

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



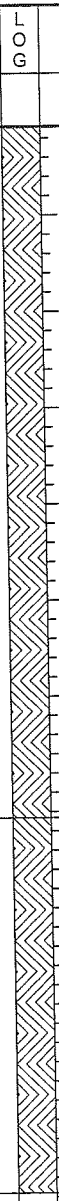
SHEET 2 OF 2

MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST J. Lachewitz/ M. Lear								
SITE DESCRIPTION NORTH ANNA COL								GROUND WATER (ft)								
BORING NO. B-925		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 12.3						
COLLAR ELEV. 270.0 ft (NAVD88)		NORTHING 3,910,037		US ft (NAD83)		EASTING 11,686,576		US ft (NAD83)		24 HR. 12.3						
TOTAL DEPTH 75.8 ft		DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto						
DATE STARTED 10/30/06		COMPLETED 10/31/06				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						
195.2					Continued from previous page											
														194.2	75.8	Boring and coring terminated at 75.8 ft in Hard Rock: Hard to very hard, BIOTITE-QUARTZ GNEISS

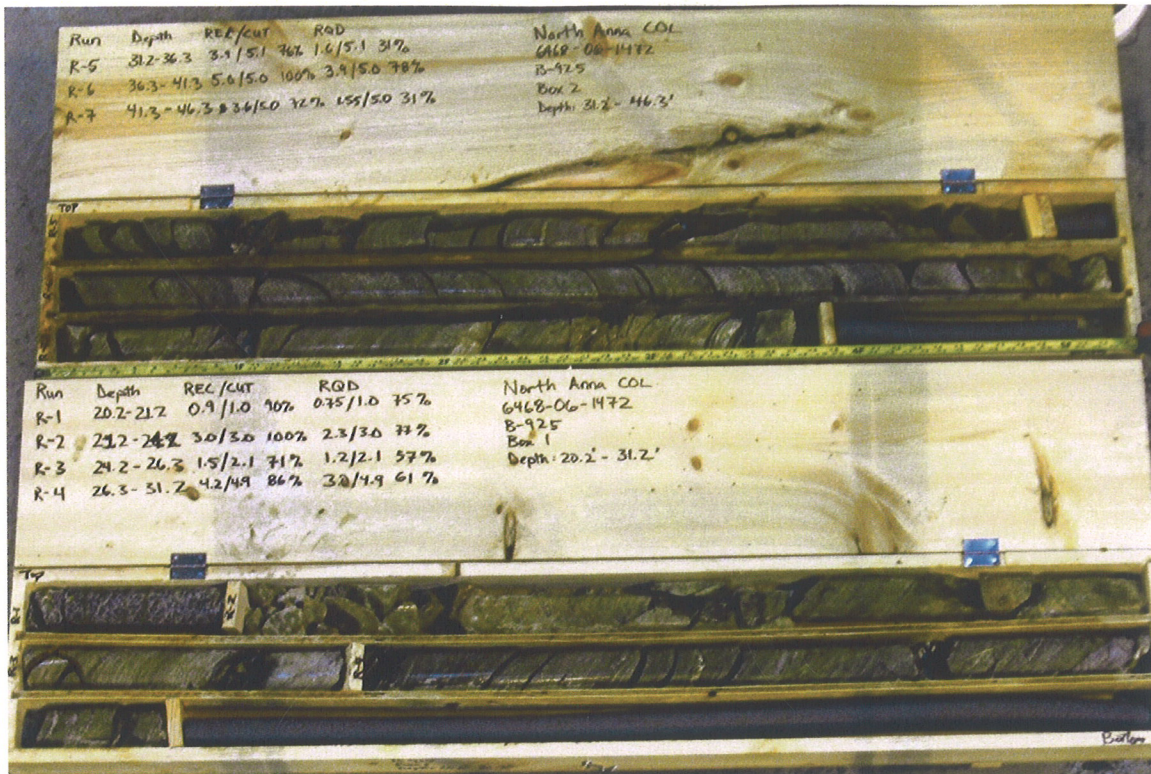
NORTH ANNA COL CORE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL.GDT 1/19/07



SHEET 1 OF 1

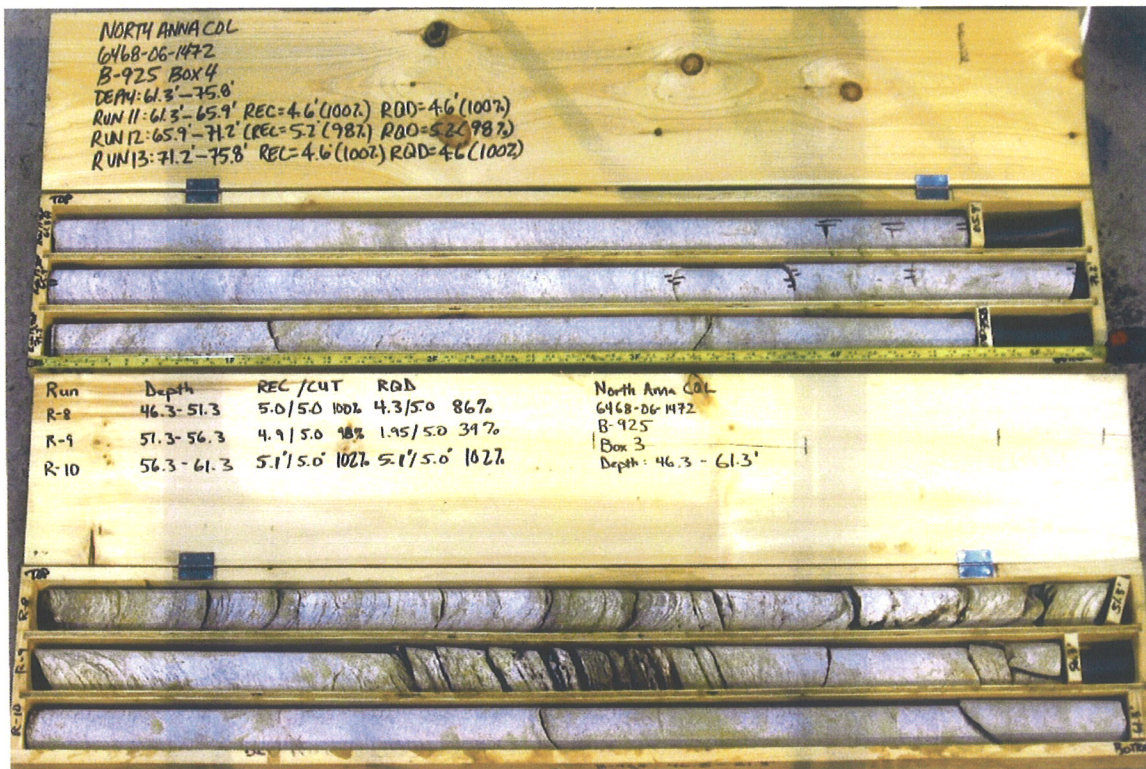
MACTEC PROJECT NO.: 6468-06-1472							COUNTY Louisa, VA			GEOLOGIST J. Lachewitz/ M. Lear		
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)		
BORING NO. B-925			DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 12.3	
COLLAR ELEV. 270.0 ft (NAVD88)			NORTHING 3,910,037		US ft (NAD83)		EASTING 11,686,576		US ft (NAD83)		24 HR. 12.3	
TOTAL DEPTH 75.8 ft			DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto	
DATE STARTED 10/30/06			COMPLETED 10/31/06				CORE BARREL TYPE: HQ 3 triple tube-wireline					
CORE SIZE HQ3			TOTAL RUN 55.6 ft									
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. RQD (ft) (%)		SAMP. NO.	STRATA REC. RQD (ft) (%)		L O G	DESCRIPTION AND REMARKS		
										Begin Coring @ 20.4 ft		
249.6	20.4	0.8	5:48/0.8	(0.8)	(0.8)	1					249.6 Hard Rock: Light gray and pinkish white, moderately severely to slightly weathered, very close to close fracturing, soft to moderately hard, BIOTITE-QUARTZ GNEISS (2 joints at 0-10° slight weathering and Fe stain) (Multiple joints at 0-60°; highly weathered fracture zone from 21.2-22.2 ft) (3 joints at 45-60° with Fe stain) (Multiple joints at 45° with Fe stain and weathering)	
248.8	21.2	3.0	2:59	100%	100%	2						
245.8	24.2		2:38	(3.0)	(2.3)							
			4:02	100%	77%	3						
243.7	26.3	2.1	4:38	(1.5)	(1.2)							
			3:39/1.1	71%	57%	4						
		4.9	2:42	(4.2)	(3.0)							
			1:54	86%	61%							
			1:54									
			1:46									
238.8	31.2		1:58/0.9									
		5.1	1:39	(3.9)	(1.6)	5					(Multiple joints at 0-90° with Fe stain, clay, and weathering)	
			1:18	76%	31%							
			1:37									
			2:22									
233.7	36.3		1:56/1.1									
		5.0	3:11	(5.0)	(3.9)	6				(Multiple joints at 35-75°, some with Fe stain and weathering)		
			2:12	100%	78%							
			2:23									
			2:10									
228.7	41.3		3:44									
		5.0	2:29	(3.6)	(1.6)	7				(Multiple joints at 10-60°, severely weathered)		
			2:05	72%	32%							
			1:29									
			1:37									
223.7	46.3		4:31									
		5.0	1:28	(5.0)	(4.3)	8				(Multiple joints at 10-45°, some severely weathered with Fe staining)		
			2:21	100%	86%							
			1:18									
			2:30									
218.7	51.3		2:09									
		5.0	2:37	(4.9)	(2.0)	9				(Multiple joints at 10-55°, some severely weathered with Fe staining)		
			2:13	98%	40%							
			1:23									
			2:27									
213.7	56.3		2:14									
		5.0	2:40	(5.1)	(5.1)	10				213.7 Hard Rock: Light gray, slightly weathered to fresh, moderately close to wide fracturing, hard to very hard, BIOTITE-QUARTZ GNEISS (2 joints at 50-60° with trace clay)		
			2:46	102%	102%							
			3:28									
			3:12									
208.7	61.3		3:56									
		4.6	4:10	(4.6)	(4.6)	11				-No Joints		
			5:04	100%	100%							
			5:30									
			5:45									
204.1	65.9		6:40/0.6									
		5.3	3:45	(5.2)	(5.2)	12				-No Joints		
			2:47	98%	98%							
			3:18									
			3:48									
198.8	71.2		5:48/1.3									
		4.6	3:47	(4.6)	(4.6)	13				(2 joints at 40-50° with trace clay)		
			3:38	100%	100%							
			3:52									
			3:58									
194.2	75.8		2:54/0.6							194.2 Coring terminated at 75.8 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 GDI 1/19/07



B-925 - Box 2

B-925 - Box 1



B-925 - Box 4

B-925 - Box 3

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

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SHEET 3 OF 3

MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST J. Howard					
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft) 0 HR. 18.6 24 HR. 19.8			
BORING NO. B-926		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE							
COLLAR ELEV. 289.0 ft (NAVD88)		NORTHING 3,910,043		US ft (NAD83)		EASTING 11,685,709		US ft (NAD83)					
TOTAL DEPTH 155.5 ft		DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto			
DATE STARTED 9/29/06				COMPLETED 10/10/06				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			
139.4					Continued from previous page								
													138.5 Hard Rock: Blue-gray, very slightly weathered to fresh, close to moderately close fracturing, hard, BIOTITE-QUARTZ GNEISS 133.5 Boring and coring terminated at 155.5 ft in Hard Rock: Hard, BIOTITE-QUARTZ GNEISS 155.5

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



SHEET 1 OF 2

MACTEC PROJECT NO.: 6468-06-1472							COUNTY Louisa, VA			GEOLOGIST J. Howard		
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)		
BORING NO. B-926			DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE				0 HR. 18.6		
COLLAR ELEV. 289.0 ft (NAVD88)			NORTHING 3,910,043		US ft (NAD83)		EASTING 11,685,709		US ft (NAD83)		24 HR. 19.8	
TOTAL DEPTH 155.5 ft			DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto	
DATE STARTED 9/29/06			COMPLETED 10/10/06				CORE BARREL TYPE: HQ 3 triple tube-wireline					
CORE SIZE HQ3			TOTAL RUN 96.2 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 @ 59.3 ft
229.7	59.3	5.3	1:15 1:15 1:00 1:45 1:15/1.3	(1.5) 28%	(0.0) 0%	1						Weathered Rock: Tan-orange, BIOTITE-QUARTZ GNEISS (continued)
224.4	64.6											225.2 63.8 224.4 64.6
		5.0	0:45 1:45 1:45 2:45 2:30	(3.0) 60%	(2.9) 58%	2						Hard Rock: Tan-gray, moderately weathered, close fracturing, medium hard, BIOTITE-QUARTZ GNEISS
219.4	69.6											Weathered Rock: No recovery-BIOTITE-QUARTZ GNEISS (2 joints at 50°)
		5.0	1:45 1:30 1:15 2:15 3:30	(4.7) 94%	(4.0) 80%	3						Hard Rock: Tan-gray to blue-gray, moderately weathered to fresh, close to moderately close fracturing, hard to very hard, BIOTITE-QUARTZ GNEISS with trace magnetite and epidote (3 joints at 30°, 2 joints at 60°, 1 joint at 40°)
214.4	74.6											(2 joints at 60°)
		5.0	2:30 2:45 1:45 1:15 2:45	(5.0) 100%	(5.0) 100%	4						
209.4	79.6											(1 joint at 30°, 2 joints at 70°; complete loss of circulation/100% water loss to formation)
		4.8	2:15 2:15 2:00 2:15 2:00/0.8	(4.5) 94%	(4.5) 94%	5						
204.6	84.4											(3 joints at 60-70°)
		5.1	3:45 3:45 3:15 3:00 5:15/1.1	(5.0) 98%	(5.0) 98%	6						
199.5	89.5											(1 joint at 20°, 1 joint at 70°)
		5.0	6:00 3:15 3:00 3:45 5:30	(4.2) 84%	(3.3) 66%	7						
194.5	94.5											(1 joint at 50°, 1 joint at 30°)
		2.0	9:00 14:15	(2.0) 100%	(2.0) 100%	8						
192.5	96.5											
		8.0	4:00 3:00 4:15 2:30 3:00 2:45 2:30	(8.0) 100%	(7.0) 88%	9						
184.5	104.5											185.6 103.4
		5.0	3:30 2:15 2:45 2:15 2:30	(4.9) 98%	(2.9) 58%	10						Hard Rock: Brown, dark gray, and dark gray-blue, moderately weathered, close fracturing, moderately hard, BIOTITE-QUARTZ GNEISS with weathered zones (13 joints at 30-40°, 1 joint at 70°)
179.5	109.5											179.5 109.5
		5.0	4:30 4:30 4:00 4:15 4:45	(5.0) 100%	(4.9) 98%	11						Hard Rock: Blue-gray, slightly weathered to fresh, close to moderately close fracturing, hard to very hard, BIOTITE-QUARTZ GNEISS (2 joints at 80°, 1 joint at 30°)
174.5	114.5											(2 joints at 60°, 1 joint at 0°, 1 joint at 20°)
		5.0	4:30 3:00 4:15 4:30 2:45	(5.0) 100%	(4.9) 98%	12						
169.5	119.5											(5 joints at 10-20°, 1 joint at 60°, 1 joint at 40°)
		5.0	3:00 1:30 1:30 2:00 1:45	(5.0) 100%	(4.5) 90%	13						
164.5	124.5											(3 joints at 80°, 2 joints at 10°, 1 joint at 60°)
		5.0	3:00 4:00 3:00 3:00 4:30	(5.0) 100%	(4.9) 98%	14						
159.5	129.5											
		3.9	2:45 2:45 3:15 3:15/0.9	(3.6) 92%	(3.4) 87%	15						
155.6	133.4											

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SHEET 2 OF 2

MACTEC PROJECT NO.: 6468-06-1472						COUNTY Louisa, VA		GEOLOGIST J. Howard		
SITE DESCRIPTION NORTH ANNA COL									GROUND WATER (ft)	
BORING NO. B-926			DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE			0 HR. 18.6	
COLLAR ELEV. 289.0 ft (NAVD88)			NORTHING 3,910,043 US ft (NAD83)			EASTING 11,685,709 US ft (NAD83)			24 HR. 19.8	
TOTAL DEPTH 155.5 ft			DRILL MACHINE CME 550 ATV			DRILLER: G. Akins			HAMMER TYPE 140 lbs Auto	
DATE STARTED 9/29/06			COMPLETED 10/10/06			CORE BARREL TYPE: HQ 3 triple tube-wireline				
CORE SIZE HQ3			TOTAL RUN 96.2 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
										Continued from previous page
149.7	139.3	5.9	4:30 6:00 9:00 3:00 2:45 4:15/0.9	(5.9) 100%	(4.2) 71%	16				(3 joints at 40°, 2 joints at 20°) Hard Rock: Blue-gray, slightly weathered to fresh, close to moderately close fracturing, hard to very hard, BIOTITE-QUARTZ GNEISS (<i>continued</i>)
144.1	144.9	5.6	2:30 2:15 2:15 3:45 5:45/1.6	(0.2) 4%	(0.0) 0%	17				Hard Rock-Weathered Rock: Brown and blue-gray, severely to slightly weathered, very close to closely fractured, soft to moderately hard, BIOTITE-QUARTZ GNEISS
138.5	150.5	5.6	2:00 0:45 2:45 2:45 3:30/1.6	(1.9) 34%	(0.0) 0%	18				
133.5	155.5	5.0	2:00 2:00 2:00 2:00 2:30	(5.0) 100%	(4.6) 92%	19				Hard Rock: Blue-gray, very slightly weathered to fresh, close to moderately close fracturing, hard, BIOTITE-QUARTZ GNEISS (1 joint at 70°, 3 joints at 40°)
										Coring terminated at 155.5 ft in Hard Rock: Hard, BIOTITE-QUARTZ GNEISS



B-926 – Box 1

B-926 – Box 2



B-926 – Box 3

B-926 – Box 4



B-926 - Box 5

B-926 - Box 6