

MACTEC PROJECT NO.: 6468-06-1472										COUNTY Louisa, VA					GEOLOGIST J. Wallen														
SITE DESCRIPTION NORTH ANNA COL															GROUND WATER (ft)														
BORING NO. B-910					DRILL METHOD: Mud Rotary/Core					SAMPLE METHODS: SPT/CORE					0 HR. ND														
COLLAR ELEV. 316.5 ft (NAVD88)					NORTHING 3,909,668					US ft (NAD83)					EASTING 11,685,883					US ft (NAD83)					24 HR. 21.4				
TOTAL DEPTH 148.4 ft					DRILL MACHINE CME 550 ATV					DRILLER: G. Akins					HAMMER TYPE 140 lbs Auto														
DATE STARTED 8/31/06					COMPLETED 9/7/06					CORE BARREL TYPE: HQ 3 triple tube-wireline																			
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	▼	L	O	G	SOIL AND ROCK DESCRIPTION														
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	NO.	MOI	G																
316.5																			Ground Surface										
315.0	1.5														910-1				316.5 0.0										
313.0	3.5	22	25	14											910-2				313.5 3.0										
310.5	6.0	5	8	14											910-3				Sandy CLAY (CL) brown (7YR 5/3), moist, very stiff (Residual Soil)										
308.0	8.5	12	13	16											910-4				309.5 7.0										
305.5	11.0	9	12	12											910-5				306.5 10.0										
303.0	13.5	6	6	9											910-6				Sandy SILT (ML) yellowish brown (10YR 5/4 to 10YR 5/6) and black (5YR 2.5/1) mottled, moist, stiff and very stiff (Residual Soil)										
298.0	18.5	5	7	12																									
293.0	23.5	2	5	8											910-7				294.5 22.0										
290.6	25.9	14	25	50/0.4											910-8				Weathered Rock: Yellowish brown (10YR 5/6) and brownish yellow (10YR 6/8), moist, very dense, BIOTITE QUARTZ GNEISS										
288.0	28.5	34	40	45											910-9														
285.2	31.3	45	50/0.4												910-10														
281.2	35.3	50/0.1													910-11														
276.1	40.4	50/0.2													910-12														
		50/0.2													910-13				274.5 42.0										
																			Hard Rock: Gray and brown, moderately severe to moderately weathered, very close to moderately close fracturing, soft, BIOTITE QUARTZ GNEISS										

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



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BORING NO. B-910			DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. ND		
COLLAR ELEV. 316.5 ft (NAVD88)			NORTHING 3,909,668		US ft (NAD83)		EASTING 11,685,883		US ft (NAD83)		24 HR. 21.4		
TOTAL DEPTH 148.4 ft			DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto		
DATE STARTED 8/31/06			COMPLETED 9/7/06				CORE BARREL TYPE: HQ 3 triple tube-wireline						
CORE SIZE HQ3			TOTAL RUN 116.6 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	
												Begin Coring @ 31.4 ft	
285.1	31.4	3.9	1:32 2:43 1:35	(0.0) 0%	(0.0) 0%	1						Weathered Rock: Yellowish brown (10YR 5/6) and brownish yellow (10YR 6/8), moist, very dense, BIOTITE QUARTZ GNEISS (continued) -No Recovery	
281.2	35.3		1:38/0.9										
281.0	35.5	4.9	N=50/0.2 1:55 2:10 1:59 1:33	(0.5) 10%	(0.0) 0%	910-12 2						-Very poor recovery	
276.1	40.4		2:19/0.9										
275.9	40.6	4.8	N=50/0.2 1:03 2:04 2:02 1:50	(2.5) 52%	(0.6) 13%	910-13 3						Hard Rock: Gray and brown, moderately severe to moderately weathered, very close to moderately close fracturing, soft, BIOTITE QUARTZ GNEISS	
271.1	45.4		2:07/0.8									(0.4 ft thick quartz vein)	
		5.0	2:10 2:16 2:17 2:22 2:25	(3.8) 76%	(2.5) 50%	4							
266.1	50.4											(6 joints at 45°)	
		5.0	1:45 1:43 2:02 2:58 2:22	(3.6) 72%	(3.0) 60%	UC-53.1'							
261.1	55.4											(5 joints at 45°)	
		5.0	3:19 2:20 2:28 2:56 2:20	(4.6) 92%	(4.3) 86%	6							
256.1	60.4											(2 joints at 70°, 4 joints at 20°)	
		4.5	1:42 1:53 1:46 2:39	(3.1) 69%	(2.3) 51%	7							
251.6	64.9		2:34/0.5										
		5.4	3:25 2:53 5:49 3:00 3:03/1.4	(2.9) 54%	(1.4) 26%	8							
246.2	70.3												
		5.0	3:49 4:46 4:26 1:54 1:49	(2.5) 50%	(0.4) 8%	9						(7 joints at 70°)	
241.2	75.3												
		5.1	3:08 2:46 2:45 2:03 2:30/1.1	(2.0) 39%	(0.0) 0%	10						Weathered Rock: Brown and gray, severely to moderately weathered, close fracturing, soft, BIOTITE QUARTZ GNEISS -Poor Recovery	
236.1	80.4											(2 joints at 15°)	
		5.0	1:43 1:44 1:16 1:17 1:15	(1.0) 20%	(0.3) 6%	11							
231.1	85.4											-No Recovery	
		5.0	1:20 1:19 1:04 1:32 1:00	(0.0) 0%	(0.0) 0%	12							
226.1	90.4												
		1.9	3:46 1:55/0.9	(1.8) 95%	(1.7) 89%	UCS-91.1'						Hard Rock: Light to dark gray, moderately weathered to fresh, close to moderately close fracturing, medium hard to very hard, BIOTITE QUARTZ GNEISS	
224.2	92.3											(4 joints at 30°)	
		3.0	5:10 2:23 2:20	(2.8) 93%	(1.4) 47%	14						(5 joints at 45°, 4 joints at 10°)	
221.2	95.3											(5 joints at 10°, 5 joints at 30°, 1 joint at 70° with clay)	
		5.0	1:42 1:45 1:38 1:48 1:43	(5.0) 100%	(3.5) 70%	15							
216.2	100.3											(1 joint at 70°, 7 joints at 30°)	
		5.0	1:57 1:46 2:02 1:36 1:48	(5.0) 100%	(3.9) 78%	16							
211.2	105.3												
			1:41			17							

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COLLAR ELEV. 316.5 ft (NAVD88)			NORTHING 3,909,668		US ft (NAD83)		EASTING 11,685,883		US ft (NAD83)		24 HR. 21.4		
TOTAL DEPTH 148.4 ft			DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto		
DATE STARTED 8/31/06			COMPLETED 9/7/06				CORE BARREL TYPE: HQ 3 triple tube-wireline						
CORE SIZE HQ3			TOTAL RUN 116.6 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													
206.2	110.3	5.0	1:39 1:48 1:35 1:48	(4.9) 98%	(3.9) 78%						(5 joints at 30°, 4 joints at 60°) Hard Rock: Light to dark gray, moderately weathered to fresh, close to moderately close fracturing, medium hard to very hard, BIOTITE QUARTZ GNEISS (continued)		
201.2	115.3	5.0	1:15 2:03 1:16 1:19 1:38	(5.0) 100%	(3.5) 70%	18					(2 joints at 75°, 5 joints at 40°, 4 joints at 10°)		
196.2	120.3	5.0	1:32 1:20 1:27 1:28 1:27	(3.5) 70%	(2.4) 48%	19					(5 joints at 10°, 6 joints at 30°)		
191.2	125.3	5.0	1:45 1:47 1:42 2:42 3:05	(4.6) 92%	(3.5) 70%	UC-120.9'					(7 joints at 40°, 1 joint at 10°)		
186.2	130.3	5.0	3:21 2:53 1:43 1:37 2:24	(4.8) 96%	(4.0) 80%	21					(5 joints at 70°, 4 joints at 10°)		
181.2	135.3	5.0	2:57 2:25 1:55 1:45 1:45	(4.9) 98%	(3.4) 68%	22					(8 joints at 45°, 5 joints at 70°)		
176.2	140.3	5.0	2:03 2:44 4:14 5:25 4:40	(4.8) 96%	(3.9) 78%	23					(5 joints at 30°, 1 joint at 70°, 4 joints at 10°)		
171.2	145.3	5.0	4:24 5:31 3:16 5:20 5:32	(5.0) 100%	(4.2) 84%	UC-142.1'					(4 joints at 45°, 1 joint at 15°; quartz vein from 142.9-143.6 ft)		
168.1	148.4	3.1	4:03 2:43 5:24/1.1	(3.0) 97%	(2.1) 68%	25					(5 joints at 45°, 1 joint at 30°)		
										168.1	148.4	Coring terminated at 148.4 ft in Hard Rock: Hard to very hard, BIOTITE-QUARTZ GNEISS	

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



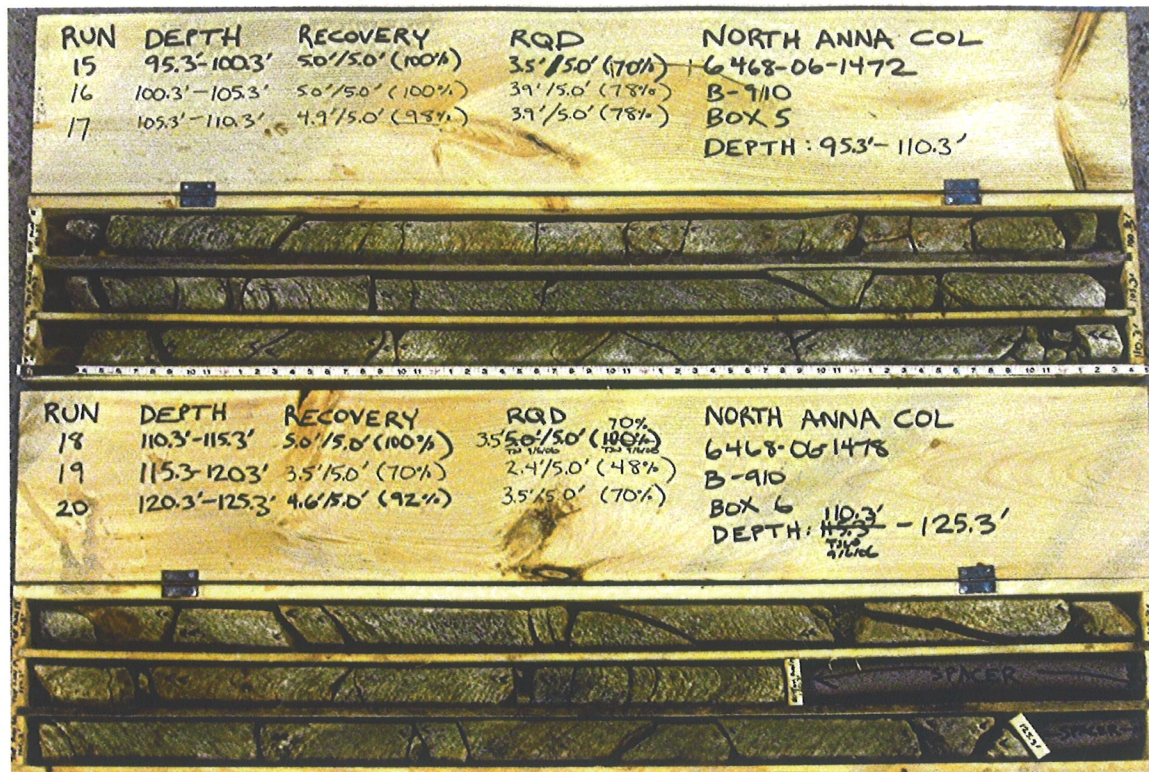
B-910 - Box 1

B-910 - Box 2



B-910 - Box 3

B-910 - Box 4



B-910 - Box 5

B-910 - Box 6



B-910 - Box 7

B-910 - Box 8