



MACTEC PROJECT NO.: 6468-06-1472					COUNTY Louisa, VA					GEOLOGIST S. Lehman						
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)						
BORING NO. B-907			DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE			0 HR. 28.1							
COLLAR ELEV. 322.7 ft (NAVD88)			NORTHING 3,909,608			US ft (NAD83)			EASTING 11,685,938			US ft (NAD83)		24 HR. 28.4		
TOTAL DEPTH 200.5 ft			DRILL MACHINE CME 45 Trailer			DRILLER: F. Cox			HAMMER TYPE 140 lbs Auto							
DATE STARTED 8/1/06			COMPLETED 8/9/06			CORE BARREL TYPE: HQ split inner barrel										
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	LOG	SOIL AND ROCK DESCRIPTION				
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	NO.	MOI				
322.7					Ground Surface							322.7	0.0			
321.2	1.5										907-1		CLAY (CL) sandy, silty, strong brown (7.5YR 5/6) dry to moist, stiff (Residual Soil)	320.2 2.5		
319.2	3.5	2	4	7							907-2		Silty, fine to coarse SAND (SM), strong brown (7.5YR 5/6), dry, medium dense (Residual Soil)			
317.2	5.5	7	6	8							907-3					
314.2	8.5	3	5	5							907-4					
311.7	11.0	4	5	6							907-5		Silty, fine to coarse SAND (SM), light yellowish brown (2.5Y 6/4), moist, loose to medium dense (Residual Soil)	312.2 10.5		
309.2	13.5	2	3	5							907-6					
305.2	17.5	6	10	11							907-7		Silty, fine to coarse SAND (SM) light yellowish brown (2.5Y 6/4), dry to moist, medium dense (Residual Soil)	306.7 16.0		
300.2	22.5	7	9	9							907-8		Silty SAND (SM) yellowish brown (10YR 5/6), moist, loose to dense, micaceous, saprolitic (Residual Soil)	301.7 21.0		
295.2	27.5	3	4	5							907-9					
290.2	32.5	3	8	9							907-10					
285.2	37.5	6	11	21							907-11		Weathered Rock: Dark yellowish brown (10YR 4/6) and light olive brown (2.5Y 5/3), moist, very dense, severely weathered, QUARTZ-BIOTITE GNEISS	286.7 36.0		
280.2	42.5	41	50/0.3								907-12		Hard Rock: Light to dark gray with orange Fe staining, moderately severe to moderately weathered, close to moderately close fracturing, medium to moderately hard, QUARTZ-BIOTITE GNEISS	280.1 42.6		
		50/0.1														

NORTH ANNA COL BURE 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. Lehman										
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft) 0 HR. 28.1 24 HR. 28.4								
BORING NO. B-907		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE												
COLLAR ELEV. 322.7 ft (NAVD88)		NORTHING 3,909,608		US ft (NAD83)		EASTING 11,685,938		US ft (NAD83)										
TOTAL DEPTH 200.5 ft		DRILL MACHINE CME 45 Trailer				DRILLER: F. Cox				HAMMER TYPE 140 lbs Auto								
DATE STARTED 8/1/06				COMPLETED 8/9/06				CORE BARREL TYPE: HQ split inner barrel										
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								
173.1					Continued from previous page													
													Hard Rock: Light gray to dark gray and light pink, slightly weathered to fresh, close to wide fracturing, hard to very hard. QUARTZ-BIOTITE GNEISS (continued)					
													122.2	Boring and coring terminated at 200.5 ft in Hard Rock: Very hard, QUARTZ-BIOTITE GNEISS				
													200.5					

NORTH ANNA COL CORE 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-907			DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE			0 HR. 28.1			
COLLAR ELEV. 322.7 ft (NAVD88)			NORTHING 3,909,608		US ft (NAD83)		EASTING 11,685,938		US ft (NAD83)		24 HR. 28.4	
TOTAL DEPTH 200.5 ft			DRILL MACHINE CME 45 Trailer			DRILLER: F. Cox			HAMMER TYPE 140 lbs Auto			
DATE STARTED 8/1/06			COMPLETED 8/9/06			CORE BARREL TYPE: HQ split inner barrel						
CORE SIZE HQ			TOTAL RUN 157.4 ft									
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft) %	RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS		
										Begin Coring @ 42.5 ft		
280.2	42.5	3.0	N=50/0.1 2:00	(2.7) 90%	(1.4) 47%	1				Weathered Rock: Dark yellowish brown (10YR 4/6) and light olive brown (2.5Y 5/3), moist, very dense, severely weathered, QUARTZ-BIOTITE GNEISS		
277.2	45.5		2:26							(continued)		
		5.0	2:12	(4.9) 98%	(4.4) 88%	2				(1 joint at 35° with clay, Fe stain; 1 joint at 10° with Fe stain)		
			2:03							Hard Rock: Light to dark gray with orange Fe staining, moderately severe to		
			2:19							moderately weathered, close to moderately close fracturing, medium to		
272.2	50.5	5.0	2:35							moderately hard, QUARTZ-BIOTITE GNEISS		
			2:32	(4.5) 90%	(3.9) 78%	UC-51.9'				(2 joints at 35°, 2 joints at 10-20°, 1 joint at 80-90°)		
			2:26							(1 joint at 30°, 1 joint at 0-5°)		
		5.0	2:27	(5.0) 100%	(4.1) 82%	4				(1 joint at 35°, 2 joints at 0-5°)		
			2:13									
			2:16									
267.2	55.5	5.0	2:15									
			2:12									
		5.0	2:04	(3.3) 66%	(2.1) 42%	5				(4 joints at 0-5°)		
			1:26									
			1:21									
262.2	60.5	5.0	1:05									
			1:12									
		5.0	1:40	(4.7) 94%	(4.1) 82%	6				(3 joints at 65° with trace clay)		
			1:33									
			1:10									
257.2	65.5	5.0	1:30									
			1:22									
		5.0	1:32	(0.2) 6%	(0.0) 0%	7				Hard Rock-Weathered Rock: Light to dark gray with orange Fe staining, severely to slightly weathered, very close to close fracturing, soft to moderately hard, QUARTZ-BIOTITE GNEISS		
		3.3	1:07							(1 joint at 70° with Fe stain)		
248.9	73.8	1.7	1:44	(0.0) 0%	(0.0) 0%	8				-No Recovery		
			0:46/0.3							-No Recovery		
247.2	75.5	4.6	0:49/0.7	(0.0) 0%	(0.0) 0%	9						
			0:52									
246.8	75.9	1.9	N=50/0.4	(0.0) 0%	(0.0) 0%	907-13						
			0:56			9						
			0:53									
			1:34									
242.2	80.5	2.9	1:42	(0.6) 32%	(0.0) 0%	10				(2 joints at 55° with trace clay and Fe stain)		
			1:14/0.6									
242.0	80.7	1.3	N=50/0.2	(1.4) 48%	(0.0) 0%	11				(3 joints at 45° and 2 joints at 65° with Fe stain)		
			4:15									
240.1	82.6	3.7	4:04/0.9	(3.5) 70%	(2.3) 46%	UC-90.0'				(4 joints at 10° with Fe stain; 2 joints at 65° with trace clay and Fe stain)		
			2:16/0.9									
		5.0	2:04									
			1:19									
			2:27									
			2:17									
			2:55									
232.2	90.5	1.3	2:51	(0.0) 0%	(0.0) 0%	13				-No Recovery		
			2:06									
230.9	91.8	3.7	4:20	(3.3) 89%	(0.9) 24%	14				(4 joints at 10° with Fe stain)		
			1:16/0.3									
			2:28/0.7									
227.2	95.5	1.6	3:59	(1.4) 88%	(0.5) 31%	15				(3 joints at 35° with Fe stain)		
			2:20									
225.6	97.1	3.4	2:30	(2.1) 62%	(0.6) 18%	16				(2 joints at 25°, 1 joint at 75°)		
			4:12									
			3:08/0.6									
			3:34/0.4									
			4:16									
222.2	100.5	1.0	1:45	(0.4) 40%	(0.0) 0%	17				-No Recovery		
			3:19									
221.2	101.5	3.0	6:31	(1.0) 33%	(0.0) 0%	18				(2 joints at 10°, 1 joint at 25°, 2 joints at 45°)		
			5:43									
			1:45									
218.2	104.5	1.0	3:42	(0.4) 40%	(0.4) 40%	19				-No Recovery		
			4:34									
217.2	105.5	3.3	6:10	(0.0) 0%	(0.0) 0%	20				(2 joints at 10°, 1 joint at 25°, 2 joints at 45°)		
			4:31									
			1:00									
213.9	108.8	1.7	0:18/0.3	(0.6) 35%	(0.0) 0%	21				-No Recovery		
			3:26/0.7									
212.2	110.5	1.3	6:58	(0.0) 0%	(0.0) 0%	22				(2 joints at 10°, 1 joint at 25°, 2 joints at 45°)		
			6:17									
210.9	111.8	3.7	3:40/0.3	(0.0) 0%	(0.0) 0%	23				-No Recovery		
			3:30/0.7									
			3:28									
207.2	115.5	5.0	3:10	(5.0) 100%	(4.0) 80%	UC-116.8'				(5 joints at 35-45° and 1 joint at 55° with Fe stain)		
			4:19									

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SHEET 2 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-907			DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE			0 HR. 28.1		
COLLAR ELEV. 322.7 ft (NAVD88)			NORTHING 3,909,608		US ft (NAD83)		EASTING 11,685,938		US ft (NAD83) 24 HR. 28.4		
TOTAL DEPTH 200.5 ft			DRILL MACHINE CME 45 Trailer			DRILLER: F. Cox			HAMMER TYPE 140 lbs Auto		
DATE STARTED 8/1/06			COMPLETED 8/9/06			CORE BARREL TYPE: HQ split inner barrel					
CORE SIZE HQ			TOTAL RUN 157.4 ft								
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft) %	RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS	
										Continued from previous page	
202.2	120.5	5.0	3:27 2:54 2:58 2:47 3:22	100%	80%					Hard Rock: Light gray to dark gray and light pink, slightly weathered to fresh, close to wide fracturing, hard to very hard, QUARTZ-BIOTITE GNEISS (continued) (4 joints at 40°)	
			3:22 3:59 3:46 3:34 3:37	(5.0) 100%	(4.5) 90%	25					
197.2	125.5	5.0	3:21 3:35 2:45 2:33 2:19 1:52	(4.9) 98%	(4.6) 92%	26				(1 joint at 40°; 1 joint at 20° moderately weathered, Fe stain)	
192.2	130.5	5.0	2:09 2:09 2:18 2:19 2:26	(4.9) 98%	(4.0) 80%	UC-131.8'				(1 joint at 60°, 1 joint at 40°, 1 joint at 20°)	
187.2	135.5	5.0	2:15 2:16 2:26 2:35 2:48	(5.0) 100%	(4.0) 80%	28				(4 joints at 60°, trace clay)	
182.2	140.5	5.0	2:32 2:04 2:07 2:42 2:40	(5.0) 100%	(4.3) 86%	29				(4 joints at 50° with clay to trace clay; 1 joint at 20° with trace clay)	
177.2	145.5	5.0	2:35 2:22 3:24 4:07 4:25	(4.9) 98%	(4.6) 92%	30				(3 joints at 45° with trace clay; 2 joints at 20°)	
172.2	150.5	5.0	5:09 5:19 5:15 5:07 4:40	(5.0) 100%	(4.8) 96%	31				(2 joints at 45° with weathering; 1 joint at 20° with trace clay)	
167.2	155.5	5.0	3:23 2:47 3:19 3:54 3:50	(5.0) 100%	(4.7) 94%	32				(1 joint at 20° with moderate Fe staining)	
162.2	160.5	5.0	3:39 3:12 2:46 3:39 4:06	(4.9) 98%	(4.9) 98%	UCS-160.8'				(3 joints at 45° with Fe stain; 1 joint at 70° with trace clay and Fe stain)	
157.2	165.5	5.0	4:45 5:06 4:39 4:58 5:53	(5.1) 102%	(5.1) 102%	34				(2 joints at 45° with trace clay, slightly weathered; 1 joint at 10° weathered)	
152.2	170.5	5.0	6:47 4:11 7:44 7:10 6:43	(5.0) 100%	(4.2) 84%	35				(2 joints at 45° slightly weathered with Fe stain; quartz vein at 60° from 171.4-171.8 ft)	
147.2	175.5	5.0	7:20 8:15 9:27 11:09 14:50	(4.8) 96%	(4.8) 96%	36				(1 joint at 70° slightly weathered with Fe stain)	
142.2	180.5	5.0	13:24 14:35 4:35 4:12 4:52	(5.2) 104%	(3.0) 60%	37				(5 joints at 65° slightly weathered with Fe stain)	
137.2	185.5	5.0	3:12 2:43 3:31 3:46 3:22	(5.0) 100%	(5.0) 100%	38				(1 joint at 45° moderately weathered with Fe stain)	
132.2	190.5	5.0	2:55	(5.0)	(5.0)	39				-No Joints	

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SHEET 3 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-907			DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE			0 HR. 28.1	
COLLAR ELEV. 322.7 ft (NAVD88)			NORTHING 3,909,608		US ft (NAD83)		EASTING 11,685,938		US ft (NAD83)	
TOTAL DEPTH 200.5 ft			DRILL MACHINE CME 45 Trailer			DRILLER: F. Cox			HAMMER TYPE 140 lbs Auto	
DATE STARTED 8/1/06			COMPLETED 8/9/06			CORE BARREL TYPE: HQ split inner barrel				
CORE SIZE HQ			TOTAL RUN 157.4 ft							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft) %	RQD (ft) %	SAMP. NO.	REC. (ft) %	RQD (ft) %	LOG	DESCRIPTION AND REMARKS
										Continued from previous page
127.2	195.5		2:54 3:02 2:20 2:05	100%	100%					
		5.0	3:01 2:02 2:34 2:40 2:52	(5.0) 100%	(5.0) 100%	UC-200.0'				
122.2	200.5									
										Coring terminated at 200.5 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



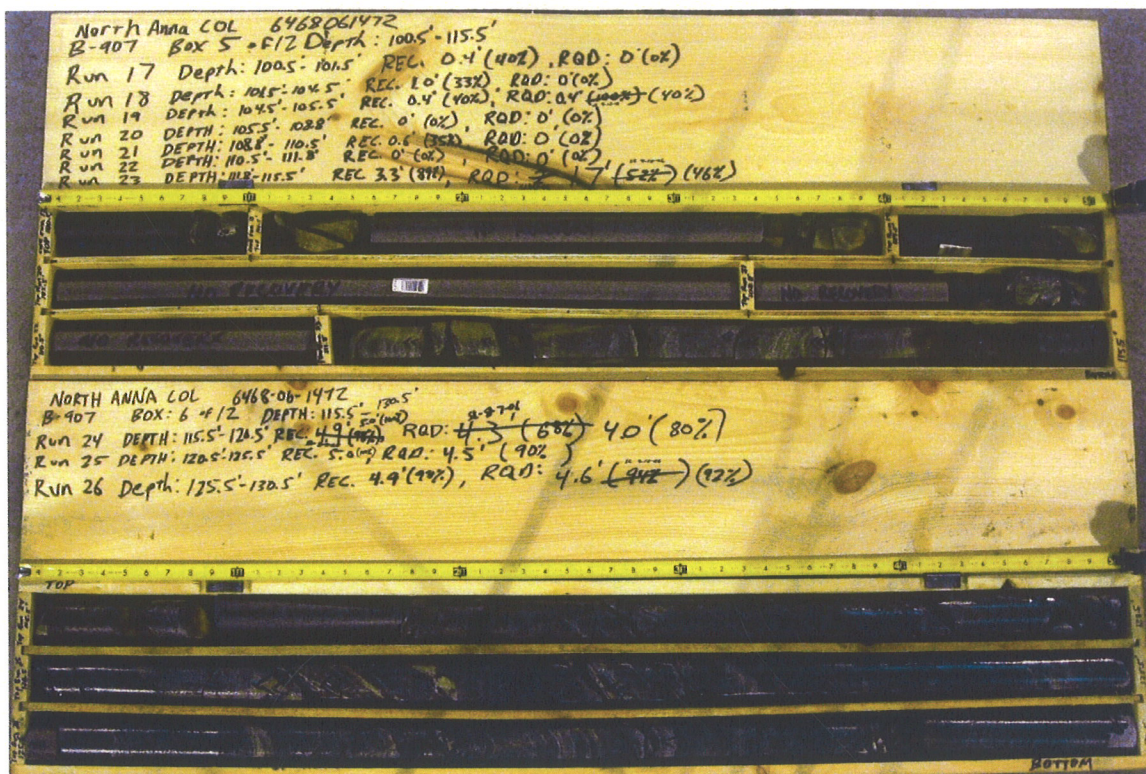
B-907 - Box 1

B-907 - Box 2



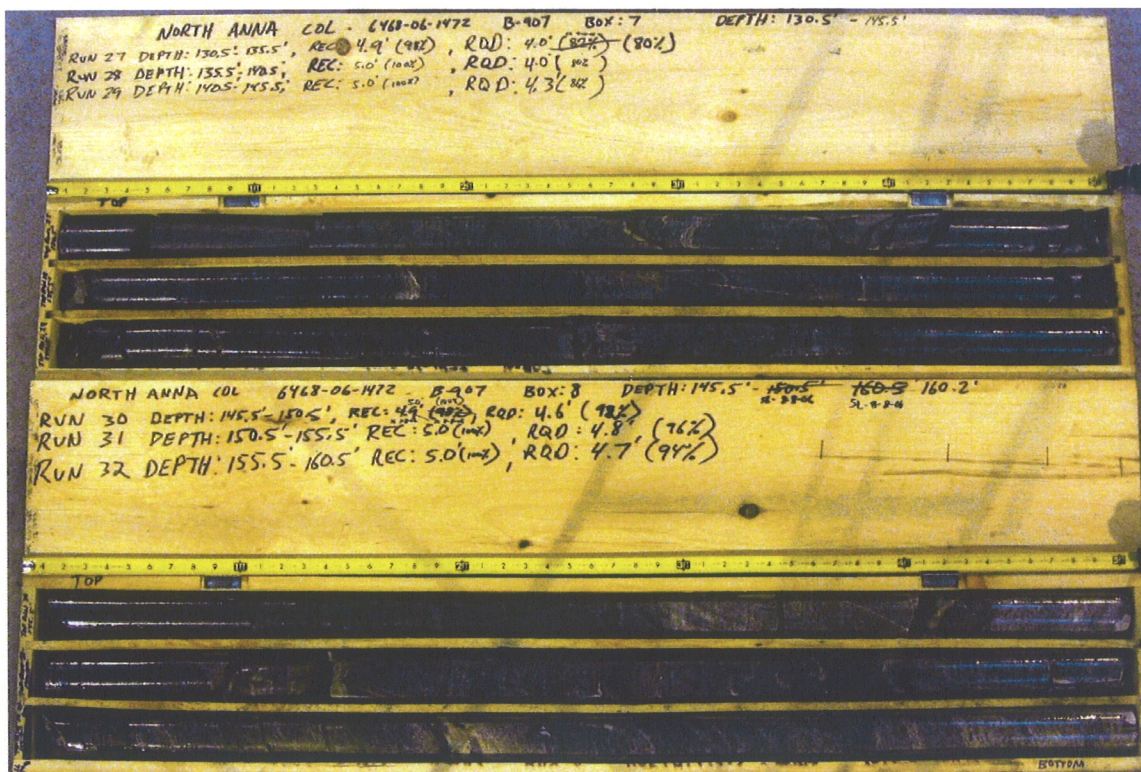
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B-907 - Box 4



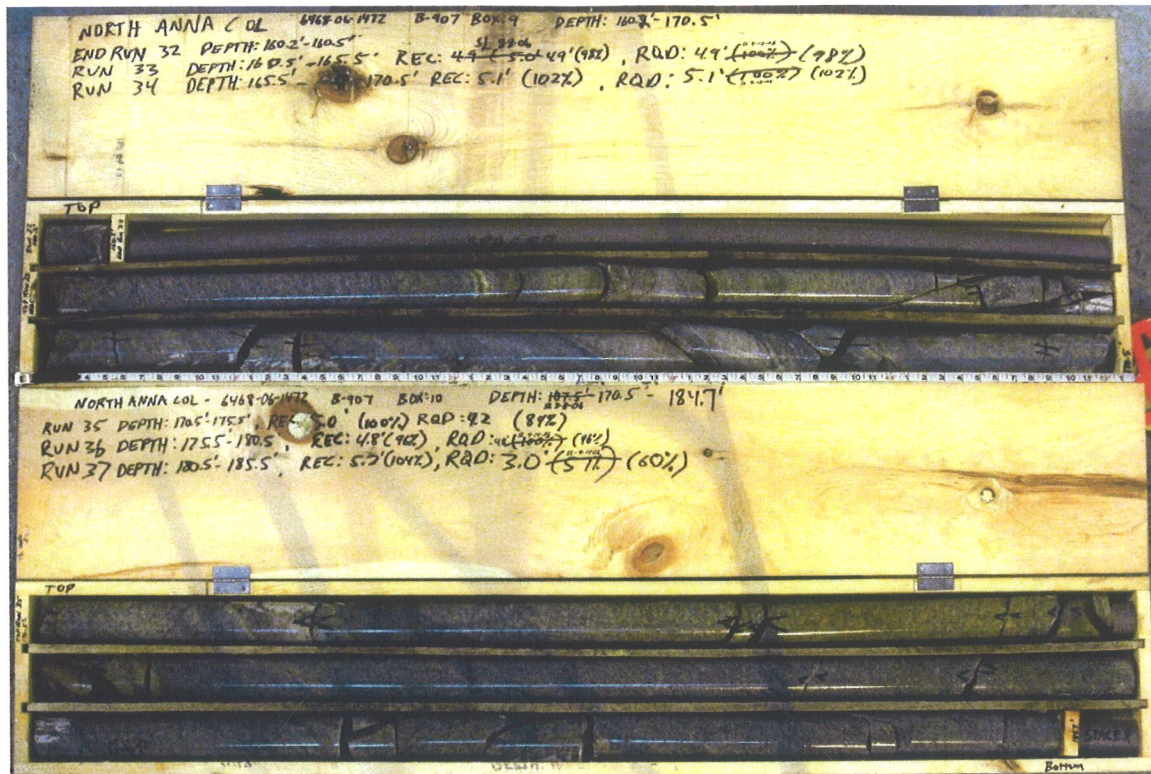
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B-907 - Box 6

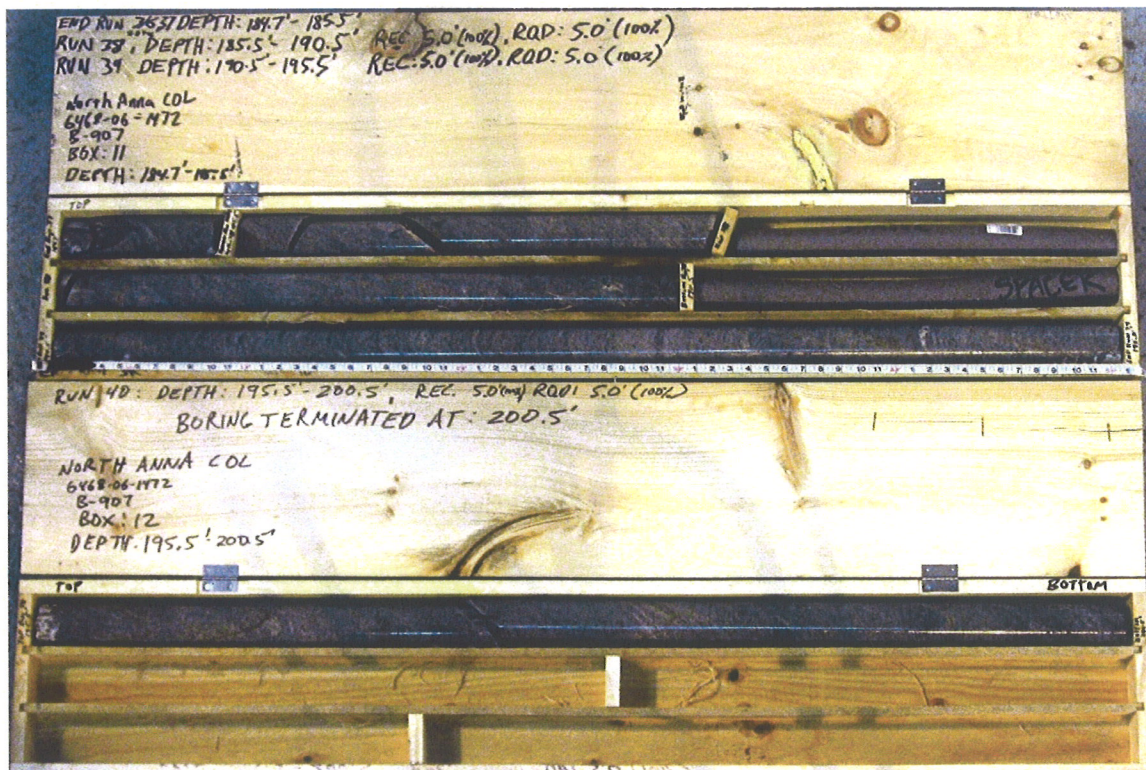


B-907 - Box 7

B-907 - Box 8



B-907 - Box 9
B-907 - Box 10



B-907 - Box 11
B-907 - Box 12