

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

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



SHEET 1 OF 3

MACTEC PROJECT NO.: 6468-06-1472						COUNTY Louisa, VA				GEOLOGIST S. Lehman			
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)			
BORING NO. B-902			DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 25.2		
COLLAR ELEV. 302.2 ft (NAVD88)			NORTHING 3,909,874		US ft (NAD83)		EASTING 11,685,884		US ft (NAD83)		24 HR. 25.4		
TOTAL DEPTH 201.7 ft			DRILL MACHINE CME 55LC Track				DRILLER: D. White				HAMMER TYPE 140 lbs Auto		
DATE STARTED 8/28/06				COMPLETED 9/7/06				CORE BARREL TYPE: HQ 3 triple tube-wireline					
CORE SIZE HQ3				TOTAL RUN 178.1 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 @ 23.6 ft			
278.6	23.6	1.9	2:46	(1.9)	(1.4)	1				278.4	Weathered Rock: Light gray and brown, very severely to severely weathered, QUARTZ GNEISS with biotite (continued)		
276.7	25.5		7:08/0.9	100%	74%								
275.4	26.8	1.3	0:12/0.1	(1.3)	(1.3)	2				275.4	(2 joints at 45°; 1 joint at 80° with Fe stain)		
		5.0	2:29	100%	100%	UCS-27.3'					Hard Rock: Light gray with orange Fe staining, slightly weathered, moderately close to wide fracturing, moderately hard, QUARTZ GNEISS with biotite and trace magnetite		
			0:06/0.2	100%	100%						-No Joints		
			3:29	(5.0)	(5.0)						Hard Rock: Light gray with orange Fe staining, very slightly weathered to fresh, moderately close to wide fracturing, hard, QUARTZ GNEISS with biotite and trace magnetite		
270.4	31.8		4:08	100%	100%								
			5:24										
			6:12										
		2.1	7:25	(2.1)	(1.9)	4							
268.3	33.9		4:46	100%	90%								
267.5	34.7	0.8	11:49	(0.6)	(0.6)	5							
			7:04/0.1	(0.6)	(0.6)								
265.4	36.8	2.1	12:04/0.8	75%	75%	6					-No Joints		
			0:15/0.1	(2.1)	(2.1)						(2 joints at 45° with Fe staining)		
		4.9	2:11	100%	100%	7					(1 joint at 20° with clay)		
			2:44	(4.9)	(4.9)						-No Joints		
			3:16	100%	100%						-No Joints		
260.5	41.7		3:36										
			4:10										
		5.1	6:09	(5.0)	(5.0)	8					-No Joints		
			9:09/0.9	98%	98%								
			1:59										
			3:21										
255.4	46.8		2:53										
			3:54										
		4.7	3:43/1.1	(4.6)	(4.6)	UC-47.4'					-No Joints		
			4:06	98%	98%								
			6:05										
250.7	51.5		7:08										
			9:58										
		5.3	10:04/0.7	(4.6)	(4.2)	10					(3 joints at 20°)		
			2:38/1.3	87%	79%								
			2:29										
245.4	56.8		1:23										
			1:56										
		5.0	2:19	(4.6)	(4.6)	11					(Moderately to slightly weathered from 58.8-60.4 ft; 2 joints at 20°)		
			2:46	92%	92%								
			2:57										
240.4	61.8		2:08										
			2:03										
		5.0	1:43	(5.0)	(5.0)	12					(1 joint at 45° with moderate weathering and Fe staining)		
			2:57	100%	100%								
			2:25										
235.4	66.8		2:43										
			3:30										
		5.0	4:08	(5.0)	(5.0)	13					-No Joints		
			5:08	100%	100%								
			7:04										
230.4	71.8		11:15										
			3:54										
		5.0	2:59	(4.7)	(4.7)	UC-72.3'					-No Joints		
			2:39	94%	94%								
			3:14										
225.4	76.8		3:45										
			4:59										
		5.0	3:46	(5.0)	(5.0)	15					-No Joints		
			4:41	100%	100%								
			5:02										
220.4	81.8		5:09										
			4:10										
		4.7	2:50	(4.7)	(4.7)	16				220.4	Hard Rock: Light gray to dark gray, fresh, moderately close to wide fracturing, hard, QUARTZ-BIOTITE GNEISS		
			5:06	100%	100%						(1 joint at 75°)		
215.7	86.5		7:00										
			7:43										
		5.2	6:01	(5.2)	(5.2)	17					(2 joints at 60°)		
			5:58	100%	100%								
			1:20										
			1:30										
			1:38										
210.5	91.7		1:26										
		5.0	1:34/1.2	(5.0)	(5.0)	UCS-92.8'					-No Joints		
			1:19	100%	100%								
			1:26										
205.5	96.7		1:23										
			1:28										
		5.0	1:39	(4.0)	(4.0)	19					-No apparent joints. abundant mechanical fractures		
			1:33										

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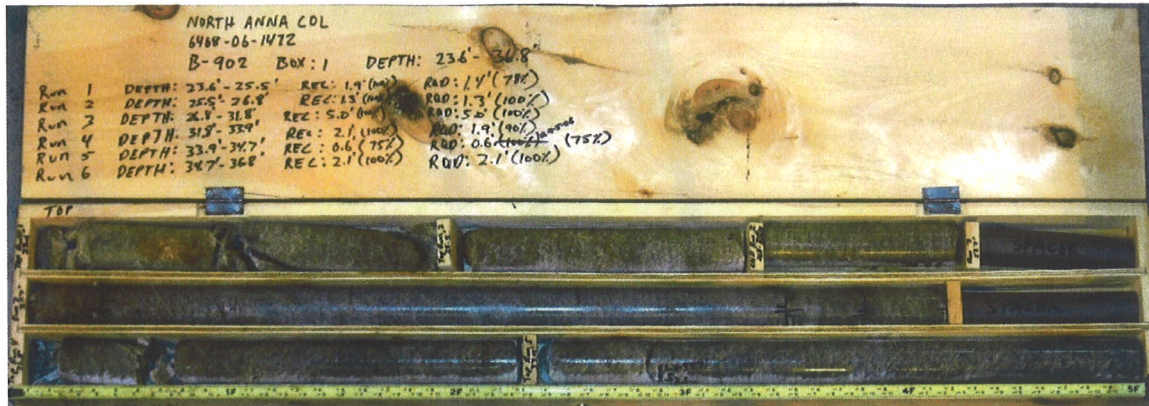
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TOTAL DEPTH 201.7 ft			DRILL MACHINE CME 55LC Track				DRILLER: D. White				HAMMER TYPE 140 lbs Auto		
DATE STARTED 8/28/06			COMPLETED 9/7/06				CORE BARREL TYPE: HQ 3 triple tube-wireline						
CORE SIZE HQ3			TOTAL RUN 178.1 ft										
ELEV. (ft)	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			
200.5	101.7	5.0	1:37 1:43 1:33 1:28	80%	80%	20				Hard Rock: Light gray to dark gray, fresh, moderately close to wide fracturing, hard, QUARTZ-BIOTITE GNEISS (continued)			
195.5	106.7	5.0	1:32 1:32 1:21 1:56 1:39	(5.0) 100%	(5.0) 100%	21				(Quartz vein from 102.1-102.4 ft; 1 joint at 70° with slight weathering and Fe staining)			
190.5	111.7	5.0	1:23 1:30 1:36 1:32 1:32	(5.0) 100%	(5.0) 100%	22				-No Joints			
185.5	116.7	5.0	1:39 1:35 1:29 1:26 1:25	(5.0) 100%	(4.4) 88%	23				Hard Rock: Light gray to bluish gray with orange Fe staining, fresh to moderately weathered, close to wide fracturing, hard, QUARTZ-BIOTITE GNEISS (Moderately to slightly weathered from 114.5-116.7 ft; 3 joints at 45° with weathering and Fe stain)			
180.5	121.7	5.0	1:33 1:32 1:36 1:38 1:34	(5.0) 100%	(4.2) 84%	24				(Moderately to very slightly weathered along joints; 4 joints at 40°, 1 joint at 70°, and 1 joint at 85°-all with fe staining)			
175.5	126.7	5.0	1:15 1:01 1:12 1:26 1:28	(3.0) 60%	(1.7) 34%	25				Hard Rock: Light gray with orange Fe staining, slight to moderately severe weathering, close fracturing, hard to moderately hard, QUARTZ GNEISS with biotite, feldspar, and trace magnetite (3 joints at 40° with Fe staining)			
170.5	131.7	5.0	2:18 2:18 2:20 2:32 2:22	(4.9) 98%	(4.9) 98%	26				Hard Rock: Light gray, fresh, close to wide fracturing, hard, QUARTZ GNEISS with biotite with trace pyrite (1 joint at 60° and 1 joint at 20° with Fe staining)			
165.5	136.7	5.0	2:13 2:28 2:34 2:53 3:17	(5.0) 100%	(5.0) 100%	27				-No Joints			
160.5	141.7	5.0	4:01 4:00 4:04 4:57 4:35	(5.0) 100%	(5.0) 100%	UC-141.9'				(1 joint at 45° with pyrite and muscovite)			
155.5	146.7	5.0	1:41 1:54 2:05 1:53 2:01	(5.0) 100%	(5.0) 100%					(1 joint at 70° and 1 joint at 45° with Fe staining)			
150.6	151.6	4.9	2:43 3:45 4:25 5:27 5:13/0.9	(4.9) 100%	(4.9) 100%	29				-No Joints			
145.5	156.7	5.1	1:55 2:30 2:20 2:45 3:03/1.1	(5.1) 100%	(5.1) 100%	30				(1 joint at 65° with clay and weathering)			
140.5	161.7	5.0	3:22 4:14 4:24 4:52 9:30	(5.0) 100%	(5.0) 100%	31				(1 joint at 90° with clay and Fe staining; 1 joint at 45 with Fe staining)			
135.5	166.7	5.0	1:55 2:53 3:44 5:31 6:11	(5.0) 100%	(5.0) 100%	32				(1 joint at 90° with trace clay)			
132.9	169.3	2.6	7:05 10:18 11:20/0.6	(2.6) 100%	(2.6) 100%	33				-No Joints			
130.5	171.7	2.4	0:35/0.4 2:21 2:07 1:38	(2.3) 96%	(2.0) 83%	34				(1 joint at 45° with moderate weathering and Fe stain)			
		5.0		(4.7) (4.7)		35				(1 joint at 80° with trace clay)			

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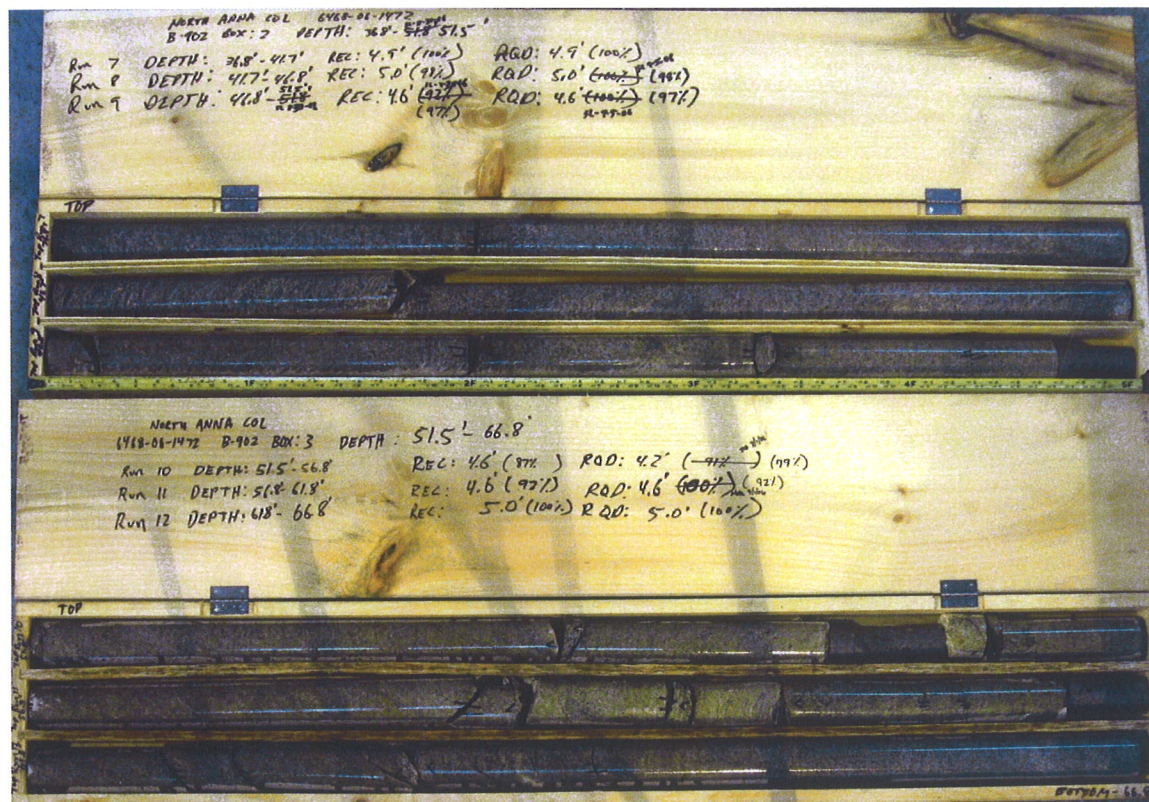


SHEET 3 OF 3

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										Continued from previous page			
125.5	176.7		2:10 2:28 3:08 3:00	94%	94%					Hard Rock: Light gray, fresh, close to wide fracturing, hard, QUARTZ GNEISS with biotite with trace pyrite (continued)			
		5.0	3:46 3:51 4:21 5:46 7:54	(5.0) 100%	(5.0) 100%	36				(1 joint at 80-90°)			
120.5	181.7												
119.1	183.1	1.4	3:19 2:25/0.4	(1.4) 100%	(1.4) 100%	37				(1 joint at 80°)			
		3.6	2:02/0.6 4:05 4:40 8:30	(3.6) 100%	(3.6) 100%	UC-184.6'				(1 joint at 70° and 1 joint at 45° with weathering and Fe stain)			
115.5	186.7									115.5 186.7			
		5.0	5:16 8:16 7:40 7:02 7:30	(5.0) 100%	(4.7) 94%	39				Hard Rock: Light gray, moderately weathered to fresh, moderately close to wide fracturing, hard, QUARTZ GNEISS with biotite and feldspar (1 joint at 80-90° weathered with trace clay; 2 joints at 60° weathered with Fe stain)			
110.5	191.7												
		3.5	2:00 2:22 2:14	(3.2) 91%	(2.5) 71%	40				(4 joints at 45° weathered with trace clay) 193.0			
107.0	195.2		2:52/0.5							Hard Rock: Dark to light gray, moderately to slightly weathered, close to moderately close fracturing, medium hard, BIOTITE GNEISS with quartz and feldspar			
105.5	196.7	1.5	2:46/0.5 5:36	(1.4) 93%	(1.2) 80%	41				(1 joint at 45° with weathering and clay)			
		5.0	2:59 3:34 2:45 2:23 2:10	(5.0) 100%	(4.1) 82%	42				(1 joint at 20° and 4 joints at 45° with clay)			
100.5	201.7									100.5 201.7			
										Coring terminated at 201.7 ft in Hard Rock: Medium hard, QUARTZ-BIOTITE GNEISS with feldspar			

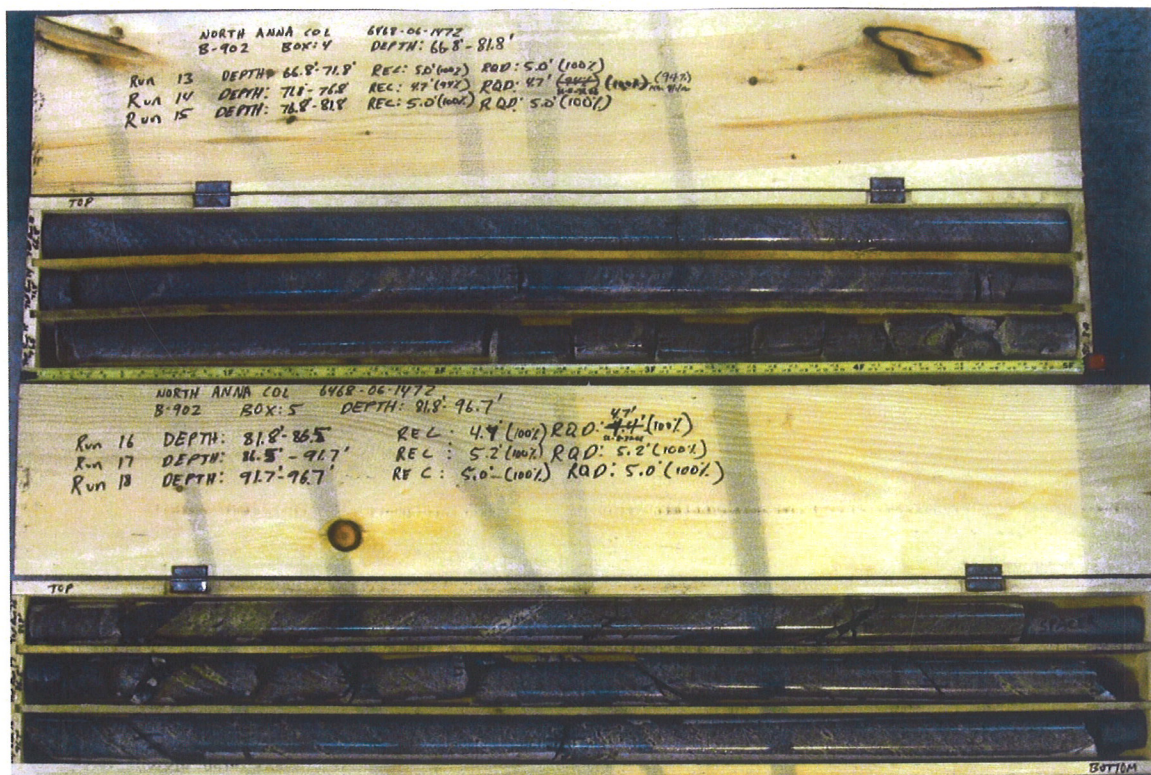


B-902 - Box 1



B-902 - Box 2

B-902 - Box 3



B-902 – Box 4

B-902 – Box 5



B-902 – Box 6

B-902 – Box 7



B-902 - Box 8

B-902 - Box 9



B-902 - Box 10

B-902 - Box 11



B-902 – Box 12

B-902 – Box 13