



MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA		GEOLOGIST S. Nicely	
SITE DESCRIPTION NORTH ANNA COL							GROUND WATER (ft)
BORING NO. B-919		DRILL METHOD: Mud Rotary/Core		SAMPLE METHODS: SPT/CORE			0 HR. 3.1
COLLAR ELEV. 317.8 ft (NAVD88)		NORTHING 3,909,575 US ft (NAD83)		EASTING 11,685,765 US ft (NAD83)		24 HR. 20.8	
TOTAL DEPTH 76.2 ft		DRILL MACHINE CME 55 Truck		DRILLER: H. Meyerson		HAMMER TYPE 140 lbs Auto	
DATE STARTED 9/13/06		COMPLETED 9/15/06		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
317.8					Ground Surface							0.0	
316.3	1.5												
314.3	3.5	1	1	2						919-1	▽	Sandy CLAY (CL), strong brown (7.5YR 5/8), moist, very soft, silty, root fragments (Residual Soil)	3.5
311.9	5.9	3	2	5						919-2		Silty, fine to coarse SAND (SM), strong brown (7.5YR 5/8), moist, loose (Residual Soil)	5.5
309.3	8.5	12	14	15						919-3		Silty, fine to coarse SAND (SM), brownish yellow (10YR 6/8-6/6), moist, medium dense to very dense, trace gravel (Residual Soil)	
306.8	11.0	11	15	16						919-4			
304.3	13.5	17	20	13						919-5			
298.9	18.9	20	36	34						919-6			
293.9	23.9	14	13	14						919-7	▼		
288.9	28.9	23	50/0.4							919-8		Weathered Rock: Yellowish brown, very severely to severely weathered, very close to close fracturing, very soft to soft, BIOTITE-QUARTZ GNEISS	23.0
283.9	33.9	40	50/0.5							919-9			
278.9	38.9	50/0.3								919-10			
276.5	41.3	50/0.2								919-11			
266.5	51.3	50/0.4								919-12			
		7	17	23						919-13		Hard Rock: Brownish gray to gray, moderately severely to moderately weathered, very close to close fracturing, moderately hard to hard, BIOTITE-QUARTZ GNEISS	53.1

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



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BORING NO. B-919		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 3.1	
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TOTAL DEPTH 76.2 ft		DRILL MACHINE CME 55 Truck				DRILLER: H. Meyerson				HAMMER TYPE 140 lbs Auto	
DATE STARTED 9/13/06				COMPLETED 9/15/06				CORE BARREL TYPE: HQ 3 triple tube-wireline			

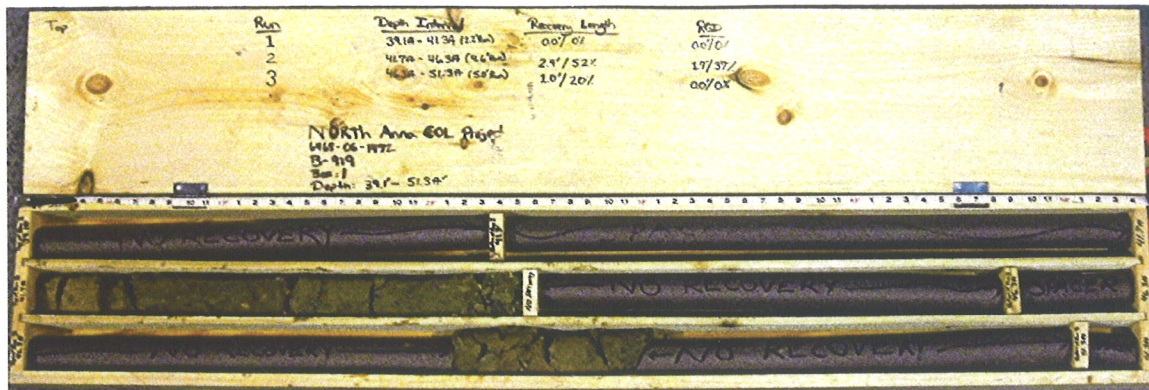
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100							
243.0															Continued from previous page		
															241.6	76.2	Boring and coring terminated at 76.2 ft in Hard Rock: Moderately hard to hard, BIOTITE-QUARTZ GNEISS

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

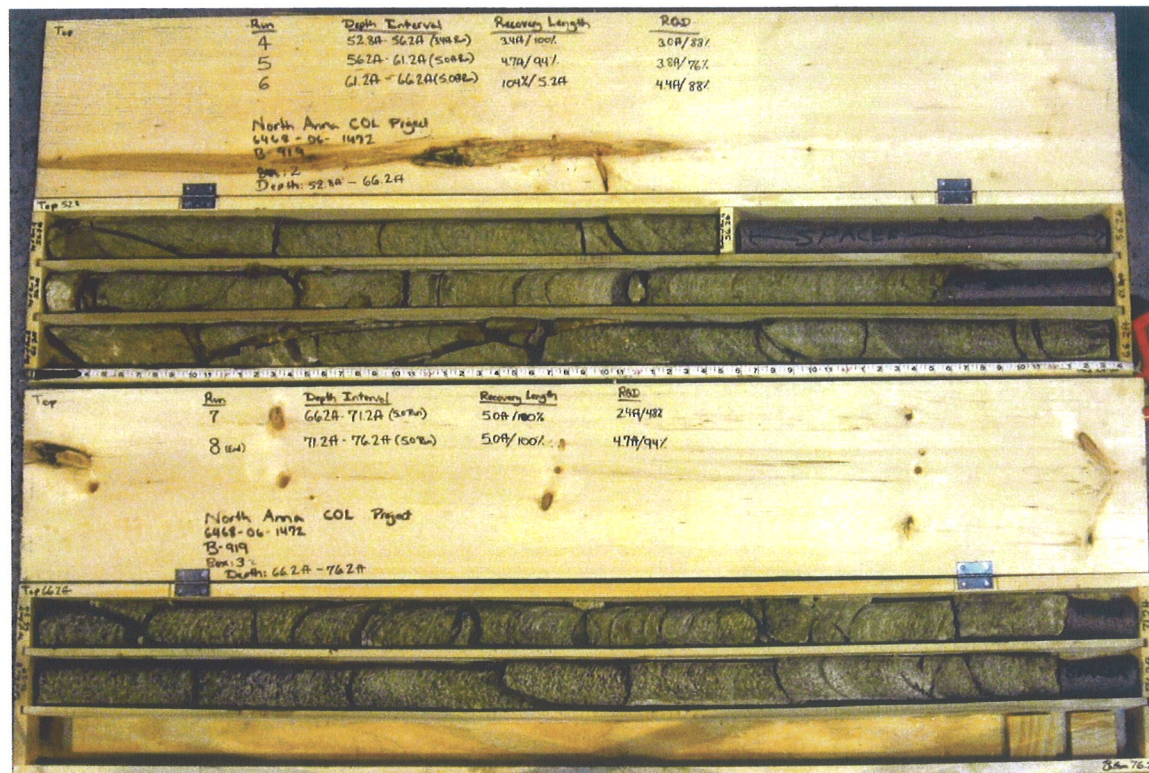


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SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)		
BORING NO. B-919			DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE				0 HR. 3.1		
COLLAR ELEV. 317.8 ft (NAVD88)			NORTHING 3,909,575		US ft (NAD83)		EASTING 11,685,765		US ft (NAD83)		24 HR. 20.8	
TOTAL DEPTH 76.2 ft			DRILL MACHINE CME 55 Truck			DRILLER: H. Meyerson			HAMMER TYPE 140 lbs Auto			
DATE STARTED 9/13/06			COMPLETED 9/15/06			CORE BARREL TYPE: HQ 3 triple tube-wireline						
CORE SIZE HQ3			TOTAL RUN 35.2 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 @ 39.1 ft		
278.7	39.1	2.2	2:49	(0.0)	(0.0)	1				Weathered Rock: Yellowish brown, very severely to severely weathered, very close to close fracturing, very soft to soft, BIOTITE-QUARTZ GNEISS <i>(continued)</i> -No Recovery -Poor Recovery		
276.5	41.3		2:54	0%	0%							
276.1	41.7	4.6	0:35/0.2 N=50/0.4 4:39 3:39 3:32 2:19	(2.4)	(1.7)	919-12 2						
271.5	46.3									-Poor Recovery		
		5.0	0:48/0.6 1:09 1:36 2:47 1:57 2:18	(1.0)	(0.0)	3						
266.5	51.3					919-13						
265.0	52.8	3.4	1:48 2:17 3:13	(3.4)	(3.0)	4				(3 joints at 20-30° weathered; 2 joints at 10-20° with Fe stain; 1 joint at 75° weathered)		
261.6	56.2									Hard Rock: Brownish gray to gray, moderately severely to moderately weathered, very close to close fracturing, moderately hard to hard, BIOTITE-QUARTZ GNEISS (2 joints at 40-50° with Fe and Mn stain; 2 joints at 10° with Fe stain)		
		5.0	1:00/0.4 2:32 2:43 2:16 2:10 2:10	(4.7)	(3.8)	5						
256.6	61.2									(6 joints at 50-60° with Fe and Mn stain; 2 joints at 80-90° with Fe staining and clay; 2 joints at 10-20° with Fe stain; Quartz vein at 62.4 ft)		
		5.0	1:57 2:46 3:10 2:58 3:20	(5.2)	(4.4)	6						
251.6	66.2									(1 joint at 65° with Fe stain; 3 joints at 40-50° with Fe and Mn stain; 9 joints at 30-40° with Fe and Mn stain; 4 joints at 10-20° with Fe and Mn)		
		5.0	2:43 2:28 2:55 2:27 2:35	(5.0)	(2.4)	7						
246.6	71.2									(1 joint at 75° with Fe stain; 4 joints at 30-40° with Fe stain and clay; 4 joints at 10-20° with Fe stain)		
		5.0	2:24 2:27 2:18 2:09 2:12	(5.0)	(4.7)	8						
241.6	76.2									Coring terminated at 76.2 ft in Hard Rock: Moderately hard to hard, BIOTITE-QUARTZ GNEISS		

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B-919 - Box 1



B-919 - Box 2

B-919 - 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-920		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 21.8				
COLLAR ELEV. 327.2 ft (NAVD88)		NORTHING 3,909,545		US ft (NAD83)		EASTING 11,685,980		US ft (NAD83)		24 HR. 32.8				
TOTAL DEPTH 150.7 ft		DRILL MACHINE CME 55 Truck				DRILLER: H. Meyerson				HAMMER TYPE 140 lbs Auto				
DATE STARTED 9/6/06		COMPLETED 9/12/06				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	
327.2					Asphalt Parking Lot							327.2	0.0	
325.2	2.0													Asphalt and base coarse gravel (Parking Lot)
323.4	3.8	3	5	5							920-1		324.8	Silty, fine to coarse SAND (SM), dark yellowish brown (10YR 3/6, 4/6, and 4/4), olive (5Y 4/4), and olive brown (2.5Y 4/4), moist, medium dense, trace clay (Residual Soil)
321.2	6.0	5	5	6							920-2			
318.7	8.5	4	5	7							920-3			
316.2	11.0	3	5	7							920-4			
313.4	13.8	4	6	8							920-5			
308.4	18.8	4	6	10							920-6			
303.5	23.7	5	7	10							920-7			
298.4	28.8	4	7	7							920-8			
293.5	33.7	5	8	10							920-9			
288.7	38.5	7	10	12							920-10			
283.7	43.5	15	36	50/0.3							920-11		289.2	Weathered Rock: Strong brown (7.5YR 4/6), very dark grayish brown (10YR 3/2), and greenish black (GLEY1 2.5/1), moist, very dense, BIOTITE GNEISS
278.7	48.5	25	41	50/0.2							920-12			
273.7	53.5	40	50/0.4								920-13			
268.7	58.5	50/0.1									920-14			
266.3	60.9	50/0.1									920-15		268.6	Hard Rock: Dark brown, moderately severely weathered, very close to close fracturing, soft, BIOTITE GNEISS
256.5	70.7	32	50/0.4								920-16			Weathered Rock: Dark brown to yellowish brown, severely weathered, very close to close fracturing, very soft to moderately hard, BIOTITE GNEISS

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TOTAL DEPTH 150.7 ft		DRILL MACHINE CME 55 Truck			DRILLER: H. Meyerson			HAMMER TYPE 140 lbs Auto
DATE STARTED 9/6/06		COMPLETED 9/12/06			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	
252.4		Continued from previous page													
251.5	75.7	50/0.1								920-17			251.4	75.8	Hard Rock-Weathered Rock: Reddish brown, gray, and blackish gray, very severely to moderately weathered, very close to close fracturing, very soft to hard, BIOTITE-QUARTZ GNEISS
241.5	85.7	50/0.4								920-18					
231.5	95.7	8	28	50/0.3						920-19					
													226.5	100.7	Hard Rock: Light to dark gray with white, pink, and green, very slightly weathered to fresh, very close to wide fracturing, 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



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BORING NO. B-920		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 21.8					
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TOTAL DEPTH 150.7 ft		DRILL MACHINE CME 55 Truck				DRILLER: H. Meyerson				HAMMER TYPE 140 lbs Auto					
DATE STARTED 9/6/06				COMPLETED 9/12/06				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	
177.6					Continued from previous page										
													176.5	150.7	Boring and coring terminated at 150.7 ft in Hard Rock: Very hard, BIOTITE-QUARTZ GNEISS

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TOTAL DEPTH 150.7 ft		DRILL MACHINE CME 55 Truck		DRILLER: H. Meyerson		HAMMER TYPE 140 lbs Auto	
DATE STARTED 9/6/06		COMPLETED 9/12/06		CORE BARREL TYPE: HQ 3 triple tube-wireline			
CORE SIZE HQ3		TOTAL RUN 150.7 ft					

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %		
										Begin Coring @ 58.6 ft
268.6	58.6	2.3	5:36	(2.0)	(0.0)	1				268.6 Hard Rock: Dark brown, moderately severely weathered, very close to close fracturing, soft, BIOTITE GNEISS
266.3	60.9		4:08	87%	0%					266.3 -Highly fractured and weathered
		4.8	0:53/0.3	(0.6)	(0.0)	2				Weathered Rock: Dark brown to yellowish brown, severely weathered, very close to close fracturing, very soft to moderately hard, BIOTITE GNEISS
			2:00	13%	0%					-Very poor recovery, highly fractured and weathered
			2:03							
			3:56							
261.5	65.7		3:16							
		5.0	1:36/0.8	(0.6)	(0.0)	3				-Very poor recovery, highly fractured and weathered
			3:18	12%	0%					
			3:18							
			3:06							
			3:11							
256.5	70.7		3:43							
			N=50/0.4			920-16				
		4.1	3:24	(0.7)	(0.0)	4				-Very poor recovery, highly fractured and weathered
			2:10	17%	0%					
			2:04							
251.5	75.7		3:52/1.1							
251.4	75.8	4.9	N=50/0.1	(3.9)	(2.7)	920-17				251.4 Hard Rock-Weathered Rock: Reddish brown, gray, and blackish gray, very severely to moderately weathered, very close to close fracturing, very soft to hard, BIOTITE-QUARTZ GNEISS
			4:53	80%	55%	5				(2 joints at 80° with Fe and Mn staining; 2 joints at 10-20°; 3 joints at 20-30°)
			1:05							
			1:11							
			1:12							
246.5	80.7	5.0	0:51/0.9	(0.8)	(0.0)	6				-Very poor recovery, highly fractured and weathered
			1:02	16%	0%					
			0:35							
			1:00							
241.5	85.7		0:44							
			0:30							
		4.6	N=50/0.4	(3.7)	(3.1)	920-18				(2 joints at 40-50° with Fe staining; 3 joints at 10-20° with Fe staining; highly fractured and severely weathered from 86.1-87.5 ft)
			1:48	80%	67%	UC-90.2'				
			3:52							
			2:16							
236.5	90.7	5.0	2:00/0.6	(1.4)	(0.0)	8				-Poor recovery, highly fractured and weathered-no recovery from 92.1-95.7 ft
			2:30	28%	0%					
			2:38							
			1:40							
			1:47							
231.5	95.7		1:48							
			N=50/0.3			920-19				
		3.7	2:38	(2.4)	(1.4)	9				-Highly fractured and weathered-no recovery from 97.0-98.2 ft; 2 joints at 50-60°
			3:05	65%	38%					
			2:19							
226.5	100.7		1:12/0.7	(5.0)	(2.1)	10				226.5 Hard Rock: Light to dark gray with white, pink, and green, very slightly weathered to fresh, very close to wide fracturing, hard to very hard, BIOTITE-QUARTZ GNEISS
		5.0	2:51	100%	42%					-Highly fractured throughout entire run; Quartz+felsdspar vein from 101.7-105.7 ft
			3:56							
			3:48							
			6:10							
221.5	105.7	5.0	5:38	(4.9)	(4.9)	UCS-107.7				-Quartz+felsdspar vein from 105.7-106.9 ft
			4:59	98%	98%					
			5:18							
			5:30							
			5:01							
216.5	110.7	5.0	4:32	(5.0)	(5.0)	12				-No Joints
			4:23	100%	100%					
			4:34							
			4:14							
			3:27							
211.5	115.7	5.0	3:52	(5.1)	(3.2)	UC-119.1'				-Highly fractured, severely weathered zones from 117.0-118.5 ft and 120.1-120.7 ft
			3:14	102%	64%					
			2:59							
			2:48							
			2:59							
206.5	120.7	5.0	ND	(3.7)	(3.0)	14				-Highly fractured, severely weathered zone with no recovery from 120.7-122.0 ft; Quartz vein from 124.2-124.6 ft
			1:38	74%	60%					
			2:06							
			3:56							
			3:38							
201.5	125.7	5.0	4:54	(5.1)	(5.1)	15				(2 joints at 30-40° with Fe and Mn staining)
			4:58	102%	102%					
			5:37							
			5:02							
			5:04							
196.5	130.7	5.0	5:30	(5.0)	(4.8)	16				(3 joints at 10-20° with Fe stain; 1 joint at 40°)
			4:59	100%	96%					
			6:35							

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COLLAR ELEV. 327.2 ft (NAVD88)			NORTHING 3,909,545		US ft (NAD83)		EASTING 11,685,980		US ft (NAD83)		24 HR. 32.8
TOTAL DEPTH 150.7 ft		DRILL MACHINE CME 55 Truck			DRILLER: H. Meyerson			HAMMER TYPE 140 lbs Auto			
DATE STARTED 9/6/06			COMPLETED 9/12/06			CORE BARREL TYPE: HQ 3 triple tube-wireline					
CORE SIZE HQ3			TOTAL RUN 150.7 ft								
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %			
										Continued from previous page	
191.5	135.7	5.0	7.29 9.03 6.45 5.17 4.29 3.30 3.07 3.04	(5.0) 100%	(3.6) 72%	17				Hard Rock: Light to dark gray with white, pink, and green, very slightly weathered to fresh, very close to wide fracturing, hard to very hard, BIOTITE-QUARTZ GNEISS (<i>continued</i>) (4 joints at 40-50° highly weathered with Fe and Mn stain; 3 joints at 30-40° with Fe stain; severely weathered zone from 136.9-137.4 ft)	
186.5	140.7	5.0	1.34 2.53 2.54 3.21 3.43	(5.0) 100%	(4.8) 96%	UCS-141.1				(2 joints at 10-20° with Fe staining)	
181.5	145.7	5.0	3.44 3.46 4.07 4.50 4.13	(5.0) 100%	(5.0) 100%	19				-No Joints	
176.5	150.7									Coring terminated at 150.7 ft in Hard Rock: Very hard, BIOTITE-QUARTZ GNEISS	

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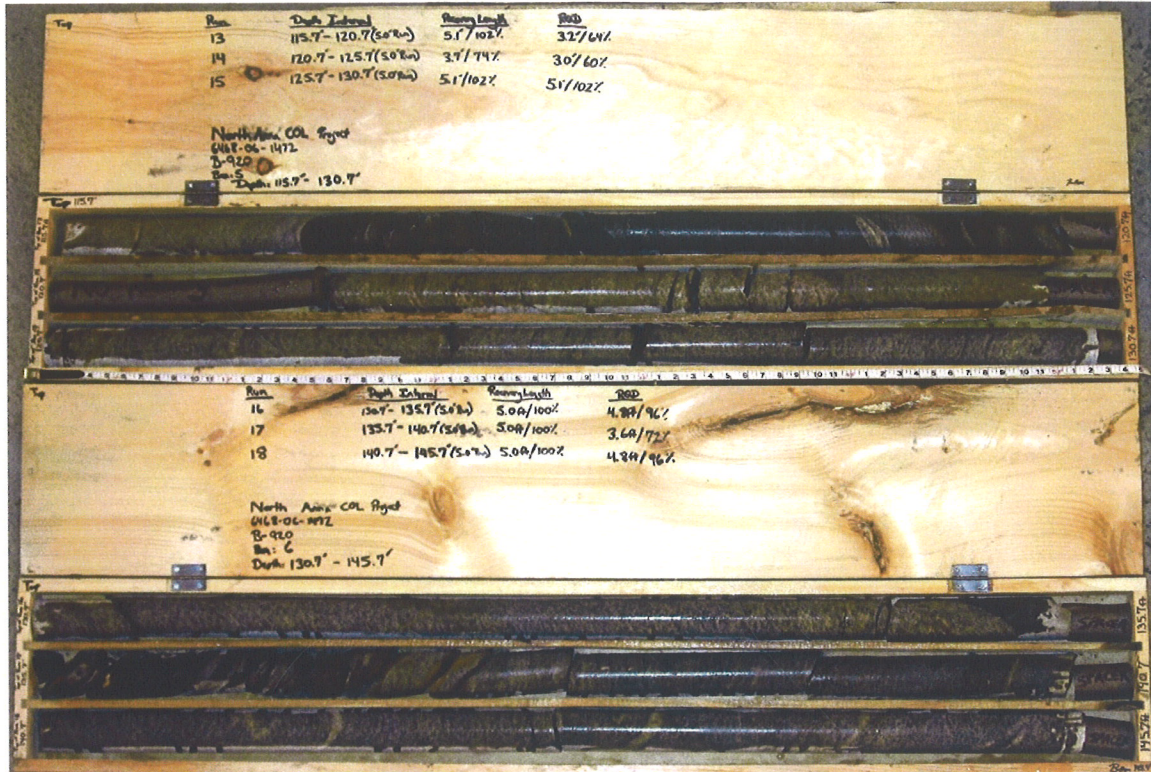
B-920 - Box 1

B-920 - Box 2

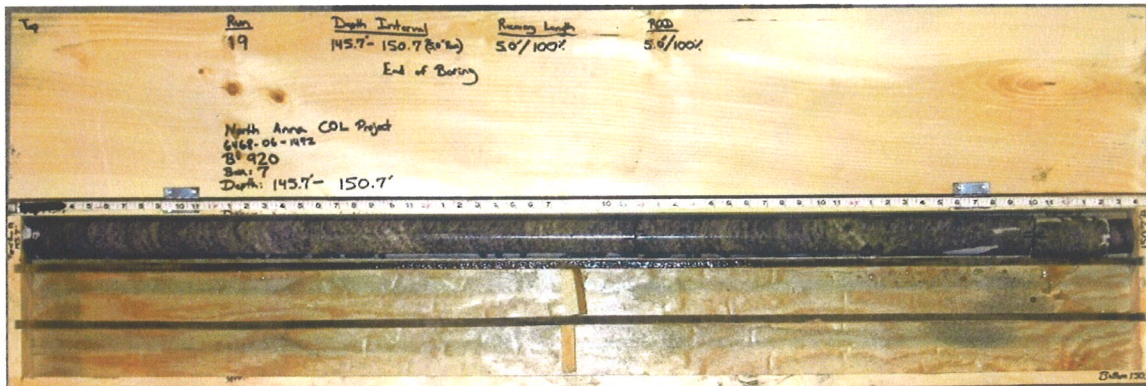


B-920 - Box 3

B-920 - Box 4



B-920 - Box 5
B-920 - Box 6



B-920 - Box 7