



MACTEC PROJECT NO.: 6468-06-1472			COUNTY Louisa, VA			GEOLOGIST J. Howard		
SITE DESCRIPTION NORTH ANNA COL							GROUND WATER (ft)	
BORING NO. B-906		DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE			0 HR. 6.0
COLLAR ELEV. 311.7 ft (NAVD88)		NORTHING 3,909,670		US ft (NAD83)		EASTING 11,685,795		24 HR. 28.8
TOTAL DEPTH 150.5 ft		DRILL MACHINE CME 550 ATV			DRILLER: G. Akins			HAMMER TYPE 140 lbs Auto
DATE STARTED 9/13/06			COMPLETED 9/19/06			CORE BARREL TYPE: HQ 3 triple tube-wireline		

ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80				100	
311.7												311.7	0.0	Ground Surface
310.2	1.5											308.7	3.0	Clayey SAND (SC), strong brown (7.5YR 5/8), dry, medium dense (Residual Soil)
308.2	3.5	4	6	10						906-1				
305.7	6.0	7	11	13						906-2				
303.2	8.5	8	9	10						906-3				
300.7	11.0	6	8	10						906-4				
298.2	13.5	6	8	16						906-5				
292.8	18.9	3	6	8						906-6				
287.8	23.9	5	7	8						906-7				
282.8	28.9	5	6	6						906-8				
277.8	33.9	16	20	37						906-9				
272.8	38.9	13	37	50/0.3						906-10		276.8	34.9	Weathered Rock: Orange brown, BIOTITE GNEISS
										906-11		272.7	39.0	Hard Rock: Tan gray, gray brown, and gray orange, moderately to slightly weathered, very close to moderately close fracturing, moderately hard to hard, BIOTITE GNEISS
		50/0.1										242.9	68.8	Hard Rock: Tan gray, moderately to slightly weathered, very close to close fracturing, moderately hard, QUARTZ GNEISS
												238.7	73.0	
												235.8	74.9	

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TOTAL DEPTH 150.5 ft		DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto			
DATE STARTED 9/13/06			COMPLETED 9/19/06			CORE BARREL TYPE: HQ 3 triple tube-wireline							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80				100
236.9					Continued from previous page								
												234.4 Weathered Rock: Tan gray, severely weathered Quartz GNEISS (partial recovery) (continued) Hard Rock: Gray, moderately weathered, close fracturing, moderately hard, QUARTZ GNEISS Weathered Rock: Brown gray, severely weathered, QUARTZ GNEISS (partial recovery)	77.3
												227.0 Hard Rock: Brown gray, moderately severe to moderately weathered, very close to close fracturing, medium hard, QUARTZ GNEISS	84.7
												225.7 Weathered Rock: Brown gray, severely weathered, QUARTZ GNEISS (partial recovery)	86.0
												222.9 Hard Rock: Gray, gray brown, blue gray, and pink, moderately to very slightly weathered, close to moderately close fracturing, medium hard to hard, BIOTITE GNEISS	88.8
												181.7 Weathered Rock: Severely weathered, BIOTITE GNEISS (partial recovery)	130.0
												178.5 Hard Rock: Blue gray, slightly weathered to fresh, close to moderately close fracturing, hard to very hard, BIOTITE GNEISS	133.2

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TOTAL DEPTH 150.5 ft		DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto					
DATE STARTED 9/13/06				COMPLETED 9/19/06				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	
162.1					Continued from previous page										
													161.2	150.5	Boring and coring terminated at 150.5 ft in Hard Rock: Very hard, BIOTITE GNEISS

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COLLAR ELEV. 311.7 ft (NAVD88)		NORTHING 3,909,670		US ft (NAD83)		EASTING 11,685,795		US ft (NAD83)		24 HR. 28.8	
TOTAL DEPTH 150.5 ft		DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto	
DATE STARTED 9/13/06				COMPLETED 9/19/06				CORE BARREL TYPE: HQ 3 triple tube-wireline			
CORE SIZE HQ3				TOTAL RUN 111.5 ft							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	
				REC. (%)	RQD (%)		REC. (%)	RQD (%)			
										Begin Coring @ 39.0 ft	
272.7	39.0	1.5	4:30/1.5	(1.0)	(0.0)	1				272.7 Hard Rock: Tan gray, gray brown, and gray orange, moderately to slightly weathered, very close to moderately close fracturing, moderately hard to hard, BIOTITE GNEISS	
271.2	40.5	5.0	1:30	(3.0)	(2.2)	2				-Weathered zones (2 joints at 70° with weathering)	
			1:30	60%	44%						
266.2	45.5	5.0	2:15								
			2:00							(2 joints at 60°, 4 joints at 80-85° with weathering)	
261.2	50.5	5.0	1:45	(4.3)	(2.6)	3					
			2:00	86%	52%						
261.2	50.5	5.0	2:15								
			2:00							(4 joints at 50-60°, 4 joints at 70-80°)	
256.2	55.5	5.0	2:00	(4.7)	(3.6)	4					
			2:00	94%	72%						
256.2	55.5	5.0	2:00								
			2:00							(2 joints at 60-70°, 3 joints at 50°)	
251.2	60.5	5.0	1:45	(4.5)	(2.5)	5					
			2:00	90%	50%						
251.2	60.5	5.0	2:15								
			2:00							(8 joints at 30-40°)	
246.2	65.5	5.0	2:00	(5.0)	(4.8)	6					
			2:00	100%	96%						
246.2	65.5	5.0	3:15								
			2:45								
242.9	68.8	3.3	3:15	(3.3)	(2.0)	7					
			4:15	100%	61%						
242.9	68.8	3.3	3:45								
			2:15/0.3								
236.8	74.9	6.1	4:15/0.8	(4.6)	(2.0)	8				242.9 Hard Rock: Tan gray, moderately to slightly weathered, very close to close fracturing, moderately hard, QUARTZ GNEISS	
			5:00	75%	33%						
236.8	74.9	6.1	4:45								
			3:00							236.7 Weathered Rock: Tan gray, severely weathered Quartz GNEISS (partial recovery)	
236.8	74.9	5.8	2:45	(3.2)	(1.5)	9				236.8 Hard Rock: Gray, moderately weathered, close fracturing, moderately hard, QUARTZ GNEISS	
			3:00	55%	26%					(6 joints at 40°, 1 joint at 80°)	
231.0	80.7	5.0	2:00							234.4 Weathered Rock: Brown gray, severely weathered, QUARTZ GNEISS (partial recovery)	
			4:15/1.8								
231.0	80.7	5.0	2:45	(2.0)	(0.0)	10					
			3:00	40%	0%						
226.0	85.7	5.0	6:15								
			4:30							227.0 Hard Rock: Brown gray, moderately severe to moderately weathered, very close to close fracturing, medium hard, QUARTZ GNEISS	
226.0	85.7	5.0	2:45	(2.3)	(1.2)	11				(4 joints at 30°)	
			3:15	46%	24%						
221.0	90.7	4.9	3:00								
			4:15							222.9 Weathered Rock: Brown gray, severely weathered, QUARTZ GNEISS (partial recovery)	
221.0	90.7	4.9	8:00	(4.3)	(3.8)	12				Hard Rock: Gray, gray brown, blue gray, and pink, moderately to very slightly weathered, close to moderately close fracturing, medium hard to hard, BIOTITE GNEISS	
			4:11/0.9	88%	78%					(5 joints at 30-40°)	
216.1	95.6	4.4	4:15	(4.4)	(3.9)	13				(2 joints at 80°, 1 joint at 20°)	
			2:15	100%	89%						
211.7	100.0	5.5	2:15								
			2:00							(4 joints at 30-40°, 2 joints at 50°)	
206.2	105.5	5.0	1:30/0.4	(5.5)	(4.7)	14					
			2:30	100%	85%						
206.2	105.5	5.0	3:30								
			3:15							(3 joints at 30-40°, 1 joint at 85°; trace epidote)	
201.2	110.5	5.0	3:00	(5.0)	(4.2)	15					
			2:15	100%	84%						
201.2	110.5	5.0	2:15	(4.9)	(4.1)	16					
			3:00	98%	82%						
			2:45								

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TOTAL DEPTH 150.5 ft		DRILL MACHINE CME 550 ATV		DRILLER: G. Akins		HAMMER TYPE 140 lbs Auto	
DATE STARTED 9/13/06			COMPLETED 9/19/06		CORE BARREL TYPE: HQ 3 triple tube-wireline		
CORE SIZE HQ3			TOTAL RUN 111.5 ft				

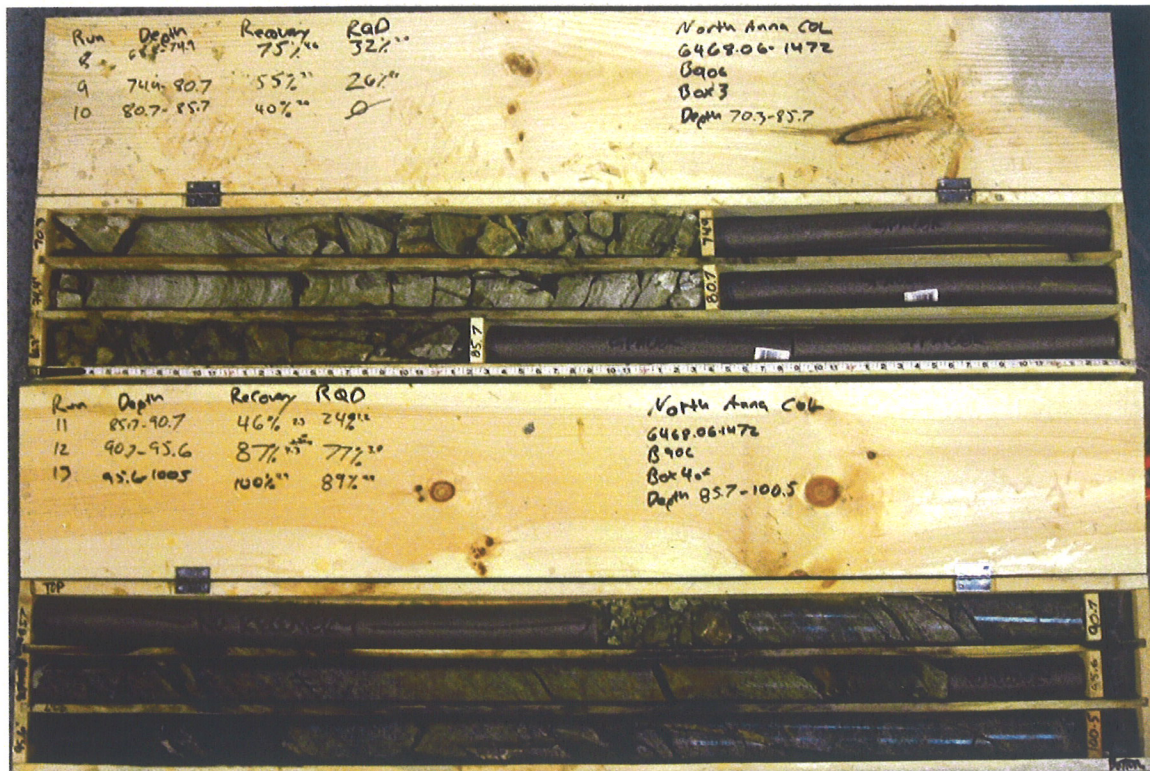
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC. (ft) %	ROD (ft) %		REC. (ft) %	ROD (ft) %		
										Continued from previous page
196.2	115.5	5.0	3:00 4:00	(5.0) 100%	(4.5) 90%	17				Hard Rock: Gray, gray brown, blue gray, and pink, moderately to very slightly weathered, close to moderately close fracturing, medium hard to hard, BIOTITE GNEISS (continued) (7 joints at 40°; trace epidote, quartz veins)
191.2	120.5	5.0	2:30 3:15 3:15 3:30 5:00	(5.0) 100%	(4.1) 82%	18				(7 joints at 30-40°)
186.2	125.5	5.0	3:00 3:45 4:30 4:00 6:30	(5.0) 100%	(4.1) 82%	19				(4 joints at 50°)
181.2	130.5	5.0	3:30 2:30 3:30 3:30 3:30	(4.5) 90%	(3.6) 72%	20				181.7 130.0 Weathered Rock: Severely weathered, BIOTITE GNEISS (partial recovery) (1 joint at 60°)
176.2	135.5	5.0	3:00 3:45 6:45 5:00 6:30	(4.6) 92%	(2.9) 58%	21				178.5 133.2 Hard Rock: Blue gray, slightly weathered to fresh, close to moderately close fracturing, hard to very hard, BIOTITE GNEISS (4 joints at 60°)
171.2	140.5	4.9	10:15 9:30 8:45 7:00 10:30	(5.0) 100%	(5.0) 100%	22				(5 joints at 60°, 1 joint at 40°; quartz+feldspar veins)
166.3	145.4	5.1	2:45 3:15 4:30 5:30 7:15	(4.9) 100%	(4.5) 92%	23				(4 joints at 60°, 1 joint at 40°; quartz+feldspar veins)
161.2	150.5	5.1	4:45 5:30 5:45 5:15 7:45/1.1	(5.1) 100%	(5.1) 100%	23				161.2 150.5 Coring terminated at 150.5 ft in Hard Rock: Very hard, BIOTITE GNEISS

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



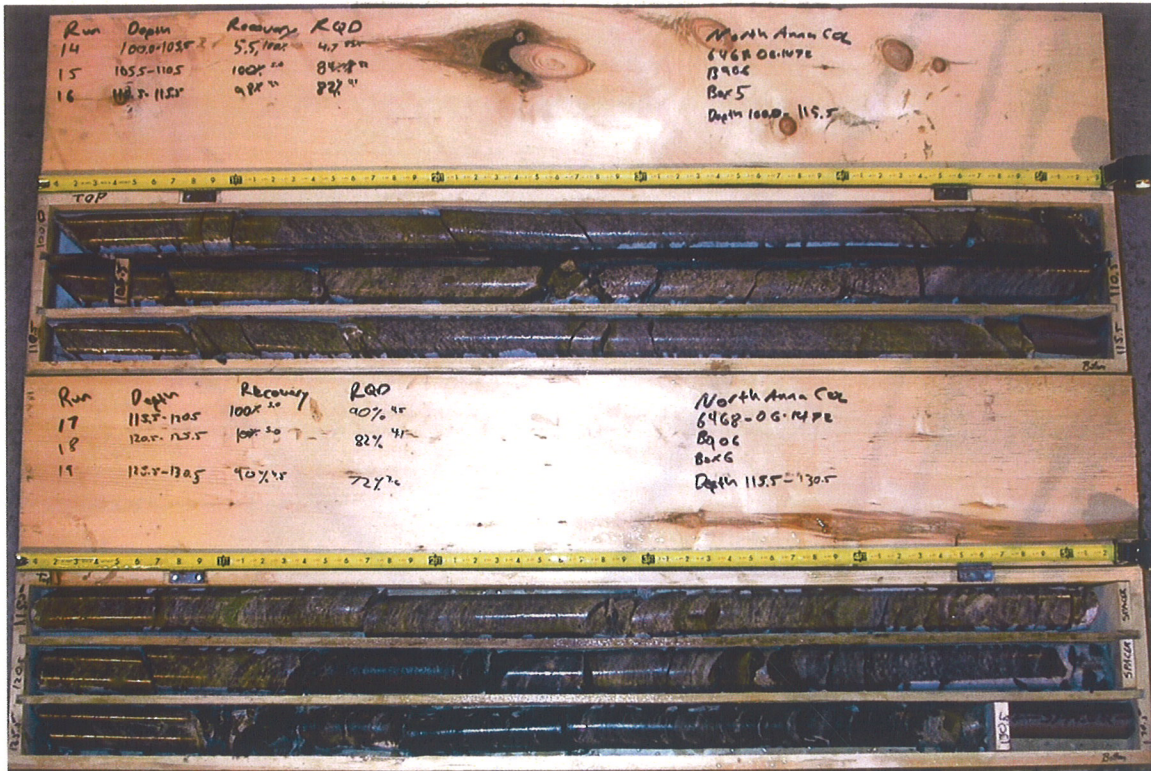
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B-906 - Box 2



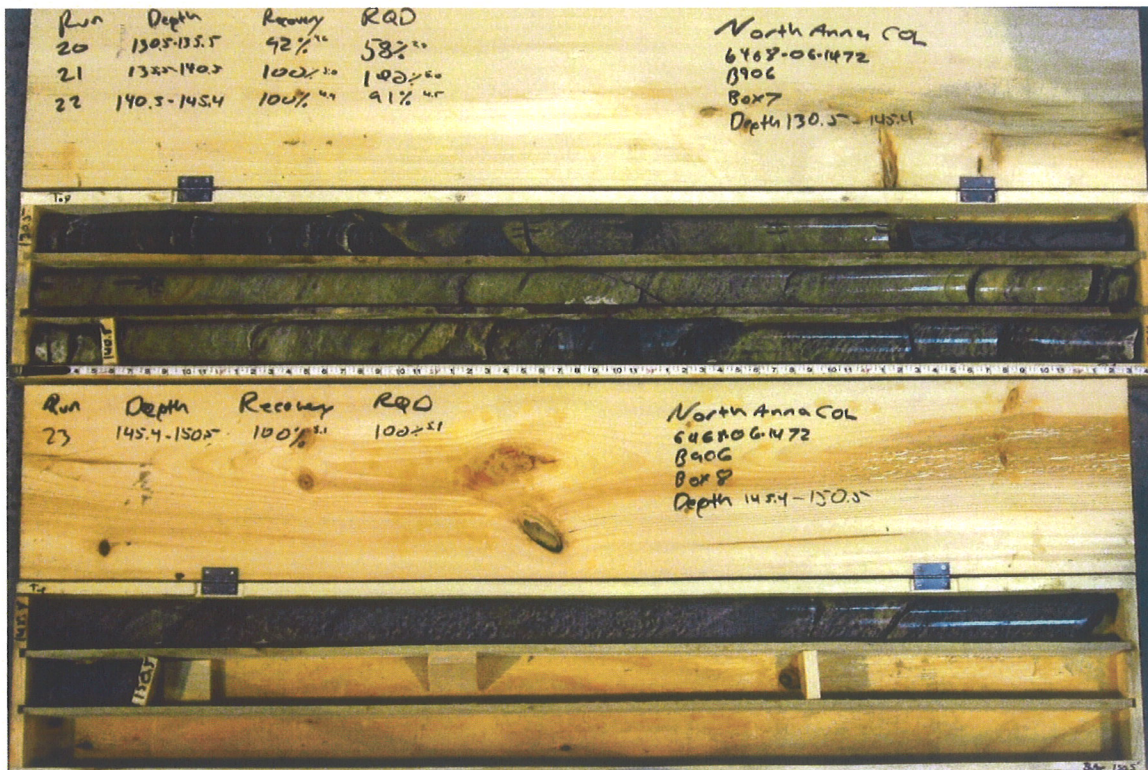
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B-906 - Box 4



B-906 - Box 5

B-906 - Box 6



B-906 - Box 7

B-906 - Box 8