



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			
BORING NO. DB-11	STATION 33+45	OFFSET CL	ALIGNMENT Ramp E
COLLAR ELEV. 657.6 ft	TOTAL DEPTH 81.0 ft	NORTHING 586,350	EASTING 1,482,847
DRILL MACHINE CME 850		DRILL METHOD Wash Rotary/NQ Core	HAMMER TYPE Automatic
DRILLER R. Toothman		START DATE 06/23/10	COMP. DATE 06/25/10
SURFACE WATER DEPTH N/A			

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
660															657.6	GROUND SURFACE 0.0
655	654.1	3.5	2	1	2										651.6	ALLUVIAL Soft, Medium Plasticity, Brown and Gray, Fine Sandy SILT with a Little Organics 6.0
650	649.1	8.5	6	10	11										645.6	RESIDUAL Very Stiff, Medium Plasticity, Brown, Fine Sandy, Clayey SILT 12.0
645	644.1	13.5	11	24	45										640.6	Very Dense, Non-Plastic, Brown and Gray, Silty, Coarse to Fine SAND 17.0
640	639.1	18.5	21	79/0.5						100/1.0					625.1	WEATHERED ROCK Gray and White, Metamorphosed Quartz Diorite 32.5
635	634.1	23.5	75	25/0.3						100/0.8					620.5	CRYSTALLINE ROCK Gray with White, Moderately to Slightly Weathered, Moderately Hard to Hard, Metamorphosed Quartz Diorite with Very Close to Close Fracture Spacing 37.1
630	629.1	28.5	72	28/0.2						100/0.7					614.1	WEATHERED ROCK Gray and Brown, Severely Weathered, Soft, Metamorphosed Quartz Diorite with No Observable Fracturing 43.5
625	625.1	32.5	60/0.0							60/0.0					589.1	CRYSTALLINE ROCK Gray with White, Moderately to Slightly Weathered, Moderately Hard to Hard, Metamorphosed Quartz Diorite with Very Close to Close Fracture Spacing 68.5
620																
615	616.5	41.1	50	50/0.3						100/0.8						
610	614.1	43.5	60/0.0							60/0.0						
605																
600																
595																
590																
585																
580																

NCDOT BORE SINGLE 111643.GPJ NC_DOT_GDT 6/25/10



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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-11	STATION 33+45	OFFSET CL	ALIGNMENT Ramp E
COLLAR ELEV. 657.6 ft	TOTAL DEPTH 81.0 ft	NORTHING 586,350	EASTING 1,482,847
DRILL MACHINE CME 850	DRILL METHOD Wash Rotary/NQ Core	HAMMER TYPE Automatic	
DRILLER R. Toothman	START DATE 06/23/10	COMP. DATE 06/25/10	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	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						ELEV. (ft)
580																
575															576.6	81.0
570																
565																
560																
555																
550																
545																
540																
535																
530																
525																
520																
515																
510																
505																
500																

NCDOT BORE SINGLE 111643.GPJ NC DOT.GDT 6/25/10

LOG

Boring Terminated at Elevation 576.6 ft in Crystalline Rock: Metamorphosed Quartz Diorite

Bentonite and Tap Water Used as Drilling Fluid

Mud Wt. = 64 lbs./cubic ft. Initially



NCDOT GEOTECHNICAL ENGINEERING UNIT CORE BORING REPORT

PROJECT NO. 34379.1.17	ID. R-2123CE	COUNTY Mecklenburg	GEOLOGIST D. Goodnight
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SITE DESCRIPTION I-485 (Charlotte Eastern Outer Loop) at I-85				GROUND WTR (ft)	
BORING NO. DB-11	STATION 33+45	OFFSET CL	ALIGNMENT Ramp E	0 HR.	5.0
COLLAR ELEV. 657.6 ft	TOTAL DEPTH 81.0 ft	NORTHING 586,350	EASTING 1,482,847	24 HR.	5.0

DRILL MACHINE CME 850	DRILL METHOD Wash Rotary/NQ Core	HAMMER TYPE Automatic
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DRILLER R. Toothman	START DATE 06/23/10	COMP. DATE 06/25/10	SURFACE WATER DEPTH N/A
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CORE SIZE NQ	TOTAL RUN 46.1 ft
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ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (%)	RQD (%)		REC. (%)	RQD (%)			
625.1											Begin Coring @ 32.5 ft	
	625.1	32.5	3.6	2:52 3:12 2:14	(1.6) 44%	(1.0) 28%		(2.4) 52%	(1.0) 22%	625.1	CRYSTALLINE ROCK	32.5
	621.5	36.1		2:19						620.5	Gray with White, Moderately to Slightly Weathered, Moderately Hard to Hard, Metamorphosed Quartz Diorite with Very Close to Close Fracture Spacing	37.1
	616.5	41.1	5.0	2:10 1:40 1:03 1:42 2:00	(0.8) 16%	(0.0) 0%				614.1	Core Loss Throughout Iron Staining on Joint Faces Extremely Fractured Zones at 33.5 ft. to 34.0 ft. and 36.1 ft. to 37.1 ft.	37.1
	614.1	43.5								614.1	WEATHERED ROCK	43.5
	611.1	46.5	3.0	1:23 1:19 1:56	(2.0) 67%	(0.5) 17%		(16.7) 67%	(3.6) 14%	610	Gray and Brown, Severely Weathered, Soft, Metamorphosed Quartz Diorite with No Observable Fracturing	43.5
	606.1	51.5	5.0	2:04 1:13 3:02 2:51 2:12	(4.2) 84%	(0.6) 12%				605	Core Loss from 37.1 ft. to 41.1 ft.	43.5
	601.1	56.5	5.0	2:00 1:59 0:56 2:15 1:10	(2.0) 40%	(0.0) 0%				600	CRYSTALLINE ROCK	43.5
	596.1	61.5	5.0	0:56 1:38 2:10 2:13 2:21	(2.0) 40%	(0.0) 0%				595	Gray with White, Moderately to Slightly Weathered, Moderately Hard to Hard, Metamorphosed Quartz Diorite with Very Close to Close Fracture Spacing	43.5
	591.1	66.5	5.0	1:28 1:41 1:24 2:57 2:43	(4.5) 90%	(2.2) 44%				590	5 joints at 80° to 90° 5 joints at 60° to 70° 4 joints at 30° to 40° 3 joints at 10° to 20°	43.5
	586.1	71.5	5.0	1:23 2:20 2:34 2:26 2:13	(4.9) 98%	(1.9) 38%		(11.6) 93%	(9.0) 72%	589.1	Core Loss Throughout and at 66.0 ft. to 66.5 ft. Iron Staining on Most Joint Faces Extremely Fractured Zones at 46.0 ft. to 46.5 ft., 47.8 ft. to 56.5 ft.	68.5
	581.1	76.5	4.5	1:49 2:05 2:03 2:27 2:36	(5.0) 100%	(4.2) 84%				585	Gray and White, Slightly to Very Slightly Weathered, Moderately Hard to Hard, Metamorphosed Quartz Diorite with Close to Moderately Close Fracture Spacing	68.5
	576.6	81.0	4.5	2:06 2:15 1:52 0:46 1:12/0.5	(3.7) 82%	(3.2) 71%				580	5 joints at 30° to 40° 5 joints at 70° to 80° 2 joints at 50° to 60° 3 joints at 10° to 20° 3 joints at 0° to 5°	68.5
										575	Core Loss at 79.5 ft. to 80.5 ft. Iron Staining on Joint Faces Moderately Severely Weathered Zone at 79.5 ft. to 80.5 ft.	81.0
										570	Boring Terminated at Elevation 576.6 ft in Crystalline Rock: Metamorphosed Quartz Diorite	81.0
										565	Bentonite and Tap Water Used as Drilling Fluid Mud Wt. = 64 lbs./cubic ft. initially	81.0
										560		81.0
										555		81.0
										550		81.0

NCDOT CORE SINGLE 111643.GPJ NC_DOT.GDT 6/25/10

CORE PHOTOGRAPHS

DB-11

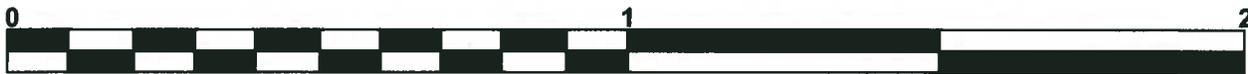
BOXES 1 & 2: 32.5 - 66.5 FEET



CORE PHOTOGRAPHS

DB-11

BOXES 3 & 4: 66.5 - 81.0 FEET



FEET

