

APPENDIX B

Boring Logs

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**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 487648.157 Y 4559635.316
Surface Elevation: 1,120.61 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB01
				Building U-3	CC 72-01
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of	1
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			10-Dec-12	10-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/47	NA		0.0	NA	0		top soil
								CL	tan/gray hard clay
							1		
							2	CL	silty brown soft clay
							3	CL	brown/gray hard clay
							4		
	NA	60/58			0.0	NA	5		native material
							6		
							7		
								CL	brown/gray hard clay
							8		
							9		
									sampled 9-10 ft
							10		
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	Roxann Williams	Date:	10-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Jeremy Lackone	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed				
Diam. of casing: 2"	Screen Interval:	Sandpack:		Grout:	
BOH:	Riser Interval:	Bentonite: 10 ft to grnd. Surface		Cover:	



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 487648.126 Y 4559636.723
Surface Elevation: 1,120.14 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	CC 72-01
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB02
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			10-Dec-12	10-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/28	NA		0.0	NA	0	CL	top soil
							1		hard brown clay
							2		
							3		
							4	CL	wet gray/brown silty clay
	NA	60/30			3.1	NA	5		
							6		
							7		
							8	CL	wet gray silty clay
							9		
	NA	60/36			0.0	NA	10		
							11		
							12		gray silty clay
							13		
							14	SM	sand/clay mix gray m-f grain
							15		End of boring 15 ft
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	14-Nov-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	15 ft to grnd. Surface	Cover:	
BOH:	Riser Interval:				



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X 487648.051 Y 4559637.234
Surface Elevation: 1,119.51 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	CC 72-01
Drilling Method:	Direct-Push	Boring No.	SB03		
	Geoprobe 6620DT	Building U-3			
Sampling Method:	2" diameter-5 ft SS sampler	Sheet 1 of	1		
	MacroCore liner				
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			10-Dec-12	10-Dec-12
Reference	NA				

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/24	NA		0.0	NA	0	CL	top soil
							1		brown silty clay with small gravel mix
							2		
							3		
							4		
					6.5			CL	brown silty clay petro odor-sampled 4-5 ft
							5		refusal at 5 ft
							6		
							7		
							8		
							9		
							10		
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by: Roxann Williams
Drilling Contractor: Frontz Drilling
WELL SPECIFICATIONS: Well not installed
Diam. of casing: 2" Screen Interval:
BOH: 5 ft bgs Riser Interval:

Date: 10-Dec-12 Notes: NA = Not Applicable
Driller: Jeremy Lackone See Sample Summary Sheets for sampling information
Sandpack: Grout:
Bentonite: 5 ft to grnd. Surface Cover:



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 487649.141 Y 4559636.178
Surface Elevation: 1,120.45 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				Bld U-3	CC 72-01
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB04
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			10-Dec-12	10-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/48	NA		0.0	NA	0		(strong odor through entire core)
							1	CL	Dark gray clay
							2	CL	wet silty soft clay
							3		
					4.4		4		large gravel layer 6"
	NA	60/34			0.0	NA	5		
							6	CL	hard brown/gray clay
					0.5				
					0.20		7		
					0.80				
					0.30		8		
					0.20				
					2.1		9		
					3.0				
					16.8				sampled
							10		End of boring 10 ft
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	Roxann Williams - ECC	Date:	10-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	10 ft to grnd. Surface	Cover:	
BOH: 10 ft bgs	Riser Interval:				



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 487647.41 Y 4559636.012
Surface Elevation: 1,120.57 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				Bld U-3	CC 72-10
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB05
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			10-Dec-12	10-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/34	NA		0.0	NA	0	CL	top soil
							1		gray/brown hard clay
							2		
							3		
							4		orange stain
	NA	60/58			0.0	NA	5	CL	wet gray/brown dark silty soft clay
							6		
							7	CL	hard gray/brown clay
							8		
							9		sand stone 1" layer tan/orange
							10		end of boring 10 ft
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	Roxann Williams - ECC	Date:	10-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Jeremy Lackone	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	10 ft to grnd. Surface	Cover:	
BOH:	10 ft bgs	Riser Interval:			

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X 495625.723 Y 4559746.552 Surface Elevation: 978.944789 ft msl Casing Below Surface: Reference Elevation: Reference Description:									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP	
													CC-72 UST-CC-72-02	
									Drilling Method:		Direct-Push		Boring No. SB01	
											Geoprobe 6620DT		Atlas Scrap Yard	
									Sampling Method:		2" diameter-5 ft SS sampler		Sheet 1 of 1	
		MacroCore liner												
Water Lev.		NA				Drilling								
Time		NA				Start	Finish							
Date		NA				5-Dec-12	5-Dec-12							
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: Soil					
		60/30			0.0	NA	0	CL	Slag, brown silty clay					
							1							
							2							
							3							
							4							
							5							
	Disc.	60/41		9 ft	0.0	NA	6	CL	Brown / gray clay (interbedded silty seams), firm, moist.					
							7							
							8							
							9							
							10							
							11							
							12							
							13							
							14							
							15							
							16							
							17							
							18							
							19							
							20							
							21							
							22							
							23							
							24							
							Logged by: T. Hernandez P.G. - Prudent Tech.							
Drilling Contractor: Frontz Drilling														
WELL SPECIFICATIONS: Well not installed														
Diam. of casing: 2" Screen Interval:														
BOH: 10 ft bgs Riser Interval:														
Date: 5-Dec-12		Notes: NA = Not Applicable												
Driller: Joe Teter		See Sample Summary Sheets for analytical information												
Sandpack:		Disc. = Discrete												
Bentonite: 0- 10 ft bgs														



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X 495628.143 Y 4559748.729
Surface Elevation: 978.961193 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	UST-CC-72-02
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB02
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Atlas Scrap Yard	
				Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			5-Dec-12	5-Dec-12
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: Soil
		60/46			0.0	NA	0		
							1	CL	
							2		Slag, brown silty clay, firm, moist
							3		
							4		
							5		
		60/48			0.0	NA	6		
							7	CL	Brown / gray clay, interbedded silty seams
							8		
	Disc.			9 ft			9		
							10		1" - 2" gravel seam at 9-9.5 ft bgs End of boring at 10 ft bgs
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	5-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter		See Sample Summary Sheets for analytical information
WELL SPECIFICATIONS:	Well not installed	Sandpack:			Disc. = Discrete
Diam. of casing: 2"	Screen Interval:	Bentonite:	0- 10 ft bgs		
BOH:	10 ft bgs	Riser Interval:			

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X 495629.668 Y 4559747.446 Surface Elevation: 979.630476 ft msl Casing Below Surface: Reference Elevation: Reference Description:									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP	
													CC-72 UST-CC-72-02	
									Drilling Method:		Direct-Push		Boring No. SB03	
											Geoprobe 6620DT		Atlas Scrap Yard	
									Sampling Method:		2" diameter-5 ft SS sampler		Sheet 1 of 1	
		MacroCore liner												
Water Lev.		NA				Drilling								
Time		NA				Start	Finish							
Date		NA				5-Dec-12	5-Dec-12							
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: Soil					
		60/46			0.0	NA	0	CL						
							1							
							2		Slag, brown silty clay, firm, moist					
							3							
							4							
		60/48			0.0	NA	6	CL						
							7		Brown / gray clay, interbedded silty seams					
							8							
							9							
							10		1" - 2" gravel seam at 9-9.5 ft bgs					
							11							
							Logged by: T. Hernandez P.G. - Prudent Tech.							
Drilling Contractor: Frontz Drilling									Driller: Joe Teter					
WELL SPECIFICATIONS: Well not installed														
Diam. of casing: 2" Screen Interval:									Sandpack:					
BOH: 10 ft bgs Riser Interval:									Bentonite: 0- 10 ft bgs					

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X 495628.829 Y 4559746.309 Surface Elevation: 979.161322 ft msl Casing Below Surface: Reference Elevation: Reference Description:									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP	
													CC-72 UST-CC-72-02	
									Drilling Method:		Direct-Push		Boring No. SB04	
											Geoprobe 6620DT		Atlas Scrap Yard	
									Sampling Method:		2" diameter-5 ft SS sampler		Sheet 1 of 1	
		MacroCore liner												
Water Lev.		NA				Drilling								
Time		NA				Start	Finish							
Date		NA				5-Dec-12	5-Dec-12							
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: Soil					
		60/46			0.0	NA	0	CL						
							1							
							2		Slag, brown silty clay, firm, moist					
							3							
							4							
							5							
	Disc.	60/48		9 ft	0.0	NA	6	CL						
							7		Brown / gray clay, interbedded silty seams					
							8							
							9							
							10		1" - 2" gravel seam at 9-9.5 ft bgs					
									End of boring at 10 ft bgs					
							11							
							12							
							13							
							14							
							15							
							16							
							17							
							18							
							19							
							20							
							21							
							22							
							23							
							24							

Logged by: T. Hernandez P.G. - Prudent Tech.		Date: 5-Dec-12	Notes: NA = Not Applicable See Sample Summary Sheets for analytical information Disc. = Discrete
Drilling Contractor: Frontz Drilling		Driller: Joe Teter	
WELL SPECIFICATIONS: Well not installed		Sandpack:	
Diam. of casing: 2" Screen Interval:		Bentonite: 0-10 ft bgs	
BOH: 10 ft bgs Riser Interval:			

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X 495627.658 Y 4559747.661 Surface Elevation: 298.345000 Casing Below Surface: Reference Elevation: Reference Description:									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP	
													CC-72 UST-CC-72-02	
									Drilling Method:		Direct-Push		Boring No. SB05	
											Geoprobe 6620DT		Atlas Scrap Yard	
									Sampling Method:		2" diameter-5 ft SS sampler		Sheet 1 of 1	
		MacroCore liner												
Water Lev.		NA				Drilling								
Time		NA				Start	Finish							
Date		NA				5-Dec-12	5-Dec-12							
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: Soil					
		60/32			0.0	NA	0	CL						
	Disc.			5 ft	0.0		5		Odor at 5 ft					
		60/45			0.0	NA	6	CL						
							11							
						Logged by: T. Hernandez P.G. - Prudent Tech.								
Drilling Contractor: Frontz Drilling									Driller: Joe Teter					
WELL SPECIFICATIONS: Well not installed									Sandpack:					
Diam. of casing: 2" Screen Interval:									Bentonite: 0-10 ft bgs					
BOH: 10 ft bgs Riser Interval:														



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 495614.284 Y 4559747.85
Surface Elevation: 978.698729 ft msl
Casing Below Surface: _____
Reference Elevation: _____
Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	UST-CC-72-03
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB01
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Atlas Scrap Yard	
				Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			5-Dec-12	5-Dec-12
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: Soil
		60/36			0.0	NA	0		
							1	CL	Light brown gray silty clay
							2		
							3		
							4		
							5	CL	Light brown clay
		60/42			0.0		6		
							7	CL	Brown clay transition to gray
	Disc.			8-9 ft			8		
							9		
							10		
		60/46			0.0		11	CL	Gray clay, fat
							12		
	Comp.			7-13 ft			13		End of boring at 13 ft bgs
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.		Date:	5-Dec-12	Notes: NA = Not Applicable See Sample Summary Sheets for sampling information Disc. = Discrete Comp. = Composite
Drilling Contractor:	Frontz Drilling		Driller:	Joe Teter	
WELL SPECIFICATIONS:	Well not installed				
Diam. of casing:	2"	Screen Interval:		Sandpack:	
BOH:	13 ft bgs	Riser Interval:		Bentonite:	0-13 ft bgs



LOG OF SOIL BORING

Coordinates:	X 495614.284 Y 4559747.85
Surface Elevation:	978.734818 ft msl
Casing Below Surface:	
Reference Elevation:	
Reference Description:	

Job. No. 5461.004		Client ACOE-Louisville			Location RVAAP	
					CC-72 UST-CC-72-03	
Drilling Method:		Direct-Push			Boring No. SB02	
		Geoprobe 6620DT			Atlas Scrap Yard	
Sampling Method:		2" diameter-5 ft SS sampler			Sheet 1 of 1	
		MacroCore liner				
					Drilling	
Water Lev.	NA				Start	Finish
Time	NA				5-Dec-12	5-Dec-12
Date	NA					
Reference	NA					

Logged by:	T. Hernandez P.G. - Prudent Tech.		Date:	5-Dec-12	Notes: NA = Not Applicable See Sample Summary Sheets for sampling information Disc. = Discrete
Drilling Contractor:	Frontz Drilling		Driller:	Joe Teter	
WELL SPECIFICATIONS:	Well not installed				
Diam. of casing: 2"	Screen Interval:		Sandpack:		
BOH: 10 ft bgs	Riser Interval:		Bentonite: 0-10 ft bgs		



LOG OF SOIL BORING

Coordinates:	X 495614.284 Y 4559747.85
Surface Elevation:	978.751222 ft msl
Casing Below Surface:	
Reference Elevation:	
Reference Description:	

Job. No. 5461.004		Client ACOE-Louisville			Location RVAAP	
					CC-72 UST-CC-72-03	
Drilling Method:		Direct-Push			Boring No. SB03	
		Geoprobe 6620DT			Atlas Scrap Yard	
Sampling Method:		2" diameter-5 ft SS sampler			Sheet 1 of 1	
		MacroCore liner				
					Drilling	
Water Lev.	NA				Start	Finish
Time	NA				5-Dec-12	5-Dec-12
Date	NA					
Reference	NA					

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	5-Dec-12	Notes: NA = Not Applicable See Sample Summary Sheets for sampling information Disc. = Discrete
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	
WELL SPECIFICATIONS:	Well not installed			
Diam. of casing: 2"	Screen Interval:		Sandpack:	
BOH: 10 ft bgs	Riser Interval:		Bentonite: 0-10 ft bgs	



LOG OF SOIL BORING

Coordinates:	X 495614.284 Y 4559747.85
Surface Elevation:	978.829961 ft msl
Casing Below Surface:	
Reference Elevation:	
Reference Description:	

Job. No. 5461.004		Client ACOE-Louisville			Location RVAAP	
					CC-72 UST-CC-72-03	
Drilling Method:		Direct-Push			Boring No. SB04	
		Geoprobe 6620DT			Atlas Scrap Yard	
Sampling Method:		2" diameter-5 ft SS sampler			Sheet 1 of 1	
		MacroCore liner				
					Drilling	
Water Lev.	NA				Start	Finish
Time	NA				5-Dec-12	5-Dec-12
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: Soil
		60/48			0.0	NA	0		
							1		
							2		
									Slag, sand, clay fill
							3		
							4		
						5			
	Disc.	60/52		8-9 ft	0.0			CL	
							6		
							7		Light brown clay interbedded with sand/gravel
							8		
							9		
						10		End of boring at 10 ft bgs	

Logged by:	T. Hernandez P.G. - Prudent Tech.
Drilling Contractor:	Frontz Drilling
WELL SPECIFICATIONS:	Well not installed
Diam. of casing: 2"	Screen Interval:
BOH: 10 ft bgs	Riser Interval:

Date: 5-Dec-12
Driller: Joe Teter

Sandpack: _____
Bentonite: 0-10 ft bgs

Notes: NA = Not Applicable
See Sample Summary Sheets for
sampling information
Disc. = Discrete



LOG OF SOIL BORING

Coordinates:	X 495614.284 Y 4559747.85
Surface Elevation:	978.597024 ft msl
Casing Below Surface:	
Reference Elevation:	
Reference Description:	

Job. No. 5461.004		Client ACOE-Louisville			Location RVAAP	
					CC-72 UST-CC-72-03	
Drilling Method:		Direct-Push			Boring No. SB05	
		Geoprobe 6620DT			Atlas Scrap Yard	
Sampling Method:		2" diameter-5 ft SS sampler			Sheet 1 of 1	
		MacroCore liner				
					Drilling	
Water Lev.	NA				Start	Finish
Time	NA				5-Dec-12	5-Dec-12
Date	NA					
Reference	NA					

Logged by:	T. Hernandez P.G. - Prudent Tech.		Date:	5-Dec-12	Notes: NA = Not Applicable See Sample Summary Sheets for sampling information Disc. = Discrete
Drilling Contractor:	Frontz Drilling		Driller:	Joe Teter	
WELL SPECIFICATIONS:	Well not installed				
Diam. of casing: 2"	Screen Interval:		Sandpack:		
BOH: 10 ft bgs	Riser Interval:		Bentonite: 0-10 ft bgs		



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 495625.917 Y 4559757.056
Surface Elevation: 978.045850 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	UST-CC-72-04
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB01
				Atlas Scrap Yard	
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			5-Dec-12	5-Dec-12
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: Soil
		60/32			0.0	NA	0		
							1		
							2	CL	Light brown silty clay
							3		
							4		
		60/47					5		
					0.0	NA	6		
							7	CL	Light brown silty clay
							8		
	Disc.			9 ft			9		
							10		End of boring 10 ft bgs
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	5-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter		See Sample Summary Sheets for analytical information
WELL SPECIFICATIONS:	Well not installed	Sandpack:			Disc. = Discrete
Diam. of casing: 2"	Screen Interval:	Bentonite:	0-10 ftbgs		
BOH:	10 ft bgs	Riser Interval:			

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X 495621.008 Y 4559759.5 Surface Elevation: 978.291910 ft msl Casing Below Surface: Reference Elevation: Reference Description:									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP CC-72 UST-CC-72-04	
									Drilling Method: Direct-Push Geoprobe 6620DT		Boring No. SB02 Atlas Scrap Yard			
									Sampling Method: 2" diameter-5 ft SS sampler MacroCore liner		Sheet 1 of 1			
											Drilling			
									Water Lev. NA		Start		Finish	
									Time NA		5-Dec-12		5-Dec-12	
									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: Soil					
		60/37			0.0	NA	0	CL	Light brown silty clay					
						1								
						2								
						3								
						4								
	60/45						5							
	Disc.			9 ft	0.0	NA	6	CL	Light brown silty clay					
							7							
							8							
							9							
							11							
							12							
							13							
							14							
							15							
							16							
							17							
							18							
	19													
	20													
	21													
	22													
	23													
	24													

Logged by: T. Hernandez P.G. - Prudent Tech.		Date: 5-Dec-12	Notes: NA = Not Applicable See Sample Summary Sheets for analytical information Disc. = Discrete
Drilling Contractor: Frontz Drilling		Driller: Joe Teter	
WELL SPECIFICATIONS: Well not installed		Sandpack:	
Diam. of casing: 2" Screen Interval:		Bentonite: 0-10 ftbgs	
BOH: 10 ft bgs Riser Interval:			

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X 495620.281 Y 4559758.5 Surface Elevation: 978.226294 ft msl Casing Below Surface: Reference Elevation: Reference Description:										Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP	
														CC-72 UST-CC-72-05	
										Drilling Method:		Direct-Push		Boring No. SB01	
												Geoprobe 6620DT		Atlas Scrap Yard	
										Sampling Method:		2" diameter-5 ft SS sampler		Sheet 1 of 1	
		MacroCore liner													
				Drilling											
Water Lev.		NA				Start	Finish								
Time		NA				5-Dec-12	5-Dec-12								
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: Soil						
		60/51	NA		0.0	NA	0	CL							
							1								
							2		Light brown silty clay						
							3								
							4		Transition to brown clay						
							5								
							6								
							7								
							8								
							9								
	Disc.	60/53		8-9 ft	0.0	NA	6	CL							
							7								
							8								
							9		Interbedded seams of gravel 1" thick 8-9 ft						
							10		Light brown clay						
							11								
							12								
							13								
							14								
							15								
							16								
							17								
							18								
							19								
							20								
							21								
							22								
							23								
							24								

Logged by: T. Hernandez P.G. - Prudent Tech.

Drilling Contractor: Frontz Drilling

WELL SPECIFICATIONS: Well not installed

Diam. of casing: 2" Screen Interval:

BOH: 10 ft bgs Riser Interval:

Date: 5-Dec-12

Driller: Joe Teter

Sandpack:

Bentonite: 0-10 ft bgs

Notes: NA = Not Applicable

See Sample Summary Sheets for analytical information

Disc. = Discrete

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X 495620.355 Y 4559757.635 Surface Elevation: 978.098342 ft msl Casing Below Surface: Reference Elevation: Reference Description:										Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP	
														CC-72 UST-CC-72-05	
										Drilling Method:		Direct-Push		Boring No. SB02	
												Geoprobe 6620DT		Atlas Scrap Yard	
										Sampling Method:		2" diameter-5 ft SS sampler		Sheet 1 of 1	
		MacroCore liner													
				Drilling											
Water Lev.		NA				Start	Finish								
Time		NA				5-Dec-12	5-Dec-12								
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: Soil						
		60/57	NA		0.0	NA	0	CL							
							1								
							2		Light brown silty clay						
							3								
							4		Transition to brown clay						
	Disc.	60/50		8-9 ft	0.0	NA	5	CL							
							6								
							7								
							8		Interbedded seams of gravel 1" thick 8-9 ft						
							9		Light brown clay						
							10		End of boring at 10 ft bgs						
							11								
							12								
							13								
							14								
							15								
							16								
							17								
							18								
							19								
							20								
							21								
							22								
							23								
							24								

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	5-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter		See Sample Summary Sheets for analytical information
WELL SPECIFICATIONS:	Well not installed	Sandpack:			Disc. = Discrete
Diam. of casing: 2"	Screen Interval:	Bentonite:	0-10 ft bgs		
BOH:	10 ft bgs	Riser Interval:			



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X 495620.355 Y 4559757.635

Surface Elevation: 978.528127 ft msl

Casing Below Surface:

Reference Elevation:

Reference Description:

Job. No. 5461.004

Client ACOE-Louisville

Location RVAAP

CC-72 UST-CC-72-05

Drilling Method: Direct-Push

Geoprobe 6620DT

Sampling Method: 2" diameter-5 ft SS sampler

MacroCore liner

Sheet 1 of 1

Drilling

Water Lev. NA

Start

Finish

Time NA

5-Dec-12

5-Dec-12

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: Soil
		60/48	NA		0.0	NA	0		
							1		
							2	CL	Light brown silty clay
							3		
							4	CL	Transition to brown clay
							5		
		60/41			0.0	NA	6		
							7		
							8		
	Disc.			8-9 ft			9	CL	Interbedded seams of gravel 1" thick 8-9 ft
							10		Light brown clay
									End of boring at 10 ft bgs
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by: T. Hernandez P.G. - Prudent Tech.

Drilling Contractor: Frontz Drilling

WELL SPECIFICATIONS: Well not installed

Diam. of casing: 2" Screen Interval:

BOH: 10 ft bgs Riser Interval:

Date: 5-Dec-12

Driller: Joe Teter

Sandpack:

Bentonite: 0-10 ft bgs

Notes: NA = Not Applicable

See Sample Summary Sheets for analytical information

Disc. = Discrete

Logged by: T. Hernandez P.G. - Prudent Tech.

Drilling Contractor: Frontz Drilling

WELL SPECIFICATIONS: Well not installed

Diam. of casing: 2" Screen Interval:

BOH: 10 ft bgs Riser Interval:

Date: 5-Dec-12

Driller: Joe Teter

Sandpack:

Bentonite: 0-10 ft bgs

Notes: NA = Not Applicable

See Sample Summary Sheets for analytical information

Disc. = Discrete



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X 495620.355 Y 4559757.635

Surface Elevation: 978.403457 ft msl

Casing Below Surface:

Reference Elevation:

Reference Description:

Job. No. 5461.004

Client ACOE-Louisville

Location RVAAP

CC-72 UST-CC-72-05

Drilling Method: Direct-Push

Geoprobe 6620DT

Sampling Method: 2" diameter-5 ft SS sampler

MacroCore liner

Sheet 1 of 1

Drilling

Water Lev. NA

Start

Finish

Time NA

5-Dec-12

5-Dec-12

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: Soil
		60/54	NA		0.0	NA	0		
							1		
							2	CL	Light brown silty clay
							3		
							4	CL	Transition to brown clay
							5		
		60/50			0.0	NA	6		
							7		
							8		
	Disc.			8-9 ft			9	CL	Interbedded seams of gravel 1" thick 8-9 ft
							10		Light brown clay
									End of boring at 10 ft bgs
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by: T. Hernandez P.G. - Prudent Tech.

Drilling Contractor: Frontz Drilling

WELL SPECIFICATIONS: Well not installed

Diam. of casing: 2" Screen Interval:

BOH: 10 ft bgs Riser Interval:

Date: 5-Dec-12

Driller: Joe Teter

Sandpack:

Bentonite: 0-10 ft bgs

Notes: NA = Not Applicable

See Sample Summary Sheets for analytical information

Disc. = Discrete

Logged by: T. Hernandez P.G. - Prudent Tech.

Drilling Contractor: Frontz Drilling

WELL SPECIFICATIONS: Well not installed

Diam. of casing: 2" Screen Interval:

BOH: 10 ft bgs Riser Interval:

Date: 5-Dec-12

Driller: Joe Teter

Sandpack:

Bentonite: 0-10 ft bgs

Notes: NA = Not Applicable

See Sample Summary Sheets for analytical information

Disc. = Discrete



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X490983.474 Y4558654.591
Surface Elevation: 1,145.14 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 72-06
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB01
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			10-Dec-12	10-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/26	NA		0.0	NA	0		top soil
							1	CL	sandy clay-tan M-F grain
							2	CL	tan slity clay
							3		
							4		
	NA	60/58			0.0	NA	5		
							6		
							7	CL	sand gravel, tan layer 3" - native clay darker gray/tan with large gravel mixed
							8		
							9		
							10		Sample
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	14-Nov-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	10 ft to grnd. Surface	Cover:	
BOH:	Riser Interval:				



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X490984.297 Y4558655.377
Surface Elevation: 1,145.00 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 72-06
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB02
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			10-Dec-12	10-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/43	NA		0.0	NA	0		6" top soil, grass, roots
							1	CL	tan silty clay
							2		
							3		
							4		
	NA	60/58				NA	5		
							6	CL	gray dark 3" light tan staining
							7		Burgandy 2" band. Clay mixed with gravel
							8		Native material
							9	CL SM	light gray band 4" sandy/hard
									brown sand m grain 3"
									4" clay, dark brown
							10		Sampled
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	14-Nov-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	10 ft to grnd. Surface	Cover:	
BOH:	Riser Interval:				



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X490985.195 Y4558654.095
Surface Elevation: 1,143.62 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 72-06
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB03
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			10-Dec-12	10-Dec-12
Reference	NA				

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/31	NA		0.0	NA	0		6" top soil, grass, roots
								CL	Tan/orange silty sand clay soft
							1		
							2	CL	clay. Sand and soft
							3		clay darker brown, soft
							4		
	NA	60/58				NA	5		
							6	CL	hard dark brown clay
							7	SM	4" tan M grain sand gravel mix
							8		clay hard brown
							9		light gray band hard sand
									brown clay hand
	NA					NA	10		
							11		
							12		
							13		
							14		
	NA					NA	15		
							16		
							17		
							18		
							19		
	NA					NA	20		
							21		
							22		
							23		
							24		

Logged by: T. Hernandez P.G. - Prudent Tech.
Drilling Contractor: Frontz Drilling
WELL SPECIFICATIONS: Well not installed
Diam. of casing: 2" Screen Interval:
BOH: Riser Interval:

Date: 14-Nov-12 Notes: NA = Not Applicable
Driller: Joe Teter See Sample Summary Sheets for
sampling information
Sandpack: Grout:
Bentonite: 10 ft to grnd. Surface Cover:



Environmental Chemical Corporation

LOG OF SOIL BORING
Coordinates: X490984.411 Y4558654.396
Surface Elevation: 1,144.38 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No. 5461.004
Client ACOE-Louisville
Location RVAAP
CC-72 RV 72-06

Drilling Method: Direct-Push
Geoprobe 6620DT
Boring No. SB04

Sampling Method: 2" diameter-5 ft SS sampler
MacroCore liner
Sheet 1 of 1

Water Lev. NA
Time NA
Date NA
Reference NA

Start 10-Dec-12
Finish 10-Dec-12

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil	
	NA	60/35	NA		0.0	NA	0	CL	4" top soil	
									Tan sandy clay, soft	
							1			
							2			
							3			
							4			
									Tan sandy clay, hard	
	NA	60/58				NA	5	SM CL		
							6			darken staining
									native material	
							7			large gravel mix
									clay hard brown	
							8			
										sand/sand stone tan
							9			
										hard tan/brown clay
	NA	60/58				NA	10			
							11			
							12			sand stone, light gray clay
							13			
							14			
	NA					NA	15		Endo of boring	
							16			
							17			
							18			
							19			
	NA					NA	20			
							21			
							22			
							23			
							24			

Logged by: T. Hernandez P.G. - Prudent Tech.
Drilling Contractor: Frontz Drilling
WELL SPECIFICATIONS: Well not installed
Diam. of casing: 2" Screen Interval:
BOH: Riser Interval:

Date: 14-Nov-12
Driller: Joe Teter
Sandpack:
Bentonite: 15 ft to grnd. Surface

Notes: NA = Not Applicable
See Sample Summary Sheets for sampling information
Grout:
Cover:



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X490984.2 Y4558655.377
Surface Elevation: 1,145.00 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 72-06
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB02
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			14-Aug-13	14-Aug-13
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/43	NA		0.0	NA	0		
							1		
							2		silty clay, brown with ss gravel
							3		
							4		
	NA	60/58				NA	5		
							6		silty sand, brownish yellow
							7		
							8		silty clay, brown, interbedded with ss gravel
							9		
	NA					NA	10		
							11		
							12		
							13		End boring at 13 ft
							14		
	NA					NA	15		
							16		
							17		
							18		
							19		
	NA					NA	20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	14-Nov-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	10 ft to grnd. Surface	Cover:	
BOH:	Riser Interval:				



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X496595.214 Y4559021.393
Surface Elevation: 984.04 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 72-08
Drilling Method:	Direct-Push			Boring No.	SB01
	Geoprobe 6620DT				
Sampling Method:	2" diameter-5 ft SS sampler			Sheet 1 of 1	
	MacroCore liner				
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			7-Dec-12	7-Dec-12
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/50	NA		0.0	NA	0	CL	Brown silty clay (dry) with pea size gravel
							1		
							2		
							3		
							4		
								CL	Brown silty clay (Dry)
	NA	60/48			0.0	NA	5		
							6		
							7		
							8		
							9		
							10		Refusal at 10 ft
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	7-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	10 ft to grnd. Surface	Cover:	
BOH:	Riser Interval:				



Environmental Chemical
Corporation

LOG OF SOIL BORING

Coordinates: X496592.616 Y4559020.086
Surface Elevation: 984.09 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 72-08
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB02
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			7-Dec-12	7-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/48	NA		0.0	NA	0	CL	Brown silty clay (dry) with pea size gravel
							1		
							2		
							3		
							4		
	NA	60/41			0.0	NA	5	CL	Brown silty clay (Dry)
							6		
							7		
							8		
							9		
							10		refusal at 10 ft
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	7-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	10 ft to grnd. Surface	Cover:	
BOH:	Riser Interval:				

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X496594.866 Y4559018.56 Surface Elevation: 983.91 ft msl Casing Below Surface: _____ Reference Elevation: _____ Reference Description: _____									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP CC-72 RV 72-08	
									Drilling Method: Direct-Push Geoprobe 6620DT				Boring No. SB03	
									Sampling Method: 2" diameter-5 ft SS sampler MacroCore liner				Sheet 1 of 1	
													Drilling	
									Water Lev. NA				Start	
Time NA				7-Dec-12		7-Dec-12								
Date NA														
Reference NA														
Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil					
	NA	60/53	NA		0.0	NA	0	CL	Brown silty clay (dry) with pea size gravel					
							1							
							2							
							3							
							4							
	NA	60/51			0.0	NA	5	CL	Brown silty clay (dry)					
							6							
							7							
							8							
							9							
							10		Refusal at 10 ft					
							11							
							12							
							13							
							14							
							15							
							16							
							17							
							18							
							19							
							20							
							21							
							22							
							23							
							24							

Logged by:	T. Hernandez P.G. - Prudent Tech.		Date:	7-Dec-12	Notes: NA = Not Applicable See Sample Summary Sheets for sampling information
Drilling Contractor:	Frontz Drilling		Driller:	Joe Teter	
WELL SPECIFICATIONS: Well not installed					
Diam. of casing: 2"	Screen Interval:		Sandpack:		Grout:
BOH:	Riser Interval:		Bentonite: 10 ft to grnd. Surface		Cover:

Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X496594.186 Y4559019.977 Surface Elevation: 984.09 ft msl Casing Below Surface: _____ Reference Elevation: _____ Reference Description: _____									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP CC-72 RV 72-08	
									Drilling Method: Direct-Push Geoprobe 6620DT				Boring No. SB04	
									Sampling Method: 2" diameter-5 ft SS sampler MacroCore liner				Sheet 1 of 1	
													Drilling	
									Water Lev. NA				Start	
Time NA				7-Dec-12		7-Dec-12								
Date NA														
Reference NA														

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/48	NA		0.0	NA	0	CL	Brown silty clay (dry) with pea size gravel
							1		
							2		
							3		
							4		
	NA	60/51			0.0	NA	5	CL	Brown silty clay (dry)
							6		
							7		
							8		
							9		
		12/5			0.0		10		
							11		refusal at 11'
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
	NA						20		
							21		
							22		
							23		
							24		

Logged by: T. Hernandez P.G. - Prudent Tech.
 Drilling Contractor: Frontz Drilling
 WELL SPECIFICATIONS: Well not installed
 Diam. of casing: 2" Screen Interval: _____
 BOH: 11 ft Riser Interval: _____

Date: 14-Nov-12 **Notes:** NA = Not Applicable
 Driller: Joe Teter See Sample Summary Sheets for sampling information
 Sandpack: _____ Grout: _____
 Bentonite: 11 ft to grnd. Surface Cover: _____



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X496594 Y4559019.977
Surface Elevation: 984.09 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 72-08
Drilling Method:	Direct-Push			Boring No.	SB04
	Geoprobe 6620DT				
Sampling Method:	2" diameter-5 ft SS sampler			Sheet 1 of 1	
	MacroCore liner				
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			14-Aug-13	14-Aug-13
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvr	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/48	NA		0.0	NA	0	CL	Silty clay with gravel, black, dense, soft
							1		
							2		
							3		
							4		
									Brown silty clay, dense, stiff, faint moisture
	NA	60/51			0.0	NA	5		
							6		
							7		
							8	CL	Grading to medium stiff, moist
	Comp.			7-11			9		
	NA	12/9			0.0	NA	10	CL	Grading to soft, wet, with fine sand
							11		refusal at 11'
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by: J. Scott - ECC P.G.
Drilling Contractor: Frontz Drilling
WELL SPECIFICATIONS: Well not installed
Diam. of casing: 2" Screen Interval:
BOH: 11 ft Riser Interval:

Date: 14-Aug-13 Notes: NA = Not Applicable
Driller: Rickie Shanks See Sample Summary Sheets for
sampling information
Sandpack: Grout: Comp.= Composite
Bentonite: 11 ft to grnd. Surface Cover:



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X487746.121 Y4559218.121
Surface Elevation: 1,114.60 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville			Location	RVAAP
						CC-76	Building A-1
Drilling Method:		Direct-Push				Boring No.	SB01 Hex Chrom.
		Geoprobe 6620DT					
Sampling Method:		2" diameter-5 ft SS sampler				Sheet 1 of 1	
		MacroCore liner					
						Drilling	
Water Lev.	NA					Start	Finish
Time	NA					11-Dec-12	11-Dec-12
Date	NA						
Reference	NA						

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
		60/19			0.0	NA	0		
							1	CL	brown hard clay
							2	CL	sand/clay mix m-grain soft
							3	CL	brown soft clay
							4		
		60/3			0.0	NA	5		
							6		
							7		
							8		
							9	SM	m-c grain tan sand wet
		60/34			0.0	NA	10		
							11	CL	gray silty clay firm
							12		
							13		
							14		
		60/30			0.0	NA	15		
							16	SM	coarse grain sand tan
							17		
							18		
							19		
						NA	20		end of boring
							21		
							22		
							23		
							24		

Logged by: Roxann Williams
Drilling Contractor: Frontz Drilling
WELL SPECIFICATIONS: Well not installed
Diam. of casing: 2" Screen Interval:
BOH: Riser Interval:

Date: 11-Dec-12 Notes: NA = Not Applicable
Driller: Jeremy Lackone See Sample Summary Sheets for
sampling information
Sandpack: Grout:
Bentonite: 20 ft to grnd. Surface Cover:



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X487744.472 Y4559218.464
Surface Elevation: 1,114.75 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-76	Building A-1
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB02 Hex Chrom.
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			11-Dec-12	11-Dec-12
Reference	NA				

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
		60/16			0.0	NA	0	CL	brown soft clay/sand mix
							1		
							2		
							3		
							4		
		60/3			0.0	NA	5	CL	brown soft clay/sand mix
							6		
							7		
							8		
							9		
		60/14			0.0	NA	10		
							11		
							12	CL	wet gray hard clay
							13		
							14	CL	wet brown clay sand mix
		60/37			0.0	NA	15		
							16	SM	c-m grain sand tan with gravel mixed
							17		
							18		
							19		
									Sample
							20		End of boring 20 ft
							21		
							22		
							23		
							24		

Logged by:	Roxann Williams	Date:	11-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Jeremy Lackone	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	20 ft to grnd. Surface	Cover:	
BOH:	Riser Interval:				



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X487742.832 Y4559217.588
Surface Elevation: 1,114.98 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville			Location	RVAAP
						CC-76	Building A-1
Drilling Method:		Direct-Push				Boring No.	SB03 Hex Chrom.
		Geoprobe 6620DT					
Sampling Method:		2" diameter-5 ft SS sampler				Sheet 1 of 1	
		MacroCore liner					
						Drilling	
Water Lev.	NA					Start	Finish
Time	NA					11-Dec-12	11-Dec-12
Date	NA						
Reference	NA						

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/19			0.0	NA	0	CL	brown soft silty clay
							1		
							2		
							3		
							4		
	NA	60/5			0.0	NA	5	CL	brown soft silty clay
							6		
							7		
							8		
							9		
									gray gravel, coarse sand-concrete?
	NA	60/9			0.0	NA	10	CL	wet soft gray silty clay
							11		
							12		
							13		
							14		
	NA	60/24			0.0	NA	15	SM	black sand gravel-looks like pavement gravel?
							16		
							17	CL	gray silty soft clay
							18	SM	wet brown c-m grain sand
							19		
						NA	20		Endo of boring 20 ft
							21		
							22		
							23		
							24		

Logged by: Roxann Williams
Drilling Contractor: Frontz Drilling
WELL SPECIFICATIONS: Well not installed
Diam. of casing: 2" Screen Interval:
BOH: Riser Interval:

Date: 11-Dec-12 Notes: NA = Not Applicable
Driller: Jeremy Lackone See Sample Summary Sheets for
sampling information
Sandpack: Grout:
Bentonite: 20 ft to grnd. Surface Cover:



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 492626.869 Y 4557533.366
Surface Elevation: 1054.960925 ft msl
Casing Below Surface: _____
Reference Elevation: _____
Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV-4
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB01 DU-1
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			4-Dec-12	4-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass
		60/39			0.0	NA	0		Grass
							1	CL	Light brown clay
							2		
							3		
							4		
						NA	5	CL	Light brown clay, stone, discoloration
	Disc.	60/48		5-6 ft	0.0		6		
							7		
							8		
							9		
						NA	10	CL	Light brown clay, firm, moist
		60/36			0.0		11		
	Comp.			7-13 ft			12		Light brown clay, firm, moist
							13	CL	End of boring 13 ft bgs
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	4-Dec-12	Notes: NA = Not Applicable See Sample Summary Sheets for analytical information Disc. = Discrete Comp. = Composite
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		
Diam. of casing: 2"	Screen Interval:	Bentonite:	0-13 ft bgs	
BOH:	13 ft bgs	Riser Interval:		



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 492627.41 Y 4557532.619
Surface Elevation: 1054.892028 ft msl
Casing Below Surface: _____
Reference Elevation: _____
Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV-4
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB02 DU-1
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			4-Dec-12	4-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	In. Drvr / In. Recvr	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass
		60/34			0.0	NA	0		Grass
							1	CL	Light brown clay
							2		
							3		
							4		
							5	CL	Light brown clay, stone, discoloration
	Disc.	60/42		5-6 ft	0.0	NA	6		
							7		
							8	CL	Light brown clay
							9		
							10		End of boring 10 ft bgs
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by: T. Hernandez P.G. - Prudent Tech.
Drilling Contractor: Frontz Drilling
WELL SPECIFICATIONS: Well not installed
Diam. of casing: 2" Screen Interval: _____
BOH: 10 ft bgs Riser Interval: _____

Date: 4-Dec-12
Driller: Joe Teter
Sandpack: _____
Bentonite: 0-10 ft bgs

Notes: NA = Not Applicable
See Sample Summary Sheets for
analytical information
Disc. = Discrete
Comp. = Composite



Environmental Chemical
Corporation

LOG OF SOIL BORING

Coordinates: X 492627.41 Y 4557532.619
Surface Elevation: 1054.980610 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV-4
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB03 DU-1
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			4-Dec-12	4-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	In. Drvr / In. Recvr	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass
		60/46			0.0	NA	0		Grass
							1	CL	Light brown clay
							2		
							3		
							4		
							5	CL	Light brown clay, stone, discoloration
	Disc.	60/45		5-6 ft	0.0	NA	6		
							7		
							8	CL	Light brown clay
							9		
							10		End of boring 10 ft bgs
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by: T. Hernandez P.G. - Prudent Tech.
Drilling Contractor: Frontz Drilling
WELL SPECIFICATIONS: Well not installed
Diam. of casing: 2" Screen Interval:
BOH: 10 ft bgs Riser Interval:

Date: 4-Dec-12
Driller: Joe Teter
Sandpack:
Bentonite: 0-10 ft bgs

Notes: NA = Not Applicable
See Sample Summary Sheets for
analytical information
Disc. = Discrete
Comp. = Composite

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X 492795.316 Y 4557823.373 Surface Elevation: 1024.856304 ft msl Casing Below Surface: _____ Reference Elevation: _____ Reference Description: _____									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP	
													CC-72 RV 5	
									Drilling Method: Direct-Push Geoprobe 6620DT				Boring No. SB01	
									Sampling Method: 2" diameter-5 ft SS sampler MacroCore liner				Sheet 1 of 1	
													Drilling	
Water Lev.		NA				Start		Finish						
Time		NA				3-Dec-12		3-Dec-12						
Date		NA												
Reference		NA												
Surface Conditions: Soil														
Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log						
		NR			0.0	NA	0	CL						
				5-6 ft	0.0	NA	6	CL						
	Disc.	NR			0.0	NA	7	CL						
	Comp.	NR		7-13 ft	0.0	NA	11	CL						
							12	CL						
							13							
							14							
							15							
							16							
							17							
							18							
							19							
							20							
							21							
							22							
							23							
							24							

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	3-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter		NR -= Not Recorded
WELL SPECIFICATIONS:	Well not installed				See Sample Summary Sheets for sampling information
Diam. of casing: 2"	Screen Interval:	Sandpack:			Disc. = Discrete
BOH:	13 ft bgs	Riser Interval:	Bentonite: 0-13 ft bgs		Comp. = Composite

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X 492797.084 Y 4557824.908 Surface Elevation: 1024.744757 ft msl Casing Below Surface: _____ Reference Elevation: _____ Reference Description: _____									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP	
													CC-72 RV 5	
									Drilling Method: Direct-Push Geoprobe 6620DT				Boring No. SB02	
									Sampling Method: 2" diameter-5 ft SS sampler MacroCore liner				Sheet 1 of 1	
													Drilling	
Water Lev.		NA				Start		Finish						
Time		NA				3-Dec-12		3-Dec-12						
Date		NA												
Reference		NA												
Surface Conditions: Soil														
Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log						
		NR			0.0	NA	0	CL						
							1							
							2							
							3		Light brown clay					
							4							
							5							
	Disc.	NR		5-6 ft	0.0	NA	6	CL						
							7							
							8		Light brown clay					
							9							
							10							
		NR			0.0	NA	11	CL						
							12		Light brown clay					
							13		10 inch thick wet, silty clay seam at 12 ft bgs					
							14	CL						
							15							
							16							
							17							
							18							
							19							
							20							
							21							
							22							
							23							
							24							

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	3-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter		NR = Not Recorded
WELL SPECIFICATIONS:	Well not installed				See Sample Summary Sheets for sampling information
Diam. of casing: 2"	Screen Interval:	Sandpack:			Disc. = Discrete
BOH:	13 ft bgs	Riser Interval:		Bentonite: 0-13 ft bgs	

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X 492794.544 Y 4557826.547 Surface Elevation: 1024.961290 ft msl Casing Below Surface: _____ Reference Elevation: _____ Reference Description: _____									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP	
													CC-72 RV 5	
									Drilling Method: Direct-Push Geoprobe 6620DT				Boring No. SB03	
									Sampling Method: 2" diameter-5 ft SS sampler MacroCore liner				Sheet 1 of 1	
													Drilling	
Water Lev.		NA				Start		Finish						
Time		NA				3-Dec-12		3-Dec-12						
Date		NA												
Reference		NA												
Surface Conditions: Soil														
Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log						
		NR			0.0	NA	0	CL						
				5-6 ft	0.0	NA	6	CL						
	Disc.	NR			0.0	NA	7	CL						
		NR			0.0	NA	8	CL						
					0.0	NA	9	CL						
					0.0	NA	10	CL						
					0.0	NA	11	CL						
					0.0	NA	12	CL						
					0.0	NA	13	CL						
					0.0	NA	14	CL						
					0.0	NA	15	CL						
					0.0	NA	16	CL						
					0.0	NA	17	CL						
					0.0	NA	18	CL						
					0.0	NA	19	CL						
					0.0	NA	20	CL						
					0.0	NA	21	CL						
					0.0	NA	22	CL						
					0.0	NA	23	CL						
					0.0	NA	24	CL						

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	3-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter		NR = Not Recorded
WELL SPECIFICATIONS:	Well not installed				See Sample Summary Sheets for sampling information
Diam. of casing: 2"	Screen Interval:	Sandpack:			Disc. = Discrete
BOH:	13 ft bgs	Riser Interval:	Bentonite: 0-13 ft bgs		



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 487603.289 Y 4559946.491
 Surface Elevation: 1125.898300 ft msl
 Casing Below Surface: _____
 Reference Elevation: _____
 Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville			Location	RVAAP
						CC-76	Building U-6
Drilling Method:	Direct-Push Geoprobe 6620DT					Boring No.	SB01 Hex Chrom.
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner					Sheet 1 of 1	
						Drilling	
Water Lev.	NA					Start	Finish
Time	NA					12-Dec-12	12-Dec-12
Date	NA						
Reference	NA						

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
		60/24			0.0	NA	0		
							1	CL	Brown clay, hard
							2		
							3		
							4	CL	Gray/brown clay, hard
					0.0		5		
		60/22				NA	6	CL	Brown clay, hard
							7	CL	Gray silty clay, soft
							8		
							9	CL	Gray silty clay, wet
							10	SM	Brown medium to coarse sand
		60/29			0.0	NA	11	CL	Brown silty clay, soft
							12		
							13		
							14	CL	Brown clay, hard
							15		
		60/39			0.0	NA	16	CL	Gray silty hard clay
							17		Silty clay layer, soft, wet
							18		Medium gray sandy clay
							19		
	Disc.			19-20 ft			20		End of boring 20 ft bgs
							21		
							22		
							23		
							24		

Logged by: Roxann Williams - ECC
 Drilling Contractor: Frontz Drilling
 WELL SPECIFICATIONS: Well not installed
 Diam. of casing: 2" Screen Interval: _____
 BOH: 20 ft bgs Riser Interval: _____

Date: 12-Dec-12
 Driller: Jeremy Lackone
 Sandpack: _____
 Bentonite: 0- 20 ft bgs

Notes: NA = Not Applicable
 See Sample Summary Sheets for
 sampling information
 Disc. = Discrete



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 487603.579 Y 4559954.542
 Surface Elevation: 1125.143700 ft msl
 Casing Below Surface: _____
 Reference Elevation: _____
 Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-76	Building U-6
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB02
					Hex Chrom.
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			11-Dec-12	11-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
		60/22			0.0	NA	0	CL	Brown clay,
							1		
							2	CL	2 Inch layer, black clay with gravel,
							3		Brown clay, hard
							4		
					0.0		5		
		60/20				NA	6	CL	Brown clay, hard,
							7		
							8	CL	Brown silty clay, soft,
							9		
							10		
		60/39			0.0	NA	11		
							12	CL	Gray clay with little gravel, hard,
							13	SM	3 Inch tan/orange medium to coarse sand, firm, moist
							14	CL	Gray silty clay, hard
							15		
		60/39			0.0	NA	16		
							17		
							18	CL	Gray silty clay, firm, wet
							19		
	Disc.			19-20 ft			20		End of boring 20 ft bgs
							21		
							22		
							23		
							24		

Logged by: Roxann Williams - ECC
 Drilling Contractor: Frontz Drilling
 WELL SPECIFICATIONS: Well not installed
 Diam. of casing: 2" Screen Interval: _____
 BOH: 20 ft bgs Riser Interval: _____

Date: 11-Dec-12
 Driller: Jeremy Lackone
 Sandpack: _____
 Bentonite: 0- 20 ft bgs

Notes: NA = Not Applicable
 See Sample Summary Sheets for
 sampling information
 Disc. = Discrete



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 487607.939 Y 4559953.778
 Surface Elevation: 1124.477700 ft msl
 Casing Below Surface: _____
 Reference Elevation: _____
 Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-76	Building U-6
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB03
					Hex Chrom.
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			11-Dec-12	11-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvr	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
		60/16			0.0	NA	0	CL	Brown silty clay, soft
							1		
							2	CL	2 Inch layer, gravel
							3		Brown clay, soft
							4		
					0.0		5		
		60/21				NA	6	CL	Brown silty clay, soft
							7		
							8	CL	3 Inch layer gravel
							9		Brown silty clay, soft
							10		
		60/26			0.0	NA	11	CL	Gray silty clay, hard
							12		
							13		
							14		
							15		
		60/39			0.0	NA	16	CL	Gray silty clay, hard, moist
							17		
							18		
							19		
	Disc.			19-20 ft			20		End of boring 20 ft bgs
							21		
							22		
							23		
							24		

Logged by: Roxann Williams - ECC
 Drilling Contractor: Frontz Drilling
 WELL SPECIFICATIONS: Well not installed
 Diam. of casing: 2" Screen Interval: _____
 BOH: 20 ft bgs Riser Interval: _____

Date: 11-Dec-12
 Driller: Jeremy Lackone
 Sandpack: _____
 Bentonite: 0- 20 ft bgs

Notes: NA = Not Applicable
 See Sample Summary Sheets for
 sampling information
 Disc. = Discrete



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 487612.631 Y 4559954.933
 Surface Elevation: 1123.936400 ft msl
 Casing Below Surface: _____
 Reference Elevation: _____
 Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville			Location	RVAAP	
						CC-76	Building U-6	
Drilling Method:	Direct-Push Geoprobe 6620DT					Boring No.	SB04 Hex Chrom.	
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner					Sheet 1 of 1		
						Drilling		
Water Lev.	NA					Start	Finish	
Time	NA					11-Dec-12	11-Dec-12	
Date	NA							
Reference	NA							

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
		60/16			0.0	NA	0	CL	Brown clay, hard
							1		
							2	CL	2 Inch layer, gravel
							3		Brown silty clay, soft
							4		
					0.0		5		
		60/21				NA	6	CL	Brown silty clay, soft
							7		2 Inch layer, cobbles
							8		
							9		
							10		
		60/26			0.0	NA	11	CL	Brown silty clay, soft
							12	CL	Brown silty clay, soft, wet
							13		
							14	CL	Gray silty clay, soft
							15		
		60/39			0.0	NA	16	CL	Gray silty clay, soft
							17	CL	Gray clay, hard
							18		
							19		
	Disc.			19-20 ft			20		End of boring 20 ft bgs
							21		
							22		
							23		
							24		

Logged by: Roxann Williams - ECC
 Drilling Contractor: Frontz Drilling
 WELL SPECIFICATIONS: Well not installed
 Diam. of casing: 2" Screen Interval: _____
 BOH: 20 ft bgs Riser Interval: _____

Date: 11-Dec-12
 Driller: Jeremy Lackone
 Sandpack: _____
 Bentonite: 0- 20 ft bgs

Notes: NA = Not Applicable
 See Sample Summary Sheets for sampling information
 Disc. = Discrete



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 487613.163 Y 4559948.132
 Surface Elevation: 1124.543400
 Casing Below Surface: _____
 Reference Elevation: _____
 Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville			Location	RVAAP
						CC-76	Building U-6
Drilling Method:	Direct-Push Geoprobe 6620DT					Boring No.	SB05 Hex Chrom.
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner					Sheet 1 of 1	
						Drilling	
Water Lev.	NA					Start	Finish
Time	NA					12-Dec-12	12-Dec-12
Date	NA						
Reference	NA						

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
		60/16			0.0	NA	0	CL	Dark brown clay, soft
							1		
							2	CL	Gray silty clay, soft
							3		
							4		
					0.0		5		
		60/21				NA	6	CL	Gray silty clay, soft
							7		
							8		
							9		
							10		
		60/26			0.0	NA	11	CL	Brown sandy clay, soft
							12	CL	Brown sandy clay, soft, wet
							13		
							14	CL	Gray clay, hard
							15		
		60/39			0.0	NA	16	CL	Gray clay, hard
							17		
							18		2 Inch layer cobbles
							19		
	Disc.			19-20 ft			20		End of boring 20 ft bgs
							21		
							22		
							23		
							24		

Logged by: Roxann Williams - ECC
 Drilling Contractor: Frontz Drilling
 WELL SPECIFICATIONS: Well not installed
 Diam. of casing: 2" Screen Interval: _____
 BOH: 20 ft bgs Riser Interval: _____

Date: 12-Dec-12
 Driller: Jeremy Lackone
 Sandpack: _____
 Bentonite: 0- 20 ft bgs

Notes: NA = Not Applicable
 See Sample Summary Sheets for
 sampling information
 Disc. = Discrete



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 487608.046 Y 4559946.964
 Surface Elevation: 1125.586700
 Casing Below Surface: _____
 Reference Elevation: _____
 Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-76	Building U-6
Drilling Method:	Direct-Push	Boring No.	SB06		
	Geoprobe 6620DT		Hex Chrom.		
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-Dec-12	12-Dec-12
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
		60/28			0.0	NA	0	CL	Dark brown clay, soft, moist
							1		
							2	CL	One inch gravel layer
							3		Brown silty clay, soft, moist
							4		
					0.0		5		
		60/31				NA	6	CL	Brown silty clay, soft, moist
							7		
							8	CL	One inch layer tan medium sand with little gravel
							9		Gray silty clay, soft, moist
							10	CL	Gray rock, pulverized concrete
							11		Gray silty clay, soft, moist
		60/21			0.0	NA	12	CL	Brown silty clay, hard, moist
							13		
							14	CL	Gray clay, hard, little gravel, moist
							15		
		60/23			0.0	NA	16	CL	Gray clay, hard, moist
							17		
							18		
							19		
	Disc.			19-20 ft			20		End of boring 20 ft bgs
							21		
							22		
							23		
							24		

Logged by: Roxann Williams - ECC
 Drilling Contractor: Frontz Drilling
 WELL SPECIFICATIONS: Well not installed
 Diam. of casing: 2" Screen Interval: _____
 BOH: 20 ft bgs Riser Interval: _____

Date: 12-Dec-12
 Driller: Jeremy Lackone
 Sandpack: _____
 Bentonite: 0- 20 ft bgs

Notes: NA = Not Applicable
 See Sample Summary Sheets for sampling information
 Disc. = Discrete



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: 487640.293 4559623.44
Surface Elevation: 1,121.79 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-76	Building U-3
Drilling Method:	Direct-Push			Boring No.	SB01
	Geoprobe 6620DT				Hex Chrom.
Sampling Method:	2" diameter-5 ft SS sampler			Sheet 1 of 1	
	MacroCore liner				
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			11-Dec-12	11-Dec-12
Reference	NA				

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/29	NA		0.0	NA	0	CL	brown hard clay
							1		
							2		
							3		
							4		
	NA	60/20			0.0	NA	5	CL	gray soft silty clay
							6		
							7		
							8		concrete powder
							9		
	NA	60/24			0.0	NA	10	CL	brown/ gray soft silty clay
							11		
							12		
							13		
							14	SM	wet silty m-f grain sand
								SM	c-m grain sand
	NA	12/8				NA	15		Sampled
							16		End of boring
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	Roxann Williams	Date:	11-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Jeremy Lackone	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	16 ft to grnd. surface	Cover:	
BOH:	16 ft	Riser Interval:			



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X487639.904 Y4559616.302
Surface Elevation: 1,122.68 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-76	Building U-3
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB02 Hex Chrom.
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			11-Dec-12	11-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/22	NA		0.0	NA	0	CL	brown/gray hard clay
							1		
							2		
							3		
							4	SM	sand tan/orange m grain
	NA	48/40			0.0	NA	5	CL	
							6		darker gray hard clay
							7		
							8		
							9		End-refusal concrete
							10		
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	Roxann Williams	Date:	11-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Jeremy Lackone	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite: 9 ft to grnd. Surface		Cover:	
BOH: 9 ft	Riser Interval:				



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X487639.90 Y4559616.302
Surface Elevation: 1,122.68 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No. 5461.004		Client ACOE-Louisville			Location RVAAP	
					CC-76 Building U-3	
Drilling Method:		Direct-Push			Boring No. SB02 (Re-Do)	
		Geoprobe 6620DT			Hex Chrom.	
Sampling Method:		2" diameter-5 ft SS sampler			Sheet 1 of 1	
		MacroCore liner				
					Drilling	
Water Lev.	NA				Start	Finish
Time	NA				11-Dec-12	11-Dec-12
Date	NA					
Reference	NA					

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/36	NA		0.0	NA	0		
							1	CL	soft brown clay
							2	SM	3" light tan sand layer m-c grain
							3	CL	brown hard clay
							4		
							5		
							6		
							7		
							8		
							9		
	NA	60/48			0.0	NA	5	CL	brown hard clay
							6		
							7		
							8		
							9		
	NA	60/46			0.0	NA	10	CL	gray hard silty clay
							11		
							12	CL	soft gray silty clay
							13		
							14	SM	c-m grain brown sand with large gravel
							15		Sampled
	NA	60/12			0.0	NA	16		
							17		End of boring 16 ft
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by: Roxann Williams
Drilling Contractor: Frontz Drilling
WELL SPECIFICATIONS: Well not installed
Diam. of casing: 2" Screen Interval:
BOH: Riser Interval:

Date: 11-Dec-12 Notes: NA = Not Applicable
Driller: Jeremy Lackone See Sample Summary Sheets for
sampling information
Sandpack: Grout:
Bentonite: 16 ft to grnd. Surface Cover:



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X487636.06 Y4559622.773
Surface Elevation: 1,122.46 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-76	Building U-3
Drilling Method:	Direct-Push			Boring No.	SB03
	Geoprobe 6620DT				Hex Chrom.
Sampling Method:	2" diameter-5 ft SS sampler			Sheet 1 of 1	
	MacroCore liner				
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			11-Dec-12	11-Dec-12
Reference	NA				

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/25	NA		0.0	NA	0	CL	brown/gray clay
							1		
							2		
							3	SM	tan sand m-c grain
							4		
								CL	gray hard clay
	NA	48/26	NA		0.0	NA	5	CL	gray hard clay
							6		
							7		
							8		
							9		Sampled
									End-refusal concrete.
							10		
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	Roxann Williams	Date:	11-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Jeremy Lackone	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	9 ft to grnd. Surface	Cover:	
BOH:	9 ft	Riser Interval:			

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X487636.06 Y4559622.773 Surface Elevation: 1,122.46 ft msl Casing Below Surface: Reference Elevation: Reference Description:									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP CC-76 Building U-3	
									Drilling Method:		Direct-Push Geoprobe 6620DT		Boring No. SB03 (RE-DO) Hex Chrom.	
									Sampling Method:		2" diameter-5 ft SS sampler MacroCore liner		Sheet 1 of 1	
									Water Lev.		NA		Drilling	
									Time		NA		Start Finish	
Date		NA		11-Dec-12 11-Dec-12										
Reference		NA												
Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil					
	NA	60/27	NA		0.0	NA	0	CL	gray/tan marbled hard clay					
							1							
							2							
							3							
							4							
	NA	60/17			0.0	NA	5	CL	gray/tan marbled soft clay					
							6							
							7							
							8							
							9							
	NA	60/15			0.0	NA	10	CL SM	wet gray soft silty clay sand m-c grain					
							11							
							12							
							13							
							14							
	NA	12/12			0.0	NA	15		Sampled End of boring					
							16							
							17							
							18							
							19							
							20							
							21							
							22							
							23							
							24							

Logged by:	<u>Roxann Williams</u>	Date:	<u>11-Dec-12</u>	Notes:	NA = Not Applicable
Drilling Contractor:	<u>Frontz Drilling</u>	Driller:	<u>Jeremy Lackone</u>	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	<u>16 ft to grnd. Surface</u>	Cover:	
BOH:	<u>16 ft</u>	Riser Interval:			

Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X487641.128 Y4559620.214 Surface Elevation: 1,122.01 ft msl Casing Below Surface: _____ Reference Elevation: _____ Reference Description: _____										Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP CC-76 Building U-3	
										Drilling Method:		Direct-Push Geoprobe 6620DT		Boring No. SB04 Hex Chrom.	
										Sampling Method:		2" diameter-5 ft SS sampler MacroCore liner		Sheet 1 of 1	
										Water Lev.		NA		Drilling	
										Time		NA		Start Finish	
Date		NA		11-Dec-12 11-Dec-12											
Reference		NA													
Surface Conditions: Soil															
Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log							
	NA	60/32	NA		0.0	NA	0	CL	brown hard clay						
							1								
							2								
							3		dark brown soft clay						
							3		brown silty soft clay						
							4		brown hard silty clay						
	NA	60/48			0.0	NA	5	CL	brown hard silty clay						
							6								
							7								
							8								
							9								
	NA	60/49				NA	10		gray hard clay						
							11								
							12		gray soft clay						
							13								
							14		wet soft clay						
									c-m grain, sand brown						
									Sampled						
	NA	12/9				NA	15								
							16		End of boring						
							17								
							18								
							19								
							20								
							21								
							22								
							23								
							24								

Logged by: Roxann Williams
 Drilling Contractor: Frontz Drilling
 WELL SPECIFICATIONS: Well not installed
 Diam. of casing: 2" Screen Interval: _____
 BOH: _____ Riser Interval: _____

Date: 11-Dec-12 **Notes:** NA = Not Applicable
 Driller: Jeremy Lackone See Sample Summary Sheets for sampling information
 Sandpack: _____ Grout: _____
 Bentonite: 16 ft to grnd. Surface Cover: _____



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X487643.7 Y4559618.841
Surface Elevation: 1,121.64 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville			Location	RVAAP	
						CC-76	Building U-3	
Drilling Method:	Direct-Push					Boring No.	SB05	
	Geoprobe 6620DT						Hex Chrom.	
Sampling Method:	2" diameter-5 ft SS sampler					Sheet 1 of 1		
	MacroCore liner							
Water Lev.	NA					Drilling		
Time	NA					Start	Finish	
Date	NA					11-Dec-12	11-Dec-12	
Reference	NA							

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/31	NA		0.0	NA	0	CL	brown hard clay
							1		
							2		
							3		
							4	CL	soft brown silty clay
								CL	hard brown silty clay
	NA	60/48			0.0	NA	5		
							6		
							7		
							8		
							9		
	NA	60/48			0.0	NA	10	CL	gray soft silty clay
							11		
							12		
							13		
							14	CL	wet gray silty soft clay
								SM	sand m-c grain
	NA	12/10			0.0	NA	15		Sampled
							16		End of boring
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by: Roxann Williams
Drilling Contractor: Frontz Drilling
WELL SPECIFICATIONS: Well not installed
Diam. of casing: 2" Screen Interval:
BOH: Riser Interval:

Date: 11-Dec-12 Notes: NA = Not Applicable
Driller: Jeremy Lackone See Sample Summary Sheets for
sampling information
Sandpack: Grout:
Bentonite: 16 ft to grnd. Surface Cover:



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X487636.62 Y4559618.464
Surface Elevation: 1,122.93 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-76	Building U-3
Drilling Method:	Direct-Push			Boring No.	SB06
	Geoprobe 6620DT				Hex Chrom.
Sampling Method:	2" diameter-5 ft SS sampler			Sheet 1 of 1	
	MacroCore liner				
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			11-Dec-12	11-Dec-12
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/34	NA		0.0	NA	0		
							1	CL	top soil
									brown hard clay
							2		
							3		
							4		
	NA	60/45			0.0	NA	5		
							6		
							7		
							8		large gravel/concrete rocks
							9		
	NA	60/48			0.0	NA	10	CL	gray soft silty clay
							11		
							12		
							13		
							14	SM	wet
									sand m-c grain brown
	NA	12/7			0.0	NA	15		
							16		End of boring
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by: Roxann Williams
Drilling Contractor: Frontz Drilling
WELL SPECIFICATIONS: Well not installed
Diam. of casing: 2" Screen Interval:
BOH: Riser Interval:

Date: 11-Dec-12 Notes: NA = Not Applicable
Driller: Jeremy Lackone See Sample Summary Sheets for
sampling information
Sandpack: Grout:
Bentonite: 16 ft to grnd. Surface Cover:



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X487864.498 Y4559243.984
Surface Elevation: 1,108.83 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	Building A6
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB01 Hex Chrom
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			16-Nov-12	16-Nov-12
Date	NA				
Reference	NA				6

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/36	NA		0.0	NA	0		
							1		
							2	CL	Fill material sand/clay
							3		
							4		
	NA	60/40			0.0	NA	5		
							6	CL	Bottom of tank hole
							7		Brown stiff silty clay (native)
							8		TD 7'
							9		
							10		
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	16-Nov-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	7 ft to grnd. Surface	Cover:	
BOH:	7 ft	Riser Interval:			



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X487864.411 Y4559242.458
Surface Elevation: 1,108.62 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	Building A6
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB02 Hex Chrom
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			16-Nov-12	16-Nov-12
Date	NA				
Reference	NA				6

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/41	NA		0.0	NA	0		
							1	CL	Fill material sand/clay
							2		
							3		
							4		
	NA	60/40			0.0	NA	5	CL	At 5.5 brown clay/silty (native)
							6		
							7		End at 7ft
							8		
							9		
							10		
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	16-Nov-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite: 7 ft to grnd. Surface		Cover:	
BOH: 7 ft	Riser Interval:				



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: 487864.585 4559240.728
Surface Elevation: 1,108.52 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	Building A6
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB03 Hex Chrom
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			16-Nov-12	16-Nov-12
Date	NA				
Reference	NA				6

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/32	NA		0.0	NA	0		
							1	SM	Fill material sand/silty mixed
							2		
							3		
							4		4' Bottom has a hard asphalt patch, bottom of tank hold??
	NA	60/42			0.0	NA	5	CL	silty clay transition to brn clay/silty (native)
							6		
							7		End at 7 ft
							8		
							9		
							10		
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	16-Nov-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	7 ft to grnd. Surface	Cover:	
BOH:	7 ft	Riser Interval:			



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: 487865.71 4559230.14
Surface Elevation: 1,108.50 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	Building A6
Drilling Method:	Direct-Push			Boring No.	SB04
	Geoprobe 6620DT				Hex Chrom
Sampling Method:	2" diameter-5 ft SS sampler			Sheet 1 of 1	
	MacroCore liner			Drilling	
Water Lev.	NA			Start	Finish
Time	NA			16-Nov-12	16-Nov-12
Date	NA				
Reference	NA				6

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/35	NA		0.0	NA	0	SM	
							1		
							2		fill material sand/silty mixed (wet)
							3		
							4		
	NA	60/40			0.0	NA	5		
							6		
							7		fill gravel slag- @ 7' (not to native)
							8		
							9		
	NA	60/12			0.0	NA	10		
							11		To 11' end boring
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	16-Nov-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	11 ft to grnd. Surface	Cover:	
BOH: 11 ft	Riser Interval:				



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X487862.881 Y4559232.257
Surface Elevation: 1,108.72 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville			Location	RVAAP	
						CC-72	Building A6	
Drilling Method:	Direct-Push					Boring No.	SB05	
	Geoprobe 6620DT						Hex Chrom	
Sampling Method:	2" diameter-5 ft SS sampler					Sheet 1 of 1		
	MacroCore liner							
Water Lev.	NA					Drilling		
Time	NA					Start	Finish	
Date	NA					16-Nov-12	16-Nov-12	
Reference	NA							

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/38	NA		0.0	NA	0		
							1	CL	fill material sand/silty clay (gravel wet)
							2		
							3		
							4		
	NA	60/45			0.0	NA	5	CL	silty/clay gravel bottom of tank hold @ 6'
							6		
							7		refusal at 8'
							8		
							9		
	NA	60/12			0.0	NA	10		
							11		redrilled to 11' - end at 11 ft
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	16-Nov-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite: 11 ft to grnd. Surface		Cover:	
BOH:	11 ft bgs	Riser Interval:			



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X487862.415 Y4559230.226
Surface Elevation: 1,108.67 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	Building A6
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB06 Hex Chrom
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			16-Nov-12	16-Nov-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/39	NA		0.0	NA	0		
							1	CL	Fill material sand/silty clay, gravel
							2		
							3		
							4		
	NA	60/47			0.0	NA	5		
							6	CL	silty clay gravel/slag
							7		
							8		refusal at 8' redo to 11'
							9		
	NA	60/12			0.0	NA	10		
							11		end at 11 ft
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	16-Nov-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	11 ft to grnd. Surface	Cover:	
BOH:	11 ft	Riser Interval:			



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: 487859.405 4559230.549
Surface Elevation: 1,108.50 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	Building A6
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB07 Hex Chrom
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			16-Nov-12	16-Nov-12
Date	NA				
Reference	NA				6

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/36	NA		0.0	NA	0		
							1	CL	fill material (sand silty clay) gravel (wet)
							2		
							3		
							4		
	NA	60/40			0.0	NA	5	CL	Fill material (sand silty clay) gravel (wet)
							6		
							7		
							8		refusal at 8" slag made 3 attempts, all refusal 8'
							9		end at 8 ft
							10		
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	16-Nov-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	8 ft to grnd. Surface	Cover:	
BOH:	8 ft	Riser Interval:			

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X487861.68; Y4559227.786 Surface Elevation: 1,108.41 ft msl Casing Below Surface: Reference Elevation: Reference Description:										Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP CC-72 Building A6	
										Drilling Method: Direct-Push Geoprobe 6620DT		Boring No. SB08 Hex Chrom			
										Sampling Method: 2" diameter-5 ft SS sampler MacroCore liner		Sheet 1 of 1			
										Water Lev. NA		Drilling			
										Time NA		Start 16-Nov-12			
										Date NA		Finish 16-Nov-12			
										Reference NA		6			
Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil						
	NA	60/36	NA		0.0	NA	0	CL							
							1		Fill material (sand silty clay, wet)						
							2								
							3								
							4								
	NA	60/45			0.0	NA	5								
							6		Fill, gravel, slag @ 8'						
							7								
							8		refusal at 8'						
							9								
							10								
							11								
							12								
							13								
							14								
							15								
							16								
							17								
							18								
							19								
							20								
							21								
							22								
							23								
							24								

Logged by:	T. Hernandez P.G. - Prudent Tech.		Date:	16-Nov-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling		Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed		Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:		Bentonite: 8 ft to grnd. Surface	Cover:		
BOH:	8 ft	Riser Interval:				



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X487864.583 Y4559224.207
Surface Elevation: 1,108.42 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	Building A6
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB09 Hex Chrom
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			16-Nov-12	16-Nov-12
Date	NA				
Reference	NA				6

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/39	NA		0.0	NA	0		
							1	CL	fill material (sand/silty clay, wet)
							2		
							3		
							4		
	NA	60/44			0.0	NA	5	CL	fill material (sand/silty clay, wet)
							6		
							7		
							8		
							9		
									Refusal at 10' - end at 10 ft
							10		
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	16-Nov-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	10 ft to grnd. Surface	Cover:	
BOH:	10 ft	Riser Interval:			



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X487861.20 Y4559225.01
Surface Elevation: 1,108.75 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	Building A6
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB10 Hex Chrom
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			16-Nov-12	16-Nov-12
Date	NA				
Reference	NA				6

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/43	NA		0.0	NA	0		
							1	CL	fill material (sand, silty clay, wet)
							2		
							3		
							4		
	NA	60/40			0.0	NA	5	CL	fill material (sand, silty clay, wet)
							6		
							7		
							8		
							9	CL	Native @ 9' brown silty clay
	NA	60/12			0.0	NA	10		End at 10 ft
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	16-Nov-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite: 10 ft to grnd. Surface		Cover:	
BOH: 10 ft	Riser Interval:				



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X487857.762 Y4559226.384
Surface Elevation: 1,108.59 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	Building A6
Drilling Method:	Direct-Push			Boring No.	SB11
	Geoprobe 6620DT				Hex Chrom
Sampling Method:	2" diameter-5 ft SS sampler			Sheet 1 of 1	
	MacroCore liner				
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			16-Nov-12	16-Nov-12
Reference	NA				6

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/36	NA		0.0	NA	0		
							1	CL	fill material silty clay, sand
							2		
							3		
							4		
	NA	60/40			0.0	NA	5	CL	silty brown clay
							6		
							7		
							8		
							9		
	NA	60/12			0.0	NA	10	CL	silty brown clay
							11		End at 11 ft
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	16-Nov-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	11 ft to grnd. Surface	Cover:	
BOH:	11 ft	Riser Interval:			



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X487860.479 Y4559221.633
Surface Elevation: 1,108.48 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	Building A6
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB12 Hex Chrom
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			16-Nov-12	16-Nov-12
Date	NA				
Reference	NA				6

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/37	NA		0.0	NA	0		
							1	CL	fill material silty clay sand
							2		
							3		
							4		
	NA	60/45			0.0	NA	5	CL	fill material silty clay sand
							6		
							7		
							8		
							9		Silty brown clay at 9'
	NA	60/12			0.0	NA	10		
							11		End at 11 ft
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	16-Nov-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite: 11 ft to grnd. Surface		Cover:	
BOH: 11 ft	Riser Interval:				

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X487864.673 Y4559239.31 Surface Elevation: 1,108.58 ft msl Casing Below Surface: Reference Elevation: Reference Description:									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP CC-76 Building A-6	
									Drilling Method: Direct-Push Geoprobe 6620DT		Boring No. SB13 Hex Chrom.			
									Sampling Method: 2" diameter-5 ft SS sampler MacroCore liner		Sheet 1 of 1			
									Water Lev. NA		Drilling			
									Time NA		Start 11-Dec-12			
									Date NA		Finish 11-Dec-12			
									Reference NA					
Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil					
	NA	60/19	NA		0.0	NA	0	CL	brown hard clay w marbeling					
							1							
							2							
							3							
							4							
	NA	60/5			0.0	NA	5	CL	brown hard clay w marbeling					
							6							
							7							
							8							
							9							
							10							
							11							
							12							
							13							
							14							
							15							
							16							
							17							
							18							
							19							
							20							
							21							
							22							
							23							
							24							

Logged by: Roxann Williams		Date: 11-Dec-12		Notes: NA = Not Applicable	
Drilling Contractor: Frontz Drilling		Driller: Jeremy Lackone		See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS: Well not installed		Sandpack:		Grout:	
Diam. of casing: 2"		Bentonite: 8 ft to grnd. Surface		Cover:	
BOH: 8 ft					

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X 487465.855 Y 4559457.755 Surface Elevation: 1152.709080 ft msl Casing Below Surface: _____ Reference Elevation: _____ Reference Description: _____									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP CC-72 RV 46	
									Drilling Method: Direct-Push Geoprobe 6620DT		Boring No. SB01			
									Sampling Method: 2" diameter-5 ft SS sampler MacroCore liner		Sheet 1 of 1			
									Water Lev. NA		Drilling			
									Time NA		Start 6-Dec-12			
									Date NA		Finish 6-Dec-12			
									Reference NA					
Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Asphalt					
		60/38			0.0	NA	0	CL	Asphalt					
							1		Sand fill, pieces of brick					
							2							
							3		Brown silty clay, fill					
							4							
						NA	5							
		60/47			0.0		6	CL						
							7							
							8		At 8' native brown silty clay					
							9							
							10							
	Disc.	36/28		11.5 ft	0.0	NA	11	CL						
							12		Brown silty clay, interbedded silty seam, firm, moist					
							13		End of boring 13 ft bgs					
	Comp.			7-13 ft			14							
							15							
							16							
							17							
							18							
							19							
							20							
							21							
							22							
							23							
							24							

Logged by: <u>T. Hernandez P.G. - Prudent Tech.</u> Drilling Contractor: <u>Frontz Drilling</u> WELL SPECIFICATIONS: <u>Well not installed</u> Diam. of casing: <u>2"</u> Screen Interval: _____ BOH: <u>13 ft bgs</u> Riser Interval: _____	Date: <u>6-Dec-12</u> Driller: <u>Joe Teter</u> Sandpack: _____ Bentonite: <u>0-13 ft bgs</u>	Notes: NA = Not Applicable See Sample Summary Sheets for analytical information Disc. = Discrete Comp. = Composite
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Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X 487465.182 Y 4559456.475 Surface Elevation: 1157.689334 ft msl Casing Below Surface: _____ Reference Elevation: _____ Reference Description: _____									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP	
													CC-72 RV 46	
									Drilling Method: Direct-Push				Boring No. SB02	
									Geoprobe 6620DT					
									Sampling Method: 2" diameter-5 ft SS sampler				Sheet 1 of 1	
MacroCore liner														
Water Lev.		NA				Drilling								
Time		NA				Start	Finish							
Date		NA				6-Dec-12	6-Dec-12							
Reference		NA												

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass
		60/51			0.0	NA	0	CL	
							1		
							2		
							3		
							4		
						NA	5	CL	Brown sandy clay, fill
		60/47			0.0		6	CL	
							7		
							8		
							9		
							10		
	Disc.			10 ft					
		36/30			0.0		11	CL CL	
							12		Brown silty clay, interbedded silty seam, dry
							13		Sandy clay
									End of boring 13 ft bgs
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by: T. Hernandez P.G. - Prudent Tech.	Date: 6-Dec-12	Notes: NA = Not Applicable See Sample Summary Sheets for analytical information Disc. = Discrete
Drilling Contractor: Frontz Drilling	Driller: Joe Teter	
WELL SPECIFICATIONS: Well not installed	Sandpack: _____	
Diam. of casing: 2" Screen Interval: _____	Bentonite: 0-13 ft bgs	
BOH: 13 ft bgs Riser Interval: _____		

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X 487466.564 Y 4559453.327 Surface Elevation: 1149.067392 ft msl Casing Below Surface: Reference Elevation: Reference Description:									Job. No. 5461.004 Client ACOE-Louisville		Location RVAAP CC-72 RV 46	
									Drilling Method: Direct-Push Geoprobe 6620DT		Boring No. SB03	
									Sampling Method: 2" diameter-5 ft SS sampler MacroCore liner		Sheet 1 of 1	
									Water Lev. NA		Drilling	
									Time NA		Start 6-Dec-12 Finish 6-Dec-12	
									Date NA			
									Reference NA			
Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Asphalt			
		60/46			0.0	NA	0	CL	Asphalt			
							1		Sand fill, pieces of brick			
							2					
							3		Brown silty clay, fill			
							4					
						NA	5					
		60/49			0.0		6	CL				
							7					
							8		At 8' native brown silty clay			
							9					
	Disc.			10 ft			10		End of boring at 10 ft bgs			
							11					
							12					
							13					
							14					
							15					
							16					
							17					
							18					
							19					
							20					
							21					
							22					
							23					
							24					

Logged by: T. Hernandez P.G. - Prudent Tech. Drilling Contractor: Frontz Drilling WELL SPECIFICATIONS: Well not installed Diam. of casing: 2" Screen Interval: BOH: 10 ft bgs Riser Interval:	Date: 6-Dec-12 Driller: Joe Teter Sandpack: Bentonite: 0-10 ft bgs	Notes: NA = Not Applicable See Sample Summary Sheets for analytical information Disc. = Discrete
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Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X 487465.721 Y 4559454.617 Surface Elevation: 1158.020695 ft msl Casing Below Surface: _____ Reference Elevation: _____ Reference Description: _____									Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP	
													CC-72 RV 46	
									Drilling Method: Direct-Push				Boring No. SB04	
									Geoprobe 6620DT					
									Sampling Method: 2" diameter-5 ft SS sampler				Sheet 1 of 1	
MacroCore liner														
Water Lev.		NA				Drilling								
Time		NA				Start	Finish							
Date		NA				6-Dec-12	6-Dec-12							
Reference		NA												

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Asphalt
		60/39			0.0	NA	0		Asphalt
							1		Brown sand fill, pieces of brick, soft, moist
							2		
							3		Silty clay, fill
							4		
						NA	5		
		60/46			0.0		6		
							7		
							8		Brown sandy fill
							9		
	Disc.			10 ft			10		
		60/47			0.0		11		
					2.2		12		Gray/black silty clay, discolored, odor 10-13 ft
	Disc.			13ft			13		
							14		
							15		
		36/31					16		Brown silty sand, some clay
							17		
					1.3		18		Brown silty sand, some clay, gravel, odor
							19		End of boring 18 ft.
							20		
							21		
							22		
							23		
							24		

Logged by: T. Hernandez P.G. - Prudent Tech.	Date: 6-Dec-12	Notes: NA = Not Applicable See Sample Summary Sheets for analytical information Disc. = Discrete
Drilling Contractor: Frontz Drilling	Driller: Joe Teter	
WELL SPECIFICATIONS: Well not installed	Sandpack: _____	
Diam. of casing: 2" Screen Interval: _____	Bentonite: 0-18 ft bgs	
BOH: 18 ft bgs Riser Interval: _____		



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 492610.467 Y 4557573.703
Surface Elevation: 1054.819850 ft msl
Casing Below Surface: _____
Reference Elevation: _____
Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 86
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB01
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			3-Dec-12	3-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass
		60/57	NA		0.0	NA	0		Grass
							1		
							2	CL	1- 4 ft brown silty clay, fill
							3		
							4		
							5	CL	4-7 ft brown clay, stone, dry
		60/52							
	Disc.			6-7 ft		NA	6		
							7		
							8		
							9		
							10	CL	7-11' brown dry clay, stone
	Comp.	12/8		7-11 ft		NA	11		Refusal at 11'
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	3-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter		See Sample Summary Sheets for analytical information
WELL SPECIFICATIONS:	Well not installed				Disc. = Discrete
Diam. of casing: 2"	Screen Interval:	Sandpack:			Comp. = Composite
BOH:	11 ft bgs	Bentonite:	0-11 ft bgs		



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 492611.69 Y 4557574.957
Surface Elevation: 1054.376942 ft msl
Casing Below Surface: _____
Reference Elevation: _____
Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 86
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB02
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			3-Dec-12	3-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvr	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass
		60/49	NA		0.0	NA	0		Grass
							1		
							2	CL	1- 4 ft brown silty clay, fill
							3		
							4		
							5	CL	4-7 ft brown clay, stone, dry
		60/52		6-7 ft	0.0	NA	6		
	Disc.						7		
							8		
							9		
							10	CL	7-11' brown dry clay, stone
		12/7			0.0	NA	11		Refusal at 11'
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	3-Dec-12	Notes: NA = Not Applicable See Sample Summary Sheets for analytical information Disc. = Discrete
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		
Diam. of casing: 2"	Screen Interval:	Bentonite: 0-11 ft bgs		
BOH:	11 ft bgs	Riser Interval:		



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 492613.53 Y 4557575.377
Surface Elevation: 1054.662372 ft msl
Casing Below Surface: _____
Reference Elevation: _____
Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 86
Drilling Method:	Direct-Push			Boring No. SB03	
	Geoprobe 6620DT				
Sampling Method:	2" diameter-5 ft SS sampler			Sheet 1 of 1	
	MacroCore liner				
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			3-Dec-12	3-Dec-12
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass
		60/51	NA		0.0	NA	0		Grass
							1		
							2	CL	1- 4 ft Brown silty clay, fill, soft, moist
							3		
							4		
							5		
		60/47		6-7 ft	0.0	NA	6	CL	4-7 ft Brown clay, hard, dry
	Disc.						7		
							8		
							9		
							10	CL	7-11' Brown dry clay, stone
		12/7			0.0	NA	11		Refusal at 11'
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	3-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter		See Sample Summary Sheets for analytical information
WELL SPECIFICATIONS:	Well not installed				Disc. = Discrete
Diam. of casing: 2"	Screen Interval:	Sandpack:			
BOH: 11 ft bgs	Riser Interval:	Bentonite: 0-11 ft bgs			



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 492613.53 Y 4557575.377
Surface Elevation: 1054.662372 ft msl
Casing Below Surface: _____
Reference Elevation: _____
Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 86
Drilling Method:	Direct-Push			Boring No. SB04	
	Geoprobe 6620DT				
Sampling Method:	2" diameter-5 ft SS sampler			Sheet 1 of 1	
	MacroCore liner				
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			3-Dec-12	3-Dec-12
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass
		60/51	NA		0.0	NA	0		Grass
							1		
							2	CL	1- 4 ft Brown silty clay, fill, soft, moist
							3		
							4		
							5		
		60/47		6-7 ft	0.0	NA	6	CL	4-7 ft Brown clay, hard, dry
	Disc.						7		
							8		
							9		
							10	CL	7-11' Brown dry clay, stone
		12/7			0.0	NA	11		Refusal at 11'
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	3-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter		See Sample Summary Sheets for analytical information
WELL SPECIFICATIONS:	Well not installed				Disc. = Discrete
Diam. of casing: 2"	Screen Interval:	Sandpack:			
BOH: 11 ft bgs	Riser Interval:	Bentonite: 0-11 ft bgs			



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 492613.714 Y 4557573.586
Surface Elevation: 1054.563948 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 86
Drilling Method:	Direct-Push			Boring No. SB05	
	Geoprobe 6620DT				
Sampling Method:	2" diameter-5 ft SS sampler			Sheet 1 of 1	
	MacroCore liner				
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			3-Dec-12	3-Dec-12
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass
		60/49	NA		0.0	NA	0		Grass
							1		
							2	CL	1- 4 ft Brown silty clay, fill, soft, moist
							3		
							4		
							5		
		60/52		6-7 ft	0.0	NA	6	CL	4-7 ft Brown clay, hard, dry
	Disc.						7		
							8		
							9		
							10	CL	7-11' Brown dry clay, stone
		12/8			0.0	NA	11		Refusal at 11'
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	3-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter		See Sample Summary Sheets for analytical information
WELL SPECIFICATIONS:	Well not installed				Disc. = Discrete
Diam. of casing: 2"	Screen Interval:	Sandpack:			
BOH: 11 ft bgs	Riser Interval:	Bentonite: 0-11 ft bgs			



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 492611.846 Y 4557573.206
Surface Elevation: 1054.770638 ft msl
Casing Below Surface: _____
Reference Elevation: _____
Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 86
Drilling Method:	Direct-Push			Boring No. SB06	
	Geoprobe 6620DT				
Sampling Method:	2" diameter-5 ft SS sampler			Sheet 1 of 1	
	MacroCore liner				
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			3-Dec-12	3-Dec-12
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass
		60/49	NA		0.0	NA	0		Grass
							1		
							2	CL	1- 4 ft brown silty clay, fill
							3		
							4		
							5	CL	4-7 ft brown clay, stone, dry
		60/52		6-7 ft	0.0	NA	6		
	Disc.						7		
							8		
							9		
							10	CL	7-11' brown dry clay, stone
		12/8			0.0	NA	11		Refusal at 11'
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	<u>T. Hernandez P.G. - Prudent Tech.</u>	Date:	<u>3-Dec-12</u>	Notes:	NA = Not Applicable
Drilling Contractor:	<u>Frontz Drilling</u>	Driller:	<u>Joe Teter</u>		See Sample Summary Sheets for analytical information
WELL SPECIFICATIONS:	Well not installed				
Diam. of casing: <u>2"</u>	Screen Interval: _____	Sandpack:	_____		<u>Disc. = Discrete</u>
BOH: <u>11 ft bgs</u>	Riser Interval: _____	Bentonite: <u>0-11 ft bgs</u>	_____		



**Environmental Chemical
Corporation**

LOG OF SOIL BORING
Coordinates: X 492622.562 Y 4557527.911
Surface Elevation: 1056.332299 ft msl
Casing Below Surface: _____
Reference Elevation: _____
Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 87
Drilling Method:	Direct-Push			Boring No. SB01	
	Geoprobe 6620DT				
Sampling Method:	2" diameter-5 ft SS sampler			Sheet 1 of 1	
	MacroCore liner				
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			4-Dec-12	4-Dec-12
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass
		60/34			0.0	NA	0		Grass
							1		
							2		
							3	CL	Light brown silty clay
							4		
							5	CL	Transition to dry clay
	Disc.	60/48		6-7 ft	0.0	NA	6	CL	at 6.5', discolored soil
							7		
							8		
							9		
							10		
		36/28			0.0	NA	11	CL	Light borwn silty clay, dry
							12		
	Comp.			7-13 ft			13		End of boring 13 ft bgs
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	4-Dec-12	Notes: NA = Not Applicable See Sample Summary Sheets for sampling information Disc. = Discrete Comp. = Composite
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		
Diam. of casing: 2"	Screen Interval:	Bentonite:	0-13 ft bgs	
BOH:	13 ft bgs	Riser Interval:		



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 492623.358 Y 4557526.757
Surface Elevation: 1056.187944 ft msl
Casing Below Surface: _____
Reference Elevation: _____
Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 87
Drilling Method:	Direct-Push			Boring No. SB02	
	Geoprobe 6620DT				
Sampling Method:	2" diameter-5 ft SS sampler			Sheet 1 of 1	
	MacroCore liner				
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			4-Dec-12	4-Dec-12
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass
		60/36			0.0	NA	0		Grass
							1	SM	Brown sandy silt, soft, moist
							2	CL	Light brown silty clay
							3		Bits of wire at 28"
							4		
							5	CL	Transition to dry clay
		48/48			0.0	NA	6		
	Disc.			6-7 ft			7	CL	at 6.5', discolored soil
									End of boring at 7 ft
							8		
							9		
							10		
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	4-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter		See Sample Summary Sheets for sampling information
WELL SPECIFICATIONS:	Well not installed				Disc. = Discrete
Diam. of casing: 2"	Screen Interval:	Sandpack:			
BOH: 10 ft bgs	Riser Interval:	Bentonite: 0-10 ft bgs			



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 492623.358 Y 4557526.757
Surface Elevation: 1056.135451 ft msl
Casing Below Surface: _____
Reference Elevation: _____
Reference Description: _____

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 87
Drilling Method:	Direct-Push			Boring No. SB03	
	Geoprobe 6620DT				
Sampling Method:	2" diameter-5 ft SS sampler			Sheet 1 of 1	
	MacroCore liner				
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			4-Dec-12	4-Dec-12
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Grass
		60/36			0.0	NA	0		Grass
							1	SM	Brown sandy silt, soft, moist
							2	CL	Light brown silty clay
							3		
							4		
							5	CL	Transition to dry clay
		48/48			0.0	NA	6		
	Disc.			6-7 ft			7		End of boring at 7 ft
							8		
							9		
							10		
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	4-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter		See Sample Summary Sheets for sampling information
WELL SPECIFICATIONS:	Well not installed				Disc. = Discrete
Diam. of casing: 2"	Screen Interval:	Sandpack:			
BOH: 10 ft bgs	Riser Interval:	Bentonite: 0-10 ft bgs			



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X 497556.317 Y 4559536.053
Surface Elevation: 990.762230 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 88
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB01
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			7-Dec-12	7-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
		60/52			0.0	NA	0		
							1	CL	
							2		Brown silty clay, fill,
							3		
							4		
							5	CL	Fill ends at 4.8'
									Brown silty clay, dry
	Disc.	60/47		6 ft	0.0	NA	6		
							7		
							8	CL	Brown silty clay, dry, firm
							9		
							10		End of boring 10 ft bgs
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	7-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter		See Sample Summary Sheets for analytical information
WELL SPECIFICATIONS:	Well not installed				Disc. = Discrete
Diam. of casing: 2"	Screen Interval:	Sandpack:			
BOH: 10 ft bgs	Riser Interval:	Bentonite: 0-10 ft bgs			



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X 497553.488 Y 4559536.418
Surface Elevation: 991.018133 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 88
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB02
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			7-Dec-12	7-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
		60/48			0.0	NA	0		
							1	CL	
							2		Brown silty clay, fill
							3		
							4		
							5	CL	Fill ends at 4.8'
									Black clay (odor) transitions to light brown clay
		60/23			0.0	NA	6	CL	
							7		Light brown silty clay with some pea gravel
	Disc.			7 ft					End of boring 7 ft bgs
							8		
							9		
							10		
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by: T. Hernandez P.G. - Prudent Tech.
Drilling Contractor: Frontz Drilling
WELL SPECIFICATIONS: Well not installed
Diam. of casing: 2" Screen Interval:
BOH: 7 ft bgs Riser Interval:

Date: 7-Dec-12
Driller: Joe Teter
Sandpack:
Bentonite: 0-7 ft bgs

Notes: NA = Not Applicable
See Sample Summary Sheets for analytical information
Disc. = Discrete



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X 497557.524 Y 4559538.604
Surface Elevation: 991.247789 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 88
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB03
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			7-Dec-12	7-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
		60/48			0.0	NA	0		
							1	CL	
							2		Brown silty clay, fill
							3		
							4		
							5		Fill ends at 4.8'
		60/23			0.0	NA	6	CL	Light brown silty clay with some pea gravel
	Disc.			7 ft			7		End of boring 7 ft bgs
							8		
							9		
							10		
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	7-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter		See Sample Summary Sheets for analytical information
WELL SPECIFICATIONS:	Well not installed				Disc. = Discrete
Diam. of casing: 2"	Screen Interval:	Sandpack:			
BOH: 7 ft bgs	Riser Interval:	Bentonite: 0-7 ft bgs			



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X 497557.524 Y 4559538.604
Surface Elevation: 991.073906 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 88
Drilling Method:	Direct-Push			Boring No. SB04	
	Geoprobe 6620DT				
Sampling Method:	2" diameter-5 ft SS sampler			Sheet 1 of 1	
	MacroCore liner				
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			7-Dec-12	7-Dec-12
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
		60/48			0.0	NA	0		
							1	CL	
							2		Brown silty clay, fill, soft, moist
							3		
							4		
							5		Fill ends at 4.8'
		60/23			0.0	NA	6	CL	Light brown silty clay with some pea gravel
	Disc.			7 ft			7		End of boring 7 ft bgs
							8		
							9		
							10		
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	7-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter		See Sample Summary Sheets for analytical information
WELL SPECIFICATIONS:	Well not installed				Disc. = Discrete
Diam. of casing: 2"	Screen Interval:	Sandpack:			
BOH: 7 ft bgs	Riser Interval:	Bentonite: 0-7 ft bgs			



Environmental Chemical Corporation

LOG OF SOIL BORING

Coordinates: X 497555.627 Y 4559537.366
Surface Elevation: 990.949236 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 88
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No.	SB05
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			7-Dec-12	7-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
		60/48			0.0	NA	0		
							1	CL	
							2		Brown silty clay, fill, soft, moist
							3		
							4		
							5	CL	Fill ends at 4.8'
									Black clay (odor) transitions to light brown clay, firm, moist
		60/23			0.0	NA	6	CL	
							7		Light brown silty clay with some pea gravel, firm, moist
	Disc.			7 ft					End of boring 7 ft bgs
							8		
							9		
							10		
							11		
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by: T. Hernandez P.G. - Prudent Tech.
Drilling Contractor: Frontz Drilling
WELL SPECIFICATIONS: Well not installed
Diam. of casing: 2" Screen Interval:
BOH: 7 ft bgs Riser Interval:

Date: 7-Dec-12
Driller: Joe Teter
Sandpack:
Bentonite: 0-7 ft bgs

Notes: NA = Not Applicable
See Sample Summary Sheets for analytical information
Disc. = Discrete

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X 497555.627 Y 4559537.366 Surface Elevation: 990.949236 ft msl Casing Below Surface: _____ Reference Elevation: _____ Reference Description: _____										Job. No. 5461.004		Client ACOE-Louisville		Location RVAAP CC-72 RV 88							
										Drilling Method: Direct-Push Geoprobe 6620DT				Boring No. SB05							
										Sampling Method: 2" diameter-5 ft SS sampler MacroCore liner				Sheet 1 of 1							
										Water Lev. NA				Start							
										Time NA				Finish							
<table border="1" style="width: 100%;"> <tr> <td colspan="2">Date</td> <td colspan="2">14-Aug-13</td> <td colspan="2">14-Aug-13</td> </tr> <tr> <td colspan="2">Reference</td> <td colspan="2">NA</td> <td colspan="2"></td> </tr> </table>										Date		14-Aug-13		14-Aug-13		Reference		NA			
Date		14-Aug-13		14-Aug-13																	
Reference		NA																			
Surface Conditions: Soil																					
Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Sample Depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log													
		60/48			0.0	NA	0														
							1	CL	Sandy gravel, light gray												
							2		Silty clay, olive (5Y 4/3), dense, medium stiff, moist												
							3	CL	Silty clay, very dark gray (5Y 3/1), medium stiff, moist												
							4	CL	Silty brown clay (10YR 4/3), dense, stiff, moist												
							5														
		60/23			0.0	NA	6														
							7														
							8	CL	Grading to very stiff, dry												
							9														
							10	CL	Grading to soft, moist												
		36/30			0.0	NA	11														
							12	CL	Grading to very stiff												
	Comp.			7-13 ft			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: 14-Aug-13 Driller: Rickie Skanks Sandpack: _____ Bentonite: 0-13 ft bgs	Notes: NA = Not Applicable See Sample Summary Sheets for analytical information Comp. = Composite Re-sampled on 14 August 2013 to coll. DSB composite sample
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**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X 493382.681 Y 4557637.159

Surface Elevation: 987.412534 ft msl

Casing Below Surface:

Reference Elevation:

Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 89
Drilling Method:	Direct-Push			Boring No.	SB01
	Geoprobe 6620DT				
Sampling Method:	2" diameter-5 ft SS sampler			Sheet 1 of 1	
	MacroCore liner				
Water Lev.	NA			Drilling	
Time	NA			Start	Finish
Date	NA			4-Dec-12	4-Dec-12
Reference	NA				

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/39	NA		0.0	NA	0	CL	Brown Silty clay/sand (fill)
							1		
							2		
							3		
							4		
								CL	fill orange/gray mixed clay
	NA	60/29			0.0	NA	5		
							6		
							7		
							8		
							9		
	NA	12/9			0.0	NA	10	CL	fill @ 9.5' 10' native dry clay, gray stone
							11		refusal at 11'
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	4-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	10 ft to grnd. Surface	Cover:	
BOH:	Riser Interval:				

 Environmental Chemical Corporation LOG OF SOIL BORING Coordinates: X 493383.349 Y 4557636.071 Surface Elevation: 987.448622 ft msl Casing Below Surface: _____ Reference Elevation: _____ Reference Description: _____									Job. No. 5461.004 Client ACOE-Louisville		Location RVAAP CC-72 RV 89	
									Drilling Method: Direct-Push Geoprobe 6620DT		Boring No. SB02	
									Sampling Method: 2" diameter-5 ft SS sampler MacroCore liner		Sheet 1 of 1	
									Water Lev. NA		Drilling Start Finish	
									Time NA		4-Dec-12 4-Dec-12	
									Date NA			
									Reference NA			
Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil			
	NA	60/39	NA		0.0	NA	0	CL	Brown Silty clay/sand (fill)			
							1					
							2					
							3					
							4					
								CL	fill orange/gray mixed clay			
	NA	60/29			0.0	NA	5					
							6					
							7					
							8					
							9					
	NA	12/9			0.0	NA	10	CL	fill @ 9.5' 10' native dry clay, gray stone			
							11		refusal at 11'			
							12					
							13					
							14					
							15					
							16					
							17					
							18					
							19					
							20					
							21					
							22					
							23					
							24					

Logged by:	T. Hernandez P.G. - Prudent Tech.		Date:	4-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling		Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed					
Diam. of casing: 2"	Screen Interval:		Sandpack:		Grout:	
BOH:	Riser Interval:		Bentonite: 10 ft to grnd. Surface		Cover:	



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X493382.874 Y4557635.064
Surface Elevation: 987.24 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No. 5461.004		Client ACOE-Louisville			Location RVAAP	
					CC-72	RV 89
Drilling Method:		Direct-Push			Boring No. SB03	
		Geoprobe 6620DT				
Sampling Method:		2" diameter-5 ft SS sampler			Sheet 1 of 1	
		MacroCore liner				
					Drilling	
Water Lev.	NA				Start	Finish
Time	NA				4-Dec-12	4-Dec-12
Date	NA					
Reference	NA					

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/33	NA		0.0	NA	0	CL	Brown Silty clay/sand (fill)
							1		
							2		
							3		
							4		
								CL	fill orange/gray mixed clay
	NA	60/28				NA	5		
							6		
							7		
							8		
							9		
	NA	12/8				NA	10	CL	fill @ 9.5' 10' native dry clay, gray stone
							11		refusal at 11'
							12		
							13		
							14		
	NA					NA	15		
							16		
							17		
							18		
							19		
	NA					NA	20		
							21		
							22		
							23		
							24		

Logged by: T. Hernandez P.G. - Prudent Tech.
Drilling Contractor: Frontz Drilling
WELL SPECIFICATIONS: Well not installed
Diam. of casing: 2" Screen Interval:
BOH: Riser Interval:

Date: 4-Dec-12 Notes: NA = Not Applicable
Driller: Joe Teter See Sample Summary Sheets for
sampling information
Sandpack: Grout:
Bentonite: 10 ft to grnd. Surface Cover:



Environmental Chemical
Corporation

LOG OF SOIL BORING

Coordinates: X493382.146 Y4557635.928
Surface Elevation: 987.39 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville			Location	RVAAP
						CC-72	RV 89
Drilling Method:	Direct-Push					Boring No.	SB04
	Geoprobe 6620DT						
Sampling Method:	2" diameter-5 ft SS sampler					Sheet 1 of 1	
	MacroCore liner						
						Drilling	
Water Lev.	NA					Start	Finish
Time	NA					4-Dec-12	4-Dec-12
Date	NA						
Reference	NA						

Digital Picture #	Sample Type	n. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/38	NA		0.0	NA	0	CL	Brown Silty clay/sand (fill)
							1		
							2		
							3		
							4		
								CL	fill orange/gray mixed clay
	NA	60/25				NA	5		
							6		
							7		
							8		
							9		
	NA	12/7				NA	10	CL	fill @ 9.5' 10' native dry clay, gray stone
							11		refusal at 11'
							12		
							13		
							14		
	NA					NA	15		
							16		
							17		
							18		
							19		
	NA					NA	20		
							21		
							22		
							23		
							24		

Logged by: T. Hernandez P.G. - Prudent Tech.
Drilling Contractor: Frontz Drilling
WELL SPECIFICATIONS: Well not installed
Diam. of casing: 2" Screen Interval:
BOH: Riser Interval:

Date: 4-Dec-12 Notes: NA = Not Applicable
Driller: Joe Teter See Sample Summary Sheets for
sampling information
Sandpack: Grout:
Bentonite: 10 ft to grnd. Surface Cover:



**Environmental Chemical
Corporation**

LOG OF SOIL BORING

Coordinates: X493382.732 Y4557635.961
Surface Elevation: 987.47 ft msl
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	5461.004	Client	ACOE-Louisville	Location	RVAAP
				CC-72	RV 89
Drilling Method:	Direct-Push Geoprobe 6620DT			Boring No. SB05	
Sampling Method:	2" diameter-5 ft SS sampler MacroCore liner			Sheet 1 of 1	
				Drilling	
Water Lev.	NA			Start	Finish
Time	NA			4-Dec-12	4-Dec-12
Date	NA				
Reference	NA				

Digital Picture #	Sample Type	In. Drvr / In. Recvrd	Dpth. Csg.	Samp. # / Samp. depth	PID (ppm)	Blows per 6 in.	Depth (feet)	USCS Log	Surface Conditions: Soil
	NA	60/38	NA		0.0	NA	0	CL	Brown Silty clay/sand (fill)
							1		
							2		
							3		
							4		
								CL	fill orange/gray mixed clay
	NA	60/32			0.0	NA	5		
							6		
							7		
							8		
							9		
	NA	12/9			0.0	NA	10	CL	fill @ 9.5' 10' native dry clay, gray stone
							11		refusal at 11'
							12		
							13		
							14		
							15		
							16		
							17		
							18		
							19		
							20		
							21		
							22		
							23		
							24		

Logged by:	T. Hernandez P.G. - Prudent Tech.	Date:	4-Dec-12	Notes:	NA = Not Applicable
Drilling Contractor:	Frontz Drilling	Driller:	Joe Teter	See Sample Summary Sheets for sampling information	
WELL SPECIFICATIONS:	Well not installed	Sandpack:		Grout:	
Diam. of casing: 2"	Screen Interval:	Bentonite:	10 ft to grnd. Surface	Cover:	
BOH:	Riser Interval:				

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HTW DRILLING LOG

HOLE NO.
SB-1-3
SHEET 1
OF 2 SHEETS

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRANZ DRILLING	
3. PROJECT RAVENNA AAP		4. LOCATION CC 72 RV-A	
5. NAME OF DRILLER		6. MANUFACTURER'S DESIGNATION OF DRILL GEOPAC 66200T	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION RV-A SB1-3	
		9. SURFACE ELEVATION	
		10. DATE STARTED 4 DEC 12	11. DATE COMPLETED 4 DEC 12
12. OVERBURDEN THICKNESS		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 SB 1+2=10', SB 3=13'		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES NA	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)
23. SIGNATURE OF INSPECTOR T. HERMAN			

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	0	LT BEN CLAY STONE	0.0	SB-1 SB2			
CL	1	STONE	0.0	SB 3			(SB-1 Small Al item in shoe)
CL	2	" " "	0.0	SB-1 ONLY			(P100 4' WD)
	3	TD 13'	0.0				SB1, SB2, SB3
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						
	21						
	22						
	23						
	24						
	25						
	26						
	27						
	28						
	29						
	30						
	31						
	32						
	33						
	34						
	35						

MARK 55

PROJECT
RAVENNA AAP

HOLE NO.

4 DEC 12

HTW DRILLING LOG

HOLE NO.
SB 1-3
SHEET 1
OF 2 SHEETS

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRANZ DRILLING	
3. PROJECT RAVENNA AAP		4. LOCATION CC 72 RV-5	
5. NAME OF DRILLER JOE TATER		6. MANUFACTURER'S DESIGNATION OF DRILL GEOPHYSICAL 66200	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION RV-5 SB 1-3	
		9. SURFACE ELEVATION	
		10. DATE STARTED 3 DEC 12	
		11. DATE COMPLETED 3 DEC 12	
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED N/A	
13. DEPTH DRILLED INTO ROCK N/A		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE 13'		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES N/A	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)
			OTHER (SPECIFY)
			OTHER (SPECIFY)
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)
			23. SIGNATURE OF INSPECTOR T. HARRIS

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
CC	0	LI GEN CLAY	0.0				
CC	1		0.6				
CC	1.5	TRANS TO A WET SILTY CLAY SAND 6-10" THICK	12				
	2	TD 13	0.0				
	2.5						
	3						
	3.5						
	4						
	4.5						
	5						
	5.5						
	6						
	6.5						
	7						
	7.5						
	8						
	8.5						
	9						
	9.5						
	10						
	10.5						
	11						
	11.5						
	12						
	12.5						
	13						

MPK 55

PROJECT
RAVENNA AAP

HOLE NO.

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME

ECC

2. DRILLING SUBCONTRACTOR

FRONTZ DRILLING

SHEET 1
OF 2 SHEETS

3. PROJECT

RAVENNA AAP

4. LOCATION

LU#6 SB-1 RV41

5. NAME OF DRILLER

Jeremy

6. MANUFACTURER'S DESIGNATION OF DRILL

ROMARK 6120T

7. SIZES AND TYPES OF DRILLING
AND SAMPLING EQUIPMENT

8. HOLE LOCATION

SB-1

9. SURFACE ELEVATION

10. DATE STARTED

12/10/12

11. DATE COMPLETED

12/18/12

12. OVERBURDEN THICKNESS

15. DEPTH GROUNDWATER ENCOUNTERED

13. DEPTH DRILLED INTO ROCK

NA

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE

0-15'

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

NA

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS

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

Robert Williams

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	2	Gray tan clay soft	0.0 ppm PID				looks all native
CL	4	Gray hard clay					
CL	6	5-6 ft petro small DO on pid					Sampled.
CL	8	Orange tan clay hard					
CL	10	large gravel mixed in					
CL	12	Sandy tan/orange clay soft					
CL	14	Wet 3" layer Sandy tan/orange clay soft					
CL	16	hard dark brown clay					
	18	End					
	20						

MRK JUNE 55

PROJECT

RAVENNA AAP

HOLE NO.

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME

ECC

2. DRILLING SUBCONTRACTOR

FRONTZ DRILLING

SHEET 1
OF 2 SHEETS

3. PROJECT

RAVENNA AAP

4. LOCATION

LL#6 SB-2 RV 41

5. NAME OF DRILLER

JULY

6. MANUFACTURER'S DESIGNATION OF DRILL

6602007

7. SIZES AND TYPES OF DRILLING
AND SAMPLING EQUIPMENT

8. HOLE LOCATION

SB-2

9. SURFACE ELEVATION

10. DATE STARTED

12/10/12

11. DATE COMPLETED

12/10/12

12. OVERBURDEN THICKNESS

15. DEPTH GROUNDWATER ENCOUNTERED

13. DEPTH DRILLED INTO ROCK

NA

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE

0-10'

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

NA

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS

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

Roxan Williams

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	Brown hard clay	0.0 ppm PID				
CL	2						
CL	3						
CL	4						
CL	5						
CL	6	3" band soft + brown clay mixed w/ large gravel.					
CL	7	brown clay					
CL	8						
CL	9	brown clay with small gravel					
CL	10						

MPK FORM 55

PROJECT

RAVENNA AAP

HOLE NO.

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRONTZ DRILLING		HOLE NO.	
3. PROJECT RAVENNA AAP		4. LOCATION LL#6 SB3 RV41		SHEET 1 OF 2 SHEETS	
5. NAME OF DRILLER Jenny		6. MANUFACTURER'S DESIGNATION OF DRILL GEOPROBE 6620 DT			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION SB-3			
		9. SURFACE ELEVATION			
		10. DATE STARTED 12/10/12		11. DATE COMPLETED 12/13/12	
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED			
13. DEPTH DRILLED INTO ROCK NA		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
14. TOTAL DEPTH OF HOLE 0-10'		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES NA		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
21. TOTAL CORE RECOVERY %					
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR Roxana Williams	

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	clay brown gray soft	0.0 pld				
	2	clay brown gray hard	ppm				
	3						
	4						
	5						
	6						
	7						
CL	8	sand/gravel 2" tan band.	Native				
	9	soft brown/gray clay					
	10						

MRK FORM 55

PROJECT
RAVENNA AAP

HOLE NO.

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME

ECC

2. DRILLING SUBCONTRACTOR

FRANZ DRILLING

SHEET 1 OF 2 SHEETS

3. PROJECT

RAVENNA AAP

4. LOCATION

LL#6

SB-4

RV 41

5. NAME OF DRILLER

JERRY

6. MANUFACTURER'S DESIGNATION OF DRILL

GEOPHYS 602-01

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

8. HOLE LOCATION

SB-4

9. SURFACE ELEVATION

10. DATE STARTED

12/10/12

11. DATE COMPLETED

12/16/12

12. OVERBURDEN THICKNESS

15. DEPTH GROUNDWATER ENCOUNTERED

13. DEPTH DRILLED INTO ROCK

NA

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE

0-15'

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

NA

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS

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

Roxanne Williams

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	soft brown clay	0.0 ppm				
	2	hard brown clay	PID				
CL	3						
	4						
CL	5						
	6	large gravel mixed in hard clay					
	7	Wet					
	8	gravel seam with gray clay					
CL	9	brown clay soft mixed with small gravel					
	10						

MARK JUNE 55

PROJECT

RAVENNA AAP

HOLE NO.

11

12

13

14

gravel layer 2"
dark brown hard clay mixed gravel

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME

ECC

2. DRILLING SUBCONTRACTOR

FRONTZ DRILLING

SHEET 1
OF 2 SHEETS

3. PROJECT

RAVENNA AAP

4. LOCATION

LL#6 SB-5

KV41

5. NAME OF DRILLER

Jimmy

6. MANUFACTURER'S DESIGNATION OF DRILL

GROBORA 6020 DT

7. SIZES AND TYPES OF DRILLING
AND SAMPLING EQUIPMENT

8. HOLE LOCATION

SB-5

9. SURFACE ELEVATION

10. DATE STARTED

12/10/12

11. DATE COMPLETED

12/10/12

12. OVERBURDEN THICKNESS

15. DEPTH GROUNDWATER ENCOUNTERED

13. DEPTH DRILLED INTO ROCK

NA

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE

10'

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

NA

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS

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

Roxana Williams

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

Brown/gray clay hard

D.Oppm
PID

2

3

4

5

CL

6

Hard brown silty clay

7

8

9

1" small
gravel layer.
Soft clay brown silty

10

Native

Sample

MPK FORM 55

PROJECT

RAVENNA AAP

HOLE NO.

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME

ECC

2. DRILLING SUBCONTRACTOR

FRONTZ DRILLING

SHEET 1
OF 2 SHEETS

3. PROJECT

RAVENNA AAP

4. LOCATION

LL#6 SD-6 RV41

5. NAME OF DRILLER

Jeremy

6. MANUFACTURER'S DESIGNATION OF DRILL

GEOPRIDE 66200T

7. SIZES AND TYPES OF DRILLING
AND SAMPLING EQUIPMENT

8. HOLE LOCATION

9. SURFACE ELEVATION

10. DATE STARTED

12/10/12

11. DATE COMPLETED

12. OVERBURDEN THICKNESS

15. DEPTH GROUNDWATER ENCOUNTERED

13. DEPTH DRILLED INTO ROCK

NA

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE

D-10'

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

NA

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS

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

R. Williams

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

brown hard clay hard

0.0

2

3

4

5

CL

6

7

8

9

10

↓
brown and red layer sand stone
soft brown clay silty
large gravel mixed in

↓
hard brown clay

KT native
sampled

HTW DRILLING LOG										HOLE NO. 5801			
1. COMPANY NAME ECC				2. DRILLING SUBCONTRACTOR Frontz				SHEET 1 OF 1 SHEETS					
3. PROJECT Ravenna Army Ammunition Plant				4. LOCATION CC 72-RV41									
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		9. SURFACE ELEVATION		10. DATE STARTED		11. DATE COMPLETED			
		MACROCORE		RV41, 5801		NA		8/14/1304		8/14			
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				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 %	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR					
		BENTONITE						D. [Signature]					
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	5 2 10 4 18 6 20 8 28 10 30 12 25 14 40 45	Silty Clay, Brown, (10YR 4/3), dense, sh. to soft (variable), moist.											
		HC odor & staining		5.5		UOCCO 10'		HC odor in 3 hrs @ 10' Sample d/p 1320					

HOLE NO.

RV-41, SBO1

HOLE NO.
SB 1-4

SHEET 1
OF 2 SHEETS

6 DEC 12

PROJECT
RAVENNA AAP

HOLE NO.

HTW DRILLING LOG

HOLE NO.
581-6

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRONTZ DRILLING		SHEET 1 OF 2 SHEETS	
3. PROJECT RAVENNA AAP		4. LOCATION CL 72 RV 86			
5. NAME OF DRILLER JOE TETER		6. MANUFACTURER'S DESIGNATION OF DRILL GEOPROR 682101			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION 581-6			
		9. SURFACE ELEVATION			
		10. DATE STARTED 3 DEC 12		11. DATE COMPLETED 3 DEC 12	
		12. OVERBURDEN THICKNESS			
13. DEPTH DRILLED INTO ROCK NA		15. DEPTH GROUNDWATER ENCOUNTERED			
14. TOTAL DEPTH OF HOLE 11'		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
18. GEOTECHNICAL SAMPLES NA		DISTURBED		UNDISTURBED	
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR T. HERNANDEZ	
				21. TOTAL CORE RECOVERY %	

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	1-4'	SILTY CLAY-FILL	0.0				
CL	4-7'	DRY CLAYSTONE					
CL	7-11'	DRY CLAYSTONE					
CL		REMARK: 11'					
	15'	TID 11'					
	20'						
	25'						
	30'						
	35'						
	40'						
	45'						

MPK FORM 55

PROJECT
RAVENNA AAP

HOLE NO.

HTW DRILLING LOG

HOLE NO.
SB 1-3

1. COMPANY NAME

ECC

2. DRILLING SUBCONTRACTOR

FRANTZ DRILLING

3. PROJECT

RAVENNA AAP

4. LOCATION

CC72 RV-87

5. NAME OF DRILLER

JOE TETRA

6. MANUFACTURER'S DESIGNATION OF DRILL

GEOPHOS 6620 DT

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

8. HOLE LOCATION

SB-1-3

9. SURFACE ELEVATION

10. DATE STARTED

4 DEC 12

11. DATE COMPLETED

4 DEC 12

12. OVERBURDEN THICKNESS

15. DEPTH GROUNDWATER ENCOUNTERED

13. DEPTH DRILLED INTO ROCK

NA

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE

13', 10', 10'

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

NA

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS

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

T. HERNANDEZ

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
CC	0	LT GEN SILTY CLAY	0.0				
CC	5	LT BENSILTY CLAY @ 5'		TELD 28" SB-2			
CC	6.5	TRANS TO DRY CLAY @ 6.5'	0.0				
CC	10	discarded soil.					
CC	13	LT GEN SILTY CLAY (REV)	0.0	SB-1 only			
	15	TM 13'					
	20						
	25						
	30						
	35						
	40						
	45						

[Signature]

4 DEC 12

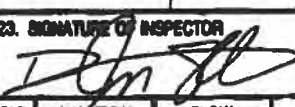
HTW DRILLING LOG

HOLE NO. **SB(1-5)**

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRONTZ DRILLING		SHEET 1 OF 2 SHEETS	
3. PROJECT RAVENNA AAP		4. LOCATION CC72-08 RUS8			
5. NAME OF DRILLER JOR TETRA		6. MANUFACTURER'S DESIGNATION OF DRILL GRUPPORA 6020 OT			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION SB(1-5)			
		9. SURFACE ELEVATION			
		10. DATE STARTED 7 DEC 12		11. DATE COMPLETED 7 DEC 12	
		12. OVERBURDEN THICKNESS			
13. DEPTH DRILLED INTO ROCK NA		15. DEPTH GROUNDWATER ENCOUNTERED			
14. TOTAL DEPTH OF HOLE		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)					
18. GEOTECHNICAL SAMPLES NA		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
21. TOTAL CORE RECOVERY %					
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR T. HERNANDEZ	

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	0	BEN SILTY CLAY (FILL)	SAME	CL (GOOD)	SAME	SAME	SAME P10
CL	4.8	Pill ends x 4.8	TRANS TO	CL	AS	AS	AS
CL	6	(CLY) BEN CLAY (SLTY)	LT BEN SILTY CLAY	CL	SB-2	SB-2	SB-2
		SAMPLED AT 6	UNITED PROGRESS	SAMPLED AT 7	SAMPLED AT 7	SAMPLED AT 7	SAMPLED AT 6.0
CL	10	TD 10'	TD 7'	TD 7'	TD 7'		0.0
	15	SB-1	SB-2	SB-3	SB-4		
	20						
	25						
	30						
	35						
	40						
	45						

7 DEC 12

HTW DRILLING LOG							HOLE NO. 58-5
1. COMPANY NAME ECC			2. DRILLING SUBCONTRACTOR Frontz			SHEET 1 OF 5 SHEETS	
3. PROJECT Ravenna Army Ammunition Plant			4. LOCATION CC RE CC-72, RU-88				
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 RU-88 - 58-5			
				9. SURFACE ELEVATION NA			
				10. DATE STARTED JS 8/14 ; H+ 1136		11. DATE COMPLETED 8/14	
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			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)	
		—		—		—	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		23. SIGNATURE OF INSPECTOR	
		BENTONITE					

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
6m CL		Sandy Gravel; light grey					
	5-2	Silty Clay, olive, (5Y 4/2), dense, mod. stiff, moist					
	18-4	v. dark grey (5Y 3/1)					
	18-6	Silty Clay, brown (10YR 4/3), dense, stiff, moist;					
	20-8	Grading to v. stiff, dry	0.0				
	25-10	Grading to soft, moist	0.0				
	30-12	Grading to very stiff	0.0 0.0 0.0				Sampled @ 1155
	38-14						
	40						
	45						

HTW DRILLING LOG

HOLE NO.
SB-1-5

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRANTZ DRILLING		SHEET 1 OF 2 SHEETS	
3. PROJECT RAVENNA AAP		4. LOCATION CC72 RV89			
5. NAME OF DRILLER JOE TRTAR		6. MANUFACTURER'S DESIGNATION OF DRILL GRAPADIA 6520 DT			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION RV 89			
		9. SURFACE ELEVATION			
		10. DATE STARTED 4 DEC 12		11. DATE COMPLETED 4 DEC 12	
		12. OVERBURDEN THICKNESS			
13. DEPTH DRILLED INTO ROCK NA		15. DEPTH GROUNDWATER ENCOUNTERED			
14. TOTAL DEPTH OF HOLE 11'		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)					
18. GEOTECHNICAL SAMPLES NA		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
21. TOTAL CORE RECOVERY %					
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
23. SIGNATURE OF INSPECTOR T. HERNANDEZ					

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
CC	0	BEN SILTY CLAY / SAND	FILL	0.0			
CC	5	FILL GRAY / CLAY MIXED					
CC	10	FILL @ 29.5' 10' NATIVE DRY CLAY STAIN	GRAY CLAY STAIN	0.0			
CC	15	REFUSAL @ 11'		0.0			
	20						
	25						
	30						
	35						
	40						
	45						

MPK JUNE 55

PROJECT
RAVENNA AAP

HOLE NO.

4 DEC 12

HTW DRILLING LOG										HOLE NO.		
1. COMPANY NAME ECL					2. DRILLING SUBCONTRACTOR Frontz Drilling					SHEET 1 OF 7 SHEETS		
3. PROJECT Ravenna					4. LOCATION Bldg A-1 SB-1							
5. NAME OF DRILLER Jeremy					6. MANUFACTURER'S DESIGNATION OF DRILL GRIPPER 66200T							
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT			5 FT SS SAMPLER MILWAUKEE			8. HOLE LOCATION SB-1			9. SURFACE ELEVATION			
12. OVERBURDEN THICKNESS					10. DATE STARTED 4/11/12 11. DATE COMPLETED							
13. DEPTH DRILLED INTO ROCK					15. DEPTH GROUNDWATER ENCOUNTERED							
14. TOTAL DEPTH OF HOLE 0-20'					16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED							
18. GEOTECHNICAL SAMPLES					DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES			
20. SAMPLES FOR CHEMICAL ANALYSIS			VOC		METALS		OTHER (SPECIFY)		OTHER (SPECIFY)		21. TOTAL CORE RECOVERY %	
22. DISPOSITION OF HOLE			BACKFILLED		MONITORING WELL		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR			
YES									Roxann Wilson			

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
	2	brown hard clay	0.0 ppm pct.				
	4	sand/clay mix M-grain soft. brown soft clay					
	6						
	8	M-C grain tan sand wet					
	10	gray silty clay firm					
	12						
	14						
	16	coarse grain sand tan					
	18						
	20						
		end					sampled

HTW DRILLING LOG							HOLE NO.
1. COMPANY NAME ELL			2. DRILLING SUBCONTRACTOR Fronte Drilling			SHEET 1 OF 1 SHEETS	
3. PROJECT Ravenna			4. LOCATION Bldg A-1 SB-2				
5. NAME OF DRILLER Jeremy			6. MANUFACTURER'S DESIGNATION OF DRILL GRAND 002001				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 1 FT. 25 STAMPING NR600000			8. HOLE LOCATION SB-2				
			9. SURFACE ELEVATION —				
12. OVERBURDEN THICKNESS —			15. DEPTH GROUNDWATER ENCOUNTERED —				
13. DEPTH DRILLED INTO ROCK —			18. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED —				
14. TOTAL DEPTH OF HOLE 0-20'			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) —				
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES —	
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS		OTHER (SPECIFY)	
						21. TOTAL CORE RECOVERY %	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		23. SIGNATURE OF INSPECTOR	
FES						Roxanne Williams	

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	2	Brown soft clay/sand mix ↓	0.6 pld ppm ↓				
	4						
	6						
CL	8						
	10						
CL	12	Wet Gray hard clay ↓					
	14						
	16						
SM	18						
	20						
		Wet brown clay sand mix ↓					
		6-10 grain sand tan with gravel mixed ↓					
		↓	8	Sample			

HTW DRILLING LOG						HOLE NO.	
1. COMPANY NAME ECL			2. DRILLING SUBCONTRACTOR Frontz Drilling		SHEET 1 OF 1 SHEETS		
3. PROJECT Ravenna			4. LOCATION Bldg A-1 SB-3				
5. NAME OF DRILLER Jeremy			6. MANUFACTURER'S DESIGNATION OF DRILL CEPRA 6620 RT				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT			8. HOLE LOCATION SB-3				
5 FT. SL. SAMPLER MACROLOG			9. SURFACE ELEVATION —				
			10. DATE STARTED 12/11/12		11. DATE COMPLETED —		
12. OVERBURDEN THICKNESS —			15. DEPTH GROUNDWATER ENCOUNTERED —				
13. DEPTH DRILLED INTO ROCK —			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED —				
14. TOTAL DEPTH OF HOLE 0-20'			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) —				
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES —	
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS		OTHER (SPECIFY)	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		OTHER (SPECIFY)	
		YES				23. SIGNATURE OF INSPECTOR	

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	2	↓ brown w/ silty clay	0.0				
CL	4						
CL	6						
CL	8						
SM	10	gray gravel coarse sand - concrete?					
CL	12	Wet soft gray clay silty					
	14						
SM	16	Black sand gravel - looks like pavement gravel?					
	18	gray silty clay soft Wet brown c-m grain sand					
	20	End.					

HTW DRILLING LOG							HOLE NO. SB-2
1. COMPANY NAME ECC			2. DRILLING SUBCONTRACTOR FILANTZ			SHEET 1 OF 1 SHEETS	
3. PROJECT RAVENNA			4. LOCATION CC 70-A6				
5. NAME OF DRILLER JOE TETRA			6. MANUFACTURER'S DESIGNATION OF DRILL GEORGE 66200T				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 5 FT SL SAMPLER - MCLUCORA			8. HOLE LOCATION SB-2				
			9. SURFACE ELEVATION —				
			10. DATE STARTED 16 NOV 12		11. DATE COMPLETED 16 NOV 12		
12. OVERBURDEN THICKNESS —			15. DEPTH GROUNDWATER ENCOUNTERED —				
13. DEPTH DRILLED INTO ROCK —			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED				
14. TOTAL DEPTH OF HOLE 7'			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) —				
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES —	
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS		OTHER (SPECIFY)	
						OTHER (SPECIFY)	
						OTHER (SPECIFY)	
22. DISPOSITION OF HOLE —		BACKFILLED		MONITORING WELL		OTHER (SPECIFY)	
						23. SIGNATURE OF INSPECTOR T. HERNANDEZ	
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		FILL MATERIAL SAND/CLAY	0.0				
CL		CS. 5' BEN CLAY/SILT (NATIVE)	0.0				
		TD @ 7'					

HTW DRILLING LOG							HOLE NO. SB-3
1. COMPANY NAME FCC			2. DRILLING SUBCONTRACTOR FRONT 2			SHEET 1 OF 1 SHEETS	
3. PROJECT RAVENNA			4. LOCATION CC7B A-6				
5. NAME OF DRILLER JOE TETER			6. MANUFACTURER'S DESIGNATION OF DRILL FLORIDA 6620PT				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION		9. SURFACE ELEVATION SB-3		10. DATE STARTED 16 NOV 12	
						11. DATE COMPLETED 16 NOV 12	
12. OVERBURDEN THICKNESS —			13. DEPTH GROUNDWATER ENCOUNTERED —				
13. DEPTH DRILLED INTO ROCK —			14. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED —				
14. TOTAL DEPTH OF HOLE 7' 7"			15. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)				
16. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		17. TOTAL NUMBER OF CORE BOXES	
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS		OTHER (SPECIFY)	
						21. TOTAL CORE RECOVERY %	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		23. SIGNATURE OF INSPECTOR J. HEARNES	
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
SM	0.0	FILL MATERIAL SAND / SILTY MIXED	0.0				
CL	0.0	@ 4' BOTTOM HAS A HARD ASPHALT PATCH BOTTOM OF TANK HOLD ?? SILTY / CLAY TRANS TO BEN CLAY / SILTY (NATIVE) TDC 7'	0.0				

HTW DRILLING LOG

HOLE NO.
SB-4

1. COMPANY NAME KCC		2. DRILLING SUBCONTRACTOR FRUNTZ		SHEET 1 OF 1 SHEETS	
3. PROJECT JOB MTRN			4. LOCATION CC 7B A-6		
5. NAME OF DRILLER			6. MANUFACTURER'S DESIGNATION OF DRILL GEOPAC 662001		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION SB-4			
		9. SURFACE ELEVATION			
		10. DATE STARTED 16 NOV 12		11. DATE COMPLETED 16 NOV 12	
		12. OVERBURDEN THICKNESS			
13. DEPTH DRILLED INTO ROCK			15. DEPTH GROUNDWATER ENCOUNTERED		
14. TOTAL DEPTH OF HOLE 7' 11"			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED		
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
21. TOTAL CORE RECOVERY %					
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR T. Hernandez	

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
SM		FILL BANTALAN SAND/SILTY (WET) MIXED	0-0				
		FILL GRAVEL SLAG-OTI (# NOT TO NATIVE)	0-0				
		TD 11'					

HTW DRILLING LOG

HOLE NO.

SB-5

1. COMPANY NAME

FCC

2. DRILLING SUBCONTRACTOR

FILM 12

SHEET 1

OF 1 SHEETS

3. PROJECT

RAVINA

4. LOCATION

CC 7B A2A6

5. NAME OF DRILLER

JOE TETRA

6. MANUFACTURER'S DESIGNATION OF DRILL

FEDERAL 162001

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

5 FT JS SAMPLER

MACAUSON

8. HOLE LOCATION

SB-5

9. SURFACE ELEVATION

10. DATE STARTED

16 NOV 12

11. DATE COMPLETED

16 NOV 12

12. OVERBURDEN THICKNESS

15. DEPTH GROUNDWATER ENCOUNTERED

13. DEPTH DRILLED INTO ROCK

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE

11'

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS

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

RETAINITE

J. HERNANDEZ

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		FILL MATERIAL SAND/SILTY CLAY (GRAVEL WET)	0.0				
CL		SILTY CLAY GRAVEL BOTTOM OF TANK HOLD @ 6'	0.0				
		REFUSAL AT 8'	0.0				
		DID A RECD TO 11'					
		TDE 11'					

HTW DRILLING LOG

HOLE NO.

SB-6

1. COMPANY NAME

ECC

2. DRILLING SUBCONTRACTOR

FRONTZ

SHEET 1

OF 1 SHEETS

3. PROJECT

RAVANA

4. LOCATION

CC FB A-6

5. NAME OF DRILLER

JOB TAMA

6. MANUFACTURER'S DESIGNATION OF DRILL

GEOPHON 6024 DT

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

5 FT SI SAMPLER
MAGNETIC

8. HOLE LOCATION

SB-6

9. SURFACE ELEVATION

10. DATE STARTED

16 NOV 12

11. DATE COMPLETED

16 NOV 12

12. OVERBURDEN THICKNESS

15. DEPTH GROUNDWATER ENCOUNTERED

13. DEPTH DRILLED INTO ROCK

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE

11'

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS

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

DTFENITH

T. HERNANDEZ

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

6L

FILL MATERIAL SAND/SILT/CLAY
GRAVEL

0.0

CL

SILT/CLAY GRAVEL/SAND

0.0

CL

REFUSAL AT 8'
REDU TO 11'
TD @ 11'

0.0

HTW DRILLING LOG

HOLE NO.

SB-7

SHEET 1

OF 1 SHEETS

1. COMPANY NAME

ECC

2. DRILLING SUBCONTRACTOR

FRUNTZ

3. PROJECT

MAVENA

4. LOCATION

CL 7B A-6

5. NAME OF DRILLER

JOE TATEA

6. MANUFACTURER'S DESIGNATION OF DRILL

GEOPAC 662009

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

5 FT IT SANDPAC
MACHOLERA

8. HOLE LOCATION

SB-7

9. SURFACE ELEVATION

10. DATE STARTED

16 NOV 12

11. DATE COMPLETED

16 NOV 12

12. OVERBURDEN THICKNESS

15. DEPTH GROUNDWATER ENCOUNTERED

13. DEPTH DRILLED INTO ROCK

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE

8'

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS

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

BETWITE

NA

T. HERRANDEZ

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		FILL MATERIAL (SAND SILTY CLAY)	0.0				
		GRAVEL (WET)					
CL		REFUSAL AT 8' SLWL	0.0				
		MADE 3 ATTEMPTS					
		ALL REFUSAL 8'					

HTW DRILLING LOG							HOLE NO. SB-8
1. COMPANY NAME ECC			2. DRILLING SUBCONTRACTOR FRANT 2			SHEET 1 OF 1 SHEETS	
3. PROJECT RAVANA				4. LOCATION CC 78 A-6			
5. NAME OF DRILLER Job TRIN				6. MANUFACTURER'S DESIGNATION OF DRILL GRAPADOL 662001			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		5 FT ID SAMPLER MEASURING		8. HOLE LOCATION SB-8		9. SURFACE ELEVATION —	
12. OVERBURDEN THICKNESS —		15. DEPTH GROUNDWATER ENCOUNTERED —		10. DATE STARTED 16 NOV 12		11. DATE COMPLETED 16 NOV 12	
13. DEPTH DRILLED INTO ROCK —		18. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED —		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) —			
14. TOTAL DEPTH OF HOLE 8'		19. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) —					
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		20. TOTAL NUMBER OF CORE BOXES —	
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS		OTHER (SPECIFY)	
22. DISPOSITION OF HOLE —		BACKFILLED		MONITORING WELL		OTHER (SPECIFY)	
23. SIGNATURE OF INSPECTOR T. HARRISON		21. TOTAL CORE RECOVERY % —		24. SIGNATURE OF INSPECTOR T. HARRISON		25. SIGNATURE OF INSPECTOR T. HARRISON	
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
CC		FILL MATERIAL (SAND SILTY CLAY) WET		0.0			
		FILL GRAVEL SLUG @ 8'		0.0			
		REFUSAL @ 8'					

HTW DRILLING LOG

HOLE NO.
SB-10

1. COMPANY NAME ECC 2. DRILLING SUBCONTRACTOR FRONTZ SHEET 1 OF 1 SHEETS

3. PROJECT RAVENNA 4. LOCATION CC 72 A 6

5. NAME OF DRILLER JOE TETER 6. MANUFACTURER'S DESIGNATION OF DRILL ROCKWELL 6620 DT

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 5 FT SL DRILLER 8. HOLE LOCATION SB-10

9. SURFACE ELEVATION —

10. DATE STARTED 16 NOV 12 11. DATE COMPLETED 16 NOV 12

12. OVERBURDEN THICKNESS — 15. DEPTH GROUNDWATER ENCOUNTERED —

13. DEPTH DRILLED INTO ROCK — 16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED —

14. TOTAL DEPTH OF HOLE 10' 17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) —

18. GEOTECHNICAL SAMPLES DISTURBED — UNDISTURBED — 19. TOTAL NUMBER OF CORE BOXES —

20. SAMPLES FOR CHEMICAL ANALYSIS 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 T. HEANANDER

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		FILL MATERIAL (SAND/SILTY CLAY) WET	0.0				
CL		CL	0.0				
		NATIVE @ 9' BLEN SILTY CLAY	0.0				
		JDE @ 10'					

HTW DRILLING LOG							HOLE NO. SB-11
1. COMPANY NAME ECC			2. DRILLING SUBCONTRACTOR FRUNTZ			SHEET 1 OF 1 SHEETS	
3. PROJECT RAVANA			4. LOCATION CC 7B A-6				
5. NAME OF DRILLER JOE TETRA			6. MANUFACTURER'S DESIGNATION OF DRILL 6" DIAMETER 6620 RT				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		5 FT SS SAMPLER CORK CORE		8. HOLE LOCATION SB-11			
				9. SURFACE ELEVATION —			
				10. DATE STARTED 16 NOV 12		11. DATE COMPLETED 16 NOV 12	
12. OVERBURDEN THICKNESS —			15. DEPTH GROUNDWATER ENCOUNTERED —				
13. DEPTH DRILLED INTO ROCK —			18. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED				
14. TOTAL DEPTH OF HOLE 11'			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) —				
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES —	
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS		OTHER (SPECIFY)	
						OTHER (SPECIFY)	
						OTHER (SPECIFY)	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		OTHER (SPECIFY)	
		BENTONITE				23. SIGNATURE OF INSPECTOR T. HERNANDEZ	
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
CL		FILL MATERIAL SILTY CLAY SAND		0.0			
CL		SILTY BRN SLAY @ 9'		0.0			
CL		TD @ 11'		0.0			

HTW DRILLING LOG

HOLE NO.
SB-12
SHEET 1
OF 1 SHEETS

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRONT 2	
3. PROJECT RAVENNA		4. LOCATION CC 7B A-6	
5. NAME OF DRILLER Jodi TATIR		6. MANUFACTURER'S DESIGNATION OF DRILL GRAPTOR 0620 87	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 5 FT. IS SAMPLER MACALCONE		8. HOLE LOCATION SB-12	
		9. SURFACE ELEVATION	
		10. DATE STARTED 16 NOV 12	11. DATE COMPLETED 16 NOV 12
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED	
13. DEPTH DRILLED INTO ROCK		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE 11'		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)
			OTHER (SPECIFY)
			OTHER (SPECIFY)
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)
	BENTONITE		
23. SIGNATURE OF INSPECTOR T. HERNANDEZ			

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
CC		FILL MATERIAL (SILTY CLAY) SAND	0.0				
CC		SILTY BRN CLAY @ 9' TO 11'	0.0				

TEST SAMPLE

HTW DRILLING LOG							HOLE NO.	
1. COMPANY NAME <u>ECC</u>			2. DRILLING SUBCONTRACTOR <u>Frontz Drilling</u>			SHEET 1 OF 1 SHEETS		
3. PROJECT <u>Ravenna</u>			4. LOCATION <u>Building A-6 SB-13</u>					
5. NAME OF DRILLER <u>Jeremy</u>			6. MANUFACTURER'S DESIGNATION OF DRILL <u>GEOPRIME 6620 OF</u>					
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT <u>5 FT SS SAMPLER</u> <u>MAG-ROTOR</u>			8. HOLE LOCATION <u>SB-13</u>					
			9. SURFACE ELEVATION <u> </u>					
			10. DATE STARTED <u>12/11/12</u>					
			11. DATE COMPLETED <u> </u>					
12. OVERBURDEN THICKNESS <u> </u>			15. DEPTH GROUNDWATER ENCOUNTERED <u> </u>					
13. DEPTH DRILLED INTO ROCK <u> </u>			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED <u> </u>					
14. TOTAL DEPTH OF HOLE <u>0-8'</u>			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) <u> </u>					
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES <u> </u>		
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS		OTHER (SPECIFY)		
		OTHER (SPECIFY)		OTHER (SPECIFY)		OTHER (SPECIFY)		
21. TOTAL CORE RECOVERY %								
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		OTHER (SPECIFY)		
		<u>YES</u>						
23. SIGNATURE OF INSPECTOR <u>Robert Williams</u>								
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
<u>CL</u>	<u>1</u>	<u>Brown hard clay with gray marl</u>		<u>0.6</u>				
<u>SM</u>	<u>2</u>	<u>medium gravel layers 2"</u>		<u>0.0</u>				
<u>CL</u>	<u>3</u>							
	<u>4</u>							
	<u>5</u>							
	<u>6</u>							
	<u>7</u>							
	<u>8</u>	<u>end</u>						
	<u>9</u>							
	<u>10</u>							

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME <i>ECC</i>		2. DRILLING SUBCONTRACTOR <i>FRONTZ DRILLING</i>		SHEET 1 OF 2 SHEETS	
3. PROJECT <i>RAVENNA AAP</i>		4. LOCATION <i>Building U-3 SB-1</i>			
5. NAME OF DRILLER <i>Kleiny</i>		6. MANUFACTURER'S DESIGNATION OF DRILL <i>66012001 662007</i>			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION <i>SB-1</i>			
		9. SURFACE ELEVATION			
		10. DATE STARTED <i>12/11/12</i>		11. DATE COMPLETED	
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED			
13. DEPTH DRILLED INTO ROCK <i>NA</i>		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
14. TOTAL DEPTH OF HOLE <i>0-16'</i>		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES <i>NA</i>		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
21. TOTAL CORE RECOVERY %					
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR <i>Roxana Williams</i>	

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	2	Brown hard clay	0.0 ppm p.a.				
	4						
CL	15	Gray soft clay silty					
	8						
	10	concrete powder					
OL	12	Brown/gray soft silty clay					
SM	14	Wet silty M-F grain sand					
SM	16	C-M grain sand.					
	18	end					
	20						

MRK FORM 55

PROJECT
RAVENNA AAP

HOLE NO.

* HAVE TO REDRILL *

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME <i>ECC</i>		2. DRILLING SUBCONTRACTOR <i>FRONTZ DRILLING</i>		SHEET 1 OF 2 SHEETS	
3. PROJECT <i>RAVENNA AAP</i>		4. LOCATION <i>Building V-3 SP5-2</i>			
5. NAME OF DRILLER		6. MANUFACTURER'S DESIGNATION OF DRILL			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION <i>SP5-2</i>			
		9. SURFACE ELEVATION			
		10. DATE STARTED <i>12/11/12</i>			
11. DATE COMPLETED <i>12/11/12</i>		12. OVERBURDEN THICKNESS			
13. DEPTH DRILLED INTO ROCK <i>NA</i>		14. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
15. DEPTH GROUNDWATER ENCOUNTERED		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)		18. TOTAL DEPTH OF HOLE <i>0-91 (refusal)</i>			
19. GEOTECHNICAL SAMPLES <i>NA</i>		DISTURBED		UNDISTURBED	
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
21. TOTAL CORE RECOVERY %		22. DISPOSITION OF HOLE			
		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR <i>Ryan Williams</i>	

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	2	brown gray hard clay	0.0 pc ppm				
SM	4	Sand tan/gray M grain					
CL	10	Darker gray hard clay					
	8						
	9	end Refusal concrete	Sampled.				
	10						
	12						
	14						
	16						
	18						
	20						

KEDRILL

HTW DRILLING LOG										HOLE NO.
1. COMPANY NAME ELL					2. DRILLING SUBCONTRACTOR Fruntz Drilling					SHEET 1 OF 7 SHEETS
3. PROJECT Ravenna					4. LOCATION Building V-3 SB-2					
5. NAME OF DRILLER Jeremy					6. MANUFACTURER'S DESIGNATION OF DRILL PROPR 66200T					
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT					8. HOLE LOCATION SB-2					
					9. SURFACE ELEVATION					
					10. DATE STARTED 12/11/12		11. DATE COMPLETED 12/11/12			
12. OVERBURDEN THICKNESS					15. DEPTH GROUNDWATER ENCOUNTERED					
13. DEPTH DRILLED INTO ROCK					16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED					
14. TOTAL DEPTH OF HOLE 0-16'					17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)					
18. GEOTECHNICAL SAMPLES			DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES			
20. SAMPLES FOR CHEMICAL ANALYSIS			VOC		METALS		OTHER (SPECIFY)		21. TOTAL CORE RECOVERY %	
22. DISPOSITION OF HOLE			BACKFILLED		MONITORING WELL		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR	
									Roxanne Williams	

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
EL	2	soft brown clay	0.0 ppm				
SM		3" light tan sand layer M-C grain	pid.				
CL		brown hard clay					
	4						
	6						
	8						
CL	10	Gray hard clay silty					
	12	soft gray clay silty					
SM	14	6" M grain brown sand with large gravel					
	16	end	✓	sampled			
	18						
	20						

* HAVE TO REDRILL *

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME <i>ECC</i>		2. DRILLING SUBCONTRACTOR <i>FRONTZ DRILLING</i>		HOLE NO.	
3. PROJECT <i>RAVENNA AAP</i>		4. LOCATION <i>CL76 V-3 SB-3</i>		SHEET 1 OF 2 SHEETS	
5. NAME OF DRILLER <i>Jimmy</i>		6. MANUFACTURER'S DESIGNATION OF DRILL			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION <i>SB-3</i>			
		9. SURFACE ELEVATION			
		10. DATE STARTED <i>11/10/12</i>		11. DATE COMPLETED <i>12/11/12</i>	
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED			
13. DEPTH DRILLED INTO ROCK <i>NA</i>		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
14. TOTAL DEPTH OF HOLE <i>0-9' (refusal)</i>		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES <i>NA</i>		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
21. TOTAL CORE RECOVERY %					
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR <i>Ronan Williams</i>	

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	brown gray hard clay	0.0 pld ppm				
	2						
SA	3	sand tan M-C grain					
CL	4	gray clay hard.					
	5						
	6						
	7						
	8						
	9	red refusal concrete					sampled.

MRK JUNE 55

PROJECT
RAVENNA AAP

HOLE NO.

REDRILL

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME ELL

2. DRILLING SUBCONTRACTOR Frontz Drilling

SHEET 1
OF 1 SHEETS

3. PROJECT Ravenna

4. LOCATION Building V-3 SB-3

5. NAME OF DRILLER Jeremy

6. MANUFACTURER'S DESIGNATION OF DRILL
GROPER 66200T

7. SIZES AND TYPES OF DRILLING
AND SAMPLING EQUIPMENT

8. HOLE LOCATION SB-3

9. SURFACE ELEVATION

10. DATE STARTED 12/11/12 11. DATE COMPLETED 12/11/12

12. OVERBURDEN THICKNESS

15. DEPTH GROUNDWATER ENCOUNTERED

13. DEPTH DRILLED INTO ROCK

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE 0-16'

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS

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

Rosann Williams

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	2	Gray tan marbled hard clay	6.0 pph				
	4		ppm				
	6	soft					
CL	8						
	10						
	12						
SM	14	wet gray soft silty clay sand M-c grain					
	16	end.					
	18						
	20						

✓ & sampled.

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRONTEZ DRILLING		HOLE NO.	
3. PROJECT RAVENNA AAP		4. LOCATION Block V-3 SB-4		SHEET 1 OF 2 SHEETS	
5. NAME OF DRILLER JENN		6. MANUFACTURER'S DESIGNATION OF DRILL			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION SB-4			
		9. SURFACE ELEVATION			
		10. DATE STARTED 12/11/12			
11. DATE COMPLETED 12/11/12		12. OVERBURDEN THICKNESS			
13. DEPTH DRILLED INTO ROCK NA		15. DEPTH GROUNDWATER ENCOUNTERED			
14. TOTAL DEPTH OF HOLE 0-16'		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)		18. GEOTECHNICAL SAMPLES			
19. TOTAL NUMBER OF CORE BOXES		20. SAMPLES FOR CHEMICAL ANALYSIS			
21. TOTAL CORE RECOVERY %		22. DISPOSITION OF HOLE			
23. SIGNATURE OF INSPECTOR Ryan Williams		24. BACKFILLED			
25. MONITORING WELL		26. OTHER (SPECIFY)			

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
CC	2	brown hard clay	0.0 ppm pcd				
	4	dark brown soft clay brown silty clay 50 ft brown silty clay hard					
	10						
CC	8						
	10	gray hard clay					
	12	gray soft clay					
	14	wet soft clay c-m grain sand brown					
	16	end					
	18						
	20						

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME <i>ECC</i>		2. DRILLING SUBCONTRACTOR <i>FRONTZ DRILLING</i>		SHEET 1 OF 2 SHEETS	
3. PROJECT <i>RAVENNA AAP</i>		4. LOCATION <i>Building V-3 SB-5</i>			
5. NAME OF DRILLER <i>Jimmy</i>		6. MANUFACTURER'S DESIGNATION OF DRILL <i>GEOPAC 6620DT</i>			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION <i>SB-5</i>			
		9. SURFACE ELEVATION			
		10. DATE STARTED <i>12/11/12</i>		11. DATE COMPLETED <i>12/11/12</i>	
		12. OVERBURDEN THICKNESS			
13. DEPTH DRILLED INTO ROCK <i>NA</i>		15. DEPTH GROUNDWATER ENCOUNTERED			
14. TOTAL DEPTH OF HOLE <i>0-16</i>		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
18. GEOTECHNICAL SAMPLES <i>NA</i>		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
21. TOTAL CORE RECOVERY %					
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		23. SIGNATURE OF INSPECTOR <i>Rolann Williams</i>			

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	2	brown heavy clay	0.0				
	4	soft brown silty clay heavy brown silty clay					
	6						
	8						
CL	10	gray soft silty clay					
	12						
	14	wet gray silty soft clay					
SM	16	sand & c grain					
	18	end					
	20						

MRK FORM 55

PROJECT
RAVENNA AAP

HOLE NO.

HTW DRILLING LOG										HOLE NO.		
1. COMPANY NAME ELL					2. DRILLING SUBCONTRACTOR Frontz Drilling					SHEET 1 OF 1 SHEETS		
3. PROJECT Ravenna					4. LOCATION Building V-3 SB-6							
5. NAME OF DRILLER Jeremy					6. MANUFACTURER'S DESIGNATION OF DRILL GEOPROBE 66200T							
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT					6. HOLE LOCATION SB-6							
					9. SURFACE ELEVATION							
					10. DATE STARTED 12/11/12				11. DATE COMPLETED			
					12. OVERBURDEN THICKNESS							
13. DEPTH DRILLED INTO ROCK					15. DEPTH GROUNDWATER ENCOUNTERED							
14. TOTAL DEPTH OF HOLE 0-16'					16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED							
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)												
18. GEOTECHNICAL SAMPLES			DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS			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 Roxann Williams			

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	2	Top Soil Brown hard clay	0.0 pphm				
	4						
	6						
CL	8						
	10	large gravel/concrete rocks.					
	12	Gray soft silty clay					
	14	Wet Sand M-C grain brown					
SM	16	end	sampled				

HTW DRILLING LOG

1. COMPANY NAME ECL		2. DRILLING SUBCONTRACTOR Frontz Drilling		HOLE NO.
3. PROJECT Ravenna		4. LOCATION Bldg V-6 SB-1		SHEET 1 OF 1 SHEETS
5. NAME OF DRILLER Jeremy		6. MANUFACTURER'S DESIGNATION OF DRILL GEOR-001 662015		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION SB-1		
		9. SURFACE ELEVATION		
		10. DATE STARTED 12/12/12		11. DATE COMPLETED 12/11/12
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED		
13. DEPTH DRILLED INTO ROCK		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 115/1155		
14. TOTAL DEPTH OF HOLE 0-20' / 16-20' <i>for extra soil for</i>		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)		
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES	
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR Roxanne W...

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
cc	2	Hard brown clay	0.0 pld ppm				
	4	Gray hard clay mixed w/ brown					
cc	6	Brown hard clay					
	8	Silty soft clay gray					
sm	10	Wet silty gray clay					
	12	C-M grain brown sand.					
	14	Silty brown soft clay					
cc	16	Hard brown clay					
	18	gray silty hard clay					
cc	20	Wet silty clay layer soft					
		mainly gray clay sand mix					
	20	End					

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME ELL		2. DRILLING SUBCONTRACTOR Frontz Drilling		SHEET 1 OF 1 SHEETS	
3. PROJECT Ravenna		4. LOCATION Blida V-6 SB-2			
5. NAME OF DRILLER Jeremy		6. MANUFACTURER'S DESIGNATION OF DRILL FRONTZ 60200T			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION SB-2			
		9. SURFACE ELEVATION			
		10. DATE STARTED 12/11/12		11. DATE COMPLETED 12/11/12	
		12. OVERBURDEN THICKNESS			
13. DEPTH DRILLED INTO ROCK		15. DEPTH GROUNDWATER ENCOUNTERED			
14. TOTAL DEPTH OF HOLE 0-20'		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
				23. SIGNATURE OF INSPECTOR R. Williams	

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
CL	2	Hard brown clay	D.D ppm			
	4	Black 2" layer w/ gravel Brown hard clay	p.p.c.			
CL	8	Brown silty soft clay				
SM	12	gray hard clay with gravel max 3" tan/orange M-F grain sand.				
	14	gray hard silty clay				
CL	18	wet silty clay gray				
	20	red.				
			✓	Sampled		

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME ECU		2. DRILLING SUBCONTRACTOR Frontz Drilling		HOLE NO.	
3. PROJECT Ravenna		4. LOCATION Building 46 SB-3		SHEET 1 OF 7 SHEETS	
5. NAME OF DRILLER Jeremy		6. MANUFACTURER'S DESIGNATION OF DRILL Reelstar 6620 AT			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION SB-3			
		9. SURFACE ELEVATION			
		10. DATE STARTED 12/11/12		11. DATE COMPLETED 12/11/12	
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED			
13. DEPTH DRILLED INTO ROCK		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
14. TOTAL DEPTH OF HOLE 0-20'		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
21. TOTAL COP RECOVERY %					
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR	
				Roxanne Williams	

ELEV. b	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
CC	2	Brown soft silty clay large gravel 2" layer brown soft clay	0.0				
	4						
CC	6	Silty brown soft clay					
	8	gravel layer 3"					
	10	Silty clay soft brown					
CC	12	gray silty hard clay					
	14						
	16						
	18						
	20	end					

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME **ECL**

2. DRILLING SUBCONTRACTOR **Frontz Drilling**

SHEET 1
OF 1 SHEETS

3. PROJECT **Ravenna**

4. LOCATION **Bldg V-6 SB-4**

5. NAME OF DRILLER **Jeremy**

6. MANUFACTURER'S DESIGNATION OF DRILL
GEOPROBE 6620DT

7. SIZES AND TYPES OF DRILLING
AND SAMPLING EQUIPMENT

8. HOLE LOCATION **SB-4**

9. SURFACE ELEVATION

10. DATE STARTED **12/11/12** 11. DATE COMPLETED **12/11/12**

12. OVERBURDEN THICKNESS

15. DEPTH GROUNDWATER ENCOUNTERED

13. DEPTH DRILLED INTO ROCK

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE **D-20'**

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS

VOC

METALS

OTHER (SPECIFY)

OTHER (SPECIFY)

OTHER (SPECIFY)

21. TOTAL CC
RECOVERY
%

22. DISPOSITION OF HOLE

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)

23. SIGNATURE OF INSPECTOR

Roman (Unclear)

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	2	Brown hard clay	D.D ppm pid.				
CL	8	rock 2" layer silty soft clay brown					
CL	12	Wet brown silty clay soft					
	14	gray silty soft clay					
	16	gray hard clay					
CL	18						
	20						

HTW DRILLING LOG										HOLE NO.	
1. COMPANY NAME				2. DRILLING SUBCONTRACTOR				SHEET 1 OF 1 SHEETS			
3. PROJECT				4. LOCATION							
5. NAME OF DRILLER				6. MANUFACTURER'S DESIGNATION OF DRILL							
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT				8. HOLE LOCATION							
				9. SURFACE ELEVATION							
				10. DATE STARTED				11. DATE COMPLETED			
				12. OVERBURDEN THICKNESS				15. DEPTH GROUNDWATER ENCOUNTERED			
				13. DEPTH DRILLED INTO ROCK				18. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
14. TOTAL DEPTH OF HOLE				17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)							
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS		OTHER (SPECIFY)		OTHER (SPECIFY)		21. TOTAL COF RECOVERY %	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR			
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	2	soft dark brown sandy clay		0.0 pid							
CL	4	gray soft silty clay									
	6										
	8										
CL	10	brown sandy clay soft									
	12	wet									
CL	14	hard gray clay									
	16										
	18	2" rock layer hard gray clay									
CL	20	end									

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME ELL

2. DRILLING SUBCONTRACTOR

Frontz Drilling

SHEET 1
OF 1 SHEETS

3. PROJECT Ravenna

4. LOCATION

Blida V-6 SP-6

5. NAME OF DRILLER

Jeremy

6. MANUFACTURER'S DESIGNATION OF DRILL

GROTHMAN 6620 DT

7. SIZES AND TYPES OF DRILLING
AND SAMPLING EQUIPMENT

8. HOLE LOCATION

SP-6

9. SURFACE ELEVATION

10. DATE STARTED

12/12/12

11. DATE COMPLETED

12/12/12

12. OVERBURDEN THICKNESS

15. DEPTH GROUNDWATER ENCOUNTERED

13. DEPTH DRILLED INTO ROCK

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE

0-70'

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES

DISTURBED

UNDISTURBED

19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS

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

Roxann Williams

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
cc	2	brown silty soft clay small gravel 1" layer brown silty clay	0.0 ppm not				
	4	gray silty soft clay					
cc	6						
cc	8	1" sand band tan w/ gravel gray silty soft clay hard gray rock sandy pulverized concrete					
	10	gray silty soft clay					
cc	12	brown silty sand hard clay					
	14	gray hard clay mixed with gravel					not test return organic action 0.0 ppm
cc	16	gray hard clay					
	18						
	20	ind.					sampled.

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME <i>ECC</i>		2. DRILLING SUBCONTRACTOR <i>FRANZ DRILLING</i>		SHEET 1 OF 2 SHEETS	
3. PROJECT <i>RAVENNA AAP</i>		4. LOCATION <i>V-3 SB-1</i> <i>US 72 01</i>			
5. NAME OF DRILLER <i>Jeremy</i>		6. MANUFACTURER'S DESIGNATION OF DRILL <i>GEOPAC 65200T</i> <i>VS</i>			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION <i>SB-1</i>			
		9. SURFACE ELEVATION			
		10. DATE STARTED <i>12/10/12</i>		11. DATE COMPLETED <i>12/10/12</i>	
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED			
13. DEPTH DRILLED INTO ROCK <i>NA</i>		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
14. TOTAL DEPTH OF HOLE <i>0-10'</i>		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES <i>NA</i>		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
21. TOTAL CORE RECOVERY %					
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR <i>Roxanne Williams</i>	

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
<i>CC</i>	<i>1</i>	<i>top soil tan/gray hard clay</i>					
	<i>2</i>	<i>silty brown clay soft</i>					
	<i>3</i>	<i>brown/gray hard clay</i>					
	<i>4</i>						
	<i>5</i>						
	<i>6</i>						
<i>CC</i>	<i>7</i>						
	<i>8</i>						
	<i>9</i>						
	<i>10</i>						

Native

Sample

HTW DRILLING LOG										HOLE NO.
1. COMPANY NAME ECC					2. DRILLING SUBCONTRACTOR FRANZ DRILLING					SHEET 1 OF 2 SHEETS
3. PROJECT RAVENNA AAP					4. LOCATION V-3 SB-2 72-01					
5. NAME OF DRILLER Jimmy					6. MANUFACTURER'S DESIGNATION OF DRILL 662007 VST					
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT					8. HOLE LOCATION SB-2					
					9. SURFACE ELEVATION					
					10. DATE STARTED 12/10/12					11. DATE COMPLETED 12/10/12
12. OVERBURDEN THICKNESS					15. DEPTH GROUNDWATER ENCOUNTERED					
13. DEPTH DRILLED INTO ROCK NA					16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED					
14. TOTAL DEPTH OF HOLE 0-16'					17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)					
18. GEOTECHNICAL SAMPLES NA			DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES			
20. SAMPLES FOR CHEMICAL ANALYSIS			VOC		METALS		OTHER (SPECIFY)		OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
22. DISPOSITION OF HOLE			BACKFILLED		MONITORING WELL		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR Ryan Williams	
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	2	top soil hard brown clay	0.0							
CL	4	Wet gray/brown silty clay	-3.1 ppm	Petro	Smell		Sample			
	8	Wet gray silty	0.0							
CL	12	gray silty clay								
SM	14	Sand/clay mix gray M-F grain	0.0							
	16	End								
	18									
	20									

HTW DRILLING LOG						HOLE NO.	
1. COMPANY NAME ECC			2. DRILLING SUBCONTRACTOR FRANZ DRILLING		SHEET 1 OF 2 SHEETS		
3. PROJECT RAVENNA AAP			4. LOCATION V-3 SB-3 72-01				
5. NAME OF DRILLER Jeremy			6. MANUFACTURER'S DESIGNATION OF DRILL 6600000 662001 VST				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT			8. HOLE LOCATION SB-3				
			9. SURFACE ELEVATION				
			10. DATE STARTED 12/10/12		11. DATE COMPLETED 12/10/12		
12. OVERBURDEN THICKNESS			15. DEPTH GROUNDWATER ENCOUNTERED				
13. DEPTH DRILLED INTO ROCK NA			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED				
14. TOTAL DEPTH OF HOLE 0-10' 0-5' (refusal)			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)				
18. GEOTECHNICAL SAMPLES NA		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES	
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS		OTHER (SPECIFY)	
						21. TOTAL CORE RECOVERY %	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		OTHER (SPECIFY)	
						23. SIGNATURE OF INSPECTOR Rosann Williams	

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	TOPSOIL. brown silty clay with small gravel mix					
	2		0.0				
	3						
CL	4	↓ brown silty clay					
	5	end	petrol should be 5 ppm				3 Sampled
	6	Refusal!					w/ 5 Sampled
	7						
	8						
	9						
	10						

MPK JMS 55

PROJECT
RAVENNA AAP

HOLE NO.

HTW DRILLING LOG										HOLE NO.	
1. COMPANY NAME ECC				2. DRILLING SUBCONTRACTOR FRANZ DRILLING				SHEET 1 OF 2 SHEETS			
3. PROJECT RAVENNA AAP				4. LOCATION V-3 SB-4 72-01							
5. NAME OF DRILLER Jeremy				6. MANUFACTURER'S DESIGNATION OF DRILL GEOPRODS 8620 DT VST							
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT				8. HOLE LOCATION SB-4							
				9. SURFACE ELEVATION							
				10. DATE STARTED 12/10/12			11. DATE COMPLETED 12/10/12				
12. OVERBURDEN THICKNESS				15. DEPTH GROUNDWATER ENCOUNTERED							
13. DEPTH DRILLED INTO ROCK NA				16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED							
14. TOTAL DEPTH OF HOLE 0-10'				17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)							
18. GEOTECHNICAL SAMPLES NA		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS		OTHER (SPECIFY)		OTHER (SPECIFY)		21. TOTAL CORE RECOVERY %	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR Ryan Williams			
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	Dark gray clay	6.0				Strong odor thru out entire (V-3) Kenosha (SP?)				
	2	Wet silty soft clay									
	3										
	4	large gravel layer 6"	4.4 ppm.								
	5										
CL	6	hard brown/gray clay	0.5				Sampled				
	7		0.2								
	8		0.9								
	9		0.3								
	10		0.6								
	11		0.1								
	12		0.3								
	13		1.5								
	14		2.1								
	15		13.0								
	16		16.3 @ 10ft.								

MRK 55

PROJECT
RAVENNA AAP

HOLE NO.

HTW DRILLING LOG		HOLE NO.
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1. COMPANY NAME <i>ECC</i>	2. DRILLING SUBCONTRACTOR <i>FRANZ DRILLING</i>	SHEET 1 OF 2 SHEETS
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5. NAME OF DRILLER Jeremy	6. MANUFACTURER'S DESIGNATION OF DRILL F-1000
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7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION	FLANK ROAD COLO RD SB-5
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		8. SURFACE ELEVATION
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10. DATE STARTED	17 APR 12	11. DATE COMPLETED	17 APR 12
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12. OVERBURDEN THICKNESS	15. DEPTH GROUNDWATER ENCOUNTERED
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13. DEPTH DRILLED INTO ROCK	18. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED
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14. TOTAL DEPTH OF HOLE	0-10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)
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18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
NA			

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL COST OF ANALYSIS

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER APPROVAL	23. SIGNATURE OF INSPECTOR	RECOVERY %
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23. SIGNATURE OF INSPECTOR	UNSATISFACTORY	NEARLY SATISFACTORY	OTHER (SPECIFY)

Raymond Williams

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX NO.	ANALYTICAL SAMPLE NO.	BLOW COUNTS	REMARKS
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a	b	c	d	e	f	g	h
66		Top Soil.					

cc	gray/brown clay hard	0.5 mm PID
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[illegible][illegible][illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

[illegible]

Diagram illustrating a beam of length 10m. A downward force of 100N is applied at the left end. A reaction force of 100N acts upwards at the right end. The beam is divided into four equal segments of 2.5m each by vertical lines.

22	Wet gray brown dark clay Silty soft								
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[illegible]

57	hard gray/brown clay						
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0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

60	7	Y			
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9 - same stone 1" layer transparent.

✓ Samudra.

PROJECT	HOLE NO.
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PK FORM JAN 68 55	RAHMAD AAP	PRILE PRU.
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HTW DRILLING LOG

HOLE NO. 58-3
SHEET 1 OF 1 SHEETS

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR Frontz				
3. PROJECT Ravenna Army Ammunition Plant		4. LOCATION CC 72-01 UST BLD U3				
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 CC 72-01, 58-3			
	MACROCORE					
9. SURFACE ELEVATION NA		10. DATE STARTED 8/14/15 1347	11. DATE COMPLETED 8/14/15			
12. OVERBURDEN THICKNESS NA		15. DEPTH GROUNDWATER ENCOUNTERED 5'				
13. DEPTH DRILLED INTO ROCK NA		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED NA				
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 %
	—	—	—	—	—	
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR <i>D. L. Smith</i>		
	BENTONITE					

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	5-10	Silky Clay, brown (10YR 4/3), dense, soft					Move to SB-5 to Avoid obstruction.
	10-15	Very soft, wet grading to stiff, pink moist.					
	15-20		0.0				
	20-25		0.0				
	25-30	Very soft, wet (JS) Grading to stiff, pink moisture (JS)	0.0				
	30-35		0.0				
G.M	35-40	Color change to dark gray (2.5Y 4/1) @ 10'	0.0				
	40-45	Grading to very stiff @ 11'					
	45-50	Sandy Gravel @ 13', dense, hard, very moist, gray (2.5Y 4/1)					Sample @ 1415

HTW DRILLING LOG

HOLE NO.
SB 1-5
SHEET 1
OF 2 SHEETS

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRANTZ DRILLING	
3. PROJECT RAVENNA AAP		4. LOCATION CC 72-02 ATLAS	
5. NAME OF DRILLER		6. MANUFACTURER'S DESIGNATION OF DRILL	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION SB 1-5	
		9. SURFACE ELEVATION	
		10. DATE STARTED 5 DEC 12	11. DATE COMPLETED 5 DEC 12
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED	
13. DEPTH DRILLED INTO ROCK NA		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE 10'		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES NA	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)
			OTHER (SPECIFY)
			OTHER (SPECIFY)
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)
			23. SIGNATURE OF INSPECTOR J. HARRMAN

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	0	SCAL- BEN SILTY CLAY	0.0				
CL	10	BEN CLAY (info. bedded silty silty) GRAY GRAVEL SEAM AT (9.0-9.5) 21-2"	0.0	ONLY SB-5 (PID NO.) ODD RATS' nt 5'			
	15	SB (1-5) TD 10'					
	20						
	25						
	30						
	35						
	40						
	45						

HTW DRILLING LOG

HOLE NO.
SB-1-5

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRONTZ DRILLING		3. SHEET 1 OF 2 SHEETS	
3. PROJECT RAVENNA AAP			4. LOCATION CC-72-03 ATLAS		
5. NAME OF DRILLER			6. MANUFACTURER'S DESIGNATION OF DRILL		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT			8. HOLE LOCATION SB 1-5		
			9. SURFACE ELEVATION		
			10. DATE STARTED 5 DEC 12		
			11. DATE COMPLETED 5 DEC 12		
12. OVERBURDEN THICKNESS			15. DEPTH GROUNDWATER ENCOUNTERED		
13. DEPTH DRILLED INTO ROCK NA			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED		
14. TOTAL DEPTH OF HOLE SB-01=13', REST 10'			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)		
18. GEOTECHNICAL SAMPLES NA		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES		20. SAMPLES FOR CHEMICAL ANALYSIS		21. TOTAL CORE RECOVERY %	
VOC		METALS		OTHER (SPECIFY)	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR T. HERNANDEZ			

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	5	LT BEN / G-BAY SILTY CLAY	SLAB / SAND	LT BEN SILTY CLAY	LT BEN SILTY CLAY	SLAB / SAND	CLAY FILL
CL	10	DRY LT BEN / G-BAY SILTY CLAY	DRY LT BEN / G-BAY SILTY CLAY	LT BEN CLAY	LT BEN CLAY	LT BEN	CLAY INTERBEDDED SAND / G-BAY
	15	BEN TO G-BAY TRANS CLAY	FAT CLAY				
	20	FAT GRAY CLAY					
	25	SB-1	SB-2	SB-3	SB-5	SB-7	
	30						
	35						
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	965						
	970						
	975						
	980						
	985						
	990						
	995						
	1000						

MPK FORM 55

PROJECT
RAVENNA AAP

HOLE NO.

5 DEC 12

HTW DRILLING LOG

HOLE NO.
SB 1-2
SHEET 1
OF 2 SHEETS

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRONTZ DRILLING	
3. PROJECT RAVENNA AAP		4. LOCATION CC2-04 ATLAS	
5. NAME OF DRILLER		6. MANUFACTURER'S DESIGNATION OF DRILL	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION SB (1-2)	
		9. SURFACE ELEVATION	
		10. DATE STARTED 5 DEC 12	
		11. DATE COMPLETED 5 DEC 12	
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED	
13. DEPTH DRILLED INTO ROCK NA		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE 10'		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES NA		19. TOTAL NUMBER OF CORE BOXES	
20. SAMPLES FOR CHEMICAL ANALYSIS		21. TOTAL CORE RECOVERY %	
22. DISPOSITION OF HOLE		23. SIGNATURE OF INSPECTOR T. HAVANDB2	

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	0	LT BRN SILTY CLAY	0.0				
CL	10	TO 10'	0.0				
	15						
	20						
	25						
	30						
	35						
	40						
	45						

HTW DRILLING LOG

HOLE NO.
SB 1-A
SHEET 1
OF 2 SHEETS

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRONTZ DRILLING	
3. PROJECT RAVENNA AAP		4. LOCATION C072-05 ATLAS	
5. NAME OF DRILLER		6. MANUFACTURER'S DESIGNATION OF DRILL KOPRODA 6620 PT	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION SB (1-A)	
		9. SURFACE ELEVATION	
		10. DATE STARTED 5 DEC 12	
		11. DATE COMPLETED 5 DEC 12	
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED	
13. DEPTH DRILLED INTO ROCK NA		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE 10'		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES NA		19. TOTAL NUMBER OF CORE BOXES	
20. SAMPLES FOR CHEMICAL ANALYSIS		21. TOTAL CORE RECOVERY %	
22. DISPOSITION OF HOLE		23. SIGNATURE OF INSPECTOR T. HARRIS	

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	0	LT BENSILTY CLAY TRANS TO CLAY	0.0				
CL	1	INTER BEDDED SEAMS OF GRAVEL (1" THICK) @ 8" W. LT BOW CLAY	0.0				
	10'						
	15'						
	20'						
	25'						
	30'						
	35'						
	40'						
	45'						
	50'						
	55'						
	60'						
	65'						
	70'						
	75'						
	80'						
	85'						
	90'						
	95'						

MRK 1275 55

PROJECT
RAVENNA AAP

HOLE NO.

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRONTZ DRILLING		HOLE NO.	
3. PROJECT RAVENNA AAP		4. LOCATION WTP SB-1		SHEET 1 OF 2 SHEETS	
5. NAME OF DRILLER Jeremy Lackrone		6. MANUFACTURER'S DESIGNATION OF DRILL 660000 6670 DT			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION SB-1		9. SURFACE ELEVATION	
		10. DATE STARTED 12/10/12		11. DATE COMPLETED 12/12/12	
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED			
13. DEPTH DRILLED INTO ROCK NA		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
14. TOTAL DEPTH OF HOLE 0-10'		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES NA		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
21. TOTAL CORE RECOVERY %					
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR Rolando Williams	

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
	1	Topsoil black	0.0 pld. ppm				
CC	2	Sandy clay-tan M-F grain					
CC	3	tan clay(silty)					
	4						
	5						
	6						
	7	sand gravel layer 3" clay darker gray tan w/ large gravel mixed					
	8						
	9						
	10						

MPK FORM 55 JUN 85

PROJECT
RAVENNA AAP

HOLE NO.

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRONTZ DRILLING		HOLE NO.	
3. PROJECT RAVENNA AAP		4. LOCATION WTP SB-2		SHEET 1 OF 2 SHEETS	
5. NAME OF DRILLER Jeremy		6. MANUFACTURER'S DESIGNATION OF DRILL 662005			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION SB-2		9. SURFACE ELEVATION	
12. OVERBURDEN THICKNESS		10. DATE STARTED 12/10/12		11. DATE COMPLETED 12/16/12	
13. DEPTH DRILLED INTO ROCK NA		15. DEPTH GROUNDWATER ENCOUNTERED			
14. TOTAL DEPTH OF HOLE 0-10'		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
18. GEOTECHNICAL SAMPLES NA		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES		20. SAMPLES FOR CHEMICAL ANALYSIS			
21. TOTAL CORE RECOVERY %		22. DISPOSITION OF HOLE			
23. SIGNATURE OF INSPECTOR Roxann Williams		24. SIGNATURE OF INSPECTOR			

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
CC	1	6" Top soil, grass, roots	0.0 ppm				
	2	Tan silty clay	pid				
	3						
	4						
CL	5						
	6	gray dark 3/4 light tan staining					
	7	burgundy 2" band. clay mixed with gravel					
	8						
SA	9	light gray band 4" sandy / hard.					
CC	10	brown sand 1/4 grain 3"					
		4" clay dark brown					

MPK FORM 55

PROJECT
RAVENNA AAP

HOLE NO.

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRONTZ DRILLING		HOLE NO.	
3. PROJECT RAVENNA AAP		4. LOCATION WTP SB-3		SHEET 1 OF 2 SHEETS	
5. NAME OF DRILLER Jeremy		6. MANUFACTURER'S DESIGNATION OF DRILL GEORGE 6620 DT			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION SB-3			
		9. SURFACE ELEVATION			
		10. DATE STARTED 12/10/12		11. DATE COMPLETED 12/18/12	
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED			
13. DEPTH DRILLED INTO ROCK NA		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
14. TOTAL DEPTH OF HOLE 0-10'		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES NA		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
21. TOTAL CORE RECOVERY %					
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR Rolando Williams	

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
CC	1	6" Top Soil	0.0 pid.				
CC	2	Tan orange silty sand clay soft					
CC	3	clay tan soft.					
	4	clay darker brown soft					
	5						
	6	hard dark brown clay					
SM	7	4" tan M grain sand gravel mix					
	8	clay hard brown					
CC	9	light gray band hard sand					
	10	brown clay hard					

Native Sample

HTW DRILLING LOG

HOLE NO.

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRONZ DRILLING		SHEET 1 OF 2 SHEETS	
3. PROJECT RAVENNA AAP		4. LOCATION WTP SB-4			
5. NAME OF DRILLER Jeremy		6. MANUFACTURER'S DESIGNATION OF DRILL Phoenix 662007			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION SB-4		9. SURFACE ELEVATION	
		10. DATE STARTED 12/10/12		11. DATE COMPLETED 12/10/12	
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED			
13. DEPTH DRILLED INTO ROCK NA		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
14. TOTAL DEPTH OF HOLE 0-15'		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES NA		DISTURBED		UNDISTURBED	
19. TOTAL NUMBER OF CORE BOXES					
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
		OTHER (SPECIFY)		OTHER (SPECIFY)	
21. TOTAL CORE RECOVERY %					
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR RODWIN WILLIAMS	

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	2	4" Top SD. 1 tan sandy clay soft	0.0 ppm pid				
	4	tan sandy clay hard					
SM	6	dark staining larger gravel mix	Native				
CL	8	sand / sandstone tan					
	10	hard tan brown clay					
	12	Sandstone light gray layer					
	14	End					
	15						
	16						
	18						
	20						

MPK FORM 55

PROJECT
RAVENNA AAP

HOLE NO.

HTW DRILLING LOG							HOLE NO. SR2
1. COMPANY NAME ECC			2. DRILLING SUBCONTRACTOR Frontz			SHEET 1 OF SHEETS	
3. PROJECT Ravenna Army Ammunition Plant				4. LOCATION CC 72-06 WTP			
5. NAME OF DRILLER Joe Teter				6. MANUFACTURER'S DESIGNATION OF DRILL Geoprobe 6620DT			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		5 FT SS SAMPLER		8. HOLE LOCATION 72-06 SR2		9. SURFACE ELEVATION NA	
		MACROCORE					
10. DATE STARTED 8/14/1227				11. DATE COMPLETED			
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				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)	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		23. SIGNATURE OF INSPECTOR 	
		BENTONITE					
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	Silty Clay Soil, v. dark grey (10 YR 3/1), cutt, dense					
	2	Silty Clay, brown (10 YR 4/3) with SS gravel					
	4						
	6	Silty Gravelly Sand, brownish yellow (10 YR 4/6)	0.3				
	8	Silty Clay, brown (10 YR 4/3)	0.0				
	10	Interbedded w/ SS grains	0.3				
	12		0.0				
	14		0.0				
	16		0.0				
	18		0.0				
	20		0.0				
	22		0.0				
	24		0.0				
	26		0.0				
	28		0.0				
	30		0.0				
	32		0.0				
	34		0.0				
	36		0.0				
	38		0.0				
	40		0.0				
	42		0.0				
	44		0.0				
	46		0.0				
	48		0.0				
	50		0.0				
	52		0.0				
	54		0.0				
	56		0.0				
	58		0.0				
	60		0.0				
	62		0.0				
	64		0.0				
	66		0.0				
	68		0.0				
	70		0.0				
	72		0.0				
	74		0.0				
	76		0.0				
	78		0.0				
	80		0.0				
	82		0.0				
	84		0.0				
	86		0.0				
	88		0.0				
	90		0.0				
	92		0.0				
	94		0.0				
	96		0.0				
	98		0.0				
	100		0.0				

HTW DRILLING LOG

HOLE NO.
SB(4)

1. COMPANY NAME ECC		2. DRILLING SUBCONTRACTOR FRANZ DRILLING		SHEET 1 OF 2 SHEETS	
3. PROJECT RAVENNA AAP		4. LOCATION C72 72-08			
5. NAME OF DRILLER		6. MANUFACTURER'S DESIGNATION OF DRILL PRIPRO 662 OT			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		8. HOLE LOCATION SB(1-4)			
		9. SURFACE ELEVATION			
		10. DATE STARTED 7 DEC 12			
11. DATE COMPLETED 7 DEC 12		12. OVERBURDEN THICKNESS			
13. DEPTH DRILLED INTO ROCK NA		15. DEPTH GROUNDWATER ENCOUNTERED			
14. TOTAL DEPTH OF HOLE 16'		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)		18. GEOTECHNICAL SAMPLES NA			
19. TOTAL NUMBER OF CORE BOXES		20. SAMPLES FOR CHEMICAL ANALYSIS			
DISTURBED		UNDISTURBED		21. TOTAL CORE RECOVERY %	
VOC		METALS		OTHER (SPECIFY)	
BACKFILLED		MONITORING WELL		OTHER (SPECIFY)	
22. DISPOSITION OF HOLE		23. SIGNATURE OF INSPECTOR T. Hernandez			

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
CC	0	BEN SILTY CLAY (OKY) w/ DEK SIZE GRAVEL	same 0.0		same 14		
CC	10	BEN SILTY CLAY (OKY)	SB-1		SB-1		
	15		0.0				
	20	SB-1	SB-2		SB-3		SB-4
	25						
	30						
	35						
	40						
	45						

MRK FORM 55

PROJECT
RAVENNA AAP

HOLE NO.

7 DEC 12

HTW DRILLING LOG						HOLE NO. SR-04	
1. COMPANY NAME ECC			2. DRILLING SUBCONTRACTOR Frontz			SHEET 1 OF 7 SHEETS	
3. PROJECT Ravenna Army Ammunition Plant				4. LOCATION CC 72-08, SR-04			
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 CC 72-08			
		MACROCORE		9. SURFACE ELEVATION NA			
				10. DATE STARTED 8/14/1036		11. DATE COMPLETED 8/14	
				15. DEPTH GROUNDWATER ENCOUNTERED 11.5			
12. OVERBURDEN THICKNESS NA				16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED NA			
13. DEPTH DRILLED INTO ROCK NA				17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) NA			
14. TOTAL DEPTH OF HOLE 13							
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)	
		—		—		—	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		OTHER (SPECIFY)	
		BENTONITE		—		—	
		23. SIGNATURE OF INSPECTOR 					
-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	8- 2 10- 4 15- 6 20- 8 25- 10 30- 12 38- 14 40- 45-	<i>Silty Clay w/ gravel, black (10YR 7/1) dense, stiff</i> <i>Silty Clay, brown (10YR 4/3), dense, stiff, limit moisture</i> <i>Grading to med. stiff, moist</i> <i>Grading to soft, wet, with v. fine sand</i>	0.0 0.2 0.2 0.3 0.0 0.0 0.0				<i>Vocs @ 11' @ 1100</i>

MPK FORM 56 JUN 86

PROJECT **RVAAP**

HOLE NO.