



MACTEC

N.C.D.O.T. GEOTECHNICAL UNIT BORING LOG

SHEET 1 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY Bertie		GEOLOGIST B. Deobald	
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River (MACTEC Proj. No. 6468-04-0808)							GROUND WATER (ft)
BORING NO. MB-29							0 HR. Water
COLLAR ELEV. -0.1 ft		NORTHING 830,391		EASTING 2,607,816		24 HR. Boring	
TOTAL DEPTH 101.2 ft		DRILL MACHINE CME 45 on Buggy		DRILL METHOD Mud Rotary		HAMMER TYPE Mud Rotary	
DATE STARTED 10/21/04		COMPLETED 10/21/04		SURFACE WATER DEPTH 0.7 ft			

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					
-0.1	0.0	2	10	8	Mud Line										
-0.1	0.0													0.0	
-5.4	5.3	3	5	5										3.0	Alluvium: Muck with wood. (Blow counts invalid: drove spoon into wood.)
-9.8	9.7	2	6	7											
-14.8	14.7	1	3	2											
-19.8	19.7	2	1	2											
-24.8	24.7	2	5	7											
-29.8	29.7	8	9	9											
-34.8	34.7	3	5	6											
-39.8	39.7	10	15	12											
-44.8	44.7	4	20	29											
-49.8	49.7	11	20	23											
-54.8	54.7	7	15	17											
-59.8	59.7	15	19	25											
-64.8	64.7	7	12	18											
-69.8	69.7	5	8	15											
-74.8	74.7														

NCDOT BORE SINGLE 0808.GPJ NC DOT.GDT 10/25/04



PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY Bertie		GEOLOGIST B. Deobald						
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River (MACTEC Proj. No. 6468-04-0808)						GROUND WATER (ft)						
BORING NO. MB-29		0 HR. Water										
COLLAR ELEV. -0.1 ft		NORTHING 830,391		EASTING 2,607,816		24 HR. Boring						
TOTAL DEPTH 101.2 ft		DRILL MACHINE CME 45 on Buggy		DRILL METHOD Mud Rotary		HAMMER TYPE Mud Rotary						
DATE STARTED 10/21/04		COMPLETED 10/21/04		SURFACE WATER DEPTH 0.7 ft								
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			
-74.9					Continued from previous page							
-79.8	79.7	25	40	60/0.4	100/0.9						M	Yorktown Fm: White, blue green and gray, f. sandy, clayey SILT (A-4) with trace shell frags. (continued)
-84.8	84.7	20	30	43	73						M/W	
-89.8	89.7	26	38	43	81						M	Yorktown Fm: Gray green with white and blue, silty, f. to cse. SAND (A-2-4) with trace shell frags. and friable limestone frags.
-94.8	94.7	34	14	22	36						M	
-99.8	99.7	17	25	27	52						M/W	
		15	24	34	58						M/W	
												Boring terminated at 101.2 ft (Elev. -101.3 ft) in Yorktown Fm: V. dense, clayey, silty f. to cse. SAND (A-2-4)
												Bits Used: 0.3' Roller Cone
												Drilling Fluid Properties: 8.5 lbs/gal



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SHEET 1 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY Bertie		GEOLOGIST B. Deobald	
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River (MACTEC Proj. No. 6468-04-0808)							GROUND WATER (ft)
BORING NO. MB-30							0 HR. Water
COLLAR ELEV. 0.4 ft		NORTHING 830,343		EASTING 2,607,681		24 HR. Boring	
TOTAL DEPTH 101.4 ft		DRILL MACHINE CME 45 on Buggy		DRILL METHOD Mud Rotary		HAMMER TYPE 140-lb Manual	
DATE STARTED 10/22/04		COMPLETED 10/22/04		SURFACE WATER DEPTH 0.20			

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				
0.4	0.0	1	0	1	Mud Line									
-0.4	0.4											Sat		Alluvium: Muck
-4.9	5.3	1	2	2								Sat		Alluvium: Tan, f. sandy CLAY (A-6) with trace organics
-9.9	10.3	4	5	9								Sat		Alluvium: Tan and gray, f. SAND (A-3) with trace organics
-14.5	14.9	4	3	7								W		Alluvium: Gray and brown, clayey, silty f. SAND (A-2-4) with trace organics
-19.5	19.9	2	1	3								M		Alluvium: Gray-brown, micaceous, silty CLAY (A-7-6) with trace organics
-24.5	24.9	2	3	3								M		CPU: Gray, silty CLAY (A-7-6) with trace mica
-29.5	29.9	2	2	3								M		
-34.5	34.9	4	3	6								M		CPU: Gray, f. to cse. SAND (A-3)
-39.5	39.9	3	3	6								W		CPU: Brown, silty CLAY (A-7-6) with little organics
-44.5	44.9	2	4	19								W		CPU: Gray, f. sandy, silty CLAY (A-7-6) with trace organics and v. thinly bedded sand (A-2-4)
-49.5	49.9	7	12	17								W		CPU: Gray, f. to cse. SAND (A-2-4) with trace gravel
-54.5	54.9	13	16	10								W		
-59.5	59.9	7	4	3								W		
-64.5	64.9	6	9	12								W		Yorktown Fm: Dark gray green with white and blue, f. sandy, clayey SILT (A-4) with trace shell frags.
-69.5	69.9	5	10	21								M/W		
-74.5	74.9													Yorktown Fm: No recovery, LIMESTONE



SHEET 2 OF 2

NC DOT BORE SINGLE 0808.GPJ NC DOT.GDT 10/25/04



MACTEC

PROJECT NO. 34424.1.1			ID. R-2404A			COUNTY Bertie			GEOLOGIST B. Deobald				
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River (MACTEC Proj. No. 6468-04-0808)									GROUND WATER (ft)				
BORING NO. MB-31									0 HR. 0.00		24 HR. 0.20		
COLLAR ELEV. 0.6 ft			NORTHING 830,318			EASTING 2,607,603							
TOTAL DEPTH 100.9 ft			DRILL MACHINE CME 45 on Buggy			DRILL METHOD Mud Rotary			HAMMER TYPE 140-lb Manual				
DATE STARTED 10/23/04			COMPLETED 10/23/04			SURFACE WATER DEPTH NA							
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			
0.6					Ground Surface								
0.6	0.0	1	1	1	2								0.6
-3.7	4.3	8	7	4	11						Sat	Alluvium: Muck to 0.5 ft. Alluvium: Gray, f. sandy, CLAY (A-6)	0.6
-8.7	9.3	5	6	8	14						Sat	Alluvium: Gray, silty, f. to cse. SAND (A-3)	6.9
-13.8	14.4	5	8	7	15						Sat		16.9
-18.8	19.4	2	2	3	5						M	Alluvium: Gray brown, micaceous, silty CLAY (A-7-6) with trace organics	17.5
-23.8	24.4	2	2	3	5						M	CPU: Gray to brown, silty CLAY (A-7-6) with trace organics and mica	21.9
-28.8	29.4	2	2	3	5						M		29.4
-34.3	34.9	2	3	4	7						M		34.9
-38.8	39.4	6	6	6	12						M/W	CPU: Gray, f. to cse. sandy CLAY (A-6) with v. thinly bedded sands (A-2-4)	36.9
-43.8	44.4	4	4	6	10						M/W		43.8
-48.8	49.4	4	11	23	34						W	CPU: Gray, f. to cse. SAND (A-2-4) with trace gravel	46.9
-53.8	54.4	8	14	24	38						W		53.8
-58.8	59.4	5	5	5	10						Sat	Yorktown Fm: Dark gray, f. sandy SILT (A-4), with trace shell fragments	56.9
-63.8	64.4	6	10	15	25						M		63.8
-68.8	69.4	10	37	50	87						M		68.8
-73.8	74.4												73.8

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SITE DESCRIPTION										Dual Structures on US 17 (Windsor Bypass) over Cashie River (MACTEC Proj. No. 6468-04-0808)			GROUND WATER (ft)										
BORING NO.										MB-31			0 HR.		0.00								
COLLAR ELEV.				0.6 ft		NORTHING				830,318		EASTING		2,607,603		24 HR.		0.20					
TOTAL DEPTH				100.9 ft		DRILL MACHINE				CME 45 on Buggy		DRILL METHOD				Mud Rotary		HAMMER TYPE				140-lb Manual	
DATE STARTED				10/23/04		COMPLETED				10/23/04		SURFACE WATER DEPTH								NA			
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	MOI	L O G	SOIL AND ROCK DESCRIPTION										
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	NO.												
-74.2					Continued from previous page																		
		16	45	48							M		Yorktown Fm: Dark gray, f. sandy SILT (A-4), with trace shell fragments (<i>continued</i>)										
-78.8	79.4												77.5										
		22	34	42							W		Yorktown Fm: Blue green to gray green, clayey, silty, f. to cse. SAND (A-2-4) with trace shell frags										
-83.8	84.4																						
		21	30	32							M/W												
-88.8	89.4																						
		16	24	28							M/W												
-93.8	94.4																						
		20	19	22							M/W												
-98.8	99.4																						
		16	25	28							Sat.		-100.3 100.9										
													Boring terminated at 100.9 ft (Elev. -100.3 ft) in Yorktown Fm: V. dense, clayey, silty f. SAND (A-2-4) Bits Used: 0.3' Roller Cone Drilling Fluid Properties: 8.6 lbs/gal										



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SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River (MACTEC Proj. No. 6468-04-0808)						GROUND WATER (ft)							
BORING NO. MB-35						0 HR. 0.00							
COLLAR ELEV. 1.0 ft		NORTHING 830,191		EASTING 2,607,542		24 HR.							
TOTAL DEPTH 100.4 ft		DRILL MACHINE CME 45 on Buggy		DRILL METHOD Mud Rotary		HAMMER TYPE 140-lb Manual							
DATE STARTED 10/24/04		COMPLETED 10/24/04		SURFACE WATER DEPTH NA									
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			
1.0					Ground								
1.0	0.0	1	1	1								Alluvium: Tan and gray, f. sandy CLAY (A-6) with roots	
-4.0	5.0	10	7	4								Alluvium: Tan and gray, clayey, silty f. SAND (A-2-4)	
-9.0	10.0	2	3	5								Alluvium: Gray, f. SAND (A-3) poor recovery	
-14.0	15.0	3	1	4								Alluvium: Gray, f. to cse. SAND and GRAVEL	
-18.7	19.7	2	2	2								Alluvium: Gray brown, micaceous, silty CLAY (A-7-6) with little organics	
-23.7	24.7	2	2	2								CPU: Gray, silty CLAY (A-7-6) with trace organics	
-28.7	29.7	2	2	2									
-33.7	34.7	2	1	3									
-38.7	39.7	2	2	2								CPU: Gray, silty, clayey, f. to cse. SAND (A-2-6) with trace organics	
-43.7	44.7	1	3	3								CPU: Gray, f. sandy CLAY (A-6) with v. thinly bedded sand (A-2-4)	
-48.7	49.7	9	25	22								CPU: Gray, f. to cse. SAND (A-2-4) with trace gravel	
-53.7	54.7	10	11	17									
-58.7	59.7	5	6	6									
-63.7	64.7	7	11	10								Yorktown Fm: Gray, blue and green, f. sandy, clayey SILT (A-4) with trace shell frags	
-68.7	69.7	10	14	17									
-73.7	74.7												



MACTEC

N.C.D.O.T. GEOTECHNICAL UNIT BORING LOG

SHEET 2 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY Bertie		GEOLOGIST B. Deobald					
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River (MACTEC Proj. No. 6468-04-0808)						GROUND WATER (ft)					
BORING NO. MB-35						0 HR. 0.00					
COLLAR ELEV. 1.0 ft		NORTHING 830,191		EASTING 2,607,542		24 HR.					
TOTAL DEPTH 100.4 ft		DRILL MACHINE CME 45 on Buggy		DRILL METHOD Mud Rotary		HAMMER TYPE 140-lb Manual					
DATE STARTED 10/24/04		COMPLETED 10/24/04		SURFACE WATER DEPTH NA							
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	
-73.8					Continued from previous page						
-78.7	79.7	33	67/0.5		100/0.7					W	Yorktown Fm: Gray, blue and green, f. sandy, clayey SILT (A-4) with trace shell frags (continued)
-83.7	84.7	29	41	46	87					W	Yorktown Fm: Blue green to gray green, silty, f. to cse. SAND (A-2-4) with trace shell frags and friable limestone frags
-88.7	89.7	19	26	21	47					W	
-93.7	94.7	15	16	21	37					W	
-98.7	99.7	14	16	21	37					W	
		74	26/0.2		100/0.7					W	Boring terminated at 100.4 ft (Elev. -99.4 ft) in Yorktown Fm: V. dense, silty f. to cse. SAND (A-2-4) with friable limestone frags. Bits Used: 0.3' Roller Cone Drilling Fluid Properties: 8.5 lbs/gal