

REFERENCE: SF-690015

PROJECT: BPI.R008

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY PASQUOTANK
PROJECT DESCRIPTION BRIDGE NO. 15 ON -L- (SR 1417)
OVER PASQUOTANK RIVER AT STA. 17+08

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SF-690015	1	8

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- NOTES:
1. THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
 2. BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL

S.N. ZIMARINO

T.W. MILLER

R.E. SMITH

C.M. WALKER

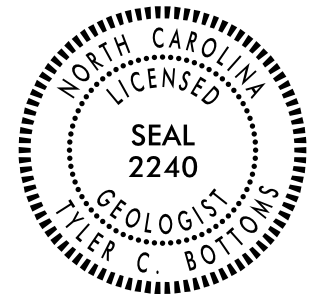
INVESTIGATED BY T.C. BOTTOMS

DRAWN BY T.C. BOTTOMS

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE JUNE 2022



DocuSigned by:
Tyler Bottoms 07/05/2022
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SIGNATURE DATE

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table with columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, TERMS AND DEFINITIONS, SOIL LEGEND AND AASHTO CLASSIFICATION, MINERALOGICAL COMPOSITION, COMPRESSIBILITY, PERCENTAGE OF MATERIAL, GROUND WATER, MISCELLANEOUS SYMBOLS, RECOMMENDATION SYMBOLS, ABBREVIATIONS, EQUIPMENT USED ON SUBJECT PROJECT, FRACTURE SPACING, BEDDING, INDURATION, PLASTICITY, COLOR.

PROJECT REFERENCE NO.	SHEET NO.
SF-690015	3
SITE PLAN	
 0 30 60 FEET	

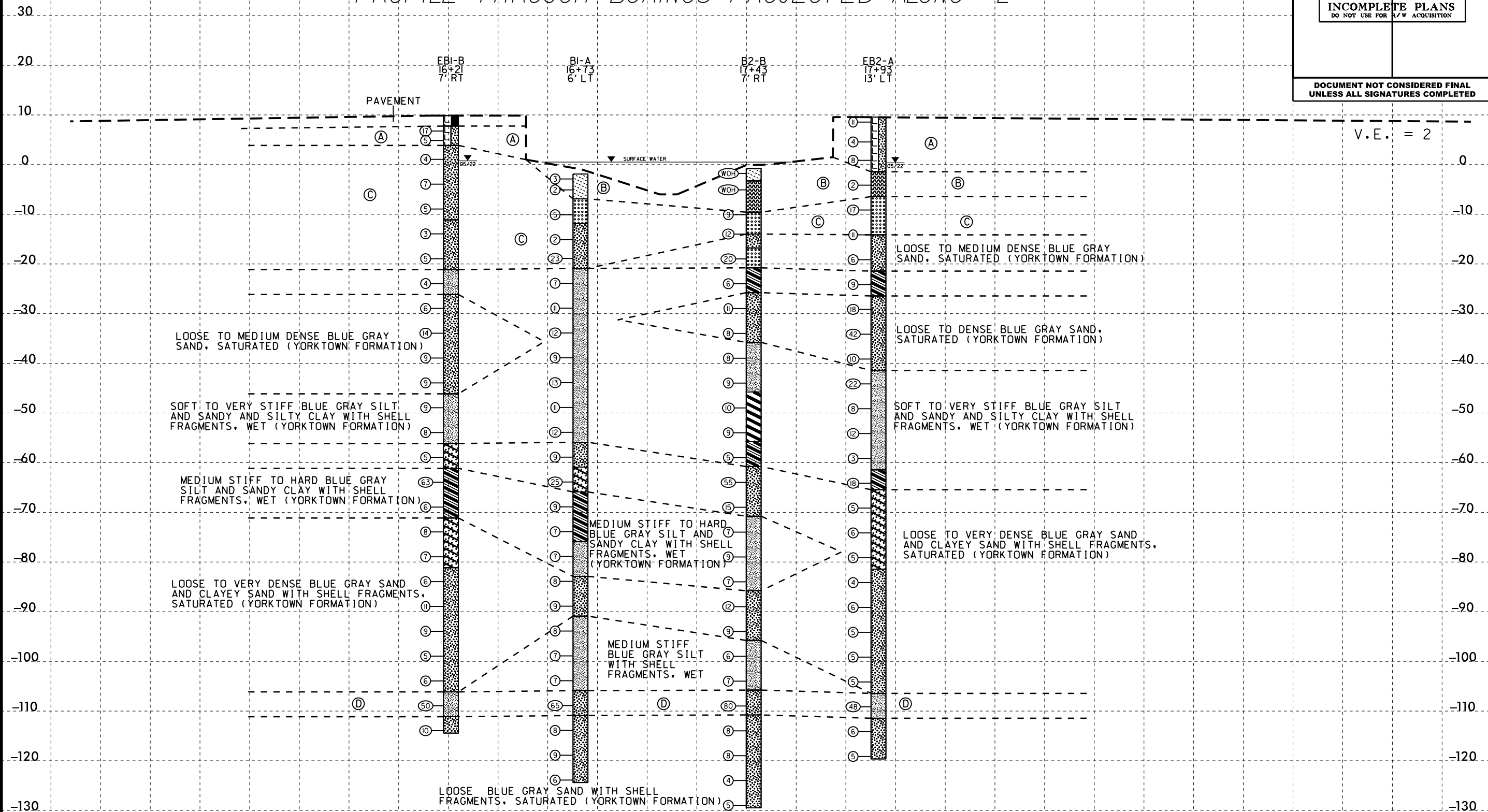
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PROJECT REFERENCE NO. <i>SF-690015</i>	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PROFILE THROUGH BORINGS PROJECTED ALONG -L-



V.E. = 2

- (A) LOOSE TO MEDIUM DENSE TAN AND BROWN SILTY SAND, MOIST TO SATURATED (ROADWAY EMBANKMENT)
- (B) VERY LOOSE BROWN AND GRAY MODERATELY ORGANIC SAND AND MUCK WITH WOOD FRAGMENTS, MOIST TO SATURATED (ALLUVIAL)
- (C) VERY LOOSE TO MEDIUM DENSE GRAY AND TAN SAND WITH WOOD FRAGMENTS, MOIST TO SATURATED (ALLUVIAL)
- (D) VERY DENSE GRAY SILTY SAND, SATURATED AND HARD SANDY SILT WITH LIMESTONE FRAGMENTS, WET (YORKTOWN FORMATION)

NOTE: GROUNDLINE PROFILE ALONG -L- DRAWN BY HAND REFERENCING BRIDGE SURVEY AND HYDRAULIC DESIGN REPORT DATED 2/15/22

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE

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GEOTECHNICAL BORING REPORT

BORE LOG

WBS BP1.R008.1	TIP SF-690015	COUNTY PASQUOTANK	GEOLOGIST Zimarino, S. N.
SITE DESCRIPTION BRIDGE NO. 15 ON SR 1417 (MORGANS CORNER RD.) OVER PASQUOTANK RIVER			GROUND WTR (ft)
BORING NO. EB1-B	STATION 16+21	OFFSET 7 ft RT	ALIGNMENT -L-
COLLAR ELEV. 9.9 ft	TOTAL DEPTH 124.3 ft	NORTHING 982,956	EASTING 2,780,381
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 87% 11/23/2021		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Smith, R. E.	START DATE 05/18/22	COMP. DATE 05/19/22	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
10														9.9	GROUND SURFACE	0.0
	7.8	2.1												7.8	PAVEMENT	2.1
	5.9	4.0	6	8	9									3.9	ROADWAY EMBANKMENT TAN SILTY SAND, MOIST	6.0
	2.1	7.8	1	2	2										ALLUVIAL GRAY SILTY SAND WITH WOOD FRAGMENTS, MOIST TO SATURATED	
	-2.9	12.8	3	3	4											
	-7.9	17.8	1	2	3											
	-12.9	22.8	1	1	2										ALLUVIAL GRAY AND TAN SILTY SAND, SATURATED	21.0
	-17.9	27.8	4	2	3											
	-22.9	32.8	2	2	2										COASTAL PLAIN BLUE-GRAY CLAYEY SILTY, WET (YORKTOWN FORMATION)	31.0
	-27.9	37.8	2	2	4										BLUE GRAY SILTY SAND, SATURATED (YORKTOWN FORMATION)	36.0
	-32.9	42.8	2	8	6											
	-37.9	47.8	2	3	6											
	-42.9	52.8	2	4	5											
	-47.9	57.8	3	4	5											
	-52.9	62.8	3	3	5											
	-57.9	67.8	3	2	3											
	-62.9	72.8	4	12	51											
	-67.9	77.8	2	3	3											

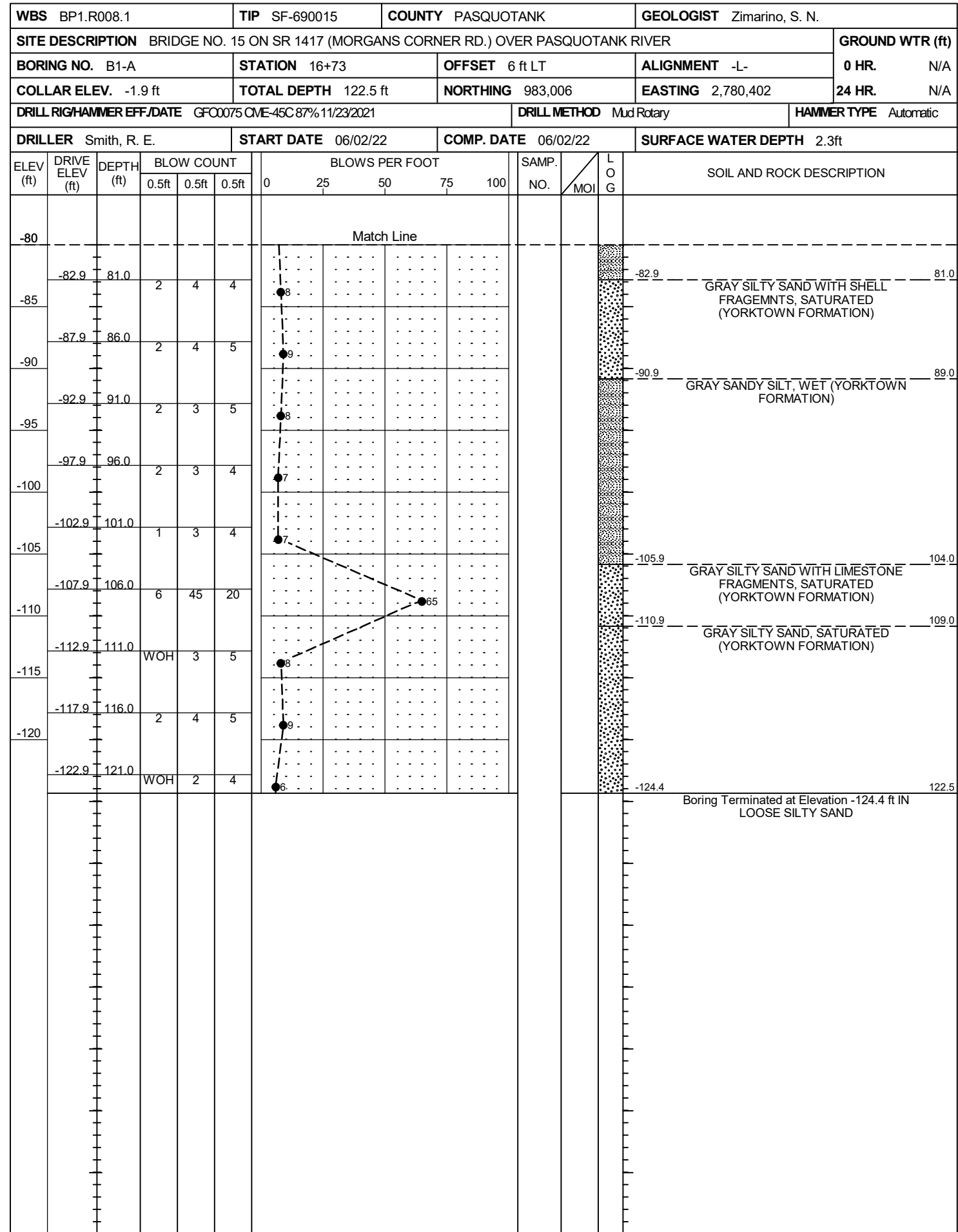
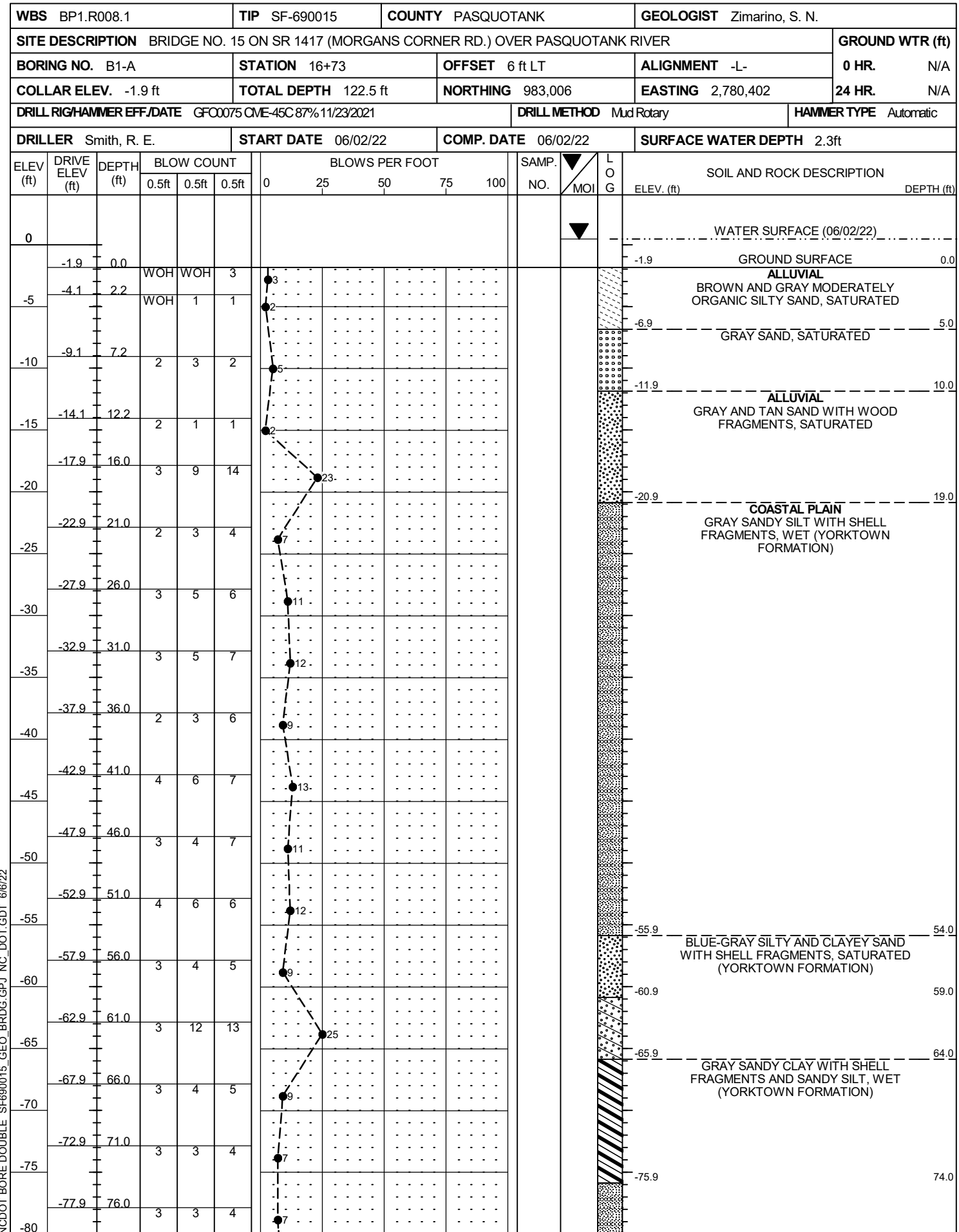
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SITE DESCRIPTION BRIDGE NO. 15 ON SR 1417 (MORGANS CORNER RD.) OVER PASQUOTANK RIVER			GROUND WTR (ft)
BORING NO. EB1-B	STATION 16+21	OFFSET 7 ft RT	ALIGNMENT -L-
COLLAR ELEV. 9.9 ft	TOTAL DEPTH 124.3 ft	NORTHING 982,956	EASTING 2,780,381
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 87% 11/23/2021		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Smith, R. E.	START DATE 05/18/22	COMP. DATE 05/19/22	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
-70																
	-72.9	82.8	2	4	4											
	-77.9	87.8	2	3	4											
	-82.9	92.8	2	3	3											
	-87.9	97.8	5	5	6											
	-92.9	102.8	2	4	5											
	-97.9	107.8	2	2	3											
	-102.9	112.8	2	2	4											
	-107.9	117.8	2	20	30											
	-112.9	122.8	4	4	6											

NCDOT BORE DOUBLE SF690015_GEO_BRDG.GPJ_NC_DOT.GDT 6/6/22

GEOTECHNICAL BORING REPORT

BORE LOG



NCDOT BORE DOUBLE SF690015_GEO_BRDG.GPJ_NC_DOT.GDT 6/6/22

GEOTECHNICAL BORING REPORT

BORE LOG

WBS BP1.R008.1	TIP SF-690015	COUNTY PASQUOTANK	GEOLOGIST Zimarino, S. N.
SITE DESCRIPTION BRIDGE NO. 15 ON SR 1417 (MORGANS CORNER RD.) OVER PASQUOTANK RIVER			GROUND WTR (ft)
BORING NO. B2-B	STATION 17+43	OFFSET 7 ft RT	ALIGNMENT -L-
COLLAR ELEV. -0.7 ft	TOTAL DEPTH 128.7 ft	NORTHING 983,055	EASTING 2,780,453
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 87% 11/23/2021		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Smith, R. E.	START DATE 05/31/22	COMP. DATE 06/01/22	SURFACE WATER DEPTH 1.3ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG G	SOIL AND ROCK DESCRIPTION	ELEV. (ft)	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
0	-0.7	0.0													-0.7		WATER SURFACE (05/31/22) GROUND SURFACE
-5	-4.0	3.3	WOH	WOH	WOH										-3.2	2.5	ALLUVIAL GRAY AND BROWN MODERATELY ORGANIC SILTY SAND, SATURATED BROWN MUCK WITH WOOD FRAGMENTS, SATURATED
-10	-9.0	8.3													-9.5	8.8	ALLUVIAL GRAY SAND, SATURATED
-15	-12.9	12.2	4	5	7										-13.9	13.2	COASTAL PLAIN BLUE-GRAY SILTY SAND, SATURATED (YORKTOWN FORMATION)
-20	-17.9	17.2	8	11	9										-16.7	16.0	
-25	-22.9	22.2	2	3	3										-20.7	20.0	GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)
-30	-27.9	27.2	4	5	6										-25.7	25.0	BLUE-GRAY SILTY SAND WITH SHELL FRAGMENTS, SATURATED (YORKTOWN FORMATION)
-35	-32.9	32.2	4	4	4										-35.7	35.0	GRAY MICACEOUS SANDY SILT, WET (YORKTOWN FORMATION)
-40	-37.9	37.2	3	3	5										-45.7	45.0	BLUE-GRAY SILTY CLAY WITH SHELL FRAGMENTS AND GRAY SANDY CLAY, WET (YORKTOWN FORMATION)
-45	-42.9	42.2	2	3	6										-55.7	55.0	
-50	-47.9	47.2	4	4	6										-60.7	60.0	GRAY CALCAREOUS SILTY SAND WITH LIMESTONE FRAGMENTS, SATURATED (YORKTOWN FORMATION)
-55	-52.9	52.2	3	4	5										-67.9	67.2	
-60	-57.9	57.2	2	2	3										-70.7	70.0	GRAY CLAYEY AND SANDY SILT, WET (YORKTOWN FORMATION)
-65	-62.9	62.2	19	28	27												
-70	-67.9	67.2	4	6	9												
-75	-72.9	72.2	2	3	4												
-80	-77.9	77.2	3	4	5												

WBS BP1.R008.1	TIP SF-690015	COUNTY PASQUOTANK	GEOLOGIST Zimarino, S. N.
SITE DESCRIPTION BRIDGE NO. 15 ON SR 1417 (MORGANS CORNER RD.) OVER PASQUOTANK RIVER			GROUND WTR (ft)
BORING NO. B2-B	STATION 17+43	OFFSET 7 ft RT	ALIGNMENT -L-
COLLAR ELEV. -0.7 ft	TOTAL DEPTH 128.7 ft	NORTHING 983,055	EASTING 2,780,453
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 87% 11/23/2021		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Smith, R. E.	START DATE 05/31/22	COMP. DATE 06/01/22	SURFACE WATER DEPTH 1.3ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG G	SOIL AND ROCK DESCRIPTION	ELEV. (ft)	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
-80															-80		Match Line
-85	-82.9	82.2	2	3	4										-85.7	85.0	GRAY CLAYEY AND SANDY SILT, WET (YORKTOWN FORMATION) (continued)
-90	-87.9	87.2	4	5	7										-95.7	95.0	GRAY SILTY SAND WITH SHELL FRAGMENTS, SATURATED (YORKTOWN FORMATION)
-95	-92.9	92.2	3	4	5										-95.7	95.0	GRAY SANDY SILT, WET (YORKTOWN FORMATION)
-100	-97.9	97.2	2	3	3										-105.7	105.0	GRAY SILTY SAND, SATURATED (YORKTOWN FORMATION)
-105	-102.9	102.2	1	2	5										-110.7	110.0	GRAY SILTY SAND, SATURATED (YORKTOWN FORMATION)
-110	-107.9	107.2	28	49	31												
-115	-112.9	112.2	2	3	5												
-120	-117.9	117.2	1	3	5												
-125	-122.9	122.2	2	2	2												
	-127.9	127.2	2	2	3												
																	Boring Terminated at Elevation -129.4 ft IN LOOSE SILTY SAND

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