



MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST S. Lehman						
SITE DESCRIPTION NORTH ANNA COL									GROUND WATER (ft)					
BORING NO. B-912		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR.	10.1			
COLLAR ELEV. 275.1 ft (NAVD88)		NORTHING 3,910,022		US ft (NAD83)		EASTING 11,686,051		US ft (NAD83)		24 HR.	10.6			
TOTAL DEPTH 151.8 ft		DRILL MACHINE CME 55LC Track				DRILLER: D. White				HAMMER TYPE 140 lbs Auto				
DATE STARTED 10/23/06		COMPLETED 10/25/06				CORE BARREL TYPE: HQ 3 triple tube-wireline								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80				100	
275.1												Ground Surface	275.1	0.0
														No samples due to utility clearance operations -soft dig/vac. truck excavation to 8.7 ft
266.0	9.1												266.4	8.7
263.5	11.6	5	7	5										Silty SAND (SM), light olive brown (2.5Y 5/4) to yellowish brown (10YR 5/6), moist, medium dense to very dense, micaceous, rock fragments (Residual Soil)
261.0	14.1	5	6	8										
		14	29	48										
256.0	19.1												255.5	19.6
		46	50/0.3											Weathered Rock: Olive brown, severely weathered, soft, QUARTZ GNEISS
251.0	24.1													
		50/0.4												
246.0	29.1													
		50/0.3												
													245.7	29.4
													244.8	30.3
													243.3	31.8
														Hard Rock: White with orange Fe staining, slightly weathered, close fracturing, moderately hard, QUARTZ GNEISS with biotite
														Hard Rock: Dark gray with orange Fe staining, moderately severely weathered, close fracturing, medium hard, BIOTITE GNEISS
														Hard Rock: Light to dark gray, slightly weathered to fresh, close to wide fracturing, medium hard to hard, QUARTZ-BIOTITE GNEISS
													218.3	56.8
														Hard Rock: Light gray, fresh, moderately close to very wide fracturing, hard, QUARTZ GNEISS with biotite and trace magnetite

NORTH ANNA COL BORE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL.GDT 1/19/07



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TOTAL DEPTH 151.8 ft		DRILL MACHINE CME 55LC Track				DRILLER: D. White				HAMMER TYPE 140 lbs Auto				
DATE STARTED 10/23/06			COMPLETED 10/25/06			CORE BARREL TYPE: HQ 3 triple tube-wireline								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80				100	
200.3					Continued from previous page									
												Hard Rock: Light gray, fresh, moderately close to very wide fracturing, hard, QUARTZ GNEISS with biotite and trace magnetite (continued)		
												173.3	Hard Rock: Light gray, fresh, very wide fracturing, hard, QUARTZ-BIOTITE GNEISS	101.8
												158.3	Hard Rock: Light gray, slightly weathered to fresh, moderately close to wide fracturing, moderately hard to hard, QUARTZ GNEISS with biotite	116.8

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TOTAL DEPTH 151.8 ft		DRILL MACHINE CME 55LC Track				DRILLER: D. White			HAMMER TYPE 140 lbs Auto							
DATE STARTED 10/23/06			COMPLETED 10/25/06			CORE BARREL TYPE: HQ 3 triple tube-wireline										
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100						
125.5					Continued from previous page											
														123.3	151.8	Boring and coring terminated at 151.8 ft in Hard Rock: Hard, QUARTZ GNEISS

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COLLAR ELEV. 275.1 ft (NAVD88)			NORTHING 3,910,022		US ft (NAD83)		EASTING 11,686,051		US ft (NAD83)		24 HR. 10.6	
TOTAL DEPTH 151.8 ft			DRILL MACHINE CME 55LC Track				DRILLER: D. White			HAMMER TYPE 140 lbs Auto		
DATE STARTED 10/23/06			COMPLETED 10/25/06				CORE BARREL TYPE: HQ 3 triple tube-wireline					
CORE SIZE HQ3			TOTAL RUN 122.4 ft									
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) % RQD (ft) %		SAMP. NO.	STRATA REC. (ft) % RQD (ft) %		LOG	DESCRIPTION AND REMARKS		
Begin Coring @ 29.4 ft												
245.7	29.4	2.4	2:04	(2.0)	(0.0)	1			245.7	Hard Rock: White with orange Fe staining, slightly weathered, close fracturing, moderately hard, QUARTZ GNEISS with biotite		
243.3	31.8		3:32	83%	0%				243.3	(3 joints at 70° Fe stain)		
		5.0	2:32/0.4	(4.2)	(1.7)	2				Hard Rock: Dark gray with orange Fe staining, moderately severely weathered, close fracturing, medium hard, BIOTITE GNEISS		
			1:37	84%	34%					Hard Rock: Light to dark gray, slightly weathered to fresh, close to wide fracturing, medium hard to hard, QUARTZ-BIOTITE GNEISS		
238.3	36.8		2:42							(5 joints at 45° slightly to severely weathered, Fe stain)		
		5.0	2:26							(1 joint at 60°, 1 joint at 45°, 1 joint at 20°-all moderately weathered, Fe stain)		
			4:02									
233.3	41.8		2:47									
		5.0	2:25	(5.0)	(4.4)	UCS-37.1'						
			2:29	100%	88%							
			2:34									
			3:42									
			3:36									
228.3	46.8		3:20	(5.0)	(4.7)	4				(3 joints at 30° with Fe stain; 1 joint at 55° moderately weathered)		
		5.0	3:38	100%	94%							
			3:14									
			3:20									
			3:12									
223.3	51.8		2:25	(5.0)	(4.7)	UC-48.9'				(1 joint at 45° moderately weathered with clay, 2 joints at 20° slightly weathered)		
		5.0	2:06	100%	94%							
			3:28									
			5:16									
			5:30									
218.3	56.8		7:50	(5.0)	(4.9)	6				-No Joints		
		5.0	1:43	100%	98%							
			2:07									
			1:53									
			2:06									
213.3	61.8		2:23	(5.0)	(4.9)	7			218.3	Hard Rock: Light gray, fresh, moderately close to very wide fracturing, hard, QUARTZ GNEISS with biotite and trace magnetite		
		5.0	2:13	100%	98%					(1 joint at 60° moderately weathered, Fe stain)		
			2:31									
			3:38									
			8:26									
208.3	66.8		10:29	(4.9)	(4.9)	UC-62.2'				-No Joints		
		5.0	6:42	98%	98%							
			4:37									
			5:52									
			8:47									
203.3	71.8		4:26	(5.0)	(5.0)	9				-No Joints		
		5.0	4:43	100%	100%							
			7:42									
			16:20									
			12:14									
198.3	76.8		2:16	(5.0)	(5.0)	10				-No Joints		
		5.0	2:51	100%	100%							
			3:07									
			3:44									
			3:45									
193.3	81.8		4:43	(5.0)	(4.9)	11				(1 joint at 90° with clay; 3 joints at 20° with Fe stain)		
		5.0	4:59	100%	98%							
			4:46									
			5:53									
			5:48									
188.3	86.8		4:46	(5.0)	(4.2)	UC-82.4'				(3 joints at 60° with trace clay, Fe stain)		
		5.0	5:02	100%	84%							
			4:45									
			5:20									
			4:52									
183.3	91.8		3:26	(5.0)	(4.4)	13				(3 joints at 60° slightly weathered, Fe stain; 1 joint at 30° slightly weathered)		
		5.0	3:41	100%	88%							
			2:59									
			3:07									
			2:29									
178.3	96.8		2:09	(5.0)	(5.0)	14				(1 joint at 30° with Fe stain)		
		5.0	2:26	100%	100%							
			2:24									
			2:10									
			2:18									
173.3	101.8		2:27	(5.0)	(5.0)	15				-No Joints; Quartz+felspar vein at 99.7-99.9 ft		
		5.0	2:34	100%	100%							
			2:55									
			3:00									
			2:43									
			3:02	(5.0)	(5.0)	16			173.3	Hard Rock: Light gray, fresh, very wide fracturing, hard, QUARTZ-BIOTITE GNEISS		
		5.0	3:04	100%	100%							

NORTH ANNA COL CORE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL.GDT 1/19/07

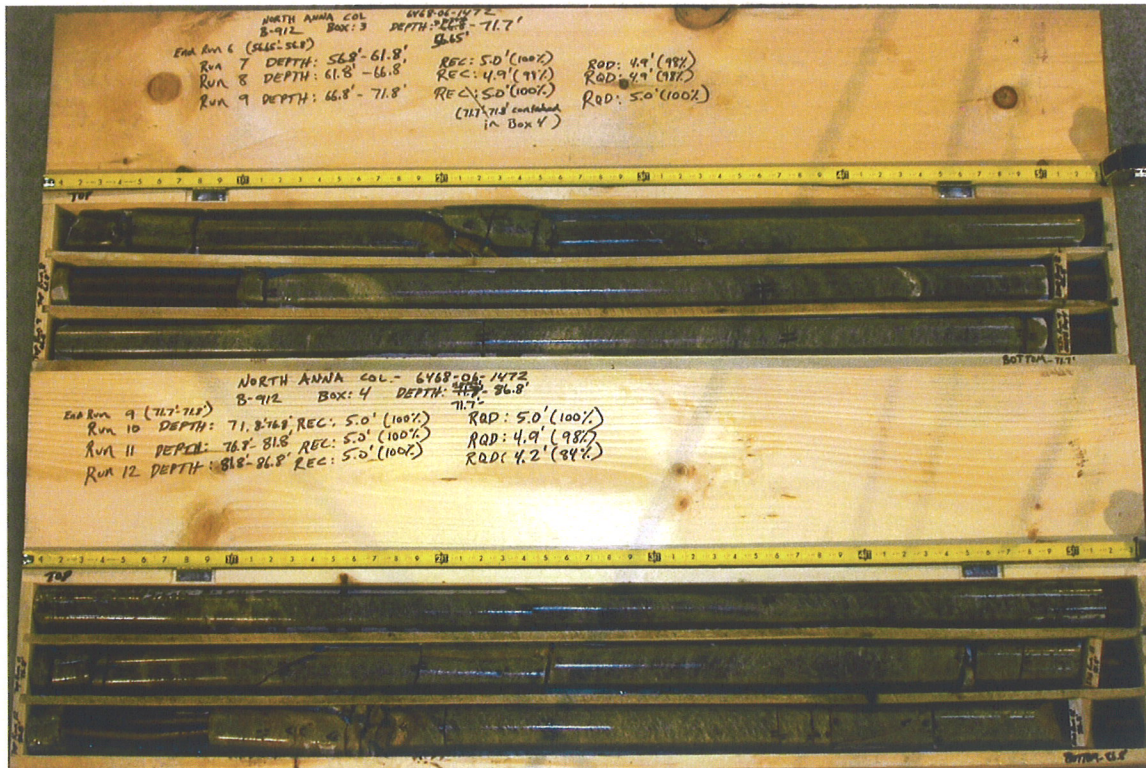


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TOTAL DEPTH 151.8 ft			DRILL MACHINE CME 55LC Track			DRILLER: D. White			HAMMER TYPE 140 lbs Auto		
DATE STARTED 10/23/06			COMPLETED 10/25/06			CORE BARREL TYPE: HQ 3 triple tube-wireline					
CORE SIZE HQ3			TOTAL RUN 122.4 ft								
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %			
										Continued from previous page	
168.3	106.8		3:33 3:56 4:30							-No Joints Hard Rock: Light gray, fresh, very wide fracturing, hard, QUARTZ-BIOTITE GNEISS (continued)	
		5.0	4:17 4:31 4:37	(5.0) 100%	(5.0) 100%	UCS-111.4				-No Joints; Quartz+feldspar vein at 45° from 108.8-109.1 ft	
163.3	111.8		5:40 4:44								
		5.0	4:36 4:25 4:44	(5.0) 100%	(5.0) 100%	18				-No Joints	
158.3	116.8		4:48 4:20								
		5.0	4:16 4:13 3:39	(5.0) 100%	(5.0) 100%	19				158.3 Hard Rock: Light gray, slightly weathered to fresh, moderately close to wide fracturing, moderately hard to hard, QUARTZ GNEISS with biotite (4 joints at 20-30° slightly weathered, trace clay, and Fe stain)	
153.3	121.8		2:21 2:06								
		5.0	2:16 4:57 2:27	(5.0) 100%	(4.8) 96%	20				(1 joint at 60° with trace clay and Fe stain; 2 joints at 30° moderately weathered)	
148.3	126.8		2:13 2:18								
		5.0	2:47 2:12 2:57	(5.0) 100%	(5.0) 100%	21				(4 joints at 50-60° with trace clay; 1 joint at 20° with Fe stain)	
143.3	131.8		2:47 3:37								
		5.0	3:24 3:24 3:47	(5.0) 100%	(4.9) 98%	22				(2 joints at 45° and 2 joints at 30° slightly weathered, Fe stain)	
138.3	136.8		3:08 4:09								
		5.0	4:07 4:04 4:40	(5.0) 100%	(5.0) 100%	23				(2 joints at 30° slightly weathered, Fe stain; 1 joint at 80-90° with clay and Fe stain; Quartz+feldspar veins at 136.7-137.1 ft and 137.9-138.8 ft)	
133.3	141.8		4:36 3:52								
		5.0	2:57 3:02 3:03	(5.0) 100%	(4.8) 96%	UC-143.9				(3 joints at 50° slightly weathered, Fe stain)	
128.3	146.8		2:41 2:51								
		5.0	2:29 3:03 4:04	(5.0) 100%	(5.0) 100%	25				-No Joints	
123.3	151.8		4:48 5:26								
										123.3 Coring terminated at 151.8 ft in Hard Rock: Hard, QUARTZ GNEISS 151.8	

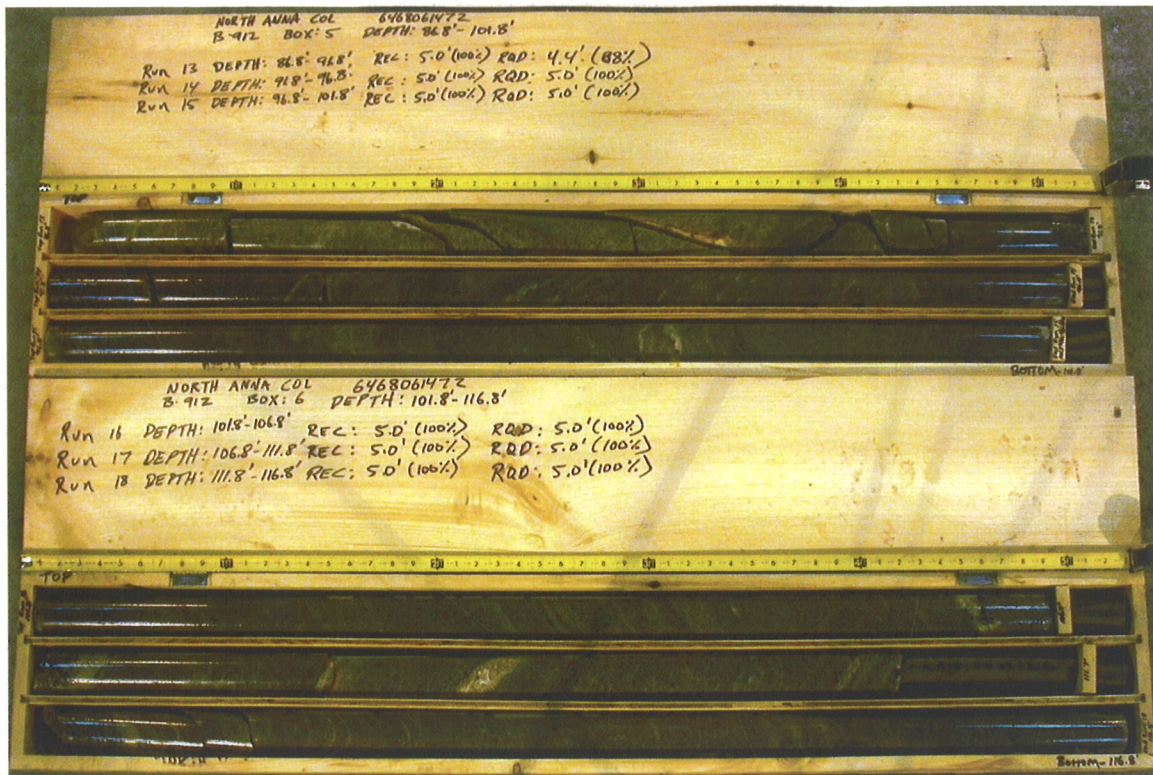
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B-912 - Box 1
B-912 - Box 2



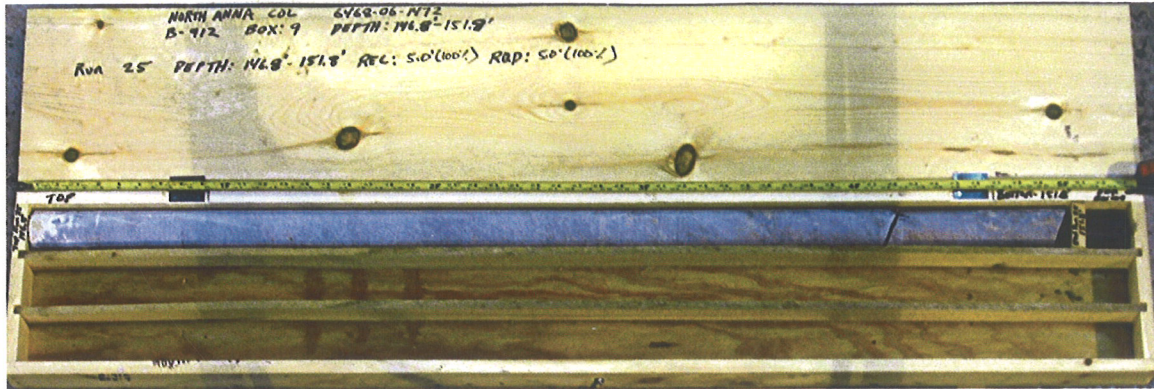
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B-912 - Box 5
B-912 - Box 6



B-912 - Box 8
B-912 - Box 7



B-912 - Box 9