



BECHTEL PROJECT NO.: 25161				MACTEC PROJECT NO.: 6468-09-2473				COUNTY: Louisa, VA				GEOLOGIST: A. Mwembeshi			
SITE DESCRIPTION: North Anna 3 Project Supplement 2								DRILLER: R. Landeros/D. Reneau				FLUID LEVEL (ft)			
BORING NO.: M-2				DRILL METHOD: Mud Rotary/Rock Core				DRILL MACHINE: CME-550X (ATL)				0 HR. NA			
GROUND ELEV.: 315.3 ft (NAVD88)				NORTHING: 3,909,531 US ft (NAD83)				EASTING: 11,685,586 US ft (NAD83)				24 HR. 20.0			
TOTAL DEPTH: 153.4 ft		SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08						ROD TYPE: AWJ		HAMMER (ID):140-lb. Auto (MEC-05)					
DATE STARTED: 9/8/09		COMPLETED: 9/10/09		HOLE DIA.: 3"		CASING DEPTH: 46.0 ft		CORE SIZE: NQ3		BITS USED: 2-7/8" Tri-Cone					
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	
315.3					Ground Surface								315.3 0.0		
													No sampling from 0.0 to 8.6 feet due to soft dig utility clearance by Dominion Personnel.		
306.7	8.6												306.7 8.6		
304.0	11.3	3	5	5						SS-1			RESIDUAL SOIL: Silty SAND (SM), very pale brown (10YR 7/4), loose, moist, fine grained sand, relict rock fabric 11.3 ft: Brown (10YR 4/3), medium dense, little mica 13.6 ft: Few mica		
301.7	13.6	5	6	7						SS-2					
		7	8	11						SS-3					
297.5	17.8	6	6	9						SS-4			17.8 ft: Some mica		
292.5	22.8	6	10	14						SS-5					
287.5	27.8	9	12	20						SS-6			27.8 ft: Dense, fine to medium grained sand, few mica		
282.5	32.8	50	50/0.1							SS-7			283.3 32.0		
277.5	37.8	8	11	24						SS-8			280.3 35.0		
272.5	42.8	50/0.2								SS-9			WEATHERED ROCK: Severely weathered QUARTZ GNEISS (Sampled as Silty SAND (SM), light gray (10YR 7/1), very dense, moist, fine to medium grained sand, few rock fragments) RESIDUAL SOIL: Silty SAND (SM), light gray (10YR 7/1), dense, moist, fine to medium grained sand, few mica, trace rock fragments		
267.5	47.8	50/0.1								SS-10			274.3 41.0		
													WEATHERED ROCK: Severely weathered BIOTITE QUARTZ GNEISS (Sampled as Silty SAND (SM), yellowish brown (10YR 5/4), very dense, moist, fine to medium grained sand, few mica, few rock fragments)		
													267.5 47.8		
													WEATHERED ROCK and HARD ROCK: Light gray to pink with orange staining, severely to slightly weathered, very close to close fracturing, moderately hard, BIOTITE QUARTZ GNEISS		
													251.4 63.9		
													HARD ROCK: Light gray, light pinkish gray, and gray-brown, with trace orange staining, moderately to very slightly weathered, very close to wide fracturing, moderately hard to hard, BIOTITE QUARTZ GNEISS		

NORTH ANNA 3 BORE NORTH ANNA 3 PROJECT.GPJ NORTH ANNA 3.GDT 12/3/09



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25161			MACTEC PROJECT NO.: 6468-09-2473			COUNTY: Louisa, VA			GEOLOGIST: A. Mwembeshi				
SITE DESCRIPTION: North Anna 3 Project Supplement 2						DRILLER: R. Landeros/D. Reneau			FLUID LEVEL (ft)				
BORING NO.: M-2			DRILL METHOD: Mud Rotary/Rock Core			DRILL MACHINE: CME-550X (ATL)			0 HR. NA				
GROUND ELEV.: 315.3 ft (NAVD88)			NORTHING: 3,909,531 US ft (NAD83)			EASTING: 11,685,586 US ft (NAD83)			24 HR. 20.0				
TOTAL DEPTH: 153.4 ft			SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08			ROD TYPE: AWJ			HAMMER (ID):140-lb. Auto (MEC-05)				
DATE STARTED: 9/8/09			COMPLETED: 9/10/09			HOLE DIA.: 3"			CASING DEPTH: 46.0 ft				
						CORE SIZE: NQ3			BITS USED: 2-7/8" Tri-Cone				
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			
240.5					Continued from previous page								
													HARD ROCK: Light gray, light pinkish gray, and gray-brown, with trace orange staining, moderately to very slightly weathered, very close to wide fracturing, moderately hard to hard, BIOTITE QUARTZ GNEISS (continued)

NORTH ANNA 3 BORE NORTH ANNA 3 PROJECT.GPJ NORTH ANNA 3.GDT 12/3/09



SHEET 3 OF 3

BECHTEL PROJECT NO.: 25161			MACTEC PROJECT NO.: 6468-09-2473			COUNTY: Louisa, VA			GEOLOGIST: A. Mwembeshi						
SITE DESCRIPTION: North Anna 3 Project Supplement 2						DRILLER: R. Landeros/D. Reneau			FLUID LEVEL (ft)						
BORING NO.: M-2			DRILL METHOD: Mud Rotary/Rock Core			DRILL MACHINE: CME-550X (ATL)			0 HR. NA						
GROUND ELEV.: 315.3 ft (NAVD88)			NORTHING: 3,909,531 US ft (NAD83)			EASTING: 11,685,586 US ft (NAD83)			24 HR. 20.0						
TOTAL DEPTH: 153.4 ft			SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08						ROD TYPE: AWJ		HAMMER (ID):140-lb. Auto (MEC-05)				
DATE STARTED: 9/8/09			COMPLETED: 9/10/09		HOLE DIA.: 3"		CASING DEPTH: 46.0 ft		CORE SIZE: NQ3		BITS USED: 2-7/8" Tri-Cone				
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					
165.7					Continued from previous page										
													161.9	153.4	Boring and coring terminated at 151.1 feet. Boring closed by tremie method with cement-bentonite grout. 24 hour water level measured on 9/10/2009 prior to drilling. Borehole was at a depth of 83.4 feet.

NORTH ANNA 3 BORE NORTH ANNA 3 PROJECT.GPJ NORTH ANNA 3.GDT 12/3/09



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25161	MACTEC PROJECT NO.: 6468-09-2473	COUNTY: Louisa, VA	GEOLOGIST: A. Mwembeshi
SITE DESCRIPTION: North Anna 3 Project Supplement 2		DRILLER: R. Landeros/D. Reneau	FLUID LEVEL (ft)
BORING NO.: M-2	DRILL METHOD: Mud Rotary/Rock Core	DRILL MACHINE: CME-550X (ATL)	0 HR. NA
GROUND ELEV.: 315.3 ft (NAVD88)	NORTHING: 3,909,531 US ft (NAD83)	EASTING: 11,685,586 US ft (NAD83)	24 HR. 20.0
TOTAL DEPTH: 153.4 ft	SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08		HAMMER (ID): 140-lb. Auto (MEC-05)
DATE STARTED: 9/8/09	COMPLETED: 9/10/09	CASING DEPTH: 46.0 ft	CORE BARREL TYPE: Wireline NQ3 Triple Tube, series 6 & 8 bits

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 @ 47.8 ft
267.5	47.8	0.6	N=50/0.1 1:32/0.6	(0.6)	(0.0)	RUN 1	(7.2)	(1.7)	267.5	WEATHERED ROCK and HARD ROCK: Light gray to pink with orange staining, severely to slightly weathered, very close to close fracturing, moderately hard, BIOTITE QUARTZ GNEISS (2 joints at 45°, open with trace clay; 2 joints at 75°, open with orange staining)
266.9	48.4	5.0	1:20 4:00 2:10 2:25 3:02	100%	0%	RUN 2	45%	11%		
261.9	53.4	5.0	2:00 2:22 2:00 0:53 2:32	(1.5) 30%	(0.7) 14%	RUN 3				(6 joints at 45°, open with orange staining and trace clay; 3 joints at 75°, open with orange staining)
256.9	58.4	5.0	3:40 5:40 2:35 3:05 4:00	(2.7) 54%	(1.0) 20%	RUN 4				(Several joints/fractures, severely weathered, open with orange staining)
251.9	63.4	5.0	2:00 3:05 2:15 2:00 2:02	(2.4) 48%	(0.0) 0%	RUN 5	(88.4) 99%	(76.0) 85%	251.4	HARD ROCK: Light gray, light pinkish gray, and gray-brown, with trace orange staining, moderately to very slightly weathered, very close to wide fracturing, moderately hard to hard, BIOTITE QUARTZ GNEISS
246.9	68.4	3.5	2:56 2:04 2:14	(4.5) 90%	(4.1) 82%	RUN 6				(6 joints at 45°, tight with orange staining)
243.4	71.9	1.5	1:34/0.5 2:00/0.5 2:45	(3.3) 94%	(1.2) 34%	RUN 7				(5 joints at 45°, open with orange staining; Note: recovered 0.5 ft of RUN 6 with RUN 7)
241.9	73.4	5.0	1:53 2:30 1:50 2:50 2:22	(1.5) 100%	(1.2) 80%	RUN 8				(3 joints at 30°, open with trace orange staining)
236.9	78.4	5.0	1:18 1:42 2:03 2:05 2:21	(5.0) 100%	(4.7) 94%	RUN 9				(3 joints at 75°, open with clay; 1 joint at 90°, open with clay)
231.9	83.4	5.0	3:30 3:14 2:59 3:20 3:37	(5.0) 100%	(3.9) 78%	RUN 10				(2 joints at 45°, open with clay; 2 joints at 90°, open with clay)
226.9	88.4	5.0	3:00 2:59 2:10 2:47 2:41	(4.7) 94%	(4.7) 94%	RUN 11				(3 joints at 45°, tight with trace orange staining; 1 joint at 75°, open with trace clay)
221.9	93.4	5.0	2:50 2:03 2:17 2:03 2:07	(5.0) 100%	(2.9) 58%	RUN 12				(4 joints at 45°, open with orange staining; 1 joint at 75°, open with clay; 0.2 ft thick quartz vein at 92.4 ft)
216.9	98.4	5.0	4:04 3:43 3:11 3:28 3:30	(4.9) 98%	(4.1) 82%	RUN 13				(3 joints at 30°, open with orange staining; 1 joint at 90°, open with orange staining)
211.9	103.4	5.0	2:45 2:03 1:57 2:03 1:49	(5.0) 100%	(4.6) 92%	RUN 14				(3 joints at 30°, open with orange staining; 1 joint at 75°, open with orange staining and clay)
206.9	108.4	5.0	2:25 1:50 2:47 1:57 2:01	(5.0) 100%	(4.4) 88%	RUN 15				(6 joints at 45°, open with orange staining; 1 joint at 75°, open with orange staining)
201.9	113.4	5.0	2:15 1:30 1:28 1:35 2:50	(5.0) 100%	(4.8) 96%	RUN 16				(3 joints at 30°, open trace orange staining; 1 joint at 75°, open with orange staining; 0.1 ft thick quartz vein at 112.4 ft)
196.9	118.4	5.0	1:55 1:37 1:40 1:31	(5.0) 100%	(4.7) 94%	RUN 17				(3 joints at 30°, open with trace orange staining; 1 joint at 75°, open with trace orange staining)
										(2 joints at 0-10°, tight; 1 joint at 45°, open with orange staining; 1 joint at 60°, open with orange staining)

NORTH ANNA 3 CORE NORTH ANNA 3 PROJECT.GPJ NORTH ANNA 3.GDT 12/3/09

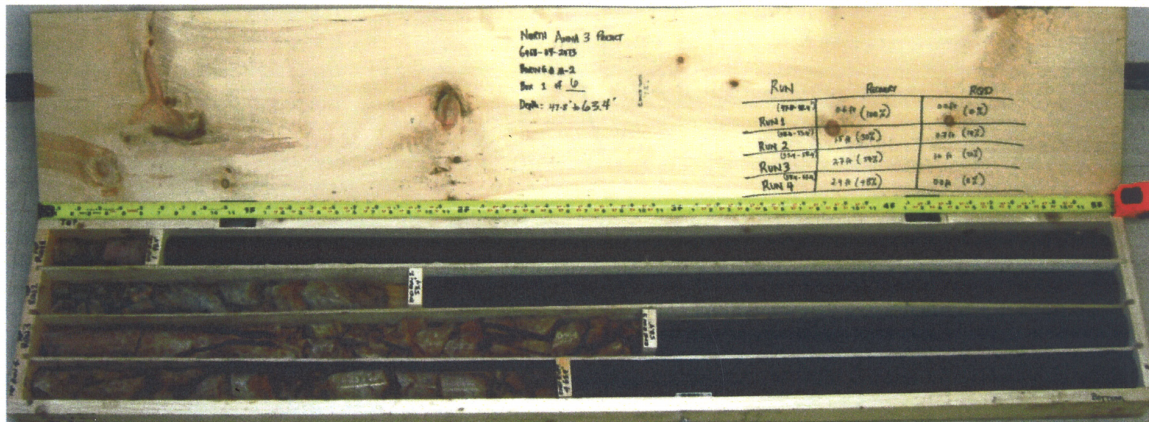


SHEET 2 OF 2

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BORING NO.: M-2	DRILL METHOD: Mud Rotary/Rock Core	DRILL MACHINE: CME-550X (ATL)	0 HR. NA
GROUND ELEV.: 315.3 ft (NAVD88)	NORTHING: 3,909,531 US ft (NAD83)	EASTING: 11,685,586 US ft (NAD83)	24 HR. 20.0
TOTAL DEPTH: 153.4 ft	SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08		HAMMER (ID): 140-lb. Auto (MEC-05)
DATE STARTED: 9/8/09	COMPLETED: 9/10/09	CASING DEPTH: 46.0 ft	CORE BARREL TYPE: Wireline NQ3 Triple Tube, series 6 & 8 bits

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) %		
										Continued from previous page
191.9	123.4	5.0	1:53 1:01 1:15 1:23 2:03 1:38	(4.9) 98%	(4.8) 96%	RUN 18				HARD ROCK: Light gray, light pinkish gray, and gray-brown, with trace orange staining, moderately to very slightly weathered, very close to wide fracturing, moderately hard to hard, BIOTITE QUARTZ GNEISS (<i>continued</i>) (2 joints at 30°, open with orange staining; 2 joints at 60°, tight)
186.9	128.4	5.0	1:25 1:44 1:53 1:48 1:20	(4.8) 96%	(4.4) 88%	RUN 19				(2 joints at 30°, open with trace orange staining; 2 joints at 60°, open with orange staining)
181.9	133.4	5.0	3:19 2:11 2:44 2:46 2:30	(5.0) 100%	(3.4) 68%	RUN 20				(3 joints at 30°, open with orange staining; 10 joints at 45°, open with clay; Moderately severely weathered, medium hard, BIOTITE GNEISS from 134.9-138.4 ft)
176.9	138.4	5.0	2:38 1:48 1:50 1:44 2:00	(5.0) 100%	(4.5) 90%	RUN 21				(Several joints at 45°, open with clay; 1 joint at 75°, open with orange staining and clay; moderately severely weathered, medium hard, BIOTITE GNEISS from 138.4-138.8 feet and from 142.4-143.4 feet)
171.9	143.4	5.0	2:24 2:02 3:02 2:20 2:03	(5.0) 100%	(4.1) 82%	RUN 22				(5 joints at 45°, open with clay; 3 joints at 75°, open with orange staining; moderately severely weathered, medium hard, BIOTITE GNEISS from 143.4-146.4 feet)
166.9	148.4	5.0	2:14 3:03 3:28 3:49 4:15	(5.0) 100%	(4.8) 96%	RUN 23				(2 joints at 45°, open with trace clay)
161.9	153.4									161.9 153.4
										Boring and coring terminated at 151.1 feet. Boring closed by tremie method with cement-bentonite grout. 24 hour water level measured on 9/10/2009 prior to drilling. Borehole was at a depth of 83.4 feet.

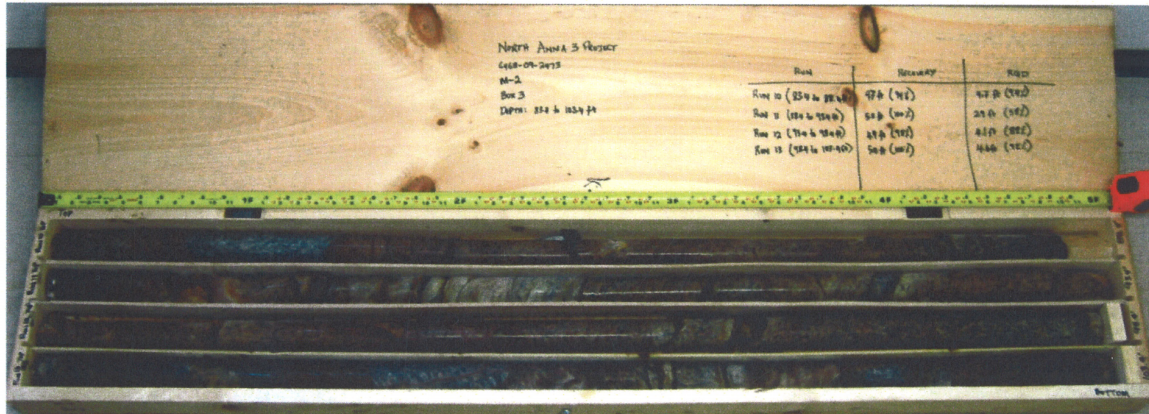
NORTH ANNA 3 CORE NORTH ANNA 3 PROJECT.GPJ NORTH ANNA 3.GDT 12/3/09



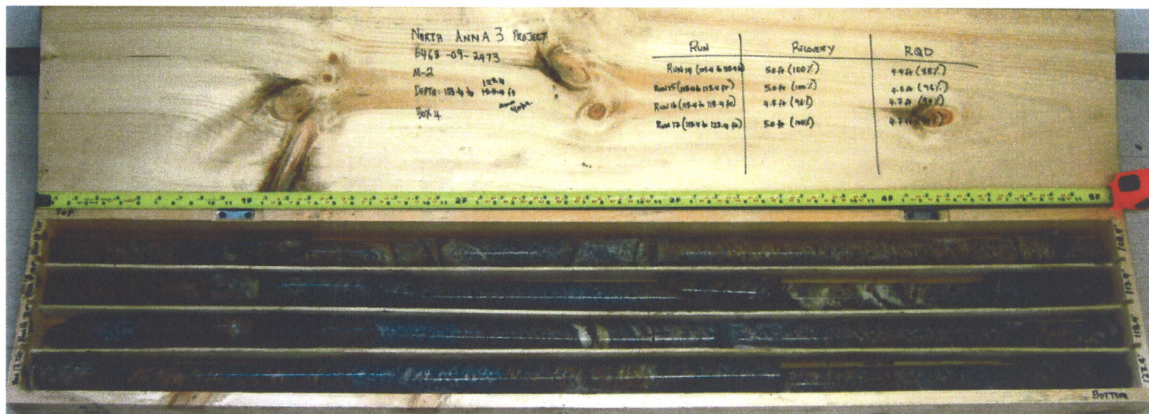
M-2 - Box 1



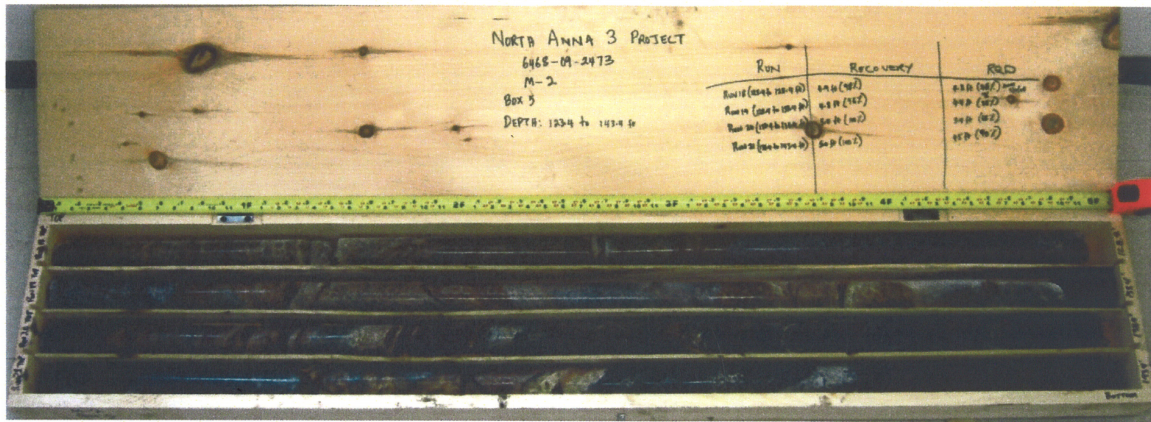
M-2 - Box 2



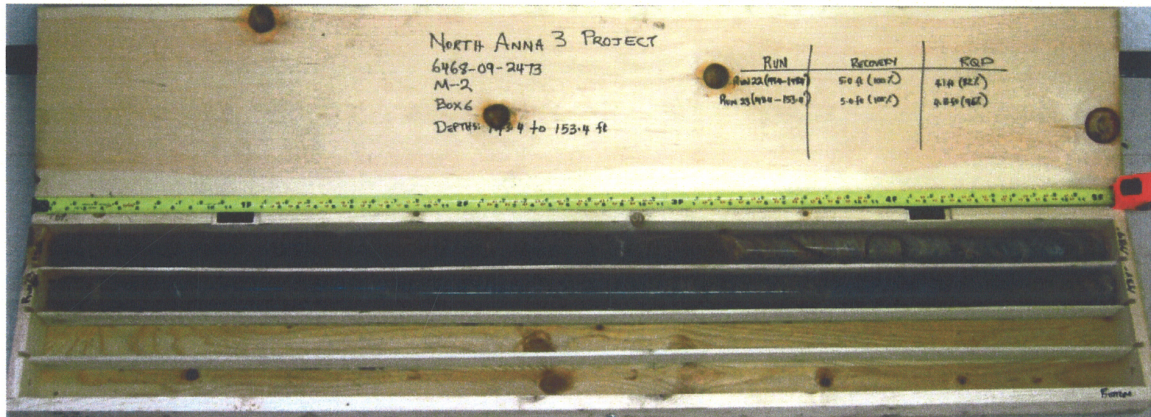
M-2 - Box 3



M-2 - Box 4



M-2 – Box 5



M-2 – Box 6