

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.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100				NO.
316.5					Ground Surface								316.5	0.0
315.0	1.5									910-1			313.5	3.0
313.0	3.5	22	25	14						910-2			Sandy CLAY (CL) brown (7YR 5/3), moist, very stiff (Residual Soil)	
310.5	6.0	5	8	14						910-3			309.5	7.0
308.0	8.5	12	13	16						910-4			Silty, fine SAND (SM), moist, medium dense (Residual Soil)	
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)	
		5	7	12										
298.0	18.5	2	5	8						910-7				
293.0	23.5	14	25	50/0.4						910-8			294.5	22.0
290.6	25.9	34	40	45						910-9			Weathered Rock: Yellowish brown (10YR 5/6) and brownish yellow (10YR 6/8), moist, very dense, BIOTITE QUARTZ GNEISS	
288.0	28.5	45	50/0.4							910-10				
285.2	31.3	50/0.1								910-11				
281.2	35.3	50/0.2								910-12				
276.1	40.4	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 COL COLURE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL.GDT 1/19/07



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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						274.5 42.0 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												
		5.0	2:10 2:16 2:17 2:22 2:25	(3.8) 76%	(2.5) 50%	4						(0.4 ft thick quartz vein)			
266.1	50.4														
		5.0	1:45 1:43 2:02 2:58 2:22	(3.6) 72%	(3.0) 60%	UC-53.1'						(6 joints at 45°)			
261.1	55.4														
		5.0	3:19 2:20 2:28 2:56 2:20	(4.6) 92%	(4.3) 86%	6						(5 joints at 45°)			
256.1	60.4														
		4.5	1:42 1:53 1:46 2:39	(3.1) 69%	(2.3) 51%	7						(2 joints at 70°, 4 joints at 20°)			
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											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														
		5.0	1:43 1:44 1:16 1:17 1:15	(1.0) 20%	(0.3) 6%	11						(2 joints at 15°)			
231.1	85.4														
		5.0	1:20 1:19 1:04 1:32 1:00	(0.0) 0%	(0.0) 0%	12						-No Recovery			
226.1	90.4											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														
		3.0	5:10 2:23 2:20	(2.8) 93%	(1.4) 47%	14						(4 joints at 30°) (5 joints at 45°, 4 joints at 10°) (5 joints at 10°, 5 joints at 30°, 1 joint at 70° with clay)			
221.2	95.3														
		5.0	1:42 1:45 1:38 1:48 1:43	(5.0) 100%	(3.5) 70%	15						(1 joint at 70°, 7 joints at 30°)			
216.2	100.3														
		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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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) (2 joints at 75°, 5 joints at 40°, 4 joints at 10°)		
201.2	115.3	5.0	1:15 2:03 1:16 1:19 1:38	(5.0) 100%	(3.5) 70%	18					(5 joints at 10°, 6 joints at 30°)		
196.2	120.3	5.0	1:32 1:20 1:27 1:28 1:27	(3.5) 70%	(2.4) 48%	19					(7 joints at 40°, 1 joint at 10°)		
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'					(5 joints at 70°, 4 joints 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					(8 joints at 45°, 5 joints at 70°)		
181.2	135.3	5.0	2:57 2:25 1:55 1:45 1:45	(4.9) 98%	(3.4) 68%	22					(5 joints at 30°, 1 joint at 70°, 4 joints at 10°)		
176.2	140.3	5.0	2:03 2:44 4:14 5:25 4:40	(4.8) 96%	(3.9) 78%	23					(4 joints at 45°, 1 joint at 15°; quartz vein from 142.9-143.6 ft)		
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'					(5 joints at 45°, 1 joint at 30°)		
168.1	148.4	3.1	4:03 2:43 5:24/1.1	(3.0) 97%	(2.1) 68%	25					Coring terminated at 148.4 ft in Hard Rock: Hard to very hard, BIOTITE-QUARTZ GNEISS		

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



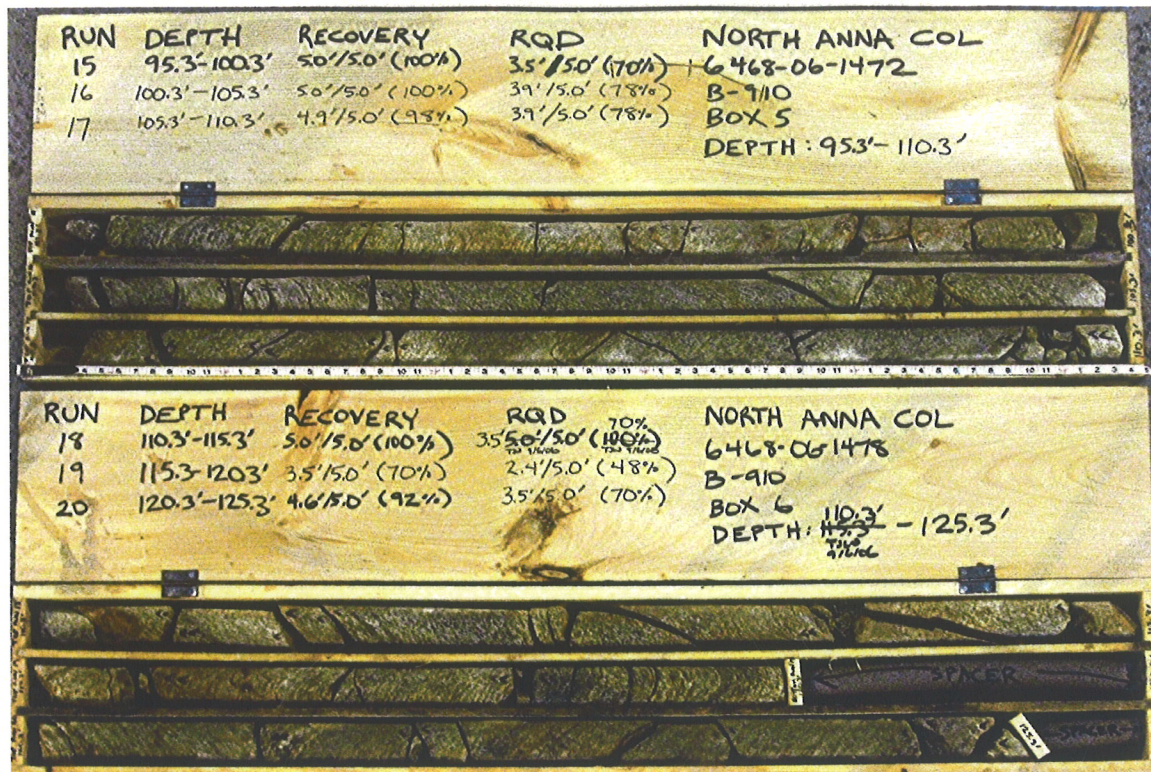
B-910 - Box 1

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