



MACTEC PROJECT NO.: 6468-06-1472			COUNTY Louisa, VA			GEOLOGIST S. Nicely									
SITE DESCRIPTION NORTH ANNA COL							GROUND WATER (ft)								
BORING NO. B-946		DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE			0 HR.	25.0						
COLLAR ELEV. 333.4 ft (NAVD88)		NORTHING 3,908,787		US ft (NAD83)		EASTING 11,683,811		US ft (NAD83)							
TOTAL DEPTH 100.7 ft		DRILL MACHINE CME 550 ATV			DRILLER: G. Akins			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	SOIL AND ROCK DESCRIPTION			
		0.5ft	0.5ft	0.5ft	0	20	40	60	80				100		
333.4					Ground Surface							333.4	0.0		
331.8	1.6														
330.1	3.3	12	11	9							946-1				
327.3	6.1	4	5	7							946-2				
324.9	8.5	3	4	5							946-3		328.4	5.0	Sandy SILT (ML) yellowish red (5YR 5/8), moist, very stiff to stiff, trace gravel (Fill)
322.3	11.1	4	5	7							946-4				
319.2	14.2	4	5	8							946-5				
314.2	19.2	3	4	4							946-6		320.4	13.0	Silty, fine to medium SAND (SM) strong brown (7.5YR 5/8), dark yellowish brown (10YR 4/6), and olive brown (2.5Y 4/3), moist to wet, loose to medium dense, micaceous (Residual Soil)
309.2	24.2	2	4	6							946-7				
304.2	29.2	3	5	8							946-8				
299.2	34.2	3	5	7							946-9				
294.2	39.2	19	41	38							946-10		302.4	31.0	Silty, fine to coarse SAND (SM) brownish yellow (10YR 6/6) and dark yellowish brown (10YR 4/4), moist, medium dense and very dense, micaceous (Residual Soil)
291.6	41.8	6	10	14							946-11				
		50/0.1									946-12		292.4	41.0	Weathered Rock: BIOTITE-QUARTZ GNEISS
													291.5	41.9	Hard Rock: Light gray, gray, brown, and reddish brown, moderately severe to slightly weathered, very close to moderately close fracturing, soft to very hard, BIOTITE-QUARTZ GNEISS with severely weathered zones

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MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST S. Nicely						
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)				
BORING NO. B-946		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 25.0				
COLLAR ELEV. 333.4 ft (NAVD88)		NORTHING 3,908,787		US ft (NAD83)		EASTING 11,683,811		US ft (NAD83)		24 HR. ND				
TOTAL DEPTH 100.7 ft		DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				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	
258.6					Continued from previous page									
												257.6	75.8	Hard Rock: Gray to light gray and reddish brown, moderately weathered to fresh, very close to moderately close fracturing, hard to very hard, BIOTITE-QUARTZ GNEISS
												232.7	100.7	Boring and coring terminated at 100.7 ft in Hard Rock: Very hard, BIOTITE-QUARTZ GNEISS

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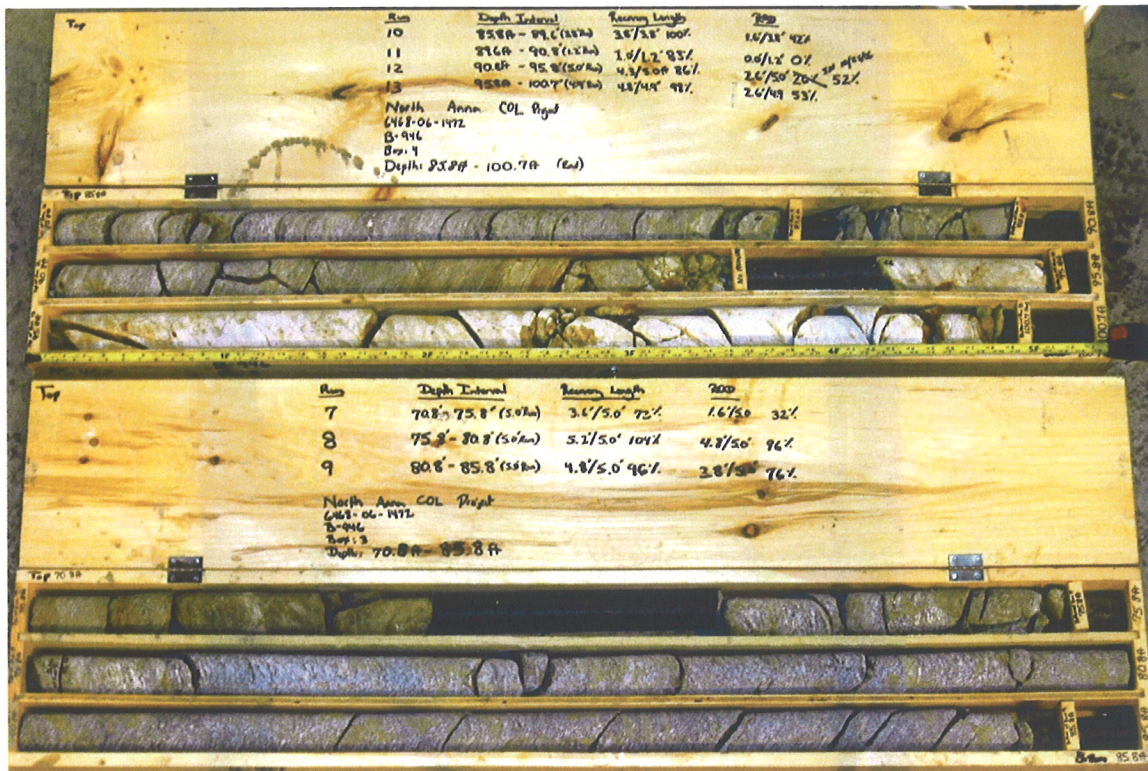
MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA		GEOLOGIST S. Nicely	
SITE DESCRIPTION NORTH ANNA COL							GROUND WATER (ft)
BORING NO. B-946		DRILL METHOD: Mud Rotary/Core		SAMPLE METHODS: SPT/CORE			0 HR. 25.0
COLLAR ELEV. 333.4 ft (NAVD88)		NORTHING 3,908,787 US ft (NAD83)		EASTING 11,683,811 US ft (NAD83)		24 HR. ND	
TOTAL DEPTH 100.7 ft		DRILL MACHINE CME 550 ATV		DRILLER: G. Akins		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 58.8 ft					

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %		
										Begin Coring @ 41.9 ft
291.5	41.9	3.9	3:46 1:54 2:16 1:12/0.9	(3.1) 79%	(2.6) 67%	1				291.5 Hard Rock: Light gray, gray, brown, and reddish brown, moderately severe to slightly weathered, very close to moderately close fracturing, soft to very hard, BIOTITE-QUARTZ GNEISS with severely weathered zones (1 joints at 30° with Fe stain; severely weathered fracture zone with no recovery from 42.3-43.1 ft)
287.6	45.8	4.9	1:29 1:32 2:16 2:20 1:31/0.9	(1.6) 33%	(1.3) 27%	2				(2 joints at 50° with Fe and Mn staining; 2 joints at 10° with Fe stain; no recovery from 45.3-49.1 ft)
282.7	50.7	5.0	2:48 1:25 1:41 1:25 1:12	(4.2) 84%	(2.1) 42%	3				-Highly fractured zones from 50.7-51.5 ft and 54.8-55.7 ft
277.7	55.7	5.0	1:05 1:26 1:31 1:49 1:42	(4.3) 86%	(3.5) 70%	4				(6 joints at 15-25° with Fe staining; 5 joints at 30-40° with Fe staining)
272.7	60.7	5.0	1:31 1:22 1:36 3:06 1:31	(4.9) 98%	(2.9) 58%	5				(10 joints at 20-30°, some with Fe staining)
267.7	65.7	5.1	2:05 2:09 1:10 1:15 1:09/1.1	(2.3) 45%	(1.9) 37%	6				(2 joints at 10° with Fe staining; no recovery from 67.7-70.5 ft)
262.6	70.8	5.0	2:16 1:25 1:19 1:06 1:23	(3.6) 72%	(1.6) 32%	7				-Highly fractured, no recovery from 72.7-73.9 ft
257.6	75.8	5.0	1:16 1:26 1:20 1:20 1:10	(5.2) 104%	(4.8) 96%	8				257.6 Hard Rock: Gray to light gray and reddish brown, moderately weathered to fresh, very close to moderately close fracturing, hard to very hard, BIOTITE-QUARTZ GNEISS (5 joints at 35-45° with trace Fe stain; 2 joints at 30°)
252.6	80.8	5.0	2:11 1:31 1:20 1:18 1:31	(4.8) 96%	(3.8) 76%	9				(7 joints at 35-45°; 1 joint at 70° with clay)
247.6	85.8	3.8	1:31 1:47 2:08	(3.8) 100%	(1.6) 42%	10				(12 joints at 30-40° with clay; 2 joints at 75° with Fe and Mn stain)
243.8	89.6	1.2	3:18/0.8	(1.0) 83%	(0.0) 0%	11				-Water loss during coring at 90.1 ft
242.6	90.8	5.0	5:15/1.2	(4.3) 86%	(2.6) 52%	12				(2 joints at 80° with Fe and Mn staining; 7 joints at 20-30° with Fe staining and clay; severely weathered zone from 93.8-95.0 ft with no recovery)
237.6	95.8	4.9	2:18 2:24 4:15 2:23 3:17	(4.8) 98%	(2.6) 53%	13				(2 joints at 65-75°, 8 joints at 35-45°, 2 joints at 20-30° -all with Fe and Mn staining)
232.7	100.7		2:22 2:21 2:23 2:48/0.9							232.7 Coring terminated at 100.7 ft in Hard Rock: Very hard, BIOTITE-QUARTZ GNEISS

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B-946 - Box 4  
B-946 - Box 3



MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST S. Lehman						
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)				
BORING NO. B-947		DRILL METHOD: Mud Rotary				SAMPLE METHODS: SPT				0 HR. ND				
COLLAR ELEV. 312.5 ft (NAVD88)		NORTHING 3,909,575		US ft (NAD83)		EASTING 11,686,367		US ft (NAD83)		24 HR. 19.5				
TOTAL DEPTH 88.8 ft		DRILL MACHINE CME 55LC Track				DRILLER: D. White				HAMMER TYPE 140 lbs Auto				
DATE STARTED 9/27/06			COMPLETED 9/28/06			CORE BARREL TYPE: NA								
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	
312.5					Ground Surface							312.5	0.0	
311.0	1.5										947-1			Elastic SILT (MH) light gray (2.5Y 7/2) and light greenish gray (GLE Y 1 8/5GY), dry to moist, stiff (Residual Soil)
309.0	3.5	4	6	9							947-2			
306.5	6.0	6	5	6							947-3			
304.0	8.5	4	3	6							947-4			Silty, SAND (SM) strong brown (7.5YR 4/6), moist, loose (Residual Soil)
301.5	11.0	4	4	5							947-5			
299.0	13.5	2	4	5							947-6			Sandy SILT (ML) light gray (2.5Y 7/2), moist, medium stiff (Residual Soil)
293.8	18.7	2	3	4							947-7			
288.8	23.7	5	6	6							947-8			Silty, fine to medium SAND (SM) reddish yellow (7.5YR 6/6), yellowish brown (2.5 Y 6/4), white (2.5Y 8/1), light yellow (2.5Y 7/3), and light olive brown (2.5Y 5/4&5/3), wet, medium dense to very dense, relict rock fabric (Residual Soil)
283.8	28.7	5	6	10							947-9			
278.8	33.7	4	3	10							947-10			
273.8	38.7	3	7	12							947-11			
268.8	43.7	12	14	16							947-12			
263.8	48.7	9	11	17							947-13			
258.8	53.7	13	23	24							947-14			
253.8	58.7	23	27	28							947-15			
248.8	63.7	36	50/0.4								947-16			Weathered Rock: Light yellowish brown (2.5Y 6/4) and light brownish gray (2.5Y 6/2), moist, very dense, severely weathered, soft, QUARTZ GNEISS
243.8	68.7	50/0.4									947-17			
238.8	73.7	50/0.3									947-18			

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MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST S. Lehman									
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)							
BORING NO. B-947		DRILL METHOD: Mud Rotary				SAMPLE METHODS: SPT				0 HR. ND							
COLLAR ELEV. 312.5 ft (NAVD88)		NORTHING 3,909,575		US ft (NAD83)		EASTING 11,686,367		US ft (NAD83)		24 HR. 19.5							
TOTAL DEPTH 88.8 ft		DRILL MACHINE CME 55LC Track				DRILLER: D. White				HAMMER TYPE 140 lbs Auto							
DATE STARTED 9/27/06				COMPLETED 9/28/06				CORE BARREL TYPE: NA									
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			
237.7					Continued from previous page												
233.8	78.7									947-19			Weathered Rock: Light yellowish brown (2.5Y 6/4) and light brownish gray (2.5Y 6/2), moist, very dense, severely weathered, soft, QUARTZ GNEISS (continued)				
228.8	83.7	50/0.2														947-20	
223.8	88.7	50/0.1														947-21	
													223.7	88.8	Boring terminated at 88.8 ft in Weathered Rock: Very dense, severely weathered, soft, QUARTZ GNEISS		

NORTH ANNA COL ...URE 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)					
BORING NO. B-948		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 21.7					
COLLAR ELEV. 310.4 ft (NAVD88)		NORTHING 3,909,619		US ft (NAD83)		EASTING 11,685,566		US ft (NAD83)		24 HR. 21.7					
TOTAL DEPTH 100.6 ft		DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto					
DATE STARTED 9/26/06				COMPLETED 9/28/06				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	
310.4					Ground Surface									310.4	0.0
308.9	1.5										948-1				
306.9	3.5	4	7	8							948-2				
304.4	6.0	5	9	10							948-3				
301.9	8.5	8	9	10							948-4				
299.4	11.0	9	9	9							948-5			299.9	10.5
296.7	13.7	6	8	11							948-6				
291.9	18.5	9	15	15							948-7				
286.9	23.5	7	8	10							948-8			288.4	22.0
281.9	28.5	45	50/0.4								948-9				
276.9	33.5	43	50/0.3								948-10				
		50/0.1												274.2	36.2
														261.0	49.4
														244.7	65.7

NORTH ANNA COL bore 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)				
BORING NO. B-948		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 21.7				
COLLAR ELEV. 310.4 ft (NAVD88)		NORTHING 3,909,619		US ft (NAD83)		EASTING 11,685,566		US ft (NAD83)		24 HR. 21.7				
TOTAL DEPTH 100.6 ft		DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto				
DATE STARTED 9/26/06				COMPLETED 9/28/06				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
235.6					Continued from previous page									
					.....								Hard Rock: Blue gray, slightly weathered to fresh, close to moderately close fracturing, hard, BIOTITE-QUARTZ GNEISS (continued)	
					.....								209.8	
					.....								100.6	Boring and coring terminated at 100.6 ft in Hard Rock: Hard, BIOTITE-QUARTZ GNEISS

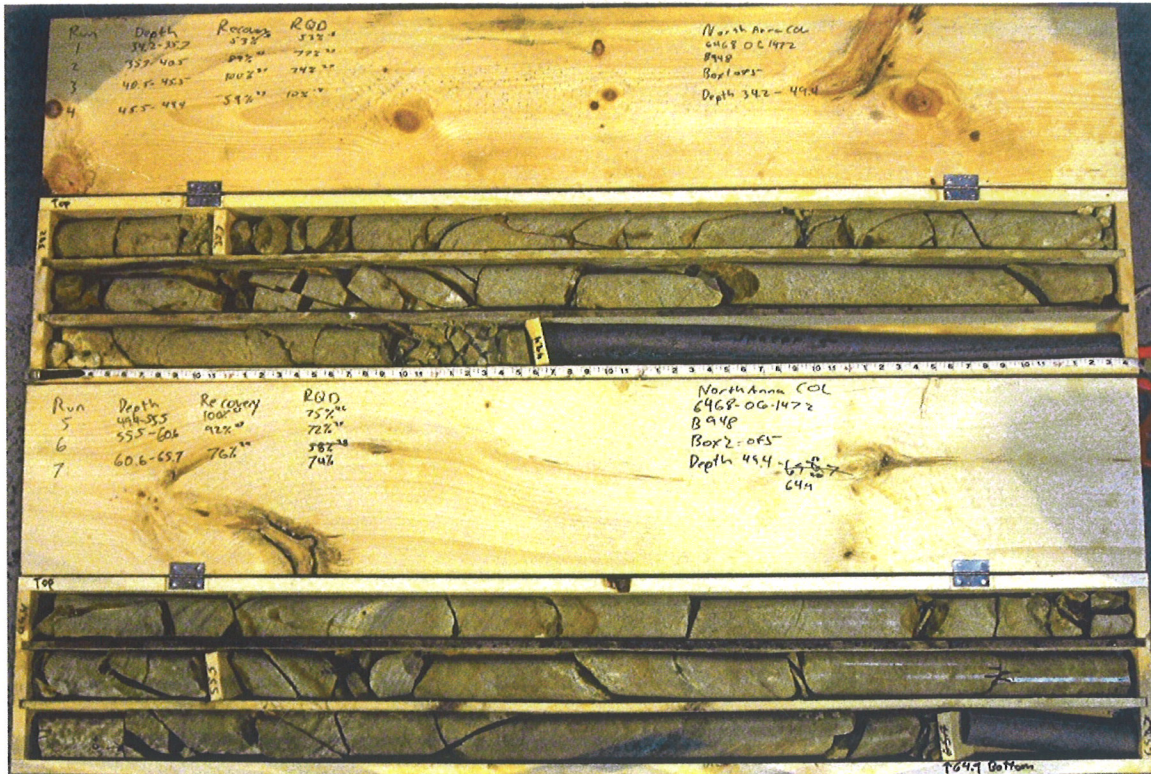
NORTH ANNA COL CORE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL.GDT 1/19/07





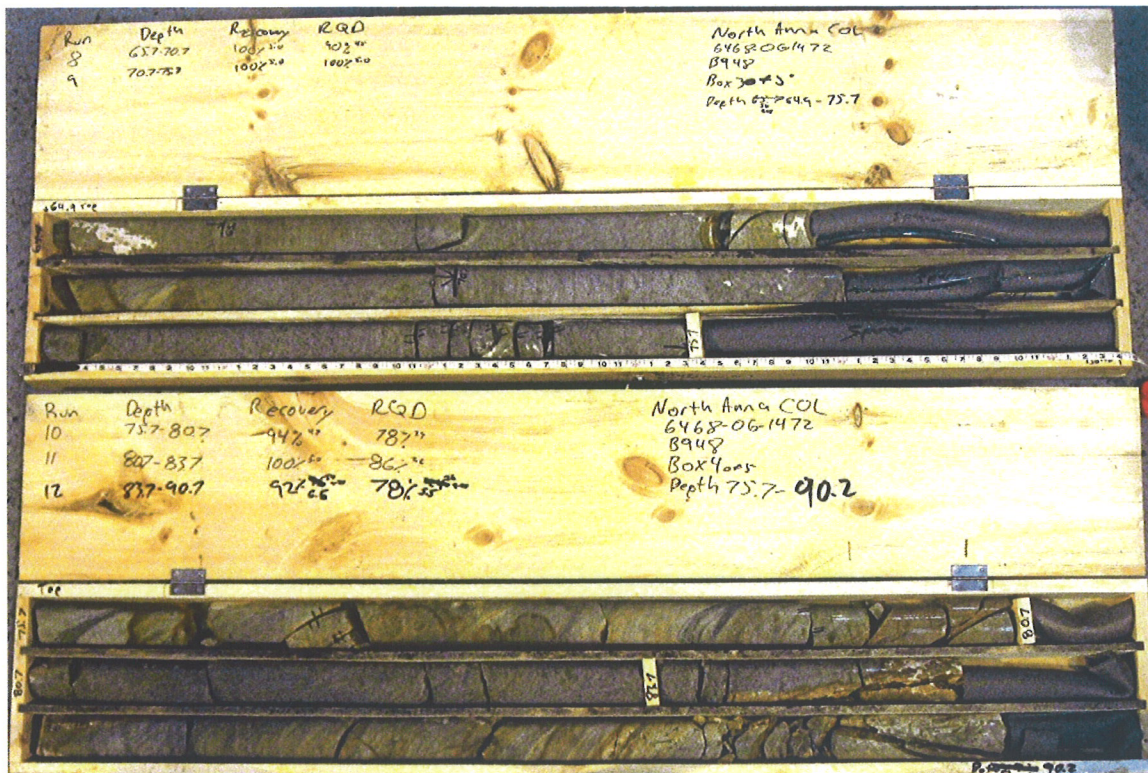
MACTEC PROJECT NO.: 6468-06-1472										COUNTY Louisa, VA		GEOLOGIST J. Howard	
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)			
BORING NO. B-948		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 21.7			
COLLAR ELEV. 310.4 ft (NAVD88)		NORTHING 3,909,619		US ft (NAD83)		EASTING 11,685,566		US ft (NAD83)		24 HR. 21.7			
TOTAL DEPTH 100.6 ft		DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto			
DATE STARTED 9/26/06				COMPLETED 9/28/06				CORE BARREL TYPE: HQ 3 triple tube-wireline					
CORE SIZE HQ3				TOTAL RUN 66.4 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 @ 34.2 ft			
276.2	34.2	1.5	1:30/1.5	(0.8)	(0.8)	1				274.2	Weathered Rock: Tan gray and brown tan, severely weathered, BIOTITE-QUARTZ GNEISS (continued) 36.2		
274.7	35.7	4.8	1:15 1:30 1:30 1:15	(4.3)	(3.7)	2					Hard Rock: Tan brown, moderately severe to moderately weathered, close fracturing, medium hard, BIOTITE-QUARTZ GNEISS with severely weathered zones		
269.9	40.5	5.0	1:30/0.8 2:15 1:00 1:15 1:30	(5.0)	(3.7)	3					(4 joints at 50°, 1 joint at 8°, 1 joint at 20°)		
264.9	45.5	3.9	1:00 1:00 0:45	(2.3)	(0.4)	4							
261.0	49.4	6.1	2:30/0.9 1:30 1:45 1:45 1:00 1:30 1:30/1.1	(6.1)	(4.6)	5				261.0	Hard Rock: Orange tan and tan gray, moderately weathered to fresh, close to moderately close fracturing, medium hard to hard, BIOTITE-QUARTZ GNEISS (5 joints at 30°, 3 joints at 60-70°) 49.4		
254.9	55.5	5.1	1:00 1:15 1:00 2:00 1:30/1.1	(4.7)	(3.7)	UC-56.8'					(3 joints at 40°, 1 joint at 10°)		
249.8	60.6	5.1	1:30 1:30 1:30 1:15 2:15/1.1	(3.9)	(3.8)	7							
244.7	65.7	5.0	2:00 2:15 3:00 3:30 4:15	(5.0)	(4.5)	8				244.7	Hard Rock: Blue gray, slightly weathered to fresh, close to moderately close fracturing, hard, BIOTITE-QUARTZ GNEISS 65.7		
239.7	70.7	5.0	3:15 1:45 1:45 2:30 3:15	(5.0)	(5.0)	9					(1 joint at 80°, 5 joints at 10°)		
234.7	75.7	5.0	2:30 2:15 3:15 2:15 3:30	(4.7)	(3.9)	UC-76.1'					(2 joints at 30°, 3 joints at 50°)		
229.7	80.7	3.0	5:30 8:45 10:45	(3.0)	(2.6)	11					(4 joints at 20-30°)		
226.7	83.7	7.0	9:30 3:30 2:00 1:30 2:15 ND ND	(6.5)	(5.5)	12							
219.7	90.7	4.7	2:45 2:30 3:30 3:15 4:00/0.7	(4.7)	(3.8)	13					(2 joints at 70°, 3 joints at 10-20°, 2 joints at 40-50°)		
215.0	95.4	5.2	4:15 4:00 4:00 3:30 3:33/1.2	(5.0)	(4.6)	14					(2 joints at 10°, 4 joints at 30-40°, 2 joints at 70°)		
209.8	100.6									209.8	Coring terminated at 100.6 ft in Hard Rock: Hard, BIOTITE-QUARTZ GNEISS 100.6		

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



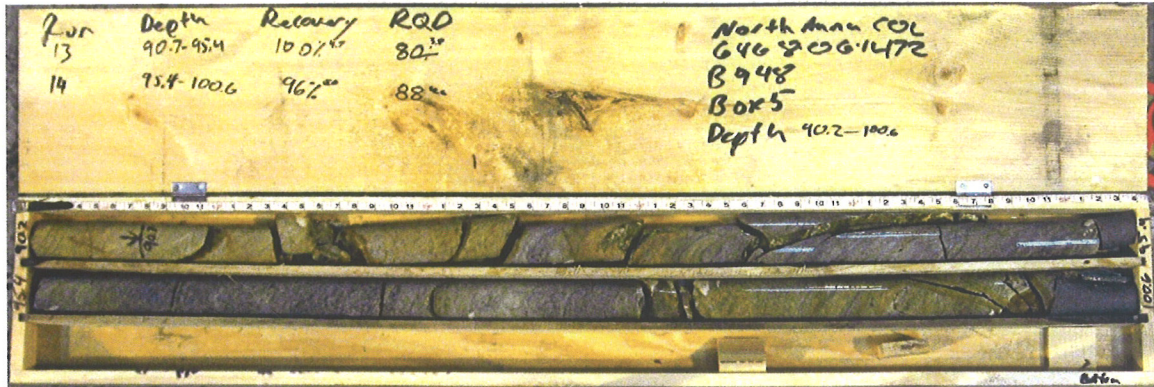
B-948 - Box 1

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B-948 - Box 3

B-948 - Box 4



B-948 - Box 5





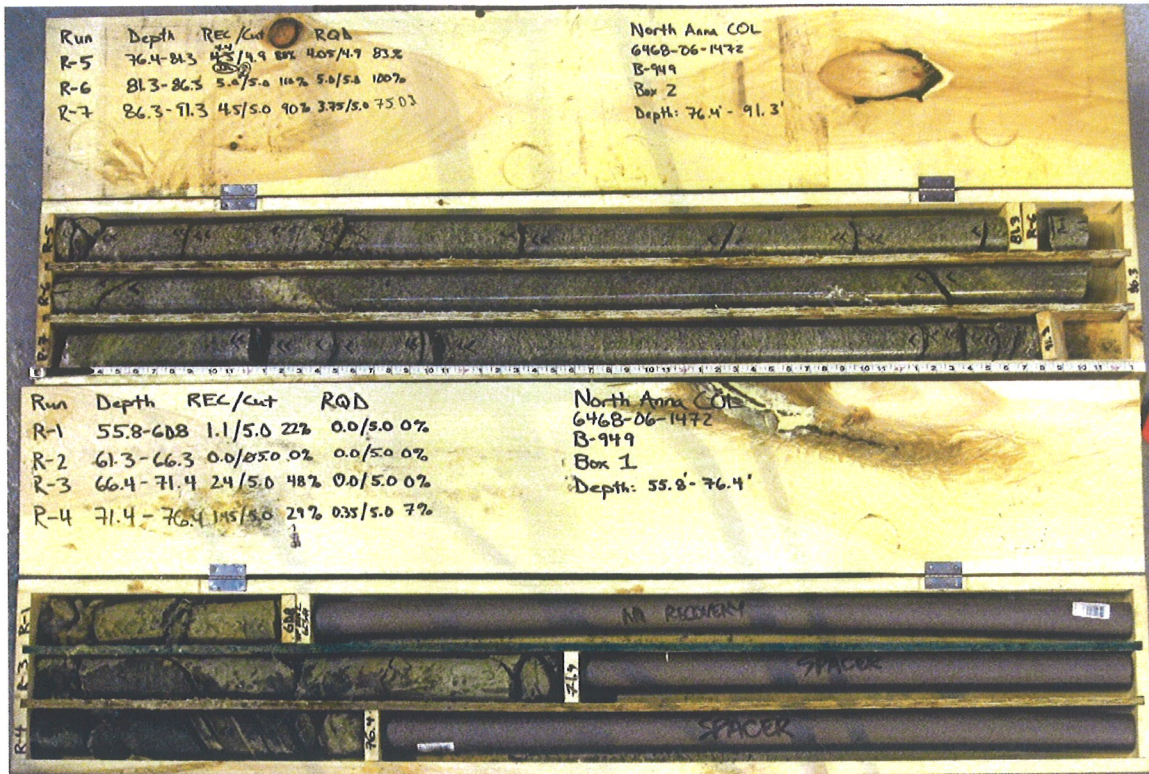
MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST J. Lachewitz						
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)				
BORING NO. B-949		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 20.2				
COLLAR ELEV. 334.8 ft (NAVD88)		NORTHING 3,909,018		US ft (NAD83)		EASTING 11,685,157		US ft (NAD83)		24 HR. ND				
TOTAL DEPTH 106.4 ft		DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto				
DATE STARTED 8/11/06			COMPLETED 8/15/06			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	
260.0					Continued from previous page									
												258.4	76.4	Hard Rock: Gray to white, moderately to slightly weathered, close to moderately close fracturing, medium hard to hard, QUARTZ-BIOTITE GNEISS with trace magnetite
												228.4	106.4	Boring and coring terminated at 106.4 ft in Hard Rock: Moderately hard, QUARTZ-BIOTITE GNEISS

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



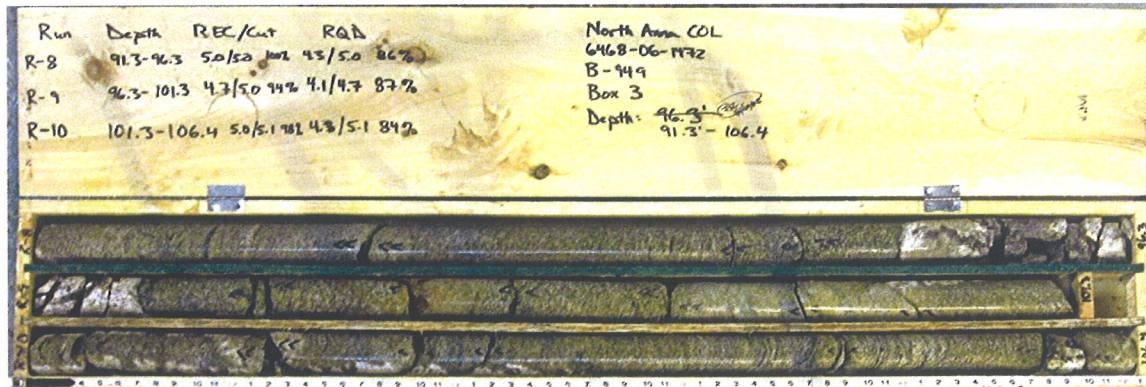
MACTEC PROJECT NO.: 6468-06-1472							COUNTY Louisa, VA			GEOLOGIST J. Lachewitz		
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)		
BORING NO. B-949			DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE				0 HR. 20.2		
COLLAR ELEV. 334.8 ft (NAVD88)			NORTHING 3,909,018		US ft (NAD83)		EASTING 11,685,157		US ft (NAD83)		24 HR. ND	
TOTAL DEPTH 106.4 ft			DRILL MACHINE CME 550 ATV			DRILLER: G. Akins			HAMMER TYPE 140 lbs Auto			
DATE STARTED 8/11/06			COMPLETED 8/15/06			CORE BARREL TYPE: HQ 3 triple tube-wireline						
CORE SIZE HQ3			TOTAL RUN 50.0 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 @ 56.1 ft		
278.7	56.1	4.7	0:57 2:22 1:17 1:50	(1.1) 23%	(0.0) 0%	1				Weathered Rock: Brown, black, and very dark gray, severely weathered, very close to close fracturing, very soft to soft, BIOTITE GNEISS (continued) -Poor Recovery		
274.0	60.8		1:02/0.7									
273.5	61.3	5.0	N=50/0.5 1:41 1:32 1:27 1:38 1:43	(0.0) 0%	(0.0) 0%	949-15 2				-No Recovery		
268.5	66.3											
268.3	66.5	4.9	N=50/0.2 4:49 2:58 5:50 3:01	(2.4) 49%	(0.0) 0%	949-16 3				-Poor Recovery		
263.4	71.4		2:43/0.9									
		5.0	3:33 3:34 2:46 1:27 2:20	(1.5) 30%	(0.0) 0%	4				-Poor Recovery		
258.4	76.4											
		4.9	1:35 1:39 1:46 1:33 2:09/0.9	(4.3) 88%	(4.1) 84%	5				Hard Rock: Gray to white, moderately to slightly weathered, close to moderately close fracturing, medium hard to hard, QUARTZ-BIOTITE GNEISS with trace magnetite (5 joints at 0-30° with Fe stain) (2 joints at 45-55° with Fe stain)		
253.5	81.3											
		5.0	1:35 2:22 2:24 2:31 4:10	(5.0) 100%	(5.0) 100%	6						
248.5	86.3											
		5.0	2:00 1:00 1:47 1:28 1:41	(4.5) 90%	(3.8) 76%	7				(4 joints at 10-40°)		
243.5	91.3											
		5.0	1:28 2:00 1:59 1:15 2:53	(5.0) 100%	(4.3) 86%	8				(5 joints at 5-45°)		
238.5	96.3											
		5.0	1:07 1:19 1:09 0:55 1:30	(4.7) 94%	(4.4) 88%	9				(Multiple joints at 0-75°)		
233.5	101.3											
		5.1	1:02 1:22 1:22 1:07 1:32/1.1	(5.0) 98%	(4.3) 84%	10				(Multiple joints at 0-75°)		
228.4	106.4											
										Coring terminated at 106.4 ft in Hard Rock: Moderately hard, QUARTZ-BIOTITE GNEISS		

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



B-949 - Box 2

B-949 - Box 1



B-949 - Box 3



MACTEC PROJECT NO.: 6468-06-1472			COUNTY Louisa, VA			GEOLOGIST S. Nicely		
SITE DESCRIPTION NORTH ANNA COL						GROUND WATER (ft)		
BORING NO. B-950		DRILL METHOD: Mud Rotary/Core		SAMPLE METHODS: SPT/CORE				0 HR. 10.4
COLLAR ELEV. 282.5 ft (NAVD88)		NORTHING 3,910,836		US ft (NAD83)		EASTING 11,686,282		24 HR. 41.1
TOTAL DEPTH 100.8 ft		DRILL MACHINE CME 55 Truck		DRILLER: H. Meyerson			HAMMER TYPE 140 lbs Auto	
DATE STARTED 8/11/06		COMPLETED 8/15/06		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			
282.5					Ground Surface							282.5 0.0
281.0	1.5									950-1		Silty, fine to coarse SAND (SM) yellowish brown (10YR 5/4), moist, loose to very loose, trace gravel (Fill)
279.0	3.5	3	5	5						950-2		
276.5	6.0									950-3		Sandy SILT (ML) yellowish brown (10YR 5/6), moist, medium stiff, trace clay (Residual Soil)
274.0	8.5	WOH	WOH	2						950-4	275.2 7.3	
271.4	11.1	4	4	4						950-5		Silty, fine to coarse SAND (SM) yellowish brown (10YR 5/6) to dark yellowish brown (10YR 4/4&4/6), moist, medium dense to dense, trace gravel (Residual Soil)
269.0	13.5	4	5	8						950-6	272.0 10.5	
263.8	18.7	5	7	14								Weathered Rock: Dark yellowish brown (10YR 4/6) and very dark greenish gray (GLEY 1 3/1), moist to dry, very dense, severely weathered, BIOTITE GNEISS
258.8	23.7	11	17	19						950-7	261.5 21.0	
253.8	28.7	28	50/0.5							950-8		Hard Rock: Dark gray, slightly to very slightly weathered, very close to moderately close fracturing, hard, QUARTZ-BIOTITE GNEISS
248.8	33.7	50/0.3								950-9		
243.8	38.7	50/0.2								950-10		Hard Rock: Dark gray, very slightly weathered to fresh, very close to wide fracturing, hard to very hard, QUARTZ-BIOTITE GNEISS
238.8	43.7	50/0.3								950-11	232.2 50.3	
233.8	48.7	50/0.3								950-12		Hard Rock: Dark gray, very slightly weathered to fresh, very close to wide fracturing, hard to very hard, QUARTZ-BIOTITE GNEISS
232.2	50.3	50/0.0								950-13	218.7 63.8	
										950-14		

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 S. Nicely						
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)				
BORING NO. B-950		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 10.4				
COLLAR ELEV. 282.5 ft (NAVD88)		NORTHING 3,910,836		US ft (NAD83)		EASTING 11,686,282		US ft (NAD83)		24 HR. 41.1				
TOTAL DEPTH 100.8 ft		DRILL MACHINE CME 55 Truck				DRILLER: H. Meyerson				HAMMER TYPE 140 lbs Auto				
DATE STARTED 8/11/06			COMPLETED 8/15/06			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
207.7					Continued from previous page									
													Hard Rock: Dark gray, very slightly weathered to fresh, very close to wide fracturing, hard to very hard, QUARTZ-BIOTITE GNEISS (continued)	
													Boring and coring terminated at 100.8 ft in Hard Rock: Very hard, QUARTZ-BIOTITE GNEISS	

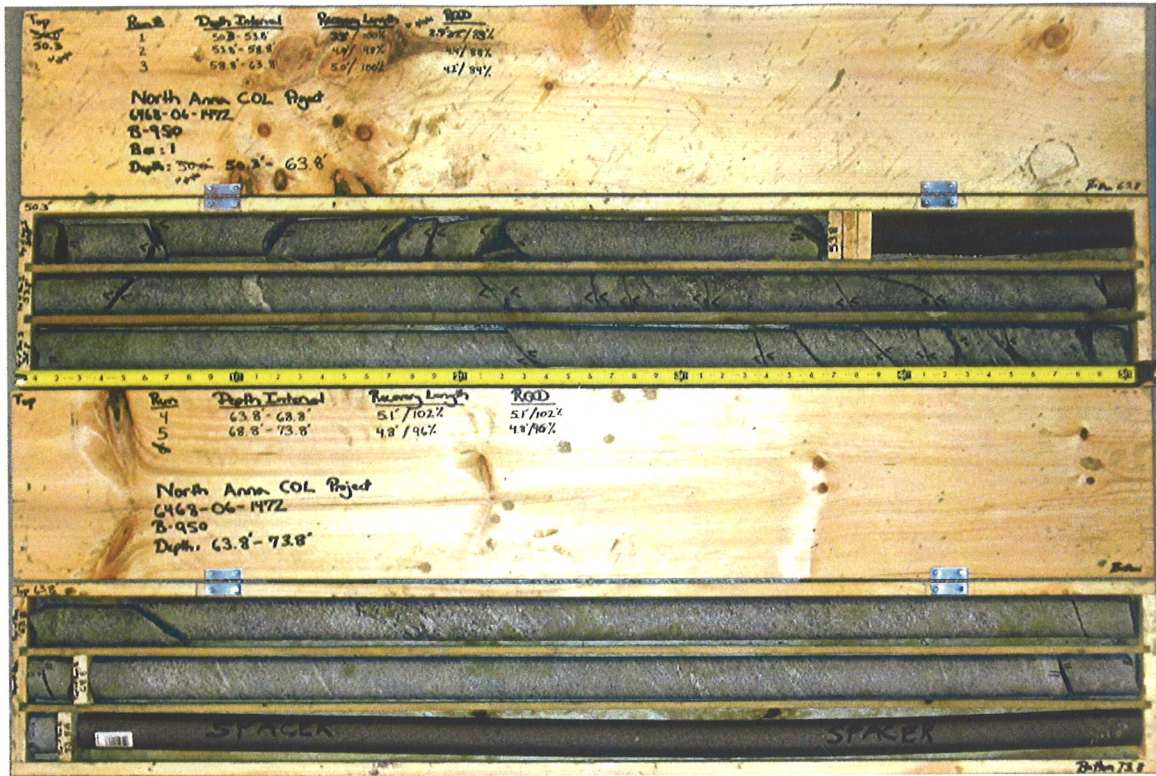
NORTH ANNA COL CORE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL.GDT 1/19/07



MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA		GEOLOGIST S. Nicely	
SITE DESCRIPTION NORTH ANNA COL							GROUND WATER (ft)
BORING NO. B-950		DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE		0 HR. 10.4
COLLAR ELEV. 282.5 ft (NAVD88)		NORTHING 3,910,836 US ft (NAD83)		EASTING 11,686,282 US ft (NAD83)		24 HR. 41.1	
TOTAL DEPTH 100.8 ft		DRILL MACHINE CME 55 Truck			DRILLER: H. Meyerson		HAMMER TYPE 140 lbs Auto
DATE STARTED 8/11/06			COMPLETED 8/15/06		CORE BARREL TYPE: HQ 3 triple tube-wireline		
CORE SIZE HQ3			TOTAL RUN 50.5 ft				

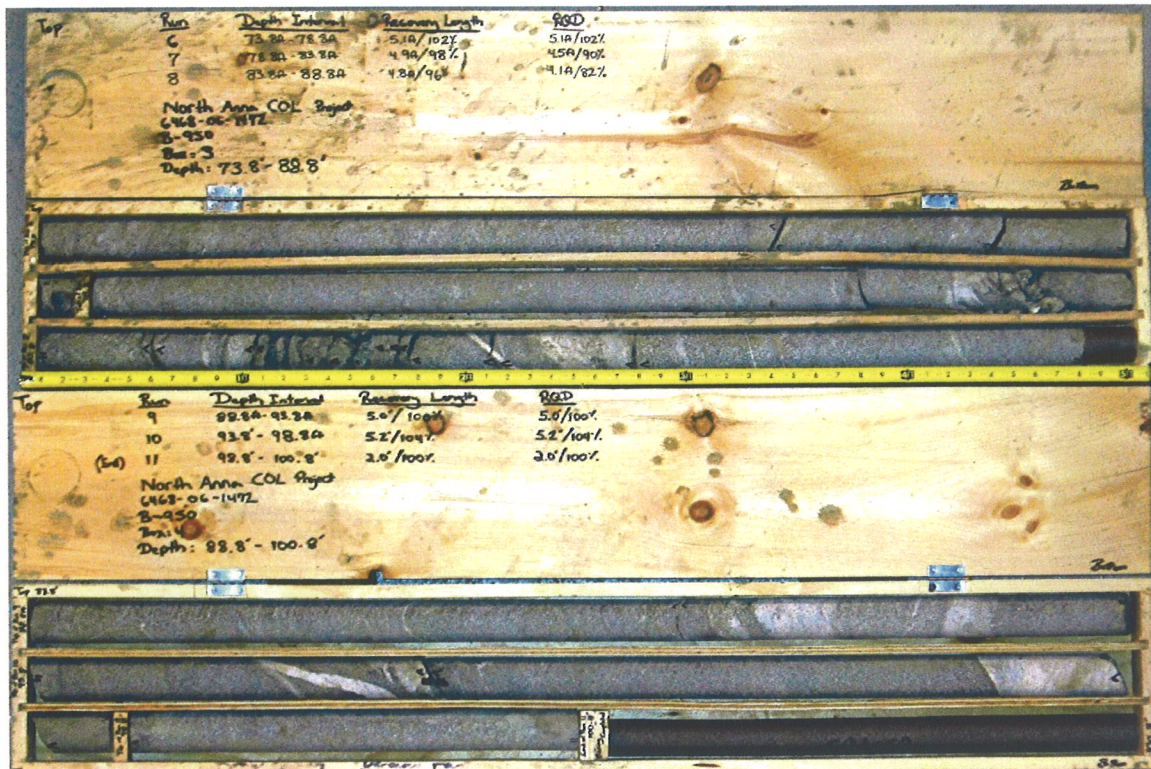
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC. (ft) %	ROD (ft) %		REC. (ft) %	ROD (ft) %		
										Begin Coring @ 50.3 ft
232.2	50.3	3.5	N=50/0.0 2:57/0.5 1:50 1:58	(3.5) 100%	(2.9) 83%	1				232.2 Hard Rock: Dark gray, slightly to very slightly weathered, very close to moderately close fracturing, hard, QUARTZ-BIOTITE GNEISS
228.7	53.8	5.0	1:39 2:03 2:14 2:08 2:35 2:34	(4.9) 98%	(4.4) 88%	2				(2 joints at 40-50° with clay; 2 joints at 10-20°; 1 joint at 50-60°; severely weathered zone from 52.3-52.5 ft) (1 joint at 70-80° with chlorite; 3 joints at 20-30° with clay; 3 joints at 30-40° with clay)
223.7	58.8	5.0	2:16 2:10 2:18 2:10 2:46	(5.0) 100%	(4.2) 84%	3				(6 joints at 40-50° and 3 joints at 20-30° with moderate weathering)
218.7	63.8	5.0	3:55 1:44 1:34 2:25 1:44	(5.1) 102%	(5.1) 102%	4				218.7 Hard Rock: Dark gray, very slightly weathered to fresh, very close to wide fracturing, hard to very hard, QUARTZ-BIOTITE GNEISS (1 joint at 40-50°)
213.7	68.8	5.0	1:51 1:24 1:37 1:46 2:36	(4.8) 96%	(4.8) 96%	5				-No Joints
208.7	73.8	5.0	2:31 1:30 1:42 1:23 1:47	(5.1) 102%	(5.1) 102%	6				(1 joint at 20-30° with clay)
203.7	78.8	5.0	1:34 1:47 1:52 2:05 1:48	(4.9) 98%	(4.5) 90%	7				(1 joint at 20-30°; Quartz vein from 83.0-83.4 ft)
198.7	83.8	5.0	2:01 1:46 2:02 2:23 2:20	(4.8) 96%	(4.1) 82%	8				(2 joints at 10-20° with Fe stain; Quartz vein from 86.2-86.5 ft with small vugs and epidote mineralization; highly fractured, severely weathered zone from 84.8-85.5 ft)
193.7	88.8	5.0	2:10 2:11 2:18 3:17 2:00	(5.0) 100%	(5.0) 100%	9				(1 joint at 10-20° with trace clay)
188.7	93.8	5.0	2:43 1:53 1:58 1:54 3:34	(5.2) 104%	(5.2) 104%	10				(2 joints at 20-30°)
183.7	98.8	2.0	2:09 2:03	(2.0) 100%	(2.0) 100%	11				-No Joints
181.7	100.8									181.7 Coring terminated at 100.8 ft in Hard Rock: Very hard, QUARTZ-BIOTITE GNEISS

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



B-950 - Box 1

B-950 - Box 2



B-950 - Box 3

B-950 - Box 4