



APPENDIX C


Boring Logs


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<div><div>Environmental Chemical Corporation</div><div>LOG OF SOIL BORING Coordinates: X 492792.205 Y 4557718.44 Surface Elevation: 1028.222 ft msl Casing Below Surface: Reference Elevation: Reference Description:</div></div>									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP CC-83	
					Drilling Method: Direct-Push Geoprobe 6620DT		Boring No. SB01 Building 1039							
					Sampling Method: 2" diameter-5 ft SS sampler MacroCore liner		Sheet 1 of 1							
					Water Lev. NA		Drilling							
					Time NA		Start 12-Aug-13							
					Date NA		Finish 12-Aug-13							
					Reference NA									
Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass					
1	ISM	60/60		1-4 ft	0.0	NA	0	CL	Grass					
							1		Dark grayish brown silty clay (10YR 4/2), soft, dense					
							2							
							3		Brown silty clay (10YR 4/3), stiff, dense, dry					
							4							
							5							
	ISM VOC	60/60		4-7 ft 7 ft	0.0	NA	6		Grading to (10YR 5/3) very stiff					
							7							
							8							
							9							
							10		End of boring 10 ft bgs					
	ISM			4-10 ft										
							11							
							12							
							13							
							14							
							15							
							16							
							17							
							18							
							19							
							20							
	21													
	22													
	23													
	24													
Logged by: J. Scott P.G. - ECC									Date: 13-Aug-13	Notes: NA = Not Applicable See Sample Summary Sheets for sampling information ISM = Incremental Sampling Method 003 VOC sample time - 1141				
Drilling Contractor: Frontz Drilling									Driller: Rickie Skanks					
WELL SPECIFICATIONS: Well not installed														
Diam. of casing: 2" Screen Interval:									Sandpack:					
BOH: 10 ft bgs Riser Interval:									Bentonite: 0- 10 ft bgs					


 <div style="text-align: center;"> Environmental Chemical Corporation </div> <div> LOG OF SOIL BORING Coordinates: X 492790.775 Y 4557719.083 Surface Elevation: 1028.216 ft msl Casing Below Surface: _____ Reference Elevation: _____ Reference Description: _____ </div>									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP CC-83	
									Drilling Method:		Direct-Push Geoprobe 6620DT		Boring No. SB02 Building 1039	
									Sampling Method:		2" diameter-5 ft SS sampler MacroCore liner		Sheet 1 of 1	
													Drilling	
									Water Lev.		NA		Start	
Time		NA		12-Aug-13		12-Aug-13								
Date		NA												
Reference		NA												
Surface Conditions: Grass														
2	ISM	60/60		1-4 ft	0.0	NA	0	CL	Grass					
									Dark grayish brown silty clay (10YR 4/2), soft, dense					
	ISM VOC	60/60		4-7 ft 7 ft	0.0	NA	6		Grading to (10YR 5/3), very stiff					
	ISM			7-10 ft	1.0		8		Light gray gravel (N 7/1)					
	ISM			4-10 ft			10		End of boring 10 ft bgs					
							11							
							12							
							13							
							14							
							15							
							16							
							17							
							18							
							19							
							20							
							21							
							22							
							23							
							24							


Logged by:	J. Scott P.G. - ECC		Date:	13-Aug-13	Notes: NA = Not Applicable See Sample Summary Sheets for sampling information ISM = Incremental Sampling Method VOC collected at 1215
Drilling Contractor:	Frontz Drilling		Driller:	Rickie Skanks	
WELL SPECIFICATIONS:	Well not installed		Sandpack:		
Diam. of casing: 2"	Screen Interval:		Bentonite:	0- 10 ft bgs	
BOH:	10 ft bgs	Riser Interval:			


<div><div>Environmental Chemical Corporation</div><div>LOG OF SOIL BORING</div><div>Coordinates: X 492790.775 Y 4557719.083</div><div>Surface Elevation: 1028.341 ft msl</div><div>Casing Below Surface:</div><div>Reference Elevation:</div><div>Reference Description:</div></div>									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP	
													CC-83	
									Drilling Method:		Direct-Push		Boring No. SB03	
											Geoprobe 6620DT		Building 1039	
									Sampling Method:		2" diameter-5 ft SS sampler		Sheet 1 of 1	
		MacroCore liner												
Water Lev.		NA				Drilling								
Time		NA				Start Finish								
Date		NA				12-Aug-13 12-Aug-13								
Reference		NA												
Surface Conditions: Grass														
Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log						
	ISM	60/60		1-4 ft	0.0 0.3 0.0	NA	0	CL						
							1							
							2							
							3							
							4							
5														
	ISM VOC	60/60		4-7 ft 7 ft	0.0	NA	6							
							7							
							8							
	ISM			7-10 ft			9							
							10							
	ISM			4-10 ft			11							
							12							
							13							
							14							
							15							
16														
17														
18														
19														
20														
21														
22														
23														
24														
Logged by: J. Scott P.G. - ECC														
Drilling Contractor: Frontz Drilling														
WELL SPECIFICATIONS: Well not installed														
Diam. of casing: 2" Screen Interval:														
BOH: 10 ft bgs Riser Interval:														
Date: 13-Aug-13														
Driller: Rickie Skanks														
Notes: NA = Not Applicable														
See Sample Summary Sheets for sampling information														
ISM = Incremental Sampling Method														
005, 006, 007, QA														
VOC collected at 1245														


<div><div>Environmental Chemical Corporation</div><div>LOG OF SOIL BORING Coordinates: X 492790.775 Y 4557719.083 Surface Elevation: 1028.580 ft msl Casing Below Surface: Reference Elevation: Reference Description:</div></div>									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP CC-83	
									Drilling Method: Direct-Push Geoprobe 6620DT		Boring No. SB04 Building 1039			
									Sampling Method: 2" diameter-5 ft SS sampler MacroCore liner		Sheet 1 of 1			
											Drilling			
									Water Lev. NA		Start		Finish	
									Time NA		12-Aug-13		12-Aug-13	
									Date NA					
									Reference NA					
Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass					
	ISM	60/60		1-4 ft	0.0	NA	0	CL	Grass					
							1		Dark grayish brown silty clay (10YR 4/2), soft, dense					
							2							
							3		Brown silty clay (10YR 5/3), very stiff, dense, dry					
							4		Sandstone cobble, light yellowish brown (2.5Y 6/3)					
							5							
							6							
							7							
							8							
							9							
	ISM VOC	60/60		4-7 ft 7 ft	0.0 0.3 0.0	NA	6							
							7							
							8							
	ISM			7-10 ft			9							
							10							
							11							
							12							
							13							
							14							
							15							
							16							
							17							
							18							
							19							
							20							
							21							
							22							
							23							
							24							

Logged by: J. Scott P.G. - ECC	Date: 13-Aug-13	Notes: NA = Not Applicable See Sample Summary Sheets for sampling information ISM = Incremental Sampling Method
Drilling Contractor: Frontz Drilling	Driller: Rickie Skanks	
WELL SPECIFICATIONS: Well not installed	Sandpack:	
Diam. of casing: 2"	Bentonite: 0- 10 ft bgs	
BOH: 10 ft bgs		

<div><div>Environmental Chemical Corporation</div><div>LOG OF SOIL BORING</div><div>Coordinates: X 492793.136 Y 4557722.927</div><div>Surface Elevation: 1028.721 ft msl</div><div>Casing Below Surface:</div><div>Reference Elevation:</div><div>Reference Description:</div></div>									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP CC-83				
									Drilling Method:		Direct-Push Geoprobe 6620DT		Boring No. SB05 Building 1039				
									Sampling Method:		2" diameter-5 ft SS sampler MacroCore liner		Sheet 1 of 1				
									Water Lev.		NA		Drilling				
									Time		NA		Start Finish				
Date		NA		12-Aug-13 12-Aug-13													
Reference		NA															
Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass								
	ISM	60/60		1-4 ft	0.0	NA	0	CL	Grass								
							1		Dark grayish brown silty clay (10YR 4/2), soft, dense								
							2										
							3		Brown silty clay (10YR 5/3), stiff, dense, dry								
							4										
							5										
							6										
							7										
							8										
							9										
3	ISM VOC ISM ISM	60/60		4-7 ft 7 ft 7-10 ft 4-10 ft	0.0	NA	6										
							7										
							8										
							9										
							10										
									Disc VOC	36/36		7-13 ft 13 ft	0.0	NA	11		
															12		
															13		End of boring 13 ft bgs
															14		
															15		
16																	
17																	
18																	
19																	
20																	
21																	
22																	
23																	
24																	
Logged by: J. Scott P.G. - ECC Drilling Contractor: Frontz Drilling WELL SPECIFICATIONS: Well not installed Diam. of casing: 2" Screen Interval: BOH: 13 ft bgs Riser Interval:									Date: 13-Aug-13 Driller: Rickie Skanks Sandpack: Bentonite: 0- 13 ft bgs		Notes: NA = Not Applicable See Sample Summary Sheets for sampling information Disc. = Discrete ISM = Incremental Sampling Method VOC @ 7 ft, sample time - 1415 VOC @ 13 ft						

<div><div>Environmental Chemical Corporation</div><div>LOG OF SOIL BORING Coordinates: X 492795.19 Y 4557723.414 Surface Elevation: 1028.846 ft msl Casing Below Surface: Reference Elevation: Reference Description:</div></div>									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP CC-83	
					Drilling Method: Direct-Push Geoprobe 6620DT		Boring No. SB06 Building 1039							
					Sampling Method: 2" diameter-5 ft SS sampler MacroCore liner		Sheet 1 of 1							
					Water Lev. NA		Drilling							
					Time NA		Start 12-Aug-13							
					Date NA		Finish 12-Aug-13							
					Reference NA									
Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass					
	ISM	60/60		1-4 ft	0.0	NA	0	CL	Grass					
							1		Dark grayish brown silty clay (10YR 4/2), soft, dense					
							2							
							3		Color change to 10YR 4/3					
							4		Grading to stiff, dry					
							5							
	ISM VOC	60/60		4-7 ft 7 ft	0.0	NA	6							
							7							
							8							
							9							
							10							
	ISM			7-10 ft										
	ISM	60/60		4-10 ft	0.0		11							
							12							
							13							
							14							
							15							
							16							
							17							
							18							
							19							
							20							
	21													
	22													
	23													
	24													
Logged by: J. Scott P.G. - ECC									Date: 13-Aug-13	Notes: NA = Not Applicable See Sample Summary Sheets for sampling information ISM = Incremental Sampling Method VOC @ 7 ft collected at 1440				
Drilling Contractor: Frontz Drilling									Driller: Rickie Skanks					
WELL SPECIFICATIONS: Well not installed														
Diam. of casing: 2" Screen Interval:									Sandpack:					
BOH: 10 ft bgs Riser Interval:									Bentonite: 0- 10 ft bgs					

<div><div>Environmental Chemical Corporation</div><div>LOG OF SOIL BORING</div><div>Coordinates: X 492794.6 Y 4557725.23</div><div>Surface Elevation: 1029.089 ft msl</div><div>Casing Below Surface:</div><div>Reference Elevation:</div><div>Reference Description:</div></div>									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP					
									Drilling Method: Direct-Push		Boring No. SB07							
									Geoprobe 6620DT		Building 1039							
									Sampling Method: 2" diameter-5 ft SS sampler		Sheet 1 of 1							
									MacroCore liner									
									Water Lev. NA		Drilling							
									Time NA		Start Finish							
									Date NA		12-Aug-13 12-Aug-13							
									Reference NA									
Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass									
	ISM	60/60		1-4 ft	0.0	NA	0	CL	Grass									
							1		Dark grayish brown silty clay (10YR 4/2), soft, dense									
							2											
							3		Brown silty clay (10YR 4/3), stiff, dense, dry									
							4											
							5		Grading to very stiff									
									ISM VOC	60/60		4-7 ft	0.0	NA	6			
															7			
															8			
															9			
10	End of boring 10 ft bgs																	
	ISM		4-10 ft			11												
						12												
						13												
						14												
						15												
						16												
						17												
						18												
						19												
						20												
21																		
22																		
23																		
24																		
Logged by: J. Scott P.G. - ECC									Date: 13-Aug-13		Notes: NA = Not Applicable							
Drilling Contractor: Frontz Drilling									Driller: Rickie Skanks		See Sample Summary Sheets for sampling information							
WELL SPECIFICATIONS: Well not installed											ISM = Incremental Sampling Method							
Diam. of casing: 2" Screen Interval:									Sandpack:		VOC @ 7 ft collected at 1455							
BOH: 10 ft bgs Riser Interval:									Bentonite: 0- 10 ft bgs		Piece of tile pipe in sampler @ 3 ft							

<div><div>Environmental Chemical Corporation</div><div>LOG OF SOIL BORING</div><div>Coordinates: X492796.754 Y 4557725.514</div><div>Surface Elevation: 1028.892 ft msl</div><div>Casing Below Surface:</div><div>Reference Elevation:</div><div>Reference Description:</div></div>									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP	
					Drilling Method: Direct-Push		Boring No. SB08							
					Geoprobe 6620DT		Building 1039							
					Sampling Method: 2" diameter-5 ft SS sampler		Sheet 1 of 1							
					MacroCore liner									
					Water Lev. NA		Drilling							
					Time NA		Start Finish							
					Date NA		12-Aug-13 12-Aug-13							
					Reference NA									
Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass					
	ISM	60/60		1-4 ft	0.0	NA	0	CL	Grass					
							1		Dark grayish brown silty clay (10YR 4/2), soft, dense					
							2							
							3							
							4		Brown silty clay (10YR 4/3), stiff, dense, dry					
							5							
							6							
							7							
							8							
							9							
	ISM VOC	60/60		4-7 ft	0.0	NA	6							
							7							
							8							
							9							
							10							
							11							
							12							
							13							
							14							
							15							
	ISM			7-10 ft	0.1	0.0	8							
							9							
							10							
							11							
							12							
							13							
							14							
							15							
							16							
							17							
	ISM			4-10 ft	0.7		10		End of boring 10 ft bgs					
							11							
							12							
							13							
							14							
							15							
							16							
							17							
							18							
							19							
							20							
							21							
							22							
							23							
							24							
							25							
							26							
							27							
							28							
							29							
Logged by: J. Scott P.G. - ECC									Date: 13-Aug-13		Notes: NA = Not Applicable See Sample Summary Sheets for sampling information ISM = Incremental Sampling Method Sample time 1510 Clay tile pipe fragments @ 3.5 ft			
Drilling Contractor: Frontz Drilling									Driller: Rickie Skanks					
WELL SPECIFICATIONS: Well not installed														
Diam. of casing: 2" Screen Interval:									Sandpack:					
BOH: 10 ft bgs Riser Interval:									Bentonite: 0- 10 ft bgs					

HTW DRILLING LOG

HOLE NO.
CC83-5801

1. COMPANY NAME ECC

2. DRILLING SUBCONTRACTOR Frontz

SHEET 1
OF 1 SHEETS

3. PROJECT Ravenna Army Ammunition Plant

4. LOCATION CC 83-316g 1039

5. NAME OF DRILLER Joe Teter *Rickie Shanks*

6. MANUFACTURER'S DESIGNATION OF DRILL Geoprobe 6620DT

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT
5 FT SS SAMPLER
MACROCORE

8. HOLE LOCATION D41-5801

9. SURFACE ELEVATION NA

10. DATE STARTED
8/12 : 1133

11. DATE COMPLETED
8/12 : 1143

12. OVERBURDEN THICKNESS NA

15. DEPTH GROUNDWATER ENCOUNTERED
NA

13. DEPTH DRILLED INTO ROCK NA

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED
NA

14. TOTAL DEPTH OF HOLE 10'

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)
NA

18. GEOTECHNICAL SAMPLES NA

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES
NA

20. SAMPLES FOR CHEMICAL ANALYSIS
SEE SAMPLE SUMMARY SHEET

VOC

METALS

OTHER (SPECIFY)

OTHER (SPECIFY)

OTHER (SPECIFY)

21. TOTAL CORE RECOVERY
100 %

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

23. SIGNATURE OF INSPECTOR

BENTONITE

DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
CL	Silly Clay; dark greyish brown (104R 4/2), soft, dense					PID 0
2						0
10	Silly Clay; brown (104R 4/3); stiff, dense, dry					2.2 (TS)
3						0
15						PID: 4.2 (TS)
4						0
20	Grady lo (104R 5/3)					0
5	very stiff					0
25						0
6						0
30				003 UCL 1245 1141		0
7						0
35						0
8						0
40						0
45						0

HTW DRILLING LOG

HOLE NO.
CC83-5802

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR Frontz		SHEET 1 OF 1 SHEETS	
3. PROJECT Ravenna Army Ammunition Plant			4. LOCATION CC 83 Bldg. 1039		
5. NAME OF DRILLER Joe Peter <i>Lickie Sheets</i>			6. MANUFACTURER'S DESIGNATION OF DRILL Geoprobe 6620DT		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		5 FT SS SAMPLER		8. HOLE LOCATION	
		MACROCORE		CC83, Du1, 5802	
				9. SURFACE ELEVATION NA	
				10. DATE STARTED 8/12 : 1150	
				11. DATE COMPLETED 8/12 : 1158	
12. OVERBURDEN THICKNESS NA			15. DEPTH GROUNDWATER ENCOUNTERED NA		
13. DEPTH DRILLED INTO ROCK NA			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED NA		
14. TOTAL DEPTH OF HOLE 10			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) NA		
18. GEOTECHNICAL SAMPLES NA		DISTURBED		UNDISTURBED	
				19. TOTAL NUMBER OF CORE BOXES NA	
20. SAMPLES FOR CHEMICAL ANALYSIS SEE SAMPLE SUMMARY SHEET		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
				21. TOTAL CORE RECOVERY 100 %	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		BENTONITE		OTHER (SPECIFY)	
				23. SIGNATURE OF INSPECTOR <i>D. [Signature]</i>	

DEPTH a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
CL	1	Silty clay; dark grayish brown, (10YR 4/6); soft, dense					0.0
	2						2.2
	3	Silty clay; brown (10YR 4/3); stiff, dense, dry.					0.0
	4						0.0
	5						0.0
	6	Grading to 10YR 5/6 very stiff					0.0
	7						0.0
	8						0.0
	9						0.0
	10	Gravel, light gray (N 7/1)					1.0
	11						0.0
	12						0.0
	13						0.0
	14						0.0
	15						0.0
	16						0.0
	17						0.0
	18						0.0
	19						0.0
	20						0.0
	21						0.0
	22						0.0
	23						0.0
	24						0.0
	25						0.0
	26						0.0
	27						0.0
	28						0.0
	29						0.0
	30						0.0
	31						0.0
	32						0.0
	33						0.0
	34						0.0
	35						0.0
	36						0.0
	37						0.0
	38						0.0
	39						0.0
	40						0.0
	41						0.0
	42						0.0
	43						0.0
	44						0.0
	45						0.0
	46						0.0
	47						0.0
	48						0.0
	49						0.0
	50						0.0
	51						0.0
	52						0.0
	53						0.0
	54						0.0
	55						0.0
	56						0.0
	57						0.0
	58						0.0
	59						0.0
	60						0.0
	61						0.0
	62						0.0
	63						0.0
	64						0.0
	65						0.0
	66						0.0
	67						0.0
	68						0.0
	69						0.0
	70						0.0
	71						0.0
	72						0.0
	73						0.0
	74						0.0
	75						0.0
	76						0.0
	77						0.0
	78						0.0
	79						0.0
	80						0.0
	81						0.0
	82						0.0
	83						0.0
	84						0.0
	85						0.0
	86						0.0
	87						0.0
	88						0.0
	89						0.0
	90						0.0
	91						0.0
	92						0.0
	93						0.0
	94						0.0
	95						0.0
	96						0.0
	97						0.0
	98						0.0
	99						0.0
	100						0.0

HTW DRILLING LOG

HOLE NO.
CC83 SB3

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR Frontz		SHEET 1 OF 1 SHEETS	
3. PROJECT Ravenna Army Ammunition Plant			4. LOCATION CC 83, Bldg 1039		
5. NAME OF DRILLER Joe Teter R. Shanks			6. MANUFACTURER'S DESIGNATION OF DRILL Geoprobe 6620DT		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		5 FT SS SAMPLER		8. HOLE LOCATION CC83, D41, SB03	
		MACROCORE		9. SURFACE ELEVATION NA	
				10. DATE STARTED 8/12/12	
				11. DATE COMPLETED 8/12/12	
12. OVERBURDEN THICKNESS NA			15. DEPTH GROUNDWATER ENCOUNTERED NA		
13. DEPTH DRILLED INTO ROCK NA			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED NA		
14. TOTAL DEPTH OF HOLE 10'			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) NA		
18. GEOTECHNICAL SAMPLES NA		DISTURBED		UNDISTURBED	
20. SAMPLES FOR CHEMICAL ANALYSIS SEE SAMPLE SUMMARY SHEET		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		BENTONITE		OTHER (SPECIFY)	
				23. SIGNATURE OF INSPECTOR	
				21. TOTAL CORE RECOVERY 93%	

DEPTH a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
CL	1	Silty Clay, dark grayish brown; (10YR 4/2), dense soft	0.0				
	2		0.0 0.3				
	3	Silty Clay, brown (10YR 4/3); dense, stiff	0.0				
	4		0.0				
	5		0.0				
	6	Grading to (10YR 5/3)	0.0				
	7		0.0				
	8	Grading to very stiff	0.0				
	9		0.0				
	10		0.0				
					005, 006, 007 - QA UOCE 1245		
							Cable @ 9'2"

HTW DRILLING LOG

HOLE NO.
CC83-5804

1. COMPANY NAME ECC

2. DRILLING SUBCONTRACTOR Frontz

SHEET 1
OF 1 SHEETS

3. PROJECT Ravenna Army Ammunition Plant

4. LOCATION CC 83 Bldg 1039

5. NAME OF DRILLER Joe Teter R.S.

6. MANUFACTURER'S DESIGNATION OF DRILL Geoprobe 6620DT

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT
5 FT SS SAMPLER
MACROCORE

8. HOLE LOCATION
CC83 Duol 5804

9. SURFACE ELEVATION NA

10. DATE STARTED
8/12/1249

11. DATE COMPLETED
8/12/1255

12. OVERBURDEN THICKNESS NA

15. DEPTH GROUNDWATER ENCOUNTERED
12.4

13. DEPTH DRILLED INTO ROCK NA

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED
NA

14. TOTAL DEPTH OF HOLE
10

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)
NA

18. GEOTECHNICAL SAMPLES NA

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS
SEE SAMPLE SUMMARY SHEET

VOC

METALS

OTHER (SPECIFY)

OTHER (SPECIFY)

OTHER (SPECIFY)

21. TOTAL CORE RECOVERY %

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

23. SIGNATURE OF INSPECTOR

BENTONITE

REV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
CL	1	Silty Clay; dark grayish brown (w/ 1/2); dense, sat.	0.0				
	2		0.4				
	3	Silty Clay; brown (10 w/ 5/3); dense, very stiff, dry	0.0				
	4		0.0				
	5	Sandstone cobble, light yellowish brown (2.54 w/ 3)	0.0				
	6		0.3				
	7		0.0				
	8		0.0				
	9		0.0				
	10		0.0				
	11		0.0				

PROJECT RVAAP

HOLE NO.

HTW DRILLING LOG

HOLE NO.

CCF3 585

1. COMPANY NAME ECC

2. DRILLING SUBCONTRACTOR Frontz

SHEET 1
OF / SHEETS

3. PROJECT Ravenna Army Ammunition Plant

4. LOCATION CC 83 Bldg. 1039

5. NAME OF DOLLER ~~Joe Teter~~ R.S.

8. MANUFACTURER'S DESIGNATION OF DRILL Geoprobe 6620DT

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	5 FT SS SAMPLER
	MACROCORE

8. HOLE LOCATION
D41 - SB05

9. SURFACE ELEVATION NA

10. DATE STARTED
8/12: 1348

11. DATE COMPLETED
8/12

12. OVERBURDEN THICKNESS NA

15. DEPTH GROUNDWATER ENCOUNTERED

13. DEPTH DRILLED INTO ROCK NA

18. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE 13'

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)
NA

18. GEOTECHNICAL SAMPLES NA

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES *NA*

20. SAMPLES FOR CHEMICAL ANALYSIS
SEE SAMPLE SUMMARY
SHEET

VOC

METALS

OTHER (SPECIFY)

OTHER (SPECIFY)

OTHER (SPECIFY) _____

21. TOTAL CORE RECOVERY
100 %

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

23. SIGNATURE OF INSPECTOR _____

BENTONITE

10

D. L. Smith

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
CL	1	Silty Clay, dark grayish brown, (10 YR 4/2), dense sat. h.	0.0				
	2		0.0				
	3		0.0				
	4		0.0				
	5		0.0				
	6	Silty Clay, brown (10 YR 5/3), dense, stiff, dry	0.0				Sample time 1415
	7		0.0				
	8		0.0				
	9		0.0				
	10		0.0				
	11		0.0				
	12		0.0				
	13		0.0				

MARK FORM 55

PROJECT RVAAP

NO

SB 5

HTW DRILLING LOG

HOLE NO.
CC83 SB6

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR Frontz		SHEET 1 OF 1 SHEETS	
3. PROJECT Ravenna Army Ammunition Plant			4. LOCATION CC 83, Bldg. 1039		
5. NAME OF DRILLER Joe Teter RS			6. MANUFACTURER'S DESIGNATION OF DRILL Geoprobe 6620DT		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	5 FT SS SAMPLER		8. HOLE LOCATION Du1 - SB6		
	MACROCORE		9. SURFACE ELEVATION NA		
			10. DATE STARTED 8/12/13 1420		
			11. DATE COMPLETED 8/12		
12. OVERBURDEN THICKNESS NA			15. DEPTH GROUNDWATER ENCOUNTERED NA		
13. DEPTH DRILLED INTO ROCK NA			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED NA		
14. TOTAL DEPTH OF HOLE 13'05" 10'			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) NA		
18. GEOTECHNICAL SAMPLES NA		DISTURBED		UNDISTURBED	
20. SAMPLES FOR CHEMICAL ANALYSIS SEE SAMPLE SUMMARY SHEET		VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)
		-	-	-	-
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
		BENTONITE	-	-	D. J. Smith
19. TOTAL NUMBER OF CORE BOXES NA					
21. TOTAL CORE RECOVERY %					

SLV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
CL	1	Silly Clay; dark greyish brown; (10 YR 4/2) dense, soft	0.0				
	2	Color change to 10 YR 4/6	0.0				
	3	Grading to stiff, dry	0.0				
	4	Grading to very stiff	0.0				
	5		0.0				
	6		0.0				
	7		0.0				
	8		0.0				
	9		0.0				
	10		0.0				
				Core 7'			Sample @ 1440

HOLE NO.
SB7

2. DRILLING SUBCONTRACTOR Frontz

SHEET 1
OF 3 SHEETS

4. LOCATION CC 83 3169 1309 ⁷⁵ 1039

5. NAME OF DRILLER ~~Joe Teter~~ R.S

6. MANUFACTURER'S DESIGNATION OF DPH: Geoprobe 6620DT

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	5 FT SS SAMPLER MACROCORE
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8. HOLE LOCATION Du1, SB7

9. SURFACE ELEVATION	NA
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10. DATE STARTED 8/12/14 32

11. DATE COMPLETED
8/12, 1942

12. OVERBURDEN THICKNESS NA

15. DEPTH GROUNDWATER ENCOUNTERED *NA*

13. DEPTH DRILLED INTO ROCK NA

18. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)
NA

18. GEOTECHNICAL SAMPLES NA

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES *NA*

20. SAMPLES FOR CHEMICAL ANALYSIS
SEE SAMPLE SUMMARY
SHEET

VOC

METALS

OTHER (SPECIFY)

OTHER (SPECIFY)

OTHER (SPECIFY):

21. TOTAL CORE RECOVERY
100 %

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

23. SIGNATURE OF INSPECTOR _____

[Signature]

MPK FORM 55

PROJECT RVAAP

HOLE NO. SB 7

HTW DRILLING LOG

HOLE NO.
CC 83 588

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR Frontz		SHEET 1 OF 1 SHEETS	
3. PROJECT Ravenna Army Ammunition Plant			4. LOCATION CC 83, Bldg 1039		
5. NAME OF DRILLER Joe Teter R.S.			6. MANUFACTURER'S DESIGNATION OF DRILL Geoprobe 6620DT		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		5 FT SS SAMPLER		8. HOLE LOCATION 241, 588	
		MACROCORE		9. SURFACE ELEVATION NA	
				10. DATE STARTED 8/12, 1443	
				11. DATE COMPLETED 8/12, 1455	
12. OVERBURDEN THICKNESS NA			15. DEPTH GROUNDWATER ENCOUNTERED NA		
13. DEPTH DRILLED INTO ROCK NA			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED NA		
14. TOTAL DEPTH OF HOLE 10'			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) NA		
18. GEOTECHNICAL SAMPLES NA		DISTURBED		UNDISTURBED	
20. SAMPLES FOR CHEMICAL ANALYSIS SEE SAMPLE SUMMARY SHEET		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		BENTONITE		OTHER (SPECIFY)	
				23. SIGNATURE OF INSPECTOR	
				19. TOTAL NUMBER OF CORE BOXES NA	
				21. TOTAL CORE RECOVERY 100%	

-ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
CL	1	Silly Clay, dark grayish brown, (10 YR 4/5), dense, stiff	0.0				
CL	5/2		0.2				
	10/3	Silly Clay, brown, (10 YR 4/3), dense, stiff, dry	0.0				
	15/4		0.3				
	20/5	Grading to very stiff	0.0				
	25/6		0.8				
	30/7		0.0				
	35/8		0.1				
	40/9		0.0				
	45/10		0.7				
							Clay tile pipe logs @ 3.5'
							Sample time 1510