



# NCDOT GEOTECHNICAL ENGINEERING UNIT

## BORELOG REPORT

PROJECT NO. 34379.1.17	ID. R-2123CE	COUNTY Mecklenburg	GEOLOGIST D. Goodnight
SITE DESCRIPTION I-485 (Charlotte Eastern Outer Loop) at I-85			GROUND WTR (ft)
BORING NO. DB-10	STATION 41+50	OFFSET 8 ft LT	ALIGNMENT Ramp H
COLLAR ELEV. 687.6 ft	TOTAL DEPTH 85.8 ft	NORTHING 585,985	EASTING 1,483,255
DRILL MACHINE CME-55 Truck	DRILL METHOD Wash Rotary/NQ Core	HAMMER TYPE Automatic	
DRILLER R. Toothman	START DATE 06/07/10	COMP. DATE 06/14/10	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
690															687.6	GROUND SURFACE
685	684.1	3.5	6	8	8								M			ROADWAY EMBANKMENT Very Stiff to Stiff, Low Plasticity, Brown, Coarse to Fine Sandy SILT with a Little Gravel
680	679.1	8.5	6	6	7								M			
675	674.1	13.5	4	4	9								M		675.6	ROADWAY EMBANKMENT Medium Stiff to Very Stiff, Medium Plasticity, Green-Gray, Coarse to Fine Sandy, Clayey SILT with a Little Gravel
670	669.1	18.5	4	3	5								M			
665	664.1	23.5	7	8	11								M			
660	659.1	28.5	4	4	6								W		660.1	RESIDUAL Stiff to Medium Stiff, Medium Plasticity, Tan-Brown and Gray, Fine Sandy, Clayey, SILT
655	654.1	33.5	2	3	4								W			
650	649.1	38.5	2	3	5								W		650.6	Medium Stiff to Very Stiff, Low Plasticity, Gray and White to Green and Tan, Fine Sandy SILT with Little Rock Fragments
645	644.1	43.5	9	11	13								W			
640	639.1	48.5	9	11	11								W			
635	634.7	52.9													637.6	WEATHERED ROCK Brown, Metamorphosed Quartz Diorite
630															634.7	CRYSTALLINE ROCK Dark Gray with White, Slightly Weathered, Hard, Metamorphosed Quartz Diorite with Very Close to Close Fracture Spacing
625															632.3	Dark Gray with White, Very Slightly Weathered to Fresh, Hard, Metamorphosed Quartz Diorite with Close to Moderately Close Fracture Spacing
620															623.8	Dark Gray, Moderately to Slightly Weathered, Hard, Finer Grained, Metamorphosed Quartz Diorite with Close Fracture Spacing
615															620.0	Dark Gray with White, Very Slightly Weathered to Fresh, Hard, Metamorphosed Quartz Diorite with Close to Moderately Close Fracture Spacing
610																

NCDOT BORE SINGLE 111643.GPJ NC\_DOT.GDT 6/18/10



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SITE DESCRIPTION I-485 (Charlotte Eastern Outer Loop) at I-85							GROUND WTR (ft)									
BORING NO. DB-10		STATION 41+50		OFFSET 8 ft LT		ALIGNMENT Ramp H										
COLLAR ELEV. 687.6 ft		TOTAL DEPTH 85.8 ft		NORTHING 585,985		EASTING 1,483,255										
DRILL MACHINE CME-55 Truck		DRILL METHOD Wash Rotary/NQ Core				HAMMER TYPE Automatic										
DRILLER R. Toothman		START DATE 06/07/10		COMP. DATE 06/14/10		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
610						Match Line										
605						•••••	•••••	•••••	•••••						Dark Gray with White, Very Slightly Weathered to Fresh, Hard, Metamorphosed Quartz Diorite with Close to Moderately Close Fracture Spacing (continued)	
600														601.8		85.8
595															Boring Terminated at Elevation 601.8 ft in Crystalline Rock: Metamorphosed Quartz Diorite	
590															Bentonite and Tap Water Used as Drilling Fluid Mud Wt. = 64 lbs./cubic ft. initially	
585															Note: Driller Noted Hard Drilling from 50.0 ft. to 52.9 ft. Material Logged from Cuttings	
580																
575																
570																
565																
560																
555																
550																
545																
540																
535																
530																

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# NCDOT GEOTECHNICAL ENGINEERING UNIT CORE BORING REPORT

PROJECT NO. 34379.1.17		ID. R-2123CE		COUNTY Mecklenburg		GEOLOGIST D. Goodnight						
SITE DESCRIPTION I-485 (Charlotte Eastern Outer Loop) at I-85							GROUND WTR (ft)					
BORING NO. DB-10		STATION 41+50		OFFSET 8 ft LT		ALIGNMENT Ramp H						
COLLAR ELEV. 687.6 ft		TOTAL DEPTH 85.8 ft		NORTHING 585,985		EASTING 1,483,255						
DRILL MACHINE CME-55 Truck		DRILL METHOD Wash Rotary/NQ Core				HAMMER TYPE Automatic						
DRILLER R. Toothman		START DATE 06/07/10		COMP. DATE 06/14/10		SURFACE WATER DEPTH N/A						
CORE SIZE NQ		TOTAL RUN 32.9 ft										
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)	
					REC. (ft) %	RQD (ft) %	REC. (ft) %	RQD (ft) %				
634.7										Begin Coring @ 52.9 ft		
	634.7	52.9	2.9	5:22	(2.5)	(1.0)	(2.0)	(0.5)		634.7	52.9	
				4:48	86%	34%	83%	21%		CRSTALLINE ROCK		
	631.8	55.8		6:12			(8.4)	(7.8)		Dark Gray with White, Slightly Weathered, Hard, Metamorphosed Quartz Diorite with Very Close to Close Fracture Spacing	55.3	
630			5.0	4:38	(5.0)	(4.6)	99%	92%		5 joints at 60° to 70° 2 joints at 30° 1 joint at 90° 1 joint at 10°		
				5:12	100%	92%						
	626.8	60.8		3:47								
			5.0	2:59								
625				3:15								
				3:26	(4.9)	(2.7)						
			5.0	2:38	98%	54%				Extremely Fractured at 53.9 ft. to 54.5 ft. Core Loss from 54.0 ft. to 54.4 ft. Some Iron Staining on Some Joint Faces	63.8	
	621.8	65.8		3:30			(2.9)	(0.0)				
			5.0	3:57			76%	0%	Dark Gray with White, Very Slightly, Weathered to Fresh, Hard, Metamorphosed Quartz Diorite with Close to Moderately Close Fracture Spacing	67.6		
620				5:23	(4.1)	(2.8)						
			5.0	4:09	82%	56%	(18.2)	(17.8)				
	616.8	70.8		5:54			100%	98%	7 joints at 30° to 40° 1 joint at 10° 2 joints at 0° to 5° 1 joint at 60°			
			5.0	4:44	(5.0)	(5.0)						
615				2:45	100%	100%			Slight Iron Staining 1 Set of Very Close Fractures at 59.3 ft.			
			5.0	3:00					Dark Gray, Moderately to Slightly Weathered, Hard, Finer Grained, Metamorphosed Quartz Diorite with Close Fracture Spacing			
	611.8	75.8		3:24								
			5.0	2:52	(5.0)	(5.0)			1 joint at 90° 6 joints at 5° to 10° 10 joints at 30° to 40°			
610				2:40	100%	100%			Moderately Severely, Weathered, Extremely Fractured Zone at 66.5 ft. to 67.0 ft. with Core Loss and Iron Staining on all Joint Faces	85.8		
			5.0	3:27					Dark Gray with White, Very Slightly Weathered to Fresh, Hard, Metamorphosed Quartz Diorite with Close to Moderately Close Fracture Spacing			
	606.8	80.8		2:33								
			5.0	2:35	(5.0)	(5.0)						
605				3:25	100%	100%						
			5.0	2:54								
	601.8	85.8		3:15								
			5.0	3:12								
600				3:27								
595												
590												
585												
580												
575												
570												
565												
560												
555												

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Boring Terminated at Elevation 601.8 ft in Crystalline Rock: Metamorphosed Quartz Diorite

Bentonite and Tap Water Used as Drilling Fluid  
Mud Wt. = 64 lbs./cubic ft. initially

# CORE PHOTOGRAPHS

## DB-10

BOXES 1 & 2: 52.9 - 70.8 FEET



# CORE PHOTOGRAPHS

## DB-10

BOXES 3 & 4: 70.8 - 85.8 FEET

