



GEOTECHNICAL BORING LOG

Prepared By JSS Date 12/16/09Checked By NAN Date 12/16/09

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25161				MACTEC PROJECT NO.: 6468-09-2473				COUNTY: Louisa, VA				GEOLOGIST: C. Baldwin					
SITE DESCRIPTION: North Anna 3 Project Supplement 2								DRILLER: P. Pitts/J. Tucker				FLUID LEVEL (ft)					
BORING NO.: M-7				DRILL METHOD: Mud Rotary/Rock Core				DRILL MACHINE: CME-55 Trailer (RAL)				0 HR.		NA			
GROUND ELEV.: 326.0 ft (NAVD88)				NORTHING: 3,909,504 US ft (NAD83)				EASTING: 11,685,836 US ft (NAD83)				24 HR.		35.3			
TOTAL DEPTH: 151.5 ft		SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08						ROD TYPE: AWJ		HAMMER (ID):140-lb. Auto (MEC-425)							
DATE STARTED: 9/8/09		COMPLETED: 9/11/09		HOLE DIA.: 3"		CASING DEPTH: 58.7 ft		CORE SIZE: NQ3		BITS USED: 2-7/8" Tri-Cone							
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	
326.0					Ground Surface												
														326.0 325.5	0.0 0.5	ASPHALT (Parking Lot) to 0.5 ft. No sampling from 0.0 to 9.1 feet due to soft dig utility clearance by Dominion Personnel	
316.9	9.1													316.9		9.1	RESIDUAL SOIL: Silty SAND (SM), Reddish yellow (5YR 6/6), medium dense, moist, fine to coarse grained sand, little mica, relict rock fabric
314.4	11.6	5	7	7							SS-1						
312.3	13.7	7	8	10							SS-2						
		8	13	15							SS-3						13.7 ft: Light gray (10YR 7/2)
306.9	19.1																
		15	19	12							SS-4						19.1 ft: Light brown (7.5YR 6/3), dense
302.0	24.0																
		23	32	46							SS-5						24.0 ft: Very dense
296.9	29.1																
		70	30/0.2								SS-6						29.1 ft: WEATHERED ROCK: Severely weathered QUARTZ GNEISS (Sampled as Silty SAND (SM), Brownish yellow (10YR 6/6), very dense, moist, fine to coarse grained sand, little mica)
291.9	34.1																
		50/0.4									SS-7						
287.0	39.0																
		50/0.4									SS-8						
281.9	44.1																
		50/0.2									SS-9						44.1 ft: No recovery
277.0	49.0																
		50/0.2									SS-10						
271.9	54.1																
		50/0.1									SS-11						54.1 ft: No recovery
266.9	59.1																
		50/0.1									SS-12						59.1 ft: No recovery

NORTH ANNA 3 BORE NORTH ANNA 3 PROJECT.GPJ NORTH ANNA 3.GDT 12/24/09



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25161		MACTEC PROJECT NO.: 6468-09-2473		COUNTY: Louisa, VA		GEOLOGIST: C. Baldwin							
SITE DESCRIPTION: North Anna 3 Project Supplement 2				DRILLER: P. Pitts/J. Tucker		FLUID LEVEL (ft)							
BORING NO.: M-7		DRILL METHOD: Mud Rotary/Rock Core		DRILL MACHINE: CME-55 Trailer (RAL)		0 HR. NA							
GROUND ELEV.: 326.0 ft (NAVD88)		NORTHING: 3,909,504 US ft (NAD83)		EASTING: 11,685,836 US ft (NAD83)		24 HR. 35.3							
TOTAL DEPTH: 151.5 ft		SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08		ROD TYPE: AWJ		HAMMER (ID):140-lb. Auto (MEC-425)							
DATE STARTED: 9/8/09		COMPLETED: 9/11/09		HOLE DIA.: 3"		CASING DEPTH: 58.7 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			
251.2					Continued from previous page								
													HARD ROCK: Gray and light gray, moderately severely to moderately weathered, very close to moderately close fracturing, medium hard to hard, BIOTITE QUARTZ GNEISS (<i>continued</i>)
													246.0 80.0
													WEATHERED ROCK: Grayish brown with orange staining, severely weathered, very close to close fracturing, very soft, QUARTZ BIOTITE GNEISS
													236.7 89.3
													HARD ROCK: Gray to grayish brown with orange staining, moderately severely to moderately weathered, very close to close fracturing, medium hard, QUARTZ BIOTITE GNEISS
													227.0 99.0
													WEATHERED ROCK: Severely weathered, QUARTZ BIOTITE GNEISS (No Recovery)
													222.0 104.0
													HARD ROCK: Orange brown to greenish gray with orange staining, moderately severely to moderately weathered, very close to close fracturing, medium hard to moderately hard, QUARTZ BIOTITE GNEISS (2 joints at 20°, open with clay; 2 joints at 40°, tight; 1 joint at 70°, open)
													219.7 106.3
													HARD ROCK: Gray with trace orange staining, slightly weathered, very close to moderately close fracturing, moderately hard, QUARTZ BIOTITE GNEISS
													209.7 116.3
													HARD ROCK: Gray to light gray and grayish brown, with orange staining, moderately to slightly weathered, very close to close fracturing, moderately hard, BIOTITE QUARTZ GNEISS
													184.7 141.3
													HARD ROCK: White, pink, and gray to light gray, very slightly weathered, close fracturing, hard, BIOTITE QUARTZ GNEISS and pegmatitic, graphic quartz + feldspar vein with trace garnet and magnetite

NORTH ANNA 3 BORE NORTH ANNA 3 PROJECT.GPJ NORTH ANNA 3.GDT 12/4/09



BECHTEL PROJECT NO.: 25161			MACTEC PROJECT NO.: 6468-09-2473			COUNTY: Louisa, VA		GEOLOGIST: C. Baldwin					
SITE DESCRIPTION: North Anna 3 Project Supplement 2						DRILLER: P. Pitts/J. Tucker		FLUID LEVEL (ft)					
BORING NO.: M-7			DRILL METHOD: Mud Rotary/Rock Core			DRILL MACHINE: CME-55 Trailer (RAL)		0 HR.	NA				
GROUND ELEV.: 326.0 ft (NAVD88)			NORTHING: 3,909,504 US ft (NAD83)			EASTING: 11,685,836 US ft (NAD83)		24 HR.	35.3				
TOTAL DEPTH: 151.5 ft		SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08				ROD TYPE: AWJ		HAMMER (ID): 140-lb. Auto (MEC-425)					
DATE STARTED: 9/8/09		COMPLETED: 9/11/09		HOLE DIA.: 3"		CASING DEPTH: 58.7 ft		CORE SIZE: NQ3 BITS USED: 2-7/8" Tri-Cone					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT 0.5ft 0.5ft 0.5ft			BLOWS PER FOOT 0 20 40 60 80 100					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	
176.4					Continued from previous page								
												174.5	151.5
												Boring and coring terminated at 151.5 feet.	
												Boring closed by tremie method with cement-bentonite grout.	
												24 hour water level measured on 9/11/2009 prior to drilling. Borehole was at a depth of 136.3 feet.	



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25161				MACTEC PROJECT NO.: 6468-09-2473				COUNTY: Louisa, VA		GEOLOGIST: C. Baldwin		
SITE DESCRIPTION: North Anna 3 Project Supplement 2						DRILLER: P. Pitts/J. Tucker				FLUID LEVEL (ft) 0 HR. NA 24 HR. 35.3		
BORING NO.: M-7				DRILL METHOD: Mud Rotary/Rock Core				DRILL MACHINE: CME-55 Trailer (RAL)				
GROUND ELEV.: 326.0 ft (NAVD88)				NORTHING: 3,909,504 US ft (NAD83)				EASTING: 11,685,836 US ft (NAD83)				
TOTAL DEPTH: 151.5 ft		SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08						HAMMER (ID): 140-lb. Auto (MEC-425)				
DATE STARTED: 9/8/09		COMPLETED: 9/11/09		CASING DEPTH: 58.7 ft		CORE BARREL TYPE: Wireline NQ3 Triple Tube, series 6 bit						
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 @ 59.2 ft		
266.8 264.7 264.2	59.2 61.3 61.8	2.1 0.5 5.0	0:50/1.1 1:03 0:23/0.5 1:35 1:57 2:14 2:00 2:15	(0.4) 19% (0.0) 0% (0.0) 0% (0.0) 0%	(0.0) 0% (0.0) 0%	RUN 1 RUN 2 RUN 3	(0.4) 4% (0.0) 0%	(0.0) 0%		266.8 264.2	WEATHERED ROCK: Brown and gray, with orange staining, severely weathered, very close fracturing, soft, BIOTITE QUARTZ GNEISS (1 joint at 0°, open) (No Recovery) (No Recovery)	59.2
259.2	66.8	4.5	2:17 1:45 1:54 4:51	(1.0) 22% (0.0) 0%	(0.0) 0%	RUN 4				255.7		70.3
254.7	71.3	5.0	4:00/0.5 3:53 3:44 3:15 3:09 3:09	(4.8) 96% (3.7) 74%	(3.6) 72%	RUN 5	(9.5) 98% (0.2) 2%	(5.7) 59%			HARD ROCK: Gray and light gray, moderately severely to moderately weathered, very close to moderately close fracturing, medium hard to hard, BIOTITE QUARTZ GNEISS (4 joints at 0°, open; 3 joints at 70-80°, tight) (3 joints at 0°, tight; 2 joints at 60°, tight; 2 joints at 80°, tight) (4 joints at 0°, open; 2 joints at 45°, tight; 2 joints at 60-70°, tight)	
249.7	76.3	5.0	3:20 3:30 3:30 3:00 3:58	(3.7) 74%	(2.1) 42%	RUN 6				246.0		80.0
244.7	81.3	5.0	2:40 2:10 2:07 2:00 3:32	(0.2) 4% (2.0) 40%	(0.0) 0%	RUN 7	(0.2) 2%	(0.0) 0%			WEATHERED ROCK: Grayish brown with orange staining, severely weathered, very close to close fracturing, very soft, QUARTZ BIOTITE GNEISS (1 joint at 40°, open with clay; poor recovery)	
239.7	86.3	5.0	2:37 2:43 2:32 3:37 3:28	(2.0) 40%	(0.8) 16%	RUN 8				236.7		89.3
234.7	91.3	5.0	3:09 3:30 4:20 3:53 3:36	(3.5) 70%	(0.4) 8%	RUN 9	(8.2) 85%	(2.4) 25%			HARD ROCK: Gray to grayish brown with orange staining, moderately severely to moderately weathered, very close to close fracturing, medium hard, QUARTZ BIOTITE GNEISS (4 joints at 50°, tight) (6 joints at 0°, tight; 4 joints at 60°, tight) (4 joints at 10°, tight; 2 joints at 50°, tight; 1 joint at 90°, tight)	
229.7	96.3	5.0	3:20 3:08 3:20 2:50 1:35	(2.7) 54%	(1.2) 24%	RUN 10				227.0		99.0
224.7	101.3	5.0	2:55 2:14 4:30 3:17 3:28	(2.3) 46%	(1.7) 34%	RUN 11	(0.0) 0%	(0.0) 0%			WEATHERED ROCK: Severely weathered, QUARTZ BIOTITE GNEISS (No Recovery)	
219.7	106.3	5.0	3:54 3:32 3:55 3:55 3:43	(4.8) 96%	(4.4) 88%	RUN 12	(2.3) 100%	(1.7) 74%		219.7	HARD ROCK: Orange brown to greenish gray with orange staining, moderately severely to moderately weathered, very close to close fracturing, medium hard to moderately hard, QUARTZ BIOTITE GNEISS (2 joints at 20°, open with clay; 2 joints at 40°, tight; 1 joint at 70°, open) HARD ROCK: Gray with trace orange staining, slightly weathered, very close to moderately close fracturing, moderately hard, QUARTZ BIOTITE GNEISS (2 joints at 40°, tight; 1 joint at 70°, tight) (5 joints at 20-30°, tight; 6 joints at 40-50°, tight)	106.3
214.7	111.3	5.0	4:26 4:14 3:57 4:16 4:30	(5.0) 100%	(4.7) 94%	RUN 13						
209.7	116.3	5.0	4:58 4:38 4:40 4:00 2:53	(4.7) 94%	(3.4) 68%	RUN 14	(24.7) 99%	(18.5) 74%		209.7	HARD ROCK: Gray to light gray and grayish brown, with orange staining, moderately to slightly weathered, very close to close fracturing, moderately hard, BIOTITE QUARTZ GNEISS (1 joint at 20°, tight; 3 joints at 50°, tight; 1 joint at 90°, tight) (3 joints at 0-10°, tight to open; 5 joints at 20-30°, tight; 1 joint at 80°, tight) (5 joints at 0-10°, tight; 3 joints at 20-30°, tight; 2 joints at 40-50°, tight; 1 joint at 70°, tight) (3 joints at 0-10°, tight; 1 joint at 40°, tight; 1 joint at 70°, tight)	116.3
204.7	121.3	5.0	2:40 2:22 2:15 2:19 2:27	(5.0) 100%	(3.7) 74%	RUN 15						
199.7	126.3	5.0	2:40 2:27 3:42 3:35 3:33	(5.0) 100%	(3.4) 68%	RUN 16						
194.7	131.3	5.0	3:37 3:34	(5.0) 100%	(4.7) 94%	RUN 17						

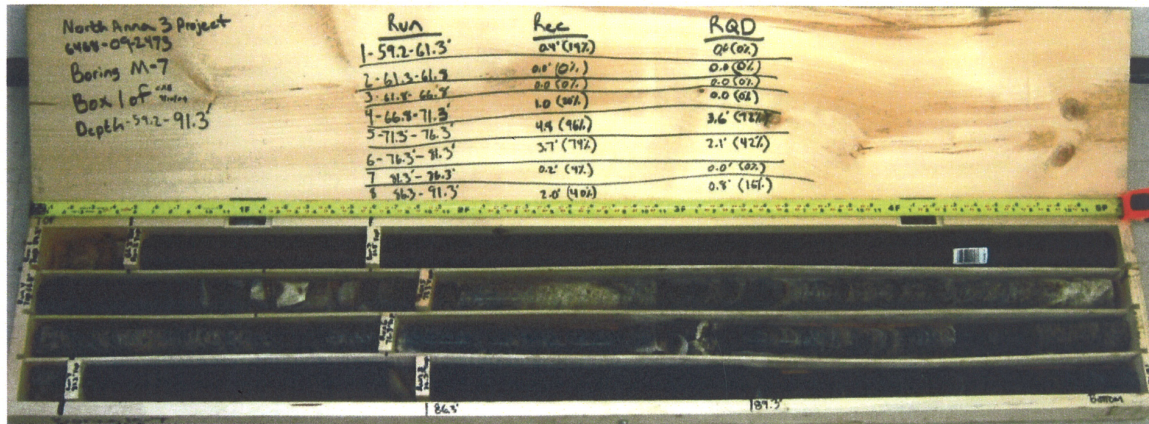
NORTH ANNA 3 CORE NORTH ANNA 3 PROJECT.GPJ NORTH ANNA 3.GDT 12/4/09



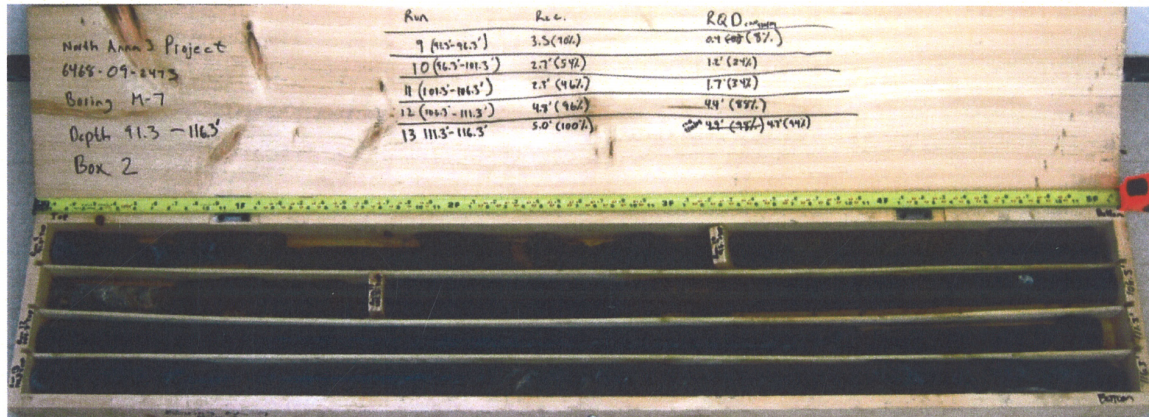
SHEET 2 OF 2

BECHTEL PROJECT NO.: 25161				MACTEC PROJECT NO.: 6468-09-2473				COUNTY: Louisa, VA		GEOLOGIST: C. Baldwin			
SITE DESCRIPTION: North Anna 3 Project Supplement 2								DRILLER: P. Pitts/J. Tucker			FLUID LEVEL (ft)		
BORING NO.: M-7				DRILL METHOD: Mud Rotary/Rock Core				DRILL MACHINE: CME-55 Trailer (RAL)			0 HR. NA		
GROUND ELEV.: 326.0 ft (NAVD88)				NORTHING: 3,909,504 US ft (NAD83)				EASTING: 11,685,836 US ft (NAD83)			24 HR. 35.3		
TOTAL DEPTH: 151.5 ft			SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08						HAMMER (ID): 140-lb. Auto (MEC-425)				
DATE STARTED: 9/8/09			COMPLETED: 9/11/09		CASING DEPTH: 58.7 ft			CORE BARREL TYPE: Wireline NQ3 Triple Tube, series 6 bit					
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	
												Continued from previous page	
189.7	136.3	5.0	3:50 3:47 3:18	(5.0)	(3.3)	RUN 18							HARD ROCK: Gray to light gray and grayish brown, with orange staining, moderately to slightly weathered, very close to close fracturing, moderately hard, BIOTITE QUARTZ GNEISS (continued) (7 joints at 10-20°, tight to open; 4 joints at 30-40°, tight; 1 joint at 70°, tight)
184.7	141.3	5.2	6:00 5:30 5:45 6:05 8:00	100%	66%							184.7	141.3
179.5	146.5	5.0	10:40 9:05 8:36 10:43 14:25/1.2	(5.2)	(4.6)	RUN 19	(10.2)	(9.2)	100%	90%			HARD ROCK: White, pink, and gray to light gray, very slightly weathered, close fracturing, hard, BIOTITE QUARTZ GNEISS and pegmatitic, graphic quartz + feldspar vein with trace garnet and magnetite (4 joints at 0-10°, tight; 4 joints at 20-30°, tight)
174.5	151.5	5.0	16:05 11:38 8:52 5:15 10:00	(5.0)	(4.6)	RUN 20						174.5	151.5
													Boring and coring terminated at 151.5 feet.
													Boring closed by tremie method with cement-bentonite grout.
													24 hour water level measured on 9/11/2009 prior to drilling. Borehole was at a depth of 136.3 feet.

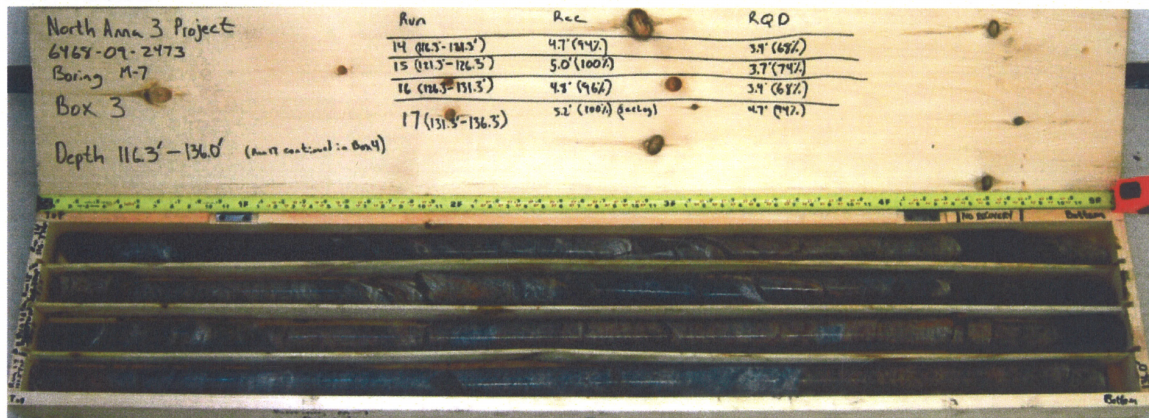
NORTH ANNA 3 CORE, NORTH ANNA 3 PROJECT-GPJ, NORTH ANNA 3.GDT, 12/4/09



M-7 - Box 1



M-7 - Box 2



M-7 - Box 3



M-7 - Box 4



BECHTEL PROJECT NO.: 25161					MACTEC PROJECT NO.: 6468-09-2473					COUNTY: Louisa, VA					GEOLOGIST: B. Mabie														
SITE DESCRIPTION: North Anna 3 Project Supplement 2										DRILLER: D. Rhodes/K. Guy					FLUID LEVEL (ft)														
BORING NO.: M-8					DRILL METHOD: Mud Rotary/Rock Core					DRILL MACHINE: CME-45C Track (RAL)					0 HR. NA														
GROUND ELEV.: 329.3 ft (NAVD88)					NORTHING: 3,909,414 US ft (NAD83)					EASTING: 11,685,847 US ft (NAD83)					24 HR. 33.0														
TOTAL DEPTH: 150.6 ft					SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08					ROD TYPE: AWJ					HAMMER (ID): 140-lb. Auto (MEC-12)														
DATE STARTED: 9/1/09					COMPLETED: 9/9/09					HOLE DIA.: 3"					CASING DEPTH: 76.0 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																			
329.3					Ground Surface									329.3	0.0														
321.2	8.1	3	5	5										321.2	8.1														
318.6	10.7	4	5	6							SS-1			319.3	10.0														
315.6	13.7	5	6	9							SS-2			316.3	13.0														
310.6	18.7	14	15	16							SS-3			313.3	16.0														
305.6	23.7	19	17	16							SS-4																		
300.6	28.7	4	6	11							SS-5																		
295.6	33.7	4	7	7							SS-6			303.3	26.0														
290.6	38.7	5	8	11							SS-7																		
285.6	43.7	13	14	15							SS-8																		
280.6	48.7	14	21	25							SS-9																		
275.6	53.7	17	31	50							SS-10																		
270.6	58.7	61	39/0.2								SS-11			273.3	56.0														
265.6	63.7	16	22	50							SS-12			268.3	61.0														
260.6	68.7	37	31	41							SS-13																		
255.6	73.7	50/0.4									SS-14																		
											SS-15			258.3	71.0														



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25161				MACTEC PROJECT NO.: 6468-09-2473				COUNTY: Louisa, VA				GEOLOGIST: B. Mabie			
SITE DESCRIPTION: North Anna 3 Project Supplement 2								DRILLER: D. Rhodes/K. Guy				FLUID LEVEL (ft)			
BORING NO.: M-8				DRILL METHOD: Mud Rotary/Rock Core				DRILL MACHINE: CME-45C Track (RAL)				0 HR. NA			
GROUND ELEV.: 329.3 ft (NAVD88)				NORTHING: 3,909,414 US ft (NAD83)				EASTING: 11,685,847 US ft (NAD83)				24 HR. 33.0			
TOTAL DEPTH: 150.6 ft		SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08						ROD TYPE: AWJ		HAMMER (ID):140-lb. Auto (MEC-12)					
DATE STARTED: 9/1/09		COMPLETED: 9/9/09		HOLE DIA.: 3"		CASING DEPTH: 76.0 ft		CORE SIZE: NQ3		BITS USED: 2-7/8" Tri-Cone					
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.
254.5					Continued from previous page										
250.6	78.7														
				50/0.2								SS-16		WEATHERED ROCK: Severely weathered BIOTITE QUARTZ GNEISS (Sampled as Well Graded SAND (SW), pale brown (10YR 6/3), very dense, wet, fine to coarse grained sand, few to little rock fragments) (continued)	
245.6	83.7													78.7 ft: Severely weathered BIOTITE QUARTZ GNEISS (Sampled as Silty SAND (SM), yellowish brown (10YR 5/4), moist, fine grained, some mica, little rock fragments (Hard drilling through entire run)	
242.9	86.4													83.7 ft: No recovery	
				50/0.0										86.4 ft: No Recovery	
														HARD ROCK: Light gray with orange staining, moderately severe to moderately weathered, close fracturing, medium hard, BIOTITE QUARTZ GNEISS	
														239.1	
														236.1	
														WEATHERED ROCK: Severely weathered BIOTITE QUARTZ GNEISS (No Recovery)	
														HARD ROCK: Light gray, brown, tan, and light brown, with orange staining, moderately to slightly weathered, close fracturing, medium hard to moderately hard, BIOTITE QUARTZ GNEISS	

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

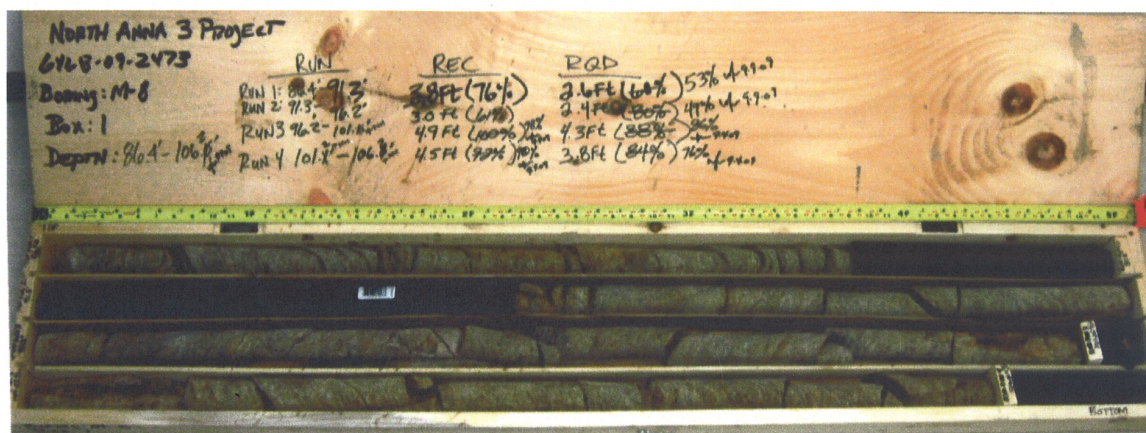
BECHTEL PROJECT NO.: 25161						MACTEC PROJECT NO.: 6468-09-2473						COUNTY: Louisa, VA						GEOLOGIST: B. Mabie																	
SITE DESCRIPTION: North Anna 3 Project Supplement 2												DRILLER: D. Rhodes/K. Guy						FLUID LEVEL (ft)																	
BORING NO.: M-8						DRILL METHOD: Mud Rotary/Rock Core						DRILL MACHINE: CME-45C Track (RAL)						0 HR. NA																	
GROUND ELEV.: 329.3 ft (NAVD88)						NORTHING: 3,909,414 US ft (NAD83)						EASTING: 11,685,847 US ft (NAD83)						24 HR. 33.0																	
TOTAL DEPTH: 150.6 ft						SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08						ROD TYPE: AWJ						HAMMER (ID): 140-lb. Auto (MEC-12)																	
DATE STARTED: 9/1/09						COMPLETED: 9/9/09						HOLE DIA.: 3"						CASING DEPTH: 76.0 ft						CORE SIZE: NQ3						BITS USED: 2-7/8" Tri-Cone					
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	MOI	LOG	SOIL AND ROCK DESCRIPTION																						
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100															NO.										
179.7					Continued from previous page																														
													178.7																						
													150.6																						
													Boring and coring terminated at 150.3 feet.																						
													Boring closed by tremie method with cement-bentonite grout.																						
													24 hour water level measured on 9/09/2009 prior to drilling. Borehole was at a depth of 136.2 feet.																						



SHEET 1 OF 1

BECHTEL PROJECT NO.: 25161				MACTEC PROJECT NO.: 6468-09-2473				COUNTY: Louisa, VA		GEOLOGIST: B. Mabie				
SITE DESCRIPTION: North Anna 3 Project Supplement 2						DRILLER: D. Rhodes/K. Guy				FLUID LEVEL (ft)				
BORING NO.: M-8				DRILL METHOD: Mud Rotary/Rock Core				DRILL MACHINE: CME-45C Track (RAL)				0 HR.	NA	
GROUND ELEV.: 329.3 ft (NAVD88)				NORTHING: 3,909,414 US ft (NAD83)				EASTING: 11,685,847 US ft (NAD83)		24 HR.		33.0		
TOTAL DEPTH: 150.6 ft			SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08						HAMMER (ID): 140-lb. Auto (MEC-12)					
DATE STARTED: 9/1/09			COMPLETED: 9/9/09		CASING DEPTH: 76.0 ft		CORE BARREL TYPE: Wireline NQ3 Triple Tube, series 6 bit							
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 @ 86.4 ft		
242.9	86.4	4.9	N=50/0.0 3:35 3:12 3:26 3:01 1:48/0.9	(3.8) 78%	(2.6) 53%		RUN 1	(3.8) 100%	(2.6) 68%			242.9	HARD ROCK: Light gray with orange staining, moderately severe to moderately weathered, close fracturing, medium hard, BIOTITE QUARTZ GNEISS (12 joints at 40-50°, open)	86.4
238.0	91.3							(0.0) 0%	(0.0) 0%			239.1	WEATHERED ROCK: Severely weathered BIOTITE QUARTZ GNEISS (No Recovery)	90.2
		4.9	1:49 2:28 2:08 2:24 2:30/0.9	(3.0) 61%	(2.4) 49%		RUN 2					236.1	HARD ROCK: Light gray, brown, tan, and light brown, with orange staining, moderately to slightly weathered, close fracturing, medium hard to moderately hard, BIOTITE QUARTZ GNEISS (1 joint at 60°, open; 3 at 90°, open) (9 joints at 20-50°, tight)	93.2
233.1	96.2	5.0	2:36 2:46 2:21 2:39 2:59	(4.9) 98%	(4.3) 86%		RUN 3							
		5.0	2:30 2:35 2:13 2:33 2:41	(4.5) 90%	(3.8) 76%		RUN 4						(7 joints at 20-30°, tight to open; 1 joint at 90°, tight)	
		5.0	2:38 2:46 2:15 2:26 2:29	(4.9) 98%	(4.0) 80%		RUN 5						(10 joints at 0-40°, open to tight)	
218.1	111.2											216.3	(3 joints at 0-40°, open)	113.0
		5.0	2:37 2:18 1:50 2:12 2:35	(1.8) 36%	(1.4) 28%		RUN 6	(0.0) 0%	(0.0) 0%			213.1	WEATHERED ROCK: Severely weathered BIOTITE QUARTZ GNEISS (No Recovery)	116.2
213.1	116.2	5.0	2:06 1:53 1:57 2:22 2:50	(4.8) 96%	(3.7) 74%		RUN 7	(6.3) 97%	(5.0) 77%				HARD ROCK: Light brown to tan and gray, with orange staining, moderately to slightly weathered, close fracturing, moderately hard, BIOTITE QUARTZ GNEISS (several joints at 90°, open) (1 joint at 20°, open)	122.7
208.1	121.2							(0.0) 0%	(0.0) 0%			206.6	WEATHERED ROCK: Severely weathered BIOTITE QUARTZ GNEISS (No Recovery)	126.2
		5.0	2:32 2:29 2:36 3:16 4:17	(1.5) 30%	(1.3) 26%		RUN 8					203.1		
203.1	126.2	3.2	3:40 4:01 3:01 1:48/0.2	(3.1) 97%	(1.8) 56%		RUN 9	(21.8) 89%	(17.0) 70%				HARD ROCK: Light brown, gray, and light gray, with orange staining, moderately severe to moderately weathered, close fracturing, medium hard to hard, BIOTITE QUARTZ GNEISS (11 joints at 0-90°, open; quartz vein from 126.2-127.8 ft) (4 joints at 0-30°, tight to open) (2 joints at 20-30°, tight; 3 joints at 80°, tight)	
199.9	129.4	1.8	2:08/0.8 2:47	(1.7) 94%	(1.3) 72%		RUN 10							
198.1	131.2	5.0	2:51 2:46 2:33 2:49 2:55	(5.0) 100%	(5.0) 100%		RUN 11							
		5.0	3:01 2:44 2:39 3:03 3:26	(4.8) 96%	(3.8) 76%		RUN 12						(6 joints at 20-30°, open; 2 joints at 80-90°, open)	
188.1	141.2	3.4	2:43 2:46 2:33 1:28/0.4	(2.8) 82%	(2.1) 62%		RUN 13						(2 joints at 0-20°, open; 2 joints at 80°, open)	
184.7	144.6	1.6	2:02/0.6 2:13	(1.6) 100%	(1.4) 88%		RUN 14						(4 joints at 20-40°, tight to open)	
183.1	146.2	4.4	2:42 2:54 3:26 4:12 1:33/0.4	(2.8) 64%	(1.6) 36%		RUN 15						(7 joints at 20-60°, open)	
178.7	150.6											178.7	Boring and coring terminated at 150.3 feet.	150.6
													Boring closed by tremie method with cement-bentonite grout.	
													24 hour water level measured on 9/09/2009 prior to drilling. Borehole was at a depth of 136.2 feet.	

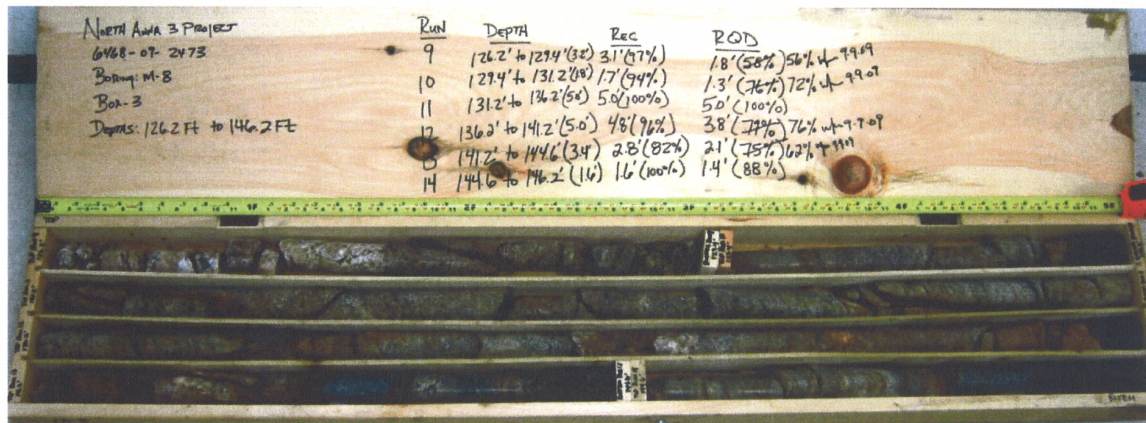
NORTH ANNA 3 CORE NORTH ANNA 3 PROJECT.GPJ NORTH ANNA 3.GDT 12/3/09



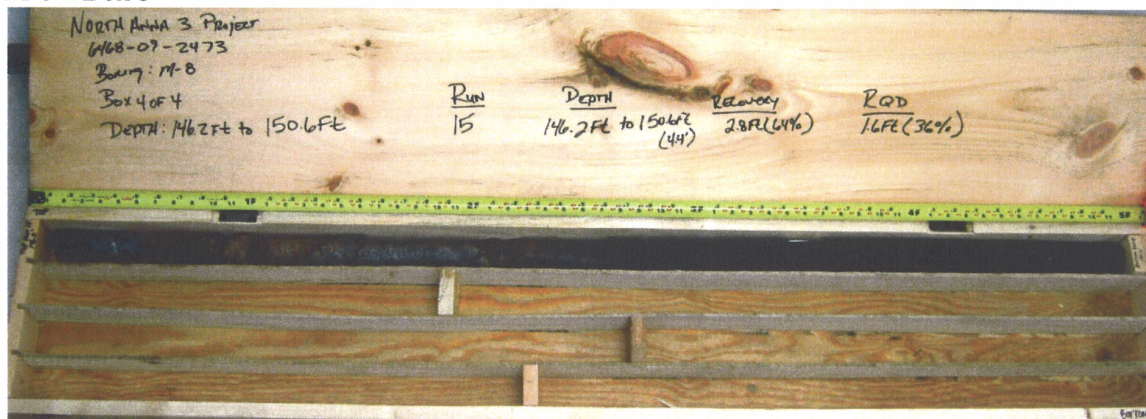
M-8 - Box 1



M-8 - Box 2



M-8 - Box 3



M-8 - Box 4