



PROJECT NO. 36971		ID. NCMA10001B		COUNTY Union		GEOLOGIST D. BENTS	
SITE DESCRIPTION Replacement of Bridge No. 33 over Twelve Mile Creek on NC 16							
BORING NO. B3-A		BORING LOCATION 18+06		OFFSET 22 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 498.5 ft		NORTHING		EASTING		GROUND WATER (ft) 0 HR. N/A	
TOTAL DEPTH 36.2 ft		DRILL MACHINE Diedrich D-50		DRILL METHOD 3/8" HSA AND NO-2 CORE BARREL		HAMMER TYPE MANUAL	
DATE STARTED 2/9/04		COMPLETED 2/9/04		SURFACE WATER DEPTH N/A			
CORE SIZE NO-2		TOTAL RUN 23.9 ft		DRILLER L. Shrader			
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft)	ROD (ft)	SAMP. NO.	SOIL AND ROCK DESCRIPTION
486.2	12.3	3.9	1:40:1.0 (3.8)	1:50:1.0 (100%)	1:50:1.0 (59%)	(23.9) (14.5)	486.2
482.3	16.2	5.0	1:30:1.0 (5.0)	1:30:1.0 (100%)	1:30:1.0 (69%)		482.3
477.3	21.2	5.0	1:30:1.0 (5.0)	1:30:1.0 (100%)	1:30:1.0 (74%)		477.3
472.3	26.2	5.0	1:30:1.0 (5.0)	1:30:1.0 (100%)	1:30:1.0 (54%)		472.3
467.3	31.2	5.0	1:30:1.0 (5.0)	1:30:1.0 (100%)	1:30:1.0 (50%)		467.3
462.3	36.2	5.0	1:30:1.0 (5.0)	1:30:1.0 (100%)	1:30:1.0 (50%)		462.3

DESCRIPTION AND REMARKS

Begin Coring @ 12.3 ft

NON-CRYSTALLINE ROCK:
MEDIUM TO MODERATELY HARD
GRAY-WHITE METAVOLCANIC MUDSTONE
WITH MODERATELY CLOSE TO VERY CLOSE FRACTURE SPACING
2 JOINTS AT 5 DEGREES, 5 JOINTS AT 30 DEGREES,
14 JOINTS AT 60 DEGREES, 18 JOINTS AT 80 DEGREES

BORING TERMINATED
AT ELEVATION 462.3 FEET
IN NON-CRYSTALLINE ROCK
MEDIUM TO MODERATELY HARD
METAVOLCANIC MUDSTONE

NCDDOT BORING SINGLE 6:1286.GPJ NCDDOT.GDT 2/18/04



PROJECT NO. 36971		ID. NCMA10001B		COUNTY Union		GEOLOGIST D. BENTS	
SITE DESCRIPTION Replacement of Bridge No. 33 over Twelve Mile Creek on NC 16							
BORING NO. B3-B		BORING LOCATION 18+06		OFFSET 22 ft RT		ALIGNMENT -L-	
COLLAR ELEV. 498.4 ft		NORTHING 10.0		EASTING 50.0		GROUND WATER (ft) 0 HR. 13.9	
TOTAL DEPTH 15.7 ft		DRILL MACHINE Diedrich D-50		DRILL METHOD 3/8" HSA		HAMMER TYPE MANUAL	
DATE STARTED 2/9/04		COMPLETED 2/9/04		SURFACE WATER DEPTH N/A			
CORE SIZE NO-2		TOTAL RUN 23.9 ft		DRILLER L. Shrader			
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft)	ROD (ft)	SAMP. NO.	SOIL AND ROCK DESCRIPTION
488.4	1.0	3	3	3	4		488.4
484.9	3.5	2	2	2	1		484.9
480.9	8.5	WOH	WOH	1000.0			480.9
487.4	11.0	600.0					487.4
484.9	13.5	600.0					484.9
482.7	15.7	600.0					482.7

DESCRIPTION AND REMARKS

GROUND SURFACE

ARTIFICIAL FILL:
MEDIUM STIFF RED-BROWN
SILTY CLAY (A-6)
WITH TRACE OF GRAVEL

ALLUVIUM:
SOFT TO VERY SOFT
ORANGE-TAN TO DARK GRAY-BROWN
FINE SANDY SILT

WITH TRACE OF GRAVEL WOOD
AND ORGANIC MATTER

WEATHERED ROCK:
(GRAY-TAN METAVOLCANIC MUDSTONE)

NON-CRYSTALLINE ROCK:
MEDIUM TO MODERATELY HARD
GRAY-TAN METAVOLCANIC MUDSTONE
1) ADVANCED 2-1/4" HSA TO 15.7 FEET

BORING TERMINATED WITH
STANDARD PENETRATION TEST REFUSAL
AT ELEVATION 482.7 FEET
IN NON-CRYSTALLINE ROCK:
MEDIUM TO MODERATELY HARD
METAVOLCANIC MUDSTONE

NCDDOT BORING SINGLE 6:1286.GPJ NCDDOT.GDT 2/18/04



PROJECT NO. 36971		ID. NCMA10001B		COUNTY Union		GEOLOGIST D. BENTS	
SITE DESCRIPTION Replacement of Bridge No. 33 over Twelve Mile Creek on NC 16							
BORING NO. EB2-A		BORING LOCATION 18+61		OFFSET 12 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 517.2 ft		NORTHING		EASTING		GROUND WATER (ft) 0 HR. DRY	
TOTAL DEPTH 39.0 ft		DRILL MACHINE CME-45B		DRILL METHOD 3/8" HSA		HAMMER TYPE AUTOMATIC	
DATE STARTED 2/3/04		COMPLETED 2/3/04		SURFACE WATER DEPTH N/A			
CORE SIZE NO-2		TOTAL RUN 23.9 ft		DRILLER L. Shrader			
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft)	ROD (ft)	SAMP. NO.	SOIL AND ROCK DESCRIPTION
517.2	0.0						517.2
513.7	3.5	2	2	2			513.7
508.7	8.5	WOH	WOH	2	2		508.7
503.7	13.5	2	1	2			503.7
498.7	18.5	2	3	4			498.7
493.7	23.5	9	21	27			493.7
488.7	28.5	29	60:0.2				488.7
483.7	33.5	75	25:0.3				483.7
478.7	38.5	1000.0					478.7

DESCRIPTION AND REMARKS

GROUND SURFACE

ROADWAY EMBANKMENT FILL:
SOFT ORANGE-BROWN TO RED-BROWN
FINE SANDY CLAY (A-6)

RESIDUUM:
MEDIUM STIFF TO HARD GRAY-TAN
FINE SANDY SILT (A-4)
WITH TRACE OF ROCK FRAGMENTS

WEATHERED ROCK:
(GRAY-TAN METAVOLCANIC MUDSTONE)

1) ADVANCED 2-1/4" HSA TO 38.5 FEET

BORING TERMINATED
AT ELEVATION 478.2 FEET
IN WEATHERED ROCK:
(METAVOLCANIC MUDSTONE)

NCDDOT BORING SINGLE 6:1286.GPJ NCDDOT.GDT 2/18/04



PROJECT NO. 36971		ID. NCMA10001B		COUNTY Union		GEOLOGIST J. MURPHY	
SITE DESCRIPTION Replacement of Bridge No. 33 over Twelve Mile Creek on NC 16							
BORING NO. EB2-B		BORING LOCATION 18+61		OFFSET 12 ft RT		ALIGNMENT -L-	
COLLAR ELEV. 517.5 ft		NORTHING		EASTING		GROUND WATER (ft) 0 HR. DRY	
TOTAL DEPTH 42.5 ft		DRILL MACHINE CME-55		DRILL METHOD 3/8" HSA		HAMMER TYPE AUTOMATIC	
DATE STARTED 2/3/04		COMPLETED 2/3/04		SURFACE WATER DEPTH N/A			
CORE SIZE NO-2		TOTAL RUN 23.9 ft		DRILLER L. Shrader			
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft)	ROD (ft)	SAMP. NO.	SOIL AND ROCK DESCRIPTION
517.5	0.0						517.5
514.0	3.5	3	2	2			514.0
509.0	8.5	2	2	2			509.0
504.0	13.5	2	2	3			504.0
499.0	18.5	3	3	4			499.0
494.0	23.5	20	19	22			494.0
489.0	28.5	11	14	10			489.0
484.0	33.5	23	63	47:0.3			484.0
479.0	38.5	1000.0					479.0
475.0	42.5	600.0					475.0

DESCRIPTION AND REMARKS

GROUND SURFACE

ROADWAY EMBANKMENT FILL:
MEDIUM STIFF
RED-BROWN AND TAN
SILTY CLAY (A-6)

RESIDUUM:
HARD TO VERY STIFF TAN
FINE SANDY SILT (A-4)

WEATHERED ROCK:
(GRAY-TAN METAVOLCANIC MUDSTONE)

1) ADVANCED 3-1/4" HSA TO 42.5 FEET

BORING TERMINATED WITH
STANDARD PENETRATION TEST REFUSAL
AT ELEVATION 475.0 FEET
ON NON-CRYSTALLINE ROCK:
MEDIUM TO MODERATELY HARD
METAVOLCANIC MUDSTONE

NCDDOT BORING SINGLE 6:1286.GPJ NCDDOT.GDT 2/18/04