



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		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								
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				
311.7					Ground Surface								311.7 0.0	
310.2	1.5									906-1		308.7 Clayey SAND (SC), strong brown (7.5YR 5/8), dry, medium dense (Residual Soil) 3.0		
308.2	3.5	4	6	10						906-2		308.7		
305.7	6.0	7	11	13						906-3				
303.2	8.5	8	9	10						906-4				
300.7	11.0	6	8	10						906-5				
298.2	13.5	6	8	16						906-6				
292.8	18.9	3	6	8						906-7				
287.8	23.9	5	7	8						906-8				
282.8	28.9	5	6	6						906-9				
277.8	33.9	16	20	37						906-10				
272.8	38.9	13	37	50/0.3	906-11		276.8 Weathered Rock: Orange brown, BIOTITE GNEISS 34.9							
												272.7 39.0		
		50/0.1										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		
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NORTH ANNA COL. JURE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL.GDT 1/19/07



MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST J. Howard									
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft) 0 HR. 6.0 24 HR. 28.8							
BORING NO. B-906		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE											
COLLAR ELEV. 311.7 ft (NAVD88)		NORTHING 3,909,670		US ft (NAD83)		EASTING 11,685,795		US ft (NAD83)									
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	

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



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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		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)	REC. (ft) %	RQD (ft) %	SAMP. NO.	REC. (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS		
										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 1:30 1:30 2:15 2:00	67% (3.0) 60%	0% (2.2) 44%	2					-Weathered zones (2 joints at 70° with weathering)	
266.2	45.5	5.0	1:45 2:00 2:15 2:00 2:00	(4.3) 86%	(2.6) 52%	3					(2 joints at 60°, 4 joints at 80-85° with weathering)	
261.2	50.5	5.0	2:00 2:00 2:00 2:00 2:00	(4.7) 94%	(3.6) 72%	4					(4 joints at 50-60°, 4 joints at 70-80°)	
256.2	55.5	5.0	1:45 2:00 2:15 2:00 2:00	(4.5) 90%	(2.5) 50%	5					(2 joints at 60-70°, 3 joints at 50°)	
251.2	60.5	5.0	2:00 2:00 3:15 2:45 3:15	(5.0) 100%	(4.8) 96%	6					(8 joints at 30-40°)	
246.2	65.5	3.3	3:15 4:15 3:45	(3.3) 100%	(2.0) 61%	7						
242.9	68.8	6.1	2:15/0.3 4:15/0.8 5:00 4:45 3:00 2:45 8:45/1.3	(4.6) 75%	(2.0) 33%	8				242.9	Hard Rock: Tan gray, moderately to slightly weathered, very close to close fracturing, moderately hard, QUARTZ GNEISS	
236.8	74.9	5.8	3:45 3:00 3:00 2:00 4:15/1.8	(3.2) 55%	(1.5) 26%	9				236.8	Weathered Rock: Tan gray, severely weathered Quartz GNEISS (partial recovery)	
231.0	80.7	5.0	2:45 3:00 6:15 4:30 2:45	(2.0) 40%	(0.0) 0%	10				231.0	Hard Rock: Gray, moderately weathered, close fracturing, moderately hard, QUARTZ GNEISS (6 joints at 40°, 1 joint at 80°)	
226.0	85.7	5.0	2:45 3:15 3:00 4:15 8:00	(2.3) 46%	(1.2) 24%	11				226.0	Weathered Rock: Brown gray, severely weathered, QUARTZ GNEISS (partial recovery)	
221.0	90.7	4.9	5:00 3:30 3:30 3:15 4:11/0.9	(4.3) 88%	(3.8) 78%	12				221.0	Hard Rock: Brown gray, moderately severe to moderately weathered, very close to close fracturing, medium hard, QUARTZ GNEISS (4 joints at 30°)	
216.1	95.6	4.4	4:15 2:15 2:15 2:00 1:30/0.4	(4.4) 100%	(3.9) 89%	13				216.1	Weathered Rock: Brown gray, severely weathered, QUARTZ GNEISS (partial recovery)	
206.2	105.5	5.5	2:30 3:30 3:15 3:00 4:00/1.5	(5.5) 100%	(4.7) 85%	14				206.2	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 (5 joints at 30-40°)	
201.2	110.5	5.0	2:30 2:15 2:15 3:00 2:30	(5.0) 100%	(4.2) 84%	15				201.2	(2 joints at 80°, 1 joint at 20°)	
		5.0	3:00 3:15 2:45	(4.9) 98%	(4.1) 82%	16					(4 joints at 30-40°, 2 joints at 50°)	
											(3 joints at 30-40°, 1 joint at 85°; trace epidote)	

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



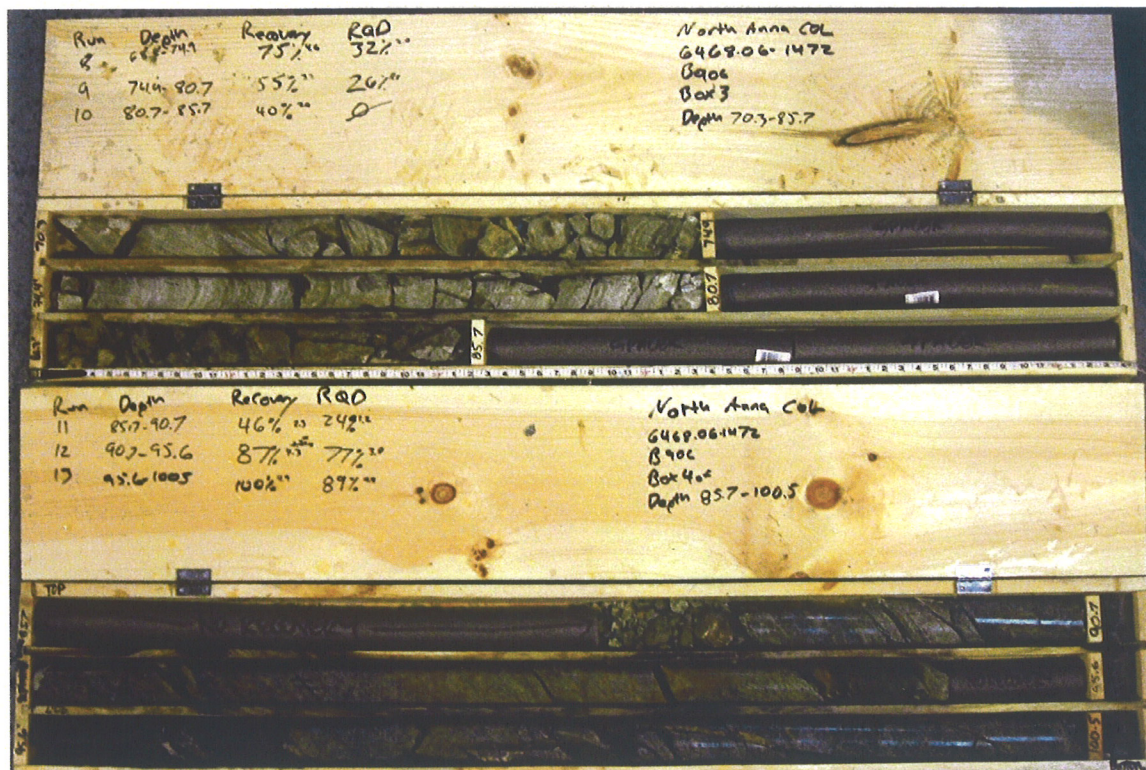
SHEET 2 OF 2

MACTEC PROJECT NO.: 6468-06-1472						COUNTY Louisa, VA				GEOLOGIST J. Howard			
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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		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 REC. (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS	
												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		2:30 3:15 3:15 3:30 5:00										
		5.0	3:00 3:45 4:30 4:00 6:30	(5.0) 100%	(4.1) 82%	18						(7 joints at 30-40°)	
186.2	125.5		2:30 3:30 3:30 3:30										
		5.0	3:30 2:30 3:30 3:30 3:30	(4.5) 90%	(3.6) 72%	19						(4 joints at 50°)	
181.2	130.5		4:00 6:30										
		5.0	3:00 3:45 6:45 5:00 6:30	(4.6) 92%	(2.9) 58%	20						Weathered Rock: Severely weathered, BIOTITE GNEISS (partial recovery) (1 joint at 60°)	
176.2	135.5		5:00 6:30										
		5.0	10:15 9:30 8:45 7:00 10:30	(5.0) 100%	(5.0) 100%	21						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		2:45 3:15 4:30 5:30 7:15										
		4.9	2:45 3:15 4:30 5:30 7:15	(4.9) 100%	(4.5) 92%	22						(5 joints at 60°, 1 joint at 40°; quartz+feldspar veins)	
166.3	145.4		2:45 3:15 4:30 5:30 7:15										
		5.1	4:45 5:30 5:45 5:15 7:45/1.1	(5.1) 100%	(5.1) 100%	23						(4 joints at 40°, 1 joint at 20°)	
161.2	150.5		4:45 5:30 5:45 5:15 7:45/1.1										
Coring terminated at 150.5 ft in Hard Rock: Very hard, BIOTITE GNEISS													



B-906 – Box 1

B-906 – Box 2



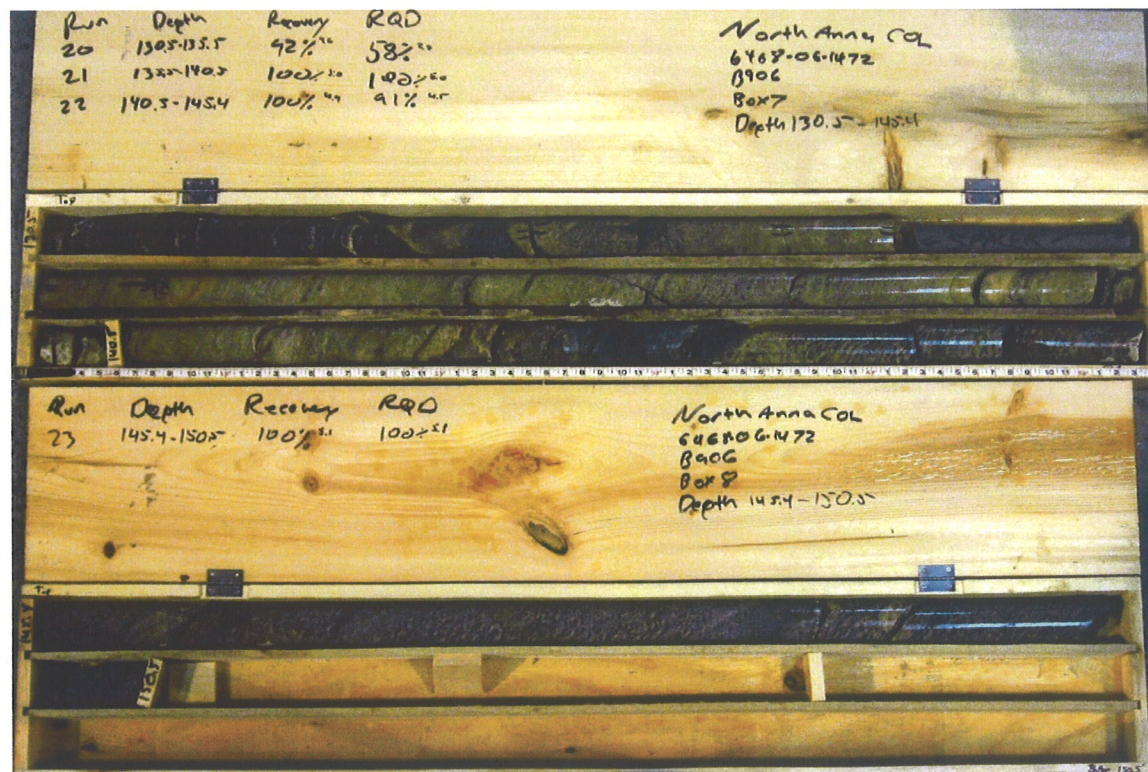
B-906 – Box 3

B-906 – Box 4



B-906 - Box 5

B-906 - Box 6



B-906 - Box 7

B-906 - Box 8