0E-03	2.6	20	6	0.001	15	6	365	1.70E-07	4.00E-04	4.26E-04	23.85
Arsenic	0.0015	4600	1.0E-03	2.6	20	6	0.001	15	6	365	6.55E-08	3.00E-04	2.18E-04	12.23
Chromium	0.0012	4600	1.0E-03	2.6	20	6	0.001	15	6	365	5.24E-08	5.00E-03	1.05E-05	0.59
Cobalt	0.0111	4600	1.0E-03	2.6	20	6	0.001	15	6	365	4.85E-07	6.00E-02	8.08E-06	0.45
Lead	0.0466	4600	1.0E-03	2.6	20	6	0.001	15	6	365	2.04E-06			
Manganese	0.0648	4600	1.0E-03	2.6	20	6	0.001	15	6	365	2.83E-06	5.00E-03	5.66E-04	31.70
Mercury	0.0032	4600	1.0E-03	2.6	20	6	0.001	15	6	365	1.40E-07	3.00E-04	4.66E-04	26.09
Thallium	0.0006	4600	1.0E-03	2.6	20	6	0.001	15	6	365	2.62E-08			
Vanadium	0.0116	4600	1.0E-03	2.6	20	6	0.001	15	6	365	5.07E-07	7.00E-03	7.24E-05	4.05
Zinc	0.129	4600	1.0E-03	2.6	20	6	0.001	15	6	365	5.64E-06	3.00E-01	1.88E-05	1.05
TOTAL													1.79E-03	100.00

File Name: SWDC.WQ1

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE INGESTION OF SEDIMENT CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from ingestion of sediment

$$Intake\ (mg/kg{\cdot}day) = \frac{C\ x\ IR\ x\ CF\ X\ EF\ x\ ED}{BW\ x\ AT}$$

Where:			
	C	=	Contaminant concentration in sediment (mg/kg)
	IR	=	Ingestion rate (mg/day)
	CF	=	Conversion factor for kg to mg (mg/day)
	EF	=	Exposure frequency (days/year)
	ED	=	Exposure duration (years)
	BW	=	Body weight (kg)
	AT	=	Averaging time (years)

Risks:

Carcinogens = Intake (mg/kg·day) x CSF $(mg/kg{\cdot}day)^{-1}$
Noncarcinogens = Intake (mg/kg·day)/RfD (mg/kg·day)

Example Carcinogen: 4,4'-DDT

$$Intake\ (mg/kg{\cdot}day) = \frac{0.023\ mg/kg\ x\ 100\ mg/day\ x\ 1.0E\text{-}06\ x\ 20\ days/yr\ x\ 30\ yrs}{70\ kg\ x\ 25{,}550\ days}$$

= 7.7E-10

Risk = 7.7E-10 mg/kg·day x 3.4E-01 $mg/kg{\cdot}day^{-1}$ = 2.6E-10

Example Noncarcinogen: 4,4'-DDT

$$Intake\ (mg/kg{\cdot}day) = \frac{0.023\ mg/kg\ x\ 100\ mg/day\ x\ 1.0E\text{-}06\ x\ 20\ days/yr\ x\ 30\ yrs}{70\ kg\ x\ 10{,}950\ days}$$

= 1.8E-09

$$Risk = \frac{1.8E\text{-}09\ mg/kg{\cdot}day}{5.0E\text{-}04\ mg/kg{\cdot}day} = 3.6E\text{-}06$$

Re: Site 35 Current Residential Adult

SEDIMENT INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 10 (SITE 36)
REMEDIAL INVESTIGATION CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT RECREATIONAL 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 for adult (days/yr)	20
ED = exposure duration for adult (yr)	30
IR = soil ingestion rate for adult (mg/day)	100
BW = body weight for adult (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

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Exposure Frequency (days/yr) Adult	Exposure Duration (yr) Adult	Ingestion Rate (mg/day) Adult	Conversion Factor (kg/mg)	Body Weight (kg) Adult	Average Carc Time (years)	Days per year (days/yr)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Diethylphthalate	0.703	20	30	100	1E-06	70	70	365	2.38E-08			
Heptachlor Epoxide	0.0014	20	30	100	1E-06	70	70	365	4.70E-11	4.50E+00	2.11E-10	0.09
Dieldrin	0.032	20	30	100	1E-06	70	70	365	1.07E-09	1.60E+01	1.72E-08	7.08
4,4'-DDE	0.8356	20	30	100	1E-06	70	70	365	2.80E-08	3.40E-01	9.53E-09	3.92
4,4'-DDD	0.9717	20	30	100	1E-06	70	70	365	3.26E-08	2.40E-01	7.82E-09	3.22
4,4'-DDT	0.0228	20	30	100	1E-06	70	70	365	7.65E-10	3.40E-01	2.60E-10	0.11
Endrin	0.00086	20	30	100	1E-06	70	70	365	2.89E-11			
Endosulfan II	0.0035	20	30	100	1E-06	70	70	365	1.17E-10			
Methoxychlor	0.0034	20	30	100	1E-06	70	70	365	1.14E-10			
Endrin Ketone	0.0031	20	30	100	1E-06	70	70	365	1.04E-10			
Endrin Aldehyde	0.0076	20	30	100	1E-06	70	70	365	2.55E-10			
Alpha-Chlordane	0.013	20	30	100	1E-06	70	70	365	4.36E-10	1.30E+00	5.67E-10	0.23
gamma-Chlordane	0.0097	20	30	100	1E-06	70	70	365	3.25E-10	1.30E+00	4.23E-10	0.17
Arsenic	2.3	20	30	100	1E-06	70	70	365	7.72E-08	1.75E+00	1.35E-07	55.53
Barium	69.4	20	30	100	1E-06	70	70	365	2.33E-06			
Beryllium	0.5	20	30	100	1E-06	70	70	365	1.68E-08	4.30E+00	7.21E-08	29.68
Chromium	27.8	20	30	100	1E-06	70	70	365	9.33E-07			
Cobalt	4.2	20	30	100	1E-06	70	70	365	1.41E-07			
Copper	24.3	20	30	100	1E-06	70	70	365	8.15E-07			
Lead	1416.5	20	30	100	1E-06	70	70	365	4.76E-05			
Manganese	34.6	20	30	100	1E-06	70	70	365	1.16E-06			
Nickel	6.7	20	30	100	1E-06	70	70	365	2.25E-07			
Selenium	0.9	20	30	100	1E-06	70	70	365	3.02E-08			
Thallium	0.7	20	30	100	1E-06	70	70	365	2.35E-08			
Vanadium	30.3	20	30	100	1E-06	70	70	365	1.02E-06			
Zinc	104	20	30	100	1E-06	70	70	365	3.49E-06			
TOTAL											2.43E-07	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Exposure Frequency (days/yr) Adult	Exposure Duration (yr) Adult	Ingestion Rate (mg/day) Adult	Conversion Factor (kg/mg)	Body Weight (kg) Adult	Average Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Diethylphthalate	0.703	20	30	100	1E-06	70	30	365	3.50E-08	8.00E-01	6.88E-08	0.00
Heptachlor Epoxide	0.0014	20	30	100	1E-06	70	30	365	1.10E-10	5.00E-04	2.19E-07	0.01
Dieldrin	0.032	20	30	100	1E-06	70	30	365	2.50E-09	5.00E-05	5.01E-05	2.27
4,4'-DDE	0.8356	20	30	100	1E-06	70	30	365	6.54E-08			
4,4'-DDD	0.9717	20	30	100	1E-06	70	30	365	7.61E-08			
4,4'-DDT	0.0228	20	30	100	1E-06	70	30	365	1.78E-09	5.00E-04	3.57E-06	0.16
Endrin	0.00086	20	30	100	1E-06	70	30	365	6.68E-11	3.00E-04	2.22E-07	0.01
Endosulfan II	0.0035	20	30	100	1E-06	70	30	365	2.74E-10			
Methoxychlor	0.0034	20	30	100	1E-06	70	30	365	2.66E-10	5.00E-03	5.32E-08	0.00
Endrin Ketone	0.0031	20	30	100	1E-06	70	30	365	2.43E-10			
Endrin Aldehyde	0.0076	20	30	100	1E-06	70	30	365	5.95E-10			
Alpha-Chlordane	0.013	20	30	100	1E-06	70	30	365	1.02E-09	6.00E-05	1.70E-05	0.77
gamma-Chlordane	0.0097	20	30	100	1E-06	70	30	365	7.59E-10	6.00E-05	1.27E-05	0.57
Arsenic	2.3	20	30	100	1E-06	70	30	365	1.80E-07	3.00E-04	6.00E-04	27.16
Barium	69.4	20	30	100	1E-06	70	30	365	5.43E-06	7.00E-02	7.76E-05	3.51
Beryllium	0.5	20	30	100	1E-06	70	30	365	3.91E-08	5.00E-03	7.83E-06	0.35
Chromium	27.8	20	30	100	1E-06	70	30	365	2.18E-06	5.00E-03	4.35E-04	19.70
Cobalt	4.2	20	30	100	1E-06	70	30	365	3.29E-07	6.00E-02	5.48E-06	0.25
Copper	24.3	20	30	100	1E-06	70	30	365	1.90E-06	3.71E-02	5.13E-05	2.32
Lead	1416.5	20	30	100	1E-06	70	30	365	1.11E-04			
Manganese	34.6	20	30	100	1E-06	70	30	365	2.71E-06	5.00E-03	5.42E-04	24.52
Nickel	6.7	20	30	100	1E-06	70	30	365	5.24E-07	2.00E-02	2.62E-05	1.19
Selenium	0.9	20	30	100	1E-06	70	30	365	7.05E-08	5.00E-03	1.41E-05	0.64
Thallium	0.7	20	30	100	1E-06	70	30	365	5.48E-08			
Vanadium	30.3	20	30	100	1E-06	70	30	365	2.37E-06	7.00E-03	3.39E-04	15.34
Zinc	104	20	30	100	1E-06	70	30	365	8.14E-06	3.00E-01	2.71E-05	1.23
TOTAL											2.21E-03	100.00

File Name: SOLWQ2

SEDIMENT INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT RECREATIONAL 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)	20
ED = exposure duration for child (yr)	6
IR = soil ingestion rate for child (mg/day)	100
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

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (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 Time (years)	Days per year (days/yr)	Carc Dose (mg/kg/day) Child	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child
Diethylphthalate	0.703	20	6	100	1E-06	15	70	365	2.20E-08			
Heptachlor Epoxide	0.0014	20	6	100	1E-06	15	70	365	4.38E-11	4.50E+00	1.97E-10	0.09
Dieldrin	0.032	20	6	100	1E-06	15	70	365	1.00E-09	1.60E+01	1.60E-08	7.06
4,4'-DDE	0.8356	20	6	100	1E-06	15	70	365	2.62E-08	3.40E-01	8.90E-09	3.92
4,4'-DDD	0.9717	20	6	100	1E-06	15	70	365	3.04E-08	2.40E-01	7.30E-09	3.22
4,4'-DDT	0.0228	20	6	100	1E-06	15	70	365	7.14E-10	3.40E-01	2.43E-10	0.11
Endrin	0.00085	20	6	100	1E-06	15	70	365	2.66E-11			
Endosulfan II	0.0035	20	6	100	1E-06	15	70	365	1.10E-10			
Methoxychlor	0.0034	20	6	100	1E-06	15	70	365	1.06E-10			
Endrin Ketone	0.0031	20	6	100	1E-06	15	70	365	9.71E-11			
Endrin Aldehyde	0.0076	20	6	100	1E-06	15	70	365	2.38E-10			
alpha-Chlordane	0.013	20	6	100	1E-06	15	70	365	4.07E-10	1.30E+00	5.29E-10	0.23
gamma-Chlordane	0.0097	20	6	100	1E-06	15	70	365	3.04E-10	1.30E+00	3.95E-10	0.17
Arsenic	2.3	20	6	100	1E-06	15	70	365	7.20E-08	1.75E+00	1.26E-07	55.53
Barium	69.4	20	6	100	1E-06	15	70	365	2.17E-06			
Beryllium	0.5	20	6	100	1E-06	15	70	365	1.57E-08	4.30E+00	6.73E-08	29.66
Chromium	27.8	20	6	100	1E-06	15	70	365	8.70E-07			
Cobalt	4.2	20	6	100	1E-06	15	70	365	1.32E-07			
Copper	24.3	20	6	100	1E-06	15	70	365	7.61E-07			
Lead	1418.5	20	6	100	1E-06	15	70	365	4.44E-05			
Manganese	34.8	20	6	100	1E-06	15	70	365	1.08E-06			
Nickel	6.7	20	6	100	1E-06	15	70	365	2.10E-07			
Selenium	0.9	20	6	100	1E-06	15	70	365	2.82E-08			
Thallium	0.7	20	6	100	1E-06	15	70	365	2.19E-08			
Vanadium	30.3	20	6	100	1E-06	15	70	365	9.46E-07			
Zinc	104	20	6	100	1E-06	15	70	365	3.26E-06			
TOTAL											2.27E-07	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day) Child	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk Child
Diethylphthalate	0.703	20	6	100	1E-06	15	6	365	2.57E-07	8.00E-01	3.21E-07	0.00
Heptachlor Epoxide	0.0014	20	6	100	1E-06	15	6	365	5.11E-10	5.00E-04	1.02E-06	0.01
Dieldrin	0.032	20	6	100	1E-06	15	6	365	1.17E-08	5.00E-05	2.34E-04	2.27
4,4'-DDE	0.8356	20	6	100	1E-06	15	6	365	3.05E-07			
4,4'-DDD	0.9717	20	6	100	1E-06	15	6	365	3.55E-07			
4,4'-DDT	0.0228	20	6	100	1E-06	15	6	365	8.33E-09	5.00E-04	1.67E-06	0.16
Endrin	0.00085	20	6	100	1E-06	15	6	365	3.11E-10	3.00E-04	1.04E-06	0.01
Endosulfan II	0.0035	20	6	100	1E-06	15	6	365	1.28E-09			
Methoxychlor	0.0034	20	6	100	1E-06	15	6	365	1.24E-09	5.00E-03	2.48E-07	0.00
Endrin Ketone	0.0031	20	6	100	1E-06	15	6	365	1.13E-09			
Endrin Aldehyde	0.0076	20	6	100	1E-06	15	6	365	2.78E-09			
alpha-Chlordane	0.013	20	6	100	1E-06	15	6	365	4.75E-09	6.00E-05	7.91E-05	0.77
gamma-Chlordane	0.0097	20	6	100	1E-06	15	6	365	3.54E-09	6.00E-05	5.91E-05	0.57
Arsenic	2.3	20	6	100	1E-06	15	6	365	8.40E-07	3.00E-04	2.80E-03	27.18
Barium	69.4	20	6	100	1E-06	15	6	365	2.54E-05	7.00E-02	3.62E-04	3.51
Beryllium	0.5	20	6	100	1E-06	15	6	365	1.83E-07	5.00E-03	3.66E-05	0.35
Chromium	27.8	20	6	100	1E-06	15	6	365	1.02E-06	5.00E-03	2.03E-03	19.70
Cobalt	4.2	20	6	100	1E-06	15	6	365	1.53E-06	6.00E-02	2.56E-05	0.25
Copper	24.3	20	6	100	1E-06	15	6	365	8.88E-06	3.71E-02	2.39E-04	2.32
Lead	1418.5	20	6	100	1E-06	15	6	365	5.18E-04			
Manganese	34.8	20	6	100	1E-06	15	6	365	1.26E-05	5.00E-03	2.53E-03	24.52
Nickel	6.7	20	6	100	1E-06	15	6	365	2.45E-06	2.00E-02	1.22E-04	1.19
Selenium	0.9	20	6	100	1E-06	15	6	365	3.29E-07	5.00E-03	6.58E-05	0.64
Thallium	0.7	20	6	100	1E-06	15	6	365	2.56E-07			
Vanadium	30.3	20	6	100	1E-06	15	6	365	1.11E-05	7.00E-03	1.59E-03	15.34
Zinc	104	20	6	100	1E-06	15	6	365	3.80E-05	3.00E-01	1.27E-04	1.23
TOTAL											1.03E-02	100.00

File Name: SDLWQ1

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE DERMAL CONTACT WITH SEDIMENT CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from dermal contact with sediment

$$Intake\ (mg/kg{\cdot}day) = \frac{C \times CF \times SA \times AF \times Abs \times EF \times ED}{BW \times AT \times DY}$$

Where:			
	C	=	Concentration of contaminant in sediment (mg/kg)
	CF	=	Conversion factor for kg to mg
	SA	=	Exposed skin surface area (cm^2)
	AF	=	Sediment to skin adherence factor ($mg/cm^{2)}$
	Abs	=	Fraction absorbed (unitless)
	EF	=	Exposure frequency (events/year)
	ED	=	Exposure duration (years)
	BW	=	Body weight (kg)
	AT	=	Averaging time (years)
	DY	=	Days per year (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: 4,4'-DDT

$$Intake\ (mg/kg{\cdot}day) = \frac{0.023\ mg/kg \times 1.0E\text{-}06 \times 11{,}500\ cm^2 \times 1 \times 0.01 \times 20\ events/yr \times 30\ yrs}{70\ kg \times 70\ years \times 365\ days/yr}$$

$$= 8.8E\text{-}10$$

Risk = 8.8E-10 mg/kg·day x 3.4E-01 $mg/kg{\cdot}day^{-1}$ = 3E-10

Example Noncarcinogen: 4,4'-DDT

$$Intake\ (mg/kg{\cdot}day) = \frac{0.023\ mg/kg \times 1.0E\text{-}06 \times 11{,}500\ cm^2 \times 1 \times 0.01 \times 20\ eventsyr \times 30\ yrs}{70\ kg \times 30\ years \times 365\ days/yr}$$

$$= 2.1E\text{-}09$$

$$Risk = \frac{2.1E\text{-}09\ mg/kg{\cdot}day}{5.0E\text{-}04\ mg/kg{\cdot}day} = 4E\text{-}06$$

Re: Site 35 Current Residential Adult

SEDIMENT DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABELE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT RECREATIONAL ADULT

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 for kg to mg	1.00E-06
SA = adult exposed skin surface area (cm2)	11500
AF = sediment to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless) (contaminant specific)	Specific
EF = adult exposure frequency (events/yr)	20
ED = adult expsosure 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

Note: Inputs are scenario and site specific

Contaminant	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 (years)	Days per year (day/year)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Diethylphthalate	0.703	1E-06	11500	1	0.01	20	30	70	70	365	2.71E-08			
Heptachlor Epoxide	0.0014	1E-06	11500	1	0.01	20	30	70	70	365	5.40E-11	4.50E+00	2.43E-10	0.12
Dieldrin	0.032	1E-06	11500	1	0.01	20	30	70	70	365	1.23E-09	1.60E+01	1.98E-08	9.64
4,4'-DDE	0.8356	1E-06	11500	1	0.01	20	30	70	70	365	3.22E-08	3.40E-01	1.10E-08	5.35
4,4'-DDD	0.9717	1E-06	11500	1	0.01	20	30	70	70	365	3.75E-08	2.40E-01	9.00E-09	4.39
4,4'-DDT	0.0228	1E-06	11500	1	0.01	20	30	70	70	365	8.80E-10	3.40E-01	2.99E-10	0.15
Endrin	0.00085	1E-06	11500	1	0.01	20	30	70	70	365	3.28E-11			
Endosulfan II	0.0035	1E-06	11500	1	0.01	20	30	70	70	365	1.35E-10			
Methoxychlor	0.0034	1E-06	11500	1	0.001	20	30	70	70	365	1.31E-11			
Endrin Ketone	0.0031	1E-06	11500	1	0.01	20	30	70	70	365	1.20E-10			
Endrin Aldehyde	0.0076	1E-06	11500	1	0.01	20	30	70	70	365	2.93E-10			
alpha-Chlordane	0.013	1E-06	11500	1	0.01	20	30	70	70	365	5.02E-10	1.30E+00	6.52E-10	0.32
gamma-Chlordane	0.0097	1E-06	11500	1	0.01	20	30	70	70	365	3.74E-10	1.30E+00	4.86E-10	0.24
Arsenic	2.3	1E-06	11500	1	0.01	20	30	70	70	365	8.87E-08	1.75E+00	1.55E-07	75.78
Barium	69.4	1E-06	11500	1	0.01	20	30	70	70	365	2.68E-06			
Beryllium	0.5	1E-06	11500	1	0.001	20	30	70	70	365	1.93E-08	4.30E+00	8.28E-08	4.05
Chromium	27.8	1E-06	11500	1	0.01	20	30	70	70	365	1.07E-06			
Cobalt	4.2	1E-06	11500	1	0.001	20	30	70	70	365	1.62E-08			
Copper	24.3	1E-06	11500	1	0.01	20	30	70	70	365	9.37E-07			
Lead	1418.5	1E-06	11500	1	0.01	20	30	70	70	365	5.47E-05			
Manganese	34.6	1E-06	11500	1	0.01	20	30	70	70	365	1.33E-06			
Nickel	6.7	1E-06	11500	1	0.01	20	30	70	70	365	2.58E-07			
Selenium	0.9	1E-06	11500	1	0.01	20	30	70	70	365	3.47E-08			
Thallium	0.7	1E-06	11500	1	0.01	20	30	70	70	365	2.70E-08			
Vanadium	30.3	1E-06	11500	1	0.001	20	30	70	70	365	1.17E-07			
Zinc	104	1E-06	11500	1	0.001	20	30	70	70	365	4.01E-07			
TOTAL													2.05E-07	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Diethylphthalate	0.703	1E-06	11500	1	0.01	20	30	70	30	365	6.33E-08	8.00E-01	7.91E-08	0.02
Heptachlor Epoxide	0.0014	1E-06	11500	1	0.01	20	30	70	30	365	1.26E-10	5.00E-04	2.52E-07	0.08
Dieldrin	0.032	1E-06	11500	1	0.01	20	30	70	30	365	2.88E-09	5.00E-05	5.76E-05	18.10
4,4'-DDE	0.8356	1E-06	11500	1	0.01	20	30	70	30	365	7.52E-08			
4,4'-DDD	0.9717	1E-06	11500	1	0.01	20	30	70	30	365	8.75E-08			
4,4'-DDT	0.0228	1E-06	11500	1	0.01	20	30	70	30	365	2.05E-09	5.00E-04	4.10E-06	1.29
Endrin	0.00085	1E-06	11500	1	0.01	20	30	70	30	365	7.65E-11	3.00E-04	2.55E-07	0.08
Endosulfan II	0.0035	1E-06	11500	1	0.01	20	30	70	30	365	3.15E-10			
Methoxychlor	0.0034	1E-06	11500	1	0.001	20	30	70	30	365	3.06E-11	5.00E-03	6.12E-09	0.00
Endrin Ketone	0.0031	1E-06	11500	1	0.001	20	30	70	30	365	2.79E-11			
Endrin Aldehyde	0.0076	1E-06	11500	1	0.001	20	30	70	30	365	6.84E-11			
alpha-Chlordane	0.013	1E-06	11500	1	0.001	20	30	70	30	365	1.17E-10	6.00E-05	1.95E-06	0.61
gamma-Chlordane	0.0097	1E-06	11500	1	0.001	20	30	70	30	365	8.73E-11	6.00E-05	1.46E-06	0.46
Arsenic	2.3	1E-06	11500	1	0.001	20	30	70	30	365	2.07E-08	3.00E-04	6.90E-05	21.69
Barium	69.4	1E-06	11500	1	0.001	20	30	70	30	365	6.25E-07	7.00E-02	8.92E-06	2.80
Beryllium	0.5	1E-06	11500	1	0.01	20	30	70	30	365	4.50E-08	5.00E-03	9.00E-06	2.83
Chromium	27.8	1E-06	11500	1	0.001	20	30	70	30	365	2.50E-07	5.00E-03	5.01E-05	15.73
Cobalt	4.2	1E-06	11500	1	0.001	20	30	70	30	365	3.78E-08	6.00E-02	6.30E-07	0.20
Copper	24.3	1E-06	11500	1	0.001	20	30	70	30	365	2.19E-07	3.71E-02	5.90E-06	1.85
Lead	1418.5	1E-06	11500	1	0.001	20	30	70	30	365	1.28E-05			
Manganese	34.6	1E-06	11500	1	0.001	20	30	70	30	365	3.11E-07	5.00E-03	6.23E-05	19.57
Nickel	6.7	1E-06	11500	1	0.001	20	30	70	30	365	6.03E-08	2.00E-02	3.02E-06	0.95
Selenium	0.9	1E-06	11500	1	0.001	20	30	70	30	365	8.10E-09	5.00E-03	1.62E-06	0.51
Thallium	0.7	1E-06	11500	1	0.001	20	30	70	30	365	6.30E-09			
Vanadium	30.3	1E-06	11500	1	0.001	20	30	70	30	365	2.73E-07	7.00E-03	3.90E-05	12.24
Zinc	104	1E-06	11500	1	0.001	20	30	70	30	365	9.36E-07	3.00E-01	3.12E-06	0.98
TOTAL													3.18E-04	100.00

File: SDDC.WQ2

SEDIMENT DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABELE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT RECREATIONAL CHILD

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 for kg to mg	1.00E-06
SA = child exposed skin surface area (cm2)	4800
AF = sediment to skin adherance factor (mg/cm2)	1
Abs = fraction absorbed (unitless) (contaminant specific)	Specific
EF = child exposure frequency (events/yr)	20
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

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2) Child	Adherance Factor (mg/cm2)	Fraction Absorbed (%)	Exposure Frequency (events/yr) Child	Exposure Duration (yrs) Child	Body Weight (kg) Child	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day) Child	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child
Diethylphthalate	0.703	1E-06	4800	1	0.01	20	6	15	70	365	1.01E-08			
Heptachlor Epoxide	0.0014	1E-06	4800	1	0.01	20	6	15	70	365	2.02E-11	4.50E+00	9.07E-11	0.09
Dieldrin	0.032	1E-06	4800	1	0.01	20	6	15	70	365	4.61E-10	1.60E+01	7.37E-09	7.06
4,4'-DDE	0.8356	1E-06	4800	1	0.01	20	6	15	70	365	1.20E-08	3.40E-01	4.09E-09	3.92
4,4'-DDD	0.9717	1E-06	4800	1	0.01	20	6	15	70	365	1.40E-08	2.40E-01	3.36E-09	3.22
4,4'-DDT	0.0228	1E-06	4800	1	0.01	20	6	15	70	365	3.28E-10	3.40E-01	1.12E-10	0.11
Endrin	0.00085	1E-06	4800	1	0.01	20	6	15	70	365	1.22E-11			
Endosulfan II	0.0035	1E-06	4800	1	0.01	20	6	15	70	365	5.04E-11			
Methoxychlor	0.0034	1E-06	4800	1	0.001	20	6	15	70	365	4.90E-12			
Endrin Ketone	0.0031	1E-06	4800	1	0.01	20	6	15	70	365	4.46E-11			
Endrin Aldehyde	0.0076	1E-06	4800	1	0.01	20	6	15	70	365	1.09E-10			
alpha-Chlordane	0.013	1E-06	4800	1	0.01	20	6	15	70	365	1.87E-10	1.30E+00	2.43E-10	0.23
gamma-Chlordane	0.0097	1E-06	4800	1	0.01	20	6	15	70	365	1.40E-10	1.30E+00	1.82E-10	0.17
Arsenic	2.3	1E-06	4800	1	0.01	20	6	15	70	365	3.31E-08	1.75E+00	5.80E-08	55.53
Barium	69.4	1E-06	4800	1	0.01	20	6	15	70	365	1.00E-06			
Beryllium	0.5	1E-06	4800	1	0.01	20	6	15	70	365	7.20E-09	4.30E+00	3.10E-08	29.68
Chromium	27.8	1E-06	4800	1	0.01	20	6	15	70	365	4.00E-07			
Cobalt	4.2	1E-06	4800	1	0.01	20	6	15	70	365	6.05E-08			
Copper	24.3	1E-06	4800	1	0.01	20	6	15	70	365	3.50E-07			
Lead	1418.5	1E-06	4800	1	0.01	20	6	15	70	365	2.04E-05			
Manganese	34.6	1E-06	4800	1	0.01	20	6	15	70	365	4.98E-07			
Nickel	6.7	1E-06	4800	1	0.01	20	6	15	70	365	9.65E-08			
Selenium	0.9	1E-06	4800	1	0.01	20	6	15	70	365	1.30E-08			
Thallium	0.7	1E-06	4800	1	0.01	20	6	15	70	365	1.01E-08			
Vanadium	30.3	1E-06	4800	1	0.01	20	6	15	70	365	4.36E-07			
Zinc	104	1E-06	4800	1	0.01	20	6	15	70	365	1.50E-06			
TOTAL													1.04E-07	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2) Child	Adherance Factor (mg/cm2)	Fraction Absorbed (%)	Exposure Frequency (events/yr) Child	Exposure Duration (yrs) Child	Body Weight (kg) Child	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day) Child	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk Child
Diethylphthalate	0.703	1E-06	4800	1	0.01	20	6	15	6	365	1.18E-07	8.00E-01	1.48E-07	0.03
Heptachlor Epoxide	0.0014	1E-06	4800	1	0.01	20	6	15	6	365	2.36E-10	6.00E-04	4.71E-07	0.08
Dieldrin	0.032	1E-06	4800	1	0.01	20	6	15	6	365	5.38E-09	5.00E-05	1.08E-04	18.58
4,4'-DDE	0.8356	1E-06	4800	1	0.01	20	6	15	6	365	1.40E-07			
4,4'-DDD	0.9717	1E-06	4800	1	0.01	20	6	15	6	365	1.63E-07			
4,4'-DDT	0.0228	1E-06	4800	1	0.01	20	6	15	6	365	3.83E-09	5.00E-04	7.66E-06	1.32
Endrin	0.00085	1E-06	4800	1	0.01	20	6	15	6	365	1.43E-10	3.00E-04	4.76E-07	0.08
Endosulfan II	0.0035	1E-06	4800	1	0.01	20	6	15	6	365	5.88E-10			
Methoxychlor	0.0034	1E-06	4800	1	0.001	20	6	15	6	365	5.71E-11	5.00E-03	1.14E-08	0.00
Endrin Ketone	0.0031	1E-06	4800	1	0.001	20	6	15	6	365	5.21E-11			
Endrin Aldehyde	0.0076	1E-06	4800	1	0.001	20	6	15	6	365	1.28E-10			
alpha-Chlordane	0.013	1E-06	4800	1	0.001	20	6	15	6	365	2.18E-10	6.00E-05	3.64E-06	0.63
gamma-Chlordane	0.0097	1E-06	4800	1	0.001	20	6	15	6	365	1.63E-10	6.00E-05	2.72E-06	0.47
Arsenic	2.3	1E-06	4800	1	0.001	20	6	15	6	365	3.86E-08	3.00E-04	1.29E-04	22.25
Barium	69.4	1E-06	4800	1	0.001	20	6	15	6	365	1.17E-06	7.00E-02	1.67E-05	2.88
Beryllium	0.5	1E-06	4800	1	0.001	20	6	15	6	365	8.40E-09	5.00E-03	1.68E-06	0.29
Chromium	27.8	1E-06	4800	1	0.001	20	6	15	6	365	4.67E-07	5.00E-03	9.34E-05	16.14
Cobalt	4.2	1E-06	4800	1	0.001	20	6	15	6	365	7.06E-08	6.00E-02	1.18E-06	0.20
Copper	24.3	1E-06	4800	1	0.001	20	6	15	6	365	4.08E-07	3.71E-02	1.10E-05	1.90
Lead	1418.5	1E-06	4800	1	0.001	20	6	15	6	365	2.38E-05			
Manganese	34.6	1E-06	4800	1	0.001	20	6	15	6	365	5.81E-07	5.00E-03	1.16E-04	20.09
Nickel	6.7	1E-06	4800	1	0.001	20	6	15	6	365	1.13E-07	2.00E-02	5.63E-06	0.97
Selenium	0.9	1E-06	4800	1	0.001	20	6	15	6	365	1.51E-08	5.00E-03	3.02E-06	0.52
Thallium	0.7	1E-06	4800	1	0.001	20	6	15	6	365	1.18E-08			
Vanadium	30.3	1E-06	4800	1	0.001	20	6	15	6	365	5.09E-07	7.00E-03	7.27E-05	12.58
Zinc	104	1E-06	4800	1	0.001	20	6	15	6	365	1.75E-06	3.00E-01	5.83E-06	1.01
TOTAL													5.78E-04	100.00

File: SDDC.WQ1

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE INGESTION OF FISH CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from ingestion of fish

$$Intake\ (mg/kg{\cdot}day) = \frac{C \times IR \times FI \times EF \times ED}{BW \times AT}$$

Where:			
	C	=	Contaminant concentration in fish (mg/kg)
	IR	=	Ingestion rate (kg/meal)
	FI	=	Fraction ingested from source (%)
	EF	=	Exposure frequency (meal/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: 4,4-DDD

$$Intake\ (mg/kg{\cdot}day) = \frac{0.113\ mg/kg \times 0.284\ kg/meal \times 100\% \times 48\ meals/yr \times 30\ yrs}{70\ kg \times 25{,}550\ days}$$

= 2.6E-05

Risk = 2.6E-05 mg/kg·day x 2.4E-01 $mg/kg{\cdot}day^{-1}$ = 6.2E-06

Example Noncarcinogen: Dieldrin

$$Intake\ (mg/kg{\cdot}day) = \frac{0.023\ mg/kg \times 0.284\ kg/meal \times 100\% \times 48\ meals/yr \times 30\ yrs}{70\ kg \times 10{,}950\ days}$$

= 1.2E-05

$$Risk = \frac{1.2E\text{-}05\ mg/kg{\cdot}day}{5E\text{-}05\ mg/kg{\cdot}day} = 2.5E\text{-}01$$

FISH INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

Intake (mg/kg-day) = CF * IR * FI * EF * ED/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
CF = contaminant concentration in fish (mg/kg)	
IR = adult ingestion rate (kg/meal)	0.145
FI = fraction ingested from contaminated source (unitless)	100
EF = adult exposure frequency (meals/yr)	48
ED = adult exposure duration (years)	9
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (years)	70
ATnc = averaging time for noncarcinogen (years)	9
DY = days per year (days/yr)	365

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Ingestion Rate (kg/meal) Adult	Fraction Ingestion (%)	Exposure Frequency (meals/yr) Adult	Exposure Duration (years) Adult	Body Weight (kg) Adult	Average Carc Time (years)	Days per year (days/yr)	Carc Dose (mg/kg-day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Acetone	16.3	0.145	1	48	9	70	70	365	6.71E-04			
beta-BHC	0.00824	0.145	1	48	9	70	70	365	2.89E-07	1.80E+00	5.19E-07	2.87
Heptachlor	0.0043	0.145	1	48	9	70	70	365	1.51E-07	4.50E+00	6.78E-07	3.75
Dieldrin	0.02139	0.145	1	48	9	70	70	365	7.49E-07	1.60E+01	1.20E-05	66.30
4,4'-DDE	0.2419	0.145	1	48	9	70	70	365	8.47E-06	3.40E-01	2.88E-06	15.93
Endrin	0.01283	0.145	1	48	9	70	70	365	4.49E-07			
Endosulfan II	0.0096	0.145	1	48	9	70	70	365	3.36E-07			
4,4'-DDD	0.1038	0.145	1	48	9	70	70	365	3.64E-06	2.40E-01	8.73E-07	4.83
4,4'-DDT	0.01458	0.145	1	48	9	70	70	365	5.11E-07	3.40E-01	1.74E-07	0.96
Endrin Ketone	0.0038	0.145	1	48	9	70	70	365	1.33E-07			
Endrin Aldehyde	0.013	0.145	1	48	9	70	70	365	4.55E-07			
alpha-Chlordane	0.0213	0.145	1	48	9	70	70	365	7.46E-07	1.30E+00	9.70E-07	5.36
Aluminum	17.1	0.145	1	48	9	70	70	365	5.99E-04			
Barium	0.82	0.145	1	48	9	70	70	365	2.87E-05			
Copper	8.24	0.145	1	48	9	70	70	365	2.89E-04			
Lead	0.61	0.145	1	48	9	70	70	365	2.14E-05			
Manganese	1.95	0.145	1	48	9	70	70	365	6.83E-05			
Mercury	1.3	0.145	1	48	9	70	70	365	4.55E-05			
Selenium	0.96	0.145	1	48	9	70	70	365	3.36E-05			
Zinc	130	0.145	1	48	9	70	70	365	4.55E-03			
TOTAL											1.81E-05	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Ingestion Rate (kg/meal) Adult	Fraction Ingestion (%)	Exposure Frequency (meals/yr) Adult	Exposure Duration (years) Adult	Body Weight (kg) Adult	Average Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg-day) Adult	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Acetone	16.3	0.145	1	48	9	70	9	365	4.44E-03	1.00E-01	4.44E-02	2.47
beta-BHC	0.00824	0.145	1	48	9	70	9	365	2.24E-06			
Heptachlor	0.0043	0.145	1	48	9	70	9	365	1.17E-06	5.00E-04	2.34E-03	0.13
Dieldrin	0.02139	0.145	1	48	9	70	9	365	5.83E-06	5.00E-05	1.17E-01	6.49
4,4'-DDE	0.2419	0.145	1	48	9	70	9	365	6.59E-05			
Endrin	0.01283	0.145	1	48	9	70	9	365	3.49E-06	5.00E-04	6.99E-03	0.39
Endosulfan II	0.0096	0.145	1	48	9	70	9	365	2.62E-06			
4,4'-DDD	0.1038	0.145	1	48	9	70	9	365	2.83E-05			
4,4'-DDT	0.01458	0.145	1	48	9	70	9	365	3.97E-06	5.00E-04	7.94E-03	0.44
Endrin Ketone	0.0038	0.145	1	48	9	70	9	365	1.04E-06			
Endrin Aldehyde	0.013	0.145	1	48	9	70	9	365	3.54E-06			
alpha-Chlordane	0.0213	0.145	1	48	9	70	9	365	5.80E-06	6.00E-05	9.67E-02	5.39
Aluminum	17.1	0.145	1	48	9	70	9	365	4.66E-03			
Barium	0.82	0.145	1	48	9	70	9	365	2.23E-04	7.00E-02	3.19E-03	0.18
Copper	8.24	0.145	1	48	9	70	9	365	2.24E-03	3.71E-02	6.05E-02	3.37
Lead	0.61	0.145	1	48	9	70	9	365	1.66E-04			
Manganese	1.95	0.145	1	48	9	70	9	365	5.31E-04	5.00E-03	1.06E-01	5.92
Mercury	1.3	0.145	1	48	9	70	9	365	3.54E-04	3.00E-04	1.18E+00	65.74
Selenium	0.96	0.145	1	48	9	70	9	365	2.62E-04	5.00E-03	5.23E-02	2.91
Zinc	130	0.145	1	48	9	70	9	365	3.54E-02	3.00E-01	1.18E-01	6.57
TOTAL											1.80E+00	100.00

FILE: FISH.WQ2

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-GWDW4-01	35-GWDW5-01	35-MW02S-02	35-MW04S-02	35-MW06S-02	35-MW09S-02
Lab Sample ID:		D94-5361-14	D94-5361-13	D94-4917-3	D94-4917-5	D94-4917-1	D94-5296-5
Date Sampled:		15-MAY-1994	15-MAY-1994	26-APR-1994	26-APR-1994	26-APR-1994	10-MAY-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	2.5 U	2.5 U	62.5 U	2.5 U	2.5 U	2.5 U
1,1,2,2-Tetrachloroethane	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethene	UG/L	0.1 U	0.1 U	2.5 U	0.1 U	0.1 U	0.1 U
1,2-Dichlorobenzene	UG/L	0.1 U	0.1 U	2.5 U	0.1 U	0.1 U	0.1 U
1,2-Dichloroethane	UG/L	0.15 U	0.15 U	4 U	0.15 U	0.15 U	0.15 U
1,2-Dichloropropane	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
1,3-Dichlorobenzene	UG/L	0.2 U	0.2 U	5 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	UG/L	0.5 U	0.5 U	12.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
Bromoform	UG/L	0.1 U	0.1 U	2.5 U	0.1 U	0.1 U	0.1 U
Bromomethane	UG/L	0.6 U	0.6 U	15 U	0.6 U	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0.1 U	0.1 U	2.5 U	0.1 U	0.1 U	0.1 U
Chlorobenzene	UG/L	0.15 U	0.15 U	4 U	0.15 U	0.15 U	0.15 U
Chloroethane	UG/L	0.3 U	0.3 U	7.5 U	0.3 U	0.3 U	0.3 U
Chloroform	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
Chloromethane	UG/L	0.25 U	0.25 U	6.5 U	0.25 U	0.25 U	0.25 U
Dibromochloromethane	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
Dichlorodifluoromethane	UG/L	1 U	1 U	25 U	1 U	1 U	1 U
Methylene chloride	UG/L	2.5 U	2.5 U	62.5 U	2.5 U	2.5 U	2.5 U
Tetrachloroethene	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
Trichloroethene	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
Trichlorofluoromethane	UG/L	0.25 U	0.25 U	6.5 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	UG/L	0.25 U	0.25 U	6.5 U	0.25 U	0.25 U	0.25 U
cis-1,2-Dichloroethene	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
cis-1,3-Dichloropropene	UG/L	0.1 U	0.1 U	2.5 U	0.1 U	0.1 U	0.1 U
trans-1,2-Dichloroethene	UG/L	0.05 U	0.05 U	1.5 U	0.05 U	0.05 U	0.05 U
trans-1,3-Dichloropropene	UG/L	0.1 U	0.1 U	2.5 U	0.1 U	0.1 U	0.1 U
Benzene	UG/L	0.1 U	0.1 U	6	0.2	0.1 U	0.1 U
Chlorobenzene	UG/L	0.1 U	0.1 U	2.5 U	0.1 U	0.1 U	0.1 U
Ethyl benzene	UG/L	0.7	1	44	0.1 U	0.1 U	0.7
Methyl Tertiary Butyl Ether	UG/L	5 U	5 U	50 U	5 U	5 U	5 U
Toluene	UG/L	1	0.8	12	0.4	0.1 U	0.3
Xylenes	UG/L	1.8	1.6	50	0.6	1	2

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-GWDW4-01	35-GWDW5-01	35-MW02S-02	35-MW04S-02	35-MW06S-02	35-MW09S-02
Lab Sample ID:		D94-5361-14	D94-5361-13	D94-4917-3	D94-4917-5	D94-4917-1	D94-5296-5
Date Sampled:		15-MAY-1994	15-MAY-1994	26-APR-1994	26-APR-1994	26-APR-1994	10-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	NA	5 U	NA	NA	NA	5 U
bis(2-Chloroethyl)ether	UG/L	NA	5 U	NA	NA	NA	5 U
2-Chlorophenol	UG/L	NA	5 U	NA	NA	NA	5 U
1,3-Dichlorobenzene	UG/L	NA	5 U	NA	NA	NA	5 U
1,4-Dichlorobenzene	UG/L	NA	5 U	NA	NA	NA	5 U
1,2-Dichlorobenzene	UG/L	NA	5 U	NA	NA	NA	5 U
2-Methylphenol	UG/L	NA	5 U	NA	NA	NA	5 U
2,2'-oxybis(1-Chloropropane)	UG/L	NA	5 U	NA	NA	NA	5 U
4-Methylphenol	UG/L	NA	5 U	NA	NA	NA	5 U
N-Nitroso-di-n-propylamine	UG/L	NA	5 U	NA	NA	NA	5 U
Hexachloroethane	UG/L	NA	5 U	NA	NA	NA	5 U
Nitrobenzene	UG/L	NA	5 U	NA	NA	NA	5 U
Isophorone	UG/L	NA	5 U	NA	NA	NA	5 U
2-Nitrophenol	UG/L	NA	5 U	NA	NA	NA	5 U
2,4-Dimethylphenol	UG/L	NA	5 U	NA	NA	NA	5 U
bis(2-Chloroethoxy)methane	UG/L	NA	5 U	NA	NA	NA	5 U
2,4-Dichlorophenol	UG/L	NA	5 U	NA	NA	NA	5 U
1,2,4-Trichlorobenzene	UG/L	NA	5 U	NA	NA	NA	5 U
Naphthalene	UG/L	NA	5 U	NA	NA	NA	5 U
4-Chloroaniline	UG/L	NA	5 U	NA	NA	NA	5 UJ
Hexachlorobutadiene	UG/L	NA	5 U	NA	NA	NA	5 U
4-Chloro-3-methylphenol	UG/L	NA	5 U	NA	NA	NA	5 U
2-Methylnaphthalene	UG/L	NA	5 U	NA	NA	NA	5 U
Hexachlorocyclopentadiene	UG/L	NA	5 U	NA	NA	NA	5 U
2,4,6-Trichlorophenol	UG/L	NA	5 U	NA	NA	NA	5 U
2,4,5-Trichlorophenol	UG/L	NA	12.5 U	NA	NA	NA	12.5 U
2-Chloronaphthalene	UG/L	NA	5 U	NA	NA	NA	5 U
2-Nitroaniline	UG/L	NA	12.5 U	NA	NA	NA	12.5 U
Dimethylphthalate	UG/L	NA	5 U	NA	NA	NA	5 U
Acenaphthylene	UG/L	NA	5 U	NA	NA	NA	5 U
2,6-Dinitrotoluene	UG/L	NA	5 U	NA	NA	NA	5 U
3-Nitroaniline	UG/L	NA	12.5 UJ	NA	NA	NA	12.5 UJ
Acenaphthene	UG/L	NA	5 U	NA	NA	NA	5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-GWDW4-01	35-GWDW5-01	35-MW02S-02	35-MW04S-02	35-MW06S-02	35-MW09S-02
Lab Sample ID:		D94-5361-14	D94-5361-13	D94-4917-3	D94-4917-5	D94-4917-1	D94-5296-5
Date Sampled:		15-MAY-1994	15-MAY-1994	26-APR-1994	26-APR-1994	26-APR-1994	10-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	NA	12.5 U	NA	NA	NA	12.5 UJ
Dibenzofuran	UG/L	NA	5 U	NA	NA	NA	5 U
4-Nitrophenol	UG/L	NA	5 UJ	NA	NA	NA	5 UJ
2,4-Dinitrotoluene	UG/L	NA	5 U	NA	NA	NA	5 U
Diethylphthalate	UG/L	NA	5 U	NA	NA	NA	5 U
Fluorene	UG/L	NA	5 U	NA	NA	NA	5 U
4-Chlorophenyl-phenylether	UG/L	NA	5 U	NA	NA	NA	5 U
4-Nitroaniline	UG/L	NA	12.5 UJ	NA	NA	NA	12.5 U
4,6-Dinitro-2-methylphenol	UG/L	NA	12.5 U	NA	NA	NA	12.5 U
N-Nitrosodiphenylamine	UG/L	NA	5 U	NA	NA	NA	5 U
4-Bromophenyl-phenylether	UG/L	NA	5 U	NA	NA	NA	5 U
Hexachlorobenzene	UG/L	NA	5 U	NA	NA	NA	5 U
Pentachlorophenol	UG/L	NA	12.5 U	NA	NA	NA	12.5 U
Phenanthrene	UG/L	NA	5 U	NA	NA	NA	5 U
Anthracene	UG/L	NA	5 U	NA	NA	NA	5 U
Carbazole	UG/L	NA	5 U	NA	NA	NA	5 U
Di-n-butylphthalate	UG/L	NA	5 U	NA	NA	NA	5 U
Fluoranthene	UG/L	NA	5 U	NA	NA	NA	5 U
Pyrene	UG/L	NA	5 U	NA	NA	NA	5 U
Butylbenzylphthalate	UG/L	NA	5 UJ	NA	NA	NA	5 U
Benzo(a)anthracene	UG/L	NA	5 U	NA	NA	NA	5 U
3,3'-Dichlorobenzidine	UG/L	NA	5 U	NA	NA	NA	5 UJ
Chrysene	UG/L	NA	5 U	NA	NA	NA	5 U
bis(2-Ethylhexyl)phthalate	UG/L	NA	5 UJ	NA	NA	NA	5 U
Di-n-octylphthalate	UG/L	NA	5 U	NA	NA	NA	5 UJ
Benzo(b)fluoranthene	UG/L	NA	5 U	NA	NA	NA	5 UJ
Benzo(k)fluoranthene	UG/L	NA	5 U	NA	NA	NA	5 UJ
Benzo(a)pyrene	UG/L	NA	5 U	NA	NA	NA	5 UJ
Indeno(1,2,3-cd)pyrene	UG/L	NA	5 U	NA	NA	NA	5 UJ
Dibenz(a,h)anthracene	UG/L	NA	5 U	NA	NA	NA	5 UJ
Benzo(g,h,i)perylene	UG/L	NA	5 U	NA	NA	NA	5 UJ

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-GWDW4-01	35-GWDW5-01	35-MW02S-02	35-MW04S-02	35-MW06S-02	35-MW09S-02
Lab Sample ID:		D94-5361-14	D94-5361-13	D94-4917-3	D94-4917-5	D94-4917-1	D94-5296-5
Date Sampled:		15-MAY-1994	15-MAY-1994	26-APR-1994	26-APR-1994	26-APR-1994	10-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	NA	0.025 U	NA	NA	NA	NA
beta-BHC	UG/L	NA	0.025 U	NA	NA	NA	NA
delta-BHC	UG/L	NA	0.025 U	NA	NA	NA	NA
gamma-BHC (Lindane)	UG/L	NA	0.025 U	NA	NA	NA	NA
Heptachlor	UG/L	NA	0.025 U	NA	NA	NA	NA
Aldrin	UG/L	NA	0.025 U	NA	NA	NA	NA
Heptachlor epoxide	UG/L	NA	0.025 U	NA	NA	NA	NA
Endosulfan I	UG/L	NA	0.025 U	NA	NA	NA	NA
Dieldrin	UG/L	NA	0.05 U	NA	NA	NA	NA
4,4'-DDE	UG/L	NA	0.05 U	NA	NA	NA	NA
Endrin	UG/L	NA	0.05 U	NA	NA	NA	NA
Endosulfan II	UG/L	NA	0.05 U	NA	NA	NA	NA
4,4'-DDD	UG/L	NA	0.05 U	NA	NA	NA	NA
Endosulfan sulfate	UG/L	NA	0.05 U	NA	NA	NA	NA
4,4'-DDT	UG/L	NA	0.05 U	NA	NA	NA	NA
Methoxychlor	UG/L	NA	0.25 U	NA	NA	NA	NA
Endrin ketone	UG/L	NA	0.05 U	NA	NA	NA	NA
Endrin aldehyde	UG/L	NA	0.05 U	NA	NA	NA	NA
alpha-Chlordane	UG/L	NA	0.025 U	NA	NA	NA	NA
gamma-Chlordane	UG/L	NA	0.025 U	NA	NA	NA	NA
Toxaphene	UG/L	NA	2.5 U	NA	NA	NA	NA
Aroclor-1016	UG/L	NA	0.5 U	NA	NA	NA	NA
Aroclor-1221	UG/L	NA	1 U	NA	NA	NA	NA
Aroclor-1232	UG/L	NA	0.5 U	NA	NA	NA	NA
Aroclor-1242	UG/L	NA	0.5 U	NA	NA	NA	NA
Aroclor-1248	UG/L	NA	0.5 U	NA	NA	NA	NA
Aroclor-1254	UG/L	NA	0.5 U	NA	NA	NA	NA
Aroclor-1260	UG/L	NA	0.5 U	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW09D-02	35-MW10S-02	35-MW10D-02	35-MW14S-02	35-MW14D-02	35-MW16S-02
Lab Sample ID:		D94-5296-6	D94-5296-13	D94-5296-8	D94-5296-10	D94-5296-11	D94-5296-16
Date Sampled:		11-MAY-1994	12-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	2.5 U	2.5 U	125 U	62.5 U	25 U	62.5 U
1,1,2,2-Tetrachloroethane	UG/L	0.05 U	0.05 U	2.5 U	1.5 U	0.5 U	1.5 U
1,1,2-Trichloroethane	UG/L	0.05 U	0.05 U	2.5 U	1.5 U	0.5 U	1.5 U
1,1-Dichloroethane	UG/L	0.05 U	0.05 U	2.5 U	1.5 U	0.5 U	1.5 U
1,1-Dichloroethene	UG/L	0.1 U	0.1 U	5 U	2.5 U	1 U	2.5 U
1,2-Dichlorobenzene	UG/L	0.1 U	0.1 U	5 U	2.5 U	1 U	2.5 U
1,2-Dichloroethane	UG/L	0.15 U	0.15 U	7.5 U	4 U	1.5 U	4 U
1,2-Dichloropropane	UG/L	0.05 U	0.05 U	2.5 U	1.5 U	0.5 U	1.5 U
1,3-Dichlorobenzene	UG/L	0.2 U	0.2 U	10 U	5 U	2 U	5 U
1,4-Dichlorobenzene	UG/L	0.5 U	0.5 U	25 U	12.5 U	5 U	12.5 U
Bromodichloromethane	UG/L	0.05 U	0.05 U	2.5 U	1.5 U	0.5 U	1.5 U
Bromoform	UG/L	0.1 U	0.1 U	5 U	2.5 U	1 U	2.5 U
Bromomethane	UG/L	0.6 U	0.6 U	30 U	15 U	6 U	15 U
Carbon tetrachloride	UG/L	0.1 U	0.1 U	5 U	2.5 U	1 U	2.5 U
Chlorobenzene	UG/L	0.15 U	0.15 U	7.5 U	4 U	1.5 U	4 U
Chloroethane	UG/L	0.3 U	0.3 U	15 U	7.5 U	3 U	7.5 U
Chloroform	UG/L	0.05 U	0.05 U	2.5 U	1.5 U	0.5 U	1.5 U
Chloromethane	UG/L	0.25 U	0.25 U	12.5 U	6.5 U	2.5 U	6.5 U
Dibromochloromethane	UG/L	0.05 U	0.05 U	2.5 U	1.5 U	0.5 U	1.5 U
Dichlorodifluoromethane	UG/L	1 U	1 U	50 U	25 U	10 U	25 U
Methylene chloride	UG/L	2.5 U	2.5 U	125 U	62.5 U	25 U	62.5 U
Tetrachloroethene	UG/L	0.05 U	0.05 U	2.5 U	1.5 U	0.5 U	1.5 U
Trichloroethene	UG/L	6.1	3.8	649	299	180	1.5 U
Trichlorofluoromethane	UG/L	0.25 U	0.25 U	12.5 U	6.5 U	2.5 U	6.5 U
Vinyl chloride	UG/L	0.25 U	0.25 U	12.5 U	6.5 U	2.5 U	6.5 U
cis-1,2-Dichloroethene	UG/L	3.3	32	973	682	185	1.5 U
cis-1,3-Dichloropropene	UG/L	0.1 U	0.1 U	5 U	2.5 U	1 U	2.5 U
trans-1,2-Dichloroethene	UG/L	0.05 U	2.6	102	47	18	1.5 U
trans-1,3-Dichloropropene	UG/L	0.1 U	0.1 U	5 U	2.5 U	1 U	2.5 U
Benzene	UG/L	1.2	3.4	5 U	2.5 U	1 U	698
Chlorobenzene	UG/L	0.1 U	0.1 U	5 U	2.5 U	1 U	2.5 U
Ethyl benzene	UG/L	1.6	0.9	36	18	6	420
Methyl Tertiary Butyl Ether	UG/L	5 U	6.6 J	241	92.5	43.9	34.1
Toluene	UG/L	1.2	0.6	59	17	12	984
Xylenes	UG/L	3.3	2.3	135	54	19	1700

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW09D-02	35-MW10S-02	35-MW10D-02	35-MW14S-02	35-MW14D-02	35-MW16S-02
Lab Sample ID:		D94-5296-6	D94-5296-13	D94-5296-8	D94-5296-10	D94-5296-11	D94-5296-16
Date Sampled:		11-MAY-1994	12-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	11
bis(2-Chloroethyl)ether	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
2-Chlorophenol	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
1,3-Dichlorobenzene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
1,4-Dichlorobenzene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
1,2-Dichlorobenzene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
2-Methylphenol	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
2,2'-oxybis(1-Chloropropane)	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
4-Methylphenol	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	6 J
N-Nitroso-di-n-propylamine	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Hexachloroethane	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Nitrobenzene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Isophorone	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
2-Nitrophenol	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
2,4-Dimethylphenol	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
bis(2-Chloroethoxy)methane	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
2,4-Dichlorophenol	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
1,2,4-Trichlorobenzene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Naphthalene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	75
4-Chloroaniline	UG/L	5 UJ	5 UJ	5 UJ	5.5 UJ	5.5 UJ	5 UJ
Hexachlorobutadiene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
4-Chloro-3-methylphenol	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
2-Methylnaphthalene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	70
Hexachlorocyclopentadiene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
2,4,6-Trichlorophenol	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
2,4,5-Trichlorophenol	UG/L	12.5 U	12.5 U	12.5 U	14 U	14 U	12.5 U
2-Chloronaphthalene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
2-Nitroaniline	UG/L	12.5 U	12.5 U	12.5 U	14 U	14 U	12.5 U
Dimethylphthalate	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Acenaphthylene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
2,6-Dinitrotoluene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
3-Nitroaniline	UG/L	12.5 UJ	12.5 UJ	12.5 UJ	14 UJ	14 UJ	12.5 UJ
Acenaphthene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW09D-02	35-MW10S-02	35-MW10D-02	35-MW14S-02	35-MW14D-02	35-MW16S-02
Lab Sample ID:		D94-5296-6	D94-5296-13	D94-5296-8	D94-5296-10	D94-5296-11	D94-5296-16
Date Sampled:		11-MAY-1994	12-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	12.5 UJ	12.5 UJ	12.5 UJ	14 UJ	14 UJ	12.5 UJ
Dibenzofuran	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
4-Nitrophenol	UG/L	5 UJ	5 UJ	5 UJ	5.5 UJ	5.5 UJ	5 UJ
2,4-Dinitrotoluene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Diethylphthalate	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Fluorene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
4-Chlorophenyl-phenylether	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
4-Nitroaniline	UG/L	12.5 U	12.5 U	12.5 U	14 U	14 U	12.5 U
4,6-Dinitro-2-methylphenol	UG/L	12.5 U	12.5 U	12.5 U	14 U	14 U	12.5 U
N-Nitrosodiphenylamine	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
4-Bromophenyl-phenylether	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Hexachlorobenzene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Pentachlorophenol	UG/L	12.5 U	12.5 U	12.5 U	14 U	14 U	12.5 U
Phenanthrene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Anthracene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Carbazole	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Di-n-butylphthalate	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Fluoranthene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Pyrene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Butylbenzylphthalate	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Benzo(a)anthracene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
3,3'-Dichlorobenzidine	UG/L	5 UJ	5 UJ	5 UJ	5.5 UJ	5.5 UJ	5 UJ
Chrysene	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
bis(2-Ethylhexyl)phthalate	UG/L	5 U	5 U	5 U	5.5 U	5.5 U	5 U
Di-n-octylphthalate	UG/L	5 UJ	5 U	5 U	5.5 U	5.5 U	5 U
Benzo(b)fluoranthene	UG/L	5 UJ	5 U	5 U	5.5 U	5.5 U	5 U
Benzo(k)fluoranthene	UG/L	5 UJ	5 U	5 U	5.5 U	5.5 U	5 U
Benzo(a)pyrene	UG/L	5 UJ	5 U	5 U	5.5 U	5.5 U	5 U
Indeno(1,2,3-cd)pyrene	UG/L	5 UJ	5 U	5 U	5.5 U	5.5 U	5 U
Dibenz(a,h)anthracene	UG/L	5 UJ	5 U	5 U	5.5 U	5.5 U	5 U
Benzo(g,h,i)perylene	UG/L	5 UJ	5 U	5 U	5.5 U	5.5 U	5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW09D-02	35-MW10S-02	35-MW10D-02	35-MW14S-02	35-MW14D-02	35-MW16S-02
Lab Sample ID:		D94-5296-6	D94-5296-13	D94-5296-8	D94-5296-10	D94-5296-11	D94-5296-16
Date Sampled:		11-MAY-1994	12-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	NA	NA	NA	NA	NA	NA
beta-BHC	UG/L	NA	NA	NA	NA	NA	NA
delta-BHC	UG/L	NA	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	UG/L	NA	NA	NA	NA	NA	NA
Heptachlor	UG/L	NA	NA	NA	NA	NA	NA
Aldrin	UG/L	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan I	UG/L	NA	NA	NA	NA	NA	NA
Dieldrin	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDE	UG/L	NA	NA	NA	NA	NA	NA
Endrin	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan II	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDD	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDT	UG/L	NA	NA	NA	NA	NA	NA
Methoxychlor	UG/L	NA	NA	NA	NA	NA	NA
Endrin ketone	UG/L	NA	NA	NA	NA	NA	NA
Endrin aldehyde	UG/L	NA	NA	NA	NA	NA	NA
alpha-Chlordane	UG/L	NA	NA	NA	NA	NA	NA
gamma-Chlordane	UG/L	NA	NA	NA	NA	NA	NA
Toxaphene	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1016	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1221	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1232	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1242	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1248	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1254	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1260	UG/L	NA	NA	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW16D-02	35-MW19S-02	35-MW19D-02	35-MW21S-02	35-MW21D-02	35-MW22S-02
Lab Sample ID:		D94-5296-12	D94-5296-17	D94-5296-22	D94-5296-23	D94-5296-24	D94-5361-17
Date Sampled:		12-MAY-1994	12-MAY-1994	12-MAY-1994	13-MAY-1994	13-MAY-1994	13-MAY-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	2.5 U	2.5 U	62.5 U	125 U	2.5 U	62.5 U
1,1,2,2-Tetrachloroethane	UG/L	0.05 U	0.05 U	1.5 U	2.5 U	0.05 U	1.5 U
1,1,2-Trichloroethane	UG/L	0.05 U	0.05 U	1.5 U	2.5 U	0.05 U	1.5 U
1,1-Dichloroethane	UG/L	0.05 U	0.05 U	1.5 U	2.5 U	0.05 U	1.5 U
1,1-Dichloroethene	UG/L	0.1 U	0.1 U	2.5 U	5 U	0.1 U	2.5 U
1,2-Dichlorobenzene	UG/L	0.1 U	0.1 U	2.5 U	5 U	0.1 U	2.5 U
1,2-Dichloroethane	UG/L	0.15 U	0.15 U	4 U	7.5 U	0.15 U	4 U
1,2-Dichloropropane	UG/L	0.05 U	0.05 U	1.5 U	2.5 U	0.05 U	1.5 U
1,3-Dichlorobenzene	UG/L	0.2 U	0.2 U	5 U	10 U	0.2 U	5 U
1,4-Dichlorobenzene	UG/L	0.5 U	0.5 U	12.5 U	25 U	0.5 U	12.5 U
Bromodichloromethane	UG/L	0.05 U	0.05 U	1.5 U	2.5 U	0.05 U	1.5 U
Bromoform	UG/L	0.1 U	0.1 U	2.5 U	5 U	0.1 U	2.5 U
Bromomethane	UG/L	0.6 U	0.6 U	15 U	30 U	0.6 U	15 U
Carbon tetrachloride	UG/L	0.1 U	0.1 U	2.5 U	5 U	0.1 U	2.5 U
Chlorobenzene	UG/L	0.15 U	0.15 U	4 U	7.5 U	0.15 U	4 U
Chloroethane	UG/L	0.3 U	0.3 U	7.5 U	15 U	0.3 U	7.5 U
Chloroform	UG/L	0.05 U	0.05 U	1.5 U	2.5 U	0.05 U	1.5 U
Chloromethane	UG/L	0.25 U	0.25 U	6.5 U	12.5 U	0.25 U	6.5 U
Dibromochloromethane	UG/L	0.05 U	0.05 U	1.5 U	2.5 U	0.05 U	1.5 U
Dichlorodifluoromethane	UG/L	1 U	1 U	25 U	25 U	1 U	25 U
Methylene chloride	UG/L	2.5 U	2.5 U	62.5 U	125 U	2.5 U	62.5 U
Tetrachloroethene	UG/L	0.05 U	0.05 U	1.5 U	2.5 U	0.05 U	1.5 U
Trichloroethene	UG/L	0.05 U	26.8	900	2.5 U	8.3	1.5 U
Trichlorofluoromethane	UG/L	0.25 U	0.25 U	6.5 U	12.5 U	0.25 U	6.5 U
Vinyl chloride	UG/L	0.25 U	0.25 U	6.5 U	12.5 U	0.25 U	6.5 U
cis-1,2-Dichloroethene	UG/L	0.05 U	26	664	2.5 U	13.9	1.5 U
cis-1,3-Dichloropropene	UG/L	0.1 U	0.1 U	2.5 U	5 U	0.1 U	2.5 U
trans-1,2-Dichloroethene	UG/L	0.05 U	6	176	2.5 U	1.5	1.5 U
trans-1,3-Dichloropropene	UG/L	0.1 U	0.1 U	2.5 U	5 U	0.1 U	2.5 U
Benzene	UG/L	0.5	0.1 U	2.5 U	210	0.1 U	1660
Chlorobenzene	UG/L	0.1 U	0.1 U	2.5 U	5 U	0.1 U	2.5 U
Ethyl benzene	UG/L	1.1	0.8	29	824	0.7	96
Methyl Tertiary Butyl Ether	UG/L	5 U	5 U	319	5 U	5 U	13.4
Toluene	UG/L	1	0.6	12	45	0.6	86
Xylenes	UG/L	2.5	1.8	50	1320	2.1	100

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW16D-02	35-MW19S-02	35-MW19D-02	35-MW21S-02	35-MW21D-02	35-MW22S-02
Lab Sample ID:		D94-5296-12	D94-5296-17	D94-5296-22	D94-5296-23	D94-5296-24	D94-5361-17
Date Sampled:		12-MAY-1994	12-MAY-1994	12-MAY-1994	13-MAY-1994	13-MAY-1994	13-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	5 U	5 U	5 U	5 U	5 U	23
bis(2-Chloroethyl)ether	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorophenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
1,3-Dichlorobenzene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2-Methylphenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2,2'-oxybis(1-Chloropropane)	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
4-Methylphenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
N-Nitroso-di-n-propylamine	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Hexachloroethane	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Nitrobenzene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Isophorone	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2-Nitrophenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dimethylphenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
bis(2-Chloroethoxy)methane	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dichlorophenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene	UG/L	5 U	5 U	5 U	499	5 U	118
4-Chloroaniline	UG/L	5 UJ	5 UJ	5 U	5 U	5 U	5 U
Hexachlorobutadiene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
4-Chloro-3-methylphenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2-Methylnaphthalene	UG/L	5 U	5 U	5 U	668	5 U	152
Hexachlorocyclopentadiene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2,4,6-Trichlorophenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2,4,5-Trichlorophenol	UG/L	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U
2-Chloronaphthalene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2-Nitroaniline	UG/L	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U
Dimethylphthalate	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Acenaphthylene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2,6-Dinitrotoluene	UG/L	5 U	5 U	5 U	5 UJ	5 UJ	5 U
3-Nitroaniline	UG/L	12.5 UJ	12.5 UJ	12.5 UJ	12.5 U	12.5 U	12.5 U
Acenaphthene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW16D-02	35-MW19S-02	35-MW19D-02	35-MW21S-02	35-MW21D-02	35-MW22S-02
Lab Sample ID:		D94-5296-12	D94-5296-17	D94-5296-22	D94-5296-23	D94-5296-24	D94-5361-17
Date Sampled:		12-MAY-1994	12-MAY-1994	12-MAY-1994	13-MAY-1994	13-MAY-1994	13-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	12.5 UJ	12.5 UJ	12.5 U	12.5 U	12.5 U	12.5 U
Dibenzofuran	UG/L	5 U	5 U	5 U	23	5 U	14
4-Nitrophenol	UG/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 U
2,4-Dinitrotoluene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Diethylphthalate	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Fluorene	UG/L	5 U	5 U	5 U	22	5 U	21
4-Chlorophenyl-phenylether	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
4-Nitroaniline	UG/L	12.5 U	12.5 U	12.5 UJ	12.5 UJ	12.5 UJ	12.5 U
4,6-Dinitro-2-methylphenol	UG/L	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U
N-Nitrosodiphenylamine	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
4-Bromophenyl-phenylether	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Hexachlorobenzene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Pentachlorophenol	UG/L	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U
Phenanthrene	UG/L	5 U	5 U	5 U	52	5 U	31
Anthracene	UG/L	5 U	5 U	5 U	7 J	5 U	5 U
Carbazole	UG/L	5 U	5 U	5 U	12	5 U	13
Di-n-butylphthalate	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Fluoranthene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Pyrene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Butylbenzylphthalate	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Benzo(a)anthracene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
3,3'-Dichlorobenzidine	UG/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 U
Chrysene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
bis(2-Ethylhexyl)phthalate	UG/L	5 U	5 U	5 UJ	5 UJ	5 UJ	5 U
Di-n-octylphthalate	UG/L	5 U	5 UJ	5 U	5 U	5 U	5 U
Benzo(b)fluoranthene	UG/L	5 U	5 UJ	5 U	5 U	5 U	5 U
Benzo(k)fluoranthene	UG/L	5 U	5 UJ	5 U	5 U	5 U	5 U
Benzo(a)pyrene	UG/L	5 U	5 UJ	5 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	UG/L	5 U	5 UJ	5 U	5 U	5 U	5 U
Dibenz(a,h)anthracene	UG/L	5 U	5 UJ	5 U	5 U	5 U	5 U
Benzo(g,h,i)perylene	UG/L	5 U	5 UJ	5 U	5 U	5 U	5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW16D-02	35-MW19S-02	35-MW19D-02	35-MW21S-02	35-MW21D-02	35-MW22S-02
Lab Sample ID:		D94-5296-12	D94-5296-17	D94-5296-22	D94-5296-23	D94-5296-24	D94-5361-17
Date Sampled:		12-MAY-1994	12-MAY-1994	12-MAY-1994	13-MAY-1994	13-MAY-1994	13-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	NA	NA	NA	0.025 U	0.025 U	NA
beta-BHC	UG/L	NA	NA	NA	0.023 J	0.025 U	NA
delta-BHC	UG/L	NA	NA	NA	0.025 U	0.025 U	NA
gamma-BHC (Lindane)	UG/L	NA	NA	NA	0.025 U	0.025 U	NA
Heptachlor	UG/L	NA	NA	NA	0.025 U	0.025 U	NA
Aldrin	UG/L	NA	NA	NA	0.013 J	0.025 U	NA
Heptachlor epoxide	UG/L	NA	NA	NA	0.025 U	0.025 U	NA
Endosulfan I	UG/L	NA	NA	NA	0.025 U	0.025 U	NA
Dieldrin	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
4,4'-DDE	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
Endrin	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
Endosulfan II	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
4,4'-DDD	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
Endosulfan sulfate	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
4,4'-DDT	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
Methoxychlor	UG/L	NA	NA	NA	0.25 U	0.25 U	NA
Endrin ketone	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
Endrin aldehyde	UG/L	NA	NA	NA	0.05 U	0.05 U	NA
alpha-Chlordane	UG/L	NA	NA	NA	0.025 U	0.025 U	NA
gamma-Chlordane	UG/L	NA	NA	NA	0.025 U	0.025 U	NA
Toxaphene	UG/L	NA	NA	NA	2.5 U	2.5 U	NA
Aroclor-1016	UG/L	NA	NA	NA	0.5 U	0.5 U	NA
Aroclor-1221	UG/L	NA	NA	NA	1 U	1 U	NA
Aroclor-1232	UG/L	NA	NA	NA	0.5 U	0.5 U	NA
Aroclor-1242	UG/L	NA	NA	NA	0.5 U	0.5 U	NA
Aroclor-1248	UG/L	NA	NA	NA	0.5 U	0.5 U	NA
Aroclor-1254	UG/L	NA	NA	NA	0.5 U	0.5 U	NA
Aroclor-1260	UG/L	NA	NA	NA	0.5 U	0.5 U	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW22D-02	35-MW25S-02	35-MW25D-02	35-MW26AW-02	35-MW26BW-01	35-MW26S-02
Lab Sample ID:		D94-5361-2	D94-5361-4	D94-5361-18	D94-5529-8	D94-5529-17	D94-4917-4
Date Sampled:		13-MAY-1994	13-MAY-1994	13-MAY-1994	17-MAY-1994	20-MAY-1994	26-APR-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	2.5 U	25 U	2.5 U	2.5 U	25 U	2.5 U
1,1,2,2-Tetrachloroethane	UG/L	0.05 U	0.5 U	0.05 U	0.05 U	0.5 U	0.05 U
1,1,2-Trichloroethane	UG/L	0.05 U	0.5 U	0.05 U	0.05 U	0.5 U	0.05 U
1,1-Dichloroethane	UG/L	0.05 U	0.5 U	0.05 U	0.05 U	0.5 U	0.05 U
1,1-Dichloroethene	UG/L	0.1 U	1 U	0.1 U	0.1 U	1 U	0.1 U
1,2-Dichlorobenzene	UG/L	0.1 U	1 U	0.1 U	0.1 U	1 U	0.1 U
1,2-Dichloroethane	UG/L	0.15 U	1.5 U	0.15 U	0.15 U	1.5 U	0.15 U
1,2-Dichloropropane	UG/L	0.05 U	0.5 U	0.05 U	0.05 U	0.5 U	0.05 U
1,3-Dichlorobenzene	UG/L	0.2 U	2 U	0.2 U	0.2 U	2 U	0.2 U
1,4-Dichlorobenzene	UG/L	0.5 U	5 U	0.5 U	0.5 U	5 U	0.5 U
Bromodichloromethane	UG/L	0.05 U	0.5 U	0.05 U	0.05 U	0.5 U	0.05 U
Bromoform	UG/L	0.1 U	1 U	0.1 U	0.1 U	1 U	0.1 U
Bromomethane	UG/L	0.6 U	6 U	0.6 U	0.6 U	6 U	0.6 U
Carbon tetrachloride	UG/L	0.1 U	1 U	0.1 U	0.1 U	1 U	0.1 U
Chlorobenzene	UG/L	0.15 U	1.5 U	0.15 U	0.15 U	1.5 U	0.15 U
Chloroethane	UG/L	0.3 U	3 U	0.3 U	0.3 U	3 U	0.3 U
Chloroform	UG/L	0.05 U	0.5 U	0.05 U	0.05 U	0.5 U	0.05 U
Chloromethane	UG/L	0.25 U	2.5 U	0.25 U	0.25 U	2.5 U	0.25 U
Dibromochloromethane	UG/L	0.05 U	0.5 U	0.05 U	0.05 U	0.5 U	0.05 U
Dichlorodifluoromethane	UG/L	1 U	10 U	1 U	1 U	10 U	1 U
Methylene chloride	UG/L	2.5 U	25 U	2.5 U	2.5 U	25 U	2.5 U
Tetrachloroethene	UG/L	0.05 U	0.5 U	0.05 U	0.05 U	0.5 U	0.05 U
Trichloroethene	UG/L	0.4	0.5 U	0.05 U	0.05 U	0.5 U	0.05 U
Trichlorofluoromethane	UG/L	0.25 U	2.5 U	0.25 U	0.25 U	2.5 U	0.25 U
Vinyl chloride	UG/L	0.25 U	2.5 U	0.25 U	0.25 U	2.5 U	0.25 U
cis-1,2-Dichloroethene	UG/L	38.3	0.5 U	0.05 U	0.05 U	260	0.05 U
cis-1,3-Dichloropropene	UG/L	0.1 U	1 U	0.1 U	0.1 U	1 U	0.1 U
trans-1,2-Dichloroethene	UG/L	0.05 U	0.5 U	0.05 U	0.05 U	0.5 U	0.05 U
trans-1,3-Dichloropropene	UG/L	0.1 U	1 U	0.1 U	0.1 U	1 U	0.1 U
Benzene	UG/L	1.7	25	0.3	0.7	1 U	0.1 U
Chlorobenzene	UG/L	0.1 U	1 U	0.1 U	0.1 U	1 U	0.1 U
Ethyl benzene	UG/L	0.5	259	0.6	1.8	1 U	0.8
Methyl Tertiary Butyl Ether	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Toluene	UG/L	0.5	122	0.7	1.3	1 U	0.9
Xylenes	UG/L	1.4	561	1.6	3.7	1 U	2

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW22D-02	35-MW25S-02	35-MW25D-02	35-MW26AW-02	35-MW26BW-01	35-MW26S-02
Lab Sample ID:		D94-5361-2	D94-5361-4	D94-5361-18	D94-5529-8	D94-5529-17	D94-4917-4
Date Sampled:		13-MAY-1994	13-MAY-1994	13-MAY-1994	17-MAY-1994	20-MAY-1994	26-APR-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	5 U	5 U	5 U	NA	NA	NA
bis(2-Chloroethyl)ether	UG/L	5 U	5 U	5 U	NA	NA	NA
2-Chlorophenol	UG/L	5 U	5 U	5 U	NA	NA	NA
1,3-Dichlorobenzene	UG/L	5 U	5 U	5 U	NA	NA	NA
1,4-Dichlorobenzene	UG/L	5 U	5 U	5 U	NA	NA	NA
1,2-Dichlorobenzene	UG/L	5 U	5 U	5 U	NA	NA	NA
2-Methylphenol	UG/L	5 U	5 U	5 U	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/L	5 U	5 U	5 U	NA	NA	NA
4-Methylphenol	UG/L	5 U	5 U	5 U	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/L	5 U	5 U	5 U	NA	NA	NA
Hexachloroethane	UG/L	5 U	5 U	5 U	NA	NA	NA
Nitrobenzene	UG/L	5 U	5 U	5 U	NA	NA	NA
Isophorone	UG/L	5 U	5 U	5 U	NA	NA	NA
2-Nitrophenol	UG/L	5 U	5 U	5 U	NA	NA	NA
2,4-Dimethylphenol	UG/L	5 U	5 U	5 U	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/L	5 U	5 U	5 U	NA	NA	NA
2,4-Dichlorophenol	UG/L	5 U	5 U	5 U	NA	NA	NA
1,2,4-Trichlorobenzene	UG/L	5 U	5 U	5 U	NA	NA	NA
Naphthalene	UG/L	5 U	123	5 U	NA	NA	NA
4-Chloroaniline	UG/L	5 U	5 U	5 U	NA	NA	NA
Hexachlorobutadiene	UG/L	5 U	5 U	5 U	NA	NA	NA
4-Chloro-3-methylphenol	UG/L	5 U	5 U	5 U	NA	NA	NA
2-Methylnaphthalene	UG/L	5 U	131	5 U	NA	NA	NA
Hexachlorocyclopentadiene	UG/L	5 U	5 U	5 U	NA	NA	NA
2,4,6-Trichlorophenol	UG/L	5 U	5 U	5 U	NA	NA	NA
2,4,5-Trichlorophenol	UG/L	12.5 U	12.5 U	12.5 U	NA	NA	NA
2-Chloronaphthalene	UG/L	5 U	5 U	5 U	NA	NA	NA
2-Nitroaniline	UG/L	12.5 U	12.5 U	12.5 U	NA	NA	NA
Dimethylphthalate	UG/L	5 U	5 U	5 U	NA	NA	NA
Acenaphthylene	UG/L	5 U	5 U	5 U	NA	NA	NA
2,6-Dinitrotoluene	UG/L	5 U	5 U	5 U	NA	NA	NA
3-Nitroaniline	UG/L	12.5 UJ	12.5 UJ	12.5 UJ	NA	NA	NA
Acenaphthene	UG/L	5 U	5 U	5 U	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW22D-02	35-MW25S-02	35-MW25D-02	35-MW26AW-02	35-MW26BW-01	35-MW26S-02
Lab Sample ID:		D94-5361-2	D94-5361-4	D94-5361-18	D94-5529-8	D94-5529-17	D94-4917-4
Date Sampled:		13-MAY-1994	13-MAY-1994	13-MAY-1994	17-MAY-1994	20-MAY-1994	26-APR-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	12.5 U	12.5 U	12.5 U	NA	NA	NA
Dibenzofuran	UG/L	5 U	8 J	5 U	NA	NA	NA
4-Nitrophenol	UG/L	5 UJ	5 UJ	5 UJ	NA	NA	NA
2,4-Dinitrotoluene	UG/L	5 U	5 U	5 U	NA	NA	NA
Diethylphthalate	UG/L	5 U	5 U	5 U	NA	NA	NA
Fluorene	UG/L	5 U	8 J	5 U	NA	NA	NA
4-Chlorophenyl-phenylether	UG/L	5 U	5 U	5 U	NA	NA	NA
4-Nitroaniline	UG/L	12.5 UJ	12.5 UJ	12.5 UJ	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	12.5 U	12.5 U	12.5 U	NA	NA	NA
N-Nitrosodiphenylamine	UG/L	5 U	5 U	5 U	NA	NA	NA
4-Bromophenyl-phenylether	UG/L	5 U	5 U	5 U	NA	NA	NA
Hexachlorobenzene	UG/L	5 U	5 U	5 U	NA	NA	NA
Pentachlorophenol	UG/L	12.5 U	12.5 U	12.5 U	NA	NA	NA
Phenanthrene	UG/L	5 U	10 J	5 U	NA	NA	NA
Anthracene	UG/L	5 U	5 U	5 U	NA	NA	NA
Carbazole	UG/L	5 U	5 U	5 U	NA	NA	NA
Di-n-butylphthalate	UG/L	5 U	5 U	5 U	NA	NA	NA
Fluoranthene	UG/L	5 U	5 U	5 U	NA	NA	NA
Pyrene	UG/L	5 U	5 U	5 U	NA	NA	NA
Butylbenzylphthalate	UG/L	5 UJ	5 UJ	5 UJ	NA	NA	NA
Benzo(a)anthracene	UG/L	5 U	5 U	5 U	NA	NA	NA
3,3'-Dichlorobenzidine	UG/L	5 U	5 U	5 U	NA	NA	NA
Chrysene	UG/L	5 U	5 U	5 U	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	5 UJ	5 UJ	5 UJ	NA	NA	NA
Di-n-octylphthalate	UG/L	5 U	5 U	5 U	NA	NA	NA
Benzo(b)fluoranthene	UG/L	5 U	5 U	5 U	NA	NA	NA
Benzo(k)fluoranthene	UG/L	5 U	5 U	5 U	NA	NA	NA
Benzo(a)pyrene	UG/L	5 U	5 U	5 U	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/L	5 U	5 U	5 U	NA	NA	NA
Dibenz(a,h)anthracene	UG/L	5 U	5 U	5 U	NA	NA	NA
Benzo(g,h,i)perylene	UG/L	5 U	5 U	5 U	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW22D-02	35-MW25S-02	35-MW25D-02	35-MW26AW-02	35-MW26BW-01	35-MW26S-02
Lab Sample ID:		D94-5361-2	D94-5361-4	D94-5361-18	D94-5529-8	D94-5529-17	D94-4917-4
Date Sampled:		13-MAY-1994	13-MAY-1994	13-MAY-1994	17-MAY-1994	20-MAY-1994	26-APR-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	NA	NA	NA	NA	NA	NA
beta-BHC	UG/L	NA	NA	NA	NA	NA	NA
delta-BHC	UG/L	NA	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	UG/L	NA	NA	NA	NA	NA	NA
Heptachlor	UG/L	NA	NA	NA	NA	NA	NA
Aldrin	UG/L	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan I	UG/L	NA	NA	NA	NA	NA	NA
Dieldrin	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDE	UG/L	NA	NA	NA	NA	NA	NA
Endrin	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan II	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDD	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDT	UG/L	NA	NA	NA	NA	NA	NA
Methoxychlor	UG/L	NA	NA	NA	NA	NA	NA
Endrin ketone	UG/L	NA	NA	NA	NA	NA	NA
Endrin aldehyde	UG/L	NA	NA	NA	NA	NA	NA
alpha-Chlordane	UG/L	NA	NA	NA	NA	NA	NA
gamma-Chlordane	UG/L	NA	NA	NA	NA	NA	NA
Toxaphene	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1016	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1221	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1232	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1242	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1248	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1254	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1260	UG/L	NA	NA	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW29A-01	35-MW29BW-01	35-MW30AW-01	35-MW30BW-01	35-MW31AW-01	35-MW31BW-01
Lab Sample ID:		D94-5296-1	D94-5296-4	D94-5529-4	D94-5361-11	D94-5715-3	D94-5361-15
Date Sampled:		10-MAY-1994	10-MAY-1994	16-MAY-1994	15-MAY-1994	19-MAY-1994	14-MAY-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	2.5 U	25 U	2.5 U	62.5 U	2.5 U	62.5 U
1,1,2,2-Tetrachloroethane	UG/L	0.05 U	0.5 U	0.05 U	1.5 U	0.05 U	1.5 U
1,1,2-Trichloroethane	UG/L	0.05 U	0.5 U	0.05 U	1.5 U	0.05 U	1.5 U
1,1-Dichloroethane	UG/L	0.05 U	0.5 U	0.05 U	1.5 U	0.05 U	1.5 U
1,1-Dichloroethene	UG/L	0.1 U	1 U	0.1 U	2.5 U	0.1 U	2.5 U
1,2-Dichlorobenzene	UG/L	0.1 U	1 U	0.1 U	2.5 U	0.1 U	2.5 U
1,2-Dichloroethane	UG/L	0.15 U	1.5 U	0.15 U	4 U	0.15 U	4 U
1,2-Dichloropropane	UG/L	0.05 U	0.5 U	0.05 U	1.5 U	0.05 U	1.5 U
1,3-Dichlorobenzene	UG/L	0.2 U	2 U	0.2 U	5 U	0.2 U	5 U
1,4-Dichlorobenzene	UG/L	0.5 U	5 U	0.5 U	12.5 U	0.5 U	12.5 U
Bromodichloromethane	UG/L	0.05 U	0.5 U	0.05 U	1.5 U	0.05 U	1.5 U
Bromoform	UG/L	0.1 U	1 U	0.1 U	2.5 U	0.1 U	2.5 U
Bromomethane	UG/L	0.6 U	6 U	0.6 U	15 U	0.6 U	15 U
Carbon tetrachloride	UG/L	0.1 U	1 U	0.1 U	2.5 U	0.1 U	2.5 U
Chlorobenzene	UG/L	0.15 U	1.5 U	0.15 U	4 U	0.15 U	4 U
Chloroethane	UG/L	0.3 U	3 U	0.3 U	7.5 U	0.3 U	7.5 U
Chloroform	UG/L	0.05 U	0.5 U	0.05 U	1.5 U	0.05 U	1.5 U
Chloromethane	UG/L	0.25 U	2.5 U	0.25 U	6.5 U	0.25 U	6.5 U
Dibromochloromethane	UG/L	0.05 U	0.5 U	0.05 U	1.5 U	0.05 U	1.5 U
Dichlorodifluoromethane	UG/L	1 U	10 U	1 U	25 U	1 U	25 U
Methylene chloride	UG/L	2.5 U	25 U	2.5 U	62.5 U	2.5 U	62.5 U
Tetrachloroethene	UG/L	0.05 U	0.5 U	0.05 U	1.5 U	0.05 U	1.5 U
Trichloroethene	UG/L	0.05 U	255	0.05 U	217	0.05 U	1.5 U
Trichlorofluoromethane	UG/L	0.25 U	2.5 U	0.25 U	6.5 U	0.25 U	6.5 U
Vinyl chloride	UG/L	0.25 U	2.5 U	0.25 U	6.5 U	0.25 U	6.5 U
cis-1,2-Dichloroethene	UG/L	0.05 U	53	0.05 U	485	0.05 U	234
cis-1,3-Dichloropropene	UG/L	0.1 U	1 U	0.1 U	2.5 U	0.1 U	2.5 U
trans-1,2-Dichloroethene	UG/L	0.05 U	6	0.05 U	115	0.05 U	26
trans-1,3-Dichloropropene	UG/L	0.1 U	1 U	0.1 U	2.5 U	0.1 U	2.5 U
Benzene	UG/L	4.1	2.5	0.1 U	16	0.1 U	15
Chlorobenzene	UG/L	0.1 U	0.1 U	0.1 U	2.5 U	0.1 U	2.5 U
Ethyl benzene	UG/L	2.4	0.9	0.9	11	0.1 U	21
Methyl Tertiary Butyl Ether	UG/L	5 U	22.3	5 U	223	5 U	76.3
Toluene	UG/L	2.2	1.6	1.3	15	0.1 U	14
Xylenes	UG/L	6.6	1.9	1.7	40	0.1 U	66

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW29A-01	35-MW29BW-01	35-MW30AW-01	35-MW30BW-01	35-MW31AW-01	35-MW31BW-01
Lab Sample ID:		D94-5296-1	D94-5296-4	D94-5529-4	D94-5361-11	D94-5715-3	D94-5361-15
Date Sampled:		10-MAY-1994	10-MAY-1994	16-MAY-1994	15-MAY-1994	19-MAY-1994	14-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	5 U	5 U	NA	NA	NA	NA
bis(2-Chloroethyl)ether	UG/L	5 U	5 U	NA	NA	NA	NA
2-Chlorophenol	UG/L	5 U	5 U	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/L	5 U	5 U	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/L	5 U	5 U	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/L	5 U	5 U	NA	NA	NA	NA
2-Methylphenol	UG/L	17	5 UJ	NA	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/L	5 UJ	5 U	NA	NA	NA	NA
4-Methylphenol	UG/L	5 U	5 U	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/L	5 UJ	5 UJ	NA	NA	NA	NA
Hexachloroethane	UG/L	5 U	5 U	NA	NA	NA	NA
Nitrobenzene	UG/L	5 U	5 U	NA	NA	NA	NA
Isophorone	UG/L	5 U	5 U	NA	NA	NA	NA
2-Nitrophenol	UG/L	5 U	5 U	NA	NA	NA	NA
2,4-Dimethylphenol	UG/L	74	5 U	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/L	5 U	5 U	NA	NA	NA	NA
2,4-Dichlorophenol	UG/L	5 U	5 U	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/L	5 U	5 U	NA	NA	NA	NA
Naphthalene	UG/L	71	5 U	NA	NA	NA	NA
4-Chloroaniline	UG/L	5 U	5 U	NA	NA	NA	NA
Hexachlorobutadiene	UG/L	5 UJ	5 UJ	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/L	5 U	5 U	NA	NA	NA	NA
2-Methylnaphthalene	UG/L	81 J	5 U	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/L	5 UJ	5 UJ	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/L	5 U	5 U	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/L	12.5 U	12.5 U	NA	NA	NA	NA
2-Chloronaphthalene	UG/L	5 U	5 U	NA	NA	NA	NA
2-Nitroaniline	UG/L	12.5 U	12.5 U	NA	NA	NA	NA
Dimethylphthalate	UG/L	5 U	5 U	NA	NA	NA	NA
Acenaphthylene	UG/L	5 U	5 U	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/L	5 U	5 U	NA	NA	NA	NA
3-Nitroaniline	UG/L	12.5 U	12.5 U	NA	NA	NA	NA
Acenaphthene	UG/L	5 U	5 U	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW29A-01	35-MW29BW-01	35-MW30AW-01	35-MW30BW-01	35-MW31AW-01	35-MW31BW-01
Lab Sample ID:		D94-5296-1	D94-5296-4	D94-5529-4	D94-5361-11	D94-5715-3	D94-5361-15
Date Sampled:		10-MAY-1994	10-MAY-1994	16-MAY-1994	15-MAY-1994	19-MAY-1994	14-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	12.5 U	12.5 U	NA	NA	NA	NA
Dibenzofuran	UG/L	5 U	5 U	NA	NA	NA	NA
4-Nitrophenol	UG/L	5 UJ	5 UJ	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/L	5 U	5 U	NA	NA	NA	NA
Diethylphthalate	UG/L	5 UJ	5 UJ	NA	NA	NA	NA
Fluorene	UG/L	5 U	5 U	NA	NA	NA	NA
4-Chlorophenyl-phenylether	UG/L	5 U	5 U	NA	NA	NA	NA
4-Nitroaniline	UG/L	12.5 U	12.5 U	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	12.5 U	12.5 U	NA	NA	NA	NA
N-Nitrosodiphenylamine	UG/L	5 U	5 U	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/L	5 U	5 U	NA	NA	NA	NA
Hexachlorobenzene	UG/L	5 U	5 U	NA	NA	NA	NA
Pentachlorophenol	UG/L	12.5 U	12.5 U	NA	NA	NA	NA
Phenanthrene	UG/L	5 U	5 U	NA	NA	NA	NA
Anthracene	UG/L	5 U	5 U	NA	NA	NA	NA
Carbazole	UG/L	5 U	5 U	NA	NA	NA	NA
Di-n-butylphthalate	UG/L	5 U	5 U	NA	NA	NA	NA
Fluoranthene	UG/L	5 U	5 U	NA	NA	NA	NA
Pyrene	UG/L	5 U	5 U	NA	NA	NA	NA
Butylbenzylphthalate	UG/L	5 UJ	5 UJ	NA	NA	NA	NA
Benzo(a)anthracene	UG/L	5 U	5 U	NA	NA	NA	NA
3,3'-Dichlorobenzidine	UG/L	5 UJ	5 UJ	NA	NA	NA	NA
Chrysene	UG/L	5 U	5 U	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	5 UJ	5 UJ	NA	NA	NA	NA
Di-n-octylphthalate	UG/L	5 UJ	5 UJ	NA	NA	NA	NA
Benzo(b)fluoranthene	UG/L	5 U	5 U	NA	NA	NA	NA
Benzo(k)fluoranthene	UG/L	5 U	5 U	NA	NA	NA	NA
Benzo(a)pyrene	UG/L	5 U	5 U	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/L	5 U	5 U	NA	NA	NA	NA
Dibenz(a,h)anthracene	UG/L	5 U	5 U	NA	NA	NA	NA
Benzo(g,h,i)perylene	UG/L	5 U	5 U	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW29A-01	35-MW29BW-01	35-MW30AW-01	35-MW30BW-01	35-MW31AW-01	35-MW31BW-01
Lab Sample ID:		D94-5296-1	D94-5296-4	D94-5529-4	D94-5361-11	D94-5715-3	D94-5361-15
Date Sampled:		10-MAY-1994	10-MAY-1994	16-MAY-1994	15-MAY-1994	19-MAY-1994	14-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	0.025 U	0.025 U	NA	NA	NA	NA
beta-BHC	UG/L	0.022 J	0.025 U	NA	NA	NA	NA
delta-BHC	UG/L	0.025 U	0.05 J	NA	NA	NA	NA
gamma-BHC (Lindane)	UG/L	0.025 U	0.025 U	NA	NA	NA	NA
Heptachlor	UG/L	0.011 J	0.025 U	NA	NA	NA	NA
Aldrin	UG/L	0.017 J	0.025 U	NA	NA	NA	NA
Heptachlor epoxide	UG/L	0.025 U	0.025 U	NA	NA	NA	NA
Endosulfan I	UG/L	0.025 U	0.025 U	NA	NA	NA	NA
Dieldrin	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
4,4'-DDE	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
Endrin	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
Endosulfan II	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
4,4'-DDD	UG/L	0.05 U	0.21 J	NA	NA	NA	NA
Endosulfan sulfate	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
4,4'-DDT	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
Methoxychlor	UG/L	0.25 U	0.25 U	NA	NA	NA	NA
Endrin ketone	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
Endrin aldehyde	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
alpha-Chlordane	UG/L	0.025 U	0.025 U	NA	NA	NA	NA
gamma-Chlordane	UG/L	0.025 U	0.025 U	NA	NA	NA	NA
Toxaphene	UG/L	2.5 U	2.5 U	NA	NA	NA	NA
Aroclor-1016	UG/L	0.5 U	0.5 U	NA	NA	NA	NA
Aroclor-1221	UG/L	1 U	1 U	NA	NA	NA	NA
Aroclor-1232	UG/L	0.5 U	0.5 U	NA	NA	NA	NA
Aroclor-1242	UG/L	0.5 U	0.5 U	NA	NA	NA	NA
Aroclor-1248	UG/L	0.5 U	0.5 U	NA	NA	NA	NA
Aroclor-1254	UG/L	0.5 U	0.5 U	NA	NA	NA	NA
Aroclor-1260	UG/L	0.5 U	0.5 U	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW32AW-01	35-MW32BW-01	35-MW33AW-01	35-MW33BW-01	35-MW34AW-01	35-MW34BW-01
Lab Sample ID:		D94-5529-15	D94-5715-6	D94-5529-14	D94-5529-7	D94-5361-8	D94-5361-7
Date Sampled:		19-MAY-1994	19-MAY-1994	19-MAY-1994	17-MAY-1994	16-MAY-1994	16-MAY-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	2.5 U	62.5 U	2.5 U	62.5 U	2.5 U	2.5 U
1,1,2,2-Tetrachloroethane	UG/L	20.5	1.5 U	0.05 U	1.5 U	0.05 U	0.05 U
1,1,2-Trichloroethane	UG/L	1.9	1.5 U	0.05 U	1.5 U	0.05 U	0.05 U
1,1-Dichloroethane	UG/L	0.05 U	1.5 U	0.05 U	1.5 U	0.05 U	0.05 U
1,1-Dichloroethene	UG/L	0.1 U	2.5 U	0.1 U	2.5 U	0.1 U	0.1 U
1,2-Dichlorobenzene	UG/L	0.1 U	2.5 U	0.1 U	2.5 U	0.1 U	0.1 U
1,2-Dichloroethane	UG/L	0.15 U	4 U	0.15 U	4 U	0.15 U	0.15 U
1,2-Dichloropropane	UG/L	0.05 U	1.5 U	0.05 U	1.5 U	0.05 U	0.05 U
1,3-Dichlorobenzene	UG/L	0.2 U	5 U	0.2 U	5 U	0.2 U	0.2 U
1,4-Dichlorobenzene	UG/L	0.5 U	12.5 U	0.5 U	12.5 U	0.5 U	0.5 U
Bromodichloromethane	UG/L	0.05 U	1.5 U	0.05 U	1.5 U	0.05 U	0.05 U
Bromoform	UG/L	0.1 U	2.5 U	0.1 U	2.5 U	0.1 U	0.1 U
Bromomethane	UG/L	0.6 U	15 U	0.6 U	15 U	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0.1 U	2.5 U	0.1 U	2.5 U	0.1 U	0.1 U
Chlorobenzene	UG/L	0.15 U	4 U	0.15 U	4 U	0.15 U	0.15 U
Chloroethane	UG/L	0.3 U	7.5 U	0.3 U	7.5 U	0.3 U	0.3 U
Chloroform	UG/L	0.05 U	1.5 U	0.05 U	1.5 U	0.05 U	0.05 U
Chloromethane	UG/L	0.25 U	6.5 U	0.25 U	6.5 U	0.25 U	0.25 U
Dibromochloromethane	UG/L	0.05 U	1.5 U	0.05 U	1.5 U	0.05 U	0.05 U
Dichlorodifluoromethane	UG/L	1 U	25 U	1 U	25 U	1 U	1 U
Methylene chloride	UG/L	2.5 U	62.5 U	2.5 U	62.5 U	2.5 U	2.5 U
Tetrachloroethene	UG/L	0.05 U	1.5 U	0.05 U	1.5 U	0.05 U	0.05 U
Trichloroethene	UG/L	25.8	197	0.05 U	574	0.05 U	0.6
Trichlorofluoromethane	UG/L	0.25 U	6.5 U	0.25 U	6.5 U	0.25 U	0.25 U
Vinyl chloride	UG/L	0.25 U	6.5 U	0.25 U	6.5 U	0.25 U	0.25 U
cis-1,2-Dichloroethene	UG/L	96.2	594	0.05 U	788	0.05 U	11.6
cis-1,3-Dichloropropene	UG/L	0.1 U	2.5 U	0.1 U	2.5 U	0.1 U	0.1 U
trans-1,2-Dichloroethene	UG/L	39.8	102	0.05 U	130	0.05 U	0.05 U
trans-1,3-Dichloropropene	UG/L	0.1 U	2.5 U	0.1 U	2.5 U	0.1 U	0.1 U
Benzene	UG/L	1	3 J	0.1 U	22	0.1 U	0.4
Chlorobenzene	UG/L	0.1 U	2.5 U	0.1 U	2.5 U	0.1 U	0.1 U
Ethyl benzene	UG/L	1.3	3 J	1.1	41	0.1 U	0.6
Methyl Tertiary Butyl Ether	UG/L	72.9	172	5 U	265	5 U	5 U
Toluene	UG/L	1.1	3 J	1.7	30	0.1 U	0.4
Xylenes	UG/L	4.2	9	3.9	95	1.7	1.8

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW32AW-01	35-MW32BW-01	35-MW33AW-01	35-MW33BW-01	35-MW34AW-01	35-MW34BW-01
Lab Sample ID:		D94-5529-15	D94-5715-6	D94-5529-14	D94-5529-7	D94-5361-8	D94-5361-7
Date Sampled:		19-MAY-1994	19-MAY-1994	19-MAY-1994	17-MAY-1994	16-MAY-1994	16-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	NA	NA	5 U	5 U	NA	NA
bis(2-Chloroethyl)ether	UG/L	NA	NA	5 U	5 U	NA	NA
2-Chlorophenol	UG/L	NA	NA	5 U	5 U	NA	NA
1,3-Dichlorobenzene	UG/L	NA	NA	5 U	5 U	NA	NA
1,4-Dichlorobenzene	UG/L	NA	NA	5 U	5 U	NA	NA
1,2-Dichlorobenzene	UG/L	NA	NA	5 U	5 U	NA	NA
2-Methylphenol	UG/L	NA	NA	5 U	5 U	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/L	NA	NA	5 U	5 U	NA	NA
4-Methylphenol	UG/L	NA	NA	5 U	5 U	NA	NA
N-Nitroso-di-n-propylamine	UG/L	NA	NA	5 U	5 U	NA	NA
Hexachloroethane	UG/L	NA	NA	5 U	5 U	NA	NA
Nitrobenzene	UG/L	NA	NA	5 U	5 U	NA	NA
Isophorone	UG/L	NA	NA	5 U	5 U	NA	NA
2-Nitrophenol	UG/L	NA	NA	5 U	5 U	NA	NA
2,4-Dimethylphenol	UG/L	NA	NA	5 U	5 U	NA	NA
bis(2-Chloroethoxy)methane	UG/L	NA	NA	5 U	5 U	NA	NA
2,4-Dichlorophenol	UG/L	NA	NA	5 U	5 U	NA	NA
1,2,4-Trichlorobenzene	UG/L	NA	NA	5 U	5 U	NA	NA
Naphthalene	UG/L	NA	NA	5 UJ	5 U	NA	NA
4-Chloroaniline	UG/L	NA	NA	5 U	5 U	NA	NA
Hexachlorobutadiene	UG/L	NA	NA	5 U	5 U	NA	NA
4-Chloro-3-methylphenol	UG/L	NA	NA	5 U	5 U	NA	NA
2-Methylnaphthalene	UG/L	NA	NA	5 U	5 U	NA	NA
Hexachlorocyclopentadiene	UG/L	NA	NA	5 U	5 U	NA	NA
2,4,6-Trichlorophenol	UG/L	NA	NA	5 U	5 U	NA	NA
2,4,5-Trichlorophenol	UG/L	NA	NA	12.5 U	12.5 U	NA	NA
2-Chloronaphthalene	UG/L	NA	NA	5 U	5 U	NA	NA
2-Nitroaniline	UG/L	NA	NA	12.5 U	12.5 U	NA	NA
Dimethylphthalate	UG/L	NA	NA	5 U	5 U	NA	NA
Acenaphthylene	UG/L	NA	NA	5 U	5 U	NA	NA
2,6-Dinitrotoluene	UG/L	NA	NA	5 UJ	5 UJ	NA	NA
3-Nitroaniline	UG/L	NA	NA	12.5 UJ	12.5 U	NA	NA
Acenaphthene	UG/L	NA	NA	5 U	5 U	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW32AW-01	35-MW32BW-01	35-MW33AW-01	35-MW33BW-01	35-MW34AW-01	35-MW34BW-01
Lab Sample ID:		D94-5529-15	D94-5715-6	D94-5529-14	D94-5529-7	D94-5361-8	D94-5361-7
Date Sampled:		19-MAY-1994	19-MAY-1994	19-MAY-1994	17-MAY-1994	16-MAY-1994	16-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	NA	NA	12.5 UJ	12.5 U	NA	NA
Dibenzofuran	UG/L	NA	NA	5 U	5 U	NA	NA
4-Nitrophenol	UG/L	NA	NA	5 UJ	5 UJ	NA	NA
2,4-Dinitrotoluene	UG/L	NA	NA	5 U	5 UJ	NA	NA
Diethylphthalate	UG/L	NA	NA	5 U	5 U	NA	NA
Fluorene	UG/L	NA	NA	5 U	5 U	NA	NA
4-Chlorophenyl-phenylether	UG/L	NA	NA	5 U	5 U	NA	NA
4-Nitroaniline	UG/L	NA	NA	12.5 U	12.5 U	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	NA	NA	12.5 U	12.5 U	NA	NA
N-Nitrosodiphenylamine	UG/L	NA	NA	5 U	5 U	NA	NA
4-Bromophenyl-phenylether	UG/L	NA	NA	5 UJ	5 U	NA	NA
Hexachlorobenzene	UG/L	NA	NA	5 U	5 U	NA	NA
Pentachlorophenol	UG/L	NA	NA	12.5 U	12.5 U	NA	NA
Phenanthrene	UG/L	NA	NA	5 U	5 U	NA	NA
Anthracene	UG/L	NA	NA	5 U	5 U	NA	NA
Carbazole	UG/L	NA	NA	5 U	5 U	NA	NA
Di-n-butylphthalate	UG/L	NA	NA	5 U	5 U	NA	NA
Fluoranthene	UG/L	NA	NA	5 U	5 U	NA	NA
Pyrene	UG/L	NA	NA	5 U	5 U	NA	NA
Butylbenzylphthalate	UG/L	NA	NA	5 UJ	5 U	NA	NA
Benzo(a)anthracene	UG/L	NA	NA	5 U	5 U	NA	NA
3,3'-Dichlorobenzidine	UG/L	NA	NA	5 UJ	5 U	NA	NA
Chrysene	UG/L	NA	NA	5 U	5 U	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	NA	NA	5 UJ	5 UJ	NA	NA
Di-n-octylphthalate	UG/L	NA	NA	5 UJ	5 UJ	NA	NA
Benzo(b)fluoranthene	UG/L	NA	NA	5 U	5 UJ	NA	NA
Benzo(k)fluoranthene	UG/L	NA	NA	5 U	5 UJ	NA	NA
Benzo(a)pyrene	UG/L	NA	NA	5 U	5 UJ	NA	NA
Indeno(1,2,3-cd)pyrene	UG/L	NA	NA	5 U	5 UJ	NA	NA
Dibenz(a,h)anthracene	UG/L	NA	NA	5 U	5 UJ	NA	NA
Benzo(g,h,i)perylene	UG/L	NA	NA	5 U	5 UJ	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW32AW-01	35-MW32BW-01	35-MW33AW-01	35-MW33BW-01	35-MW34AW-01	35-MW34BW-01
Lab Sample ID:		D94-5529-15	D94-5715-6	D94-5529-14	D94-5529-7	D94-5361-8	D94-5361-7
Date Sampled:		19-MAY-1994	19-MAY-1994	19-MAY-1994	17-MAY-1994	16-MAY-1994	16-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	NA	NA	0.025 U	0.025 U	NA	NA
beta-BHC	UG/L	NA	NA	0.025 U	0.022 J	NA	NA
delta-BHC	UG/L	NA	NA	0.025 U	0.025 U	NA	NA
gamma-BHC (Lindane)	UG/L	NA	NA	0.025 U	0.025 U	NA	NA
Heptachlor	UG/L	NA	NA	0.025 U	0.013 J	NA	NA
Aldrin	UG/L	NA	NA	0.025 U	0.025 U	NA	NA
Heptachlor epoxide	UG/L	NA	NA	0.025 U	0.025 U	NA	NA
Endosulfan I	UG/L	NA	NA	0.025 U	0.025 U	NA	NA
Dieldrin	UG/L	NA	NA	0.05 U	0.05 U	NA	NA
4,4'-DDE	UG/L	NA	NA	0.05 U	0.05 U	NA	NA
Endrin	UG/L	NA	NA	0.05 U	0.05 U	NA	NA
Endosulfan II	UG/L	NA	NA	0.05 U	0.05 U	NA	NA
4,4'-DDD	UG/L	NA	NA	0.05 U	0.05 U	NA	NA
Endosulfan sulfate	UG/L	NA	NA	0.05 U	0.05 U	NA	NA
4,4'-DDT	UG/L	NA	NA	0.05 U	0.014 J	NA	NA
Methoxychlor	UG/L	NA	NA	0.25 U	0.25 U	NA	NA
Endrin ketone	UG/L	NA	NA	0.05 U	0.05 U	NA	NA
Endrin aldehyde	UG/L	NA	NA	0.05 U	0.012 U	NA	NA
alpha-Chlordane	UG/L	NA	NA	0.025 U	0.025 U	NA	NA
gamma-Chlordane	UG/L	NA	NA	0.025 U	0.025 U	NA	NA
Toxaphene	UG/L	NA	NA	2.5 U	2.5 U	NA	NA
Aroclor-1016	UG/L	NA	NA	0.5 U	0.5 U	NA	NA
Aroclor-1221	UG/L	NA	NA	1 U	1 U	NA	NA
Aroclor-1232	UG/L	NA	NA	0.5 U	0.5 U	NA	NA
Aroclor-1242	UG/L	NA	NA	0.5 U	0.5 U	NA	NA
Aroclor-1248	UG/L	NA	NA	0.5 U	0.5 U	NA	NA
Aroclor-1254	UG/L	NA	NA	0.5 U	0.5 U	NA	NA
Aroclor-1260	UG/L	NA	NA	0.5 U	0.5 U	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW35AW-01	35-MW35BW-01	35-MW36AW-01	35-MW36BW-01	35-MW37AW-01	35-MW37BW-01
Lab Sample ID:		D94-5529-3	D94-5361-16	D94-5361-19	D94-5361-3	D94-5715-7	D94-5715-4
Date Sampled:		14-MAY-1994	15-MAY-1994	15-MAY-1994	15-MAY-1994	19-MAY-1994	19-MAY-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,1,2,2-Tetrachloroethane	UG/L	64.7	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane	UG/L	1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane	UG/L	0.05 U	3.4	2.5	7.6	0.05 U	0.05 U
1,1-Dichloroethene	UG/L	0.8	5.7	2.1	6.9	0.1 U	0.1 U
1,2-Dichlorobenzene	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-Dichloroethane	UG/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
1,2-Dichloropropane	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichlorobenzene	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bromoform	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Bromomethane	UG/L	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chlorobenzene	UG/L	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Chloroethane	UG/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Chloroform	UG/L	0.6	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chloromethane	UG/L	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Dibromochloromethane	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dichlorodifluoromethane	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Tetrachloroethene	UG/L	1.9	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Trichloroethene	UG/L	79	0.6	0.05 U	0.05 U	0.05 U	0.05 U
Trichlorofluoromethane	UG/L	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	UG/L	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
cis-1,2-Dichloroethene	UG/L	14.8	3.2	0.05 U	0.05 U	0.05 U	0.05 U
cis-1,3-Dichloropropene	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
trans-1,2-Dichloroethene	UG/L	3.7	0.4	0.05 U	0.05 U	0.05 U	0.05 U
trans-1,3-Dichloropropene	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzene	UG/L	0.4	0.1 U	1.7	0.5	0.1 U	5.3
Chlorobenzene	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Ethyl benzene	UG/L	0.7	0.8	0.8	0.6	0.1 U	0.3
Methyl Tertiary Butyl Ether	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Toluene	UG/L	1.1	0.5	0.8	0.7	0.1 U	2.2
Xylenes	UG/L	1.7	1.9	3	1.9	0.1 U	0.6

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW35AW-01	35-MW35BW-01	35-MW36AW-01	35-MW36BW-01	35-MW37AW-01	35-MW37BW-01
Lab Sample ID:		D94-5529-3	D94-5361-16	D94-5361-19	D94-5361-3	D94-5715-7	D94-5715-4
Date Sampled:		14-MAY-1994	15-MAY-1994	15-MAY-1994	15-MAY-1994	19-MAY-1994	19-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	UG/L	NA	NA	NA	NA	NA	NA
2-Chlorophenol	UG/L	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/L	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/L	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/L	NA	NA	NA	NA	NA	NA
2-Methylphenol	UG/L	NA	NA	NA	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/L	NA	NA	NA	NA	NA	NA
4-Methylphenol	UG/L	NA	NA	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/L	NA	NA	NA	NA	NA	NA
Hexachloroethane	UG/L	NA	NA	NA	NA	NA	NA
Nitrobenzene	UG/L	NA	NA	NA	NA	NA	NA
Isophorone	UG/L	NA	NA	NA	NA	NA	NA
2-Nitrophenol	UG/L	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	UG/L	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/L	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	UG/L	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/L	NA	NA	NA	NA	NA	NA
Naphthalene	UG/L	NA	NA	NA	NA	NA	NA
4-Chloroaniline	UG/L	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	UG/L	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/L	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	UG/L	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/L	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/L	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/L	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	UG/L	NA	NA	NA	NA	NA	NA
2-Nitroaniline	UG/L	NA	NA	NA	NA	NA	NA
Dimethylphthalate	UG/L	NA	NA	NA	NA	NA	NA
Acenaphthylene	UG/L	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/L	NA	NA	NA	NA	NA	NA
3-Nitroaniline	UG/L	NA	NA	NA	NA	NA	NA
Acenaphthene	UG/L	NA	NA	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW35AW-01	35-MW35BW-01	35-MW36AW-01	35-MW36BW-01	35-MW37AW-01	35-MW37BW-01
Lab Sample ID:		D94-5529-3	D94-5361-16	D94-5361-19	D94-5361-3	D94-5715-7	D94-5715-4
Date Sampled:		14-MAY-1994	15-MAY-1994	15-MAY-1994	15-MAY-1994	19-MAY-1994	19-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	NA	NA	NA	NA	NA	NA
Dibenzofuran	UG/L	NA	NA	NA	NA	NA	NA
4-Nitrophenol	UG/L	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/L	NA	NA	NA	NA	NA	NA
Diethylphthalate	UG/L	NA	NA	NA	NA	NA	NA
Fluorene	UG/L	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	UG/L	NA	NA	NA	NA	NA	NA
4-Nitroaniline	UG/L	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	UG/L	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/L	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	UG/L	NA	NA	NA	NA	NA	NA
Pentachlorophenol	UG/L	NA	NA	NA	NA	NA	NA
Phenanthrene	UG/L	NA	NA	NA	NA	NA	NA
Anthracene	UG/L	NA	NA	NA	NA	NA	NA
Carbazole	UG/L	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	UG/L	NA	NA	NA	NA	NA	NA
Fluoranthene	UG/L	NA	NA	NA	NA	NA	NA
Pyrene	UG/L	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	UG/L	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	UG/L	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	UG/L	NA	NA	NA	NA	NA	NA
Chrysene	UG/L	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	UG/L	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	UG/L	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	UG/L	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	UG/L	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/L	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	UG/L	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	UG/L	NA	NA	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW35AW-01	35-MW35BW-01	35-MW36AW-01	35-MW36BW-01	35-MW37AW-01	35-MW37BW-01
Lab Sample ID:		D94-5529-3	D94-5361-16	D94-5361-19	D94-5361-3	D94-5715-7	D94-5715-4
Date Sampled:		14-MAY-1994	15-MAY-1994	15-MAY-1994	15-MAY-1994	19-MAY-1994	19-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	NA	NA	NA	NA	NA	NA
beta-BHC	UG/L	NA	NA	NA	NA	NA	NA
delta-BHC	UG/L	NA	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	UG/L	NA	NA	NA	NA	NA	NA
Heptachlor	UG/L	NA	NA	NA	NA	NA	NA
Aldrin	UG/L	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan I	UG/L	NA	NA	NA	NA	NA	NA
Dieldrin	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDE	UG/L	NA	NA	NA	NA	NA	NA
Endrin	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan II	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDD	UG/L	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	UG/L	NA	NA	NA	NA	NA	NA
4,4'-DDT	UG/L	NA	NA	NA	NA	NA	NA
Methoxychlor	UG/L	NA	NA	NA	NA	NA	NA
Endrin ketone	UG/L	NA	NA	NA	NA	NA	NA
Endrin aldehyde	UG/L	NA	NA	NA	NA	NA	NA
alpha-Chlordane	UG/L	NA	NA	NA	NA	NA	NA
gamma-Chlordane	UG/L	NA	NA	NA	NA	NA	NA
Toxaphene	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1016	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1221	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1232	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1242	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1248	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1254	UG/L	NA	NA	NA	NA	NA	NA
Aroclor-1260	UG/L	NA	NA	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW38AW-01	35-MW38BW-01
Lab Sample ID:		D94-5715-8	D94-5529-16
Date Sampled:		20-MAY-1994	20-MAY-1994
	UNITS		
VOLATILES			
1,1,1-Trichloroethane	UG/L	2.5 U	2.5 U
1,1,2,2-Tetrachloroethane	UG/L	0.05 U	0.05 U
1,1,2-Trichloroethane	UG/L	0.05 U	0.05 U
1,1-Dichloroethane	UG/L	0.05 U	0.05 U
1,1-Dichloroethene	UG/L	0.1 U	0.1 U
1,2-Dichlorobenzene	UG/L	0.1 U	0.1 U
1,2-Dichloroethane	UG/L	0.15 U	0.15 U
1,2-Dichloropropane	UG/L	0.05 U	0.05 U
1,3-Dichlorobenzene	UG/L	0.2 U	0.2 U
1,4-Dichlorobenzene	UG/L	0.5 U	0.5 U
Bromodichloromethane	UG/L	0.05 U	0.05 U
Bromoform	UG/L	0.1 U	0.1 U
Bromomethane	UG/L	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0.1 U	0.1 U
Chlorobenzene	UG/L	0.15 U	0.15 U
Chloroethane	UG/L	0.3 U	0.3 U
Chloroform	UG/L	0.05 U	0.05 U
Chloromethane	UG/L	0.25 U	0.25 U
Dibromochloromethane	UG/L	0.05 U	0.05 U
Dichlorodifluoromethane	UG/L	1 U	1 U
Methylene chloride	UG/L	2.5 U	2.5 U
Tetrachloroethene	UG/L	0.05 U	0.05 U
Trichloroethene	UG/L	0.05 U	0.05 U
Trichlorofluoromethane	UG/L	0.25 U	0.25 U
Vinyl chloride	UG/L	0.25 U	0.25 U
cis-1,2-Dichloroethene	UG/L	0.05 U	0.05 U
cis-1,3-Dichloropropene	UG/L	0.1 U	0.1 U
trans-1,2-Dichloroethene	UG/L	0.05 U	0.05 U
trans-1,3-Dichloropropene	UG/L	0.1 U	0.1 U
Benzene	UG/L	0.1 U	0.1 U
Chlorobenzene	UG/L	0.1 U	0.1 U
Ethyl benzene	UG/L	0.1 U	0.1 U
Methyl Tertiary Butyl Ether	UG/L	5 U	5 U
Toluene	UG/L	0.1 U	0.1 U
Xylenes	UG/L	0.1 U	0.1 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW38AW-01	35-MW38BW-01
Lab Sample ID:		D94-5715-8	D94-5529-16
Date Sampled:		20-MAY-1994	20-MAY-1994
	UNITS		
SEMIVOLATILES			
Phenol	UG/L	NA	NA
bis(2-Chloroethyl)ether	UG/L	NA	NA
2-Chlorophenol	UG/L	NA	NA
1,3-Dichlorobenzene	UG/L	NA	NA
1,4-Dichlorobenzene	UG/L	NA	NA
1,2-Dichlorobenzene	UG/L	NA	NA
2-Methylphenol	UG/L	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/L	NA	NA
4-Methylphenol	UG/L	NA	NA
N-Nitroso-di-n-propylamine	UG/L	NA	NA
Hexachloroethane	UG/L	NA	NA
Nitrobenzene	UG/L	NA	NA
Isophorone	UG/L	NA	NA
2-Nitrophenol	UG/L	NA	NA
2,4-Dimethylphenol	UG/L	NA	NA
bis(2-Chloroethoxy)methane	UG/L	NA	NA
2,4-Dichlorophenol	UG/L	NA	NA
1,2,4-Trichlorobenzene	UG/L	NA	NA
Naphthalene	UG/L	NA	NA
4-Chloroaniline	UG/L	NA	NA
Hexachlorobutadiene	UG/L	NA	NA
4-Chloro-3-methylphenol	UG/L	NA	NA
2-Methylnaphthalene	UG/L	NA	NA
Hexachlorocyclopentadiene	UG/L	NA	NA
2,4,6-Trichlorophenol	UG/L	NA	NA
2,4,5-Trichlorophenol	UG/L	NA	NA
2-Chloronaphthalene	UG/L	NA	NA
2-Nitroaniline	UG/L	NA	NA
Dimethylphthalate	UG/L	NA	NA
Acenaphthylene	UG/L	NA	NA
2,6-Dinitrotoluene	UG/L	NA	NA
3-Nitroaniline	UG/L	NA	NA
Acenaphthene	UG/L	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW38AW-01	35-MW38BW-01
Lab Sample ID:		D94-5715-8	D94-5529-16
Date Sampled:		20-MAY-1994	20-MAY-1994
	UNITS		
SEMIVOLATILES Cont.			
2,4-Dinitrophenol	UG/L	NA	NA
Dibenzofuran	UG/L	NA	NA
4-Nitrophenol	UG/L	NA	NA
2,4-Dinitrotoluene	UG/L	NA	NA
Diethylphthalate	UG/L	NA	NA
Fluorene	UG/L	NA	NA
4-Chlorophenyl-phenylether	UG/L	NA	NA
4-Nitroaniline	UG/L	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	NA	NA
N-Nitrosodiphenylamine	UG/L	NA	NA
4-Bromophenyl-phenylether	UG/L	NA	NA
Hexachlorobenzene	UG/L	NA	NA
Pentachlorophenol	UG/L	NA	NA
Phenanthrene	UG/L	NA	NA
Anthracene	UG/L	NA	NA
Carbazole	UG/L	NA	NA
Di-n-butylphthalate	UG/L	NA	NA
Fluoranthene	UG/L	NA	NA
Pyrene	UG/L	NA	NA
Butylbenzylphthalate	UG/L	NA	NA
Benzo(a)anthracene	UG/L	NA	NA
3,3'-Dichlorobenzidine	UG/L	NA	NA
Chrysene	UG/L	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	NA	NA
Di-n-octylphthalate	UG/L	NA	NA
Benzo(b)fluoranthene	UG/L	NA	NA
Benzo(k)fluoranthene	UG/L	NA	NA
Benzo(a)pyrene	UG/L	NA	NA
Indeno(1,2,3-cd)pyrene	UG/L	NA	NA
Dibenz(a,h)anthracene	UG/L	NA	NA
Benzo(g,h,i)perylene	UG/L	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW38AW-01	35-MW38BW-01
Lab Sample ID:		D94-5715-8	D94-5529-16
Date Sampled:		20-MAY-1994	20-MAY-1994
	UNITS		
PESTICIDE/PCBs			
alpha-BHC	UG/L	NA	NA
beta-BHC	UG/L	NA	NA
delta-BHC	UG/L	NA	NA
gamma-BHC (Lindane)	UG/L	NA	NA
Heptachlor	UG/L	NA	NA
Aldrin	UG/L	NA	NA
Heptachlor epoxide	UG/L	NA	NA
Endosulfan I	UG/L	NA	NA
Dieldrin	UG/L	NA	NA
4,4'-DDE	UG/L	NA	NA
Endrin	UG/L	NA	NA
Endosulfan II	UG/L	NA	NA
4,4'-DDD	UG/L	NA	NA
Endosulfan sulfate	UG/L	NA	NA
4,4'-DDT	UG/L	NA	NA
Methoxychlor	UG/L	NA	NA
Endrin ketone	UG/L	NA	NA
Endrin aldehyde	UG/L	NA	NA
alpha-Chlordane	UG/L	NA	NA
gamma-Chlordane	UG/L	NA	NA
Toxaphene	UG/L	NA	NA
Aroclor-1016	UG/L	NA	NA
Aroclor-1221	UG/L	NA	NA
Aroclor-1232	UG/L	NA	NA
Aroclor-1242	UG/L	NA	NA
Aroclor-1248	UG/L	NA	NA
Aroclor-1254	UG/L	NA	NA
Aroclor-1260	UG/L	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
VOLATILES						
1,1,1-Trichloroethane	UG/L	ND	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	64.7	2.2	9.5	4.4	2.9
1,1,2-Trichloroethane	UG/L	1.9	0.5	0.7	0.7	1.2
1,1-Dichloroethane	UG/L	7.6	0.7	1.3	1.1	1.8
1,1-Dichloroethene	UG/L	6.9	1.1	1.7	1.5	2.7
1,2-Dichlorobenzene	UG/L	ND	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	ND	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	ND	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/L	ND	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/L	ND	NA	NA	NA	NA
Bromodichloromethane	UG/L	ND	NA	NA	NA	NA
Bromoform	UG/L	ND	NA	NA	NA	NA
Bromomethane	UG/L	ND	NA	NA	NA	NA
Carbon tetrachloride	UG/L	ND	NA	NA	NA	NA
Chlorobenzene	UG/L	ND	NA	NA	NA	NA
Chloroethane	UG/L	ND	NA	NA	NA	NA
Chloroform	UG/L	0.6	0.5	0.7	0.7	1.0
Chloromethane	UG/L	ND	NA	NA	NA	NA
Dibromochloromethane	UG/L	ND	NA	NA	NA	NA
Dichlorodifluoromethane	UG/L	ND	NA	NA	NA	NA
Methylene chloride	UG/L	ND	NA	NA	NA	NA
Tetrachloroethene	UG/L	1.9	0.5	0.7	0.7	1.1
Trichloroethene	UG/L	900	72.1	180.7	115.2	8102.1
Trichlorofluoromethane	UG/L	ND	NA	NA	NA	NA
Vinyl chloride	UG/L	ND	NA	NA	NA	NA
cis-1,2-Dichloroethene	UG/L	973	112.9	236.1	169.1	98463.3
cis-1,3-Dichloropropene	UG/L	ND	NA	NA	NA	NA
trans-1,2-Dichloroethene	UG/L	176	16.8	39.0	26.1	367.6
trans-1,3-Dichloropropene	UG/L	ND	NA	NA	NA	NA
Benzene	UG/L	1660	54.2	253.2	114.5	84.1
Chlorobenzene	UG/L	ND	NA	NA	NA	NA
Ethyl benzene	UG/L	824	37.0	133.3	68.7	96.0
Methyl Tertiary Butyl Ether	UG/L	319	38.0	74.5	55.8	52.0
Toluene	UG/L	984	29.0	139.7	62.2	56.8
Xylenes	UG/L	1700	86.3	307.3	159.5	247.7

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
SEMIVOLATILES						
Phenol	UG/L	23	6.0	3.8	7.4	6.7
bis(2-Chloroethyl)ether	UG/L	ND	NA	NA	NA	NA
2-Chlorophenol	UG/L	ND	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/L	ND	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/L	ND	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/L	ND	NA	NA	NA	NA
2-Methylphenol	UG/L	17	5.5	2.4	6.4	6.0
2,2'-oxybis(1-Chloropropane)	UG/L	ND	NA	NA	NA	NA
4-Methylphenol	UG/L	6 J	5.1	0.2	5.2	5.2
N-Nitroso-di-n-propylamine	UG/L	ND	NA	NA	NA	NA
Hexachloroethane	UG/L	ND	NA	NA	NA	NA
Nitrobenzene	UG/L	ND	NA	NA	NA	NA
Isophorone	UG/L	ND	NA	NA	NA	NA
2-Nitrophenol	UG/L	ND	NA	NA	NA	NA
2,4-Dimethylphenol	UG/L	74	7.9	14.1	12.8	8.3
bis(2-Chloroethoxy)methane	UG/L	ND	NA	NA	NA	NA
2,4-Dichlorophenol	UG/L	ND	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/L	ND	NA	NA	NA	NA
Naphthalene	UG/L	499	41.0	104.0	77.4	68.5
4-Chloroaniline	UG/L	ND	NA	NA	NA	NA
Hexachlorobutadiene	UG/L	ND	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/L	ND	NA	NA	NA	NA
2-Methylnaphthalene	UG/L	668	49.9	138.1	98.2	80.6
Hexachlorocyclopentadiene	UG/L	ND	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/L	ND	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/L	ND	NA	NA	NA	NA
2-Chloronaphthalene	UG/L	ND	NA	NA	NA	NA
2-Nitroaniline	UG/L	ND	NA	NA	NA	NA
Dimethylphthalate	UG/L	ND	NA	NA	NA	NA
Acenaphthylene	UG/L	ND	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/L	ND	NA	NA	NA	NA
3-Nitroaniline	UG/L	ND	NA	NA	NA	NA
Acenaphthene	UG/L	ND	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
SEMIVOLATILES Cont.						
2,4-Dinitrophenol	UG/L	ND	NA	NA	NA	NA
Dibenzofuran	UG/L	23	6.3	4.0	7.7	7.1
4-Nitrophenol	UG/L	ND	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/L	ND	NA	NA	NA	NA
Diethylphthalate	UG/L	ND	NA	NA	NA	NA
Fluorene	UG/L	22	6.5	4.7	8.2	7.5
4-Chlorophenyl-phenylether	UG/L	ND	NA	NA	NA	NA
4-Nitroaniline	UG/L	ND	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	ND	NA	NA	NA	NA
N-Nitrosodiphenylamine	UG/L	ND	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/L	ND	NA	NA	NA	NA
Hexachlorobenzene	UG/L	ND	NA	NA	NA	NA
Pentachlorophenol	UG/L	ND	NA	NA	NA	NA
Phenanthrene	UG/L	52	8.3	10.7	12.0	9.6
Anthracene	UG/L	7 J	5.1	0.4	5.3	5.3
Carbazole	UG/L	13	5.7	2.1	6.4	6.2
Di-n-butylphthalate	UG/L	ND	NA	NA	NA	NA
Fluoranthene	UG/L	ND	NA	NA	NA	NA
Pyrene	UG/L	ND	NA	NA	NA	NA
Butylbenzylphthalate	UG/L	ND	NA	NA	NA	NA
Benzo(a)anthracene	UG/L	ND	NA	NA	NA	NA
3,3'-Dichlorobenzidine	UG/L	ND	NA	NA	NA	NA
Chrysene	UG/L	ND	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	ND	NA	NA	NA	NA
Di-n-octylphthalate	UG/L	ND	NA	NA	NA	NA
Benzo(b)fluoranthene	UG/L	ND	NA	NA	NA	NA
Benzo(k)fluoranthene	UG/L	ND	NA	NA	NA	NA
Benzo(a)pyrene	UG/L	ND	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/L	ND	NA	NA	NA	NA
Dibenz(a,h)anthracene	UG/L	ND	NA	NA	NA	NA
Benzo(g,h,i)perylene	UG/L	ND	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
PESTICIDE/PCBs						
alpha-BHC	UG/L	ND	NA	NA	NA	NA
beta-BHC	UG/L	0.023 J	0.024	0.001	0.025	0.025
delta-BHC	UG/L	0.05 J	0.029	0.009	0.036	0.036
gamma-BHC (Lindane)	UG/L	ND	NA	NA	NA	NA
Heptachlor	UG/L	0.013 J	0.021	0.006	0.026	0.030
Aldrin	UG/L	0.017 J	0.022	0.005	0.026	0.028
Heptachlor epoxide	UG/L	ND	NA	NA	NA	NA
Endosulfan I	UG/L	ND	NA	NA	NA	NA
Dieldrin	UG/L	ND	NA	NA	NA	NA
4,4'-DDE	UG/L	ND	NA	NA	NA	NA
Endrin	UG/L	ND	NA	NA	NA	NA
Endosulfan II	UG/L	ND	NA	NA	NA	NA
4,4'-DDD	UG/L	0.21 J	0.073	0.060	0.117	0.129
Endosulfan sulfate	UG/L	ND	NA	NA	NA	NA
4,4'-DDT	UG/L	0.014 J	0.045	0.014	0.055	0.076
Methoxychlor	UG/L	ND	NA	NA	NA	NA
Endrin ketone	UG/L	ND	NA	NA	NA	NA
Endrin aldehyde	UG/L	ND	NA	NA	NA	NA
alpha-Chlordane	UG/L	ND	NA	NA	NA	NA
gamma-Chlordane	UG/L	ND	NA	NA	NA	NA
Toxaphene	UG/L	ND	NA	NA	NA	NA
Aroclor-1016	UG/L	ND	NA	NA	NA	NA
Aroclor-1221	UG/L	ND	NA	NA	NA	NA
Aroclor-1232	UG/L	ND	NA	NA	NA	NA
Aroclor-1242	UG/L	ND	NA	NA	NA	NA
Aroclor-1248	UG/L	ND	NA	NA	NA	NA
Aroclor-1254	UG/L	ND	NA	NA	NA	NA
Aroclor-1260	UG/L	ND	NA	NA	NA	NA

APPENDIX V.6a
GROUNDWATER TOTAL INORGANICS

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TOTAL METALS

Client Sample ID:		35-EMW03-03	35-EMW05-03	35-EMW7-03	35-GWDW5-01	35-MW09S-02	35-MW09D-02
Lab Sample ID:		5361-5	5361-1	5361-10	5361-13	5296-5	5296-6
Date Sampled:		14-MAY-1994	14-MAY-1994	14-MAY-1994	15-MAY-1994	10-MAY-1994	11-MAY-1994
	UNITS						
Aluminum	UG/L	4960	43800	81000	215	93000	10800
Antimony	UG/L	23 U	23 U	23 U	23 U		
Arsenic	UG/L	3.5	23.4	10.7	2.6	86.5 J	7.8 J
Barium	UG/L	60.4 J	114	1410	20.7	706	132
Beryllium	UG/L	1.5	2.5	16.7	0.5 U	14	3
Cadmium	UG/L	1.6	1.8	4.7	0.15 U	4.4 J	1.3 J
Calcium	UG/L	215000	47400	834000	49300	256000	202000
Chromium	UG/L	25.6	91.4	283	3.5 U	451	96
Cobalt	UG/L	26	5.5 U	67.9	5.5 U	19	5.5 U
Copper	UG/L	5	20.4	32.8	2.7	41	15
Iron	UG/L	10400	36500	81000	310	55300	10200
Lead	UG/L	2.7			1.6	35.7	10.7 J
Magnesium	UG/L	4880	5990	20500	2560	13200	5180
Manganese	UG/L	45.7	75.8	281	13.3	273	49
Mercury	UG/L	0.05 U	0.05 U	0.17 J	0.46 J	0.05 UJ	0.05 UJ
Nickel	UG/L	28.8	18.8	104	5.5 U	62	18
Potassium	UG/L	1220 U	4540	7370	5730	9140	1220 U
Selenium	UG/L	0.7 UJ	0.7 U	3.5 UJ	0.7 UJ	2.1 J	1.7
Silver	UG/L	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Sodium	UG/L	6930	12300	7750	33900	68200	9450
Thallium	UG/L	0.5 UJ	2 J	1.3	0.5 UJ	2.3	0.5 U
Vanadium	UG/L	35.5	92.6	185	2.5 U	246	37
Zinc	UG/L	81.1	148	383	5.5 U	867	

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TOTAL METALS

Client Sample ID:		35-MW10S-02	35-MW10D-02	35-MW14S-02	35-MW14D-02	35-MW16S-02	35-MW16D-02
Lab Sample ID:		5296-13	5296-8	5296-10	5296-11	5296-16	5296-12
Date Sampled:		12-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
Aluminum	UG/L	218000	24600	114000	5110	158000	8870
Antimony	UG/L						
Arsenic	UG/L	165 J	20.3 J	30.2 J	2.9 J	6 J	
Barium	UG/L	2230	271	2210	118	870	82
Beryllium	UG/L	40	6	30	1	34	4
Cadmium	UG/L		3.6 J	6.8 J	1.1 J	8.2 J	1.3 J
Calcium	UG/L	2050000	443000	896000	164000	886000	131000
Chromium	UG/L	1120	206	743	64	735	81
Cobalt	UG/L	60	5.5 U	17	5.5 U	33	5.5 U
Copper	UG/L	140	25	78	12	70	16
Iron	UG/L	111000	20900	77700	5530	137000	31300
Lead	UG/L	57.6	9.7 J	23.6	4.4 J	29.9	5.3 J
Magnesium	UG/L	42600	9690	25300	3970	27200	5390
Manganese	UG/L	462	83	195	32	408	344
Mercury	UG/L	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Nickel	UG/L	221	29	85	5.5 U	127	30
Potassium	UG/L	12800	4670	5590	3090	8300	12200 U
Selenium	UG/L			13.5 J	2 J		
Silver	UG/L	20	1.5 U	4	1.5 U	4	1.5 U
Sodium	UG/L	45400	9070	10500	8450	4470	7540
Thallium	UG/L	4.8 J	1.1	3.3	0.5 U	2.5	1
Vanadium	UG/L	537	90	302	26	466	48
Zinc	UG/L	947				689	

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TOTAL METALS

Client Sample ID:		35-MW19S-02	35-MW19D-02	35-MW21S-02	35-MW21D-02	35-MW22S-02	35-MW22D-02
Lab Sample ID:		5296-17	5296-22	5296-23	5296-24	5361-17	5361-2
Date Sampled:		12-MAY-1994	12-MAY-1994	13-MAY-1994	13-MAY-1994	13-MAY-1994	13-MAY-1994
	UNITS						
Aluminum	UG/L	101000	23000	119000	4350	380000	34100
Antimony	UG/L					23 U	23 U
Arsenic	UG/L	6.3 J	4.5 J	103 J	1.9 J	26.2	2.6 J
Barium	UG/L	287	99	1400	77	2280	300
Beryllium	UG/L	11	12	29	1	63.5	11.8
Cadmium	UG/L	10.2 J	15	11.1	1 J	340	6.1
Calcium	UG/L	104000	210000	1200000	330000	787000	825000
Chromium	UG/L	301	201	1050	81	1540	268
Cobalt	UG/L	168	118	32	5.5 U	281	56.1
Copper	UG/L	38	21	83	11	94.7	26.4
Iron	UG/L	139000	63300	255000	9730	239000	57500
Lead	UG/L	64	13.1	31	3.2 J	6.9	
Magnesium	UG/L	9650	10200	33300	8590	35400	16700
Manganese	UG/L	684	1420	121	65	497	299
Mercury	UG/L	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.15 J	0.84 J
Nickel	UG/L	174	148	138	5.5 U	524	119
Potassium	UG/L	10900	12200 U	9000	1220 U	22300	7150
Selenium	UG/L	1.4 J		7 J		11.5 J	0.7 UJ
Silver	UG/L	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Sodium	UG/L	14600	11850 U	10900	23100	5030	7960
Thallium	UG/L	2.8	1.6	4.5	0.5 U	2.7	0.5 U
Vanadium	UG/L	228	99	447	33	886	141
Zinc	UG/L	714	707	622		1850	424

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TOTAL METALS

Client Sample ID:		35-MW25S-02	35-MW25D-02	35-MW29A-01	35-MW29BW-01	35-MW33AW-01	35-MW33BW-01
Lab Sample ID:		5361-4	5361-18	5296-1	5296-4	5529-14	5529-7
Date Sampled:		13-MAY-1994	13-MAY-1994	10-MAY-1994	10-MAY-1994	19-MAY-1994	17-MAY-1994
	UNITS						
Aluminum	UG/L	7810	8880	113822	1880	78200	12.65 U
Antimony	UG/L	23 U	23 U	10.2 J	3.8 J		
Arsenic	UG/L	6.1	3.7 J	14.9 J	2.9 J	1 UJ	1 UJ
Barium	UG/L	150	205	3440	93	898	43.9
Beryllium	UG/L	2.3	3.9	3.8 J	0.14 J	3.5	0.5 U
Cadmium	UG/L	0.56	0.96	11	0.31	0.31 J	0.49 J
Calcium	UG/L	138000 J	262000 J	18900	132000	13510	92100
Chromium	UG/L	40.1 J	74.2 J	292	4.6	194	3.5 U
Cobalt	UG/L	5.5 U	5.5 U	168 J	12 J	5.5 U	5.5 U
Copper	UG/L	2	7.7	38 J	4 J	13.4	3.7 U
Iron	UG/L	65900 J	9820 J	117000	2260	70100	67.7
Lead	UG/L	2.2	2	4.2 J	3.9 J	18.2 J	1.2 J
Magnesium	UG/L	6220	4960	10700	3210	8260	2650
Manganese	UG/L	735 J	55 J	662	52 J	58.8	23.3
Mercury	UG/L	0.44 J	0.05 U	0.05 UJ	0.05 UJ	0.05 U	0.05 U
Nickel	UG/L	5.5 U	13.4	294	28 J	34.1	5.5 U
Potassium	UG/L	1220 U	4050	8880	1220 U	5690	2740
Selenium	UG/L	0.7 UJ	0.7 UJ			1.8 J	0.7 UJ
Silver	UG/L	1.5 U	1.5 U	0.6 U	0.55 U	1.5 U	1.5 U
Sodium	UG/L	10700	7140	14200	8450	8070	10800
Thallium	UG/L	1.5 J	0.5 U	5	0.5 U	0.9	0.3 U
Vanadium	UG/L	25.1	32.4	425	8 J	176	2.5 U
Zinc	UG/L	43.6	41.9	415	42 J	65.8	5.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TOTAL METALS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
Aluminum	UG/L	380000	68100.4	88917.8	99210.0	3430315.1
Antimony	UG/L	83.5 R	19.8	6.9	23.8	34.0
Arsenic	UG/L	165 J	23.2	40.5	37.7	60.6
Barium	UG/L	3440	729.0	944.9	1059.6	2302.7
Beryllium	UG/L	63.5	12.3	16.0	17.9	57.1
Cadmium	UG/L	340	18.8	70.2	43.9	41.4
Calcium	UG/L	2050000	428592.1	488688.2	599568.8	1241149.4
Chromium	UG/L	1540	331.2	410.8	474.9	2167.5
Cobalt	UG/L	281	46.6	69.9	71.1	118.2
Copper	UG/L	140	33.4	35.3	45.7	77.2
Iron	UG/L	255000	66909.1	70469.4	91564.1	1606400.4
Lead	UG/L	64	15.8	18.4	22.7	40.3
Magnesium	UG/L	42600	13179.2	11473.3	17193.3	20333.3
Manganese	UG/L	1420	288.9	331.8	405.0	787.9
Mercury	UG/L	0.84 J	0.1	0.2	0.2	0.2
Nickel	UG/L	524	92.7	120.3	134.7	293.3
Potassium	UG/L	22300	6768.3	5002.9	8518.7	11343.9
Selenium	UG/L	13.5 J	3.1	4.0	4.9	6.4
Silver	UG/L	20	2.4	3.8	3.7	2.8
Sodium	UG/L	68200	14865.0	14689.2	20004.3	19042.6
Thallium	UG/L	5	1.7	1.5	2.2	2.8
Vanadium	UG/L	886	190.4	221.1	267.8	1013.7
Zinc	UG/L	1850	447.3	477.6	643.2	4708.8

APPENDIX V.6b
GROUNDWATER DISSOLVED INORGANICS

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
DISSOLVED METALS

Client Sample ID:		35-EMW03D-03	35-EMW05D-03	35-EMW7D-03	35-GWDW5D-01	35-MW09SD-02	35-MW09DD-02
Lab Sample ID:		D94-5361-5	D94-5361-1	D94-5361-10	D94-5361-13	D94-5296-5	D94-5296-6
Date Sampled:		14-MAY-1994	14-MAY-1994	14-MAY-1994	15-MAY-1994	10-MAY-1994	11-MAY-1994
	UNITS						
Aluminum	UG/L	50 U	50 U	50 U	50 U	50 U	50 U
Antimony	UG/L	30 U	30 U	30 U	30 U	30 U	30 U
Arsenic	UG/L	2.5 U	16	2.5 U	2.5 U	6	2.5 U
Barium	UG/L	10 U	10 U	20	10 U	46	20
Beryllium	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Cadmium	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Calcium	UG/L	95000	46100	93900	53200	94700	91600
Chromium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Cobalt	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Copper	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Iron	UG/L	25 U	16400	25 U	25 U	25 U	278
Lead	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Magnesium	UG/L	2210	3240	3850	2450	3720	2300
Manganese	UG/L	19	47	19	11	42	24
Mercury	UG/L	0.7	0.5	0.6	0.8	2.9	1.4
Nickel	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Potassium	UG/L	1250 U	1250 U	1250 U	1250 U	2000 U	2000 U
Selenium	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Silver	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Sodium	UG/L	6710	12500	6200	36100	72200	8460
Thallium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	UG/L	2.5 U	2.5 U	6	2.5 U	2.5 U	2.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
DISSOLVED METALS

Client Sample ID:		35-MW10SD-02	35-MW10DD-02	35-MW14SD-02	35-MW14DD-02	35-MW16SD-02	35-MW16DD-02
Lab Sample ID:		D94-5296-13	D94-5296-8	D94-5296-10	D94-5296-11	D94-5296-16	D94-5296-12
Date Sampled:		12-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
Aluminum	UG/L	50 U	50 U	50 U	50 U	50 U	50 U
Antimony	UG/L	30 U	30 U	30 U	30 U	30 U	30 U
Arsenic	UG/L	22	2.5 U	10	2.5 U	7	2.5 U
Barium	UG/L	44	10 U	38	34	29	10 U
Beryllium	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Cadmium	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Calcium	UG/L	117000	109000	154000	113000	113000	85700
Chromium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Cobalt	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Copper	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Iron	UG/L	2600	306	4330	5830	10300	222
Lead	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Magnesium	UG/L	3180	2380	5970	2400	3750	3300
Manganese	UG/L	47	17	73	22	89	244
Mercury	UG/L	0.1 U	0.1 U	0.7	5.2	0.1 U	0.3
Nickel	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Potassium	UG/L	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Selenium	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Silver	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Sodium	UG/L	39700	7170	7830	7550	2570	7000
Thallium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	UG/L	12	5 U	5 U	5 U	5 U	5 U
Zinc	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
DISSOLVED METALS

Client Sample ID:		35-MW19SD-02	35-MW19DD-02	35-MW21SD-02	35-MW21DD-02	35-MW22SD-02	35-MW22DD-02
Lab Sample ID:		D94-5296-17	D94-5296-22	D94-5296-23	D94-5296-24	D94-5361-17	D94-5361-2
Date Sampled:		12-MAY-1994	12-MAY-1994	13-MAY-1994	13-MAY-1994	13-MAY-1994	13-MAY-1994
	UNITS						
Aluminum	UG/L	372	50 U	50 U	50 U	444	5850
Antimony	UG/L	30 U	30 U	30 U	30 U	30 U	30 U
Arsenic	UG/L	2.5 U	2.5 U	64	2.5 U	2.5 U	13
Barium	UG/L	23	10 U	10 U	26	71	53
Beryllium	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Cadmium	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	3	0.5 U
Calcium	UG/L	44400	107000	100000	132000	674000	122000
Chromium	UG/L	5 U	5 U	5 U	5 U	5 U	24
Cobalt	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Copper	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Iron	UG/L	254	25 U	90600	1730	1530	17400
Lead	UG/L	2	1 U	1 U	1 U	1 U	2
Magnesium	UG/L	2140	4710	4260	4380	8520	3450
Manganese	UG/L	157	34	36	44	186	87
Mercury	UG/L	1.6	0.2	0.2	0.3	0.8	0.7
Nickel	UG/L	5 U	5 U	5 U	5 U	5 U	10
Potassium	UG/L	2000 U	2000 U	2000 U	2000 U	1250 U	1250 U
Selenium	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Silver	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Sodium	UG/L	13800	9770	8220	21900	8150	3620
Thallium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	UG/L	5 U	5 U	5 U	5 U	5 U	19
Zinc	UG/L	2.5 U	2.5 U	10	2.5 U	36	42

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
DISSOLVED METALS

Client Sample ID:		35-MW25SD-02	35-MW25DD-02	35-MW29AD-01	35-MW29BWD-01	35-MW33AWD-01	35-MW33BWD-01
Lab Sample ID:		D94-5361-4	D94-5361-18	D94-5296-1	D94-5296-4	D94-5529-14	D94-5529-7
Date Sampled:		13-MAY-1994	13-MAY-1994	10-MAY-1994	10-MAY-1994	19-MAY-1994	17-MAY-1994
	UNITS						
Aluminum	UG/L	50 U	50 U	288	50 U	117	50 U
Antimony	UG/L	30 U	30 U	30 U	30 U	30 U	30 U
Arsenic	UG/L	2.5 U	2.5 U	17	2.5 U	2.5 U	2.5 U
Barium	UG/L	10 U	21	145	79	77	44
Beryllium	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Cadmium	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Calcium	UG/L	107000	77900	7160	82900	10600	93300 D
Chromium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Cobalt	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Copper	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Iron	UG/L	35000	25 U	4330	102	25 U	25 U
Lead	UG/L	1 U	3	1 U	1 U	1 U	2
Magnesium	UG/L	5040	1640	2120	2670	4330	2630
Manganese	UG/L	733	22	56	42	25	24
Mercury	UG/L	0.5	0.5	5.6	6	2.2	3.7
Nickel	UG/L	5 U	5 U	28	5 U	10 UD	5 U
Potassium	UG/L	1250 U	1250 U	2000 U	2000 U	1250 U	1250 U
Selenium	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Silver	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Sodium	UG/L	11100	6720	14200	8760	7960	11200
Thallium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	UG/L	5 U	5 U	11	5 U	5 U	5 U
Zinc	UG/L	2.5 U	2.5 U	8	2.5 U	10	2.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
DISSOLVED METALS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
Aluminum	UG/L	5850	334.2	1179.9	747.0	308.5
Antimony	UG/L	ND	NA	NA	NA	NA
Arsenic	UG/L	64	8.1	13.2	12.7	11.7
Barium	UG/L	145	35.4	32.0	46.6	54.1
Beryllium	UG/L	ND	NA	NA	NA	NA
Cadmium	UG/L	3	0.6	0.5	0.8	0.7
Calcium	UG/L	674000	113519.2	124465.7	157065.8	184502.0
Chromium	UG/L	24	5.8	3.9	7.1	6.4
Cobalt	UG/L	ND	NA	NA	NA	NA
Copper	UG/L	ND	NA	NA	NA	NA
Iron	UG/L	90600	7975.5	19413.6	14767.7	751157.9
Lead	UG/L	3	1.2	0.5	1.4	1.4
Magnesium	UG/L	8520	3526.7	1517.1	4057.5	4103.6
Manganese	UG/L	733	87.5	149.3	139.7	129.2
Mercury	UG/L	6	1.5	1.8	2.1	3.9
Nickel	UG/L	28	6.4	4.8	8.1	7.2
Potassium	UG/L	ND	NA	NA	NA	NA
Selenium	UG/L	ND	NA	NA	NA	NA
Silver	UG/L	ND	NA	NA	NA	NA
Sodium	UG/L	72200	14141.3	15290.7	19491.0	19160.4
Thallium	UG/L	ND	NA	NA	NA	NA
Vanadium	UG/L	19	6.1	3.3	7.3	6.9
Zinc	UG/L	42	6.5	10.3	10.1	8.5

APPENDIX V.7
SURFACE WATER ORGANICS

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW01	35-SW02	35-SW03	35-SW04	35-SW05	35-SW06
Lab Sample ID:		4120-12	4120-13	4120-1	4120-2	4120-3	4120-4
Date Sampled:		12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994
	UNITS						
VOLATILES							
Chloromethane	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Chloride	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Methylene Chloride	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Disulfide	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethene (total)	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone	UG/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
1,1,1-Trichloroethane	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Toluene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Xylene (total)	UG/L	5 U	5 U	5 U	5 U	5 U	5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW01	35-SW02	35-SW03	35-SW04	35-SW05	35-SW06
Lab Sample ID:		4120-12	4120-13	4120-1	4120-2	4120-3	4120-4
Date Sampled:		12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
bis(2-Chloroethyl)ether	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
2-Chlorophenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
1,3-Dichlorobenzene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
1,4-Dichlorobenzene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
1,2-Dichlorobenzene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
2-Methylphenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2,2'-oxybis(1-Chloropropane)	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
4-Methylphenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
N-Nitroso-di-n-propylamine	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Hexachloroethane	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Nitrobenzene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Isophorone	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
2-Nitrophenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dimethylphenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
bis(2-Chloroethoxy)methane	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
2,4-Dichlorophenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Naphthalene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
4-Chloroaniline	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Hexachlorobutadiene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
4-Chloro-3-methylphenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2-Methylnaphthalene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Hexachlorocyclopentadiene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
2,4,6-Trichlorophenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2,4,5-Trichlorophenol	UG/L	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U
2-Chloronaphthalene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
2-Nitroaniline	UG/L	12.5 U	12.5 U	12.5 UJ	12.5 U	12.5 U	12.5 U
Dimethylphthalate	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Acenaphthylene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
2,6-Dinitrotoluene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
3-Nitroaniline	UG/L	12.5 U	12.5 U	12.5 UJ	12.5 U	12.5 U	12.5 U
Acenaphthene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW01	35-SW02	35-SW03	35-SW04	35-SW05	35-SW06
Lab Sample ID:		4120-12	4120-13	4120-1	4120-2	4120-3	4120-4
Date Sampled:		12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U
Dibenzofuran	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
4-Nitrophenol	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dinitrotoluene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Diethylphthalate	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Fluorene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
4-Chlorophenyl-phenylether	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
4-Nitroaniline	UG/L	12.5 U	12.5 U	12.5 UJ	12.5 U	12.5 U	12.5 U
4,6-Dinitro-2-methylphenol	UG/L	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U
N-Nitrosodiphenylamine	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
4-Bromophenyl-phenylether	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Hexachlorobenzene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Pentachlorophenol	UG/L	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U	12.5 U
Phenanthrene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Anthracene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Carbazole	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Di-n-butylphthalate	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Fluoranthene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Pyrene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Butylbenzylphthalate	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Benzo(a)anthracene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
3,3'-Dichlorobenzidine	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Chrysene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
bis(2-Ethylhexyl)phthalate	UG/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
Di-n-octylphthalate	UG/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
Benzo(b)fluoranthene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Benzo(k)fluoranthene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Benzo(a)pyrene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Dibenz(a,h)anthracene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U
Benzo(g,h,i)perylene	UG/L	5 U	5 U	5 UJ	5 U	5 U	5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW01	35-SW02	35-SW03	35-SW04	35-SW05	35-SW06
Lab Sample ID:		4120-12	4120-13	4120-1	4120-2	4120-3	4120-4
Date Sampled:		12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994
	UNITS						
PESTCIDE/PCBs							
alpha-BHC	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
beta-BHC	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
delta-BHC	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-BHC (Lindane)	UG/L	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Heptachlor	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Aldrin	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor epoxide	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan I	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dieldrin	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4,4'-DDE	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endrin	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan II	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4,4'-DDD	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan sulfate	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4,4'-DDT	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Methoxychlor	UG/L	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Endrin ketone	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endrin aldehyde	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
alpha-Chlordane	UG/L	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
gamma-Chlordane	UG/L	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Toxaphene	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Aroclor-1016	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor-1221	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1232	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor-1242	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor-1248	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor-1254	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor-1260	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW07	36-SW05	36-SW06	36-SW07
Lab Sample ID:		4581-1	4375-9	4375-11	4375-10
Date Sampled:		20-APR-1994	18-APR-1994	18-APR-1994	18-APR-1994
	UNITS				
VOLATILES					
Chloromethane	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Bromomethane	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Vinyl Chloride	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Chloroethane	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Methylene Chloride	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Acetone	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Carbon Disulfide	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
1,1-Dichloroethene	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
1,1-Dichloroethane	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
1,2-Dichloroethene (total)	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Chloroform	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
1,2-Dichloroethane	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
2-Butanone	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
1,1,1-Trichloroethane	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Carbon Tetrachloride	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Bromodichloromethane	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
1,2-Dichloropropane	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
cis-1,3-Dichloropropene	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Trichloroethene	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Dibromochloromethane	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
1,1,2-Trichloroethane	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Benzene	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
trans-1,3-Dichloropropene	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Bromoform	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
4-Methyl-2-Pentanone	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
2-Hexanone	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Tetrachloroethene	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
1,1,2,2-Tetrachloroethane	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Toluene	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Chlorobenzene	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Ethylbenzene	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Styrene	UG/L	5 UJ	5 UJ	5 UJ	5 UJ
Xylene (total)	UG/L	5 UJ	5 UJ	5 UJ	5 UJ

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW07	36-SW05	36-SW06	36-SW07
Lab Sample ID:		4581-1	4375-9	4375-11	4375-10
Date Sampled:		20-APR-1994	18-APR-1994	18-APR-1994	18-APR-1994
	UNITS				
SEMIVOLATILES					
Phenol	UG/L	5 U	5 UJ	5 UJ	5.5 UJ
bis(2-Chloroethyl)ether	UG/L	5 UJ	5 UJ	5 U	5.5 U
2-Chlorophenol	UG/L	5 U	5 U	5 U	5.5 U
1,3-Dichlorobenzene	UG/L	5 U	5 UJ	5 U	5.5 U
1,4-Dichlorobenzene	UG/L	5 U	5 UJ	5 U	5.5 U
1,2-Dichlorobenzene	UG/L	5 U	5 UJ	5 U	5.5 U
2-Methylphenol	UG/L	5 U	5 U	5 U	5.5 U
2,2'-oxybis(1-Chloropropane)	UG/L	5 UJ	5 UJ	5 U	5.5 U
4-Methylphenol	UG/L	5 U	5 U	5 U	5.5 U
N-Nitroso-di-n-propylamine	UG/L	5 UJ	5 UJ	5 U	5.5 U
Hexachloroethane	UG/L	5 U	5 UJ	5 U	5.5 U
Nitrobenzene	UG/L	5 U	5 UJ	5 U	5.5 U
Isophorone	UG/L	5 U	5 UJ	5 U	5.5 U
2-Nitrophenol	UG/L	5 U	5 U	5 U	5.5 U
2,4-Dimethylphenol	UG/L	5 U	5 U	5 U	5.5 U
bis(2-Chloroethoxy)methane	UG/L	5 U	5 UJ	5 U	5.5 U
2,4-Dichlorophenol	UG/L	5 U	5 U	5 U	5.5 U
1,2,4-Trichlorobenzene	UG/L	5 U	5 UJ	5 U	5.5 U
Naphthalene	UG/L	5 U	5 UJ	5 U	5.5 U
4-Chloroaniline	UG/L	5 U	5 UJ	5 U	5.5 U
Hexachlorobutadiene	UG/L	5 U	5 UJ	5 U	5.5 U
4-Chloro-3-methylphenol	UG/L	5 U	5 U	5 U	5.5 U
2-Methylnaphthalene	UG/L	5 U	5 UJ	5 U	5.5 U
Hexachlorocyclopentadiene	UG/L	5 U	5 UJ	5 U	5.5 U
2,4,6-Trichlorophenol	UG/L	5 U	5 U	5 U	5.5 U
2,4,5-Trichlorophenol	UG/L	12.5 U	12.5 U	12.5 U	14 U
2-Chloronaphthalene	UG/L	5 U	5 UJ	5 U	5.5 U
2-Nitroaniline	UG/L	12.5 U	12.5 UJ	12.5 U	14 U
Dimethylphthalate	UG/L	5 U	5 UJ	5 UJ	5.5 UJ
Acenaphthylene	UG/L	5 U	5 UJ	5 U	5.5 U
2,6-Dinitrotoluene	UG/L	5 U	5 UJ	5 U	5.5 U
3-Nitroaniline	UG/L	12.5 UJ	12.5 UJ	12.5 U	14 U
Acenaphthene	UG/L	5 U	5 UJ	5 U	5.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW07	36-SW05	36-SW06	36-SW07
Lab Sample ID:		4581-1	4375-9	4375-11	4375-10
Date Sampled:		20-APR-1994	18-APR-1994	18-APR-1994	18-APR-1994
	UNITS				
SEMIVOLATILES Cont.					
2,4-Dinitrophenol	UG/L	12.5 UJ	12.5 UJ	12.5 U	14 U
Dibenzofuran	UG/L	5 U	5 UJ	5 U	5.5 U
4-Nitrophenol	UG/L	5 U	5 U	5 UJ	5.5 UJ
2,4-Dinitrotoluene	UG/L	5 U	5 UJ	5 U	5.5 U
Diethylphthalate	UG/L	5 U	5 UJ	5 U	5.5 U
Fluorene	UG/L	5 U	5 UJ	5 U	5.5 U
4-Chlorophenyl-phenylether	UG/L	5 U	5 UJ	5 U	5.5 U
4-Nitroaniline	UG/L	12.5 U	12.5 UJ	12.5 U	14 U
4,6-Dinitro-2-methylphenol	UG/L	12.5 UJ	12.5 U	12.5 U	14 U
N-Nitrosodiphenylamine	UG/L	5 U	5 UJ	5 UJ	5.5 UJ
4-Bromophenyl-phenylether	UG/L	5 U	5 UJ	5 U	5.5 U
Hexachlorobenzene	UG/L	5 U	5 UJ	5 U	5.5 U
Pentachlorophenol	UG/L	12.5 U	12.5 U	12.5 U	14 U
Phenanthrene	UG/L	5 U	5 UJ	5 U	5.5 U
Anthracene	UG/L	5 U	5 UJ	5 U	5.5 U
Carbazole	UG/L	5 U	5 UJ	5 U	5.5 U
Di-n-butylphthalate	UG/L	5 U	5 UJ	5 U	5.5 U
Fluoranthene	UG/L	5 U	5 UJ	5 U	5.5 U
Pyrene	UG/L	5 U	5 UJ	5 U	5.5 U
Butylbenzylphthalate	UG/L	5 U	5 UJ	5 UJ	5.5 UJ
Benzo(a)anthracene	UG/L	5 U	5 UJ	5 U	5.5 U
3,3'-Dichlorobenzidine	UG/L	5 U	5 UJ	5 U	5.5 U
Chrysene	UG/L	5 U	5 UJ	5 UJ	5.5 UJ
bis(2-Ethylhexyl)phthalate	UG/L	5 U	5 UJ	5 UJ	5.5 UJ
Di-n-octylphthalate	UG/L	5 U	5 UJ	5 U	5.5 U
Benzo(b)fluoranthene	UG/L	5 U	5 UJ	5 U	5.5 U
Benzo(k)fluoranthene	UG/L	5 U	5 UJ	5 U	5.5 U
Benzo(a)pyrene	UG/L	5 U	5 UJ	5 U	5.5 U
Indeno(1,2,3-cd)pyrene	UG/L	5 U	5 UJ	5 U	5.5 U
Dibenz(a,h)anthracene	UG/L	5 U	5 UJ	5 U	5.5 U
Benzo(g,h,i)perylene	UG/L	5 U	5 UJ	5 U	5.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW07	36-SW05	36-SW06	36-SW07
Lab Sample ID:		4581-1	4375-9	4375-11	4375-10
Date Sampled:		20-APR-1994	18-APR-1994	18-APR-1994	18-APR-1994
	UNITS				
PESTCIDE/PCBs					
alpha-BHC	UG/L	0.025 U	0.025 UJ	0.025 UJ	0.025 UJ
beta-BHC	UG/L	0.025 U	0.025 UJ	0.025 UJ	0.025 UJ
delta-BHC	UG/L	0.025 U	0.025 UJ	0.025 UJ	0.025 UJ
gamma-BHC (Lindane)	UG/L	0.25 U	0.025 UJ	0.025 UJ	0.025 UJ
Heptachlor	UG/L	0.025 U	0.025 UJ	0.025 UJ	0.025 UJ
Aldrin	UG/L	0.025 U	0.025 UJ	0.025 UJ	0.025 UJ
Heptachlor epoxide	UG/L	0.025 U	0.025 UJ	0.025 UJ	0.025 UJ
Endosulfan I	UG/L	0.025 U	0.025 UJ	0.025 UJ	0.025 UJ
Dieldrin	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
4,4'-DDE	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
Endrin	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
Endosulfan II	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
4,4'-DDD	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
Endosulfan sulfate	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
4,4'-DDT	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
Methoxychlor	UG/L	0.295 UJ	0.025 U	0.25 U	0.25 U
Endrin ketone	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
Endrin aldehyde	UG/L	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ
alpha-Chlordane	UG/L	0.025 U	0.025 UJ	0.025 UJ	0.025 UJ
gamma-Chlordane	UG/L	0.025 U	0.025 UJ	0.025 UJ	0.025 UJ
Toxaphene	UG/L	2.5 U	2.5 UJ	2.5 UJ	2.5 UJ
Aroclor-1016	UG/L	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ
Aroclor-1221	UG/L	1 U	1 UJ	1 UJ	1 UJ
Aroclor-1232	UG/L	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ
Aroclor-1242	UG/L	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ
Aroclor-1248	UG/L	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ
Aroclor-1254	UG/L	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ
Aroclor-1260	UG/L	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
VOLATILES						
Chloromethane	UG/L	ND	NA	NA	NA	NA
Bromomethane	UG/L	ND	NA	NA	NA	NA
Vinyl Chloride	UG/L	ND	NA	NA	NA	NA
Chloroethane	UG/L	ND	NA	NA	NA	NA
Methylene Chloride	UG/L	ND	NA	NA	NA	NA
Acetone	UG/L	ND	NA	NA	NA	NA
Carbon Disulfide	UG/L	ND	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	ND	NA	NA	NA	NA
1,1-Dichloroethane	UG/L	ND	NA	NA	NA	NA
1,2-Dichloroethene (total)	UG/L	ND	NA	NA	NA	NA
Chloroform	UG/L	ND	NA	NA	NA	NA
1,2-Dichloroethane	UG/L	ND	NA	NA	NA	NA
2-Butanone	UG/L	ND	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/L	ND	NA	NA	NA	NA
Carbon Tetrachloride	UG/L	ND	NA	NA	NA	NA
Bromodichloromethane	UG/L	ND	NA	NA	NA	NA
1,2-Dichloropropane	UG/L	ND	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	ND	NA	NA	NA	NA
Trichloroethene	UG/L	ND	NA	NA	NA	NA
Dibromochloromethane	UG/L	ND	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/L	ND	NA	NA	NA	NA
Benzene	UG/L	ND	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	ND	NA	NA	NA	NA
Bromoform	UG/L	ND	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	ND	NA	NA	NA	NA
2-Hexanone	UG/L	ND	NA	NA	NA	NA
Tetrachloroethene	UG/L	ND	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	ND	NA	NA	NA	NA
Toluene	UG/L	ND	NA	NA	NA	NA
Chlorobenzene	UG/L	ND	NA	NA	NA	NA
Ethylbenzene	UG/L	ND	NA	NA	NA	NA
Styrene	UG/L	ND	NA	NA	NA	NA
Xylene (total)	UG/L	ND	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
SEMIVOLATILES						
Phenol	UG/L	ND	NA	NA	NA	NA
bis(2-Chloroethyl)ether	UG/L	ND	NA	NA	NA	NA
2-Chlorophenol	UG/L	ND	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/L	ND	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/L	ND	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/L	ND	NA	NA	NA	NA
2-Methylphenol	UG/L	ND	NA	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/L	ND	NA	NA	NA	NA
4-Methylphenol	UG/L	ND	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/L	ND	NA	NA	NA	NA
Hexachloroethane	UG/L	ND	NA	NA	NA	NA
Nitrobenzene	UG/L	ND	NA	NA	NA	NA
Isophorone	UG/L	ND	NA	NA	NA	NA
2-Nitrophenol	UG/L	ND	NA	NA	NA	NA
2,4-Dimethylphenol	UG/L	ND	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/L	ND	NA	NA	NA	NA
2,4-Dichlorophenol	UG/L	ND	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/L	ND	NA	NA	NA	NA
Naphthalene	UG/L	ND	NA	NA	NA	NA
4-Chloroaniline	UG/L	ND	NA	NA	NA	NA
Hexachlorobutadiene	UG/L	ND	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/L	ND	NA	NA	NA	NA
2-Methylnaphthalene	UG/L	ND	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/L	ND	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/L	ND	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/L	ND	NA	NA	NA	NA
2-Chloronaphthalene	UG/L	ND	NA	NA	NA	NA
2-Nitroaniline	UG/L	ND	NA	NA	NA	NA
Dimethylphthalate	UG/L	ND	NA	NA	NA	NA
Acenaphthylene	UG/L	ND	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/L	ND	NA	NA	NA	NA
3-Nitroaniline	UG/L	ND	NA	NA	NA	NA
Acenaphthene	UG/L	ND	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
SEMIVOLATILES Cont.						
2,4-Dinitrophenol	UG/L	ND	NA	NA	NA	NA
Dibenzofuran	UG/L	ND	NA	NA	NA	NA
4-Nitrophenol	UG/L	ND	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/L	ND	NA	NA	NA	NA
Diethylphthalate	UG/L	ND	NA	NA	NA	NA
Fluorene	UG/L	ND	NA	NA	NA	NA
4-Chlorophenyl-phenylether	UG/L	ND	NA	NA	NA	NA
4-Nitroaniline	UG/L	ND	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	ND	NA	NA	NA	NA
N-Nitrosodiphenylamine	UG/L	ND	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/L	ND	NA	NA	NA	NA
Hexachlorobenzene	UG/L	ND	NA	NA	NA	NA
Pentachlorophenol	UG/L	ND	NA	NA	NA	NA
Phenanthrene	UG/L	ND	NA	NA	NA	NA
Anthracene	UG/L	ND	NA	NA	NA	NA
Carbazole	UG/L	ND	NA	NA	NA	NA
Di-n-butylphthalate	UG/L	ND	NA	NA	NA	NA
Fluoranthene	UG/L	ND	NA	NA	NA	NA
Pyrene	UG/L	ND	NA	NA	NA	NA
Butylbenzylphthalate	UG/L	ND	NA	NA	NA	NA
Benzo(a)anthracene	UG/L	ND	NA	NA	NA	NA
3,3'-Dichlorobenzidine	UG/L	ND	NA	NA	NA	NA
Chrysene	UG/L	ND	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	ND	NA	NA	NA	NA
Di-n-octylphthalate	UG/L	ND	NA	NA	NA	NA
Benzo(b)fluoranthene	UG/L	ND	NA	NA	NA	NA
Benzo(k)fluoranthene	UG/L	ND	NA	NA	NA	NA
Benzo(a)pyrene	UG/L	ND	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/L	ND	NA	NA	NA	NA
Dibenz(a,h)anthracene	UG/L	ND	NA	NA	NA	NA
Benzo(g,h,i)perylene	UG/L	ND	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
PESTCIDE/PCBs						
alpha-BHC	UG/L	ND	NA	NA	NA	NA
beta-BHC	UG/L	ND	NA	NA	NA	NA
delta-BHC	UG/L	ND	NA	NA	NA	NA
gamma-BHC (Lindane)	UG/L	ND	NA	NA	NA	NA
Heptachlor	UG/L	ND	NA	NA	NA	NA
Aldrin	UG/L	ND	NA	NA	NA	NA
Heptachlor epoxide	UG/L	ND	NA	NA	NA	NA
Endosulfan I	UG/L	ND	NA	NA	NA	NA
Dieldrin	UG/L	ND	NA	NA	NA	NA
4,4'-DDE	UG/L	ND	NA	NA	NA	NA
Endrin	UG/L	ND	NA	NA	NA	NA
Endosulfan II	UG/L	ND	NA	NA	NA	NA
4,4'-DDD	UG/L	ND	NA	NA	NA	NA
Endosulfan sulfate	UG/L	ND	NA	NA	NA	NA
4,4'-DDT	UG/L	ND	NA	NA	NA	NA
Methoxychlor	UG/L	ND	NA	NA	NA	NA
Endrin ketone	UG/L	ND	NA	NA	NA	NA
Endrin aldehyde	UG/L	ND	NA	NA	NA	NA
alpha-Chlordane	UG/L	ND	NA	NA	NA	NA
gamma-Chlordane	UG/L	ND	NA	NA	NA	NA
Toxaphene	UG/L	ND	NA	NA	NA	NA
Aroclor-1016	UG/L	ND	NA	NA	NA	NA
Aroclor-1221	UG/L	ND	NA	NA	NA	NA
Aroclor-1232	UG/L	ND	NA	NA	NA	NA
Aroclor-1242	UG/L	ND	NA	NA	NA	NA
Aroclor-1248	UG/L	ND	NA	NA	NA	NA
Aroclor-1254	UG/L	ND	NA	NA	NA	NA
Aroclor-1260	UG/L	ND	NA	NA	NA	NA

APPENDIX V.8
SURFACE WATER INORGANICS

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-SW01	35-SW02	35-SW03	35-SW04	35-SW05	35-SW06
Lab Sample ID:		4120-12	4120-13	4120-1	4120-2	4120-3	4120-4
Date Sampled:		12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994
	UNITS						
Aluminum	UG/L	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.6 UJ
Antimony	UG/L	0.5 U	0.5 U	1.8	1.5	0.5 U	0.5 U
Arsenic	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Barium	UG/L	16.9	16.7	19.5	19	18.2	23.3
Beryllium	UG/L	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
Cadmium	UG/L	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
Calcium	UG/L	58000	58100	59500	59300	58800	63900
Chromium	UG/L	0.5 U	0.5 U	1 J	0.5 U	0.5 U	1.2 J
Cobalt	UG/L	4.5 U	4.5 U	9.5 J	11.7 J	16.8 J	4.5 U
Copper	UG/L	3.25 U	2.2 U	3.15 U	3.3 U	1.7 U	5.2 U
Iron	UG/L	764 J	850 J	1060 J	1230 J	842 J	1750 J
Lead	UG/L	0.5 U	1.4	2.1	2.1	0.5 U	2.4
Magnesium	UG/L	2380	2390	3120	3140	3470	5180
Manganese	UG/L	30.1	29.1	36.9	44.9	38.7	77.4
Mercury	UG/L	3 J	0.1 U	0.1 U	3.2 J	0.1 U	0.1 U
Nickel	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Potassium	UG/L	2460	2170	3210	2760	2810	3840
Selenium	UG/L	0.5 UJ	0.5 UJ	0.5 UJ	1.3 J	0.5 UJ	0.5 UJ
Silver	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Sodium	UG/L	47000	42600	57000	59100	57300	68800
Thallium	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vanadium	UG/L	2 U	2 U	2 U	2 U	2 U	2 U
Zinc	UG/L						13.15 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-SW07	36-SW05	36-SW06	36-SW07
Lab Sample ID:		4581-1	4375-9	4375-11	4375-10
Date Sampled:		20-APR-1994	18-APR-1994	18-APR-1994	18-APR-1994
	UNITS				
Aluminum	UG/L	6580	1.3	1.2 J	1
Antimony	UG/L	19.5 U	3.9	0.5 U	2.4 J
Arsenic	UG/L	2.7 J	1.2 U	0.5 U	0.5 U
Barium	UG/L	48.5 J	9.8 U	9.1 U	9.15 U
Beryllium	UG/L	2.5 U	0.5 U	0.5 U	0.5 U
Cadmium	UG/L	0.5 U	0.5 U	0.5 U	0.5 U
Calcium	UG/L	58500	41700	44000	48800
Chromium	UG/L	8.5 U	0.85 U	0.95 U	1.35 U
Cobalt	UG/L	9 J	4.5 U	4.5 U	4.5 U
Copper	UG/L	9.6 U	3.5 U	4 U	2.65 U
Iron	UG/L	9500	967 J	1070 J	1380 J
Lead	UG/L	97 J	1.65 U	1.55 U	1.45 U
Magnesium	UG/L	4610 J	17900	13200	9300
Manganese	UG/L	113	31.9	29.5	24.5
Mercury	UG/L	0.05 UJ	0.085 U	0.175 U	0.165 U
Nickel	UG/L	5 U	5 U	5 U	5 U
Potassium	UG/L	4780 J	8210	7490	5920
Selenium	UG/L	2.15 U	0.5 U	0.5 UJ	0.5 U
Silver	UG/L	2 U	0.5 U	0.5 U	0.5 U
Sodium	UG/L	59800	192000	136000	103000
Thallium	UG/L	1 J	0.5 UJ	0.5 UJ	0.5 UJ
Vanadium	UG/L	14.8 J	11.2	9	4.5
Zinc	UG/L	129 J	14.05 U	7.3 U	8.15 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
Aluminum	UG/L	6580	731.8	2193.1	2003.0	268905.4
Antimony	UG/L	3.9	3.5	6.1	7.0	12.4
Arsenic	UG/L	2.7 J	1.1	0.6	1.5	1.5
Barium	UG/L	48.5 J	18.5	12.0	25.5	28.4
Beryllium	UG/L	ND	NA	NA	NA	NA
Cadmium	UG/L	ND	NA	NA	NA	NA
Calcium	UG/L	63900	54077.8	7182.6	58241.1	60378.8
Chromium	UG/L	1.2 J	1.6	2.6	3.1	3.2
Cobalt	UG/L	16.8 J	7.7	4.4	10.3	11.1
Copper	UG/L	ND	NA	NA	NA	NA
Iron	UG/L	9500	1962.6	2833.3	3604.9	3378.3
Lead	UG/L	97 J	12.0	31.9	30.5	46.6
Magnesium	UG/L	17900	6612.2	5611.5	9864.9	12408.7
Manganese	UG/L	113	42.1	27.3	57.9	64.8
Mercury	UG/L	3.2 J	0.8	1.3	1.5	4.8
Nickel	UG/L	ND	NA	NA	NA	NA
Potassium	UG/L	8210	4423.3	2288.1	5749.6	6245.8
Selenium	UG/L	1.3 J	0.8	0.6	1.1	1.1
Silver	UG/L	ND	NA	NA	NA	NA
Sodium	UG/L	192000	83755.6	50570.4	113068.5	117760.6
Thallium	UG/L	1 J	0.6	0.2	0.7	0.6
Vanadium	UG/L	14.8 J	5.5	4.9	8.4	11.6
Zinc	UG/L	129 J	39.6	59.7	96.5	1122.2

APPENDIX V.9
SEDIMENT ORGANICS

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD01-06	35-SD01-612	35-SD02-06	35-SD02-612	35-SD03-06	35-SD03-612
Lab Sample ID:		4585-4	4585-5	4585-6	4585-8	5608-1	5608-2
Date Sampled:		20-APR-1994	20-APR-1994	20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994
	UNITS						
VOLATILES							
Chloromethane	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 UJ	7.5 U
Bromomethane	UG/KG	9.5 U	7.5 U	6.5 U	60.5 U	7 UJ	7.5 U
Vinyl Chloride	UG/KG	9.5 U	7.5 U	6.5 U	60.5 U	7 U	7.5 U
Chloroethane	UG/KG	9.5 U	7.5 U	6.5 U	60.5 U	7 U	7.5 U
Methylene Chloride	UG/KG	9.5 U	7.5 U	6.5 U	60.5 U	7 U	7.5 U
Acetone	UG/KG	9.5 U	128 J	6.5 UJ	60.5 U	7 UJ	7.5 U
Carbon Disulfide	UG/KG	9.5 U	7.5 U	6.5 U	60.5 U	7 U	7.5 U
1,1-Dichloroethene	UG/KG	9.5 U	7.5 U	6.5 U	60.5 U	7 U	7.5 U
1,1-Dichloroethane	UG/KG	9.5 U	7.5 U	6.5 U	60.5 U	7 U	7.5 U
1,2-Dichloroethene (total)	UG/KG	9.5 U	7.5 U	6.5 U	60.5 U	7 U	7.5 U
Chloroform	UG/KG	9.5 U	7.5 U	6.5 U	60.5 U	7 U	7.5 U
1,2-Dichloroethane	UG/KG	9.5 U	7.5 U	6.5 U	60.5 U	7 U	7.5 U
2-Butanone	UG/KG	9.5 U	7.5 UJ	6.5 UJ	60.5 U	7 UJ	7.5 U
1,1,1-Trichloroethane	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 U	7.5 U
Carbon Tetrachloride	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 U	7.5 U
Bromodichloromethane	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 U	7.5 U
1,2-Dichloropropane	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 U	7.5 U
cis-1,3-Dichloropropene	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 U	7.5 U
Trichloroethene	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 U	7.5 U
Dibromochloromethane	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 U	7.5 U
1,1,2-Trichloroethane	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 U	7.5 U
Benzene	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 U	7.5 U
trans-1,3-Dichloropropene	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 U	7.5 U
Bromoform	UG/KG	9.5 UJ	7.5 UJ	6.5 UJ	60.5 U	7 U	7.5 U
4-Methyl-2-Pentanone	UG/KG	9.5 UJ	7.5 UJ	6.5 UJ	60.5 U	7 UJ	7.5 U
2-Hexanone	UG/KG	9.5 UJ	7.5 UJ	6.5 UJ	60.5 U	7 UJ	7.5 U
Tetrachloroethene	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 UJ	7.5 U
1,1,2,2-Tetrachloroethane	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 UJ	7.5 U
Toluene	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	8 J	7.5 U
Chlorobenzene	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 UJ	7.5 U
Ethylbenzene	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 UJ	7.5 U
Styrene	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 UJ	7.5 U
Xylene (total)	UG/KG	9.5 UJ	7.5 U	6.5 U	60.5 U	7 UJ	7.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD01-06	35-SD01-612	35-SD02-06	35-SD02-612	35-SD03-06	35-SD03-612
Lab Sample ID:		4585-4	4585-5	4585-6	4585-8	5608-1	5608-2
Date Sampled:		20-APR-1994	20-APR-1994	20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
bis(2-Chloroethyl)ether	UG/KG	320 U	244.5 U	210.5 U	200 U	226 UJ	242.5 UJ
2-Chlorophenol	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
1,3-Dichlorobenzene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
1,4-Dichlorobenzene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
1,2-Dichlorobenzene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
2-Methylphenol	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
2,2'-oxybis(1-Chloropropane)	UG/KG	320 U	244.5 UJ	210.5 UJ	200 UJ	226 U	242.5 U
4-Methylphenol	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
N-Nitroso-di-n-propylamine	UG/KG	320 U	244.5 UJ	210.5 UJ	200 UJ	226 U	242.5 U
Hexachloroethane	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Nitrobenzene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Isophorone	UG/KG	320 U	244.5 U	210.5 U	200 U	226 UJ	242.5 UJ
2-Nitrophenol	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
2,4-Dimethylphenol	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
bis(2-Chloroethoxy)methane	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
2,4-Dichlorophenol	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
1,2,4-Trichlorobenzene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Naphthalene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
4-Chloroaniline	UG/KG	320 U	244.5 U	210.5 U	200 U	226 UJ	242.5 UJ
Hexachlorobutadiene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
4-Chloro-3-methylphenol	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
2-Methylnaphthalene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Hexachlorocyclopentadiene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
2,4,6-Trichlorophenol	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
2,4,5-Trichlorophenol	UG/KG	775 U	592.5 U	511 U	485.5 U	548 U	588 U
2-Chloronaphthalene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
2-Nitroaniline	UG/KG	775 U	592.5 U	511 U	485.5 U	548 U	588 U
Dimethylphthalate	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Acenaphthylene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
2,6-Dinitrotoluene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 UJ	242.5 UJ
3-Nitroaniline	UG/KG	775 UJ	592.5 UJ	511 UJ	485.5 UJ	548 UJ	588 UJ
Acenaphthene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD01-06	35-SD01-612	35-SD02-06	35-SD02-612	35-SD03-06	35-SD03-612
Lab Sample ID:		4585-4	4585-5	4585-6	4585-8	5608-1	5608-2
Date Sampled:		20-APR-1994	20-APR-1994	20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	775 U	592.5 UJ	511 UJ	485.5 UJ	548 U	588 U
Dibenzofuran	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
4-Nitrophenol	UG/KG	320 UJ	244.5 UJ	210.5 UJ	200 UJ	226 UJ	242.5 UJ
2,4-Dinitrotoluene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Diethylphthalate	UG/KG	320 U	244.5 U	210.5 U	200 U	352 J	896
Fluorene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
4-Chlorophenyl-phenylether	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
4-Nitroaniline	UG/KG	775 UJ	592.5 UJ	511 UJ	485.5 UJ	548 U	588 U
4,6-Dinitro-2-methylphenol	UG/KG	775 U	592.5 U	511 U	485.5 U	548 U	588 U
N-Nitrosodiphenylamine	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
4-Bromophenyl-phenylether	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Hexachlorobenzene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Pentachlorophenol	UG/KG	775 U	592.5 U	511 U	485.5 U	548 U	588 U
Phenanthrene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Anthracene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Carbazole	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Di-n-butylphthalate	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Fluoranthene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Pyrene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Butylbenzylphthalate	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Benzo(a)anthracene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
3,3'-Dichlorobenzidine	UG/KG	320 UJ	244.5 UJ	210.5 UJ	200 UJ	226 U	242.5 U
Chrysene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
bis(2-Ethylhexyl)phthalate	UG/KG	320 UJ	244.5 UJ	210.5 UJ	200 UJ	226 UJ	242.5 UJ
Di-n-octylphthalate	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Benzo(b)fluoranthene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Benzo(k)fluoranthene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Benzo(a)pyrene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Indeno(1,2,3-cd)pyrene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Dibenz(a,h)anthracene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U
Benzo(g,h,i)perylene	UG/KG	320 U	244.5 U	210.5 U	200 U	226 U	242.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD01-06	35-SD01-612	35-SD02-06	35-SD02-612	35-SD03-06	35-SD03-612
Lab Sample ID:		4585-4	4585-5	4585-6	4585-8	5608-1	5608-2
Date Sampled:		20-APR-1994	20-APR-1994	20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/KG	1.65 U	1.25 U	1.1 U	1.05 U	6 U	6 U
beta-BHC	UG/KG	1.65 U	1.25 U	1.1 U	1.05 U	6 U	6 U
delta-BHC	UG/KG	1.65 U	1.25 U	1.1 U	1.05 U	6 U	6 U
gamma-BHC (Lindane)	UG/KG	1.65 U	1.25 U	1.1 U	1.05 U	6 U	6 U
Heptachlor	UG/KG	1.65 U	1.25 U	1.1 U	1.05 U	2.3 J	6 U
Aldrin	UG/KG	1.65 U	1.25 U	1.1 U	1.05 U	6 U	6 U
Heptachlor epoxide	UG/KG	0.74 J	1.25 U	0.43 J	1.2 J	6 U	6 U
Endosulfan I	UG/KG	1.65 U	1.25 U	1.1 U	1.05 U	6 U	6 U
Dieldrin	UG/KG	3.2 U	2.45 U	2.1 U	1.7 J	11.5 U	12 U
4,4'-DDE	UG/KG	3.2 U	1 J	1.8 J	38	11.5 U	12 U
Endrin	UG/KG	1.65 U	1.25 U	1.1 U	0.44 J	6 U	6 U
Endosulfan II	UG/KG	3.2 U	2.45 U	2.1 U	1.4 J	11.5 U	12 U
4,4'-DDD	UG/KG	1.65 U	1.1 J	2.3 J	40	11.5 U	6 U
Endosulfan sulfate	UG/KG	3.2 U	2.45 U	2.1 U	2 U	11.5 U	12 U
4,4'-DDT	UG/KG	3.2 U	0.73 J	0.66 J	1.6 J	11.5 U	12 U
Methoxychlor	UG/KG	2.7 J	0.65 J	0.49 J	2.2 J	58 U	62 U
Endrin ketone	UG/KG	3.2 U	2.45 U	2.1 U	2 U	11.5 U	12 U
Endrin aldehyde	UG/KG	3.2 U	2.45 U	2.1 U	2 U	11.5 U	12 U
alpha-Chlordane	UG/KG	1.65 U	1.25 U	0.51 J	6	6 U	6 U
gamma-Chlordane	UG/KG	1.65 U	1.25 U	1.1 UJ	6.7	6 U	6 U
Toxaphene	UG/KG	164.5 U	126 U	108.5 U	103 U	580 U	620 U
Aroclor-1016	UG/KG	32 U	24.5 U	21 U	20 U	113 U	121 U
Aroclor-1221	UG/KG	65 U	50 U	43 U	40.5 U	229.5 U	245 U
Aroclor-1232	UG/KG	32 U	24.5 U	21 U	20 U	113 U	121 U
Aroclor-1242	UG/KG	32 U	24.5 U	21 U	20 U	113 U	121 U
Aroclor-1248	UG/KG	32 U	24.5 U	21 U	20 U	113 U	121 U
Aroclor-1254	UG/KG	32 U	24.5 U	21 U	20 U	113 U	121 U
Aroclor-1260	UG/KG	32 U	24.5 U	21 U	20 U	113 U	121 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD04-06	35-SD04-612	35-SD05-06	35-SD05-612	35-SD06-06	35-SD06-612
Lab Sample ID:		4585-1	4585-3	5608-3	5608-4	5608-5	5608-6
Date Sampled:		20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994
	UNITS						
VOLATILES							
Chloromethane	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
Bromomethane	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 UJ	10.5 U	41.5 U
Vinyl Chloride	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
Chloroethane	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
Methylene Chloride	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
Acetone	UG/KG	439.5 UJ	390.5 UJ	14.5 UJ	7.5 UJ	10.5 U	41.5 U
Carbon Disulfide	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
1,1-Dichloroethene	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
1,1-Dichloroethane	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
1,2-Dichloroethene (total)	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
Chloroform	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
1,2-Dichloroethane	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
2-Butanone	UG/KG	439.5 UJ	390.5 UJ	14.5 UJ	7.5 UJ	10.5 U	41.5 U
1,1,1-Trichloroethane	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
Carbon Tetrachloride	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
Bromodichloromethane	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
1,2-Dichloropropane	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
cis-1,3-Dichloropropene	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
Trichloroethene	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
Dibromochloromethane	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
1,1,2-Trichloroethane	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
Benzene	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
trans-1,3-Dichloropropene	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
Bromoform	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
4-Methyl-2-Pentanone	UG/KG	439.5 UJ	390.5 UJ	14.5 UJ	7.5 UJ	10.5 U	41.5 U
2-Hexanone	UG/KG	439.5 UJ	390.5 UJ	14.5 UJ	7.5 UJ	10.5 U	41.5 U
Tetrachloroethene	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
1,1,2,2-Tetrachloroethane	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
Toluene	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
Chlorobenzene	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
Ethylbenzene	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
Styrene	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U
Xylene (total)	UG/KG	439.5 U	390.5 UJ	14.5 UJ	7.5 U	10.5 U	41.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD04-06	35-SD04-612	35-SD05-06	35-SD05-612	35-SD06-06	35-SD06-612
Lab Sample ID:		4585-1	4585-3	5608-3	5608-4	5608-5	5608-6
Date Sampled:		20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
bis(2-Chloroethyl)ether	UG/KG	290 U	258 U	471.5 UJ	250 UJ	351 U	275 UJ
2-Chlorophenol	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
1,3-Dichlorobenzene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
1,4-Dichlorobenzene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
1,2-Dichlorobenzene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
2-Methylphenol	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
2,2'-oxybis(1-Chloropropane)	UG/KG	290 UJ	258 UJ	471.5 U	250 U	351 U	275 U
4-Methylphenol	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
N-Nitroso-di-n-propylamine	UG/KG	290 UJ	258 UJ	471.5 U	250 U	351 U	275 U
Hexachloroethane	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
Nitrobenzene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
Isophorone	UG/KG	290 U	258 U	471.5 UJ	250 UJ	351 U	275 UJ
2-Nitrophenol	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
2,4-Dimethylphenol	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
bis(2-Chloroethoxy)methane	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
2,4-Dichlorophenol	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
1,2,4-Trichlorobenzene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
Naphthalene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
4-Chloroaniline	UG/KG	290 U	258 U	471.5 UJ	250 UJ	351 UJ	275 UJ
Hexachlorobutadiene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
4-Chloro-3-methylphenol	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
2-Methylnaphthalene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
Hexachlorocyclopentadiene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
2,4,6-Trichlorophenol	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
2,4,5-Trichlorophenol	UG/KG	703 U	625 U	1143 U	606 U	851 U	666.5 U
2-Chloronaphthalene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
2-Nitroaniline	UG/KG	703 U	625 U	1143 U	606 U	851 U	666.5 U
Dimethylphthalate	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
Acenaphthylene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
2,6-Dinitrotoluene	UG/KG	290 U	258 U	471.5 UJ	250 UJ	351 UJ	275 UJ
3-Nitroaniline	UG/KG	703 UJ	625 UJ	1143 UJ	606 UJ	851 UJ	666.5 UJ
Acenaphthene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD04-06	35-SD04-612	35-SD05-06	35-SD05-612	35-SD06-06	35-SD06-612
Lab Sample ID:		4585-1	4585-3	5608-3	5608-4	5608-5	5608-6
Date Sampled:		20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	703 UJ	625 UJ	1143 U	606 U	851 UJ	666.5 U
Dibenzofuran	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
4-Nitrophenol	UG/KG	290 UJ	258 UJ	471.5 UJ	250 UJ	351 UJ	275 UJ
2,4-Dinitrotoluene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
Diethylphthalate	UG/KG	290 U	258 U	471.5 U	250 U	351 U	398 J
Fluorene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
4-Chlorophenyl-phenylether	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
4-Nitroaniline	UG/KG	703 UJ	625 UJ	1143 U	606 U	851 U	666.5 U
4,6-Dinitro-2-methylphenol	UG/KG	703 U	625 U	1143 U	606 UJ	851 U	666.5 U
N-Nitrosodiphenylamine	UG/KG	290 U	258 U	471.5 U	250 UJ	351 U	275 U
4-Bromophenyl-phenylether	UG/KG	290 U	258 U	471.5 U	250 UJ	351 U	275 U
Hexachlorobenzene	UG/KG	290 U	258 U	471.5 U	250 UJ	351 U	275 U
Pentachlorophenol	UG/KG	703 U	625 U	1143 U	606 UJ	851 U	666.5 U
Phenanthrene	UG/KG	290 U	258 U	471.5 U	250 UJ	351 U	275 U
Anthracene	UG/KG	290 U	258 U	471.5 U	250 UJ	351 U	275 U
Carbazole	UG/KG	290 U	258 U	471.5 U	250 UJ	351 U	275 U
Di-n-butylphthalate	UG/KG	290 U	258 U	471.5 U	250 UJ	351 U	275 U
Fluoranthene	UG/KG	290 U	258 U	471.5 U	250 UJ	351 U	275 U
Pyrene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
Butylbenzylphthalate	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
Benzo(a)anthracene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
3,3'-Dichlorobenzidine	UG/KG	290 UJ	258 UJ	471.5 U	250 U	351 UJ	275 U
Chrysene	UG/KG	290 U	258 U	471.5 U	250 U	351 U	275 U
bis(2-Ethylhexyl)phthalate	UG/KG	290 UJ	625 J	704 J	469 J	351 U	275 U
Di-n-octylphthalate	UG/KG	290 U	258 U	471.5 U	250 UJ	351 U	275 U
Benzo(b)fluoranthene	UG/KG	290 U	258 U	471.5 U	250 UJ	351 U	275 U
Benzo(k)fluoranthene	UG/KG	290 U	258 U	471.5 U	250 UJ	351 U	275 U
Benzo(a)pyrene	UG/KG	290 U	258 U	471.5 U	250 UJ	351 U	275 U
Indeno(1,2,3-cd)pyrene	UG/KG	290 U	258 U	471.5 U	250 UJ	351 U	275 U
Dibenz(a,h)anthracene	UG/KG	290 U	258 U	471.5 U	250 UJ	351 U	275 U
Benzo(g,h,i)perylene	UG/KG	290 U	258 U	471.5 U	250 UJ	351 U	275 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD04-06	35-SD04-612	35-SD05-06	35-SD05-612	35-SD06-06	35-SD06-612
Lab Sample ID:		4585-1	4585-3	5608-3	5608-4	5608-5	5608-6
Date Sampled:		20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/KG	1.45 U	1.35 U	2.45 U	1.3 U	1.8 U	1.4 U
beta-BHC	UG/KG	1.45 U	1.35 U	2.45 U	1.3 U	1.8 U	1.4 U
delta-BHC	UG/KG	1.45 U	1.35 U	2.45 U	1.3 U	1 J	1.4 U
gamma-BHC (Lindane)	UG/KG	1.45 U	1.35 U	2.45 U	1.3 U	1.8 U	1.4 U
Heptachlor	UG/KG	1.45 U	1.35 U	2.45 U	1.3 U	1.8 U	1.4 U
Aldrin	UG/KG	1.45 U	1.35 U	2.45 U	1.3 U	1.8 U	1.4 U
Heptachlor epoxide	UG/KG	1.45 U	1.2 J	2.45 U	0.72 J	1.8 U	1.4 U
Endosulfan I	UG/KG	1.45 U	1.35 U	2.45 U	1.3 U	1.8 U	1.4 U
Dieldrin	UG/KG	1.6 J	3.1 J	4.75 U	2.5 U	3.5 U	2.75 U
4,4'-DDE	UG/KG	31 J	82	80	46	115	7.7
Endrin	UG/KG	1.45 U	0.59 J	2.45 U	0.85 J	0.77 J	1.4 U
Endosulfan II	UG/KG	1.3 J	3.5 J	1.6 J	0.84 J	2.2 J	2.75 U
4,4'-DDD	UG/KG	43	111	43	28	39	5.9
Endosulfan sulfate	UG/KG	2.8 U	2.6 U	4.75 U	2.5 U	3.5 U	2.75 U
4,4'-DDT	UG/KG	4.9 J	5.2	3.7 J	1.3 J	1.7 J	2.75 U
Methoxychlor	UG/KG	0.86 J	13.5 U	24.5 U	13 U	18 U	14 U
Endrin ketone	UG/KG	2.8 U	2.8 J	3.1 J	2.5 U	3.5 U	2.75 U
Endrin aldehyde	UG/KG	2.8 U	2.6 U	1.5 J	1.1 J	2.2 J	1 J
alpha-Chlordane	UG/KG	4	5.6	9.3	4.8	1.8 U	1.4 U
gamma-Chlordane	UG/KG	3.6	7.6	2.45 U	5	1.8 U	1.4 U
Toxaphene	UG/KG	144.5 U	133 U	244 U	129 U	180 U	141.5 U
Aroclor-1016	UG/KG	28 U	26 U	47.5 U	25 U	35 U	27.5 U
Aroclor-1221	UG/KG	57 U	52.5 U	96 U	51 U	71 U	56 U
Aroclor-1232	UG/KG	28 U	26 U	47.5 U	25 U	35 U	27.5 U
Aroclor-1242	UG/KG	28 U	26 U	47.5 U	25 U	35 U	27.5 U
Aroclor-1248	UG/KG	28 U	26 U	47.5 U	25 U	35 U	27.5 U
Aroclor-1254	UG/KG	28 U	26 U	47.5 U	25 U	35 U	27.5 U
Aroclor-1260	UG/KG	28 U	26 U	47.5 U	25 U	35 U	27.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD07-06	35-SD07-612	36-SD05-06	36-SD05-612	36-SD06-06	36-SD06-612
Lab Sample ID:		4585-9	4585-10	5608-13	5608-18	5608-19	5608-20
Date Sampled:		20-APR-1994	20-APR-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
VOLATILES							
Chloromethane	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
Bromomethane	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
Vinyl Chloride	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
Chloroethane	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
Methylene Chloride	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
Acetone	UG/KG	8 UJ	250 UJ	26.5 UJ	8.5 U	5.5 UJ	6 UJ
Carbon Disulfide	UG/KG	8 U	250 UJ		8.5 U		6 UJ
1,1-Dichloroethene	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
1,1-Dichloroethane	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
1,2-Dichloroethene (total)	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
Chloroform	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
1,2-Dichloroethane	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
2-Butanone	UG/KG	8 UJ	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
1,1,1-Trichloroethane	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
Carbon Tetrachloride	UG/KG	8 U	250 UJ	26.5 UJ	8.5 UJ	5.5 U	6 UJ
Bromodichloromethane	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
1,2-Dichloropropane	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
cis-1,3-Dichloropropene	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
Trichloroethene	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
Dibromochloromethane	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
1,1,2-Trichloroethane	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
Benzene	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
trans-1,3-Dichloropropene	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
Bromoform	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
4-Methyl-2-Pentanone	UG/KG	8 UJ	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
2-Hexanone	UG/KG	8 UJ	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
Tetrachloroethene	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
1,1,2,2-Tetrachloroethane	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
Toluene	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
Chlorobenzene	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
Ethylbenzene	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ
Styrene	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 UJ	6 UJ
Xylene (total)	UG/KG	8 U	250 UJ	26.5 UJ	8.5 U	5.5 U	6 UJ

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD07-06	35-SD07-612	36-SD05-06	36-SD05-612	36-SD06-06	36-SD06-612
Lab Sample ID:		4585-9	4585-10	5608-13	5608-18	5608-19	5608-20
Date Sampled:		20-APR-1994	20-APR-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
bis(2-Chloroethyl)ether	UG/KG	260 U	284 U	868.5 UJ	825 UJ	212.5 UJ	205.5 UJ
2-Chlorophenol	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
1,3-Dichlorobenzene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
1,4-Dichlorobenzene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
1,2-Dichlorobenzene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
2-Methylphenol	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
2,2'-oxybis(1-Chloropropane)	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
4-Methylphenol	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
N-Nitroso-di-n-propylamine	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
Hexachloroethane	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
Nitrobenzene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
Isophorone	UG/KG	260 U	284 U	868.5 UJ	825 UJ	212.5 UJ	205.5 UJ
2-Nitrophenol	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
2,4-Dimethylphenol	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
bis(2-Chloroethoxy)methane	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
2,4-Dichlorophenol	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
1,2,4-Trichlorobenzene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
Naphthalene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
4-Chloroaniline	UG/KG	260 U	284 U	868.5 UJ	825 UJ	212.5 UJ	205.5 UJ
Hexachlorobutadiene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
4-Chloro-3-methylphenol	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
2-Methylnaphthalene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
Hexachlorocyclopentadiene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 UJ	205.5 U
2,4,6-Trichlorophenol	UG/KG	260 U	284 U	868.5 U	825 U	212.5 UJ	205.5 U
2,4,5-Trichlorophenol	UG/KG	630 U	688.5 U	2105 U	2000 U	515 UJ	498 U
2-Chloronaphthalene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 UJ	205.5 U
2-Nitroaniline	UG/KG	630 U	688.5 U	2105 U	2000 U	515 UJ	498 U
Dimethylphthalate	UG/KG	260 U	284 U	868.5 U	825 U	212.5 UJ	205.5 U
Acenaphthylene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 UJ	205.5 U
2,6-Dinitrotoluene	UG/KG	260 U	284 U	868.5 UJ	825 UJ	212.5 UJ	205.5 UJ
3-Nitroaniline	UG/KG	630 UJ	688.5 UJ	2105 UJ	2000 UJ	515 UJ	498 UJ
Acenaphthene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 UJ	205.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD07-06	35-SD07-612	36-SD05-06	36-SD05-612	36-SD06-06	36-SD06-612
Lab Sample ID:		4585-9	4585-10	5608-13	5608-18	5608-19	5608-20
Date Sampled:		20-APR-1994	20-APR-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	630 U	688.5 U	2105 UJ	2000 UJ	515 UJ	498 UJ
Dibenzofuran	UG/KG	260 U	284 U	868.5 U	825 U	212.5 UJ	205.5 U
4-Nitrophenol	UG/KG	260 UJ	284 UJ	868.5 UJ	825 UJ	212.5 UJ	205.5 UJ
2,4-Dinitrotoluene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 UJ	205.5 U
Diethylphthalate	UG/KG	260 U	284 U	2135 J	825 U	212.5 UJ	205.5 U
Fluorene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 UJ	205.5 U
4-Chlorophenyl-phenylether	UG/KG	260 U	284 U	868.5 U	825 U	212.5 UJ	205.5 U
4-Nitroaniline	UG/KG	630 UJ	688.5 UJ	2105 UJ	2000 UJ	515 UJ	498 UJ
4,6-Dinitro-2-methylphenol	UG/KG	630 U	688.5 U	2105 UJ	2000 U	515 UJ	498 U
N-Nitrosodiphenylamine	UG/KG	260 U	284 U	868.5 UJ	825 U	212.5 UJ	205.5 U
4-Bromophenyl-phenylether	UG/KG	260 U	284 U	868.5 UJ	825 U	212.5 UJ	205.5 U
Hexachlorobenzene	UG/KG	260 U	284 U	868.5 UJ	825 U	212.5 UJ	205.5 U
Pentachlorophenol	UG/KG	630 U	688.5 U	2105 UJ	2000 U	515 UJ	498 U
Phenanthrene	UG/KG	260 U	284 U	868.5 UJ	825 U	212.5 UJ	205.5 U
Anthracene	UG/KG	260 U	284 U	868.5 UJ	825 U	212.5 UJ	205.5 U
Carbazole	UG/KG	260 U	284 U	868.5 UJ	825 U	212.5 UJ	205.5 U
Di-n-butylphthalate	UG/KG	260 U	284 U	868.5 UJ	825 U	212.5 UJ	218 J
Fluoranthene	UG/KG	260 U	284 U	868.5 UJ	825 U	212.5 UJ	205.5 U
Pyrene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
Butylbenzylphthalate	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
Benzo(a)anthracene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
3,3'-Dichlorobenzidine	UG/KG	260 UJ	284 UJ	868.5 UJ	825 UJ	212.5 UJ	205.5 UJ
Chrysene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
bis(2-Ethylhexyl)phthalate	UG/KG	260 UJ	159 UJ	868.5 UJ	825 UJ	212.5 UJ	205.5 UJ
Di-n-octylphthalate	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
Benzo(b)fluoranthene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
Benzo(k)fluoranthene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
Benzo(a)pyrene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
Indeno(1,2,3-cd)pyrene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
Dibenz(a,h)anthracene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U
Benzo(g,h,i)perylene	UG/KG	260 U	284 U	868.5 U	825 U	212.5 U	205.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SD07-06	35-SD07-612	36-SD05-06	36-SD05-612	36-SD06-06	36-SD06-612
Lab Sample ID:		4585-9	4585-10	5608-13	5608-18	5608-19	5608-20
Date Sampled:		20-APR-1994	20-APR-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/KG	1.35 U	1.45 U	4.45 U	60 U	12 U	12 U
beta-BHC	UG/KG	0.59 J	1.45 U	4.45 U	60 U	12 U	12 U
delta-BHC	UG/KG	1.35 U	0.92 J	4.45 U	60 U	12 U	12 U
gamma-BHC (Lindane)	UG/KG	1.35 U	1.45 U	4.45 U	60 U	12 U	12 U
Heptachlor	UG/KG	0.91 J	1.45 U	4.45 U	60 U	12 U	12 U
Aldrin	UG/KG	1.35 U	1.45 U	4.45 U	60 U	12 U	12 U
Heptachlor epoxide	UG/KG	0.78 J	1.4 J	4.45 U	60 U	12 U	12 U
Endosulfan I	UG/KG	1.35 U	1.45 U	4.45 U	60 U	12 U	12 U
Dieldrin	UG/KG	1.4 J	2.6 J	8.5 U	116 U	52	23 U
4,4'-DDE	UG/KG	34	57	242 J	1200	249	179
Endrin	UG/KG	1.35 U	0.7 J	4.45 U	60 U	12 U	12 U
Endosulfan II	UG/KG	1.3 J	0.88 J	8.5 U	116 U	23.5 U	23 U
4,4'-DDD	UG/KG	40	60	223 J	1140	221	159
Endosulfan sulfate	UG/KG	2.6 U	2.85 U	8.5 U	116 U	23.5 U	23 U
4,4'-DDT	UG/KG	2.3 J	2.1 J	31 J	46 J	14 J	8 J
Methoxychlor	UG/KG	13.5 U	3.4 J	45 U	600 U	120 U	119.5 U
Endrin ketone	UG/KG	2.6 U	2.85 U	8.5 U	116 U	23.5 U	23 U
Endrin aldehyde	UG/KG	2.6 U	2.85 U	7.6 J	116 U	23.5 U	23 U
alpha-Chlordane	UG/KG	7	8.5	4.45 U	60 U	12 U	12 U
gamma-Chlordane	UG/KG	6.1	9.7	4.45 U	60 U	12 U	12 U
Toxaphene	UG/KG	134 U	146 U	447.5 U	6000 U	1215 U	1195 U
Aroclor-1016	UG/KG	26 U	28.5 U	87 U	1160 U	235.5 U	232.5 U
Aroclor-1221	UG/KG	53 U	57.5 U	176.5 U	2360 U	478.5 U	472 U
Aroclor-1232	UG/KG	26 U	28.5 U	87 U	1160 U	235.5 U	232.5 U
Aroclor-1242	UG/KG	26 U	28.5 U	87 U	1160 U	235.5 U	232.5 U
Aroclor-1248	UG/KG	26 U	28.5 U	87 U	1160 U	235.5 U	232.5 U
Aroclor-1254	UG/KG	26 U	28.5 U	87 U	1160 U	235.5 U	232.5 U
Aroclor-1260	UG/KG	26 U	28.5 U	87 U	1160 U	235.5 U	232.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		36-SD07-06	36-SD07-612
Lab Sample ID:		5608-21	5608-22
Date Sampled:		18-MAY-1994	18-MAY-1994
	UNITS		
VOLATILES			
Chloromethane	UG/KG	5.5 U	22.5 U
Bromomethane	UG/KG	5.5 U	22.5 U
Vinyl Chloride	UG/KG	5.5 U	22.5 U
Chloroethane	UG/KG	5.5 U	22.5 U
Methylene Chloride	UG/KG	5.5 U	22.5 U
Acetone	UG/KG	5.5 U	22.5 UJ
Carbon Disulfide	UG/KG	5.5 U	
1,1-Dichloroethene	UG/KG	5.5 U	22.5 U
1,1-Dichloroethane	UG/KG	5.5 U	22.5 U
1,2-Dichloroethene (total)	UG/KG	5.5 U	22.5 U
Chloroform	UG/KG	5.5 U	22.5 U
1,2-Dichloroethane	UG/KG	5.5 U	22.5 U
2-Butanone	UG/KG	5.5 U	22.5 U
1,1,1-Trichloroethane	UG/KG	5.5 U	22.5 U
Carbon Tetrachloride	UG/KG	5.5 UJ	22.5 U
Bromodichloromethane	UG/KG	5.5 U	22.5 U
1,2-Dichloropropane	UG/KG	5.5 U	22.5 U
cis-1,3-Dichloropropene	UG/KG	5.5 U	22.5 U
Trichloroethene	UG/KG	5.5 U	22.5 U
Dibromochloromethane	UG/KG	5.5 U	22.5 U
1,1,2-Trichloroethane	UG/KG	5.5 U	22.5 U
Benzene	UG/KG	5.5 U	22.5 U
trans-1,3-Dichloropropene	UG/KG	5.5 U	22.5 U
Bromoform	UG/KG	5.5 U	22.5 U
4-Methyl-2-Pentanone	UG/KG	5.5 U	22.5 U
2-Hexanone	UG/KG	5.5 U	22.5 U
Tetrachloroethene	UG/KG	5.5 U	22.5 U
1,1,2,2-Tetrachloroethane	UG/KG	5.5 U	22.5 U
Toluene	UG/KG	5.5 U	22.5 U
Chlorobenzene	UG/KG	5.5 U	22.5 U
Ethylbenzene	UG/KG	5.5 U	22.5 U
Styrene	UG/KG	5.5 U	22.5 UJ
Xylene (total)	UG/KG	5.5 U	22.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		36-SD07-06	36-SD07-612
Lab Sample ID:		5608-21	5608-22
Date Sampled:		18-MAY-1994	18-MAY-1994
	UNITS		
SEMIVOLATILES			
Phenol	UG/KG	1320 U	740 U
bis(2-Chloroethyl)ether	UG/KG	1320 UJ	740 UJ
2-Chlorophenol	UG/KG	1320 U	740 U
1,3-Dichlorobenzene	UG/KG	1320 U	740 U
1,4-Dichlorobenzene	UG/KG	1320 U	740 U
1,2-Dichlorobenzene	UG/KG	1320 U	740 U
2-Methylphenol	UG/KG	1320 U	740 U
2,2'-oxybis(1-Chloropropane)	UG/KG	1320 U	740 U
4-Methylphenol	UG/KG	1320 U	740 U
N-Nitroso-di-n-propylamine	UG/KG	1320 U	740 U
Hexachloroethane	UG/KG	1320 U	740 U
Nitrobenzene	UG/KG	1320 U	740 U
Isophorone	UG/KG	1320 UJ	740 UJ
2-Nitrophenol	UG/KG	1320 U	740 U
2,4-Dimethylphenol	UG/KG	1320 U	740 U
bis(2-Chloroethoxy)methane	UG/KG	1320 U	740 U
2,4-Dichlorophenol	UG/KG	1320 U	740 U
1,2,4-Trichlorobenzene	UG/KG	1320 U	740 U
Naphthalene	UG/KG	1320 U	740 U
4-Chloroaniline	UG/KG	1320 UJ	740 UJ
Hexachlorobutadiene	UG/KG	1320 U	740 U
4-Chloro-3-methylphenol	UG/KG	1320 U	740 U
2-Methylnaphthalene	UG/KG	1320 U	740 U
Hexachlorocyclopentadiene	UG/KG	1320 U	740 U
2,4,6-Trichlorophenol	UG/KG	1320 U	740 U
2,4,5-Trichlorophenol	UG/KG	3200 U	1793.5 U
2-Chloronaphthalene	UG/KG	1320 U	740 U
2-Nitroaniline	UG/KG	3200 U	1793.5 U
Dimethylphthalate	UG/KG	1320 U	740 U
Acenaphthylene	UG/KG	1320 U	740 U
2,6-Dinitrotoluene	UG/KG	1320 UJ	740 UJ
3-Nitroaniline	UG/KG	3200 UJ	1793.5 UJ
Acenaphthene	UG/KG	1320 U	740 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		36-SD07-06	36-SD07-612
Lab Sample ID:		5608-21	5608-22
Date Sampled:		18-MAY-1994	18-MAY-1994
	UNITS		
SEMIVOLATILES Cont.			
2,4-Dinitrophenol	UG/KG	3200 UJ	1793.5 UJ
Dibenzofuran	UG/KG	1320 U	740 U
4-Nitrophenol	UG/KG	1320 UJ	740 UJ
2,4-Dinitrotoluene	UG/KG	1320 U	740 U
Diethylphthalate	UG/KG	1320 U	740 U
Fluorene	UG/KG	1320 U	740 U
4-Chlorophenyl-phenylether	UG/KG	1320 U	740 U
4-Nitroaniline	UG/KG	3200 UJ	1793.5 UJ
4,6-Dinitro-2-methylphenol	UG/KG	3200 U	1793.5 U
N-Nitrosodiphenylamine	UG/KG	1320 U	740 U
4-Bromophenyl-phenylether	UG/KG	1320 U	740 U
Hexachlorobenzene	UG/KG	1320 U	740 U
Pentachlorophenol	UG/KG	3200 U	1793.5 U
Phenanthrene	UG/KG	1320 U	740 U
Anthracene	UG/KG	1320 U	740 U
Carbazole	UG/KG	1320 U	740 U
Di-n-butylphthalate	UG/KG	1320 U	740 U
Fluoranthene	UG/KG	1320 U	740 U
Pyrene	UG/KG	1320 U	740 U
Butylbenzylphthalate	UG/KG	1320 U	740 U
Benzo(a)anthracene	UG/KG	1320 U	740 U
3,3'-Dichlorobenzidine	UG/KG	1320 UJ	740 UJ
Chrysene	UG/KG	1320 U	740 U
bis(2-Ethylhexyl)phthalate	UG/KG	1320 UJ	740 UJ
Di-n-octylphthalate	UG/KG	1320 U	740 U
Benzo(b)fluoranthene	UG/KG	1320 U	740 U
Benzo(k)fluoranthene	UG/KG	1320 U	740 U
Benzo(a)pyrene	UG/KG	1320 U	740 U
Indeno(1,2,3-cd)pyrene	UG/KG	1320 U	740 U
Dibenz(a,h)anthracene	UG/KG	1320 U	740 U
Benzo(g,h,i)perylene	UG/KG	1320 U	740 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		36-SD07-06	36-SD07-612
Lab Sample ID:		5608-21	5608-22
Date Sampled:		18-MAY-1994	18-MAY-1994
	UNITS		
PESTICIDE/PCBs			
alpha-BHC	UG/KG	12.5 U	12 U
beta-BHC	UG/KG	12.5 U	12 U
delta-BHC	UG/KG	12.5 U	12 U
gamma-BHC (Lindane)	UG/KG	12.5 U	12 U
Heptachlor	UG/KG	12.5 U	12 U
Aldrin	UG/KG	12.5 U	12 U
Heptachlor epoxide	UG/KG	12.5 U	12 U
Endosulfan I	UG/KG	12.5 U	12 U
Dieldrin	UG/KG	24 U	14 J
4,4'-DDE	UG/KG	51	32 J
Endrin	UG/KG	12.5 U	12 U
Endosulfan II	UG/KG	24 U	23.5 U
4,4'-DDD	UG/KG	74	41
Endosulfan sulfate	UG/KG	24 U	23.5 U
4,4'-DDT	UG/KG	24 U	5.7 J
Methoxychlor	UG/KG	123 U	121.5 U
Endrin ketone	UG/KG	24 U	23.5 U
Endrin aldehyde	UG/KG	24 U	23.5 U
alpha-Chlordane	UG/KG	13 J	6.5 J
gamma-Chlordane	UG/KG	12.5 U	12 U
Toxaphene	UG/KG	1230 U	1215 U
Aroclor-1016	UG/KG	239 U	235.5 U
Aroclor-1221	UG/KG	485.5 U	478.5 U
Aroclor-1232	UG/KG	239 U	235.5 U
Aroclor-1242	UG/KG	239 U	235.5 U
Aroclor-1248	UG/KG	239 U	235.5 U
Aroclor-1254	UG/KG	239 U	235.5 U
Aroclor-1260	UG/KG	239 U	235.5 U

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
VOLATILES						
Chloromethane	UG/KG	ND	NA	NA	NA	NA
Bromomethane	UG/KG	ND	NA	NA	NA	NA
Vinyl Chloride	UG/KG	ND	NA	NA	NA	NA
Chloroethane	UG/KG	ND	NA	NA	NA	NA
Methylene Chloride	UG/KG	ND	NA	NA	NA	NA
Acetone	UG/KG	128 J	72.8	131.0	123.4	217.9
Carbon Disulfide	UG/KG	156 R	NA	NA	NA	NA
1,1-Dichloroethene	UG/KG	ND	NA	NA	NA	NA
1,1-Dichloroethane	UG/KG	ND	NA	NA	NA	NA
1,2-Dichloroethene (total)	UG/KG	ND	NA	NA	NA	NA
Chloroform	UG/KG	ND	NA	NA	NA	NA
1,2-Dichloroethane	UG/KG	ND	NA	NA	NA	NA
2-Butanone	UG/KG	ND	NA	NA	NA	NA
1,1,1-Trichloroethane	UG/KG	ND	NA	NA	NA	NA
Carbon Tetrachloride	UG/KG	ND	NA	NA	NA	NA
Bromodichloromethane	UG/KG	ND	NA	NA	NA	NA
1,2-Dichloropropane	UG/KG	ND	NA	NA	NA	NA
cis-1,3-Dichloropropene	UG/KG	ND	NA	NA	NA	NA
Trichloroethene	UG/KG	ND	NA	NA	NA	NA
Dibromochloromethane	UG/KG	ND	NA	NA	NA	NA
1,1,2-Trichloroethane	UG/KG	ND	NA	NA	NA	NA
Benzene	UG/KG	ND	NA	NA	NA	NA
trans-1,3-Dichloropropene	UG/KG	ND	NA	NA	NA	NA
Bromoform	UG/KG	ND	NA	NA	NA	NA
4-Methyl-2-Pentanone	UG/KG	ND	NA	NA	NA	NA
2-Hexanone	UG/KG	ND	NA	NA	NA	NA
Tetrachloroethene	UG/KG	ND	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/KG	ND	NA	NA	NA	NA
Toluene	UG/KG	8 J	66.8	131.1	117.5	169.8
Chlorobenzene	UG/KG	ND	NA	NA	NA	NA
Ethylbenzene	UG/KG	ND	NA	NA	NA	NA
Styrene	UG/KG	ND	NA	NA	NA	NA
Xylene (total)	UG/KG	ND	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
SEMIVOLATILES						
Phenol	UG/KG	ND	NA	NA	NA	NA
bis(2-Chloroethyl)ether	UG/KG	ND	NA	NA	NA	NA
2-Chlorophenol	UG/KG	ND	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/KG	ND	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/KG	ND	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/KG	ND	NA	NA	NA	NA
2-Methylphenol	UG/KG	ND	NA	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/KG	ND	NA	NA	NA	NA
4-Methylphenol	UG/KG	ND	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	ND	NA	NA	NA	NA
Hexachloroethane	UG/KG	ND	NA	NA	NA	NA
Nitrobenzene	UG/KG	ND	NA	NA	NA	NA
Isophorone	UG/KG	ND	NA	NA	NA	NA
2-Nitrophenol	UG/KG	ND	NA	NA	NA	NA
2,4-Dimethylphenol	UG/KG	ND	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/KG	ND	NA	NA	NA	NA
2,4-Dichlorophenol	UG/KG	ND	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	ND	NA	NA	NA	NA
Naphthalene	UG/KG	ND	NA	NA	NA	NA
4-Chloroaniline	UG/KG	ND	NA	NA	NA	NA
Hexachlorobutadiene	UG/KG	ND	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/KG	ND	NA	NA	NA	NA
2-Methylnaphthalene	UG/KG	ND	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/KG	ND	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/KG	ND	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	ND	NA	NA	NA	NA
2-Chloronaphthalene	UG/KG	ND	NA	NA	NA	NA
2-Nitroaniline	UG/KG	ND	NA	NA	NA	NA
Dimethylphthalate	UG/KG	ND	NA	NA	NA	NA
Acenaphthylene	UG/KG	ND	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/KG	ND	NA	NA	NA	NA
3-Nitroaniline	UG/KG	ND	NA	NA	NA	NA
Acenaphthene	UG/KG	ND	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
SEMIVOLATILES Cont.						
2,4-Dinitrophenol	UG/KG	ND	NA	NA	NA	NA
Dibenzofuran	UG/KG	ND	NA	NA	NA	NA
4-Nitrophenol	UG/KG	ND	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/KG	ND	NA	NA	NA	NA
Diethylphthalate	UG/KG	2135 J	511.2	482.8	697.8	703.2
Fluorene	UG/KG	ND	NA	NA	NA	NA
4-Chlorophenyl-phenylether	UG/KG	ND	NA	NA	NA	NA
4-Nitroaniline	UG/KG	ND	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	ND	NA	NA	NA	NA
N-Nitrosodiphenylamine	UG/KG	ND	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/KG	ND	NA	NA	NA	NA
Hexachlorobenzene	UG/KG	ND	NA	NA	NA	NA
Pentachlorophenol	UG/KG	ND	NA	NA	NA	NA
Phenanthrene	UG/KG	ND	NA	NA	NA	NA
Anthracene	UG/KG	ND	NA	NA	NA	NA
Carbazole	UG/KG	ND	NA	NA	NA	NA
Di-n-butylphthalate	UG/KG	218 J	403.4	299.4	519.1	520.6
Fluoranthene	UG/KG	ND	NA	NA	NA	NA
Pyrene	UG/KG	ND	NA	NA	NA	NA
Butylbenzylphthalate	UG/KG	ND	NA	NA	NA	NA
Benzo(a)anthracene	UG/KG	ND	NA	NA	NA	NA
3,3'-Dichlorobenzidine	UG/KG	ND	NA	NA	NA	NA
Chrysene	UG/KG	ND	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	704 J	437.4	309.9	557.2	600.7
Di-n-octylphthalate	UG/KG	ND	NA	NA	NA	NA
Benzo(b)fluoranthene	UG/KG	ND	NA	NA	NA	NA
Benzo(k)fluoranthene	UG/KG	ND	NA	NA	NA	NA
Benzo(a)pyrene	UG/KG	ND	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/KG	ND	NA	NA	NA	NA
Dibenz(a,h)anthracene	UG/KG	ND	NA	NA	NA	NA
Benzo(g,h,i)perylene	UG/KG	ND	NA	NA	NA	NA

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
PESTICIDE/PCBs						
alpha-BHC	UG/KG	ND	NA	NA	NA	NA
beta-BHC	UG/KG	0.59 J	7.1	13.2	12.2	15.0
delta-BHC	UG/KG	1 J	7.1	13.2	12.2	14.7
gamma-BHC (Lindane)	UG/KG	ND	NA	NA	NA	NA
Heptachlor	UG/KG	2.3 J	6.9	13.2	12.0	13.6
Aldrin	UG/KG	ND	NA	NA	NA	NA
Heptachlor epoxide	UG/KG	1.4 J	7.0	13.2	12.1	18.9
Endosulfan I	UG/KG	ND	NA	NA	NA	NA
Dieldrin	UG/KG	52	14.6	26.8	25.0	32.0
4,4'-DDE	UG/KG	1200	123.7	264.2	225.8	835.6
Endrin	UG/KG	0.85 J	6.9	13.2	12.1	19.4
Endosulfan II	UG/KG	3.5 J	13.3	25.7	23.2	39.5
4,4'-DDD	UG/KG	1140	114.5	250.6	211.4	971.7
Endosulfan sulfate	UG/KG	ND	NA	NA	NA	NA
4,4'-DDT	UG/KG	46 J	9.1	11.8	13.7	22.8
Methoxychlor	UG/KG	3.4 J	67.8	133.3	119.3	931.5
Endrin ketone	UG/KG	3.1 J	13.7	25.5	23.6	27.6
Endrin aldehyde	UG/KG	7.6 J	13.4	25.6	23.3	35.4
alpha-Chlordane	UG/KG	13 J	8.6	12.6	13.5	18.5
gamma-Chlordane	UG/KG	9.7	8.7	12.7	13.6	15.8
Toxaphene	UG/KG	ND	NA	NA	NA	NA
Aroclor-1016	UG/KG	ND	NA	NA	NA	NA
Aroclor-1221	UG/KG	ND	NA	NA	NA	NA
Aroclor-1232	UG/KG	ND	NA	NA	NA	NA
Aroclor-1242	UG/KG	ND	NA	NA	NA	NA
Aroclor-1248	UG/KG	ND	NA	NA	NA	NA
Aroclor-1254	UG/KG	ND	NA	NA	NA	NA
Aroclor-1260	UG/KG	ND	NA	NA	NA	NA

APPENDIX V.10
SEDIMENT INORGANICS

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-SD01-06	35-SD01-612	35-SD02-06	35-SD02-612	35-SD03-06	35-SD03-612
Lab Sample ID:		4585-4	4585-5	4585-6	4585-8	5608-1	5608-2
Date Sampled:		20-APR-1994	20-APR-1994	20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994
	UNITS						
Aluminum	MG/KG	37300	19200	484	903	1160	2010
Antimony	MG/KG					3.15 UJ	3.35 UJ
Arsenic	MG/KG	2.3 J	0.75 UJ	0.46 J	0.34 J		
Barium	MG/KG	129	58.8	3.8	6.5	7.8	10.9
Beryllium	MG/KG				0.06 U	0.07 U	0.075 U
Cadmium	MG/KG					0.05 U	0.065 U
Calcium	MG/KG	5040 J	3160 J	3831 J	4970 J	795 J	1360
Chromium	MG/KG	28.4 J	17 J	0.85 U	1.65 U	2.5	3.7
Cobalt	MG/KG	6.6	3.2	1.8	0.65 U	0.75 U	0.8 U
Copper	MG/KG	4.1	0.49 U	0.6 U	24.8	0.9 U	1.25 U
Iron	MG/KG	10400 J	6210 J	1050 J	1970 J	1130	2530
Lead	MG/KG	21.1 J	12.4 J	4.7 J	26.3 J	5.2	77.9
Magnesium	MG/KG	685	480	88.1	145	148	334
Manganese	MG/KG	29.7 J	13.1 J	3.2 J	5.2 J	4.1	6.6
Mercury	MG/KG			0.07 J			
Nickel	MG/KG	4.75 U	2.65 U	0.7 U	0.8 U	2.2	2.1 B
Potassium	MG/KG	498	181 U	156 U	148 U	167 U	178.5 U
Selenium	MG/KG	1.6 J	0.5 UJ	0.23 J	0.085 UJ	0.205 U	0.3 U
Silver	MG/KG	0.02 U	0.015 U	0.015 U	0.01 U	0.205 U	0.22 U
Sodium	MG/KG	229 U	176 U	151.5 U	143.5 U	162.5 U	173.5 U
Thallium	MG/KG	0.66 J	0.43 J	0.065 U	0.06 U	0.15	0.075 U
Vanadium	MG/KG	24.2 J	14.5 J	0.94 J	1.9 J	2.1	3
Zinc	MG/KG						

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-SD04-06	35-SD04-612	35-SD05-06	35-SD05-612	35-SD06-06	35-SD06-612
Lab Sample ID:		4585-1	4585-3	5608-3	5608-4	5608-5	5608-6
Date Sampled:		20-APR-1994	20-APR-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994	17-MAY-1994
	UNITS						
Aluminum	MG/KG	1950 J	4240	11300	2580	16000	8430
Antimony	MG/KG			6.6 UJ	3.5 UJ	4.85 UJ	3.85 UJ
Arsenic	MG/KG	0.97 J	1 J	2.3 J	0.91 J	3.7 J	
Barium	MG/KG	10	30.1	43.7	15.8	36.7	19.2
Beryllium	MG/KG	0.09 U		0.4	0.075 U	0.59	0.27
Cadmium	MG/KG			0.255 U	0.11 U	0.46 U	0.085 U
Calcium	MG/KG	4940 J	4110 J	6490 J	5780 J	4500 J	4100 J
Chromium	MG/KG	2.85 U	14.8 J	16.3	4.3	20.9	9.1
Cobalt	MG/KG	0.95 U	0.85 U	3.2	0.85 U	2.9	4
Copper	MG/KG	4.2	8.4	18.1	5.2	21.2	4.6
Iron	MG/KG	3560 J	7110 J	13400	3910	10900	8350
Lead	MG/KG	32 J	34.4 J	92	54.2	82.6	
Magnesium	MG/KG	260	405	1070	446	1140	715
Manganese	MG/KG	11 J	15.9 J	25.2	10.9	24.3	23.4
Mercury	MG/KG						
Nickel	MG/KG	1.2 U	1.9 U	5.5	2.2	6.4	2.6
Potassium	MG/KG	214.5 U	190.5 U	350.5 U	185 U	812	203.5 U
Selenium	MG/KG	0.125 UJ	0.11 UJ	0.49 U	0.23 U	0.295 U	0.225 U
Silver	MG/KG	0.02 U	0.015 U	0.43 U	0.23 U	0.32 U	0.25 U
Sodium	MG/KG	518	461	729	180 U	706	712
Thallium	MG/KG	0.09 U	0.22 J	0.63	0.2	0.47	0.35
Vanadium	MG/KG	4.8 J	8.8 J	21.2	4.7	23.9	10.9
Zinc	MG/KG		101 J				

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-SD07-06	35-SD07-612	36-SD05-06	36-SD05-612	36-SD06-06	36-SD06-612
Lab Sample ID:		4585-9	4585-10	5608-13	5608-18	5608-19	5608-20
Date Sampled:		20-APR-1994	20-APR-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
Aluminum	MG/KG	3960	8820	11100	17200	2150	1560
Antimony	MG/KG			12.1 UJ	11.4 UJ	2.95 UJ	2.85 UJ
Arsenic	MG/KG	1.2 J	2.3 J		2.8 J	0.67 J	0.7 J
Barium	MG/KG	19.5	48.6	25.7	31.6	3.4	2.4
Beryllium	MG/KG			0.265 U	0.25 U	0.065 U	0.06 U
Cadmium	MG/KG			0.44 U	0.1 U	0.025 U	0.02 U
Calcium	MG/KG	2530 J	3800 J	5670 J	8340 J	301 J	106 U
Chromium	MG/KG	7.1 J	20 J	19.4	14.6	3.1	2.4
Cobalt	MG/KG	7.8	3.2	2.9 U	2.7 U	1.4	0.7 U
Copper	MG/KG	9.4	10.6	24.4	6.8	4.4	3.4
Iron	MG/KG	5340 J	7220 J	14900	15900	1860	1090
Lead	MG/KG	42 J	79 J	115		15100	7.1
Magnesium	MG/KG	227	359	2750	2940	305	201
Manganese	MG/KG	28.8 J	37 J	36.8	62.8	5.6	4.9
Mercury	MG/KG						
Nickel	MG/KG	3.2 U	3.65 U	13.6 B	7.8	2.1	2.6
Potassium	MG/KG	192 U	210 U	640 U	605 U	157 U	152 U
Selenium	MG/KG	0.25 J	0.28 J	1.85 UJ	0.75 U	0.105 U	0.11 U
Silver	MG/KG	0.07 U	0.015 U	0.8 U	0.75 U	0.195 U	0.185 U
Sodium	MG/KG	186.5 U	204 U	4980	1860	548	514
Thallium	MG/KG	0.22 J	0.38	0.89	0.59	0.065 U	0.06 U
Vanadium	MG/KG	8.7 J	15.9 J	39.3	19.6	4.6	3.2
Zinc	MG/KG	60.4 J	104 J				

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		36-SD07-06	36-SD07-612
Lab Sample ID:		5608-21	5608-22
Date Sampled:		18-MAY-1994	18-MAY-1994
	UNITS		
Aluminum	MG/KG	31500	10800
Antimony	MG/KG	18.4 UJ	10.3 UJ
Arsenic	MG/KG	2 J	1.7 J
Barium	MG/KG	60.9	19.9
Beryllium	MG/KG	1.1	0.225 U
Cadmium	MG/KG	0.155 U	0.245 U
Calcium	MG/KG	17500 J	8610 J
Chromium	MG/KG	28.6	10.4
Cobalt	MG/KG	4.4 U	2.45 U
Copper	MG/KG	14.4	5.1
Iron	MG/KG	13100	9710
Lead	MG/KG	44.9	17
Magnesium	MG/KG	3830	1830
Manganese	MG/KG	29.2	15.3
Mercury	MG/KG		
Nickel	MG/KG	10	7.3
Potassium	MG/KG	2610	545 U
Selenium	MG/KG	1.3 U	0.65 U
Silver	MG/KG	1.2 U	0.65 U
Sodium	MG/KG	4320	1180
Thallium	MG/KG	0.96	0.54
Vanadium	MG/KG	28.6	12.4
Zinc	MG/KG		

STATISTICAL SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENTS
MCB CAMP LEJEUNE, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MAXIMUM DETECTED	ARITHMETIC MEAN	STANDARD DEVIATION	NORMAL UPPER 95% CONFIDENCE INTERVAL	LOG NORMAL UPPER 95% CONFIDENCE INTERVAL
Aluminum	MG/KG	37300	9544.6	10592.1	13639.6	27603.1
Antimony	MG/KG	10.3 R	NA	NA	NA	NA
Arsenic	MG/KG	9 R	1.5	1.0	1.9	2.3
Barium	MG/KG	129	28.5	30.2	40.1	69.4
Beryllium	MG/KG	1.6 R	0.2	0.3	0.4	0.5
Cadmium	MG/KG	4.3 R	NA	NA	NA	NA
Calcium	MG/KG	17500 J	4707.5	3880.0	6207.6	15144.3
Chromium	MG/KG	28.6	11.1	9.2	14.7	27.8
Cobalt	MG/KG	7.8	2.6	2.0	3.4	4.2
Copper	MG/KG	24.8	8.1	7.7	11.1	24.3
Iron	MG/KG	15900	6644.2	4793.9	8497.6	13686.8
Lead	MG/KG	15100	926.8	3652.5	2424.8	1418.5
Magnesium	MG/KG	3830	909.9	1103.3	1336.5	2022.2
Manganese	MG/KG	62.8	19.4	15.5	25.3	34.6
Mercury	MG/KG	8 R	0.1	NA	NA	NA
Nickel	MG/KG	13.6 B	4.1	3.4	5.4	6.7
Potassium	MG/KG	2610	423.4	568.2	643.1	588.4
Selenium	MG/KG	1.6 J	0.5	0.5	0.7	0.9
Silver	MG/KG	ND	NA	NA	NA	NA
Sodium	MG/KG	4980	916.1	1388.7	1453.0	1845.0
Thallium	MG/KG	0.96	0.3	0.3	0.5	0.7
Vanadium	MG/KG	39.3	12.2	10.7	16.3	30.3
Zinc	MG/KG	145 R	88.5	24.4	129.5	226.2

APPENDIX W
CDI RISK SPREADSHEETS

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE SOIL INGESTION CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from ingestion of soil

$$Intake\ (mg/kg{\cdot}day) = \frac{C\ x\ CF\ x\ EF\ x\ ED\ x\ IR}{BW\ x\ AT}$$

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: 4,4-DDD

$$Intake\ (mg/kg{\cdot}day) = \frac{3.24\ mg/kg\ x\ 100\ mg/day\ x\ 350\ days/yr\ x\ 24\ yrs\ x\ 1.0E\text{-}6\ kg/mg}{70\ kg\ x\ 25{,}550\ days}$$

= 1.5E-06

Risk = 1.56E-06 mg/kg·day x 2.4E-01 $mg/kg{\cdot}day^{-1}$ = 4E-07

Example Noncarcinogen: 4,4-DDT

$$Intake\ (mg/kg{\cdot}day) = \frac{0.262\ mg/kg\ x\ 100\ mg/day\ x\ 350\ days/yr\ x\ 24\ yrs\ x\ 1.0E\text{-}6\ kg/mg}{70\ kg\ x\ 8{,}760\ days}$$

= 4E-07

$$Risk = \frac{4E\text{-}07\ mg/kg{\cdot}day}{5E\text{-}04\ mg/kg{\cdot}day} = 7E\text{-}04$$

Re: Site 35 Future Residential Adult

SOIL INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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)	24
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)	24
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Exposure Frequency (days/yr) Adult	Exposure Duration (yr) Adult	Conversion Factor (kg/mg)	Ingestion Rate (mg/day) Adult	Body Weight (kg) Adult	Average Carc Time (years)	Days per year (days/yr)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Phenanthrene	1.06	350	24	1E-06	100	70	70	365	4.98E-07			
Benzo(b)fluoranthene	1.09	350	24	1E-06	100	70	70	365	5.12E-07	7.30E-01	3.74E-07	2.18
Benzo(g,h,i)perylene	0.366	350	24	1E-06	100	70	70	365	1.72E-07			
Dieldrin	0.212	350	24	1E-06	100	70	70	365	9.96E-08	1.60E+01	1.59E-06	9.30
Endosulfan II	0.0029	350	24	1E-06	100	70	70	365	1.36E-09			
4,4'-DDD	3.24	350	24	1E-06	100	70	70	365	1.52E-06	2.40E-01	3.65E-07	2.13
Endrin Ketone	0.0012	350	24	1E-06	100	70	70	365	5.64E-10			
Endrin Aldehyde	0.0016	350	24	1E-06	100	70	70	365	7.51E-10			
Arsenic	18	350	24	1E-06	100	70	70	365	8.45E-06	1.75E+00	1.48E-05	86.38
Lead	53.7	350	24	1E-06	100	70	70	365	2.52E-05			
Manganese	32.7	350	24	1E-06	100	70	70	365	1.54E-05			
TOTAL											1.71E-05	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Phenanthrene	1.06	350	24	1E-06	100	70	24	365	1.45E-06			
Benzo(b)fluoranthene	1.09	350	24	1E-06	100	70	24	365	1.49E-06			
Benzo(g,h,i)perylene	0.366	350	24	1E-06	100	70	24	365	5.01E-07			
Dieldrin	0.212	350	24	1E-06	100	70	24	365	2.90E-07	5.00E-05	5.81E-03	5.65
Endosulfan II	0.0029	350	24	1E-06	100	70	24	365	3.97E-09			
4,4'-DDD	3.24	350	24	1E-06	100	70	24	365	4.44E-06			
Endrin Ketone	0.0012	350	24	1E-06	100	70	24	365	1.64E-09			
Endrin Aldehyde	0.0016	350	24	1E-06	100	70	24	365	2.19E-09			
Arsenic	18	350	24	1E-06	100	70	24	365	2.47E-05	3.00E-04	8.22E-02	80.02
Lead	53.7	350	24	1E-06	100	70	24	365	7.36E-05	5.00E-03	1.47E-02	14.32
Manganese	32.7	350	24	1E-06	100	70	24	365	4.48E-05			
TOTAL											1.03E-01	100.00

File Name: SI.WQ2

SOIL INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (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 (years)	Days per year (days/yr)	Carc Dose (mg/kg/day) Child	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child
Phenanthrene	1.06	350	6	1E-06	200	15	70	365	1.16E-06			
Benzo(b)fluoranthene	1.09	350	6	1E-06	200	15	70	365	1.19E-06	7.30E-01	8.72E-07	2.18
Benzo(g,h,i)perylene	0.366	350	6	1E-06	200	15	70	365	4.01E-07			
Dieldrin	0.212	350	6	1E-06	200	15	70	365	2.32E-07	1.60E+01	3.72E-06	9.30
Endosulfan II	0.0029	350	6	1E-06	200	15	70	365	3.18E-09			
4,4'-DDD	3.24	350	6	1E-06	200	15	70	365	3.55E-06	2.40E-01	8.52E-07	2.13
Endrin Ketone	0.0012	350	6	1E-06	200	15	70	365	1.32E-09			
Endrin Aldehyde	0.0016	350	6	1E-06	200	15	70	365	1.75E-09			
Arsenic	18	350	6	1E-06	200	15	70	365	1.97E-05	1.75E+00	3.45E-05	86.38
Lead	53.7	350	6	1E-06	200	15	70	365	5.88E-05			
Manganese	32.7	350	6	1E-06	200	15	70	365	3.58E-05			
TOTAL											4.00E-05	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day) Child	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk Child
Phenanthrene	1.06	350	6	1E-06	200	15	6	365	1.36E-05			
Benzo(b)fluoranthene	1.09	350	6	1E-06	200	15	6	365	1.39E-05			
Benzo(g,h,i)perylene	0.366	350	6	1E-06	200	15	6	365	4.68E-06			
Dieldrin	0.212	350	6	1E-06	200	15	6	365	2.71E-06	5.00E-05	5.42E-02	5.99
Endosulfan II	0.0029	350	6	1E-06	200	15	6	365	3.71E-08			
4,4'-DDD	3.24	350	6	1E-06	200	15	6	365	4.14E-05			
Endrin Ketone	0.0012	350	6	1E-06	200	15	6	365	1.53E-08			
Endrin Aldehyde	0.0016	350	6	1E-06	200	15	6	365	2.05E-08			
Arsenic	18	350	6	1E-06	200	15	6	365	2.30E-04	3.00E-04	7.67E-01	84.77
Lead	53.7	350	6	1E-06	200	15	6	365	6.87E-04			
Manganese	32.7	350	6	1E-06	200	15	6	365	4.18E-04	5.00E-03	8.36E-02	9.24
TOTAL											9.05E-01	100.00

File Name: SI.WQ1

OLD PAGES follow

APPENDIX W
CDI RISK SPREADSHEETS

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE SOIL INGESTION CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

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: 4,4-DDD

$$Intake\ (mg/kg{\cdot}day) = \frac{3.24\ mg/kg \times 100\ mg/day \times 350\ days/yr \times 24\ yrs \times 1.0E\text{-}6\ kg/mg}{70\ kg \times 25{,}550\ days}$$

= 1.5E-06

Risk = 1.56E-06 mg/kg·day x 2.4E-01 $mg/kg{\cdot}day^{-1}$ = 4E-07

Example Noncarcinogen: 4,4-DDT

$$Intake\ (mg/kg{\cdot}day) = \frac{0.262\ mg/kg \times 100\ mg/day \times 350\ days/yr \times 24\ yrs \times 1.0E\text{-}6\ kg/mg}{70\ kg \times 8{,}760\ days}$$

= 4E-07

$$Risk = \frac{4E\text{-}07\ mg/kg{\cdot}day}{5E\text{-}04\ mg/kg{\cdot}day} = 7E\text{-}04$$

Re: Site 35 Future Residential Adult

SOIL INGESTION EXPOSUR SSMENT
OPERABLE UNIT NO.10 (SITE
REMEDIAL INVESTIGATION CTO-0232
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

max detected, mg/kg (prev. reported as ug/kg)

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg) C	Exposure Frequency (days/yr) Child EF	Exposure Duration (yr) Child ED	Conversion Factor (kg/mg) CF	Ingestion Rate (mg/day) Child IR	Body Weight (kg) Child BW	Average Carc Time (years) ATc	Days per year (days/yr) DY	Carc Dose (mg/kg/day) Child	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child
Dieldrin	0.212	350	6	1E-06	200	15	70	365	2.32E-07	1.60E+01	3.72E-06	9.33
4,4'-DDE	1.57	350	6	1E-06	200	15	70	365	1.72E-06	3.40E-01	5.85E-07	1.47
4,4'-DDD	3.24	350	6	1E-06	200	15	70	365	3.55E-06	2.40E-01	8.52E-07	2.14
4,4'-DDT	0.262	350	6	1E-06	200	15	70	365	2.87E-07	3.40E-01	9.76E-08	0.24
alpha-Chlordane	0.036	350	6	1E-06	200	15	70	365	3.95E-08	1.30E+00	5.13E-08	0.13
gamma-Chlordane	0.027	350	6	1E-06	200	15	70	365	2.96E-08	1.30E+00	3.85E-08	0.10
Arsenic	18	350	6	1E-06	200	15	70	365	1.97E-05	1.75E+00	3.45E-05	86.60
TOTAL											3.99E-05	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day) Child	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk Child
Dieldrin	0.212	350	6	1E-06	200	15	6	365	2.71E-06	5.00E-05	5.42E-02	6.17
Endrin	0.0079	350	6	1E-06	200	15	6	365	1.01E-07	3.00E-04	3.37E-04	0.04
4,4'-DDT	0.262	350	6	1E-06	200	15	6	365	3.35E-06	5.00E-04	6.70E-03	0.76
alpha-Chlordane	0.036	350	6	1E-06	200	15	6	365	4.60E-07	6.00E-05	7.67E-03	0.87
gamma-Chlordane	0.027	350	6	1E-06	200	15	6	365	3.45E-07	6.00E-05	5.75E-03	0.65
Arsenic	18	350	6	1E-06	200	15	6	365	2.30E-04	3.00E-04	7.67E-01	87.26
Barium	41.2	350	6	1E-06	200	15	6	365	5.27E-04	7.00E-02	7.53E-03	0.86
Manganese	32.7	350	6	1E-06	200	15	6	365	4.18E-04	1.40E-01	2.99E-03	0.34
Vanadium	14.7	350	6	1E-06	200	15	6	365	1.88E-04	7.00E-03	2.68E-02	3.05
TOTAL											8.79E-01	100.00

File Name: SI.WQ1

SOIL INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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)	24
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)	24
DY = days per year (days/year)	365
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Exposure Frequency (days/yr) Adult	Exposure Duration (yr) Adult	Conversion Factor (kg/mg)	Ingestion Rate (mg/day) Adult	Body Weight (kg) Adult	Average Carc Time (years)	Days per year (days/yr)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Dieldrin	0.212	350	24	1E-06	100	70	70	365	8.98E-08	1.60E+01	1.59E-06	9.33
4,4'-DDE	1.57	350	24	1E-06	100	70	70	365	7.37E-07	3.40E-01	2.51E-07	1.47
4,4'-DDD	3.24	350	24	1E-06	100	70	70	365	1.52E-06	2.40E-01	3.65E-07	2.14
4,4'-DDT	0.262	350	24	1E-06	100	70	70	365	1.23E-07	3.40E-01	4.18E-08	0.24
alpha-Chlordane	0.036	350	24	1E-06	100	70	70	365	1.69E-08	1.30E+00	2.20E-08	0.13
gamma-Chlordane	0.027	350	24	1E-06	100	70	70	365	1.27E-08	1.30E+00	1.65E-08	0.10
Arsenic	18	350	24	1E-06	100	70	70	365	8.45E-06	1.75E+00	1.48E-05	86.60
TOTAL											1.71E-05	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Dieldrin	0.212	350	24	1E-06	100	70	24	365	2.90E-07	5.00E-05	5.81E-03	6.17
Endrin	0.0079	350	24	1E-06	100	70	24	365	1.08E-08	3.00E-04	3.61E-05	0.04
4,4'-DDT	0.262	350	24	1E-06	100	70	24	365	3.59E-07	5.00E-04	7.18E-04	0.76
alpha-Chlordane	0.036	350	24	1E-06	100	70	24	365	4.93E-08	6.00E-05	8.22E-04	0.87
gamma-Chlordane	0.027	350	24	1E-06	100	70	24	365	3.70E-08	6.00E-05	6.16E-04	0.65
Arsenic	18	350	24	1E-06	100	70	24	365	2.47E-05	3.00E-04	8.22E-02	87.28
Barium	41.2	350	24	1E-06	100	70	24	365	5.64E-05	7.00E-02	8.06E-04	0.86
Manganese	32.7	350	24	1E-06	100	70	24	365	4.48E-05	1.40E-01	3.20E-04	0.34
Vanadium	14.7	350	24	1E-06	100	70	24	365	2.01E-05	7.00E-03	2.88E-03	3.05
TOTAL											9.42E-02	100.00

File Name: SI.WQ2

SOIL INGESTION EXPOSU ESSMENT
OPERABLE UNIT NO.10 (SI
REMEDIAL INVESTIGATION CTO-0232
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)	350
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

Note: Inputs are scenario and site specific

Contaminant	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 (years)	Days per year (days/yr)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Dieldrin	0.212	350	4	1E-06	100	70	70	365	1.88E-08	1.60E+01	2.66E-07	9.33
4,4'-DDE	1.57	350	4	1E-06	100	70	70	365	1.23E-07	3.40E-01	4.18E-08	1.47
4,4'-DDD	3.24	350	4	1E-06	100	70	70	365	2.54E-07	2.40E-01	6.09E-08	2.14
4,4'-DDT	0.262	350	4	1E-06	100	70	70	365	2.05E-08	3.40E-01	6.97E-09	0.24
alpha-Chlordane	0.036	350	4	1E-06	100	70	70	365	2.82E-09	1.30E+00	3.66E-09	0.13
gamma-Chlordane	0.027	350	4	1E-06	100	70	70	365	2.11E-09	1.30E+00	2.75E-09	0.10
Arsenic	18	350	4	1E-06	100	70	70	365	1.41E-06	1.75E+00	2.47E-06	86.60
TOTAL											2.85E-06	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Dieldrin	0.212	350	4	1E-06	100	70	4	365	2.90E-07	5.00E-05	5.81E-03	6.17
Endrin	0.0079	350	4	1E-06	100	70	4	365	1.08E-08	3.00E-04	3.61E-05	0.04
4,4'-DDT	0.262	350	4	1E-06	100	70	4	365	3.59E-07	5.00E-04	7.18E-04	0.76
alpha-Chlordane	0.036	350	4	1E-06	100	70	4	365	4.93E-08	6.00E-05	8.22E-04	0.87
gamma-Chlordane	0.027	350	4	1E-06	100	70	4	365	3.70E-08	6.00E-05	6.16E-04	0.65
Arsenic	18	350	4	1E-06	100	70	4	365	2.47E-05	3.00E-04	8.22E-02	87.26
Barium	41.2	350	4	1E-06	100	70	4	365	5.64E-05	7.00E-02	8.06E-04	0.86
Manganese	32.7	350	4	1E-06	100	70	4	365	4.48E-05	1.40E-01	3.20E-04	0.34
Vanadium	14.7	350	4	1E-06	100	70	4	365	2.01E-05	7.00E-03	2.88E-03	3.05
TOTAL											9.42E-02	100.00

File Name: SI.WQ3

SOIL INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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

Note: Inputs are scenario and site specific

Contaminant	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 (years)	Days per year (days/yr)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Tetrachlorethene	0.0125	90	1	1E-06	480	70	70	365	3.02E-10	5.20E-02	1.57E-11	0.01
Arsenic	2.7	90	1	1E-06	480	70	70	365	6.52E-08	1.75E+00	1.14E-07	99.99
TOTAL											1.14E-07	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Tetrachlorethene	0.0125	90	1	1E-06	480	70	1	365	2.11E-08	1.00E-02	2.11E-06	0.01
Arsenic	2.7	90	1	1E-06	480	70	1	365	4.57E-06	3.00E-04	1.52E-02	94.90
Barium	19.8	90	1	1E-06	480	70	1	365	3.35E-05	7.00E-02	4.78E-04	2.98
Copper	7.4	90	1	1E-06	480	70	1	365	1.25E-05	3.71E-02	3.37E-04	2.10
TOTAL											1.60E-02	100.00

File Name: SI.WQ4

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE DERMAL CONTACT WITH SOIL CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from dermal contact with soil

$$Intake\ (mg/kg\cdot day) = \frac{C \times CF \times SA \times AF \times Abs \times EF \times ED}{BW \times AT}$$

Where:			
	C	=	Contaminant concentration in soil (mg/kg)
	CF	=	Conversion factor (kg/mg)
	SA	=	Surface available for contact (cm^2/event)
	AF	=	Soil to skin adherence factor (mg/cm^2)
	Abs	=	Fraction absorbed (percent)
	EF	=	Exposure frequency (days/year)
	ED	=	Exposure duration (years)
	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: 4,4-DDD

$$Intake\ (mg/kg\cdot day) = \frac{3.24\ mg/kg \times 1.0E\text{-}06\ kg/mg \times 5{,}800\ cm^2/event \times 1\% \times 1\ mg/cm^2 \times 350\ event/yr \times 24\ yrs}{70\ kg \times 25{,}550\ days}$$

= 9E-07

Risk = 9E-07 mg/kg·day x 2.4E-01 $mg/kg\cdot day^{-1}$ = 2E-07

Example Noncarcinogen: 4,4-DDT

$$Intake\ (mg/kg\cdot day) = \frac{0.262\ mg/kg \times 1.0E\text{-}06\ kg/mg \times 5{,}800\ cm^2/event \times 1\ mg/cm^2 \times 1\% \times 350\ event/yr \times 24\ yrs}{70\ kg \times 8{,}760\ days}$$

= 2E-07

$$Risk = \frac{2E\text{-}07\ mg/kg\cdot day}{5E\text{-}04\ mg/kg\cdot day} = 4E\text{-}04$$

SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (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 (years)	Days per year (day/year)	Carc Dose (mg/kg/day) Child	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child
Dieldrin	0.212	1E-06	2300	1	0.01	350	6	15	70	365	2.67E-08	1.60E+01	4.27E-07	42.27
4,4'-DDE	1.57	1E-06	2300	1	0.01	350	6	15	70	365	1.98E-07	3.40E-01	6.73E-08	6.65
4,4'-DDD	3.24	1E-06	2300	1	0.01	350	6	15	70	365	4.08E-07	2.40E-01	9.80E-08	9.69
4,4'-DDT	0.262	1E-06	2300	1	0.01	350	6	15	70	365	3.30E-08	3.40E-01	1.12E-08	1.11
alpha-Chlordane	0.036	1E-06	2300	1	0.01	350	6	15	70	365	4.54E-09	1.30E+00	5.90E-09	0.58
gamma-Chlordane	0.027	1E-06	2300	1	0.01	350	6	15	70	365	3.40E-09	1.30E+00	4.42E-09	0.44
Arsenic	18	1E-06	2300	1	0.001	350	6	15	70	365	2.27E-07	1.75E+00	3.97E-07	39.26
TOTAL													1.01E-06	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day) Child	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk Child
Dieldrin	0.121	1E-06	2300	1	0.01	350	6	15	6	365	1.78E-07	5.00E-05	3.56E-03	23.47
Endrin	0.0079	1E-06	2300	1	0.01	350	6	15	6	365	1.16E-08	3.00E-04	3.87E-05	0.26
4,4'-DDT	0.262	1E-06	2300	1	0.01	350	6	15	6	365	3.85E-07	5.00E-04	7.70E-04	5.08
alpha-Chlordane	0.036	1E-06	2300	1	0.01	350	6	15	6	365	5.29E-08	6.00E-05	8.82E-04	5.82
gamma-Chlordane	0.027	1E-06	2300	1	0.01	350	6	15	6	365	3.97E-08	6.00E-05	6.62E-04	4.36
Arsenic	18	1E-06	2300	1	0.001	350	6	15	6	365	2.65E-06	3.00E-04	8.82E-03	58.18
Barium	41.2	1E-06	2300	1	0.001	350	6	15	6	365	6.06E-06	7.00E-02	8.65E-05	0.57
Manganese	32.7	1E-06	2300	1	0.001	350	6	15	6	365	4.81E-06	1.40E-01	3.43E-05	0.23
Vanadium	14.7	1E-06	2300	1	0.001	350	6	15	6	365	2.16E-06	7.00E-03	3.09E-04	2.04
TOTAL													1.52E-02	100.00

File Name: SDC.WQ1

SOIL DERMAL CONTACT E[illegible]E ASSESSMENT
OPERABLE UNIT NO. 10 (SIT[illegible]
REMEDIAL INVESTIGATION CTO-0232
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)	24
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	24
DY = day per year (day/yr)	365
CSF = cancer slope factor (mg/kg-day)-1	specific
RfD = reference dose (mg/kg-day)	specific

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Conversion Factor (kg/mg)	Surface Area (cm2) Adult	Adherence Factor (mg/cm2)	Fraction Absorbed (%)	Exposure Frequency (events/yr) Adult	Exposure Duration (yrs) Adult	Body Weight (kg) Adult	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Dieldrin	0.212	1E-06	5800	1	0.01	350	24	70	70	365	5.78E-08	1.60E+01	9.24E-07	42.27
4,4'-DDE	1.57	1E-06	5800	1	0.01	350	24	70	70	365	4.28E-07	3.40E-01	1.45E-07	6.65
4,4'-DDD	3.24	1E-06	5800	1	0.01	350	24	70	70	365	8.83E-07	2.40E-01	2.12E-07	9.69
4,4'-DDT	0.262	1E-06	5800	1	0.01	350	24	70	70	365	7.14E-08	3.40E-01	2.43E-08	1.11
alpha-Chlordane	0.036	1E-06	5800	1	0.01	350	24	70	70	365	9.81E-09	1.30E+00	1.27E-08	0.58
gamma-Chlordane	0.027	1E-06	5800	1	0.01	350	24	70	70	365	7.35E-09	1.30E+00	9.56E-09	0.44
Arsenic	18	1E-06	5800	1	0.001	350	24	70	70	365	4.90E-07	1.75E+00	8.58E-07	39.26
TOTAL													2.19E-06	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Dieldrin	0.121	1E-06	5800	1	0.01	350	24	70	24	365	9.61E-08	5.00E-05	1.92E-03	23.47
Endrin	0.0079	1E-06	5800	1	0.01	350	24	70	24	365	6.26E-09	3.00E-04	2.09E-05	0.26
4,4'-DDT	0.262	1E-06	5800	1	0.01	350	24	70	24	365	2.08E-07	5.00E-04	4.16E-04	5.08
alpha-Chlordane	0.036	1E-06	5800	1	0.01	350	24	70	24	365	2.86E-08	6.00E-05	4.77E-04	5.82
gamma-Chlordane	0.027	1E-06	5800	1	0.01	350	24	70	24	365	2.15E-08	6.00E-05	3.58E-04	4.36
Arsenic	18	1E-06	5800	1	0.001	350	24	70	24	365	1.43E-06	3.00E-04	4.77E-03	58.18
Barium	41.2	1E-06	5800	1	0.001	350	24	70	24	365	3.27E-06	7.00E-02	4.68E-05	0.57
Manganese	32.7	1E-06	5800	1	0.001	350	24	70	24	365	2.60E-06	1.40E-01	1.86E-05	0.23
Vanadium	14.7	1E-06	5800	1	0.001	350	24	70	24	365	1.17E-06	7.00E-03	1.67E-04	2.04
TOTAL													8.19E-03	100.00

File Name: SDC.WQ2

SOIL DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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)	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)	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

Contaminant	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 (years)	Days per year (day/year)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Dieldrin	0.212	1E-06	5800	1	0.01	350	4	70	70	365	9.83E-09	1.60E+01	1.54E-07	42.27
4,4'-DDE	1.57	1E-06	5800	1	0.01	350	4	70	70	365	7.13E-08	3.40E-01	2.42E-08	6.65
4,4'-DDD	3.24	1E-06	5800	1	0.01	350	4	70	70	365	1.47E-07	2.40E-01	3.53E-08	9.69
4,4'-DDT	0.262	1E-06	5800	1	0.01	350	4	70	70	365	1.19E-08	3.40E-01	4.04E-09	1.11
alpha-Chlordane	0.036	1E-06	5800	1	0.01	350	4	70	70	365	1.63E-09	1.30E+00	2.12E-09	0.58
gamma-Chlordane	0.027	1E-06	5800	1	0.01	350	4	70	70	365	1.23E-09	1.30E+00	1.59E-09	0.44
Arsenic	18	1E-06	5800	1	0.001	350	4	70	70	365	8.17E-08	1.75E+00	1.43E-07	39.26
TOTAL													3.64E-07	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Dieldrin	0.121	1E-06	5800	1	0.01	350	4	70	4	365	9.61E-08	5.00E-05	1.92E-03	23.47
Endrin	0.0079	1E-06	5800	1	0.01	350	4	70	4	365	6.26E-09	3.00E-04	2.09E-05	0.26
4,4'-DDT	0.262	1E-06	5800	1	0.01	350	4	70	4	365	2.08E-07	5.00E-04	4.16E-04	5.08
alpha-Chlordane	0.036	1E-06	5800	1	0.01	350	4	70	4	365	2.86E-08	6.00E-05	4.77E-04	5.82
gamma-Chlordane	0.027	1E-06	5800	1	0.01	350	4	70	4	365	2.15E-08	6.00E-05	3.58E-04	4.36
Arsenic	18	1E-06	5800	1	0.001	350	4	70	4	365	1.43E-06	3.00E-04	4.77E-03	58.18
Barium	41.2	1E-06	5800	1	0.001	350	4	70	4	365	3.27E-06	7.00E-02	4.68E-05	0.57
Manganese	32.7	1E-06	5800	1	0.001	350	4	70	4	365	2.60E-06	1.40E-01	1.86E-05	0.23
Vanadium	14.7	1E-06	5800	1	0.001	350	4	70	4	365	1.17E-06	7.00E-03	1.67E-04	2.04
TOTAL													8.19E-03	100.00

File Name: SDC.WQ3

SOIL DERMAL CONTACT E[illegible]E ASSESSMENT
OPERABLE UNIT NO. 10 (SI[illegible]
REMEDIAL INVESTIGATION CTO-0232
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

Note: Inputs are scenario and site specific

Contaminant	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 (years)	Days per year (day/year)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Tetrachlorethene	0.0125	1E-06	4300	1	0.01	90	1	70	70	365	2.70E-11	5.20E-02	1.41E-12	0.14
Arsenic	2.7	1E-06	4300	1	0.001	90	1	70	70	365	5.84E-10	1.75E+00	1.02E-09	99.86
TOTAL													1.02E-09	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Tetrachlorethene	0.0125	1E-06	4300	1	0.01	90	1	70	1	365	1.89E-09	1.00E-02	1.89E-07	0.13
Arsenic	2.7	1E-06	4300	1	0.001	90	1	70	1	365	4.09E-08	3.00E-04	1.36E-04	94.79
Barium	19.8	1E-06	4300	1	0.001	90	1	70	1	365	3.00E-07	7.00E-02	4.28E-06	2.98
Copper	7.4	1E-06	4300	1	0.001	90	1	70	1	365	1.12E-07	3.71E-02	3.02E-06	2.10
TOTAL													1.44E-04	100.00

File Name: SDC.WQ4

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE INHALATION OF PARTICULATES CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

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: 4,4-DDT

$$Intake\ (mg/kg{\cdot}day) = \frac{0.262\ mg/kg \times 20\ m^3/day \times 350\ days/yr \times 24\ yrs \times 1/4.6E{+}09\ m^3/kg}{70\ kg \times 25{,}550\ days}$$

= 5.4E-12

Risk = 5.4E-12 mg/kg·day x 3.4E-01 $mg/kg{\cdot}day^{-1}$ = 2E-12

Example Noncarcinogen: Manganese

$$Intake\ (mg/kg{\cdot}day) = \frac{32.7\ mg/kg \times 20\ m^3/day \times 350\ days/yr \times 24\ yrs \times 1/4.6E{+}09\ m^3/kg}{70\ kg \times 8{,}760\ days}$$

= 2E-09

$$Risk = \frac{2E{-}09\ mg/kg{\cdot}day}{4E{-}04\ mg/kg{\cdot}day} = 5E{-}06$$

Re: Site 35 Future Residential Adult

PARTICULATE INHALATION [illegible]URE ASSESSMENT
OPERABLE UNIT NO. 10 (SITE [illegible])
REMEDIAL INVESTIGATION CTO-0232
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)	10
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)	4.63E+09

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Conrtribution to Risk
Arsenic	18.00	4.6E+09	350	10	6	15	70	365	2.13E-10	1.50E+01	3.20E-09	98.72
4,4'-DDT	0.262	4.6E+09	350	10	6	15	70	365	3.10E-12	3.40E-01	1.05E-12	0.03
Dieldrin	0.212	4.6E+09	350	10	6	15	70	365	2.51E-12	1.61E+01	4.04E-11	1.25
TOTAL											3.24E-09	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Barium	41.20	4.6E+09	350	10	6	15	6	365	5.69E-09	1.43E-04	3.98E-05	11.19
Manganese	32.7	4.6E+09	350	10	6	15	6	365	4.51E-09	1.43E-05	3.16E-04	88.81
TOTAL											3.56E-04	100.00

File Name: PI.WQ1

PARTICULATE INHALATION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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)	24
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	24
DY = day per year (day/yr)	365
PEF = particulate emission factor (m3/kg)	4.63E+09

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Contribution to Risk
Arsenic	18.00	4.6E+09	350	20	24	70	70	365	3.65E-10	1.50E+01	5.48E-09	98.72
4,4'-DDT	0.262	4.6E+09	350	20	24	70	70	365	5.32E-12	3.40E-01	1.81E-12	0.03
Dieldrin	0.212	4.6E+09	350	20	24	70	70	365	4.30E-12	1.61E+01	6.92E-11	1.25
TOTAL											5.55E-09	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Barium	41.20	4.6E+09	350	20	24	70	24	365	2.44E-09	1.43E-04	1.70E-05	11.19
Manganese	32.7	4.6E+09	350	20	24	70	24	365	1.93E-09	1.43E-05	1.35E-04	88.81
TOTAL											1.52E-04	100.00

File Name: PI.WQ2

PARTICULATE INHALATIO[illegible]URE ASSESSMENT
OPERABLE UNIT NO. 10 (S[illegible]
REMEDIAL INVESTIGATION CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE 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)	350
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)	4.63E+09

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Carc Time (years)	Days per year (day/year)	Carc Dose (mg/kg/day)	Slope Factor (mg/kg-day)-1	Carcinogenic Risk	Percent Conrtribution to Risk
Arsenic	18.00	4.6E+09	350	20	4	70	70	365	6.09E-11	1.50E+01	9.13E-10	98.72
4,4'-DDT	0.262	4.6E+09	350	20	4	70	70	365	8.86E-13	3.40E-01	3.01E-13	0.03
Dieldrin	0.212	4.6E+09	350	20	4	70	70	365	7.17E-13	1.61E+01	1.15E-11	1.25
TOTAL											9.25E-10	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Particulate Emission Factor (m3/kg)	Exposure Frequency (events/yr)	Inhalation Rate (m3/day)	Exposure Duration (yrs)	Body Weight (kg)	Average Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day)	Reference Dose (mg/kg-day)	Noncarcinogenic Risk	Percent Noncarcinogenic Risk
Barium	41.20	4.6E+09	350	20	4	70	4	365	2.44E-09	1.43E-04	1.70E-05	11.19
Manganese	32.7	4.6E+09	350	20	4	70	4	365	1.93E-09	1.43E-05	1.35E-04	88.81
TOTAL											1.52E-04	100.00

File Name: PI.WQ3

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE GROUNDWATER INGESTION CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

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: Trichloroethene

$$Intake\ (mg/kg\cdot day) = \frac{0.9\ mg/L \times 2\ L/day \times 350\ days/yr \times 30\ yrs}{70\ kg \times 25{,}550\ days}$$

= 1.1E-02

Risk = 1.1E-02 mg/kg·day x 1.1E-02 $mg/kg\cdot day^{-1}$ = 1.0E-04

Example Noncarcinogen: Trichloroethene

$$Intake\ (mg/kg\cdot day) = \frac{0.9\ mg/L \times 2\ L/day \times 350\ days/yr \times 30\ yrs}{70\ kg \times 10{,}950\ days}$$

= 2.5E-02

$$Risk = \frac{2.5E\text{-}02\ mg/kg\cdot day}{6E\text{-}03\ mg/kg\cdot day} = 4$$

Re: Site 35 Future Residential Adult

GROUNDWATER INGESTIO[illegible]OSURE ASSESSMENT
OPERABLE UNIT NO. 10 (S[illegible]
REMEDIAL INVESTIGATION [illegible]232
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

Note: Inputs are scenario and site specific

Contaminant	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 (years)	Days per year (day/yr)	Carc Dose (mg/kg-day) Child	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child
Trichloroethene	0.9	1	350	6	15	70	365	4.93E-03	1.10E-02	5.42E-05	2.743
Benzene	0.0841	1	350	6	15	70	365	4.61E-04	2.90E-02	1.34E-05	0.678
Arsenic	0.0606	1	350	6	15	70	365	3.32E-04	1.70E+00	5.64E-04	28.548
Beryllium	0.0571	1	350	6	15	70	365	3.13E-04	4.30E+00	1.35E-03	68.035
										1.98E-03	100.00

Contaminant	Concentration Noncarcinogen (mg/l)	Ingestion Rate (L/day) Child	Exposure Frequency (day/year) Child	Exposure Duration (year) Child	Body Weight (kg) Child	Average Noncarc Time (years)	Days per year (day/yr)	Noncarc Dose (mg/kg-day) Child	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Child	Percent Noncarcionogenic Risk Child
Trichloroethene	0.9000	1	350	6	15	6	365	5.75E-02	6.00E-03	9.59E+00	15.08
cis-1,2-Dichloroethene	0.9730	1	350	6	15	6	365	6.22E-02	1.00E-02	6.22E+00	9.76
trans-1,2-Dichloroethene	0.1760	1	350	6	15	6	365	1.13E-02	2.00E-02	5.63E-01	0.88
Ethyl Benzene	0.0960	1	350	6	15	6	365	6.14E-03	1.00E-01	6.14E-02	0.10
Methyl Tertiary Butyl Ether	0.0520	1	350	6	15	6	365	3.32E-03	5.00E-03	6.65E-01	1.05
Toluene	0.0568	1	350	6	15	6	365	3.63E-03	2.00E-01	1.82E-02	0.03
Xylenes	0.2477	1	350	6	15	6	365	1.58E-02	2.00E+00	7.92E-03	0.01
Naphthalene	0.0685	1	350	6	15	6	365	4.38E-03	4.00E-02	1.09E-01	0.17
Antimony	0.0340	1	350	6	15	6	365	2.17E-03	4.00E-04	5.43E+00	8.55
Arsenic	0.0606	1	350	6	15	6	365	3.87E-03	3.00E-04	1.29E+01	20.31
Barium	2.3027	1	350	6	15	6	365	1.47E-01	7.00E-02	2.10E+00	3.31
Beryllium	0.0571	1	350	6	15	6	365	3.65E-03	5.00E-03	7.30E-01	1.15
Cadmium	0.0414	1	350	6	15	6	365	2.65E-03	5.00E-04	5.29E+00	8.32
Cobalt	0.1182	1	350	6	15	6	365	7.56E-03	6.00E-02	1.26E-01	0.20
Copper	0.0772	1	350	6	15	6	365	4.94E-03	3.71E-02	1.33E-01	0.21
Manganese	0.7879	1	350	6	15	6	365	5.04E-02	5.00E-03	1.01E+01	15.84
Mercury	0.0002	1	350	6	15	6	365	1.28E-05	3.00E-04	4.26E-02	0.07
Nickel	0.2933	1	350	6	15	6	365	1.87E-02	2.00E-02	9.37E-01	1.47
Selenium	0.0064	1	350	6	15	6	365	4.09E-04	5.00E-03	8.18E-02	0.13
Vanadium	0.886	1	350	6	15	6	365	5.66E-02	7.00E-03	8.09E+00	12.72
Zinc	1.85	1	350	6	15	6	365	1.18E-01	3.00E-01	3.94E-01	0.62
TOTAL										63.6	100.00

File Name: GWI.WQ1

GROUNDWATER INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/l)	Ingestion Rate (L/day) Adult	Exposure Frequency (day/year) Adult	Exposure Duration (year) Adult	Body Weight (kg) Adult	Average Carc Time (years)	Days per year (day/yr)	Carc Dose (mg/kg-day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Trichloroethene	0.9	2	350	30	70	70	365	1.06E-02	1.10E-02	1.16E-04	2.743
Benzene	0.0841	2	350	30	70	70	365	9.87E-04	2.90E-02	2.86E-05	0.676
Arsenic	0.0606	2	350	30	70	70	365	7.12E-04	1.70E+00	1.21E-03	28.546
Beryllium	0.0571	2	350	30	70	70	365	6.70E-04	4.30E+00	2.88E-03	68.035
										4.24E-03	100.00

Contaminant	Concentration Noncarcinogen (mg/l)	Ingestion Rate (L/day) Adult	Exposure Frequency (day/year) Adult	Exposure Duration (year) Adult	Body Weight (kg) Adult	Average Noncarc Time (years)	Days per year (day/yr)	Noncarc Dose (mg/kg-day) Adult	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcionogenic Risk Adult
Trichloroethene	0.9000	2	350	30	70	30	365	2.47E-02	6.00E-03	4.11E+00	15.08
cis-1,2-Dichloroethene	0.9730	2	350	30	70	30	365	2.67E-02	1.00E-02	2.67E+00	9.78
trans-1,2-Dichloroethene	0.1760	2	350	30	70	30	365	4.82E-03	2.00E-02	2.41E-01	0.88
Ethyl Benzene	0.0960	2	350	30	70	30	365	2.63E-03	1.00E-01	2.63E-02	0.10
Methyl Tertiary Butyl Ether	0.0520	2	350	30	70	30	365	1.42E-03	5.00E-03	2.85E-01	1.05
Toluene	0.0568	2	350	30	70	30	365	1.56E-03	2.00E-01	7.78E-03	0.03
Xylenes	0.2477	2	350	30	70	30	365	6.79E-03	2.00E+00	3.39E-03	0.01
Naphthalene	0.0685	2	350	30	70	30	365	1.88E-03	4.00E-02	4.69E-02	0.17
Antimony	0.0340	2	350	30	70	30	365	9.32E-04	4.00E-04	2.33E+00	8.55
Arsenic	0.0606	2	350	30	70	30	365	1.66E-03	3.00E-04	5.53E+00	20.31
Barium	2.3027	2	350	30	70	30	365	6.31E-02	7.00E-02	9.01E-01	3.31
Beryllium	0.0571	2	350	30	70	30	365	1.56E-03	5.00E-03	3.13E-01	1.15
Cadmium	0.0414	2	350	30	70	30	365	1.13E-03	5.00E-04	2.27E+00	8.32
Cobalt	0.1182	2	350	30	70	30	365	3.24E-03	6.00E-02	5.40E-02	0.20
Copper	0.0772	2	350	30	70	30	365	2.12E-03	3.71E-02	5.70E-02	0.21
Manganese	0.7879	2	350	30	70	30	365	2.16E-02	5.00E-03	4.32E+00	15.84
Mercury	0.0002	2	350	30	70	30	365	5.48E-06	3.00E-04	1.83E-02	0.07
Nickel	0.2933	2	350	30	70	30	365	8.04E-03	2.00E-02	4.02E-01	1.47
Selenium	0.0064	2	350	30	70	30	365	1.75E-04	5.00E-03	3.51E-02	0.13
Vanadium	0.886	2	350	30	70	30	365	2.43E-02	7.00E-03	3.47E+00	12.72
Zinc	1.85	2	350	30	70	30	365	5.07E-02	3.00E-01	1.69E-01	0.62
TOTAL										27.3	100.00

File Name: GWI.WQ2

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE DERMAL CONTACT WITH GROUNDWATER CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from dermal contact with groundwater

$$Intake\ (mg/kg{\cdot}day) = \frac{C \times SA \times PC \times ET \times EF \times ED \times CF}{BW \times AT}$$

Where:			
	C	=	Contaminant concentration in groundwater (mg/L)
	SA	=	Exposed skin surface available for contact (cm^2)
	PC	=	Permeability constant (cm/hr)
	ET	=	Exposure time (hr/day)
	EF	=	Exposure frequency (days/year)
	ED	=	Exposure duration (years)
	CF	=	Conversion factor (1 L/1,000 cm^3)
	BW	=	Body weight (kg)
	AT_c	=	Averaging time carcinogen (days)
	AT_{nc}	=	Averaging time noncarcinogen (days)

Risks:

Carcinogens = Intake (mg/kg·day) x CSF $(mg/kg{\cdot}day)^{-1}$
Noncarcinogens = Intake (mg/kg·day)/RfD (mg/kg·day)

Example Carcinogen: Trichloroethene

$$Intake\ (mg/kg{\cdot}day) = \frac{0.9\ mg/L \times 23{,}000\ cm^2 \times 1.6E\text{-}02\ cm/hr \times 0.25\ hr/day \times 350\ days/yr \times 30\ yrs \times 1\ L/1{,}000\ cm^3}{70\ kg \times 25{,}550\ days}$$

= 4.9E-04

Risk = 4.9E-04 mg/kg·day x 1.1E-02 $mg/kg{\cdot}day^{-1}$ = 5.3E-06

Example Noncarcinogen: Trichloroethene

$$Intake\ (mg/kg{\cdot}day) = \frac{0.9\ mg/L \times 23{,}000\ cm^2/hr \times 1.6E\text{-}02\ cm/hr \times 0.25\ hr/day \times 350\ days/yr \times 30\ yrs \times 1\ L/1{,}000\ cm^3}{70\ kg \times 10{,}950\ days}$$

= 1.1E-03

$$Risk = \frac{1.1E\text{-}03\ mg/kg{\cdot}day}{6E\text{-}03\ mg/kg{\cdot}day} = 1.9E\text{-}01$$

GROUNDWATER DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
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

Note: Inputs are site and scenario specific

Contaminant	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 (years)	Days per Year (days)	Carc Dose (mg/kg-day) Child	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child
Trichloroethene	0.9	10000	1.60E-02	0.25	350	6	0.001	15	70	365	1.97E-04	1.10E-02	2.17E-06	28.38
Benzene	0.0841	10000	2.10E-02	0.25	350	6	0.001	15	70	365	2.42E-05	2.90E-02	7.02E-07	9.18
Arsenic	0.0606	10000	1.00E-03	0.25	350	6	0.001	15	70	365	8.30E-07	1.70E+00	1.41E-06	18.46
Beryllium	0.0571	10000	1.00E-03	0.25	350	6	0.001	15	70	365	7.82E-07	4.30E+00	3.36E-06	43.99
TOTAL													7.65E-06	100.00

	Concentration Noncarcinogen (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	Average Noncarc Time (years)	Days per Year (days)	Noncarc Dose (mg/kg-day) Child	Reference Dose (mg/kg-day)	Noncarc Risk Child	Percent Noncarcinogenic Risk Child
Trichloroethene	0.9	10000	1.60E-02	0.25	350	6	0.001	15	6	365	2.30E-03	6.00E-03	3.84E-01	66.82
cis-1,2-Dichloroethene	0.973	10000	1.55E-03	0.25	350	6	0.001	15	6	365	2.41E-04	1.00E-02	2.41E-02	4.20
trans-1,2-Dichloroethene	0.176	10000	1.00E-02	0.25	350	6	0.001	15	6	365	2.81E-04	2.00E-02	1.41E-02	2.45
Ethyl Benzene	0.096	10000	7.40E-02	0.25	350	6	0.001	15	6	365	1.14E-03	1.00E-01	1.14E-02	1.98
Methyl Tertiary Butyl Ether	0.052	10000	1.55E-03	0.25	350	6	0.001	15	6	365	1.29E-05	5.00E-03	2.58E-03	0.45
Toluene	0.0568	10000	4.50E-02	0.25	350	6	0.001	15	6	365	4.08E-04	2.00E-01	2.04E-03	0.36
Xylenes	0.2477	10000	8.00E-02	0.25	350	6	0.001	15	6	365	3.17E-03	2.00E+00	1.58E-03	0.28
Naphthalene	0.0685	10000	6.90E-02	0.25	350	6	0.001	15	6	365	7.55E-04	4.00E-02	1.89E-02	3.29
Antimony	0.034	10000	1.00E-03	0.25	350	6	0.001	15	6	365	5.43E-06	4.00E-04	1.36E-02	2.37
Arsenic	0.0606	10000	1.00E-03	0.25	350	6	0.001	15	6	365	9.68E-06	3.00E-04	3.23E-02	5.62
Barium	2.3027	10000	1.00E-03	0.25	350	6	0.001	15	6	365	3.68E-04	7.00E-02	5.26E-03	0.92
Beryllium	0.0571	10000	1.00E-03	0.25	350	6	0.001	15	6	365	9.13E-06	5.00E-03	1.83E-03	0.32
Cadmium	0.0414	10000	1.00E-03	0.25	350	6	0.001	15	6	365	6.62E-06	5.00E-04	1.32E-02	2.31
Cobalt	0.1182	10000	1.00E-03	0.25	350	6	0.001	15	6	365	1.89E-05	6.00E-02	3.15E-04	0.05
Copper	0.0772	10000	1.00E-03	0.25	350	6	0.001	15	6	365	1.23E-05	3.71E-02	3.33E-04	0.06
Manganese	0.7879	10000	1.00E-03	0.25	350	6	0.001	15	6	365	1.26E-04	5.00E-03	2.52E-02	4.39
Mercury	0.0002	10000	1.00E-03	0.25	350	6	0.001	15	6	365	3.20E-08	3.00E-04	1.07E-04	0.02
Nickel	0.2933	10000	1.00E-03	0.25	350	6	0.001	15	6	365	4.69E-05	2.00E-02	2.34E-03	0.41
Selenium	0.0064	10000	1.00E-03	0.25	350	6	0.001	15	6	365	1.02E-06	5.00E-03	2.05E-04	0.04
Vanadium	0.886	10000	1.00E-03	0.25	350	6	0.001	15	6	365	1.42E-04	7.00E-03	2.02E-02	3.52
Zinc	1.85	10000	1.00E-03	0.25	350	6	0.001	15	6	365	2.96E-04	3.00E-01	9.86E-04	0.17
													5.74E-01	100.00

File Name: GWDC.WQ1

IROUNDWATER DERMAL CONTA SURE ASSESSMENT
PERABLE UNIT NO.10 (SITE 35)
EMEDIAL INVESTIGATION CTO-0
ICB CAMP LEJEUNE, NORTH CAROLINA
UTURE RESIDENTIAL ADULT

lermal Contact from groundwater is calcuated as follows:

ntake (mg/kg-day) = CW * SA * PC * ET * EF * ED * CF/BW * ATc or ATnc * DY

lisk = 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 = child body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	30
DY = days per year (days)	365

Note: Inputs are site and scenario specific

Contaminant	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)	Days per Year (days)	Carc Dose (mg/kg-day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Trichloroethene	0.9	23000	1.60E-02	0.25	350	30	0.001	70	70	365	4.86E-04	1.10E-02	5.35E-06	28.38
Benzene	0.0641	23000	2.10E-02	0.25	350	30	0.001	70	70	365	5.96E-05	2.90E-02	1.73E-06	9.18
Arsenic	0.0608	23000	1.00E-03	0.25	350	30	0.001	70	70	365	2.05E-06	1.70E+00	3.48E-06	18.46
Beryllium	0.0571	23000	1.00E-03	0.25	350	30	0.001	70	70	365	1.93E-06	4.30E+00	8.29E-06	43.99
TOTAL													1.88E-05	100.00

	Concentration Noncarcinogen (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	Average Noncarc Time (years)	Days per Year (days)	Noncarc Dose (mg/kg-day) Adult	Reference Dose (mg/kg-day)	Noncarc Risk Adult	Percent Noncarcinogenic Risk Adult
Trichloroethene	0.9	23000	1.60E-02	0.25	350	30	0.001	70	30	365	1.13E-03	6.00E-03	1.89E-01	66.82
cis-1,2-Dichloroethene	0.973	23000	1.55E-03	0.25	350	30	0.001	70	30	365	1.19E-04	1.00E-02	1.19E-02	4.20
trans-1,2-Dichloroethene	0.178	23000	1.00E-02	0.25	350	30	0.001	70	30	365	1.39E-04	2.00E-02	6.93E-03	2.45
Ethyl Benzene	0.096	23000	7.40E-02	0.25	350	30	0.001	70	30	365	5.60E-04	1.00E-01	5.60E-03	1.98
Methyl Tertiary Butyl Ether	0.052	23000	1.55E-03	0.25	350	30	0.001	70	30	365	6.35E-06	5.00E-03	1.27E-03	0.45
Toluene	0.0568	23000	4.50E-02	0.25	350	30	0.001	70	30	365	2.01E-04	2.00E-01	1.01E-03	0.36
Xylenes	0.2477	23000	8.00E-02	0.25	350	30	0.001	70	30	365	1.56E-03	2.00E+00	7.80E-04	0.28
Naphthalene	0.0685	23000	6.90E-02	0.25	350	30	0.001	70	30	365	3.72E-04	4.00E-02	9.31E-03	3.29
Antimony	0.034	23000	1.00E-03	0.25	350	30	0.001	70	30	365	2.68E-06	4.00E-04	6.70E-03	2.37
Arsenic	0.0608	23000	1.00E-03	0.25	350	30	0.001	70	30	365	4.77E-06	3.00E-04	1.59E-02	5.62
Barium	2.3027	23000	1.00E-03	0.25	350	30	0.001	70	30	365	1.81E-04	7.00E-02	2.59E-03	0.92
Beryllium	0.0571	23000	1.00E-03	0.25	350	30	0.001	70	30	365	4.50E-06	5.00E-03	9.00E-04	0.32
Cadmium	0.0414	23000	1.00E-03	0.25	350	30	0.001	70	30	365	3.26E-06	5.00E-04	6.52E-03	2.31
Cobalt	0.1182	23000	1.00E-03	0.25	350	30	0.001	70	30	365	9.31E-06	6.00E-02	1.55E-04	0.05
Copper	0.0772	23000	1.00E-03	0.25	350	30	0.001	70	30	365	6.08E-06	3.71E-02	1.64E-04	0.06
Manganese	0.7879	23000	1.00E-03	0.25	350	30	0.001	70	30	365	6.21E-05	5.00E-03	1.24E-02	4.39
Mercury	0.0002	23000	1.00E-03	0.25	350	30	0.001	70	30	365	1.58E-08	3.00E-04	5.25E-05	0.02
Nickel	0.2933	23000	1.00E-03	0.25	350	30	0.001	70	30	365	2.31E-05	2.00E-02	1.16E-03	0.41
Selenium	0.0064	23000	1.00E-03	0.25	350	30	0.001	70	30	365	5.04E-07	5.00E-03	1.01E-04	0.04
Vanadium	0.886	23000	1.00E-03	0.25	350	30	0.001	70	30	365	6.98E-05	7.00E-03	9.97E-03	3.52
Zinc	1.85	23000	1.00E-03	0.25	350	30	0.001	70	30	365	1.46E-04	3.00E-01	4.86E-04	0.17
													2.83E-01	100.00

File Name: GWDC.WQ2

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE INHALATION OF VOLATILE ORGANICS CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from the inhalation of volatile organics

$$Intake\ (mg/kg{\cdot}day) = \frac{Cs \times IR \times ET \times EF \times ED \times 1.0}{BW \times AT}$$

Where:	Cs	=	Shower air concentration (mg/m^3)
	IR	=	Inhalation rate (m^3/hr)
	ET	=	Exposure time (hrs/day)
	EF	=	Exposure frequency (days/year)
	ED	=	Exposure duration (years)
	1.0	=	Absorbed fraction
	BW	=	Body weight (kg)
	AT	=	Averaging time (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: Trichloroethene

$$Intake\ (mg/kg{\cdot}day) = \frac{1.54\ mg/m^3 \times 0.6\ m^3/hr \times 0.25\ hrs/d \times 350\ days/yr \times 30\ yrs \times 1.0}{70\ kg \times 25{,}550\ days}$$

= 1.35E-03

Risk = 1.35E-03 mg/kg·day x 6E-03 $mg/kg{\cdot}day^{-1}$ = 8.1E-06

Example Noncarcinogen: Ethylbenzene

$$Intake\ (mg/kg{\cdot}day) = \frac{0.12\ mg/m^3 \times 0.6\ m^3/hr \times 0.25\ hrs/d \times 350\ days/yr \times 30\ yrs \times 1.0}{70\ kg \times 10{,}950\ days}$$

= 2.5E-04

$$Risk = \frac{2.5E\text{-}04\ mg/kg{\cdot}day}{2.9E\text{-}01\ mg/kg{\cdot}day} = 8.6E\text{-}04$$

Re: Site 35 Future Residential Adult

VOLATILE INHALATION EXPOSURE ASSESSMENT
OPERABLE [illegible] NO.10 (SITE 35)
REMEDIAL [illegible] TIGATION CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
FUTURE RESIDENTIAL ADULTS AND CHILD

==========

PURPOSE: TO ESTABLISH AIR CONCENTRATIONS OF VOLATILE ORGANIC CONSTITUENTS (VOCs) ASSOCIATED WITH SHOWERING AND THE SUBSEQUENT FUTURE HYPOTHETICAL INHALATION EXPOSURE OF ADULTS AND ADOLESCENTS.

==========

PERTINANT EQUATIONS:

$$Cs = Cinf[1+(1/(kts))(exp(-kts)-1)]$$

where:

Cs = SHOWER AIR CONCENTRATION (mg/m^3)
Cinf = ASSYMPTOTIC CONCENTRATION IN AIR (mg/m^3)
ts = SHOWERING TIME (min)
k = RATE CONSTANT (min^-1)

$$Cinf = [(E)(Fw)(Ct/1000)]/Fa$$

where:

E = THE EFFICIENCY OF RELEASE - WATER TO AIR
Fw = THE FLOW RATE OF WATER IN THE SHOWER (L/min)
Ct = CONSTITUENT CONCENTRATION IN SHOWER WATER
Fa = FLOW RATE OF AIR IN THE SHOWER (m^3/min)

$$k = Fa/Vb$$

where:

Vb = THE VOLUME OF AN AVERAGE BATHROOM (m^3)

$$Ei = (Etce)(Hi)/(Htce)$$

where:

Ei = THE RELATIVE EFFICIENCY OF RELEASE OF CHEMICAL
Etce = THE EFFICIENCY OF RELEASE OF TCE
Hi = THE HENRY's CONSTANT FOR CHEMICAL i (m^3 atm/mol)
Htce = THE HENRY's CONSTANT FOR TCE (m^3 atm/mol)

ADULT AND CHILD EXPOSURE TO VOCs WHILE SHOWERING

CONSTITUENTS		Etce	Htce	Hi	Ei	Fa	Vb
			(m^3 atm/mol)	(m^3 atm/mol)		(m^3/min)	(m^3)
Trichloroethene		0.6	9.10E-03	9.10E-03	0.6000	2.4	12
Benzene		0.6	9.10E-03	5.50E-03	0.3626	2.4	12
Ethylbenzene		0.6	9.10E-03	6.60E-03	0.4352	2.4	12
Toluene		0.6	9.10E-03	6.66E-03	0.4391	2.4	12
CONSTITUENTS	IR*	IR	ET	EF	ED	ED*	BW
	(m^3/hr)	(m^3/hr)	(hrs/d)	(d/yrs)	(yrs)	(yrs)	(Kg)
Trichloroethene	0.6	0.6	0.25	350	30	6	70
Benzene	0.6	0.6	0.25	350	30	6	70
Ethylbenzene	0.6	0.6	0.25	350	30	6	70
Toluene	0.6	0.6	0.25	350	30	6	70
Totals							

CDI = (Cs)(IR)(ET)(EF)(ED)(1.0) / (BW)(AT)

where:

IR = The inhalation rate (m^3/hr)
ET = The exposure time (hrs/d)
EF = Exposure frequency (d/yr)
ED = Exposure duration (yrs)
1.0 = Absorbed fraction
BW = Body weight (Kg)
AT = The averaging time (d)

ICR = CDI * CSF

(ug/L)

where:

CSF = The carcinogenic slope factor (Kg*d/mg)

HI = CDI / RfC

where:

RfC = The reference concentration (mg/Kg*d)

L i vs. TCE

mol)

k	Ct	Fw	Cinf	ts	Cs
(min^-1)	(ug/L)	(L/min)	(mg/m^3)	(min)	(mg/m^3)
0.2	900	10	2.250	15	1.53735
0.2	84.1	10	0.127	15	0.08683
0.2	96	10	0.174	15	0.11893
0.2	56.8	10	0.104	15	0.07101

BW* (Kg)	AT (CARC) (Kg)	AT (NCARC) (Kg)	AT* (NCARC) (Kg)	DOSE (CARC) (mg/Kg d)	DOSE (NCARC) (mg/Kg d)	DOSE* (CARC) (mg/Kg d)	DOSE* (NCARC) (mg/Kg d)	CSF (mg/Kg d)-1	RfC (mg/Kg d)
15	25550	10950	2190	1.35E-03	3.16E-03	1.26E-03	1.47E-02	0.006	
15	25550	10950	2190	7.65E-05	1.78E-04	7.14E-05	8.33E-04	0.0291	
15	25550	10950	2190	1.05E-04	2.44E-04	9.78E-05	1.14E-03		0.286
15	25550	10950	2190	6.25E-05	1.46E-04	5.84E-05	6.81E-04		1.14

ICR	ICR*	HI	HI*
8.12E-06	7.58E-06	0.00000	0.00000
2.23E-06	2.08E-06	0.00000	0.00000
0.00E+00	0.00E+00	0.00085	0.00399
0.00E+00	0.00E+00	0.00013	0.00060
1.03E-05	9.66E-06	0.001	0.005

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE INGESTION OF SURFACE WATER CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from ingestion of surface water

$$Intake\ (mg/kg\cdot day) = \frac{C \times IR \times ET \times EF \times ED}{BW \times AT \times DY}$$

Where:	C	=	Contaminant concentration in surface water (mg/L)
	CR	=	Contact rate (L/hr)
	ET	=	Exposure time (hrs/event)
	EF	=	Exposure frequency (events/year)
	ED	=	Exposure duration (years)
	BW	=	Body weight (kg)
	AT	=	Averaging time (years)
	DY	=	Days per year (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: Antimony

$$Intake\ (mg/kg\cdot day) = \frac{0.0039\ mg/L \times 0.05\ L/hr \times 2.6\ hrs/event \times 20\ events/yr \times 30\ years}{70\ kg \times 30\ years \times 365\ days/yr}$$

= 3.97E-07

$$Risk = \frac{3.97E\text{-}07\ mg/kg\cdot day}{4.0E\text{-}04\ mg/kg\cdot day} = 9.9E\text{-}04$$

Re: Site 35 Current Residential Adult

SURFACE WATER INGEST[illegible]OSURE ASSESSMENT
OPERABLE UNIT NO.10 (SI[illegible]
REMEDIAL INVESTIGATION CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT 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)		
IR = ingestion rate (Liter/hour)		0.05
ET = child exposure time (hours/event)		2.6
EF = child exposure frequency (events/yr)		20
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	

Note: inputs are scenario and site specific

Contaminant	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	Average Carc Time (years)	Days per Year (days)	Carc Dose (mg/kg-day) Child	Cancer Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child
no carcinogenic contaminants												
TOTAL											ERR	ERR

Contaminant	Concentration Noncarcinogen (mg/l)	Contact Rate (l/hour)	Exposure Time (hrs/event) Child	Exposure Frequency (events/yr) Child	Expsosure Duration (years) Child	Body Weight (kg) Child	Average Noncarc (years)	Days per Year (days)	Noncarc Dose (mg/kg-day) Child	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk Child
Antimony	0.0039	0.05	2.6	20	6	15	6	365	1.85E-06	4.00E-04	4.63E-03	27.35
Cobalt	0.0111	0.05	2.6	20	6	15	6	365	5.27E-06	6.00E-02	8.79E-05	0.52
Manganese	0.0648	0.05	2.6	20	6	15	6	365	3.08E-05	5.00E-03	6.15E-03	36.35
Mercury	0.0032	0.05	2.6	20	6	15	6	365	1.52E-06	3.00E-04	5.07E-03	29.92
Vanadium	0.0116	0.05	2.6	20	6	15	6	365	5.51E-06	7.00E-03	7.87E-04	4.65
Zinc	0.129	0.05	2.6	20	6	15	6	365	6.13E-05	3.00E-01	2.04E-04	1.21
TOTAL											1.69E-02	100.00

FILE NAME: SWI.WQ1

SURFACE WATER INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT 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)		
IR = ingestion rate (Liter/hour)		0.05
ET = adult exposure time (hours/event)		2.6
EF = adult exposure frequency (events/yr)		20
ED = adult exposure duration (yrs)		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 (days)		365
CSF = cancer slope factor (mg/kg-day)-1	specific	
RfD = reference dose (mg/kg-day)	specific	

Note: inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/l)	Contact Rate (l/hour)	Exposure Time (hrs/event) Adult	Exposure Frequency (events/yr) Adult	Exposure Duration (years) Adult	Body Weight (kg) Adult	Average Carc Time (years)	Days per Year (days)	Carc Dose (mg/kg-day) Adult	Cancer Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
no carcinogenic contaminants												
TOTAL											ERR	ERR

Contaminant	Concentration Noncarcinogen (mg/l)	Contact Rate (l/hour)	Exposure Time (hrs/event) Adult	Exposure Frequency (events/yr) Adult	Expsosure Duration (years) Adult	Body Weight (kg) Adult	Average Noncarc (years)	Days per Year (days)	Noncarc Dose (mg/kg-day) Adult	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Antimony	0.0039	0.05	2.6	20	30	70	30	365	3.97E-07	4.00E-04	9.92E-04	27.35
Cobalt	0.0111	0.05	2.6	20	30	70	30	365	1.13E-06	6.00E-02	1.88E-05	0.52
Manganese	0.0648	0.05	2.6	20	30	70	30	365	6.59E-06	5.00E-03	1.32E-03	36.35
Mercury	0.0032	0.05	2.6	20	30	70	30	365	3.26E-07	3.00E-04	1.09E-03	29.92
Vanadium	0.0116	0.05	2.6	20	30	70	30	365	1.18E-06	7.00E-03	1.69E-04	4.65
Zinc	0.129	0.05	2.6	20	30	70	30	365	1.31E-05	3.00E-01	4.38E-05	1.21
TOTAL											3.63E-03	100.00

FILE NAME: SWI.WQ2

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE DERMAL CONTACT WITH SURFACE WATER CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from dermal contact with surface water

$$Intake\ (mg/kg\cdot day) = \frac{C \times SA \times PC \times ET \times EF \times ED \times CF}{BW \times AT}$$

Where:	C	=	Contaminant concentration in groundwater (mg/L)
	SA	=	Exposed skin surface available for contact (cm^2)
	PC	=	Permeability constant (cm/hr)
	ET	=	Exposure time (hr/day)
	EF	=	Exposure frequency (days/year)
	ED	=	Exposure duration (years)
	CF	=	Conversion factor (1 L/1,000 cm^3)
	BW	=	Body weight (kg)
	AT_c	=	Averaging time carcinogen (days)
	AT_{nc}	=	Averaging time noncarcinogen (days)

Risks:

Carcinogens = Intake (mg/kg·day) x CSF $(mg/kg\cdot day)^{-1}$
Noncarcinogens = Intake (mg/kg·day)/RfD (mg/kg·day)

Example Carcinogen: No Carcinogenic COPCs in Surface Water

Example Noncarcinogen: Antimony

$$Intake\ (mg/kg\cdot day) = \frac{0.0039\,mg/L \times 11{,}500\,cm^2 \times 1.0E\text{-}03\,cm/hr \times 2.6\,hr/day \times 20\,days/yr \times 30\,yrs \times 1\,L/1{,}000\,cm^3}{70\,kg \times 10{,}950\,days}$$

$$= 9.1E\text{-}08$$

$$Risk = \frac{9.1E\text{-}08\ mg/kg\cdot day}{4.0E\text{-}04\ mg/kg\cdot day} = 2.3E\text{-}04$$

SURFACE WATER DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION - CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT 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)	4600
PC = contaminant specific dermal permeability (cm/hr)	Specific
ET = child exposure time (hours/day)	2.6
EF = child exposure frequency (days/yr)	20
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

Note: Inputs are site and scenario specific

Contaminant	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 (years)	Days per Year (days)	Carc Dose (mg/kg-day) Child	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child
No carcinogenic contaminants														
TOTAL													EHH	EHH

Contaminant	Concentration Noncarcinogen (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	Average Noncarc Time (years)	Days per Year (days)	Noncarc Dose (mg/kg-day) Child	Reference Dose (mg/kg-day)	Noncarc Risk Child	Percent Noncarcinogenic Risk Child
Antimony	0.0039	4600	1.0E-03	2.6	20	6	0.001	15	6	365	1.70E-07	4.00E-04	4.26E-04	27.35
Cobalt	0.0111	4600	1.0E-03	2.6	20	6	0.001	15	6	365	4.85E-07	8.00E-02	6.06E-06	0.52
Manganese	0.0648	4600	1.0E-03	2.6	20	6	0.001	15	6	365	2.83E-06	5.00E-03	5.66E-04	36.35
Mercury	0.0032	4600	1.0E-03	2.6	20	6	0.001	15	6	365	1.40E-07	3.00E-04	4.66E-04	29.92
Vanadium	0.0116	4600	1.0E-03	2.6	20	6	0.001	15	6	365	5.07E-07	7.00E-03	7.24E-05	4.65
Zinc	0.129	4600	1.0E-03	2.6	20	6	0.001	15	6	365	5.64E-06	3.00E-01	1.88E-05	1.21
TOTAL													1.56E-03	100.00

File Name: SWDC.WQ1

SURFACE WATER DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABLE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION - CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT 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 = adult skin surface available for contact (cm2)	11500
PC = contaminant specific dermal permeability (cm/hr)	Specific
ET = adult exposure time (hours/day)	2.6
EF = adult exposure frequency (days/yr)	20
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
CSF = cancer slope factor (mg/kg-day)-1	Specific
RfD = reference dose (mg/kg-day)	Specific

Note: Inputs are site and scenario specific

Contaminant	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)	Days per Year (days)	Carc Dose (mg/kg-day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
no carcinogenic contaminants														
TOTAL													ERR	ERR

Contaminant	Concentration Noncarcinogen (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	Average Noncarc Time (years) Adult	Days per Year (days)	Noncarc Dose (mg/kg-day) Adult	Reference Dose (mg/kg-day)	Noncarc Risk Adult	Percent Noncarcinogenic Risk Adult
Antimony	0.0039	11500	1.0E-03	2.6	20	30	0.001	70	30	365	9.13E-08	4.00E-04	2.28E-04	27.35
Cobalt	0.0111	11500	1.0E-03	2.6	20	30	0.001	70	30	365	2.60E-07	6.00E-02	4.33E-06	0.52
Manganese	0.0648	11500	1.0E-03	2.6	20	30	0.001	70	30	365	1.52E-06	5.00E-03	3.03E-04	36.35
Mercury	0.0032	11500	1.0E-03	2.6	20	30	0.001	70	30	365	7.49E-08	3.00E-04	2.50E-04	29.92
Vanadium	0.0116	11500	1.0E-03	2.6	20	30	0.001	70	30	365	2.71E-07	7.00E-03	3.88E-05	4.65
Zinc	0.129	11500	1.0E-03	2.6	20	30	0.001	70	30	365	3.02E-06	3.00E-01	1.01E-05	1.21
TOTAL													8.34E-04	100.00

File Name: SWDC.WQ2

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE INGESTION OF SEDIMENT CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from ingestion of sediment

$$Intake\ (mg/kg{\cdot}day) = \frac{C \times IR \times CF \times EF \times ED}{BW \times AT}$$

Where:			
	C	=	Contaminant concentration in sediment (mg/kg)
	IR	=	Ingestion rate (mg/day)
	CF	=	Conversion factor for kg to mg (mg/day)
	EF	=	Exposure frequency (days/year)
	ED	=	Exposure duration (years)
	BW	=	Body weight (kg)
	AT	=	Averaging time (years)

Risks:

Carcinogens = Intake (mg/kg·day) x CSF $(mg/kg{\cdot}day)^{-1}$
Noncarcinogens = Intake (mg/kg·day)/RfD (mg/kg·day)

Example Carcinogen: 4,4'-DDT

$$Intake\ (mg/kg{\cdot}day) = \frac{0.023\ mg/kg \times 100\ mg/day \times 1.0E\text{-}06 \times 20\ days/yr \times 30\ yrs}{70\ kg \times 25{,}550\ days}$$

= 7.7E-10

Risk = 7.7E-10 mg/kg·day x 3.4E-01 $mg/kg{\cdot}day^{-1}$ = 2.6E-10

Example Noncarcinogen: 4,4'-DDT

$$Intake\ (mg/kg{\cdot}day) = \frac{0.023\ mg/kg \times 100\ mg/day \times 1.0E\text{-}06 \times 20\ days/yr \times 30\ yrs}{70\ kg \times 10{,}950\ days}$$

= 1.8E-09

$$Risk = \frac{1.8E\text{-}09\ mg/kg{\cdot}day}{5.0E\text{-}04\ mg/kg{\cdot}day} = 3.6E\text{-}06$$

Re: Site 35 Current Residential Adult

SEDIMENT INGESTION E[illegible]E ASSESSMENT
OPERABLE UNIT NO. 10 ([illegible])
REMEDIAL INVESTIGATION CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT 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)	20
ED = exposure duration for child (yr)	6
IR = soil ingestion rate for child (mg/day)	100
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

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (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 Time (years)	Days per year (days/yr)	Carc Dose (mg/kg/day) Child	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child
Heptachlor Epoxide	0.0014	20	6	100	1E-06	15	70	365	4.38E-11	9.10E+00	3.99E-10	0.18
Dieldrin	0.032	20	6	100	1E-06	15	70	365	1.00E-09	1.60E+01	1.60E-08	7.06
4,4'-DDE	0.8356	20	6	100	1E-06	15	70	365	2.62E-08	3.40E-01	8.90E-09	3.92
4,4'-DDD	0.9717	20	6	100	1E-06	15	70	365	3.04E-08	2.40E-01	7.30E-09	3.21
4,4'-DDT	0.0228	20	6	100	1E-06	15	70	365	7.14E-10	3.40E-01	2.43E-10	0.11
alpha-Chlordane	0.013	20	6	100	1E-06	15	70	365	4.07E-10	1.30E+00	5.29E-10	0.23
gamma-Chlordane	0.0097	20	6	100	1E-06	15	70	365	3.04E-10	1.30E+00	3.95E-10	0.17
Arsenic	2.3	20	6	100	1E-06	15	70	365	7.20E-08	1.75E+00	1.26E-07	55.48
Beryllium	0.5	20	6	100	1E-06	15	70	365	1.57E-08	4.30E+00	6.73E-08	29.64
TOTAL											2.27E-07	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day) Child	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk Child
Heptachlor Epoxide	0.0014	20	6	100	1E-06	15	6	365	5.11E-10	1.30E-05	3.93E-05	0.68
Dieldrin	0.032	20	6	100	1E-06	15	6	365	1.17E-08	5.00E-05	2.34E-04	4.02
Endrin	0.00085	20	6	100	1E-06	15	6	365	3.11E-10	3.00E-04	1.04E-06	0.02
4,4'-DDT	0.0228	20	6	100	1E-06	15	6	365	8.33E-09	5.00E-04	1.67E-05	0.29
Methoxychlor	0.0034	20	6	100	1E-06	15	6	365	1.24E-09	5.00E-03	2.48E-07	0.00
alpha-Chlordane	0.013	20	6	100	1E-06	15	6	365	4.75E-09	6.00E-05	7.91E-05	1.36
gamma-Chlordane	0.0097	20	6	100	1E-06	15	6	365	3.54E-09	6.00E-05	5.91E-05	1.02
Arsenic	2.3	20	6	100	1E-06	15	6	365	8.40E-07	3.00E-04	2.80E-03	48.17
Barium	69.4	20	6	100	1E-06	15	6	365	2.54E-05	7.00E-02	3.62E-04	6.23
Beryllium	0.5	20	6	100	1E-06	15	6	365	1.83E-07	5.00E-03	3.65E-05	0.63
Cobalt	4.2	20	6	100	1E-06	15	6	365	1.53E-06	6.00E-02	2.56E-05	0.44
Copper	24.3	20	6	100	1E-06	15	6	365	8.88E-06	3.71E-02	2.39E-04	4.12
Manganese	34.6	20	6	100	1E-06	15	6	365	1.26E-05	1.40E-01	9.03E-05	1.55
Nickel	6.7	20	6	100	1E-06	15	6	365	2.45E-06	2.00E-02	1.22E-04	2.10
Vanadium	30.3	20	6	100	1E-06	15	6	365	1.11E-05	7.00E-03	1.58E-03	27.20
Zinc	104	20	6	100	1E-06	15	6	365	3.80E-05	3.00E-01	1.27E-04	2.18
TOTAL											5.81E-03	100.00

File Name: SDI.WQ1

SEDIMENT INGESTION EXPOSURE ASSESSMENT
OPERABLE UNIT NO. 10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT 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 for adult (days/yr)	20
ED = exposure duration for adult (yr)	30
IR = soil ingestion rate for adult (mg/day)	100
BW = body weight for adult (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

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Exposure Frequency (days/yr) Adult	Exposure Duration (yr) Adult	Ingestion Rate (mg/day) Adult	Conversion Factor (kg/mg)	Body Weight (kg) Adult	Average Carc Time (years)	Days per year (days/yr)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg/day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Heptachlor Epoxide	0.0014	20	30	100	1E-06	70	70	365	4.70E-11	9.10E+00	4.27E-10	0.18
Dieldrin	0.032	20	30	100	1E-06	70	70	365	1.07E-09	1.60E+01	1.72E-08	7.06
4,4'-DDE	0.8356	20	30	100	1E-06	70	70	365	2.80E-08	3.40E-01	9.53E-09	3.92
4,4'-DDD	0.9717	20	30	100	1E-06	70	70	365	3.26E-08	2.40E-01	7.82E-09	3.21
4,4'-DDT	0.0228	20	30	100	1E-06	70	70	365	7.65E-10	3.40E-01	2.60E-10	0.11
alpha-Chlordane	0.013	20	30	100	1E-06	70	70	365	4.36E-10	1.30E+00	5.67E-10	0.23
gamma-Chlordane	0.0097	20	30	100	1E-06	70	70	365	3.25E-10	1.30E+00	4.23E-10	0.17
Arsenic	2.3	20	30	100	1E-06	70	70	365	7.72E-08	1.75E+00	1.35E-07	55.48
Beryllium	0.5	20	30	100	1E-06	70	70	365	1.68E-08	4.30E+00	7.21E-08	29.64
TOTAL											2.43E-07	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Exposure Frequency (days/yr) Adult	Exposure Duration (yr) Adult	Ingestion Rate (mg/day) Adult	Conversion Factor (kg/mg)	Body Weight (kg) Adult	Average Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg/day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Heptachlor Epoxide	0.0014	20	30	100	1E-06	70	30	365	1.10E-10	1.30E-05	8.43E-06	0.68
Dieldrin	0.032	20	30	100	1E-06	70	30	365	2.50E-09	5.00E-05	5.01E-05	4.02
Endrin	0.00085	20	30	100	1E-06	70	30	365	6.65E-11	3.00E-04	2.22E-07	0.02
4,4'-DDT	0.0228	20	30	100	1E-06	70	30	365	1.78E-09	5.00E-04	3.57E-06	0.29
Methoxychlor	0.0034	20	30	100	1E-06	70	30	365	2.66E-10	5.00E-03	5.32E-08	0.00
alpha-Chlordane	0.013	20	30	100	1E-06	70	30	365	1.02E-09	6.00E-05	1.70E-05	1.36
gamma-Chlordane	0.0097	20	30	100	1E-06	70	30	365	7.59E-10	6.00E-05	1.27E-05	1.02
Arsenic	2.3	20	30	100	1E-06	70	30	365	1.80E-07	3.00E-04	6.00E-04	48.17
Barium	69.4	20	30	100	1E-06	70	30	365	5.43E-06	7.00E-02	7.76E-05	6.23
Beryllium	0.5	20	30	100	1E-06	70	30	365	3.91E-08	5.00E-03	7.83E-06	0.63
Cobalt	4.2	20	30	100	1E-06	70	30	365	3.29E-07	6.00E-02	5.48E-06	0.44
Copper	24.3	20	30	100	1E-06	70	30	365	1.90E-06	3.71E-02	5.13E-05	4.12
Manganese	34.6	20	30	100	1E-06	70	30	365	2.71E-06	1.40E-01	1.93E-05	1.55
Nickel	6.7	20	30	100	1E-06	70	30	365	5.24E-07	2.00E-02	2.62E-05	2.10
Vanadium	30.3	20	30	100	1E-06	70	30	365	2.37E-06	7.00E-03	3.39E-04	27.20
Zinc	104	20	30	100	1E-06	70	30	365	8.14E-06	3.00E-01	2.71E-05	2.18
TOTAL											1.25E-03	100.00

File Name: SDI.WQ2

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE DERMAL CONTACT WITH SEDIMENT CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from dermal contact with sediment

$$Intake\ (mg/kg\cdot day) = \frac{C \times CF \times SA \times AF \times Abs \times EF \times ED}{BW \times AT \times DY}$$

Where:			
	C	=	Concentration of contaminant in sediment (mg/kg)
	CF	=	Conversion factor for kg to mg
	SA	=	Exposed skin surface area (cm^2)
	AF	=	Sediment to skin adherence factor (mg/cm^2)
	Abs	=	Fraction absorbed (unitless)
	EF	=	Exposure frequency (events/year)
	ED	=	Exposure duration (years)
	BW	=	Body weight (kg)
	AT	=	Averaging time (years)
	DY	=	Days per year (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: 4,4'-DDT

$$Intake\ (mg/kg\cdot day) = \frac{0.023\ mg/kg \times 1.0E\text{-}06 \times 11{,}500\ cm^2 \times 1 \times 0.01 \times 20\ events/yr \times 30\ yrs}{70\ kg \times 70\ years \times 365\ days/yr}$$

= 8.8E-10

Risk = 8.8E-10 mg/kg·day x 3.4E-01 $mg/kg\cdot day^{-1}$ = 3E-10

Example Noncarcinogen: 4,4'-DDT

$$Intake\ (mg/kg\cdot day) = \frac{0.023\ mg/kg \times 1.0E\text{-}06 \times 11{,}500\ cm^2 \times 1 \times 0.01 \times 20\ eventsyr \times 30\ yrs}{70\ kg \times 30\ years \times 365\ days/yr}$$

= 2.1E-09

$$Risk = \frac{2.1E\text{-}09\ mg/kg\cdot day}{5.0E\text{-}04\ mg/kg\cdot day} = 4E\text{-}06$$

SEDIMENT DERMAL CONTACT EXPOSURE ASSESSMENT
OPERABELE UNIT NO.10 (SITE 35)
REMEDIAL INVESTIGATION CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT RESIDENTIAL CHILD

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 for kg to mg	1.00E-06
SA = child exposed skin surface area (cm2)	4600
AF = sediment to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless) (contaminant specific)	Specific
EF = child exposure frequency (events/yr)	20
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

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (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 (years)	Days per year (day/year)	Carc Dose (mg/kg/day) Child	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Child	Percent Carcinogenic Risk Child
Heptachlor Epoxide	0.0014	1E-06	4600	1	0.01	20	6	15	70	365	2.02E-11	9.10E+00	1.83E-10	0.76
Dieldrin	0.032	1E-06	4600	1	0.01	20	6	15	70	365	4.61E-10	1.60E+01	7.37E-09	30.17
4,4'-DDE	0.8356	1E-06	4600	1	0.01	20	6	15	70	365	1.20E-08	3.40E-01	4.09E-09	16.74
4,4'-DDD	0.9717	1E-06	4600	1	0.01	20	6	15	70	365	1.40E-08	2.40E-01	3.36E-09	13.74
4,4'-DDT	0.0228	1E-06	4600	1	0.01	20	6	15	70	365	3.28E-10	3.40E-01	1.12E-10	0.46
alpha-Chlordane	0.013	1E-06	4600	1	0.01	20	6	15	70	365	1.87E-10	1.30E+00	2.43E-10	1.00
gamma-Chlordane	0.0097	1E-06	4600	1	0.01	20	6	15	70	365	1.40E-10	1.30E+00	1.82E-10	0.74
Arsenic	2.3	1E-06	4600	1	0.001	20	6	15	70	365	3.31E-09	1.75E+00	5.80E-09	23.72
Beryllium	0.5	1E-06	4600	1	0.001	20	6	15	70	365	7.20E-10	4.30E+00	3.10E-09	12.67
TOTAL													2.44E-08	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day) Child	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Child	Percent Noncarcinogenic Risk Child
Heptachlor Epoxide	0.0014	1E-06	4600	1	0.01	20	6	15	6	365	2.35E-10	1.30E-05	1.81E-05	4.07
Dieldrin	0.032	1E-06	4600	1	0.01	20	6	15	6	365	5.38E-09	5.00E-05	1.08E-04	24.16
Endrin	0.00085	1E-06	4600	1	0.01	20	6	15	6	365	1.43E-10	3.00E-04	4.76E-07	0.11
4,4'-DDT	0.0228	1E-06	4600	1	0.01	20	6	15	6	365	3.83E-09	5.00E-04	7.66E-06	1.72
Methoxychlor	0.0034	1E-06	4600	1	0.01	20	6	15	6	365	5.71E-10	5.00E-03	1.14E-07	0.03
alpha-Chlordane	0.013	1E-06	4600	1	0.01	20	6	15	6	365	2.18E-09	6.00E-05	3.64E-05	8.16
gamma-Chlordane	0.0097	1E-06	4600	1	0.01	20	6	15	6	365	1.63E-09	6.00E-05	2.72E-05	6.10
Arsenic	2.3	1E-06	4600	1	0.001	20	6	15	6	365	3.86E-08	3.00E-04	1.29E-04	28.94
Barium	69.4	1E-06	4600	1	0.001	20	6	15	6	365	1.17E-06	7.00E-02	1.67E-05	3.74
Beryllium	0.5	1E-06	4600	1	0.001	20	6	15	6	365	8.40E-09	5.00E-03	1.68E-06	0.38
Cobalt	4.2	1E-06	4600	1	0.001	20	6	15	6	365	7.06E-08	6.00E-02	1.18E-06	0.26
Copper	24.3	1E-06	4600	1	0.001	20	6	15	6	365	4.08E-07	3.71E-02	1.10E-05	2.47
Manganese	34.6	1E-06	4600	1	0.001	20	6	15	6	365	5.81E-07	1.40E-01	4.15E-06	0.93
Nickel	6.7	1E-06	4600	1	0.001	20	6	15	6	365	1.13E-07	2.00E-02	5.63E-06	1.26
Vanadium	30.3	1E-06	4600	1	0.001	20	6	15	6	365	5.09E-07	7.00E-03	7.27E-05	16.34
Zinc	104	1E-06	4600	1	0.001	20	6	15	6	365	1.75E-06	3.00E-01	5.83E-06	1.31
TOTAL													4.45E-04	100.00

File: SDDC.WQ1

SEDIMENT DERMAL CONTACT R[illegible]E ASSESSMENT
OPERABELE UNIT NO.10 (SITE 3
REMEDIAL INVESTIGATION CTO-0[illegible]
MCB CAMP LEJEUNE, NORTH CAROLINA
CURRENT RESIDENTIAL ADULT

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 for kg to mg	1.00E-06
SA = adult exposed skin surface area (cm2)	11500
AF = sediment to skin adherence factor (mg/cm2)	1
Abs = fraction absorbed (unitless) (contaminant specific)	Specific
EF = adult exposure frequency (events/yr)	20
ED = adult expsosure 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

Note: Inputs are scenario and site specific

Contaminant	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 (years)	Days per year (day/year)	Carc Dose (mg/kg/day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
Heptachlor Epoxide	0.0014	1E-06	11500	1	0.01	20	30	70	70	365	5.40E-11	9.10E+00	4.92E-10	0.75
Dieldrin	0.032	1E-06	11500	1	0.01	20	30	70	70	365	1.23E-09	1.60E+01	1.98E-08	30.17
4,4'-DDE	0.8356	1E-06	11500	1	0.01	20	30	70	70	365	3.22E-08	3.40E-01	1.10E-08	16.74
4,4'-DDD	0.9717	1E-06	11500	1	0.01	20	30	70	70	365	3.75E-08	2.40E-01	9.00E-09	13.74
4,4'-DDT	0.0228	1E-06	11500	1	0.01	20	30	70	70	365	8.80E-10	3.40E-01	2.99E-10	0.46
alpha-Chlordane	0.013	1E-06	11500	1	0.01	20	30	70	70	365	5.02E-10	1.30E+00	6.52E-10	1.00
gamma-Chlordane	0.0097	1E-06	11500	1	0.01	20	30	70	70	365	3.74E-10	1.30E+00	4.86E-10	0.74
Arsenic	2.3	1E-06	11500	1	0.001	20	30	70	70	365	8.87E-09	1.75E+00	1.55E-08	23.72
Beryllium	0.5	1E-06	11500	1	0.001	20	30	70	70	365	1.93E-09	4.30E+00	8.29E-09	12.67
TOTAL													6.55E-08	100.00

Contaminant	Concentration Noncarcinogen (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 Noncarc Time (years)	Days per year (day/year)	Noncarc Dose (mg/kg/day) Adult	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Heptachlor Epoxide	0.0014	1E-06	11500	1	0.01	20	30	70	30	365	1.26E-10	1.30E-05	9.69E-06	4.07
Dieldrin	0.032	1E-06	11500	1	0.01	20	30	70	30	365	2.88E-09	5.00E-05	5.76E-05	24.16
Endrin	0.00085	1E-06	11500	1	0.01	20	30	70	30	365	7.65E-11	3.00E-04	2.55E-07	0.11
4,4'-DDT	0.0228	1E-06	11500	1	0.01	20	30	70	30	365	2.05E-09	5.00E-04	4.10E-06	1.72
Methoxychlor	0.0034	1E-06	11500	1	0.01	20	30	70	30	365	3.06E-10	5.00E-03	6.12E-08	0.03
alpha-Chlordane	0.013	1E-06	11500	1	0.01	20	30	70	30	365	1.17E-09	6.00E-05	1.95E-05	8.18
gamma-Chlordane	0.0097	1E-06	11500	1	0.01	20	30	70	30	365	8.73E-10	6.00E-05	1.46E-05	6.10
Arsenic	2.3	1E-06	11500	1	0.001	20	30	70	30	365	2.07E-08	3.00E-04	6.90E-05	28.94
Barium	69.4	1E-06	11500	1	0.001	20	30	70	30	365	6.25E-07	7.00E-02	8.92E-06	3.74
Beryllium	0.5	1E-06	11500	1	0.001	20	30	70	30	365	4.50E-09	5.00E-03	9.00E-07	0.38
Cobalt	4.2	1E-06	11500	1	0.001	20	30	70	30	365	3.78E-08	6.00E-02	6.30E-07	0.26
Copper	24.3	1E-06	11500	1	0.001	20	30	70	30	365	2.19E-07	3.71E-02	5.90E-06	2.47
Manganese	34.6	1E-06	11500	1	0.001	20	30	70	30	365	3.11E-07	1.40E-01	2.22E-06	0.93
Nickel	8.7	1E-06	11500	1	0.001	20	30	70	30	365	6.03E-08	2.00E-02	3.02E-06	1.26
Vanadium	30.3	1E-06	11500	1	0.001	20	30	70	30	365	2.73E-07	7.00E-03	3.90E-05	16.34
Zinc	104	1E-06	11500	1	0.001	20	30	70	30	365	9.36E-07	3.00E-01	3.12E-06	1.31
TOTAL													2.38E-04	100.00

File: SDDC.WQ2

Computed by: LHJ Checked by: MDB Date: 10/94

EXAMPLE INGESTION OF FISH CALCULATIONS
OPERABLE UNIT NO. 10
CONTRACT TASK ORDER 0232

Purpose: Estimate intake/risk from ingestion of fish

$$Intake\ (mg/kg{\cdot}day) = \frac{C \times IR \times FI \times EF \times ED}{BW \times AT}$$

Where:			
	C	=	Contaminant concentration in fish (mg/kg)
	IR	=	Ingestion rate (kg/meal)
	FI	=	Fraction ingested from source (%)
	EF	=	Exposure frequency (meal/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: 4,4-DDD

$$Intake\ (mg/kg{\cdot}day) = \frac{0.113\ mg/kg \times 0.284\ kg/meal \times 100\% \times 48\ meals/yr \times 30\ yrs}{70\ kg \times 25{,}550\ days}$$

= 2.6E-05

Risk = 2.6E-05 mg/kg·day x 2.4E-01 $mg/kg{\cdot}day^{-1}$ = 6.2E-06

Example Noncarcinogen: Dieldrin

$$Intake\ (mg/kg{\cdot}day) = \frac{0.023\ mg/kg \times 0.284\ kg/meal \times 100\% \times 48\ meals/yr \times 30\ yrs}{70\ kg \times 10{,}950\ days}$$

= 1.2E-05

$$Risk = \frac{1.2E\text{-}05\ mg/kg{\cdot}day}{5E\text{-}05\ mg/kg{\cdot}day} = 2.5E\text{-}01$$

Re: Site 35 Current Residential Adult

FISH INGESTION EXPOSUF SSMENT
OPERABLE UNIT NO.10 (SI
REMEDIAL INVESTIGATION CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

Intake (mg/kg-day) = CF * IR * FI * EF * ED/BW * ATc or ATnc * DY

Risk = Intake * CSF or /RfD

Where:	INPUTS
CF = contaminant concentration in fish (mg/kg)	
IR = adult ingestion rate (kg/meal)	0.284
FI = fraction ingested from contaminated source (unitless)	100
EF = adult exposure frequency (meals/yr)	48
ED = adult exposure duration (years)	30
BW = adult body weight (kg)	70
ATc = averaging time for carcinogen (years)	70
ATnc = averaging time for noncarcinogen (years)	30
DY = days per year (days/yr)	365

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (mg/kg)	Ingestion Rate (kg/meal) Adult	Fraction Ingestion (%)	Exposure Frequency (meals/yr) Adult	Exposure Duration (years) Adult	Body Weight (kg) Adult	Average Carc Time (years)	Days per year (days/yr)	Carc Dose (mg/kg-day) Adult	Slope Factor (mg/kg-day)-1	Carcinogenic Risk Adult	Percent Carcinogenic Risk Adult
beta-BHC	0.00779	0.284	1	48	30	70	70	365	1.76E-06	1.80E+00	3.21E-06	2.38
gamma-BHC (Lindane)	0.0055	0.284	1	48	30	70	70	365	1.26E-06	1.30E+00	1.63E-06	1.21
Heptachlor	0.0043	0.284	1	48	30	70	70	365	9.83E-07	4.50E+00	4.42E-06	3.28
Dieldrin	0.02289	0.284	1	48	30	70	70	365	5.23E-06	1.60E+01	8.37E-05	62.16
4,4'-DDE	0.36338	0.284	1	48	30	70	70	365	8.31E-05	3.40E-01	2.83E-05	20.97
4,4'-DDD	0.11338	0.284	1	48	30	70	70	365	2.59E-05	2.40E-01	6.22E-06	4.62
4,4'-DDT	0.00965	0.284	1	48	30	70	70	365	2.21E-06	3.40E-01	7.50E-07	0.56
alpha-Chlordane	0.0218	0.284	1	48	30	70	70	365	4.98E-06	1.30E+00	6.48E-06	4.81
TOTAL											1.35E-04	100.00

Contaminant	Concentration Noncarcinogen (mg/kg)	Ingestion Rate (kg/meal) Adult	Fraction Ingestion (%)	Exposure Frequency (meals/yr) Adult	Exposure Duration (years) Adult	Body Weight (kg) Adult	Average Noncarc Time (years)	Days per year (days/yr)	Noncarc Dose (mg/kg-day) Adult	Reference Dose (mg/kg-day)	Noncarcinogenic Risk Adult	Percent Noncarcinogenic Risk Adult
Carbon Disulfide	4.24225	0.284	1	48	30	70	30	365	2.26E-03	1.00E-01	2.26E-02	0.64
gamma-BHC (Lindane)	0.00753	0.284	1	48	30	70	30	365	4.02E-06	3.00E-04	1.34E-02	0.38
Heptachlor	0.00725	0.284	1	48	30	70	30	365	3.87E-06	5.00E-04	7.74E-03	0.22
Dieldrin	0.02289	0.284	1	48	30	70	30	365	1.22E-05	5.00E-05	2.44E-01	6.86
Endrin	0.01644	0.284	1	48	30	70	30	365	9.84E-06	3.00E-04	3.28E-02	0.92
4,4'-DDT	0.00965	0.284	1	48	30	70	30	365	5.15E-06	5.00E-04	1.03E-02	0.29
alpha-Chlordane	0.0218	0.284	1	48	30	70	30	365	1.16E-05	6.00E-05	1.94E-01	5.45
Barium	0.84	0.284	1	48	30	70	30	365	4.48E-04	7.00E-02	6.40E-03	0.18
Cadmium	0.5	0.284	1	48	30	70	30	365	2.67E-04	5.00E-04	5.34E-01	14.99
Copper	16.74	0.284	1	48	30	70	30	365	8.93E-03	3.71E-02	2.41E-01	6.77
Manganese	1.99	0.284	1	48	30	70	30	365	1.06E-03	5.00E-03	2.12E-01	5.97
Mercury	0.98	0.284	1	48	30	70	30	365	5.23E-04	3.00E-04	1.74E+00	48.98
Selenium	0.62	0.284	1	48	30	70	30	365	3.31E-04	5.00E-03	6.62E-02	1.86
Zinc	130	0.284	1	48	30	70	30	365	6.94E-02	3.00E-01	2.31E-01	6.50
TOTAL											3.56E+00	100.00

FILE: FISH.WQ2

APPENDIX X
RI/FS BIOTA POPULATION DATA

APPENDIX X.1
FISH AND CRAB SPECIES

FISH AND CRAB SPECIES COLLECTED
SITES 35 AND 36
OU NO. 10
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

Fish Species	Date	Time	COC SAMPLE NO.	Length (cm)	Weight (g)
Pumpkinseed	4-20-94	1000	36-FS01-PS01	16	100
	4-20-94	1000	36-FS01-PS02	14	65
Bluegill	4-20-94	1000	36-FS01-BG01	17	106
Stripped Mullet	4-18-94	1000	36-FS01-SM01	33.5	395
	4-18-94	1000	36-FS01-SM02	32.5	400
	4-18-94	1000	36-FS01-SM03	32.5	345
	4-18-94	1000	36-FS01-SM04	35.5	500
	4-18-94	1000	36-FS01-SM05	37	500
	4-18-94	1000	36-FS01-SM06	34.5	450
	4-18-94	1000	36-FS01-SM07	34	405
	4-18-94	1000	36-FS01-SM08	27.5	325
White Catfish	4-18-94	1000	36-FS01-WC01	30.5	400
	4-18-94	1000	36-FS01-WC02	31	480
	4-18-94	1000	36-FS01-WC03	30	405
Sheepshead Minnow	4-20-94	920	NA	21 individuals NR	NR
Summer Flounder	4-20-94	920	NA	1 individual NR	NR
Mummichog	4-20-94	920	NA	19 individuals NR	NR
Pinfish	4-20-94	920	NA	1 individual	NR
Stripped Mullet	4-18-94	800	36-FS02-SM01	30.5	305
	4-18-94	800	36-FS02-SM02	35	420
	4-18-94	800	36-FS02-SM03	32.5	355
	4-18-94	800	36-FS02-SM04	31	370
Largemouth Bass	4-18-94	800	36-FS02-LMB01	27	270
Blue Crab	4-20-94	800	36-FS02-BC01	15	140
	4-20-94	800	36-FS02-BC02	15	150
	5-9-94	1800	36-FS02-CB01	16	165
	5-9-94	1800	36-FS02-CB01	15.2	163
	5-9-94	1800	36-FS02-CB02	14.3	140
	5-9-94	1800	36-FS02-CB02	12.8	130
	5-9-94	1800	36-FS02-CB03	13.3	130
	5-9-94	1800	36-FS02-CB03	13.4	125
	5-10-94	1010	36-FS02-CB04	14.5	195
	5-10-94	1010	36-FS02-CB04	13.3	160
	5-10-94	1010	36-FS02-CB05	14	140
White Catfish	4-18-94	800	36-FS02-WC01	33.5	500
	4-18-94	800	36-FS02-WC02	30.5	350
	4-18-94	800	36-FS02-WC03	27.5	375
	4-18-94	800	36-FS02-WC04	30	305
	4-18-94	800	36-FS02-WC05	32.5	480
	4-20-94	800	36-FS02-WC06	34	650
	4-20-94	800	36-FS02-WC07	37	750
	4-20-94	800	36-FS02-WC08	37	890
Sharptail Goby	4-20-94	845	NA	1 individual NR	NR

FISH AND CRAB SPECIES COLLECTED
SITES 35 AND 36
OU NO. 10
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

Fish Species	Date	Time	COC SAMPLE NO	Length (cm)	Weight (g)
Pinfish	4-20-94	845	NA	2 individuals NR	NR
Eastern Mosquitofish	4-20-94	845	NA	1 individual NR	NR
Stripped Mullet	4-18-94	800	36-FS03-SMO1	39	675
	4-18-94	800	36-FS03-SMO2	37	550
	4-18-94	800	36-FS03-SMO3	32	375
	4-18-94	800	36-FS03-SMO4	38	540
	4-18-94	1600	36-FS03-SMO5	29	260
Stripped Mullet	4-20-94	820	NA	3 individuals NR	NR
Pumpkinseed	4-18-94	800	36-FS03-PS01	17	125
Largemouth Bass	4-18-94	800	36-FS03-LMB01	32	500
	4-20-94	800	36-FS03-LMB02	42	1350
Warmouth	4-20-94	815	36-FS03-WM01	21	220
White Catfish	4-18-94	800	36-FS03-WCO1	34	400
	4-18-94	800	36-FS03-WCO2	35.5	470
	4-18-94	800	36-FS03-WCO3	34	600
	4-18-94	800	36-FS03-WCO4	33.5	470
	4-18-94	800	36-FS03-WCO5	31.5	365
	4-18-94	800	36-FS03-WCO6	30	360
	4-18-94	800	36-FS03-WCO7	32	315
	4-18-94	800	36-FS03-WCO8	33.5	495
	4-18-94	800	36-FS03-WCO9	32.5	450
	4-18-94	800	36-FS03-WC10	33.5	510
Longnose Gar	4-20-94	800	36-FS03-LGO1	82	1700
	4-20-94	800	36-FS03-LGO2	76	1200
Blue Crab	5-9-94	1810	36-FS03-CB01	12.4	120
	5-9-94	1810	36-FS03-CB01	14	130
	5-9-94	1810	36-FS03-CB02	13.2	140
	5-9-94	1810	36-FS03-CB02	12.5	120
	5-9-94	1810	36-FS03-CB03	12.4	120
	5-9-94	1810	36-FS03-CB03	12.3	137
	5-9-94	1810	36-FS03-CB04	12.5	115
	5-9-94	1810	36-FS03-CB04	16.5	240
	5-9-94	1810	36-FS03-CB05	14.3	145
	5-9-94	1810	36-FS03-CB05	14.2	140
	5-9-94	1810	36-FS03-CB06	14	160
	5-9-94	1810	36-FS03-CB06	15.4	190
	5-9-94	1810	36-FS03-CB07	12.3	125
	5-9-94	1810	36-FS03-CB07	12	120
	5-10-94	1000	36-FS03-CB08	15.5	245
	5-10-94	1000	36-FS03-CB08	14.7	180
	5-10-94	1000	36-FS03-CB09	16.5	230
	5-10-94	1000	36-FS03-CB09	13.5	135
	5-10-94	1000	36-FS03-CB10	13	155
	5-10-94	1000	36-FS03-CB10	12	105
	5-10-94	1000	36-FS03-CB11	13.5	140
Mummichog	4-20-94	820	NA	2 individuals NR	NR

FISH AND CRAB SPECIES COLLECTED
SITES 35 AND 36
OU NO. 10
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

Fish Species	Date	Time	COC SAMPLE NO	Length (cm)	Weight (g)
Pinfish	4-20-94	820	NA	7 individuals NR	NR
Eastern Mosquitofish	4-20-94	820	NA	1 individual NR	NR
Grass Shrimp	4-20-94	820	NA	21 individuals NR	NR
Green Sunfish	4-15-94	1530	35-FS01-GS01	9	15
American Eel	4-15-94	1530	35-FS01-AE01	5 individuals 11 to 18 cm	22.5
Pumpkinseed	4-15-94	1530	35-FS01-PS01	8	10
Spot	4-15-94	1530	NA	76 individuals 3 to 4.5 cm	NR
Stripped Mullet	4-15-94	1530	NA	125 individuals 2.5 to 4.5 cm	NR
Sharptail Goby	4-15-94	1530	NA	2 individuals 5.5 to 6.5 cm	NR
American Eel	4-14-94	1230	35-FS02-AE01	4 individuals 13 to 25 cm	70
Pumpkinseed	4-14-94	1230	35-FSO2-PS01	2 individuals 8.5 to 11.5 cm	95
Pumpkinseed	4-14-94	1230	NA	4 individuals 8.5 to 10.5 cm	55
Longnose Gar	4-14-94	900	35-FS02-LG01	95.5	2750
Mud Catfish	4-17-94	715	35-FS02-MC01	37.5	680
	4-17-94	715	35-FS02-MC02	26.5	280
	4-14-94	900	NA	15.5	20
Crayfish	4-14-94	900	35-FS02-CF01	12 individuals 3.5 to 7.0 cm	50
Sheepshead Minnow	4-17-94	NA	NA	12 individuals 3.0 to 3.5 cm	NR
Spot	4-14-94	1230	NA	216 individuals 1.5 to 4.5	70
Stripped Mullet	4-14-94	1230	NA	55 individuals 2.0 to 4.0 cm	30
Banded Killfish	4-17-94	NA	NA	6	NR

FISH AND CRAB SPECIES COLLECTED
SITES 35 AND 36
OU NO. 10
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

Fish Species	Date	Time	COC SAMPLE NO.	Length (cm)	Weight (g)
Fat Sleeper	4-14-94	1230	NA	6	NR
Lesser Killfish	4-14-94	1230	NA	2 individuals 3.0 cm	NR
Brown Bullhead	4-14-94	1230	NA	NR	NR
Summer Flounder	4-14-94	1230	NA	2.5	NR
Mummichog	4-14-94	900	NA	3 individuals NR	NR
Pinfish	4-14-94	900	NA	4 individuals NR	NR
Eastern Mosquitofish	4-14-94	900	NA	2 individuals NR	NR
Warmouth	4-15-94	940	35-FS03-WM01	17.5	140
	4-15-94	940	35-FS03-WM02	15	80
Longnose Gar	4-15-94	940	35-FS03-LG01	83.5	900
	4-17-94	825	35-FS03-LG02	94	2950
	4-17-94	825	35-FS03-LG03	88.5	2400
	4-17-94	825	35-FS03-LG04	84.5	2000
	4-17-94	825	35-FS03-LG05	74.5	1150
	4-17-94	825	35-FS03-LG06	77.5	1350
	4-17-94	825	35-FS03-LG07	65.5	750
	4-17-94	825	35-FS03-LG08	75.5	1400
	4-17-94	825	35-FS03-LG09	73	510
Stripped Mullet	4-14-94	930	35-FS03-SM01	38	530
	4-14-94	930	35-FS03-SM02	30.2	300
	4-17-94	825	35-FS03-SM03	34.5	425
	4-17-94	825	35-FS03-SM04	39.5	600
Stripped Mullet	4-14-94	930	NA	4 individuals NR	NR
Mud Catfish	4-14-94	930	35-FS03-MC01	35.5	670
	4-17-94	825	35-FS03-MC02	36.5	700
	4-17-94	825	35-FS03-MC03	32.5	500
	4-17-94	825	35-FS03-MC04	33	600
	4-17-94	825	35-FS03-MC05	48.5	920
	4-17-94	825	35-FS03-MC06	36.5	720
	4-17-94	825	35-FS03-MC07	37.5	840
	4-17-94	825	35-FS03-MC08	35	620
	4-17-94	825	35-FS03-MC09	35.5	460
	4-17-94	825	35-FS03-MC10	29	280
American Eel	4-14-94	1900	35-FS03-AE01	31	50
Pumpkinseed	4-14-94	1845	35-FS03-PS01	15	65
	4-14-94	1845	35-FS03-PS02	12	40
	4-15-94	940	35-FS03-PS03	12	40
	4-15-94	940	35-FS03-PS04	10.5	25
	4-15-94	940	35-FS03-PS05	12	25
	4-15-94	940	35-FS03-PS06	11.5	25
	4-17-94	825	35-FS03-PS07	17.5	100

FISH AND CRAB SPECIES COLLECTED
SITES 35 AND 36
OU NO. 10
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

Fish Species	Date	Time	COC SAMPLE NO	Length (cm)	Weight (g)
Bluegill	4-15-94	940	35-FS03-BG01	16	75
	4-15-94	940	35-FS03-BG02	13.5	50
	4-15-94	940	35-FS03-BG03	11	25
	4-15-94	940	35-FS03-BG04	12	40
	4-15-94	940	35-FS03-BG05	19	125
	4-15-94	940	35-FS03-BG06	15	40
	4-15-94	940	35-FS03-BG07	18.5	140
Spot	4-14-94	930	NA	95 individuals 2.5 to 5.5	NR
Pinfish	4-14-94	930	NA	7 individuals NR	NR
Eastern Mosquitofish	4-14-94	930	NA	1 individual NR	NR
Crayfish	4-14-94	930	NA	1 individual NR	NR

APPENDIX X.2
BENTHIC MACROINVERTEBRATE SPECIES

RAW DATA TABLE: BENTHIC MACROINVERTEBRATE SPECIES
SITE 35
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

Species	35-BN01	35-BN02	35-BN03	35-BN04
NEMATODA	2			
ANNELIDA				
Oligochaeta				
Lumbricina				
Lumbricidae	1			
Tubificida				
Naididae				
Dero digitata			27	
Stylaria lacustris			8	
Tubificidae				
Limnodrilus hoffmeisteri	248	3	1	18
ARTHROPODA				
Crustacea				
Amphipoda				
Gammaridae				
Gammarus tigrinus			1	
Insecta				
Coleoptera				
Elmidae				
Dubiraphia sp.		1		
Macronychus glabratus	1			
Diptera				
Ceratopogonidae				
Bezzia/Palpomyia sp. (biting midges)				1
Chironomidae				
Cardiocladius sp.	1			
Chironomus decorus gr. (midges)	132	58	41	79
Cricotopus bicinctus gr.		2	2	1
Cricotopus ornatus			5	
Dicrotendipes hervosus		1		
Parstanytarsus recens	2			
Polypedilum illinoense			1	
Polypedilum scalaenum	35		6	
Tanytarsus sp.			2	2
Thienemannimyia gr			1	
Tribelos jucundum	3		1	
MOLLUSCA				
Bivalvia				
Veneroida				
Sphaerildae				
Pisidium casertanum	4			
Oastropoda				
Basommatophora				
Physidae				
Physella sp.	1			
Total Taxa	11	5	12	5
Total Specimens	430	65	96	101
Brillouin's Diversity	0.488	0.176	0.649	0.266
SPECIES DENSITY (#/M^2)	2740.59911	414.276609	611.854685	643.722116
SPECIES DIVERSITY (Shannon-Wiener)	0.46410594	0.20810955	0.71806751	0.29036588

PERCENT BENTHIC MACROINVERTEBRATE SPECIES PER STATION
SITE 35
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

Species	35-BN01	35-BN02	35-BN03	35-BN04
NEMATODA	0.47			
ANNELIDA				
Oligochaeta				
Lumbricina				
Lumbricidae	0.23			
Tubificida				
Naididae				
Dero digitata			28.13	
Stylaria lacustris			8.33	
Tubificidae				
Limnodrilus hoffmeisteri	57.67	4.62	1.04	17.82
ARTHROPODA				
Crustacea				
Amphipoda				
Gammaridae				
Gammarus tigrinus			1.04	
Insecta				
Coleoptera				
Elmidae				
Dubiraphia sp.		1.54		
Macronychus glabratus	0.23			
Diptera				
Ceratopogonidae				
Bezzia/Palpomyia sp.				0.99
Chironomidae				
Cardiocladius sp.	0.23			
Chironomus decorus gr.	30.70	89.23	42.71	78.22
Cricotopus bicinctus gr.		3.08	2.08	0.99
Cricotopus ornatus			5.21	
Dicrotendipes hervosus		1.54		
Parstanytarsus recens	0.47			
Polypedilum illinoense			1.04	
Polypedilum scalaenum	8.14		6.25	
Tanytarsus sp.			2.08	1.98
Thienemannimyia gr			1.04	
Tribelos jucundum	0.70		1.04	
MOLLUSCA				
Bivalvia				
Veneroida				
Sphaerildae				
Pisidium casertanum	0.93			
Oastropoda				
Basommatophora				
Physidae				
Physella sp.	0.23			
TOTAL PERCENT	100	100	100	100

PERCENT BENTHIC MACROINVERTEBRATE SPECIES PER STATION
SITE 36
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

Species		36-BN01	36-BN02	36-BN03
ANNELIDA				
Oligochaeta				
Tubificida				
Naididae				
Dero digitata		2.3	0.3	
Tubificidae		2.3		0.3
Polychaeta				
Capitellida				
Capitellidae				
Heteromastus filiformis			0.6	0.3
Phyllodocida				
Nereidae				
Nereis succinea		40.9	63.5	49.5
Spionida				
Spionidae				
Polydora sp.			2.3	4.0
Terebellida				
Ampharetidae				
Hypaniola grayi		13.6	27.3	13.2
ARTHROPODA				
Crustacea				
Amphipoda				
Gammaridae				
Gammarus tigrinus			1.1	9.9
Decapoda				
Palaemonidae				
Palaemonetes pugio				0.3
Portunidae				
Callinectes sp.				0.3
Insecta				
Diptera				
Ceratopogonidae				
Palpomyia/sphaeromias sp.		2.3	0.3	0.3
Chironomidae				
Chironomus decorus gr.		9.1	3.4	21.2
Cricotopus ornatus		22.7	0.6	
Dicrotendipes modestus		2.3		
Prociadius sp.		2.3		0.3
Tanytarsus sp.			0.6	0.3
Tribelos lucundum				0.3
Tabanidae				
Chrysops sp.		2.3		
TOTAL PERCENT		100	100	100

RAW DATA TABLE: BENTHIC MACROINVERTEBRATE SPECIES
SITE 36
REMEDIAL INVESTIGATION, CTO-0232
MCB CAMP LEJEUNE, NORTH CAROLINA

Species	36-BN01	36-BN02	36-BN03
ANNELIDA			
Oligochaeta			
Tubificida			
Naididae			
Dero digitata	1	1	
Tubificidae	1		1
Polychaeta			
Capitellida			
Capitellidae			
Heteromastus filiformis		2	1
Phyllodocida			
Nereidae			
Nereis succinea	18	221	184
Spionida			
Spionidae			
Polydora sp.		8	15
Terebellida			
Ampharetidae			
Hypaniola grayi	6	95	49
ARTHROPODA			
Crustacea			
Amphipoda			
Gammaridae			
Gammarus tigrinus		4	37
Decapoda			
Palaemonidae			
Palaemonetes pugio			1
Portunidae			
Callinectes sp.			1
Insecta			
Diptera			
Ceratopogonidae			
Palpomyia/sphaeromias sp. (biting midges)	1	1	1
Chironomidae			
Chironomus decorus gr.	4	12	79
Cricotopus ornatus	10	2	
Dicrotendipes modestus	1		
Prociadius sp.	1		1
Tanytarsus sp.		2	1
Tribelos lucundum			1
Tabanidae			
Chrysops sp.	1		
Total Taxa	10	10	13
Total Specimens	44	348	372
Brillouin's Diversity	0.632	0.424	0.6
SPECIES DENSITY (#/M^2)	280	2218	2371
SPECIES DIVERSITY (Shannon-Wiener)	0.742	0.456	0.628

APPENDIX X.3
TERRESTRIAL REFERENCE VALUES

Derivation of Terrestrial Reference Values

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, 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)

The TRVs for the whitetailed deer were 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 less than 6 months, the new TRV was multiplied by 0.1 to account for subchronic to chronic uncertainty. The TRV for a cow was then adjusted to a TRV for a deer to account for differences in the body size using the following equation (Opresko, 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)

The TRVs for the bobwhite quail were 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 was then adjusted to a TRV for a bobwhite 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 0.177 kg.

The TRVs for the cottontail rabbit were 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 (0.058 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 the other species that did not have MTLs.

The TRV was 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, 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. The appropriate body size adjustments were made for these species using the same equation as above. The attached table contains the respective body weights used in the TRV adjustments.

The following species were used to calculate TRVs: dog, mink, rat, mouse, rabbit, and guinea pig. The TRV Table in this report specifies which animal was used to develop the TRV. When possible, the chronic NOAEL value was used in the development of the TRV. However, in some instances, only a 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. The attached table identifies, in parentheses, which chemicals were used as surrogates.

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REFERENCE INTAKE DOSES

Chemical		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		NA		NA		NA	
Antimony		NA		NA		4.06	(1)	NA		0.035	(12)	NA		NA		NA	
Arsenic		0.25	(1)	2.5	(1)	2.90	(1)	NA		NA		0.7	(13)	NA		NA	
Barium		0.1	(1)	1	(1)	1.16	(1)	NA		0.25	(4)	0.825	(4)	NA		NA	
Beryllium		NA		NA		NA		NA		0.54	(4)	0.8	(4)	NA		NA	
Cadmium		0.0025	(1)	0.025	(1)	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		0.42	(16)	NA		0.032	(17)
Iron		5	(1)	50	(1)	29.02	(1)	NA		NA		NA		NA		NA	
Lead		0.15	(1)	1.5	(1)	1.74	(1)	NA		5	(6)	NA		NA		NA	
Manganese		5	(1)	100	(1)	23.21	(1)	NA		NA		NA		NA		NA	
Mercury		0.01	(1)	0.1	(1)	0.12	(1)	NA		0.32	(18)	NA		NA		NA	
Nickel		0.25	(1)	15	(1)	2.90	(1)	25	(2)	5	(2)	NA		NA		NA	
Selenium		0.01	(1)	0.1	(1)	0.12	(1)	NA		0.04	(19)	NA		NA		NA	
Silver		NA		5	(1)	NA		NA		NA		0.181	(20)	NA		NA	
Thallium		NA		NA		NA		NA		0.025	(54)	NA		NA		NA	
Vanadium		0.25	(1)	0.5	(1)	0.06	(1)	NA		NA		NA		NA		NA	
Zinc		2.5	(1)	50	(1)	29.02	(1)	1	(3)	NA		NA		NA		NA	
Cyanide		NA		4.5	(21)	NA		0.375	(22)	10.8	(23)	NA		NA		NA	
Acenaphthene		NA		NA		NA		NA		17.5	(56)	NA		NA		NA	
Anthracene		NA		NA		NA		NA		NA		100	(33)	NA		NA	
Benzo(a)anthracene	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		0.1		NA		NA	
Benzo(b)fluoranthene	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		0.1		NA		NA	
Benzo(k)fluoranthene	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		0.1		NA		NA	
Benzo(ghi)perylene	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		0.1		NA		NA	
Benzo(a)pyrene		NA		NA		NA		NA		NA		0.1	(7)	NA		NA	
beta-BHC		NA		NA		NA		NA		5	(51)	NA		NA		NA	
Bis(2-ethylhexyl)phthalate		NA		NA		NA		NA		NA		NA		0.19	(11)	NA	
Butylbenzylphthalate		NA		NA		NA		NA		15.9	(52)	NA		NA		NA	
Carbazole	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		0.1		NA		NA	
Chrysene	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		0.1		NA		NA	
Dibenzofuran	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		0.1		NA		NA	
Dibenz(a,h)anthracene	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		0.1		NA		NA	
Diethylphthalate		NA		NA		NA		NA		75	(53)	NA		NA		NA	
Di-n-butylphthalate	(Bis(2-ethylhexyl)phth	NA		NA		NA		NA		NA		NA		0.19		NA	
Fluoranthene		NA		NA		NA		NA		NA		12.5	(8)	NA		NA	
Indeno(1,2,3-cd)pyrene	(Benzo(a)pyrene)	NA		NA		NA		NA		NA		0.1		NA		NA	
2-Methylnaphthalene	(Naphthalene)	NA		NA		NA		NA		41		NA		NA		NA	
Naphthalene		NA		NA		NA		NA		41	(9)	NA		NA		NA	
Phenanthrene	(Naphthalene)	NA		NA		NA		NA		41		NA		NA		NA	
Phenol		NA		NA		NA		NA		6	(57)	NA		NA		NA	
Pyrene		NA		NA		NA		NA		NA		7.5	(10)	NA		NA	
Alpha-chlordane	(Chlordane)	1	(24)	NA		NA		0.075	(48)	0.055	(49)	NA		NA		NA	
Gamma-chlordane	(Chlordane)	1	(24)	NA		NA		0.075	(48)	0.055	(49)	NA		NA		NA	
Dieldrin		0.5	(24)	NA		NA		0.005	(25)	0.005	(25)	NA		NA		NA	
4,4'-DDD	(DDT)	NA		0.2	(DDT)	NA		NA		0.005		NA		NA		NA	
DDE		NA		0.2	(46) Mallard	NA		NA		0.005	(47)	NA		NA		NA	
-DDT		NA		0.2	(46) Mallard	NA		NA		0.005	(47)	NA		NA		NA	
Endosulfan II	(Endosulfan)	NA		NA		NA		0.2	(26)	0.6	(26)	NA		NA		NA	
Endosulfan sulfate	(Endosulfan)	NA		NA		NA		NA		NA		NA		NA		NA	
Endrin		NA		0.03	(24)	NA		0.025	(27)	0.3	(28)	NA		NA		NA	
Endrin aldehyde	(Endrin)	NA		0.03	(24)	NA		0.025	(27)	0.3	(28)	NA		NA		NA	
Endrin ketone	(Endrin)	NA		0.03	(24)	NA		0.025	(27)	0.3	(28)	NA		NA		NA	
Heptachlor		NA		NA		NA		NA		0.15	(45)	NA		NA		0.057	(29)
Aroclor-1221		NA		NA		NA		NA		3.5	(30)	NA		NA		NA	
Aroclor-1232	(Aroclor-1242)	NA		NA		NA		NA		0.03	(31)	NA		NA		NA	
Aroclor-1260		NA		NA		NA		NA		0.005	(32)	NA		NA		NA	
Aroclor-1254		NA		NA		NA		NA		0.032	(50)	NA		NA		NA	
Methylene chloride		NA		NA		NA		NA		5.85	(34)	NA		NA		NA	
Carbon disulfide		NA		NA		11	(35)	NA		NA		NA		NA		NA	
1,1-Dichloroethene		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethene (total)		NA		NA		NA		NA		5	(44)	NA		NA		NA	
Chloroform		NA		NA		NA		1.29	(36)	38	(37)	NA		NA		NA	
2-Butanone		NA		NA		NA		NA		NA		NA		NA		NA	
1,1,1-Trichloroethane		NA		NA		NA		NA		0.296	(38)	NA		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	
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	
Acetone		NA		NA		NA		NA		10	(43)	NA		NA		NA	

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(2) Ambrose, 1976
(3) Drinker et. al., 1927
(4) Schroder, 1975a,b
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(7) Mackenzie, 1981
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(18) Fitzhugh, 1950
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(32) Byrne, 1988
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(34) Nat. Coffee Assoc., 1982
(35) Hardin, 1981
(36) USEPA, 1987
(37) Jorgenson, 1985
(38) NTP, 1988
(39) NTP, 1985a
(40) White, 1985
(41) Wolf, 1956
(42) Buben, 1985
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(44) Quast, 1983
(45) Veskoi, 1966
(46) Heath, 1969
(47) Lang, 1950
(48) WHO, 1984 and NRCC, 1975
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(50) Linder, 1974
(51) Ito, 1975
(52) NTP, 1985b
(53) Brown, 1978
(54) USEPA, 1986a
(55) USEPA, 1986b
(56) USEPA, 1989
(57) NTP, 1983

TERRESTRIAL REFERENCE VALUES

Body Weight (kg)	
Cattle	100
Whitetailed Deer	45.4
Bobwhite Quail	0.177
Eastern Cottontail	1.189
Lab Rat	0.35
Lab Dog	12.7
Poultry	0.5
Red Fox	4.54
Racoon	5.98
Lab Mouse	0.03
Guinea pig	3
Mink	1.3
Duck	1

Chemical		Whitetailed Deer (mg/kg/day)	Bobwhite Quail (mg/kg/day)	Eastern Cottont (mg/kg/day)	Red Fox (mg/kg/day)	Racoon (mg/kg/day)
Aluminum		6.51E+00	1.41E+01	1.16E+01	2.11E+01	6.78E+00
Antimony		6.91E-03	4.39E-02	4.06E+00	1.49E-02	1.36E-02
Arsenic		3.25E-01	3.53E+00	2.90E+00	1.31E-01	1.20E-01
Barium		1.30E-01	1.41E+00	1.16E+00	1.06E-01	9.72E-02
Beryllium		1.07E-01	6.78E-01	3.59E-01	2.30E-01	2.10E-01
Cadmium		3.25E-03	3.53E-02	2.90E-02	1.06E-01	1.55E-03
Chromium		6.51E+00	7.07E+01	5.80E+01	1.03E+00	9.37E-01
Cobalt		6.51E-02	7.07E-01	5.80E-01	3.71E-01	3.39E-01
Copper		6.51E-01	2.12E+01	1.16E+01	2.11E-02	1.93E-02
Iron		6.51E+00	7.07E+01	2.90E+01	1.86E+01	1.69E+01
Lead		1.95E-01	2.12E+00	1.74E+00	2.13E+00	1.94E+00
Manganese		6.51E+00	1.41E+02	2.32E+01	1.49E+01	1.36E+01
Mercury		1.30E-02	1.41E-01	1.20E-01	1.36E-01	1.24E-01
Nickel		3.25E-01	2.12E+01	2.90E+00	3.52E+01	1.94E+00
Selenium		1.30E-02	1.41E-01	1.20E-01	1.70E-02	1.55E-02
Silver		1.58E-02	7.07E+00	5.31E-02	3.40E-02	3.10E-02
Thallium		4.94E-03	3.14E-02	1.66E-02	1.06E-02	9.71E-03
Vanadium		3.25E-01	7.07E-01	5.80E-02	3.71E-02	3.39E-02
Zinc		3.25E+00	7.07E+01	2.90E+01	1.41E+00	1.69E+01
Cyanide		2.13E+00	6.36E+00	7.18E+00	5.28E-01	4.20E+00
Acenaphthene		3.46E+00	2.20E+01	1.16E+01	7.45E+00	6.79E+00
Anthracene		8.71E+00	5.53E+01	2.93E+01	1.88E+01	1.71E+01
Benzo(a)anthracene		8.71E-03	5.53E-02	2.93E-02	1.88E-02	1.71E-02
Benzo(b)fluoranthene		8.71E-03	5.53E-02	2.93E-02	1.88E-02	1.71E-02
Benzo(k)fluoranthene		8.71E-03	5.53E-02	2.93E-02	1.88E-02	1.71E 02
Benzo(ghi)perylene		8.71E-03	5.53E-02	2.93E-02	1.88E-02	1.71E-02
Benzo(a)pyrene		8.71E-03	5.53E-02	2.93E-02	1.88E-02	1.71E-02
beta-BHC		9.88E-01	6.28E+00	3.33E+00	2.13E+00	1.94E+00
Bis(2-ethylhexyl)phthalate		7.68E-02	4.88E-01	2.59E-01	1.65E-01	1.51E-01
Butylbenzylphthalate		3.14E+00	2.00E+01	1.06E+01	6.77E+00	6.17E+00
Carbazole		8.71E-03	5.53E-02	2.93E-02	1.88E-02	1.71E-02
Chrysene		8.71E-03	5.53E-02	2.93E-02	1.88E-02	1.71E-02
Dibenzofuran		8.71E-03	5.53E-02	2.93E-02	1.88E-02	1.71E-02
Dibenz(a,h)anthracene		8.71E-03	5.53E-02	2.93E-02	1.88E-02	1.71E-02
Diethylphthalate		1.48E+01	9.41E+01	4.99E+01	3.19E+01	2.91E+01
Di-n-butylphthalate		7.68E-02	4.88E-01	2.59E-01	1.65E-01	1.51E-01
Fluoranthene		1.09E+00	6.92E+00	3.67E+00	2.35E+00	2.14E+00
Indeno(1,2,3-cd)pyrene		8.71E-03	5.53E-02	2.93E-02	1.88E-02	1.71E-02
2-Methylnaphthalene		8.10E+00	5.15E+01	2.73E+01	1.74E+01	1.59E+01
Naphthalene		8.10E+00	5.15E+01	2.73E+01	1.74E+01	1.59E+01
Phenanthrene		8.10E+00	5.15E+01	2.73E+01	1.74E+01	1.59E+01
Phenol		1.19E+00	7.53E+00	3.99E+00	2.55E+00	2.33E+00
Pyrene		6.53E-01	4.15E+00	2.20E+00	1.41E+00	1.28E+00
Alpha-chlordane	(Chlordane)	1.30E+00	6.28E-03	3.66E-02	1.06E-01	2.14E-02
Gamma-chlordane	(Chlordane)	1.30E+00	6.28E-03	3.66E-02	1.06E-01	2.14E-02
Dieldrin		6.51E-01	6.28E-03	3.33E-03	7.04E-03	1.94E-03
4,4'-DDD		9.88E-04	3.56E-01	3.33E-03	2.13E-03	1.94E-03
4,4'-DDE		9.88E-04	3.56E-01	3.33E-03	2.13E-03	1.94E-03
4,4'-DDT		9.88E-04	3.56E-01	3.33E-03	2.13E-03	1.94E-03
Endosulfan II		1.19E-01	6.28E-03	3.99E-01	2.82E-01	2.33E-01
Endosulfan sulfate	(Endosul)	1.19E-01	6.28E-03	3.99E-01	2.82E-01	2.33E-01
Endrin		1.64E-02	5.34E-02	5.51E-02	3.52E-02	3.21E-02
Endrin aldehyde	(Endrin)	1.64E-02	5.34E-02	5.51E-02	3.52E-02	3.21E-02
Endrin ketone	(Endrin)	1.64E-02	5.34E-02	5.51E-02	3.52E-02	3.21E-02
Heptachlor		2.96E-02	1.88E-01	9.98E-02	6.38E-02	5.82E-02
Aroclor-1221		6.91E-01	4.39E+00	2.33E+00	1.49E+00	1.36E+00
Aroclor-1232		5.93E-03	3.77E-02	2.00E-02	1.28E-02	1.16E-02
Aroclor-1260		9.88E-04	6.28E-03	3.33E-03	2.13E-03	1.94E-03
Aroclor-1254		6.32E-03	4.02E-02	2.13E-02	1.36E-02	1.24E-02
Methylene chloride		1.16E+00	7.34E+00	3.89E+00	2.49E+00	2.27E+00
Carbon disulfide		3.27E+00	2.08E+01	1.10E+01	7.04E+00	6.42E+00
1,1-Dichloroethane		NA	NA	NA	NA	NA
1,2-Dichloroethene (total)		9.88E-01	6.28E+00	3.33E+00	2.13E+00	1.94E+00
Chloroform		7.51E+00	4.77E+01	2.53E+01	1.62	1.48E+01
2-Butanone		NA	NA	NA	NA	NA
1,1,1-Trichloroethane		5.85E-02	3.72E-01	1.97E-01	1.26E-01	1.15E-01
Trichloroethene		1.96E+01	1.26E+02	6.65E+01	4.26E+01	3.88E+01
1,1,2-Trichloroethane		3.40E-02	2.16E-01	1.14E-01	7.32E-02	6.68E-02
Benzene		1.98E-02	1.26E-01	6.65E-02	4.26E-02	3.88E-02
Tetrachloroethene		2.77E-01	1.76E+00	9.31E-01	5.96E-01	5.44E-01
Toluene		4.41E+00	2.80E+01	1.48E+01	9.49E+00	8.66E+00
Ethylbenzene		1.92E+00	1.22E+01	6.46E+00	4.13E+00	3.77E+00
Xylenes		3.54E+01	2.25E+02	1.19E+02	7.62E+01	6.95E+01

APPENDIX Y
RI/FS FIELD DUPLICATE SUMMARIES

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS04-00	35-SS04-00D	35-SS07-00	35-SS07-00D
Lab Sample ID:		5617-10	5057-16	5617-8	5617-7
Date Sampled:		10-MAY-1994	10-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS				
VOLATILES					
Chloromethane	UG/KG	11 UJ	43 UJ	11 U	11 U
Bromomethane	UG/KG	11 UJ	43 UJ	11 U	11 U
Vinyl Chloride	UG/KG	11 UJ	43 UJ	11 U	11 U
Chloroethane	UG/KG	11 UJ	43 UJ	11 U	11 U
Methylene Chloride	UG/KG	11 UJ	43 UJ	11 U	11 U
Acetone	UG/KG	11 UJ	358 J	11 UJ	11 U
Carbon Disulfide	UG/KG	11 UJ	43 UJ	33	11 U
1,1-Dichloroethene	UG/KG	11 UJ	43 UJ	33 R	11 U
1,1-Dichloroethane	UG/KG	11 UJ	43 UJ	11 U	11 U
1,2-Dichloroethene (total)	UG/KG	11 UJ	43 UJ	11 U	11 U
Chloroform	UG/KG	11 UJ	43 UJ	11 U	11 U
1,2-Dichloroethane	UG/KG	11 UJ	43 UJ	11 U	11 U
2-Butanone	UG/KG	11 UJ	43 UJ	11 U	11 U
1,1,1-Trichloroethane	UG/KG	11 UJ	43 UJ	11 U	11 U
Carbon Tetrachloride	UG/KG	11 UJ	43 UJ	11 U	11 UJ
Bromodichloromethane	UG/KG	11 UJ	43 UJ	11 U	11 U
1,2-Dichloropropane	UG/KG	11 UJ	43 UJ	11 U	11 U
cis-1,3-Dichloropropene	UG/KG	11 UJ	43 UJ	11 U	11 U
Trichloroethene	UG/KG	11 UJ	43 UJ	11 U	11 U
Dibromochloromethane	UG/KG	11 UJ	43 UJ	11 U	11 U
1,1,2-Trichloroethane	UG/KG	11 UJ	43 UJ	11 U	11 U
Benzene	UG/KG	11 UJ	43 UJ	11 U	11 U
trans-1,3-Dichloropropene	UG/KG	11 UJ	43 UJ	11 U	11 U
Bromoform	UG/KG	11 UJ	43 UJ	11 U	11 U
4-Methyl-2-Pentanone	UG/KG	11 UJ	43 UJ	11 U	11 U
2-Hexanone	UG/KG	11 UJ	43 UJ	11 U	11 U
Tetrachloroethene	UG/KG	11 UJ	43 UJ	11 U	11 U
1,1,2,2-Tetrachloroethane	UG/KG	11 UJ	43 UJ	11 U	11 U
Toluene	UG/KG	11 UJ	43 UJ	11 U	11 U
Chlorobenzene	UG/KG	11 UJ	43 UJ	11 U	11 U
Ethylbenzene	UG/KG	11 UJ	43 UJ	11 U	11 U
Styrene	UG/KG	11 UJ	43 UJ	11 UJ	11 U
Xylene (total)	UG/KG	11 UJ	43 UJ	11 U	11 U

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS04-00	35-SS04-00D	35-SS07-00	35-SS07-00D
Lab Sample ID:		5617-10	5057-16	5617-8	5617-7
Date Sampled:		10-MAY-1994	10-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS				
SEMIVOLATILES					
Phenol	UG/KG	360 U	1416 U	370 U	373 U
bis(2-Chloroethyl)ether	UG/KG	360 UJ	1416 UJ	370 UJ	373 UJ
2-Chlorophenol	UG/KG	360 U	1416 U	370 U	373 U
1,3-Dichlorobenzene	UG/KG	360 U	1416 U	370 U	373 U
1,4-Dichlorobenzene	UG/KG	360 U	1416 U	370 U	373 U
1,2-Dichlorobenzene	UG/KG	360 U	1416 U	370 U	373 U
2-Methylphenol	UG/KG	360 U	1416 U	370 U	373 U
2,2'-oxybis(1-Chloropropane)	UG/KG	360 U	1416 U	370 U	373 U
4-Methylphenol	UG/KG	360 U	1416 U	370 U	373 U
N-Nitroso-di-n-propylamine	UG/KG	360 U	1416 U	370 U	373 U
Hexachloroethane	UG/KG	360 U	1416 U	370 U	373 U
Nitrobenzene	UG/KG	360 U	1416 U	370 U	373 U
Isophorone	UG/KG	360 UJ	1416 UJ	370 UJ	373 UJ
2-Nitrophenol	UG/KG	360 U	1416 U	370 U	373 U
2,4-Dimethylphenol	UG/KG	360 U	1416 U	370 U	373 U
bis(2-Chloroethoxy)methane	UG/KG	360 U	1416 U	370 U	373 U
2,4-Dichlorophenol	UG/KG	360 U	1416 U	370 U	373 U
1,2,4-Trichlorobenzene	UG/KG	360 U	1416 U	370 U	373 U
Naphthalene	UG/KG	360 U	1416 U	370 U	373 U
4-Chloroaniline	UG/KG	360 UJ	1416 UJ	370 UJ	373 UJ
Hexachlorobutadiene	UG/KG	360 U	1416 U	370 U	373 U
4-Chloro-3-methylphenol	UG/KG	360 U	1416 U	370 U	373 U
2-Methylnaphthalene	UG/KG	360 U	1416 U	370 U	373 U
Hexachlorocyclopentadiene	UG/KG	360 U	1416 U	370 U	373 U
2,4,6-Trichlorophenol	UG/KG	360 U	1416 U	370 U	373 U
2,4,5-Trichlorophenol	UG/KG	873 U	3433 U	896 U	904 U
2-Chloronaphthalene	UG/KG	360 U	1416 U	370 U	373 U
2-Nitroaniline	UG/KG	873 U	3433 U	896 U	904 U
Dimethylphthalate	UG/KG	360 U	1416 U	370 U	373 U
Acenaphthylene	UG/KG	360 U	1416 U	370 U	373 U
2,6-Dinitrotoluene	UG/KG	360 UJ	1416 UJ	370 UJ	373 UJ
3-Nitroaniline	UG/KG	873 UJ	3433 UJ	896 UJ	904 UJ
Acenaphthene	UG/KG	360 U	1416 U	370 U	373 U

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS04-00	35-SS04-00D	35-SS07-00	35-SS07-00D
Lab Sample ID:		5617-10	5057-16	5617-8	5617-7
Date Sampled:		10-MAY-1994	10-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS				
SEMIVOLATILES Cont.					
2,4-Dinitrophenol	UG/KG	873 UJ	3433 UJ	896 UJ	904 UJ
Dibenzofuran	UG/KG	360 U	1416 U	370 U	373 U
4-Nitrophenol	UG/KG	360 U	1416 U	370 U	373 U
2,4-Dinitrotoluene	UG/KG	360 U	1416 U	370 U	373 U
Diethylphthalate	UG/KG	360 UJ	1416 U	370 UJ	373 UJ
Fluorene	UG/KG	360 U	1416 U	370 U	373 U
4-Chlorophenyl-phenylether	UG/KG	360 U	1416 U	370 U	373 U
4-Nitroaniline	UG/KG	873 UJ	3433 U	896 UJ	904 UJ
4,6-Dinitro-2-methylphenol	UG/KG	873 UJ	3433 U	896 UJ	904 UJ
N-Nitrosodiphenylamine	UG/KG	360 UJ	1416 U	370 U	373 U
4-Bromophenyl-phenylether	UG/KG	360 UJ	1416 U	370 U	373 U
Hexachlorobenzene	UG/KG	360 UJ	1416 U	370 U	373 U
Pentachlorophenol	UG/KG	873 UJ	3433 U	896 U	904 U
Phenanthrene	UG/KG	360 UJ	1416 U	370 U	373 U
Anthracene	UG/KG	360 UJ	1416 U	370 U	373 U
Carbazole	UG/KG	360 UJ	1416 UJ	370 UJ	373 UJ
Di-n-butylphthalate	UG/KG	360 UJ	1416 U	370 U	373 U
Fluoranthene	UG/KG	360 UJ	1416 U	370 U	373 U
Pyrene	UG/KG	360 UJ	1416 U	370 U	373 U
Butylbenzylphthalate	UG/KG	360 UJ	1416 U	370 U	373 U
Benzo(a)anthracene	UG/KG	360 UJ	1416 U	370 U	373 U
3,3'-Dichlorobenzidine	UG/KG	360 UJ	1416 U	370 U	373 U
Chrysene	UG/KG	360 UJ	1416 U	370 U	373 U
bis(2-Ethylhexyl)phthalate	UG/KG	279 J	1416 U	370 UJ	373 UJ
Di-n-octylphthalate	UG/KG	360 UJ	1416 U	370 U	373 U
Benzo(b)fluoranthene	UG/KG	360 UJ	1416 U	370 U	373 U
Benzo(k)fluoranthene	UG/KG	360 UJ	1416 U	370 U	373 U
Benzo(a)pyrene	UG/KG	360 UJ	1416 U	370 U	373 U
Indeno(1,2,3-cd)pyrene	UG/KG	360 UJ	1416 U	370 U	373 U
Dibenz(a,h)anthracene	UG/KG	360 UJ	1416 U	370 U	373 U
Benzo(g,h,i)perylene	UG/KG	208 J	1416 U	370 U	373 U

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOILS
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SS04-00	35-SS04-00D	35-SS07-00	35-SS07-00D
Lab Sample ID:		5617-10	5057-16	5617-8	5617-7
Date Sampled:		10-MAY-1994	10-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS				
PESTICIDE/PCBs					
alpha-BHC	UG/KG	1.9 U	NA	1.9 U	1.9 U
beta-BHC	UG/KG	0.53 J	NA	1.9 U	1.9 U
delta-BHC	UG/KG	1.9 U	NA	1.9 U	1.9 U
gamma-BHC (Lindane)	UG/KG	1.9 U	NA	1.9 U	1.9 U
Heptachlor	UG/KG	1.9 U	NA	1.9 U	1.9 U
Aldrin	UG/KG	1.9 U	NA	2.3 U	1.9 U
Heptachlor epoxide	UG/KG	1.9 U	NA	1.9 U	1.9 U
Endosulfan I	UG/KG	1.9 U	NA	1.9 U	1.9 U
Dieldrin	UG/KG	2.9 J	NA	11	12
4,4'-DDE	UG/KG	8.7	NA	14	13
Endrin	UG/KG	7.9	NA	0.68 J	1.9 U
Endosulfan II	UG/KG	2.9 J	NA	0.42 J	3.7 U
4,4'-DDD	UG/KG	11	NA	2.5	2.1
Endosulfan sulfate	UG/KG	3.6 U	NA	3.8 U	3.7 U
4,4'-DDT	UG/KG	48	NA	3.2 J	2.8 J
Methoxychlor	UG/KG	19 U	NA	20 U	19 U
Endrin ketone	UG/KG	1.2 J	NA	3.8 U	3.7 U
Endrin aldehyde	UG/KG	1.6 J	NA	3.8 U	3.7 U
alpha-Chlordane	UG/KG	4.1	NA	1.9 U	1.9 U
gamma-Chlordane	UG/KG	1.9 U	NA	1.9 U	1.9 U
Toxaphene	UG/KG	186 U	NA	195 U	192 U
Aroclor-1016	UG/KG	36 U	NA	38 U	37 U
Aroclor-1221	UG/KG	73 U	NA	77 U	76 U
Aroclor-1232	UG/KG	36 U	NA	38 U	37 U
Aroclor-1242	UG/KG	36 U	NA	38 U	37 U
Aroclor-1248	UG/KG	36 U	NA	38 U	37 U
Aroclor-1254	UG/KG	36 U	NA	38 U	37 U
Aroclor-1260	UG/KG	36 U	NA	38 U	37 U

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE SOIL
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TOTAL METALS

Client Sample ID:		35-SS04-00	35-SS04-00D	35-SS07-00	35-SS07-00D
Lab Sample ID:		5617-10	5057-16	5617-8	5617-7
Date Sampled:		10-MAY-1994	10-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS				
Aluminum	MG/KG	2330	12700 J	7870	5520
Antimony	MG/KG	8 J	19.8 UJ	7.4 J	5.2 UJ
Arsenic	MG/KG	0.13 UJ	9.3 J	0.5 J	3 J
Barium	MG/KG	79.5	38.8 J	15.4	19.1
Beryllium	MG/KG	0.11 U	0.43 U	0.22	0.33
Cadmium	MG/KG	15 J	0.42 J	0.16 J	0.38 J
Calcium	MG/KG	27700 J	6500 J	4680 J	12200 J
Chromium	MG/KG	98.1	22.4	13	10.9
Cobalt	MG/KG	4.3	4.7 U	1.2 U	1.2 U
Copper	MG/KG	43	12.1	3.2 J	123 J
Iron	MG/KG	4400	6490	10000 J	5770 J
Lead	MG/KG	71 J	74.6	17.1 J	32.9 J
Magnesium	MG/KG	675	2660	346	461
Manganese	MG/KG	35.6	15.5	6.6	10.7
Mercury	MG/KG	0.23 R	0.73 R	0.13 R	0.13 R
Nickel	MG/KG	6.8	5.2	2.4	3.1
Potassium	MG/KG	4240 U	1050 U	273 U	27600 U
Selenium	MG/KG	0.15 UJ	0.6 UJ	0.16 UJ	0.16 UJ
Silver	MG/KG	0.33 U	1.3 U	0.34 U	0.34 U
Sodium	MG/KG	961 U	2140	265 U	268 U
Thallium	MG/KG	0.07 U	0.43	0.2	0.15 J
Vanadium	MG/KG	14.2	27.2	18.8	14.4
Zinc	MG/KG	430	62.9	18.4 R	27 R

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SUBSURFACE SOIL
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:	35-MW40-03D
Lab Sample ID:	4585-24
Date Sampled:	30-APR-1994

VOLATILES		
Chloromethane	UG/KG	12 U
Bromomethane	UG/KG	12 U
Vinyl Chloride	UG/KG	12 U
Chloroethane	UG/KG	12 U
Methylene Chloride	UG/KG	12 U
Acetone	UG/KG	12 U
Carbon Disulfide	UG/KG	12 U
1,1-Dichloroethene	UG/KG	12 U
1,1-Dichloroethane	UG/KG	12 U
1,2-Dichloroethene (total)	UG/KG	12 U
Chloroform	UG/KG	12 U
1,2-Dichloroethane	UG/KG	12 U
2-Butanone	UG/KG	12 U
1,1,1-Trichloroethane	UG/KG	12 U
Carbon Tetrachloride	UG/KG	12 UJ
Bromodichloromethane	UG/KG	12 U
1,2-Dichloropropane	UG/KG	12 U
cis-1,3-Dichloropropene	UG/KG	12 U
Trichloroethene	UG/KG	12 U
Dibromochloromethane	UG/KG	12 U
1,1,2-Trichloroethane	UG/KG	12 U
Benzene	UG/KG	12 U
trans-1,3-Dichloropropene	UG/KG	12 U
Bromoform	UG/KG	12 U
4-Methyl-2-Pentanone	UG/KG	12 U
2-Hexanone	UG/KG	12 U
Tetrachloroethene	UG/KG	12 U
1,1,2,2-Tetrachloroethane	UG/KG	12 U
Toluene	UG/KG	12 U
Chlorobenzene	UG/KG	12 U
Ethylbenzene	UG/KG	12 U
Styrene	UG/KG	12 U
Xylene (total)	UG/KG	12 U

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-GWDW5-01	35-GWDW5-01D	35-MW10D-02	35-MW10D-02D	35-MW19S-02	35-MW19S-02D
Lab Sample ID:		D94-5361-13	D94-5361-12	D94-5296-8	D94-5296-7	D94-5296-17	D94-5296-21
Date Sampled:		15-MAY-1994	15-MAY-1994	11-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	5 U	5 U	250 U	250 U	5 U	5 U
1,1,2,2-Tetrachloroethane	UG/L	0.1 U	0.1 U	5 U	5 U	0.1 U	0.1 U
1,1,2-Trichloroethane	UG/L	0.1 U	0.1 U	5 U	5 U	0.1 U	0.1 U
1,1-Dichloroethane	UG/L	0.1 U	0.1 U	5 U	5 U	0.1 U	0.1 U
1,1-Dichloroethene	UG/L	0.2 U	0.2 U	10 U	10 U	0.2 U	0.2 U
1,2-Dichlorobenzene	UG/L	0.2 U	0.2 U	10 U	10 U	0.2 U	0.2 U
1,2-Dichloroethane	UG/L	0.3 U	0.3 U	15 U	15 U	0.3 U	0.3 U
1,2-Dichloropropane	UG/L	0.1 U	0.1 U	5 U	5 U	0.1 U	0.1 U
1,3-Dichlorobenzene	UG/L	0.4 U	0.4 U	20 U	20 U	0.4 U	0.4 U
1,4-Dichlorobenzene	UG/L	1 U	1 U	50 U	50 U	1 U	1 U
Bromodichloromethane	UG/L	0.1 U	0.1 U	5 U	5 U	0.1 U	0.1 U
Bromoform	UG/L	0.2 U	0.2 U	10 U	10 U	0.2 U	0.2 U
Bromomethane	UG/L	1.2 U	1.2 U	60 U	60 U	1.2 U	1.2 U
Carbon tetrachloride	UG/L	0.2 U	0.2 U	10 U	10 U	0.2 U	0.2 U
Chlorobenzene	UG/L	0.3 U	0.3 U	15 U	15 U	0.3 U	0.3 U
Chloroethane	UG/L	0.6 U	0.6 U	30 U	30 U	0.6 U	0.6 U
Chloroform	UG/L	0.1 U	0.1 U	5 U	5 U	0.1 U	0.1 U
Chloromethane	UG/L	0.5 U	0.5 U	25 U	25 U	0.5 U	0.5 U
Dibromochloromethane	UG/L	0.1 U	0.1 U	5 U	5 U	0.1 U	0.1 U
Dichlorodifluoromethane	UG/L	2 U	2 U	100 U	100 U	2 U	2 U
Methylene chloride	UG/L	5 U	5 U	250 U	250 U	5 U	5 U
Tetrachloroethene	UG/L	0.1 U	0.1 U	5 U	5 U	0.1 U	0.8
Trichloroethene	UG/L	0.1 U	0.1 U	649	591	26.8	26.1
Trichlorofluoromethane	UG/L	0.5 U	0.5 U	25 U	25 U	0.5 U	0.5 U
Vinyl chloride	UG/L	0.5 U	0.5 U	25 U	25 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	UG/L	0.1 U	0.1 U	973	894	26	26.4
cis-1,3-Dichloropropene	UG/L	0.2 U	0.2 U	10 U	10 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	UG/L	0.1 U	0.1 U	102	100	6	6.1
trans-1,3-Dichloropropene	UG/L	0.2 U	0.2 U	10 U	10 U	0.2 U	0.2 U
Benzene	UG/L	0.2 U	0.2 U	10 U	10 U	0.2 U	0.2 U
Chlorobenzene	UG/L	0.2 U	0.2 U	10 U	10 U	0.2 U	0.2 U
Ethyl benzene	UG/L	1	0.7	36	85	0.8	0.5
Methyl Tertiary Butyl Ether	UG/L	10 U	10 U	241	250	10 U	10 U
Toluene	UG/L	0.8	0.9	59	41	0.6	0.5
Xylenes	UG/L	1.6	2.4	135	99	1.8	1.5

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-GWDW5-01	35-GWDW5-01D	35-MW10D-02	35-MW10D-02D	35-MW19S-02	35-MW19S-02D
Lab Sample ID:		D94-5361-13	D94-5361-12	D94-5296-8	D94-5296-7	D94-5296-17	D94-5296-21
Date Sampled:		15-MAY-1994	15-MAY-1994	11-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis(1-Chloropropane)	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	UG/L	10 U	6 J	10 U	10 U	10 U	10 U
Hexachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 UJ
Hexachlorobutadiene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	UG/L	25 UJ	25 UJ	25 UJ	25 UJ	25 UJ	25 UJ
Acenaphthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-GWDW5-01	35-GWDW5-01D	35-MW10D-02	35-MW10D-02D	35-MW19S-02	35-MW19S-02D
Lab Sample ID:		D94-5361-13	D94-5361-12	D94-5296-8	D94-5296-7	D94-5296-17	D94-5296-21
Date Sampled:		15-MAY-1994	15-MAY-1994	11-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 U	25 U	25 UJ	25 UJ	25 UJ	25 UJ
Dibenzofuran	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
2,4-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	UG/L	25 UJ	25 UJ	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 U
Benzo(a)anthracene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 UJ
Chrysene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 U
Di-n-octylphthalate	UG/L	10 U	10 U	10 U	10 U	10 UJ	10 U
Benzo(b)fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 UJ	10 U
Benzo(k)fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 UJ	10 U
Benzo(a)pyrene	UG/L	10 U	10 U	10 U	10 U	10 UJ	10 U
Indeno(1,2,3-cd)pyrene	UG/L	10 U	10 U	10 U	10 U	10 UJ	10 U
Dibenz(a,h)anthracene	UG/L	10 U	10 U	10 U	10 U	10 UJ	10 U
Benzo(g,h,i)perylene	UG/L	10 U	10 U	10 U	10 U	10 UJ	10 U

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-GWDW5-01	35-GWDW5-01D	35-MW10D-02	35-MW10D-02D	35-MW19S-02	35-MW19S-02D
Lab Sample ID:		D94-5361-13	D94-5361-12	D94-5296-8	D94-5296-7	D94-5296-17	D94-5296-21
Date Sampled:		15-MAY-1994	15-MAY-1994	11-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
beta-BHC	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
delta-BHC	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
gamma-BHC (Lindane)	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
Heptachlor	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
Aldrin	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
Heptachlor epoxide	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
Endosulfan I	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
Dieldrin	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
4,4'-DDE	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
Endrin	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
Endosulfan II	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
4,4'-DDD	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
Endosulfan sulfate	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
4,4'-DDT	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
Methoxychlor	UG/L	0.5 U	0.5 U	NA	NA	NA	NA
Endrin ketone	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
Endrin aldehyde	UG/L	0.1 U	0.1 U	NA	NA	NA	NA
alpha-Chlordane	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
gamma-Chlordane	UG/L	0.05 U	0.05 U	NA	NA	NA	NA
Toxaphene	UG/L	5 U	5 U	NA	NA	NA	NA
Aroclor-1016	UG/L	1 U	1 U	NA	NA	NA	NA
Aroclor-1221	UG/L	2 U	2 U	NA	NA	NA	NA
Aroclor-1232	UG/L	1 U	1 U	NA	NA	NA	NA
Aroclor-1242	UG/L	1 U	1 U	NA	NA	NA	NA
Aroclor-1248	UG/L	1 U	1 U	NA	NA	NA	NA
Aroclor-1254	UG/L	1 U	1 U	NA	NA	NA	NA
Aroclor-1260	UG/L	1 U	1 U	NA	NA	NA	NA

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW26BW-01	35-MW26BW-01D	35-MW38AW-01	35-MW38AW-01D
Lab Sample ID:		D94-5529-17	D94-5529-18	D94-5715-8	D94-5715-9
Date Sampled:		20-MAY-1994	20-MAY-1994	20-MAY-1994	20-MAY-1994
	UNITS				
VOLATILES					
1,1,1-Trichloroethane	UG/L	50 U	50 U	5 U	5 U
1,1,2,2-Tetrachloroethane	UG/L	1 U	1 U	0.1 U	0.1 U
1,1,2-Trichloroethane	UG/L	1 U	1 U	0.1 U	0.1 U
1,1-Dichloroethane	UG/L	1 U	1 U	0.1 U	0.1 U
1,1-Dichloroethene	UG/L	2 U	2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	UG/L	2 U	2 U	0.2 U	0.2 U
1,2-Dichloroethane	UG/L	3 U	3 U	0.3 U	0.3 U
1,2-Dichloropropane	UG/L	1 U	1 U	0.1 U	0.1 U
1,3-Dichlorobenzene	UG/L	4 U	4 U	0.4 U	0.4 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	1 U	1 U
Bromodichloromethane	UG/L	1 U	1 U	0.1 U	0.1 U
Bromoform	UG/L	2 U	2 U	0.2 U	0.2 U
Bromomethane	UG/L	12 U	12 U	1.2 U	1.2 U
Carbon tetrachloride	UG/L	2 U	2 U	0.2 U	0.2 U
Chlorobenzene	UG/L	3 U	3 U	0.3 U	0.3 U
Chloroethane	UG/L	6 U	6 U	0.6 U	0.6 U
Chloroform	UG/L	1 U	1 U	0.1 U	0.1 U
Chloromethane	UG/L	5 U	5 U	0.5 U	0.5 U
Dibromochloromethane	UG/L	1 U	1 U	0.1 U	0.1 U
Dichlorodifluoromethane	UG/L	20 U	20 U	2 U	2 U
Methylene chloride	UG/L	50 U	50 U	5 U	5 U
Tetrachloroethene	UG/L	1 U	1 U	0.1 U	0.1 U
Trichloroethene	UG/L	1 U	1 U	0.1 U	0.1 U
Trichlorofluoromethane	UG/L	5 U	5 U	0.5 U	0.5 U
Vinyl chloride	UG/L	5 U	5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	UG/L	260	267	0.1 U	0.1 U
cis-1,3-Dichloropropene	UG/L	2 U	2 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	UG/L	1 U	1 U	0.1 U	0.1 U
trans-1,3-Dichloropropene	UG/L	2 U	2 U	0.2 U	0.2 U
Benzene	UG/L	2 U	2 U	0.2 U	0.2 U
Chlorobenzene	UG/L	2 U	2 U	0.2 U	0.2 U
Ethyl benzene	UG/L	2 U	2 U	0.2 U	0.2 U
Methyl Tertiary Butyl Ether	UG/L	10 U	10 U	10 U	10 U
Toluene	UG/L	2 U	2 U	0.2 U	0.2 U
Xylenes	UG/L	2 U	2 U	0.2 U	0.2 U

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW26BW-01	35-MW26BW-01D	35-MW38AW-01	35-MW38AW-01D
Lab Sample ID:		D94-5529-17	D94-5529-18	D94-5715-8	D94-5715-9
Date Sampled:		20-MAY-1994	20-MAY-1994	20-MAY-1994	20-MAY-1994
	UNITS				
SEMIVOLATILES					
Phenol	UG/L	NA	NA	NA	NA
bis(2-Chloroethyl)ether	UG/L	NA	NA	NA	NA
2-Chlorophenol	UG/L	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/L	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/L	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/L	NA	NA	NA	NA
2-Methylphenol	UG/L	NA	NA	NA	NA
2,2'-oxybis(1-Chloropropane)	UG/L	NA	NA	NA	NA
4-Methylphenol	UG/L	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/L	NA	NA	NA	NA
Hexachloroethane	UG/L	NA	NA	NA	NA
Nitrobenzene	UG/L	NA	NA	NA	NA
Isophorone	UG/L	NA	NA	NA	NA
2-Nitrophenol	UG/L	NA	NA	NA	NA
2,4-Dimethylphenol	UG/L	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/L	NA	NA	NA	NA
2,4-Dichlorophenol	UG/L	NA	NA	NA	NA
1,2,4-Trichlorobenzene	UG/L	NA	NA	NA	NA
Naphthalene	UG/L	NA	NA	NA	NA
4-Chloroaniline	UG/L	NA	NA	NA	NA
Hexachlorobutadiene	UG/L	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/L	NA	NA	NA	NA
2-Methylnaphthalene	UG/L	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/L	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/L	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/L	NA	NA	NA	NA
2-Chloronaphthalene	UG/L	NA	NA	NA	NA
2-Nitroaniline	UG/L	NA	NA	NA	NA
Dimethylphthalate	UG/L	NA	NA	NA	NA
Acenaphthylene	UG/L	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/L	NA	NA	NA	NA
3-Nitroaniline	UG/L	NA	NA	NA	NA
Acenaphthene	UG/L	NA	NA	NA	NA

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW26BW-01	35-MW26BW-01D	35-MW38AW-01	35-MW38AW-01D
Lab Sample ID:		D94-5529-17	D94-5529-18	D94-5715-8	D94-5715-9
Date Sampled:		20-MAY-1994	20-MAY-1994	20-MAY-1994	20-MAY-1994
	UNITS				
SEMIVOLATILES Cont.					
2,4-Dinitrophenol	UG/L	NA	NA	NA	NA
Dibenzofuran	UG/L	NA	NA	NA	NA
4-Nitrophenol	UG/L	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/L	NA	NA	NA	NA
Diethylphthalate	UG/L	NA	NA	NA	NA
Fluorene	UG/L	NA	NA	NA	NA
4-Chlorophenyl-phenylether	UG/L	NA	NA	NA	NA
4-Nitroaniline	UG/L	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/L	NA	NA	NA	NA
N-Nitrosodiphenylamine	UG/L	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/L	NA	NA	NA	NA
Hexachlorobenzene	UG/L	NA	NA	NA	NA
Pentachlorophenol	UG/L	NA	NA	NA	NA
Phenanthrene	UG/L	NA	NA	NA	NA
Anthracene	UG/L	NA	NA	NA	NA
Carbazole	UG/L	NA	NA	NA	NA
Di-n-butylphthalate	UG/L	NA	NA	NA	NA
Fluoranthene	UG/L	NA	NA	NA	NA
Pyrene	UG/L	NA	NA	NA	NA
Butylbenzylphthalate	UG/L	NA	NA	NA	NA
Benzo(a)anthracene	UG/L	NA	NA	NA	NA
3,3'-Dichlorobenzidine	UG/L	NA	NA	NA	NA
Chrysene	UG/L	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/L	NA	NA	NA	NA
Di-n-octylphthalate	UG/L	NA	NA	NA	NA
Benzo(b)fluoranthene	UG/L	NA	NA	NA	NA
Benzo(k)fluoranthene	UG/L	NA	NA	NA	NA
Benzo(a)pyrene	UG/L	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/L	NA	NA	NA	NA
Dibenz(a,h)anthracene	UG/L	NA	NA	NA	NA
Benzo(g,h,i)perylene	UG/L	NA	NA	NA	NA

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
ORGANICS

Client Sample ID:		35-MW26BW-01	35-MW26BW-01D	35-MW38AW-01	35-MW38AW-01D
Lab Sample ID:		D94-5529-17	D94-5529-18	D94-5715-8	D94-5715-9
Date Sampled:		20-MAY-1994	20-MAY-1994	20-MAY-1994	20-MAY-1994
	UNITS				
PESTICIDE/PCBs					
alpha-BHC	UG/L	NA	NA	NA	NA
beta-BHC	UG/L	NA	NA	NA	NA
delta-BHC	UG/L	NA	NA	NA	NA
gamma-BHC (Lindane)	UG/L	NA	NA	NA	NA
Heptachlor	UG/L	NA	NA	NA	NA
Aldrin	UG/L	NA	NA	NA	NA
Heptachlor epoxide	UG/L	NA	NA	NA	NA
Endosulfan I	UG/L	NA	NA	NA	NA
Dieldrin	UG/L	NA	NA	NA	NA
4,4'-DDE	UG/L	NA	NA	NA	NA
Endrin	UG/L	NA	NA	NA	NA
Endosulfan II	UG/L	NA	NA	NA	NA
4,4'-DDD	UG/L	NA	NA	NA	NA
Endosulfan sulfate	UG/L	NA	NA	NA	NA
4,4'-DDT	UG/L	NA	NA	NA	NA
Methoxychlor	UG/L	NA	NA	NA	NA
Endrin ketone	UG/L	NA	NA	NA	NA
Endrin aldehyde	UG/L	NA	NA	NA	NA
alpha-Chlordane	UG/L	NA	NA	NA	NA
gamma-Chlordane	UG/L	NA	NA	NA	NA
Toxaphene	UG/L	NA	NA	NA	NA
Aroclor-1016	UG/L	NA	NA	NA	NA
Aroclor-1221	UG/L	NA	NA	NA	NA
Aroclor-1232	UG/L	NA	NA	NA	NA
Aroclor-1242	UG/L	NA	NA	NA	NA
Aroclor-1248	UG/L	NA	NA	NA	NA
Aroclor-1254	UG/L	NA	NA	NA	NA
Aroclor-1260	UG/L	NA	NA	NA	NA

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TOTAL METALS

Client Sample ID:		35-GWDW5-01	35-GWDW5-01D	35-MW10D-02	35-MW10D-02D	35-MW19S-02	35-MW19S-02D
Lab Sample ID:		5361-13	5361-12	5296-8	5296-7	5296-17	5296-21
Date Sampled:		15-MAY-1994	15-MAY-1994	11-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
Aluminum	UG/L	215	177	24600	21000	101000	91500
Antimony	UG/L	46 U	46 U	46 R	46 R	46 R	46 R
Arsenic	UG/L	2.6	2 U	20.3 J	9.5 J	6.3 J	4.3 J
Barium	UG/L	20.7	20.3	271	249	287	252
Beryllium	UG/L	1 U	1 U	6	5 J	11	10
Cadmium	UG/L	0.3 U	0.23 U	3.6 J	3	10.2 J	8.1 J
Calcium	UG/L	49300	49500	443000	430000	104000	86900
Chromium	UG/L	7 U	7 U	206	181	301	263
Cobalt	UG/L	11 U	11 U	11 U	11 U	168	129
Copper	UG/L	2.7	2.9	25	23	38	36
Iron	UG/L	310	286	20900	18100	139000	118000
Lead	UG/L	1.6	1 U	9.7 J	9.7 J	64	58.1
Magnesium	UG/L	2560	2540	9690	8940	9650	8840
Manganese	UG/L	13.3	14	83	77	684	523
Mercury	UG/L	0.46 J	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
Nickel	UG/L	11 U	11 U	29	18	174	120
Potassium	UG/L	5730	5220	4670	3660	10900	9990
Selenium	UG/L	1.4 UJ	1.4 UJ	7 R	7 R	1.4 J	7 R
Silver	UG/L	3 U	3 U	3 U	3 U	3 U	3 U
Sodium	UG/L	33900	34500	9070	8970	14600	13300
Thallium	UG/L	1 UJ	1 UJ	1.1	1 U	2.8	1.9
Vanadium	UG/L	5 U	5 U	90	73	228	207
Zinc	UG/L	11 U	11 U	147 R	146 R	714	589 R

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
GROUNDWATER
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
DISSOLVED METALS

Client Sample ID:		35-GWDW5D-01	35-GWDW5D-01D	35-MW10DD-02	35-MW10DD-02D	35-MW19SD-02	35-MW19SD-02D
Lab Sample ID:		D94-5361-13	D94-5361-12	D94-5296-8	D94-5296-7	D94-5296-17	D94-5296-21
Date Sampled:		15-MAY-1994	15-MAY-1994	11-MAY-1994	11-MAY-1994	12-MAY-1994	12-MAY-1994
	UNITS						
Aluminum	UG/L	100 U	100 U	100 U	100 U	372	146
Antimony	UG/L	60 U	60 U	60 U	60 U	60 U	60 U
Arsenic	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Barium	UG/L	20 U	20 U	20 U	20 U	23	23
Beryllium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Calcium	UG/L	53200	53200	109000	109000	44400	46600
Chromium	UG/L	10 U	1 U	10 U	10 U	10 U	10 U
Cobalt	UG/L	50 U	50 U	50 U	50 U	50 U	50 U
Copper	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Iron	UG/L	50 U	50 U	306	223	254	146
Lead	UG/L	2 U	2 U	2 U	2 U	2	2 U
Magnesium	UG/L	2450	2430	2380	2370	2140	2190
Manganese	UG/L	11	11	17	19	157	165
Mercury	UG/L	0.8	0.7	0.2 U	0.2 U	1.6	0.2 U
Nickel	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Potassium	UG/L	2500 U	3620	4000 U	4000 U	4000 U	4000 U
Selenium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Silver	UG/L	2 U	2 U	2 U	2 U	2 U	2 U
Sodium	UG/L	36100	36000	7170	7190	13800	13700
Thallium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Vanadium	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Zinc	UG/L	5 U	5 U	5 U	5 U	5 U	5 U

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW02	35-SW02D	36-SW05	36-SW05D
Lab Sample ID:		4120-13	4120-14	4375-9	4375-12
Date Sampled:		12-APR-1994	12-APR-1994	18-APR-1994	18-APR-1994
	UNITS				
VOLATILES					
Chloromethane	UG/L	10 U	10 U	10 UJ	10 UJ
Bromomethane	UG/L	10 U	10 U	10 UJ	10 UJ
Vinyl Chloride	UG/L	10 U	10 U	10 UJ	10 UJ
Chloroethane	UG/L	10 U	10 U	10 UJ	10 UJ
Methylene Chloride	UG/L	10 U	10 U	10 UJ	10 UJ
Acetone	UG/L	10 U	10 U	10 UJ	10 UJ
Carbon Disulfide	UG/L	10 U	10 U	10 UJ	10 UJ
1,1-Dichloroethene	UG/L	10 U	10 U	10 UJ	10 UJ
1,1-Dichloroethane	UG/L	10 U	10 U	10 UJ	10 UJ
1,2-Dichloroethene (total)	UG/L	10 U	10 U	10 UJ	10 UJ
Chloroform	UG/L	10 U	10 U	10 UJ	10 UJ
1,2-Dichloroethane	UG/L	10 U	10 U	10 UJ	10 UJ
2-Butanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
1,1,1-Trichloroethane	UG/L	10 U	10 U	10 UJ	10 UJ
Carbon Tetrachloride	UG/L	10 U	10 U	10 UJ	10 UJ
Bromodichloromethane	UG/L	10 U	10 U	10 UJ	10 UJ
1,2-Dichloropropane	UG/L	10 U	10 U	10 UJ	10 UJ
cis-1,3-Dichloropropene	UG/L	10 U	10 U	10 UJ	10 UJ
Trichloroethene	UG/L	10 U	10 U	10 UJ	10 UJ
Dibromochloromethane	UG/L	10 U	10 U	10 UJ	10 UJ
1,1,2-Trichloroethane	UG/L	10 U	10 U	10 UJ	10 UJ
Benzene	UG/L	10 U	10 U	10 UJ	10 UJ
trans-1,3-Dichloropropene	UG/L	10 U	10 U	10 UJ	10 UJ
Bromoform	UG/L	10 U	10 U	10 UJ	10 UJ
4-Methyl-2-Pentanone	UG/L	10 U	10 U	10 UJ	10 UJ
2-Hexanone	UG/L	10 U	10 U	10 UJ	10 UJ
Tetrachloroethene	UG/L	10 U	10 U	10 UJ	10 UJ
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	10 UJ	10 UJ
Toluene	UG/L	10 U	10 U	10 UJ	10 UJ
Chlorobenzene	UG/L	10 U	10 U	10 UJ	10 UJ
Ethylbenzene	UG/L	10 U	10 U	10 UJ	10 UJ
Styrene	UG/L	10 U	10 U	10 UJ	10 UJ
Xylene (total)	UG/L	10 U	10 U	10 UJ	10 UJ

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW02	35-SW02D	36-SW05	36-SW05D
Lab Sample ID:		4120-13	4120-14	4375-9	4375-12
Date Sampled:		12-APR-1994	12-APR-1994	18-APR-1994	18-APR-1994
	UNITS				
SEMIVOLATILES					
Phenol	UG/L	10 U	10 U	10 UJ	10 UJ
bis(2-Chloroethyl)ether	UG/L	10 U	10 U	10 UJ	10 U
2-Chlorophenol	UG/L	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 UJ	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 UJ	10 U
1,2-Dichlorobenzene	UG/L	10 U	10 U	10 UJ	10 U
2-Methylphenol	UG/L	10 U	10 U	10 U	10 U
2,2'-oxybis(1-Chloropropane)	UG/L	10 U	10 U	10 UJ	10 U
4-Methylphenol	UG/L	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	10 UJ	10 U
Hexachloroethane	UG/L	10 U	10 U	10 UJ	10 U
Nitrobenzene	UG/L	10 U	10 U	10 UJ	10 U
Isophorone	UG/L	10 U	10 U	10 UJ	10 U
2-Nitrophenol	UG/L	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	UG/L	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	UG/L	10 U	10 U	10 UJ	10 U
2,4-Dichlorophenol	UG/L	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	10 UJ	10 U
Naphthalene	UG/L	10 U	10 U	10 UJ	10 U
4-Chloroaniline	UG/L	10 U	10 U	10 UJ	10 U
Hexachlorobutadiene	UG/L	10 U	10 U	10 UJ	10 U
4-Chloro-3-methylphenol	UG/L	10 U	10 U	10 U	10 U
2-Methylnaphthalene	UG/L	10 U	10 U	10 UJ	10 U
Hexachlorocyclopentadiene	UG/L	10 U	10 U	10 UJ	10 U
2,4,6-Trichlorophenol	UG/L	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	UG/L	25 U	25 U	25 U	25 U
2-Chloronaphthalene	UG/L	10 U	10 U	10 UJ	10 U
2-Nitroaniline	UG/L	25 U	25 U	25 UJ	25 U
Dimethylphthalate	UG/L	10 U	10 U	10 UJ	10 UJ
Acenaphthylene	UG/L	10 U	10 U	10 UJ	10 U
2,6-Dinitrotoluene	UG/L	10 U	10 U	10 UJ	10 U
3-Nitroaniline	UG/L	25 U	25 U	25 UJ	25 U
Acenaphthene	UG/L	10 U	10 U	10 UJ	10 U

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW02	35-SW02D	36-SW05	36-SW05D
Lab Sample ID:		4120-13	4120-14	4375-9	4375-12
Date Sampled:		12-APR-1994	12-APR-1994	18-APR-1994	18-APR-1994
	UNITS				
SEMIVOLATILES Cont.					
2,4-Dinitrophenol	UG/L	25 U	25 U	25 UJ	25 U
Dibenzofuran	UG/L	10 U	10 U	10 UJ	10 U
4-Nitrophenol	UG/L	10 U	10 U	10 U	10 UJ
2,4-Dinitrotoluene	UG/L	10 U	10 U	10 UJ	10 U
Diethylphthalate	UG/L	10 U	10 U	10 UJ	10 U
Fluorene	UG/L	10 U	10 U	10 UJ	10 U
4-Chlorophenyl-phenylether	UG/L	10 U	10 U	10 UJ	10 U
4-Nitroaniline	UG/L	25 U	25 U	25 UJ	25 U
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	UG/L	10 U	10 U	10 UJ	10 UJ
4-Bromophenyl-phenylether	UG/L	10 U	10 U	10 UJ	10 U
Hexachlorobenzene	UG/L	10 U	10 U	10 UJ	10 U
Pentachlorophenol	UG/L	25 U	25 U	25 U	25 U
Phenanthrene	UG/L	10 U	10 U	10 UJ	10 U
Anthracene	UG/L	10 U	10 U	10 UJ	10 U
Carbazole	UG/L	10 U	10 U	10 UJ	10 U
Di-n-butylphthalate	UG/L	10 U	10 U	10 UJ	10 U
Fluoranthene	UG/L	10 U	10 U	10 UJ	10 U
Pyrene	UG/L	10 U	10 U	10 UJ	10 U
Butylbenzylphthalate	UG/L	10 U	10 U	10 UJ	10 UJ
Benzo(a)anthracene	UG/L	10 U	10 U	10 UJ	10 U
3,3'-Dichlorobenzidine	UG/L	10 U	10 U	10 UJ	10 U
Chrysene	UG/L	10 U	10 U	10 UJ	10 UJ
bis(2-Ethylhexyl)phthalate	UG/L	10 UJ	10 UJ	10 UJ	10 UJ
Di-n-octylphthalate	UG/L	10 UJ	10 UJ	10 UJ	10 U
Benzo(b)fluoranthene	UG/L	10 U	10 U	10 UJ	10 U
Benzo(k)fluoranthene	UG/L	10 U	10 U	10 UJ	10 U
Benzo(a)pyrene	UG/L	10 U	10 U	10 UJ	10 U
Indeno(1,2,3-cd)pyrene	UG/L	10 U	10 U	10 UJ	10 U
Dibenz(a,h)anthracene	UG/L	10 U	10 U	10 UJ	10 U
Benzo(g,h,i)perylene	UG/L	10 U	10 U	10 UJ	10 U

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL ORGANICS

Client Sample ID:		35-SW02	35-SW02D	36-SW05	36-SW05D
Lab Sample ID:		4120-13	4120-14	4375-9	4375-12
Date Sampled:		12-APR-1994	12-APR-1994	18-APR-1994	18-APR-1994
	UNITS				
PESTCIDE/PCBs					
alpha-BHC	UG/L	0.1 U	0.1 U	0.05 UJ	0.05 UJ
beta-BHC	UG/L	0.1 U	0.1 U	0.05 UJ	0.05 UJ
delta-BHC	UG/L	0.1 U	0.1 U	0.05 UJ	0.05 UJ
gamma-BHC (Lindane)	UG/L	0.05 U	0.05 U	0.05 UJ	0.05 UJ
Heptachlor	UG/L	0.1 U	0.1 U	0.05 UJ	0.05 UJ
Aldrin	UG/L	0.1 U	0.1 U	0.05 UJ	0.05 UJ
Heptachlor epoxide	UG/L	0.1 U	0.1 U	0.05 UJ	0.05 UJ
Endosulfan I	UG/L	0.1 U	0.1 U	0.05 UJ	0.05 UJ
Dieldrin	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 UJ
4,4'-DDE	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 UJ
Endrin	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 UJ
Endosulfan II	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 UJ
4,4'-DDD	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 UJ
Endosulfan sulfate	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 UJ
4,4'-DDT	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 UJ
Methoxychlor	UG/L	0.5 U	0.5 U	0.05 U	0.50 U
Endrin ketone	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 UJ
Endrin aldehyde	UG/L	0.1 U	0.1 U	0.1 UJ	0.1 UJ
alpha-Chlordane	UG/L	0.05 U	0.05 U	0.05 UJ	0.16 J
gamma-Chlordane	UG/L	0.05 U	0.05 U	0.05 UJ	0.05 UJ
Toxaphene	UG/L	5 U	5 U	5 UJ	5 UJ
Aroclor-1016	UG/L	1 U	1 U	1 UJ	1 UJ
Aroclor-1221	UG/L	2 U	2 U	2 UJ	2 UJ
Aroclor-1232	UG/L	1 U	1 U	1 UJ	1 UJ
Aroclor-1242	UG/L	1 U	1 U	1 UJ	1 UJ
Aroclor-1248	UG/L	1 U	1 U	1 UJ	1 UJ
Aroclor-1254	UG/L	1 U	1 U	1 UJ	1 UJ
Aroclor-1260	UG/L	1 U	1 U	1 UJ	1 UJ

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SURFACE WATER
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-SW02	35-SW02D	36-SW05	36-SW05D
Lab Sample ID:		4120-13	4120-14	4375-9	4375-12
Date Sampled:		12-APR-1994	12-APR-1994	18-APR-1994	18-APR-1994
	UNITS				
Aluminum	UG/L	1 UJ	1 UJ	1.3	1 U
Antimony	UG/L	1 U	1 U	3.9	6.8 J
Arsenic	UG/L	2 U	2 U	2.4 U	1 U
Barium	UG/L	16.7	18.6	19.6 U	17.4 U
Beryllium	UG/L	1 UJ	1 UJ	1 U	1 U
Cadmium	UG/L	1 UJ	1 UJ	1 U	1 U
Calcium	UG/L	58100	60400	41700	41400
Chromium	UG/L	1 U	1 U	1.7 U	2.4 U
Cobalt	UG/L	9 U	9 U	9 U	9 U
Copper	UG/L	4.4 U	5.2 U	7 U	4.9 U
Iron	UG/L	850 J	886 J	967 J	751 J
Lead	UG/L	1.4	1	3.3 U	2 U
Magnesium	UG/L	2390	2470	17900	18400
Manganese	UG/L	29.1	29.6	31.9	25.7
Mercury	UG/L	0.2 U	0.2 U	0.17 U	0.36 U
Nickel	UG/L	10 U	10 U	10 U	22.8
Potassium	UG/L	2170	2540	8210	8380
Selenium	UG/L	1 UJ	1 UJ	1 U	1 U
Silver	UG/L	1 U	1 U	1 U	1.3 U
Sodium	UG/L	42600	44600	192000	106500
Thallium	UG/L	1 U	1 U	1 UJ	1 UJ
Vanadium	UG/L	4 U	4 U	11.2	9.7
Zinc	UG/L	17.9 R	12.8 R	28.1 U	9.5 U

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENT
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TAL ORGANICS

Client Sample ID:		35-SD04-06	35-SD04-06D	35-SD02-06	35-SD02-06D	36-SD05-06	36-SD05-06D
Lab Sample ID:		4585-1	4585-2	4585-6	4585-7	5608-13	5608-17
Date Sampled:		20-APR-1994	20-APR-1994	20-APR-1994	20-APR-1994	18-MAY-1994	18-MAY-1994
VOLATILES							
Chloromethane	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
Bromomethane	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 UJ
Vinyl Chloride	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
Chloroethane	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
Methylene Chloride	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
Acetone	UG/KG	879 UJ	251 UJ	13 UJ	16 J	53 UJ	25 UJ
Carbon Disulfide	UG/KG	879 U	251 UJ	13 U	12 U	146 R	25 UJ
1,1-Dichloroethene	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
1,1-Dichloroethane	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
1,2-Dichloroethene (total)	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
Chloroform	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
1,2-Dichloroethane	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
2-Butanone	UG/KG	879 UJ	251 UJ	13 UJ	12 UJ	53 UJ	25 UJ
1,1,1-Trichloroethane	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
Carbon Tetrachloride	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
Bromodichloromethane	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
1,2-Dichloropropane	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
cis-1,3-Dichloropropene	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
Trichloroethene	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
Dibromochloromethane	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
1,1,2-Trichloroethane	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
Benzene	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
trans-1,3-Dichloropropene	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
Bromoform	UG/KG	879 U	251 UJ	13 UJ	12 UJ	53 UJ	25 U
4-Methyl-2-Pentanone	UG/KG	879 UJ	251 UJ	13 UJ	12 UJ	53 UJ	25 UJ
2-Hexanone	UG/KG	879 UJ	251 UJ	13 UJ	12 UJ	53 UJ	25 UJ
Tetrachloroethene	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
1,1,2,2-Tetrachloroethane	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
Toluene	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
Chlorobenzene	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
Ethylbenzene	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
Styrene	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U
Xylene (total)	UG/KG	879 U	251 UJ	13 U	12 U	53 UJ	25 U

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENT
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TAL ORGANICS

Client Sample ID:		35-SD04-06	35-SD04-06D	35-SD02-06	35-SD02-06D	36-SD05-06	36-SD05-06D
Lab Sample ID:		4585-1	4585-2	4585-6	4585-7	5608-13	5608-17
Date Sampled:		20-APR-1994	20-APR-1994	20-APR-1994	20-APR-1994	18-MAY-1994	18-MAY-1994
SEMIVOLATILES							
Phenol	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
bis(2-Chloroethyl)ether	UG/KG	580 U	829 U	421 U	410 U	1737 UJ	838 UJ
2-Chlorophenol	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
1,3-Dichlorobenzene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
1,4-Dichlorobenzene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
1,2-Dichlorobenzene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
2-Methylphenol	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
2,2'-oxybis(1-Chloropropane)	UG/KG	580 UJ	829 UJ	421 UJ	410 UJ	1737 U	838 U
4-Methylphenol	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
N-Nitroso-di-n-propylamine	UG/KG	580 UJ	829 UJ	421 UJ	410 UJ	1737 U	838 U
Hexachloroethane	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
Nitrobenzene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
Isophorone	UG/KG	580 U	829 U	421 U	410 U	1737 UJ	838 UJ
2-Nitrophenol	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
2,4-Dimethylphenol	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
bis(2-Chloroethoxy)methane	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
2,4-Dichlorophenol	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
1,2,4-Trichlorobenzene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
Naphthalene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
4-Chloroaniline	UG/KG	580 U	829 U	421 U	410 U	1737 UJ	838 UJ
Hexachlorobutadiene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
4-Chloro-3-methylphenol	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
2-Methylnaphthalene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
Hexachlorocyclopentadiene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
2,4,6-Trichlorophenol	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
2,4,5-Trichlorophenol	UG/KG	1406 U	2010 U	1022 U	995 U	4210 U	2030 U
2-Chloronaphthalene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
2-Nitroaniline	UG/KG	1406 U	2010 U	1022 U	995 U	4210 U	2030 U
Dimethylphthalate	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
Acenaphthylene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
2,6-Dinitrotoluene	UG/KG	580 U	829 U	421 U	410 U	1737 UJ	838 UJ
3-Nitroaniline	UG/KG	1406 UJ	2010 UJ	1022 UJ	995 UJ	4210 UJ	2030 UJ
Acenaphthene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENT
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TAL ORGANICS

Client Sample ID:		35-SD04-06	35-SD04-06D	35-SD02-06	35-SD02-06D	36-SD05-06	36-SD05-06D
Lab Sample ID:		4585-1	4585-2	4585-6	4585-7	5608-13	5608-17
Date Sampled:		20-APR-1994	20-APR-1994	20-APR-1994	20-APR-1994	18-MAY-1994	18-MAY-1994
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/KG	1406 UJ	2010 UJ	1022 UJ	995 UJ	4210 UJ	2030 UJ
Dibenzofuran	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
4-Nitrophenol	UG/KG	580 UJ	829 UJ	421 UJ	410 UJ	1737 UJ	838 UJ
2,4-Dinitrotoluene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
Diethylphthalate	UG/KG	580 U	829 U	421 U	410 U	2135 J	838 UJ
Fluorene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
4-Chlorophenyl-phenylether	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
4-Nitroaniline	UG/KG	1406 UJ	2010 UJ	1022 UJ	995 UJ	4210 UJ	2030 UJ
4,6-Dinitro-2-methylphenol	UG/KG	1406 U	2010 U	1022 U	995 U	4210 UJ	2030 U
N-Nitrosodiphenylamine	UG/KG	580 U	829 U	421 U	410 U	1737 UJ	838 U
4-Bromophenyl-phenylether	UG/KG	580 U	829 U	421 U	410 U	1737 UJ	838 U
Hexachlorobenzene	UG/KG	580 U	829 U	421 U	410 U	1737 UJ	838 U
Pentachlorophenol	UG/KG	1406 U	2010 U	1022 U	995 U	4210 UJ	2030 U
Phenanthrene	UG/KG	580 U	829 U	421 U	410 U	1737 UJ	838 U
Anthracene	UG/KG	580 U	829 U	421 U	410 U	1737 UJ	838 U
Carbazole	UG/KG	580 U	829 U	421 U	410 U	1737 UJ	838 U
Di-n-butylphthalate	UG/KG	580 U	829 U	421 U	410 U	1737 UJ	838 U
Fluoranthene	UG/KG	580 U	829 U	421 U	410 U	1737 UJ	838 U
Pyrene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
Butylbenzylphthalate	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
Benzo(a)anthracene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
3,3'-Dichlorobenzidine	UG/KG	580 UJ	829 UJ	421 UJ	410 UJ	1737 UJ	838 UJ
Chrysene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
bis(2-Ethylhexyl)phthalate	UG/KG	580 UJ	829 UJ	421 UJ	410 UJ	1737 UJ	838 UJ
Di-n-octylphthalate	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
Benzo(b)fluoranthene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
Benzo(k)fluoranthene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
Benzo(a)pyrene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
Indeno(1,2,3-cd)pyrene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
Dibenz(a,h)anthracene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U
Benzo(g,h,i)perylene	UG/KG	580 U	829 U	421 U	410 U	1737 U	838 U

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENT
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TAL ORGANICS

Client Sample ID:		35-SD04-06	35-SD04-06D	35-SD02-06	35-SD02-06D	36-SD05-06	36-SD05-06D
Lab Sample ID:		4585-1	4585-2	4585-6	4585-7	5608-13	5608-17
Date Sampled:		20-APR-1994	20-APR-1994	20-APR-1994	20-APR-1994	18-MAY-1994	18-MAY-1994
PESTICIDE/PCBs							
alpha-BHC	UG/KG	2.9 U	4.3 U	2.2 U	2.1 U	8.9 U	24 U
beta-BHC	UG/KG	2.9 U	4.3 U	2.2 U	2.1 U	8.9 U	24 U
delta-BHC	UG/KG	2.9 U	4.3 U	2.2 U	0.5 J	8.9 U	24 U
gamma-BHC (Lindane)	UG/KG	2.9 U	4.3 U	2.2 U	2.1 U	8.9 U	24 U
Heptachlor	UG/KG	2.9 U	4.3 U	2.2 U	2.1 U	8.9 U	24 U
Aldrin	UG/KG	2.9 U	4.3 U	2.2 U	2.1 U	8.9 U	24 U
Heptachlor epoxide	UG/KG	2.9 U	2.6 J	0.43 J	0.46 J	8.9 U	24 U
Endosulfan I	UG/KG	2.9 U	4.3 U	2.2 U	2.1 U	8.9 U	24 U
Dieldrin	UG/KG	1.6 J	8.3 U	4.2 U	0.94 J	17 U	47 U
4,4'-DDE	UG/KG	31 J	170 J	1.8 J	27 J	242 J	196 J
Endrin	UG/KG	2.9 U	1.8 J	2.2 U	2.1 U	8.9 U	24 U
Endosulfan II	UG/KG	1.3 J	4.4 J	4.2 U	1.1 J	17 U	47 U
4,4'-DDD	UG/KG	43	128	2.3 J	31 J	223 J	222 J
Endosulfan sulfate	UG/KG	5.6 U	8.3 U	4.2 U	4.1 U	17 U	47 U
4,4'-DDT	UG/KG	4.9 J	13	0.66 J	2.6 J	31 J	15 J
Methoxychlor	UG/KG	0.86 J	3.5 J	0.49 J	21 U	90 U	243 U
Endrin ketone	UG/KG	5.6 U	8.3 U	4.2 U	4.1 U	17 U	47 U
Endrin aldehyde	UG/KG	5.6 U	8.3 U	4.2 U	4.1 U	7.6 J	14 J
alpha-Chlordane	UG/KG	4	8.8	0.51 J	4.9 J	8.9 U	24 U
gamma-Chlordane	UG/KG	3.6	10	2.2 UJ	4.8 J	8.9 U	24 U
Toxaphene	UG/KG	289 U	427 U	217 U	211 U	895 U	2430 U
Aroclor-1016	UG/KG	56 U	83 U	42 U	41 U	174 U	471 U
Aroclor-1221	UG/KG	114 U	168 U	86 U	83 U	353 U	957 U
Aroclor-1232	UG/KG	56 U	83 U	42 U	41 U	174 U	471 U
Aroclor-1242	UG/KG	56 U	83 U	42 U	41 U	174 U	471 U
Aroclor-1248	UG/KG	56 U	83 U	42 U	41 U	174 U	471 U
Aroclor-1254	UG/KG	56 U	83 U	42 U	41 U	174 U	471 U
Aroclor-1260	UG/KG	56 U	83 U	42 U	41 U	174 U	471 U

FIELD DUPLICATE SAMPLE SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
SEDIMENT
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-SD04-06	35-SD04-06D	35-SD02-06	35-SD02-06D	36-SD05-06	36-SD05-06D
Lab Sample ID:		4585-1	4585-2	4585-6	4585-7	5608-13	5608-17
Date Sampled:		20-APR-1994	20-APR-1994	20-APR-1994	20-APR-1994	18-MAY-1994	18-MAY-1994
	UNITS						
Aluminum	MG/KG	1950 J	8310 J	484	333	11100	4260
Antimony	MG/KG	8.1 R	11.6 R	5.9 R	6.6 R	24.2 UJ	11.7 UJ
Arsenic	MG/KG	0.97 J	2 J	0.46 J	0.25 UJ	9 R	3 J
Barium	MG/KG	10	39.3	3.8	3.3	25.7	8.4
Beryllium	MG/KG	0.18 U	0.33 R	0.18 R	0.12 U	0.53 U	0.25 U
Cadmium	MG/KG	0.88 R	1.3 R	0.64 R	0.62 R	0.88 U	0.29 U
Calcium	MG/KG	4940 J	6100 J	3831 J	1900 J	5670 J	2010 J
Chromium	MG/KG	5.7 U	27.4 J	1.7 U	1.9 U	19.4	6.3
Cobalt	MG/KG	1.9 U	3.5	1.8	1.4 U	5.8 U	2.8 U
Copper	MG/KG	4.2	20.6	1.2 U	0.44 U	24.4	11.4
Iron	MG/KG	3560 J	14600 J	1050 J	558 J	14900	5270
Lead	MG/KG	32 J	52 J	4.7 J	4 J	115	29.7
Magnesium	MG/KG	260	1000	88.1	46.8 U	2750	1220
Manganese	MG/KG	11 J	23.4 J	3.2 J	2 J	36.8	14.2
Mercury	MG/KG	0.09 R	0.12 R	0.07 J	0.06 R	1.4 R	0.62 R
Nickel	MG/KG	2.4 U	6.5 U	1.4 U	1.9 U	13.6 B	10.1
Potassium	MG/KG	429 U	613 U	312 U	303 U	1280 U	619 U
Selenium	MG/KG	0.25 UJ	0.45 J	0.23 J	0.17 UJ	3.7 UJ	0.79 U
Silver	MG/KG	0.04 U	0.05 U	0.03 U	0.02 U	1.6 U	0.76 U
Sodium	MG/KG	518	875	303 U	294 U	4980	2330
Thallium	MG/KG	0.18 U	0.33	0.13 U	0.12 U	0.89	0.38
Vanadium	MG/KG	4.8 J	17.7 J	0.94 J	0.91 J	39.3	18
Zinc	MG/KG	45 R	213 J	17.3 R	9.1 R	145 R	52.2 R

APPENDIX Z
RI/FS QA/QC SUMMARIES

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL VOLATILES

Client Sample ID:		35-TB30	35-TB31	35-TB32	35-TB33	35-RB36	35-TB35
Lab Sample ID:		5296-15	5296-25	5361-20	5361-9	5529-10	5529-11
Date Sampled:		12-MAY-1994	13-MAY-1994	16-MAY-1994	16-MAY-1994	18-MAY-1994	18-MAY-1994
	UNITS						
VOLATILES							
Chloromethane	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Bromomethane	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Vinyl Chloride	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Chloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Methylene Chloride	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Acetone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Carbon Disulfide	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
1,1-Dichloroethene	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
1,1-Dichloroethane	UG/L	10 UJ	10 UJ	10 U	10 U	10 UJ	10 UJ
1,2-Dichloroethene (total)	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Chloroform	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
1,2-Dichloroethane	UG/L	10 UJ	10 UJ	10 U	10 U	10 UJ	10 UJ
2-Butanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,1-Trichloroethane	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Carbon Tetrachloride	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Bromodichloromethane	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
1,2-Dichloropropane	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
cis-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Trichloroethene	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Dibromochloromethane	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
1,1,2-Trichloroethane	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Benzene	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
trans-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Bromoform	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
4-Methyl-2-Pentanone	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
2-Hexanone	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Tetrachloroethene	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
1,1,2,2-Tetrachloroethane	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Toluene	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Chlorobenzene	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Ethylbenzene	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Styrene	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ
Xylene (total)	UG/L	10 UJ	10 UJ	10 U	10 U	10 U	10 UJ

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL VOLATILES

Client Sample ID:		35-TB36	35-TB38	35-TB34	35-TB39	35-SDER01	35-RB01
Lab Sample ID:		5529-12	5529-13	5529-9	5715-5	4120-17	4120-19
Date Sampled:		18-MAY-1994	19-MAY-1994	17-MAY-1994	21-MAY-1994	13-APR-1994	13-APR-1994
	UNITS						
VOLATILES							
Chloromethane	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Bromomethane	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Vinyl Chloride	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Chloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Methylene Chloride	UG/L	10 U	10 UJ	10 UJ	10 UJ	5 J	10 U
Acetone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Carbon Disulfide	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
1,1-Dichloroethene	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
1,1-Dichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
1,2-Dichloroethene (total)	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Chloroform	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
1,2-Dichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
2-Butanone	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,1-Trichloroethane	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Carbon Tetrachloride	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Bromodichloromethane	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
1,2-Dichloropropane	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
cis-1,3-Dichloropropene	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Trichloroethene	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Dibromochloromethane	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
1,1,2-Trichloroethane	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Benzene	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
trans-1,3-Dichloropropene	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Bromoform	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
4-Methyl-2-Pentanone	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
2-Hexanone	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Tetrachloroethene	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Toluene	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Chlorobenzene	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Ethylbenzene	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Styrene	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Xylene (total)	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL VOLATILES

Client Sample ID:		35-TB01	35-TB02	35-TB03	35-TB04	35-TB05	35-TB06
Lab Sample ID:		4120-5	4120-6	4120-7	4120-15	4120-16	4120-18
Date Sampled:		12-APR-1994	12-APR-1994	12-APR-1994	12-APR-1994	13-APR-1994	13-APR-1994
	UNITS						
VOLATILES							
Chloromethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,1-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	UG/L	10 U	10 U	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL VOLATILES

Client Sample ID:		35-TB07	35-TB08	35-RB05	36-RB06	35-RB03	35-RB07
Lab Sample ID:		4120-20	4120-21	4375-2	4375-8	4375-1	4375-17
Date Sampled:		13-APR-1994	14-APR-1994	17-APR-1994	18-APR-1994	16-APR-1994	19-APR-1994
	UNITS						
VOLATILES							
Chloromethane	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Bromomethane	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Vinyl Chloride	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Chloroethane	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Methylene Chloride	UG/L	10 U	5 J	10 UJ	5 J	10 UJ	10 U
Acetone	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Carbon Disulfide	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
1,1-Dichloroethene	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
1,1-Dichloroethane	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
1,2-Dichloroethene (total)	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Chloroform	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
1,2-Dichloroethane	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
2-Butanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
1,1,1-Trichloroethane	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Carbon Tetrachloride	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Bromodichloromethane	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
1,2-Dichloropropane	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
cis-1,3-Dichloropropene	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Trichloroethene	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Dibromochloromethane	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
1,1,2-Trichloroethane	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Benzene	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
trans-1,3-Dichloropropene	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Bromoform	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
4-Methyl-2-Pentanone	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
2-Hexanone	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Tetrachloroethene	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Toluene	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Chlorobenzene	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Ethylbenzene	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Styrene	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Xylene (total)	UG/L	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL VOLATILES

Client Sample ID:		35-TB11	35-TB12	35-FB01	35-FB02	35-RB08	35-RB09
Lab Sample ID:		4375-3	4375-4	4581-14	4581-15	4581-2	4581-8
Date Sampled:		18-APR-1994	18-APR-1994	02-MAY-1994	02-MAY-1994	20-APR-1994	26-APR-1994
	UNITS						
VOLATILES							
Chloromethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Bromomethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Vinyl Chloride	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Chloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Methylene Chloride	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Acetone	UG/L	25 J	10 UJ	10 UJ	43 J	10 UJ	10 UJ
Carbon Disulfide	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1-Dichloroethene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1-Dichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,2-Dichloroethene (total)	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Chloroform	UG/L	10 UJ	10 UJ	8 J	10 UJ	10 UJ	10 UJ
1,2-Dichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
2-Butanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,1-Trichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Carbon Tetrachloride	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Bromodichloromethane	UG/L	10 UJ	10 UJ	10 J	10 UJ	10 UJ	10 UJ
1,2-Dichloropropane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
cis-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Trichloroethene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Dibromochloromethane	UG/L	10 UJ	10 UJ	10 J	10 UJ	10 UJ	10 UJ
1,1,2-Trichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Benzene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
trans-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Bromoform	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
4-Methyl-2-Pentanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
2-Hexanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Tetrachloroethene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,2,2-Tetrachloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Toluene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Chlorobenzene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Ethylbenzene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Styrene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Xylene (total)	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL VOLATILES

Client Sample ID:		35-RB10	35-RB11	35-RB12	35-RB13	35-TB15	35-TB21
Lab Sample ID:		4581-12	4581-13	4581-17	4581-18	4581-3	4581-9
Date Sampled:		29-APR-1994	30-APR-1994	03-MAY-1994	04-MAY-1994	21-APR-1994	26-APR-1994
	UNITS						
VOLATILES							
Chloromethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Bromomethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Vinyl Chloride	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Chloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Methylene Chloride	UG/L	10 UJ	10 UJ	10 UJ	5 J	10 UJ	10 UJ
Acetone	UG/L	10 UJ	11 J	10 UJ	10 UJ	10 UJ	10 UJ
Carbon Disulfide	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1-Dichloroethene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1-Dichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,2-Dichloroethene (total)	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Chloroform	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,2-Dichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
2-Butanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,1-Trichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Carbon Tetrachloride	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Bromodichloromethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,2-Dichloropropane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
cis-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Trichloroethene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Dibromochloromethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,2-Trichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Benzene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
trans-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Bromoform	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
4-Methyl-2-Pentanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
2-Hexanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Tetrachloroethene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,2,2-Tetrachloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Toluene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Chlorobenzene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Ethylbenzene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Styrene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Xylene (total)	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL VOLATILES

Client Sample ID:		35-TB22	35-TB23	35-TB24	35-TB28	35-RB12	35-RB13
Lab Sample ID:		4581-10	4581-11	4581-16	4581-19	5167-12	5167-13
Date Sampled:		29-APR-1994	03-MAY-1994	04-MAY-1994	04-MAY-1994	06-MAY-1994	07-MAY-1994
	UNITS						
VOLATILES							
Chloromethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Bromomethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Vinyl Chloride	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Chloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Methylene Chloride	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Acetone	UG/L	10 UJ	10 UJ	36 J	10 UJ	10 UJ	10 UJ
Carbon Disulfide	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1-Dichloroethene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1-Dichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,2-Dichloroethene (total)	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Chloroform	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,2-Dichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
2-Butanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,1-Trichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Carbon Tetrachloride	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Bromodichloromethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,2-Dichloropropane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
cis-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Trichloroethene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Dibromochloromethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,2-Trichloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Benzene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
trans-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Bromoform	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
4-Methyl-2-Pentanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
2-Hexanone	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Tetrachloroethene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,2,2-Tetrachloroethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Toluene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Chlorobenzene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Ethylbenzene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Styrene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Xylene (total)	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL VOLATILES

Client Sample ID:		35-TB26	35-RB14	35-TB27	35-RB18	35-TB28
Lab Sample ID:		5167-14	5167-19	5167-20	5167-22	5167-23
Date Sampled:		07-MAY-1994	08-MAY-1994	09-MAY-1994	10-MAY-1994	10-MAY-1994
	UNITS					
VOLATILES						
Chloromethane	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Bromomethane	UG/L	10 UJ	10 U	10 U	10 U	10 U
Vinyl Chloride	UG/L	10 UJ	10 U	10 U	10 U	10 U
Chloroethane	UG/L	10 UJ	10 U	10 U	10 U	10 U
Methylene Chloride	UG/L	10 UJ	10 U	10 U	10 U	10 U
Acetone	UG/L	10 UJ	10 U	10 U	10 U	32
Carbon Disulfide	UG/L	10 UJ	10 U	10 U	10 U	10 U
1,1-Dichloroethene	UG/L	10 UJ	10 U	10 U	10 U	10 U
1,1-Dichloroethane	UG/L	10 UJ	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	UG/L	10 UJ	10 U	10 U	10 U	10 U
Chloroform	UG/L	10 UJ	10 U	10 U	10 U	10 U
1,2-Dichloroethane	UG/L	10 UJ	10 U	10 U	10 U	10 U
2-Butanone	UG/L	10 UJ	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	UG/L	10 UJ	10 U	10 U	10 U	10 U
Carbon Tetrachloride	UG/L	10 UJ	10 U	10 U	10 U	10 U
Bromodichloromethane	UG/L	10 UJ	10 U	10 U	10 U	10 U
1,2-Dichloropropane	UG/L	10 UJ	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	UG/L	10 UJ	10 U	10 U	10 U	10 U
Trichloroethene	UG/L	10 UJ	10 U	10 U	10 U	10 U
Dibromochloromethane	UG/L	10 UJ	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	UG/L	10 UJ	10 U	10 U	10 U	10 U
Benzene	UG/L	10 UJ	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	UG/L	10 UJ	10 U	10 U	10 U	10 U
Bromoform	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
4-Methyl-2-Pentanone	UG/L	10 UJ	10 U	10 U	10 U	10 U
2-Hexanone	UG/L	10 UJ	10 U	10 U	10 U	10 U
Tetrachloroethene	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
1,1,2,2-Tetrachloroethane	UG/L	10 UJ	10 U	10 U	10 U	10 U
Toluene	UG/L	10 UJ	10 U	10 U	10 U	10 U
Chlorobenzene	UG/L	10 UJ	10 U	10 U	10 U	10 U
Ethylbenzene	UG/L	10 UJ	10 U	10 U	10 U	10 U
Styrene	UG/L	10 UJ	10 U	10 U	10 U	10 U
Xylene (total)	UG/L	10 UJ	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL VOLATILES

Client Sample ID: Lab Sample ID: Date Sampled:		MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	UNITS						
VOLATILES							
Chloromethane	UG/L	10 UJ	10 UJ	ND	ND		0/47
Bromomethane	UG/L	10 UJ	10 UJ	ND	ND		0/47
Vinyl Chloride	UG/L	10 UJ	10 UJ	ND	ND		0/47
Chloroethane	UG/L	10 UJ	10 UJ	ND	ND		0/47
Methylene Chloride	UG/L	10 UJ	10 UJ	5 J	5 J	35-RB13	4/47
Acetone	UG/L	10 UJ	10 UJ	11 J	43 J	35-FB02	5/47
Carbon Disulfide	UG/L	10 UJ	10 UJ	ND	ND		0/47
1,1-Dichloroethene	UG/L	10 UJ	10 UJ	ND	ND		0/47
1,1-Dichloroethane	UG/L	10 UJ	10 UJ	ND	ND		0/47
1,2-Dichloroethene (total)	UG/L	10 UJ	10 UJ	ND	ND		0/47
Chloroform	UG/L	10 UJ	10 UJ	8 J	8 J	35-FB01	1/47
1,2-Dichloroethane	UG/L	10 UJ	10 UJ	ND	ND		0/47
2-Butanone	UG/L	10 UJ	10 UJ	ND	ND		0/47
1,1,1-Trichloroethane	UG/L	10 UJ	10 UJ	ND	ND		0/47
Carbon Tetrachloride	UG/L	10 UJ	10 UJ	ND	ND		0/47
Bromodichloromethane	UG/L	10 UJ	10 UJ	10 J	10 J	35-FB01	1/47
1,2-Dichloropropane	UG/L	10 UJ	10 UJ	ND	ND		0/47
cis-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	ND	ND		0/47
Trichloroethene	UG/L	10 UJ	10 UJ	ND	ND		0/47
Dibromochloromethane	UG/L	10 UJ	10 UJ	10 J	10 J	35-FB01	1/47
1,1,2-Trichloroethane	UG/L	10 UJ	10 UJ	ND	ND		0/47
Benzene	UG/L	10 UJ	10 UJ	ND	ND		0/47
trans-1,3-Dichloropropene	UG/L	10 UJ	10 UJ	ND	ND		0/47
Bromoform	UG/L	10 UJ	10 UJ	ND	ND		0/47
4-Methyl-2-Pentanone	UG/L	10 UJ	10 UJ	ND	ND		0/47
2-Hexanone	UG/L	10 UJ	10 UJ	ND	ND		0/47
Tetrachloroethene	UG/L	10 UJ	10 UJ	ND	ND		0/47
1,1,2,2-Tetrachloroethane	UG/L	10 UJ	10 UJ	ND	ND		0/47
Toluene	UG/L	10 UJ	10 UJ	ND	ND		0/47
Chlorobenzene	UG/L	10 UJ	10 UJ	ND	ND		0/47
Ethylbenzene	UG/L	10 UJ	10 UJ	ND	ND		0/47
Styrene	UG/L	10 UJ	10 UJ	ND	ND		0/47
Xylene (total)	UG/L	10 UJ	10 UJ	ND	ND		0/47

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
GC VOLATILES

Client Sample ID:		35-RB20	35-TB29	35-RB32	35-RB34	35-RB37
Lab Sample ID:		D94-5296-14	D94-5296-9	D94-5529-5	D94-5529-6	D94-5715-2
Date Sampled:		12-MAY-1994	11-MAY-1994	16-MAY-1994	16-MAY-1994	19-MAY-1994
	UNITS					
VOLATILES						
1,1,1-Trichloroethane	UG/L	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1,2-Trichloroethane	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1-Dichloroethane	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1-Dichloroethene	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	UG/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichloropropane	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,3-Dichlorobenzene	UG/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
1,4-Dichlorobenzene	UG/L	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Bromoform	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromomethane	UG/L	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Carbon tetrachloride	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	UG/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Chloroethane	UG/L	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Chloroform	UG/L	3.1	0.1 U	0.1 U	0.1 U	0.1 U
Chloromethane	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dichlorodifluoromethane	UG/L	2 U	2 U	2 U	2 U	2 U
Methylene chloride	UG/L	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Trichloroethene	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Trichlorofluoromethane	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
cis-1,3-Dichloropropene	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
trans-1,3-Dichloropropene	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Benzene	UG/L	0.2 U	NA	0.2 U	0.2 U	0.2 U
Chlorobenzene	UG/L	0.2 U	NA	0.2 U	0.2 U	0.2 U
Ethyl benzene	UG/L	0.2 U	NA	0.2 U	0.2 U	0.2 U
Methyl Tertiary Butyl Ether	UG/L	10 U	NA	10 U	10 U	10 U
Toluene	UG/L	0.6	NA	0.2 U	0.2 U	0.2 U
Xylenes	UG/L	1.4	NA	0.2 U	0.2 U	0.2 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
GC VOLATILES

Client Sample ID: Lab Sample ID: Date Sampled:		MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	UNITS						
VOLATILES							
1,1,1-Trichloroethane	UG/L	5 U	5 U	ND	ND		0/5
1,1,2,2-Tetrachloroethane	UG/L	0.1 U	0.1 U	ND	ND		0/5
1,1,2-Trichloroethane	UG/L	0.1 U	0.1 U	ND	ND		0/5
1,1-Dichloroethane	UG/L	0.1 U	0.1 U	ND	ND		0/5
1,1-Dichloroethene	UG/L	0.2 U	0.2 U	ND	ND		0/5
1,2-Dichlorobenzene	UG/L	0.2 U	0.2 U	ND	ND		0/5
1,2-Dichloroethane	UG/L	0.3 U	0.3 U	ND	ND		0/5
1,2-Dichloropropane	UG/L	0.1 U	0.1 U	ND	ND		0/5
1,3-Dichlorobenzene	UG/L	0.4 U	0.4 U	ND	ND		0/5
1,4-Dichlorobenzene	UG/L	1 U	1 U	ND	ND		0/5
Bromodichloromethane	UG/L	0.1 U	0.1 U	ND	ND		0/5
Bromoform	UG/L	0.2 U	0.2 U	ND	ND		0/5
Bromomethane	UG/L	1.2 U	1.2 U	ND	ND		0/5
Carbon tetrachloride	UG/L	0.2 U	0.2 U	ND	ND		0/5
Chlorobenzene	UG/L	0.3 U	0.3 U	ND	ND		0/5
Chloroethane	UG/L	0.6 U	0.6 U	ND	ND		0/5
Chloroform	UG/L	0.1 U	0.1 U	3.1	3.1	35-RB20	1/5
Chloromethane	UG/L	0.5 U	0.5 U	ND	ND		0/5
Dibromochloromethane	UG/L	0.1 U	0.1 U	ND	ND		0/5
Dichlorodifluoromethane	UG/L	2 U	2 U	ND	ND		0/5
Methylene chloride	UG/L	5 U	5 U	ND	ND		0/5
Tetrachloroethene	UG/L	0.1 U	0.1 U	ND	ND		0/5
Trichloroethene	UG/L	0.1 U	0.1 U	ND	ND		0/5
Trichlorofluoromethane	UG/L	0.5 U	0.5 U	ND	ND		0/5
Vinyl chloride	UG/L	0.5 U	0.5 U	ND	ND		0/5
cis-1,2-Dichloroethene	UG/L	0.1 U	0.1 U	ND	ND		0/5
cis-1,3-Dichloropropene	UG/L	0.2 U	0.2 U	ND	ND		0/5
trans-1,2-Dichloroethene	UG/L	0.1 U	0.1 U	ND	ND		0/5
trans-1,3-Dichloropropene	UG/L	0.2 U	0.2 U	ND	ND		0/5
Benzene	UG/L	0.2 U	0.2 U	ND	ND		0/4
Chlorobenzene	UG/L	0.2 U	0.2 U	ND	ND		0/4
Ethyl benzene	UG/L	0.2 U	0.2 U	ND	ND		0/4
Methyl Tertiary Butyl Ether	UG/L	10 U	10 U	ND	ND		0/4
Toluene	UG/L	0.2 U	0.2 U	0.6	0.6	35-RB20	1/4
Xylenes	UG/L	0.2 U	0.2 U	1.4	1.4	35-RB20	1/4

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL SEMIVOLATILES

Client Sample ID:		35-RB36	35-RB32	35-RB34	35-RB20	35-RB37	35-RB12
Lab Sample ID:		5529-10	5529-5	5529-6	D94-5296-14	D94-5715-2	5167-12
Date Sampled:		18-MAY-1994	16-MAY-1994	16-MAY-1994	12-MAY-1994	19-MAY-1994	06-MAY-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
bis(2-Chloroethyl)ether	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
2-Chlorophenol	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
1,2-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
2-Methylphenol	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
2,2'-oxybis(1-Chloropropane)	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
4-Methylphenol	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
N-Nitroso-di-n-propylamine	UG/L	10 U	10 U	10 U	10 U	11 U	10 UJ
Hexachloroethane	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
Nitrobenzene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
Isophorone	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
2-Nitrophenol	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
2,4-Dimethylphenol	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
bis(2-Chloroethoxy)methane	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
2,4-Dichlorophenol	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
Naphthalene	UG/L	10 UJ	10 U	10 U	10 U	11 U	10 U
4-Chloroaniline	UG/L	10 U	10 UJ	10 U	10 UJ	11 UJ	10 U
Hexachlorobutadiene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
4-Chloro-3-methylphenol	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
2-Methylnaphthalene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
Hexachlorocyclopentadiene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
2,4,6-Trichlorophenol	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
2,4,5-Trichlorophenol	UG/L	25 U	25 U	25 U	25 U	28 U	25 U
2-Chloronaphthalene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
2-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	28 U	25 U
Dimethylphthalate	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
Acenaphthylene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
2,6-Dinitrotoluene	UG/L	10 UJ	10 UJ	10 U	10 U	11 UJ	10 U
3-Nitroaniline	UG/L	25 UJ	25 UJ	25 U	25 UJ	28 UJ	25 UJ
Acenaphthene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL SEMIVOLATILES

Client Sample ID:		35-RB36	35-RB32	35-RB34	35-RB20	35-RB37	35-RB12
Lab Sample ID:		5529-10	5529-5	5529-6	D94-5296-14	D94-5715-2	5167-12
Date Sampled:		18-MAY-1994	16-MAY-1994	16-MAY-1994	12-MAY-1994	19-MAY-1994	06-MAY-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 UJ	25 UJ	25 U	25 UJ	28 UJ	25 U
Dibenzofuran	UG/L	10 U	10 U	10 U	10 U	11 UJ	10 U
4-Nitrophenol	UG/L	10 UJ	10 UJ	10 U	10 UJ	11 U	10 UJ
2,4-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
Diethylphthalate	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
Fluorene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
4-Chlorophenyl-phenylether	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
4-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	28 U	25 UJ
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	25 U	25 U	28 U	25 U
N-Nitrosodiphenylamine	UG/L	10 U	10 U	10 U	10 U	11 UJ	10 U
4-Bromophenyl-phenylether	UG/L	10 UJ	10 UJ	10 U	10 U	11 U	10 U
Hexachlorobenzene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
Pentachlorophenol	UG/L	25 U	25 U	25 U	25 U	28 U	25 U
Phenanthrene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
Anthracene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
Carbazole	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
Di-n-butylphthalate	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
Fluoranthene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
Pyrene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
Butylbenzylphthalate	UG/L	10 UJ	10 UJ	10 U	10 U	11 UJ	10 U
Benzo(a)anthracene	UG/L	10 U	10 U	10 U	10 U	11 UJ	10 U
3,3'-Dichlorobenzidine	UG/L	10 UJ	10 UJ	10 U	10 UJ	11 U	10 UJ
Chrysene	UG/L	10 U	10 U	10 U	10 U	11 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5 J	10 UJ	10 U	56	11 UJ	10 UJ
Di-n-octylphthalate	UG/L	10 UJ	10 UJ	10 U	10 U	11 UJ	10 U
Benzo(b)fluoranthene	UG/L	10 UJ	10 U	10 U	10 U	11 UJ	10 U
Benzo(k)fluoranthene	UG/L	10 UJ	10 U	10 U	10 U	11 UJ	10 U
Benzo(a)pyrene	UG/L	10 UJ	10 U	10 U	10 U	11 UJ	10 U
Indeno(1,2,3-cd)pyrene	UG/L	10 UJ	10 U	10 U	10 U	11 UJ	10 U
Dibenz(a,h)anthracene	UG/L	10 UJ	10 U	10 U	10 U	11 UJ	10 U
Benzo(g,h,i)perylene	UG/L	10 UJ	10 U	10 U	10 U	11 UJ	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL SEMIVOLATILES

Client Sample ID:		35-RB13	35-RB14	35-RB18	35-SDER01	35-RB01	35-RB05
Lab Sample ID:		5167-13	5167-19	5167-22	4120-17	4120-19	4375-2
Date Sampled:		07-MAY-1994	08-MAY-1994	10-MAY-1994	13-APR-1994	13-APR-1994	17-APR-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis(1-Chloropropane)	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	UG/L	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U
Hexachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	UG/L	25 UJ	25 UJ	25 UJ	25 U	25 U	25 U
Acenaphthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL SEMIVOLATILES

Client Sample ID:		35-RB13	35-RB14	35-RB18	35-SDER01	35-RB01	35-RB05
Lab Sample ID:		5167-13	5167-19	5167-22	4120-17	4120-19	4375-2
Date Sampled:		07-MAY-1994	08-MAY-1994	10-MAY-1994	13-APR-1994	13-APR-1994	17-APR-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Dibenzofuran	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol	UG/L	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U
2,4-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	UG/L	25 UJ	25 UJ	25 UJ	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	UG/L	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U
Chrysene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Di-n-octylphthalate	UG/L	10 U	10 U	10 U	10 UJ	10 UJ	10 UJ
Benzo(b)fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	UG/L	10 U	10 U	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL SEMIVOLATILES

Client Sample ID:		36-RB06	35-RB03	35-RB07	35-FB01	35-FB02	35-RB08
Lab Sample ID:		4375-8	4375-1	4375-17	4581-14	4581-15	4581-2
Date Sampled:		18-APR-1994	16-APR-1994	19-APR-1994	02-MAY-1994	02-MAY-1994	20-APR-1994
	UNITS						
SEMIVOLATILES							
Phenol	UG/L	10 UJ	12 U	10 UJ	10 U	10 U	10 U
bis(2-Chloroethyl)ether	UG/L	10 U	12 U	10 U	10 U	10 U	10 UJ
2-Chlorophenol	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
2-Methylphenol	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
2,2'-oxybis(1-Chloropropane)	UG/L	10 U	12 U	10 U	10 UJ	10 UJ	10 UJ
4-Methylphenol	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	UG/L	10 U	12 U	10 U	10 U	10 U	10 UJ
Hexachloroethane	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
Nitrobenzene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
Isophorone	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
2-Nitrophenol	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
Naphthalene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
4-Chloroaniline	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	UG/L	25 U	29 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
2-Nitroaniline	UG/L	25 U	29 U	25 U	25 UJ	25 UJ	25 U
Dimethylphthalate	UG/L	10 UJ	12 U	10 UJ	10 UJ	10 UJ	10 U
Acenaphthylene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
3-Nitroaniline	UG/L	25 U	29 U	25 U	25 UJ	25 UJ	25 UJ
Acenaphthene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL SEMIVOLATILES

Client Sample ID:		36-RB06	35-RB03	35-RB07	35-FB01	35-FB02	35-RB08
Lab Sample ID:		4375-8	4375-1	4375-17	4581-14	4581-15	4581-2
Date Sampled:		18-APR-1994	16-APR-1994	19-APR-1994	02-MAY-1994	02-MAY-1994	20-APR-1994
	UNITS						
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 UJ	29 U	25 U	25 U	25 U	25 UJ
Dibenzofuran	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
4-Nitrophenol	UG/L	10 U	12 U	10 UJ	10 U	10 U	10 U
2,4-Dinitrotoluene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
Diethylphthalate	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
Fluorene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
4-Nitroaniline	UG/L	25 U	29 U	25 U	25 UJ	25 UJ	25 U
4,6-Dinitro-2-methylphenol	UG/L	25 U	29 U	25 U	25 U	25 U	25 UJ
N-Nitrosodiphenylamine	UG/L	10 UJ	12 U	10 UJ	10 UJ	10 UJ	10 U
4-Bromophenyl-phenylether	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
Pentachlorophenol	UG/L	25 U	29 U	25 U	25 U	25 U	25 U
Phenanthrene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
Anthracene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
Carbazole	UG/L	10 U	12 U	10 U	10 UJ	10 UJ	10 U
Di-n-butylphthalate	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
Fluoranthene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
Pyrene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	UG/L	10 UJ	12 U	10 UJ	10 UJ	10 UJ	10 U
Benzo(a)anthracene	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	UG/L	10 U	12 U	10 U	10 U	10 U	10 U
Chrysene	UG/L	10 U	12 U	10 UJ	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	10 UJ	12 UJ	10 UJ	10 U	10 U	10 U
Di-n-octylphthalate	UG/L	10 UJ	12 UJ	10 U	10 UJ	10 UJ	10 U
Benzo(b)fluoranthene	UG/L	10 UJ	12 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	UG/L	10 UJ	12 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	UG/L	10 UJ	12 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	UG/L	10 UJ	12 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	UG/L	10 UJ	12 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	UG/L	10 UJ	12 U	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL SEMIVOLATILES

Client Sample ID:		35-RB09	35-RB10	35-RB11	35-RB12	35-RB13
Lab Sample ID:		4581-8	4581-12	4581-13	4581-17	4581-18
Date Sampled:		26-APR-1994	29-APR-1994	30-APR-1994	03-MAY-1994	04-MAY-1994
	UNITS					
SEMIVOLATILES						
Phenol	UG/L	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	UG/L	10 UJ	10 U	10 U	10 U	10 U
2-Chlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis(1-Chloropropane)	UG/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
4-Methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	UG/L	10 UJ	10 U	10 U	10 U	10 U
Hexachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
Isophorone	UG/L	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	UG/L	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	UG/L	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	UG/L	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
Naphthalene	UG/L	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	UG/L	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	UG/L	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	UG/L	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	UG/L	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	UG/L	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	UG/L	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	UG/L	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	UG/L	25 U	25 UJ	25 UJ	25 UJ	25 UJ
Dimethylphthalate	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 UJ
Acenaphthylene	UG/L	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	UG/L	25 UJ	25 UJ	25 UJ	25 UJ	25 UJ
Acenaphthene	UG/L	10 U	10 U	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL SEMIVOLATILES

Client Sample ID:		35-RB09	35-RB10	35-RB11	35-RB12	35-RB13
Lab Sample ID:		4581-8	4581-12	4581-13	4581-17	4581-18
Date Sampled:		26-APR-1994	29-APR-1994	30-APR-1994	03-MAY-1994	04-MAY-1994
	UNITS					
SEMIVOLATILES Cont.						
2,4-Dinitrophenol	UG/L	25 UJ	25 U	25 U	25 U	25 U
Dibenzofuran	UG/L	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol	UG/L	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	UG/L	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U
Fluorene	UG/L	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	UG/L	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	UG/L	25 U	25 UJ	25 UJ	25 UJ	25 UJ
4,6-Dinitro-2-methylphenol	UG/L	25 UJ	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 UJ
4-Bromophenyl-phenylether	UG/L	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	UG/L	25 U	25 U	25 U	25 U	25 U
Phenanthrene	UG/L	10 U	10 U	10 U	10 U	10 U
Anthracene	UG/L	10 U	10 U	10 U	10 U	10 U
Carbazole	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 UJ
Di-n-butylphthalate	UG/L	10 U	10 U	10 U	10 U	10 U
Fluoranthene	UG/L	10 U	10 U	10 U	10 U	10 U
Pyrene	UG/L	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	UG/L	10 U	10 UJ	10 UJ	10 U	10 U
Benzo(a)anthracene	UG/L	10 U	10 U	10 U	10 UJ	10 UJ
3,3'-Dichlorobenzidine	UG/L	10 U	10 U	10 U	10 U	10 U
Chrysene	UG/L	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	10 U	10 U	10 U	10 U	10 U
Di-n-octylphthalate	UG/L	10 U	10 UJ	10 UJ	10 UJ	10 UJ
Benzo(b)fluoranthene	UG/L	10 U	10 UJ	10 U	10 U	10 U
Benzo(k)fluoranthene	UG/L	10 U	10 UJ	10 U	10 U	10 U
Benzo(a)pyrene	UG/L	10 U	10 UJ	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	UG/L	10 U	10 UJ	10 U	10 U	10 U
Dibenz(a,h)anthracene	UG/L	10 U	10 UJ	10 U	10 U	10 U
Benzo(g,h,i)perylene	UG/L	10 U	10 UJ	10 U	10 U	10 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL SEMIVOLATILES

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES							
Phenol	UG/L	10 U	12 U	ND	ND		0/23
bis(2-Chloroethyl)ether	UG/L	10 U	12 U	ND	ND		0/23
2-Chlorophenol	UG/L	10 U	12 U	ND	ND		0/23
1,3-Dichlorobenzene	UG/L	10 U	12 U	ND	ND		0/23
1,4-Dichlorobenzene	UG/L	10 U	12 U	ND	ND		0/23
1,2-Dichlorobenzene	UG/L	10 U	12 U	ND	ND		0/23
2-Methylphenol	UG/L	10 U	12 U	ND	ND		0/23
2,2'-oxybis(1-Chloropropane)	UG/L	10 U	12 U	ND	ND		0/23
4-Methylphenol	UG/L	10 U	12 U	ND	ND		0/23
N-Nitroso-di-n-propylamine	UG/L	10 U	12 U	ND	ND		0/23
Hexachloroethane	UG/L	10 U	12 U	ND	ND		0/23
Nitrobenzene	UG/L	10 U	12 U	ND	ND		0/23
Isophorone	UG/L	10 U	12 U	ND	ND		0/23
2-Nitrophenol	UG/L	10 U	12 U	ND	ND		0/23
2,4-Dimethylphenol	UG/L	10 U	12 U	ND	ND		0/23
bis(2-Chloroethoxy)methane	UG/L	10 U	12 U	ND	ND		0/23
2,4-Dichlorophenol	UG/L	10 U	12 U	ND	ND		0/23
1,2,4-Trichlorobenzene	UG/L	10 U	12 U	ND	ND		0/23
Naphthalene	UG/L	10 UJ	12 U	ND	ND		0/23
4-Chloroaniline	UG/L	10 U	12 U	ND	ND		0/23
Hexachlorobutadiene	UG/L	10 U	12 U	ND	ND		0/23
4-Chloro-3-methylphenol	UG/L	10 U	12 U	ND	ND		0/23
2-Methylnaphthalene	UG/L	10 U	12 U	ND	ND		0/23
Hexachlorocyclopentadiene	UG/L	10 U	12 U	ND	ND		0/23
2,4,6-Trichlorophenol	UG/L	10 U	12 U	ND	ND		0/23
2,4,5-Trichlorophenol	UG/L	25 U	29 U	ND	ND		0/23
2-Chloronaphthalene	UG/L	10 U	12 U	ND	ND		0/23
2-Nitroaniline	UG/L	25 U	29 U	ND	ND		0/23
Dimethylphthalate	UG/L	10 U	12 U	ND	ND		0/23
Acenaphthylene	UG/L	10 U	12 U	ND	ND		0/23
2,6-Dinitrotoluene	UG/L	10 UJ	12 U	ND	ND		0/23
3-Nitroaniline	UG/L	25 UJ	29 U	ND	ND		0/23
Acenaphthene	UG/L	10 U	12 U	ND	ND		0/23

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL SEMIVOLATILES

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
SEMIVOLATILES Cont.							
2,4-Dinitrophenol	UG/L	25 UJ	29 U	ND	ND		0/23
Dibenzofuran	UG/L	10 U	12 U	ND	ND		0/23
4-Nitrophenol	UG/L	10 UJ	12 U	ND	ND		0/23
2,4-Dinitrotoluene	UG/L	10 U	12 U	ND	ND		0/23
Diethylphthalate	UG/L	10 U	12 U	ND	ND		0/23
Fluorene	UG/L	10 U	12 U	ND	ND		0/23
4-Chlorophenyl-phenylether	UG/L	10 U	12 U	ND	ND		0/23
4-Nitroaniline	UG/L	25 U	29 U	ND	ND		0/23
4,6-Dinitro-2-methylphenol	UG/L	25 U	29 U	ND	ND		0/23
N-Nitrosodiphenylamine	UG/L	10 U	12 U	ND	ND		0/23
4-Bromophenyl-phenylether	UG/L	10 UJ	12 U	ND	ND		0/23
Hexachlorobenzene	UG/L	10 U	12 U	ND	ND		0/23
Pentachlorophenol	UG/L	25 U	29 U	ND	ND		0/23
Phenanthrene	UG/L	10 U	12 U	ND	ND		0/23
Anthracene	UG/L	10 U	12 U	ND	ND		0/23
Carbazole	UG/L	10 U	12 U	ND	ND		0/23
Di-n-butylphthalate	UG/L	10 U	12 U	ND	ND		0/23
Fluoranthene	UG/L	10 U	12 U	ND	ND		0/23
Pyrene	UG/L	10 U	12 U	ND	ND		0/23
Butylbenzylphthalate	UG/L	10 UJ	12 U	ND	ND		0/23
Benzo(a)anthracene	UG/L	10 U	12 U	ND	ND		0/23
3,3'-Dichlorobenzidine	UG/L	10 UJ	12 U	ND	ND		0/23
Chrysene	UG/L	10 U	12 U	ND	ND		0/23
bis(2-Ethylhexyl)phthalate	UG/L	10 UJ	12 UJ	5 J	56	35-RB20	2/23
Di-n-octylphthalate	UG/L	10 UJ	12 UJ	ND	ND		0/23
Benzo(b)fluoranthene	UG/L	10 UJ	12 U	ND	ND		0/23
Benzo(k)fluoranthene	UG/L	10 UJ	12 U	ND	ND		0/23
Benzo(a)pyrene	UG/L	10 UJ	12 U	ND	ND		0/23
Indeno(1,2,3-cd)pyrene	UG/L	10 UJ	12 U	ND	ND		0/23
Dibenz(a,h)anthracene	UG/L	10 UJ	12 U	ND	ND		0/23
Benzo(g,h,i)perylene	UG/L	10 UJ	12 U	ND	ND		0/23

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL PESTICIDE/PCBs

Client Sample ID:		35-RB37	35-RB36	35-RB34	35-SDER01	35-RB05	36-RB06
Lab Sample ID:		D94-5715-2	5529-10	5529-6	4120-17	4375-2	4375-8
Date Sampled:		19-MAY-1994	18-MAY-1994	16-MAY-1994	13-APR-1994	17-APR-1994	18-APR-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	0.05 U	0.05 U	0.05 U	0.1 U	0.05 UJ	0.056 UJ
beta-BHC	UG/L	0.05 U	0.05 U	0.05 U	0.1 U	0.05 UJ	0.056 UJ
delta-BHC	UG/L	0.05 U	0.05 U	0.05 U	0.1 U	0.05 UJ	0.056 UJ
gamma-BHC (Lindane)	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.056 UJ
Heptachlor	UG/L	0.05 U	0.05 U	0.05 U	0.1 U	0.05 UJ	0.056 UJ
Aldrin	UG/L	0.05 U	0.05 U	0.05 U	0.1 U	0.05 UJ	0.056 UJ
Heptachlor epoxide	UG/L	0.05 U	0.05 U	0.05 U	0.1 U	0.05 UJ	0.056 UJ
Endosulfan I	UG/L	0.05 U	0.05 U	0.05 U	0.1 U	0.05 UJ	0.056 UJ
Dieldrin	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.11 UJ
4,4'-DDE	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.11 UJ
Endrin	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.11 UJ
Endosulfan II	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.11 UJ
4,4'-DDD	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.11 UJ
Endosulfan sulfate	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.11 UJ
4,4'-DDT	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.11 UJ
Methoxychlor	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 J	0.05 J
Endrin ketone	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.11 UJ
Endrin aldehyde	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.11 J	0.11 UJ
alpha-Chlordane	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.056 UJ
gamma-Chlordane	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.056 UJ
Toxaphene	UG/L	5 U	5 U	5 U	5 U	5 UJ	5.6 UJ
Aroclor-1016	UG/L	1 U	1 U	1 U	1 U	1 UJ	1.1 UJ
Aroclor-1221	UG/L	2 U	2 U	2 U	2 U	2 UJ	2.2 UJ
Aroclor-1232	UG/L	1 U	1 U	1 U	1 U	1 UJ	1.1 UJ
Aroclor-1242	UG/L	1 U	1 U	1 U	1 U	1 UJ	1.1 UJ
Aroclor-1248	UG/L	1 U	1 U	1 U	1 U	1 UJ	1.1 UJ
Aroclor-1254	UG/L	1 U	1 U	1 U	1 U	1 UJ	1.1 UJ
Aroclor-1260	UG/L	1 U	1 U	1 U	1 U	1 UJ	1.1 UJ

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL PESTICIDE/PCBs

Client Sample ID:		35-FB01	35-FB02	35-RB08	35-RB12	35-RB13	35-RB12
Lab Sample ID:		4581-14	4581-15	4581-2	4581-17	4581-18	5167-12
Date Sampled:		02-MAY-1994	02-MAY-1994	20-APR-1994	03-MAY-1994	04-MAY-1994	06-MAY-1994
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
beta-BHC	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
delta-BHC	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-BHC (Lindane)	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.05 U
Heptachlor	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Aldrin	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor epoxide	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan I	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dieldrin	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDE	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan II	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDD	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan sulfate	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDT	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Methoxychlor	UG/L	0.5 U	0.5 U	0.6 UJ	0.5 U	0.5 U	0.5 U
Endrin ketone	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin aldehyde	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
alpha-Chlordane	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-Chlordane	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Toxaphene	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Aroclor-1016	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1221	UG/L	2 U	2 U	2 U	2 U	2 U	2 U
Aroclor-1232	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1242	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1248	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1254	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1260	UG/L	1 U	1 U	1 U	1 U	1 U	1 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL PESTICIDE/PCBs

Client Sample ID:		35-RB13	35-RB14
Lab Sample ID:		5167-13	5167-19
Date Sampled:		07-MAY-1994	08-MAY-1994
PESTICIDE/PCBs	UNITS		
alpha-BHC	UG/L	0.05 U	0.05 U
beta-BHC	UG/L	0.05 U	0.05 U
delta-BHC	UG/L	0.05 U	0.05 U
gamma-BHC (Lindane)	UG/L	0.05 U	0.05 U
Heptachlor	UG/L	0.05 U	0.05 U
Aldrin	UG/L	0.05 U	0.05 U
Heptachlor epoxide	UG/L	0.05 U	0.05 U
Endosulfan I	UG/L	0.05 U	0.05 U
Dieldrin	UG/L	0.1 U	0.1 U
4,4'-DDE	UG/L	0.1 U	0.1 U
Endrin	UG/L	0.1 U	0.1 U
Endosulfan II	UG/L	0.1 U	0.1 U
4,4'-DDD	UG/L	0.1 U	0.1 U
Endosulfan sulfate	UG/L	0.1 U	0.1 U
4,4'-DDT	UG/L	0.1 U	0.1 U
Methoxychlor	UG/L	0.5 U	0.5 U
Endrin ketone	UG/L	0.1 U	0.1 U
Endrin aldehyde	UG/L	0.1 U	0.1 U
alpha-Chlordane	UG/L	0.05 U	0.05 U
gamma-Chlordane	UG/L	0.05 U	0.05 U
Toxaphene	UG/L	5 U	5 U
Aroclor-1016	UG/L	1 U	1 U
Aroclor-1221	UG/L	2 U	2 U
Aroclor-1232	UG/L	1 U	1 U
Aroclor-1242	UG/L	1 U	1 U
Aroclor-1248	UG/L	1 U	1 U
Aroclor-1254	UG/L	1 U	1 U
Aroclor-1260	UG/L	1 U	1 U

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
TCL PESTICIDE/PCBs

Client Sample ID: Lab Sample ID: Date Sampled:		MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
	UNITS						
PESTICIDE/PCBs							
alpha-BHC	UG/L	0.05 U	0.1 U	ND	ND		0/14
beta-BHC	UG/L	0.05 U	0.1 U	ND	ND		0/14
delta-BHC	UG/L	0.05 U	0.1 U	ND	ND		0/14
gamma-BHC (Lindane)	UG/L	0.05 U	0.5 U	ND	ND		0/14
Heptachlor	UG/L	0.05 U	0.1 U	ND	ND		0/14
Aldrin	UG/L	0.05 U	0.1 U	ND	ND		0/14
Heptachlor epoxide	UG/L	0.05 U	0.1 U	ND	ND		0/14
Endosulfan I	UG/L	0.05 U	0.1 U	ND	ND		0/14
Dieldrin	UG/L	0.1 U	0.11 UJ	ND	ND		0/14
4,4'-DDE	UG/L	0.1 U	0.11 UJ	ND	ND		0/14
Endrin	UG/L	0.1 U	0.11 UJ	ND	ND		0/14
Endosulfan II	UG/L	0.1 U	0.11 UJ	ND	ND		0/14
4,4'-DDD	UG/L	0.1 U	0.11 UJ	ND	ND		0/14
Endosulfan sulfate	UG/L	0.1 U	0.11 UJ	ND	ND		0/14
4,4'-DDT	UG/L	0.1 U	0.11 UJ	ND	ND		0/14
Methoxychlor	UG/L	0.5 U	0.6 UJ	0.05 J	0.5 J	35-RB05	2/14
Endrin ketone	UG/L	0.1 U	0.11 UJ	ND	ND		0/14
Endrin aldehyde	UG/L	0.1 U	0.11 UJ	0.11 J	0.11 J	36-RB05	1/14
alpha-Chlordane	UG/L	0.05 U	0.056 UJ	ND	ND		0/14
gamma-Chlordane	UG/L	0.05 U	0.056 UJ	ND	ND		0/14
Toxaphene	UG/L	5 U	5.6 UJ	ND	ND		0/14
Aroclor-1016	UG/L	1 U	1.1 UJ	ND	ND		0/14
Aroclor-1221	UG/L	2 U	2.2 UJ	ND	ND		0/14
Aroclor-1232	UG/L	1 U	1.1 UJ	ND	ND		0/14
Aroclor-1242	UG/L	1 U	1.1 UJ	ND	ND		0/14
Aroclor-1248	UG/L	1 U	1.1 UJ	ND	ND		0/14
Aroclor-1254	UG/L	1 U	1.1 UJ	ND	ND		0/14
Aroclor-1260	UG/L	1 U	1.1 UJ	ND	ND		0/14

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-RB20	35-RB32	35-RB34	35-RB36	35-RB37	35-SDER01
Lab Sample ID:		5296-14	5529-5	5529-6	5529-10	5715-2	4120-17
Date Sampled:		12-MAY-1994	16-MAY-1994	16-MAY-1994	18-MAY-1994	19-MAY-1994	13-APR-1994
	UNITS						
Aluminum	UG/L	64 B	52.4 U	37.9 U	134 U	33.9 J	1 UJ
Antimony	UG/L	46 R	47.9 R	46 U	46 U	46 U	1 U
Arsenic	UG/L	2 J	2.6 J	2 UJ	2 UJ	2.6	2 U
Barium	UG/L	2	7	1	2.5	6 U	2 U
Beryllium	UG/L	1 U	1 U	1 U	1 U	1 U	1 UJ
Cadmium	UG/L	0.2 UJ	0.13 J	0.1 J	0.12 J	0.23 J	1 UJ
Calcium	UG/L	1700 U	13500	1700 U	1700 U	8600 J	550 U
Chromium	UG/L	7 U	7 U	7 U	7 U	7 U	1 U
Cobalt	UG/L	11 U	11 U	11 U	11 U	11 U	13.3 J
Copper	UG/L	8	8.8 U	4.5 U	4.3 U	8.9	6.2 U
Iron	UG/L	74	69.3	42.9	119	110	47.9 J
Lead	UG/L	1 U	1 J	1 U	1 U	2.9 U	1
Magnesium	UG/L	144	1790	69 U	119 U	1200	111 U
Manganese	UG/L	2 U	2 U	2 U	2.6	3.1	2 U
Mercury	UG/L	0.1 UJ	0.1 U	0.1 U	0.1 U	0.64 J	0.2 U
Nickel	UG/L	11 U	11 U	11 U	11 U	11 U	10 U
Potassium	UG/L	2440 U	2660	2440 U	2440 U	2440 U	1670 U
Selenium	UG/L	1.4 R	1.4 UJ	1.4 U	1.4 U	1.4 U	1 UJ
Silver	UG/L	3 U	3 U	3 U	3 U	3 U	1 U
Sodium	UG/L	2370 U	47700	2370 U	2370 U	29000	2290 J
Thallium	UG/L	1 U	0.6 UJ	0.6 U	0.6 U	1 U	1 U
Vanadium	UG/L	5 U	5 U	5 U	5 U	5 U	4 U
Zinc	UG/L	11 U	11 U	11 U	11 U	16.3 J	10.2 R

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-RB01	35-RB03	35-RB07	35-RB05	36-RB06	35-RB10
Lab Sample ID:		4120-19	4375-1	4375-17	4375-2	4375-8	4581-12
Date Sampled:		13-APR-1994	16-APR-1994	19-APR-1994	17-APR-1994	18-APR-1994	29-APR-1994
	UNITS						
Aluminum	UG/L	1 UJ	1 U	1 U	1 U	1 U	72 U
Antimony	UG/L	1 U	1.7	1 UJ	1 U	1 UJ	39 U
Arsenic	UG/L	2 U	1 U	1	1 U	1 U	3.3
Barium	UG/L	2 U	9.8	2 U	9.4	2 U	2 U
Beryllium	UG/L	1 UJ	1 U	1 U	1 U	1 U	5 U
Cadmium	UG/L	1 UJ	1 UJ	1 U	1 U	1 U	1 U
Calcium	UG/L	610 U	13400	541 U	13300	564 U	126
Chromium	UG/L	1 U	1.2	1 U	1 U	1.4	5 U
Cobalt	UG/L	9 U	9 U	9 U	9 U	19.1	9 U
Copper	UG/L	8.4 U	27.4	3.4 U	30.7	4.5 U	9.4 U
Iron	UG/L	51.4 J	156 U	34 U	112 U	63.3 U	18 U
Lead	UG/L	1 U	2.4	11.1 J	7.2 U	1.6 U	1 U
Magnesium	UG/L	128 U	2280	104 U	2310	99.9 U	26 U
Manganese	UG/L	2.3	4.3	2 U	3.6	2 U	2 U
Mercury	UG/L	0.2 U	0.21 U	0.3 U	0.23 U	0.18 U	0.1 UJ
Nickel	UG/L	10 U	10 U	10 U	10 U	10 U	10 U
Potassium	UG/L	1670 U	2770	1670 U	2470	1670 U	1670 U
Selenium	UG/L	1 UJ	1 U	1 U	1 U	1 U	1 U
Silver	UG/L	1 U	1 U	1 U	1 U	1.2 J	2 U
Sodium	UG/L	2457 J	37000	972 U	37700	1630 U	1290 U
Thallium	UG/L	1 U	1.1 J	1 UJ	1 UJ	1 UJ	1 U
Vanadium	UG/L	4 U	4 U	4 U	4 U	4 U	4 U
Zinc	UG/L	6.5 R	17 U	22.3 U	12 U	8.6 U	2 UJ

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-RB11	35-FB01	35-FB02	35-RB12	35-RB13	35-RB08
Lab Sample ID:		4581-13	4581-14	4581-15	4581-17	4581-18	4581-2
Date Sampled:		30-APR-1994	02-MAY-1994	02-MAY-1994	03-MAY-1994	04-MAY-1994	20-APR-1994
	UNITS						
Aluminum	UG/L	72 U	78.1	72 U	72 U	72 U	72 U
Antimony	UG/L	39 U	39 U	39 U	39 U	39 U	39 U
Arsenic	UG/L	1 U	1 U	1 U	1 U	1 U	1 UJ
Barium	UG/L	2 U	2.1	2 U	2 U	2 U	2 U
Beryllium	UG/L	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	UG/L	1 U	1 U	1 U	1 U	1 U	1 U
Calcium	UG/L	96	14500	50 U	94	98	370
Chromium	UG/L	5 U	5 U	5 U	5 U	5 U	6.1
Cobalt	UG/L	9 U	9 U	9 U	9 U	9 U	9 U
Copper	UG/L	5.7 U	13.7 U	2.7 U	4.9 U	3.1 U	2.5 U
Iron	UG/L	18 U	173	18 U	18 U	18 U	18 U
Lead	UG/L	1 U	1 U	1 U	1 U	1 U	2.1 J
Magnesium	UG/L	26 U	3730	26 U	26 U	26 U	26 U
Manganese	UG/L	2 U	2 U	2 U	2 U	2 U	2 U
Mercury	UG/L	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ
Nickel	UG/L	10 U	10 U	10 U	36.3	10 U	10 U
Potassium	UG/L	1670 U	5450	1670 U	1670 U	1670 U	1670 U
Selenium	UG/L	1.2 U	1.3 U	1 U	1 U	1.8 U	1 U
Silver	UG/L	2 U	2 U	2 U	2 U	2 U	2.3 U
Sodium	UG/L	906 U	45200	402 U	656 U	1090 U	340 U
Thallium	UG/L	1 U	1 U	1 U	1 U	1 U	1 UJ
Vanadium	UG/L	4 U	4 U	4 U	4 U	4 U	4 U
Zinc	UG/L	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID:		35-RB09	35-RB12	35-RB13	35-RB14	35-RB18
Lab Sample ID:		4581-8	5167-12	5167-13	5167-19	5167-22
Date Sampled:		26-APR-1994	06-MAY-1994	07-MAY-1994	08-MAY-1994	10-MAY-1994
	UNITS					
Aluminum	UG/L	143	72 U	72 U	72 U	72 U
Antimony	UG/L	39 U	39 U	39 U	39 U	39 U
Arsenic	UG/L	1.2 J	1 U	1 U	1 UJ	1.6 U
Barium	UG/L	2 U	2 U	7 J	2 U	2 J
Beryllium	UG/L	5 U	5 U	5 U	5 U	5 U
Cadmium	UG/L	1 U	1 UJ	1 UJ	1 UJ	1 UJ
Calcium	UG/L	2900	308 U	15900	308 U	308 U
Chromium	UG/L	5 U	9 U	10 U	5 U	7 U
Cobalt	UG/L	9 U	9 U	9 U	9 U	9 U
Copper	UG/L	2.6 U	6 U	15 U	8 U	5 U
Iron	UG/L	77.7	18 U	66 U	18 U	18 U
Lead	UG/L	1.1 J	1 U	1.2 U	1 U	1 U
Magnesium	UG/L	44.5	71	1920	26 U	26 U
Manganese	UG/L	2.9	2 U	2 U	2 U	2 U
Mercury	UG/L	0.1 UJ	0.14 UJ	1.8 J	0.14 UJ	0.14 UJ
Nickel	UG/L	10 U	10 U	10 U	10 U	10 U
Potassium	UG/L	1670 U	1670 U	1670 U	1670 U	1670 U
Selenium	UG/L	1.3 U	1 UJ	1 UJ	1 U	1 U
Silver	UG/L	3.3 U	10 U	11 U	2 U	7 U
Sodium	UG/L	2040 U	2210	59000	1330	1420
Thallium	UG/L	1 U	1 U	1 UJ	1 U	1 U
Vanadium	UG/L	4 UJ	4 U	4 U	4 U	4 U
Zinc	UG/L	2 UJ	4 R	4 R	2 U	7 R

FREQUENCY OF DETECTION SUMMARY
CAMP GEIGER AREA FUEL FARM (SITE 35)
QA/QC SAMPLES
CAMP LEJEUNE MCB, NORTH CAROLINA
REMEDIAL INVESTIGATION - CTO-0232
METALS

Client Sample ID: Lab Sample ID: Date Sampled:	UNITS	MINIMUM NONDETECTED	MAXIMUM NONDETECTED	MINIMUM DETECTED	MAXIMUM DETECTED	LOCATION OF MAXIMUM DETECTED	FREQUENCY OF DETECTION
Aluminum	UG/L	1 UJ	134 U	33.9 J	143	35-RB09	4/23
Antimony	UG/L	1 U	46 U	1.7	47.9 R	35-RB32	3/23
Arsenic	UG/L	1 U	2 UJ	1	3.3	35-RB10	6/23
Barium	UG/L	2 U	6 U	1	9.8	35-RB03	9/23
Beryllium	UG/L	1 U	5 U	ND	ND		0/23
Cadmium	UG/L	0.2 UJ	1 UJ	0.1 J	0.23 J	35-RB37	4/23
Calcium	UG/L	50 U	1700 U	94	15900	35-RB13	12/23
Chromium	UG/L	1 U	10 U	1.2	6.1	35-RB08	3/23
Cobalt	UG/L	9 U	11 U	13.3 J	19.1	36-RB06	2/23
Copper	UG/L	2.5 U	15 U	8	30.7	35-RB05	4/23
Iron	UG/L	18 U	156 U	42.9	173	35-FB01	9/23
Lead	UG/L	1 U	7.2 U	1 J	11.1 J	35-RB07	6/23
Magnesium	UG/L	26 U	128 U	44.5	3730	35-FB01	9/23
Manganese	UG/L	2 U	2 U	2.3	4.3	35-RB03	6/23
Mercury	UG/L	0.1 UJ	0.3 U	0.64 J	1.8 J	35-RB13	2/23
Nickel	UG/L	10 U	11 U	36.3	36.3	35-RB12	1/23
Potassium	UG/L	1670 U	2440 U	2470	5450	35-FB01	4/23
Selenium	UG/L	1 UJ	1.8 U	1.4 R	1.4 R	35-RB37	1/23
Silver	UG/L	1 U	11 U	1.2 J	1.2 J	36-RB06	1/23
Sodium	UG/L	340 U	2370 U	1330	59000	35-RB13	11/23
Thallium	UG/L	0.6 UJ	1 U	1.1 J	1.1 J	35-RB03	1/23
Vanadium	UG/L	4 U	5 U	ND	ND		0/23
Zinc	UG/L	2 UJ	22.3 U	4 R	16.3 J	35-RB37	6/23