RECORD OF SUBSURFACE EXPLORATION

Virginia Beach, 204 Grayson Road, Virginia Beach, VA 23642, 757-518-1703
Williamsburg, 1592-E Penniman Road, Williamsburg, VA 23185, 757-564-6452
Elizabeth City, 106 Capital Trace Unit E, Elizabeth City, NC 27909, 252-335-9765
Jacksonville, 415-A Western Blvd, Jacksonville, NC 28546, 910-478-9915

BORING ID B-1

PROJECT NAME: Oceana Hangar 111 Fire Protection & Structural Repairs
PROJECT NUMBER: VB15-254G
CLIENT: Pennoni Associates Inc
SURFACE ELEVATION (MSL) (ft):
PROJECT LOCATION: Virginia Beach, VA
LOGGED BY: C. Lindemann, EIT
BORING LOCATION: See attached boring location plan
DATE STARTED: 9/10/2015
DRILLING METHOD(S): Rotary wash "mud"
DATE COMPLETED: 9/10/2015
GROUNDWATER*: INITIAL (ft) ▽: 6 AFTER ___ HOURS (ft) ▼: ___ CAVE-IN (ft) ▽: ___
DRILLER: GET Solutions, Inc.

The initial groundwater readings are not intended to indicate the static groundwater level.

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	%<#200
	0.4	5" Topsoil					
	2.0	Grey and tan to grey, moist, Silty fine to medium SAND (SM) with trace Clay and little to some crushed stone, medium dense "FILL"	1	SS	20	6-4-11-14 (15)	
		Grey, moist to wet, Silty fine to medium SAND (SM) with trace Clay and marine shell fragments, medium dense	2	SS	20	11-10-9-12 (19)	
5			3	SS	24	8-8-7-6 (15)	
	7.0	Brown, wet, Fat CLAY (CH) with trace Sand, fine Gravel and fibrous organic material, medium stiff to very stiff	4	SS	24	4-3-2-4 (5)	78
			5	SS	24	2-11-12-14 (23)	
10	10.0	Dark grey, wet, Silty fine to medium SAND (SM), loose	6	SS	20	7-6-3-7 (9)	
15			7	SS	18	4-3-3-2 (6)	
	16.5	Grey, wet, Poorly graded fine to medium SAND (SP-SM) with Silt, medium dense					
20			8	SS	15	7-8-8-11 (16)	
25			9	SS	18	10-10-10-5 (20)	
	26.5	Grey, wet, Sandy lean CLAY (CL) with trace marine shell fragments, soft					
30	30.0	Boring terminated at 30 feet below existing grade.	10	SS	24	1-1-2-3 (3)	54

TEST RESULTS: Plastic Limit ×——× Liquid Limit; Water Content – ●; Penetration – ▨; 10 20 30 40 50 60 70

Sample Type(s): SS – Split Spoon

Notes:

This information pertains only to this boring and should not be interpreted as being indicative of the site.

PAGE 1 OF 1

RECORD OF SUBSURFACE EXPLORATION

Virginia Beach, 204 Grayson Road, Virginia Beach, VA 23642, 757-518-1703
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Jacksonville, 415-A Western Blvd, Jacksonville, NC 28546, 910-478-9915

BORING ID B-2

PROJECT NAME: Oceana Hangar 111 Fire Protection & Structural Repairs
PROJECT NUMBER: VB15-254G
CLIENT: Pennoni Associates Inc
SURFACE ELEVATION (MSL) (ft):
PROJECT LOCATION: Virginia Beach, VA
LOGGED BY: C. Lindemann, EIT
BORING LOCATION: See attached boring location plan
DATE STARTED: 9/10/2015
DRILLING METHOD(S): Rotary wash "mud"
DATE COMPLETED: 9/10/2015
GROUNDWATER*: INITIAL (ft) ▽: 4 AFTER ___ HOURS (ft) ▼: ___ CAVE-IN (ft) ▽: ___
DRILLER: GET Solutions, Inc.

The initial groundwater readings are not intended to indicate the static groundwater level.

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	%<#200
	0.8	2.5" Bituminous Concrete 8" Aggregate Base Material	1	SS	12	5-7	
		Tan, moist, Poorly graded fine SAND (SP) with trace clay nodules, medium dense "FILL"	2	SS	24	10-9-9-10 (18)	
5	4.0	Grey to light grey, wet, Lean CLAY (CL) with trace fibrous organic material, medium stiff	3	SS	24	4-3-3-5 (6)	
			4	SS	24	4-4-3-4 (7)	
	8.0	Tan and grey, wet, Poorly graded fine SAND (SP-SM) with Silt, dense	5	SS	24	12-15-20-35 (35)	
10	10.0	Tan and grey, wet, Silty fine SAND (SM), loose to medium dense	6	SS	24	6-4-8-13 (12)	
15	15.0	Boring terminated at 15 feet below existing grade.	7	SS	24	6-3-6-6 (9)	

TEST RESULTS: Plastic Limit ×——× Liquid Limit; Water Content – ●; Penetration – ▨; 10 20 30 40 50 60 70

Sample Type(s): SS – Split Spoon

Notes:

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PAGE 1 OF 1

RECORD OF SUBSURFACE EXPLORATION

Virginia Beach, 204 Grayson Road, Virginia Beach, VA 23642, 757-518-1703
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Jacksonville, 415-A Western Blvd, Jacksonville, NC 28546, 910-478-9915

BORING ID B-3

PROJECT NAME: Oceana Hangar 111 Fire Protection & Structural Repairs
PROJECT NUMBER: VB15-254G
CLIENT: Pennoni Associates Inc
SURFACE ELEVATION (MSL) (ft):
PROJECT LOCATION: Virginia Beach, VA
LOGGED BY: C. Lindemann, EIT
BORING LOCATION: See attached boring location plan
DATE STARTED: 9/10/2015
DRILLING METHOD(S): Rotary wash "mud"
DATE COMPLETED: 9/10/2015
GROUNDWATER*: INITIAL (ft) ▽: 4 AFTER ___ HOURS (ft) ▼: ___ CAVE-IN (ft) ▽: ___
DRILLER: GET Solutions, Inc.

The initial groundwater readings are not intended to indicate the static groundwater level.

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	%<#200
	1.0	4.5" Bituminous Concrete 8" Aggregate Base Material	1	SS	0		
		Tan, moist, Silty fine to medium SAND (SM) with trace Clay	2	SS	0		
5	4.0	Grey mottled tan, wet, Fat CLAY (CH) with trace sand and fibrous organic material, medium stiff	3	SS	22	3-2-3-4 (5)	
			4	SS	20	3-3-4-7 (7)	
	7.8	Tan to grey, wet, Poorly graded fine SAND (SP-SM) with Silt, medium dense	5	SS	24	11-10-10-15 (20)	
10	10.5	Grey, wet, Silty fine SAND (SM), loose	6	SS	24	7-3-6-10 (9)	
15	15.0	Boring terminated at 15 feet below existing grade.	7	SS	24	5-3-2-2 (5)	

TEST RESULTS: Plastic Limit ×——× Liquid Limit; Water Content – ●; Penetration – ▨; 10 20 30 40 50 60 70

Sample Type(s): SS – Split Spoon

Notes:

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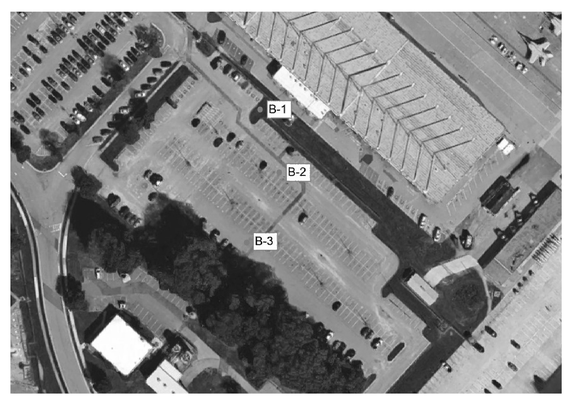
PAGE 1 OF 1

PROJECT NORTH



Boring Location Plan Overview

PROJECT: Oceana Hangar 11 Fire Protection & Structural Repairs
PLOT BY: C. Lindemann, E.I.T.
LOCATION: Virginia Beach, Virginia
PROJECT NO: VB15-254G
CLIENT: Pennoni Associates, Inc.

GET Solutions, Inc.
Geotechnical • Environmental • Testing

SYM	DESCRIPTION	DATE	APPR
1	FINAL SUBMISSION	5/2/2016	

NAVFAC

COMMONWEALTH OF VIRGINIA
BRIAN SCOTT CHEWNING
Lic. No. 038283
5/2/16
PROFESSIONAL ENGINEER
SEAL

the PROTECTION ENGINEERING GROUP
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PENNONI ASSOCIATES INC.
349 Southport Circle, Suite 100
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T 757.497.7472 F 757.497.0250
A/E INFO

APPROVED 5/11/16
FOR COMMANDER NAVFAC
ACTIVITY
SATISFACTORY TO
DES AT DRW RSP CHK BSC
PM/DM KPL/IAS
BRANCH MANAGER
CHIEF ENG/ARCH Mark J. Ainaghi, PE
FIRE PROTECTION DPS

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
NAS OCEANA – VIRGINIA BEACH, VIRGINIA
HAMPTON ROADS IPT
NAVAL AIR STATION OCEANA
VIRGINIA BEACH, VIRGINIA
HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS
SOIL BORING LOGS

SCALE: NO SCALE
EPROJECT NO.: 1372146
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 12716233
SHEET 11 OF 170
BB101

DRAWFORM REVISION: 10 MAY 2014

FILE NAME: N:\PROJECTS\GHDO\1501-Hangar 111\DESIGN_PUBLISH\1372146-B-101.dwg LAYOUT NAME: BB101 PLOTTED: Monday, April 25, 2016 - 11:12am USER: RPontil