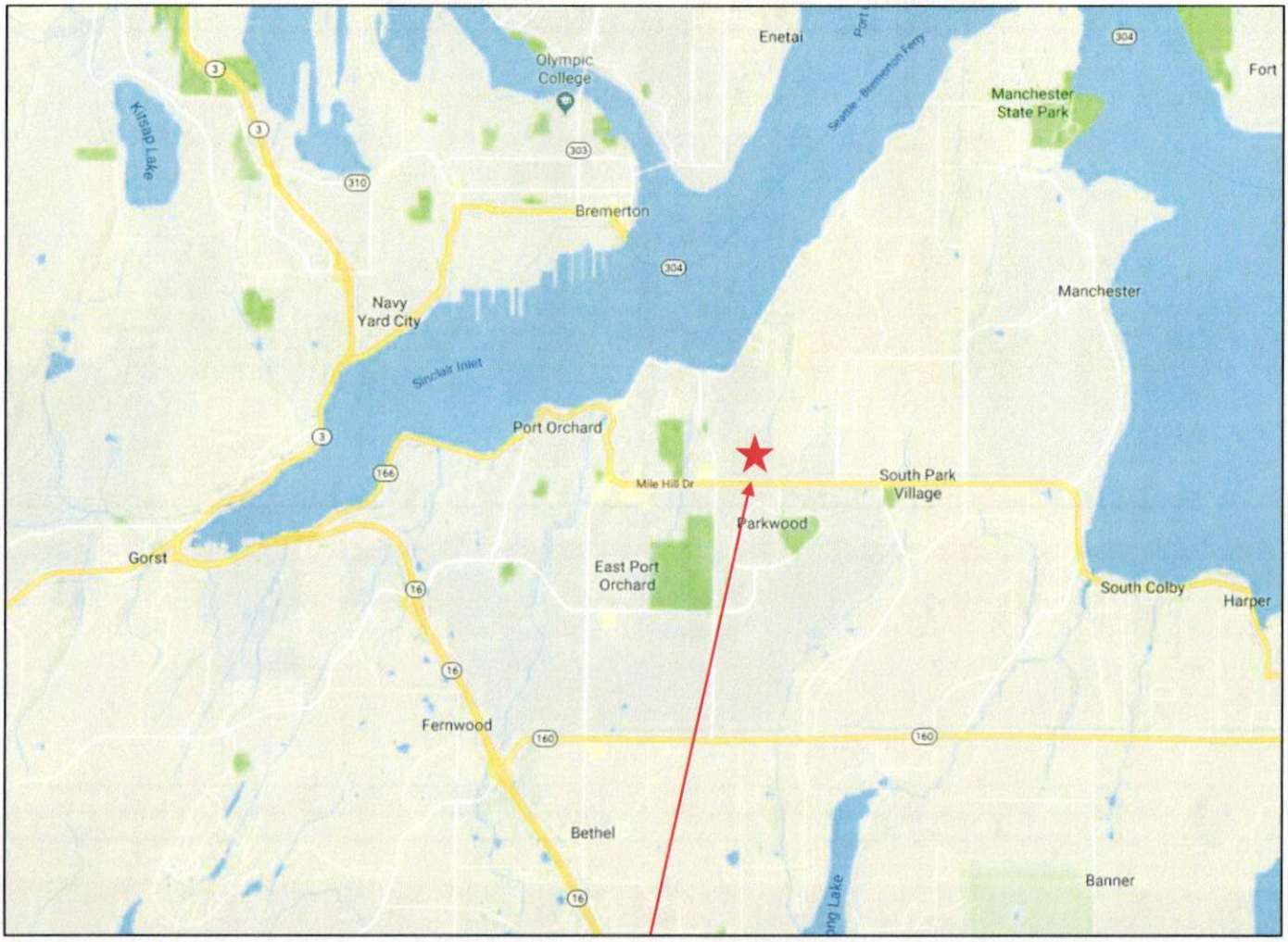

Approximate Site Location
(Map created from Google Maps)

N
W E
S

Not to Scale

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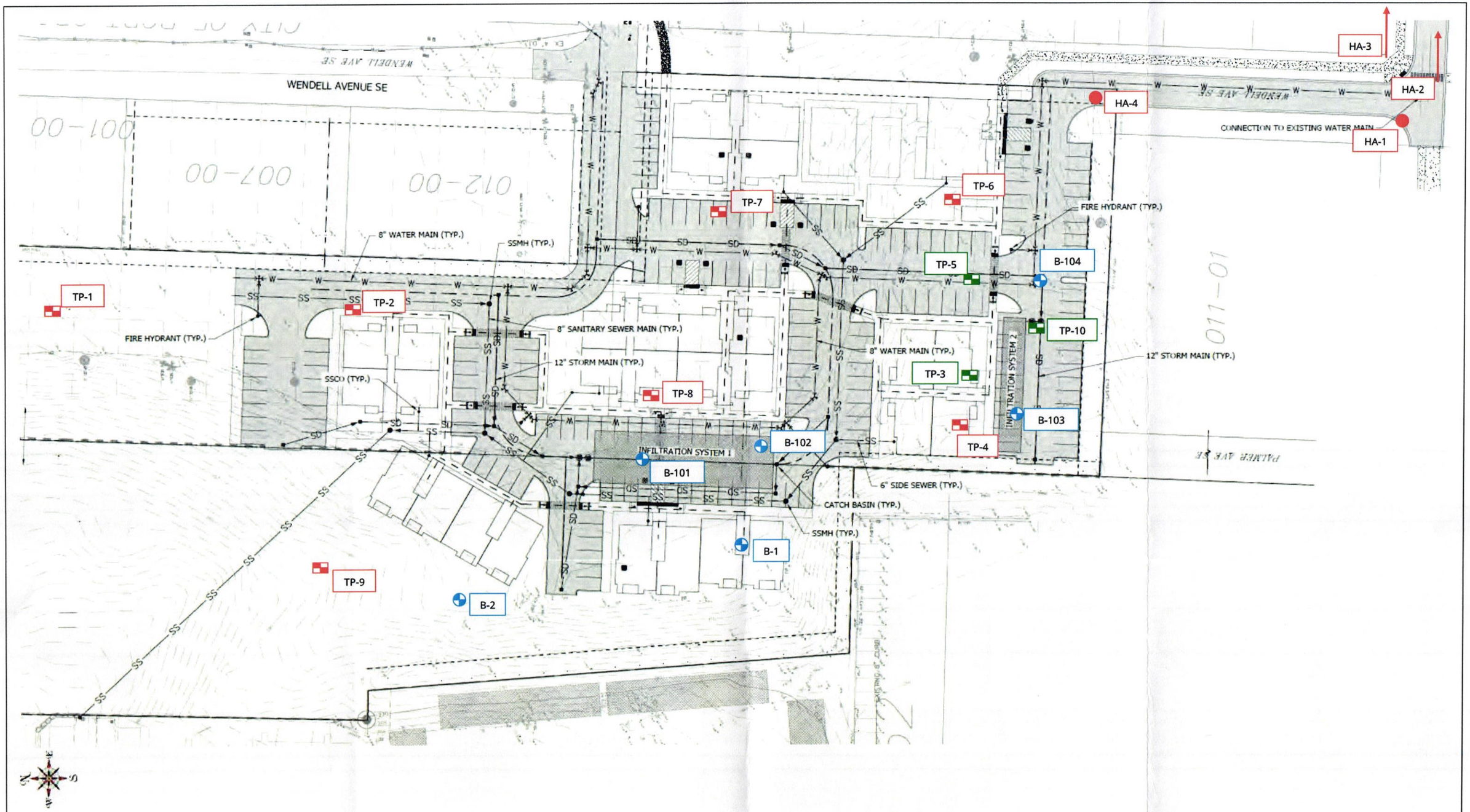
Site Location Map

Proposed Residential Development
xxx – SE Orlando Street
Port Orchard, Washington
PN: 302402-3-063-2008, 4598-005-028-0007, -022-0003, -017-0109, -001-0303, -004-0003, -007-0000, -010-0104

Doc ID: OVAHIILLC.OrlandSt.PhaseII.F	January 2020	Figure 1



TP-1 Test pit number and approximate location

B-1 Boring location and approximate location

HA-1 Hand auger number and approximate locations

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Site & Exploration Plan

Proposed Residential Development
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Doc ID: OVAHIILLC.OrlandoSt.PhaseII.SEP	January 2020	Figure 2

Approximate Site Location

Map created from Kitsap County Parcel Map Viewer Website (https://psearch.kitsapgov.com/webappa/)

B-1 Approximate Boring Locations and Numbers

TP-1 Approximate Test Pit Locations and Numbers

HA-1 Approximate Hand Auger Locations and Numbers

N W E S

Not to Scale

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Site Vicinity Map

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Doc ID: OVAHIILLC.OrlandSt.PhaseII.F	January 2020	Figure 3

Approximate Site Location

Map created from Web Soil Survey (http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx)

Soil Type	Soil Name	Parent Material	Slopes	Erosion Hazard	Hydrologic Soils Group
2	Alderwood gravelly sandy loam	Glacial till	8 to 15	Slight	B
14	Alderwood gravelly sandy loam	Glacial till	15 to 30	Moderate	B
20	Indianola loamy sand	Sandy glacial outwash	15 to 30	Moderate	A
21	Indianola-Kitsap complex	Glacial outwash	45 to 70	Severe	A
44	Ragnar fine sandy loam	Glacial outwash with ash	0 to 6	Moderate	A

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NRCS Soils Map

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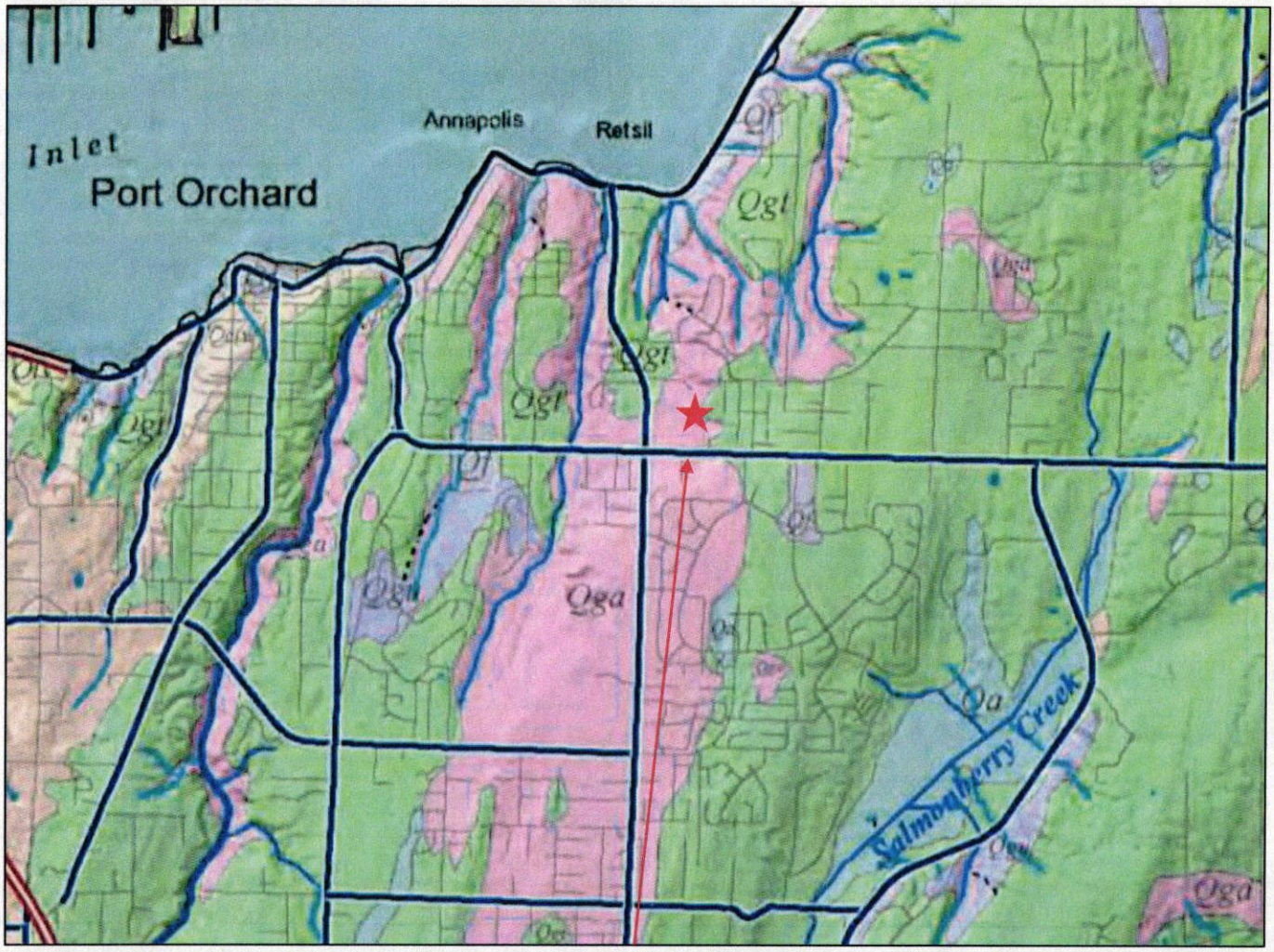
PN: 302402-3-063-2008, 4598-005-028-0007, -022-0003, -017-0109, -001-0303, -004-0003, -007-0000, -010-0104



Approximate Site Location

Washington State Department of Natural Resources Division of Geology and Earth Resources Open File Report 2005-3, 1:100,000-scale (December 2005)

Qf	Artificial fill
Qgt	Continental glacial till
Qga	Advance continental glacial outwash

N
W E
S

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USGS Geologic Map

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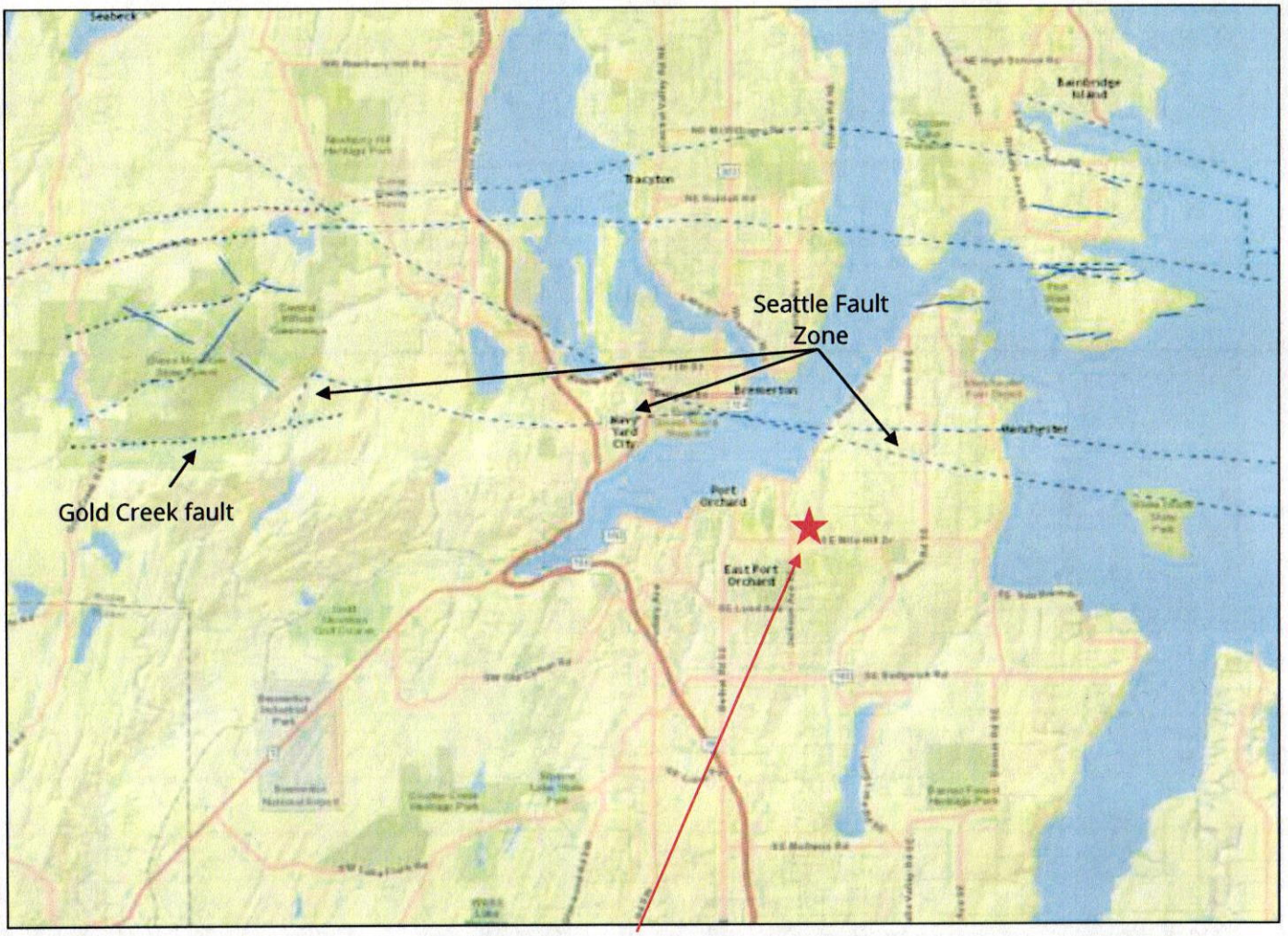
Doc ID: OVAHIILLC.OrlandSt.PhaseII.F	January 2020	Figure 5



Approximate Site Location

(Map created form Washington DNR Geologic Information Portal http://fortress.wa.gov/dnr/protectiongis/geology/?Theme=wigm)

Not to Scale

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Washington DNR Natural Hazards Map

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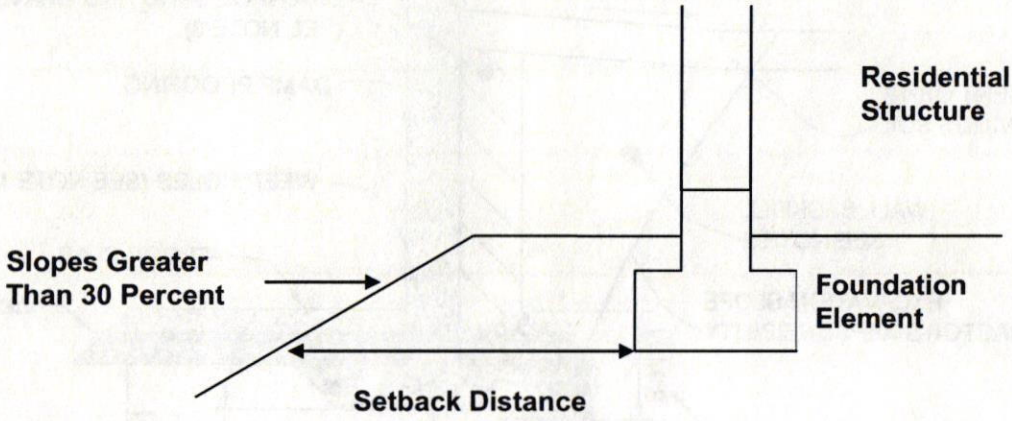
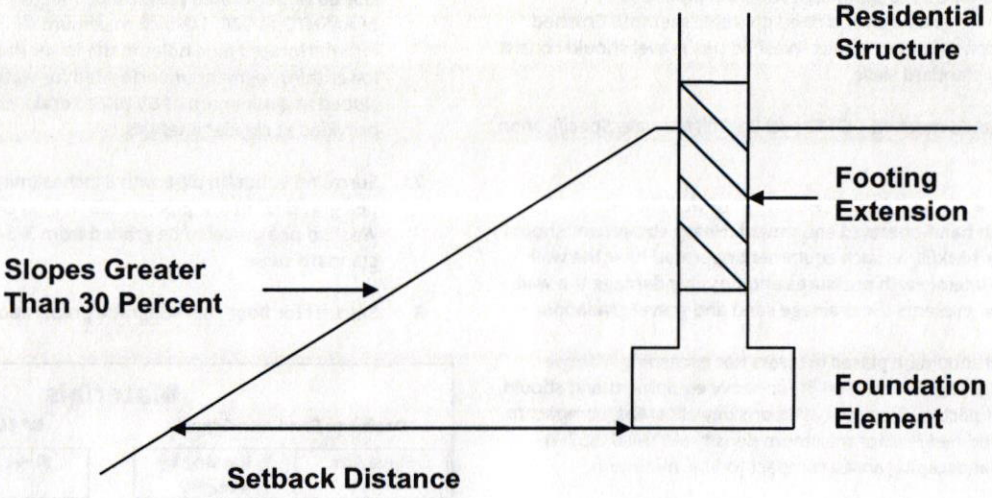
Doc ID: OVAHIILLC.OrlandSt.PhaseII.F	January 2020	Figure 6

Conventional Footing



Footing Extension



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Typical Structural Setback

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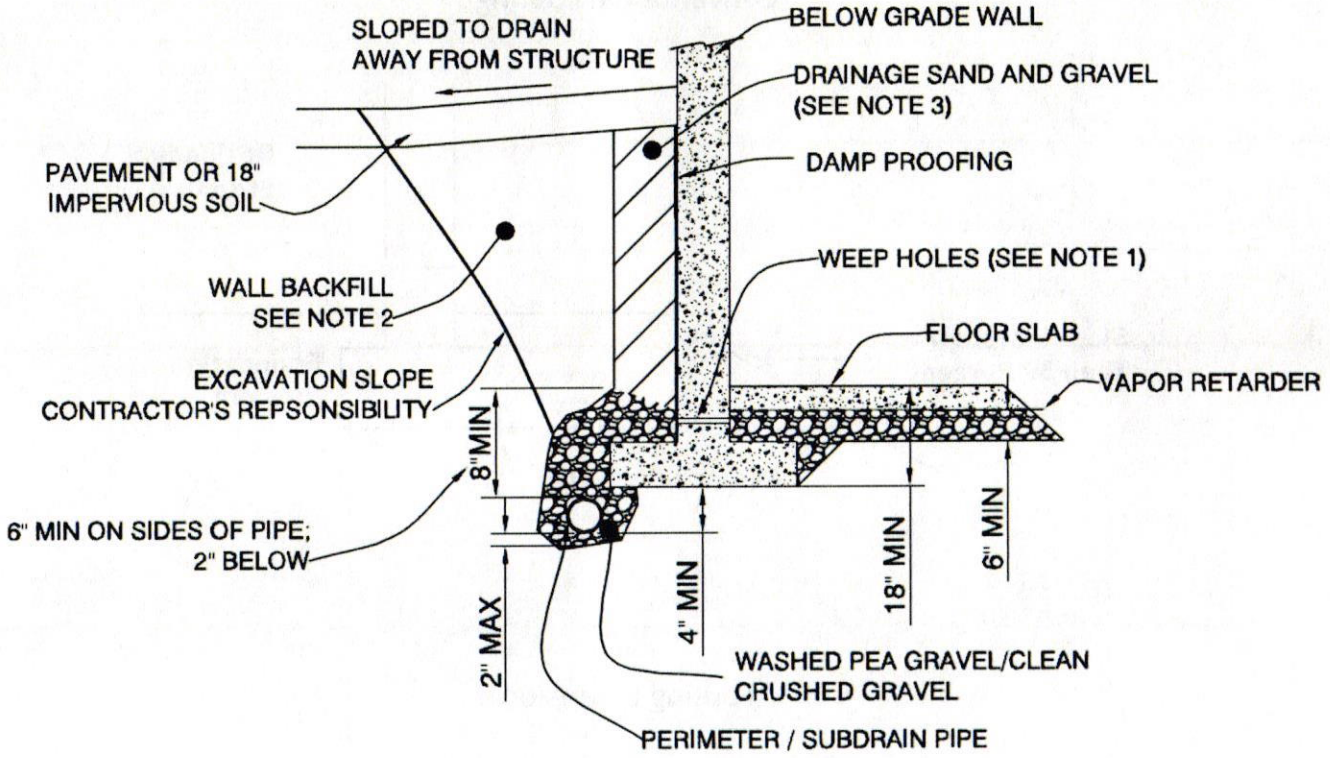
Doc ID: OVAHIILLC.OrlandSt.PhaseII.F	January 2020	Figure 7



Notes

1. Washed pea gravel/crushed rock beneath floor slab could be hydraulically connected to perimeter/subdrain pipe. Use of 1" diameter weep holes as shown is one applicable method. Crushed gravel should consist of 3/4" minus. Washed pea gravel should consist of 3/8" to No. 8 standard sieve.
2. Wall backfill should meet WSDOT Gravel Backfill for walls Specification 9-03-12(2).
3. Drainage sand and gravel backfill within 18" of wall should be compacted with hand-operated equipment. Heavy equipment should not be used for backfill, as such equipment operated near the wall could increase lateral earth pressures and possibly damage the wall. The table below presents the drainage sand and gravel gradation.
4. All wall back fill should be placed in layers not exceeding 4" loose thickness for light equipment and 8" for heavy equipment and should be densely compacted. Beneath paved or sidewalk areas, compact to at least 95% Modified Proctor maximum density (ASTM: 01557-70 Method C). In landscaping areas, compact to 90% minimum.
5. Drainage sand and gravel may be replaced with a geocomposite core sheet drain placed against the wall and connected to the subdrain pipe. The geocomposite core sheet should have a minimum transmissivity of 3.0 gallons/minute/foot when tested under a gradient of 1.0 according to ASTM 04716.
6. The subdrain should consist of 4" diameter (minimum), slotted or perforated plastic pipe meeting the requirements of AASHTO M 304; 1/8-inch maximum slot width; 3/16- to 3/8-inch perforated pipe holes in the lower half of pipe, with lower third segment unperforated for water flow; tight joints; sloped at a minimum of 6"/100' to drain; cleanouts to be provided at regular intervals.
7. Surround subdrain pipe with 8 inches (minimum) of washed pea gravel (2" below pipe" or 5/8" minus clean crushed gravel. Washed pea gravel to be graded from 3/8-inch to No.8 standard sieve.
8. See text for floor slab subgrade preparation.

Materials

Drainage Sand and Gravel

Sieve Size	% Passing by Weight
¾"	100
No 4	28 – 56
No 8	20 – 50
No 50	3 – 12
No 100	0 – 2

¾" Minus Crushed Gravel

Sieve Size	% Passing by Weight
¾"	100
½"	75 – 100
¼"	0 – 25
No 100	0 – 2
(by wet sieving)	(non-plastic)

Not to Scale

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Typical Wall Drainage and Backfill

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Appendix A

Subsurface Explorations

SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE GRAINED SOILS More than 50% Retained on No. 200 Sieve	GRAVEL More than 50% Of Coarse Fraction Retained on No. 4 Sieve	CLEAN GRAVEL	GW	WELL-GRADED GRAVEL, FINE TO COARSE GRAVEL
			GP	POORLY-GRADED GRAVEL
		GRAVEL WITH FINES	GM	SILTY GRAVEL
			GC	CLAYEY GRAVEL
	SAND More than 50% Of Coarse Fraction Passes No. 4 Sieve	CLEAN SAND	SW	WELL-GRADED SAND, FINE TO COARSE SAND
			SP	POORLY-GRADED SAND
		SAND WITH FINES	SM	SILTY SAND
			SC	CLAYEY SAND
FINE GRAINED SOILS More than 50% Passes No. 200 Sieve	SILT AND CLAY Liquid Limit Less than 50	INORGANIC	ML	SILT
			CL	CLAY
		ORGANIC	OL	ORGANIC SILT, ORGANIC CLAY
	SILT AND CLAY Liquid Limit 50 or more	INORGANIC	MH	SILT OF HIGH PLASTICITY, ELASTIC SILT
			CH	CLAY OF HIGH PLASTICITY, FAT CLAY
		ORGANIC	OH	ORGANIC CLAY, ORGANIC SILT
HIGHLY ORGANIC SOILS			PT	PEAT

NOTES:

1. Field classification is based on visual examination of soil in general accordance with ASTM D2488-90.
2. Soil classification using laboratory tests is based on ASTM D2487-90.
3. Description of soil density or consistency are based on interpretation of blow count data, visual appearance of soils, and or test data.

SOIL MOISTURE MODIFIERS:

Dry- Absence of moisture, dry to the touch

Moist- Damp, but no visible water

Wet- Visible free water or saturated, usually soil is obtained from below water table

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Unified Soils Classification System

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PN: 302402-3-063-2008, 4598-005-028-0007, -022-0003, -017-0109, -001-0303, -004-0003, -007-0000, -010-0104

TOTAL DEPTH:	36.5'	**DRILLING METHOD:**	HSA	**LOGGED BY:**	AES/DC
TOP ELEVATION:	310	**DRILLING COMPANY:**	Boretec 1, Inc	**HAMMER TYPE:**	
LATITUDE:		**DRILL RIG:**	RCT 60 Track Drill	**HAMMER WEIGHT:**	140 lbs
LONGITUDE:		**NOTES:**			

Depth	Elevation	SOIL DESCRIPTION	DRILLING NOTES	Sample	Sampler	Symbol	TEST RESULTS (Test Results: Plastic Limit ⊢—⊣ Liquid Limit; % Water Content ●; % Fines (<0.075mm) ◇; Penetration - ▲ (blows per foot) 10 20 30 40 50)	Blow Count	Ground Water
		Gray sand with silt (SP-SM) (Medium dense, moist)		1				10 7 9	
4									
		Gray sand (SP) (Medium dense, moist)		2				7 8 8	
	304								
8									
	300	gray silty sand (SM) (Medium dense, moist)		3				10 9 8	
12									
	296								
		Silty Sand interbedded with sand lenses (SM) (Medium dense, moist)		4				4 6 5	
16									
	292	gray silty sand (SM) (Medium dense, moist)		5				9 10 13	
20		gray silty sand (SM) (Medium dense, moist)		6				7 10 6	
	288								
		gray sand with silt (SP-SM) (Medium dense, moist)		7				9 9 10	
24									
		gray silty sand, more coarse (SM) (Medium dense, moist)		8				6 10 5	
	284								
28									

NOTES

1. Refer to log key for definition of symbols, abbreviations and codes
2. USCS designation is based on visual manual classification and selected lab testing
3. Groundwater level, if indicated, is for the date shown and may vary
4. N.E. = Not Encountered
5. ATD = At the Time of Drilling

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LOG OF BORING B-101

JOB: OVAHIILLC.OrlandoSt.PhII *Sheet 1 of 2*

GeoResources, LLC | **FIG.A-4**

TOTAL DEPTH:	36.5'	**DRILLING METHOD:**	HSA	**LOGGED BY:**	AES/DC
TOP ELEVATION:	310	**DRILLING COMPANY:**	Boretec 1, Inc	**HAMMER TYPE:**	
LATITUDE:		**DRILL RIG:**	RCT 60 Track Drill	**HAMMER WEIGHT:**	140 lbs
LONGITUDE:		**NOTES:**			

Depth	Elevation	SOIL DESCRIPTION	DRILLING NOTES	Sample	Sampler	Symbol	TEST RESULTS Test Results Plastic Limit ⊢—⊣ Liquid Limit % Water Content ● % Fines (<0.075mm) ◇ Penetration - ▲ (blows per foot) 10 20 30 40 50	Blow Count	Ground Water
	280	gray poorly graded sand with silt (SP-SM) (Medium dense, moist)		9			◇ ▲	6 8 7	
32	276								
		gray poorly graded sand with silt (SP-SM) (medium dense, moist)		10			▲	8 8 9	
36		Bottom of Boring Completed11.20.2019							
	272								
40									
	268								
44									
	264								
48									
	260								
52									
	256								

NOTES

1. Refer to log key for definition of symbols, abbreviations and codes
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LOG OF BORING B-101

JOB: OVAHIILLC.OrlandoSt.PhII *Sheet 2 of 2*

GeoResources, LLC | FIG. A-4

TOTAL DEPTH:	31.5	**DRILLING METHOD:**	HSA	**LOGGED BY:**	AES/DC
TOP ELEVATION:	312	**DRILLING COMPANY:**	Boretec 1, Inc	**HAMMER TYPE:**	
LATITUDE:		**DRILL RIG:**	RCT 60 Track Drill	**HAMMER WEIGHT:**	140 lbs
LONGITUDE:		**NOTES:**			

Depth	Elevation	SOIL DESCRIPTION	DRILLING NOTES	Sample	Sampler	Symbol	TEST RESULTS (Test Results: Plastic Limit ⊢—⊣ Liquid Limit; % Water Content ●; % Fines (<0.075mm) ◇; Penetration - ▲ (blows per foot) 10 20 30 40 50)	Blow Count	Ground Water
		gray sand (SP) (Loose, moist)	gravelly drilling	1				4 4 5	
4	308								
		fine gray sand (SP) (Medium dense, moist)		2				5 7 7	
8	304								
		gray sand interbedded with silty sand (SP-SM) (medium dense, moist)		3				5 9 8	
12	300						74.6 ◇→		
		gray silt with sand (ML) (Soft, moist)		4				4 8 11	
16	296								
		gray silty sand (SM) (Medium dense, moist)		5				8 7 6	
20	292	Silt with possible burnt wood fragment (SM) (medium dense, moist)	5" recovery	6				7 14 14	
		gray silty sand (SM) (medium dense, moist)		7a				17	
		gray sand with some silt		7b				20 27	
24	288							17 20	
		gray sand with interbedded silt layers (SP) (very dense, moist)		8			73 ▲→	27 16 31 42	
28	284								

NOTES

1. Refer to log key for definition of symbols, abbreviations and codes
2. USCS designation is based on visual manual classification and selected lab testing
3. Groundwater level, if indicated, is for the date shown and may vary
4. N.E. = Not Encountered
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LOG OF BORING B-102

JOB: OVAHIILLC.OrlandoSt.PhII *Sheet 1 of 2*

GeoResources, LLC | **FIG.A-5**

TOTAL DEPTH:	31.5	**DRILLING METHOD:**	HSA	**LOGGED BY:**	AES/DC
TOP ELEVATION:	312	**DRILLING COMPANY:**	Boretec 1, Inc	**HAMMER TYPE:**	
LATITUDE:		**DRILL RIG:**	RCT 60 Track Drill	**HAMMER WEIGHT:**	140 lbs
LONGITUDE:		**NOTES:**			

Depth	Elevation	SOIL DESCRIPTION	DRILLING NOTES	Sample	Sampler	Symbol	TEST RESULTS (Test Results: Plastic Limit ⊢—⊣ Liquid Limit; % Water Content ●; % Fines (<0.075mm) ◇; Penetration - ▲ (blows per foot) 10 20 30 40 50)	Blow Count	Ground Water
		gray silty sand (SM) (very dense, moist)		9			81	31 39 42	
32	280	Bottom of Boring Completed11/20/19							
36	276								
40	272								
44	268								
48	264								
52	260								

NOTES

1. Refer to log key for definition of symbols, abbreviations and codes
2. USCS designation is based on visual manual classification and selected lab testing
3. Groundwater level, if indicated, is for the date shown and may vary
4. N.E. = Not Encountered
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LOG OF BORING B-102

JOB: OVAHIILLC.OrlandoSt.PhII *Sheet 2 of 2*

GeoResources, LLC | FIG. A-5

TOTAL DEPTH:	31.5	**DRILLING METHOD:**	HSA	**LOGGED BY:**	AES
TOP ELEVATION:	298	**DRILLING COMPANY:**	Boretec 1, Inc	**HAMMER TYPE:**	Cathead
LATITUDE:		**DRILL RIG:**	EC 95 Track Drill	**HAMMER WEIGHT:**	140 lbs
LONGITUDE:		**NOTES:**	Well Tag BJI 162		

Depth	Elevation	SOIL DESCRIPTION	DRILLING NOTES	Sample	Sampler	Symbol	TEST RESULTS (Test Results: Plastic Limit ⊢—⊣ Liquid Limit; % Water Content ●; % Fines (<0.075mm) ◇; Penetration - ▲ (blows per foot) 10 20 30 40 50)	Blow Count	Ground Water
0		Black silty SAND, topsoil							
		Black silty SAND (SM) (loose, moist)							
	296								
4									
		Black to tan silty SAND (fill) (SM) (medium dense, moist)	Bottom two inches of sample tan silty sand, organics throughout	1			▲	6 11 10	
	292								
8									
		brown silty SAND (fill) (SM) (loose, moist)	small portion of brick in sample	2			▲	2 2 2	
12									
	284								
		gray SAND with silt (SP-SM) (Medium Dense, moist)		3a			▲	4 5 6	
16									
		gray silty SAND (SM) (medium dense, moist)	grades siltier in lower 6 inches of sampler	3b			▲	6 7 8	
	280								
20		gray silty SAND (SM) (medium dense, moist)	silty in upper 4 inches of sampler				▲	8 13 15	
	276								
		Golden brown sand (SP) (Medium dense, wet)		4			▲	7 11 10	ATD
24									
		Gray gravelly SAND (SP) (Medium dense,	upper 6	5			▲	11 17	

NOTES

1. Refer to log key for definition of symbols, abbreviations and codes
2. USCS designation is based on visual manual classification and selected lab testing
3. Groundwater level, if indicated, is for the date shown and may vary
4. N.E. = Not Encountered
5. ATD = At the Time of Drilling

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LOG OF BORING B-103

JOB: OVAHIILLC.OrlandoSt.PhII *Sheet 1 of 2*

GeoResources, LLC | **FIG.A-6**

TOTAL DEPTH:	31.5	**DRILLING METHOD:**	HSA	**LOGGED BY:**	AES
TOP ELEVATION:	298	**DRILLING COMPANY:**	Boretec 1, Inc	**HAMMER TYPE:**	Cathead
LATITUDE:		**DRILL RIG:**	EC 95 Track Drill	**HAMMER WEIGHT:**	140 lbs
LONGITUDE:		**NOTES:**	Well Tag BJI 162		

Depth	Elevation	SOIL DESCRIPTION	DRILLING NOTES	Sample	Sampler	Symbol	TEST RESULTS: Test Results; Plastic Limit ⊢—⊣ Liquid Limit; % Water Content ●; % Fines (<0.075mm) ◇; Penetration - ▲ (blows per foot) 10 20 30 40 50	Blow Count	Ground Water
	272	moist)	inches gravelly sand, middle 6					19	
28		gray sandy GRAVEL (GP) (Dense, wet)	inches silt, lower 6 inches sand	6			▲	15 25 23	N.E.
	268	gray silty GRAVEL (GM) (medium dense, wet)		7			▲	18 15 22	
32		Bottom of Boring Completed11/26/2019							
	264								
36									
	260								
40									
	256								
44									
	252								
48									
	248								

NOTES

1. Refer to log key for definition of symbols, abbreviations and codes
2. USCS designation is based on visual manual classification and selected lab testing
3. Groundwater level, if indicated, is for the date shown and may vary
4. N.E. = Not Encountered
5. ATD = At the Time of Drilling

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LOG OF BORING B-103

JOB: OVAHIILLC.OrlandoSt.PhII *Sheet 2 of 2*

GeoResources, LLC | FIG. A-6

TOTAL DEPTH:	31.5	**DRILLING METHOD:**	HSA	**LOGGED BY:**	AES
TOP ELEVATION:	306	**DRILLING COMPANY:**	Boretec 1, Inc	**HAMMER TYPE:**	Cathead
LATITUDE:		**DRILL RIG:**	EC 95 Track Drill	**HAMMER WEIGHT:**	140 lbs
LONGITUDE:		**NOTES:**	Well Tag BJI 162		

Depth	Elevation	SOIL DESCRIPTION	DRILLING NOTES	Sample	Sampler	Symbol	TEST RESULTS: Test Results (Plastic Limit ⊢—⊣ Liquid Limit; % Water Content ●; % Fines (<0.075mm) ◇; Penetration - ▲ (blows per foot) 10 20 30 40 50)	Blow Count	Ground Water
0		topsoil							
		brown silty SAND (SM) (loose, moist)							
	304								
4									
		gray silty SAND with trace organics (SM) (loose, moist)		1				5 3 4	
	300								
8									
	296			2				3 4 4	
12									
	292								
		dark brown silty SAND, wood debris (fill) (SM) (Medium dense, moist)		3				3 5 7	
16									
	288								
20		golden brown to gray SAND with silt (SP-SM) (Medium dense, moist)		4				5 9 10	
	284								
		gray poorly graded sand (SP) (medium dense, moist)		5				10 15 14	
24				6				11 20	

NOTES

1. Refer to log key for definition of symbols, abbreviations and codes
2. USCS designation is based on visual manual classification and selected lab testing
3. Groundwater level, if indicated, is for the date shown and may vary
4. N.E. = Not Encountered
5. ATD = At the Time of Drilling

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LOG OF BORING B-104

JOB: OVAHIILLC.OrlandoSt.PhII *Sheet 1 of 2*

GeoResources, LLC | **FIG.A-7**

TOTAL DEPTH:	31.5	**DRILLING METHOD:**	HSA	**LOGGED BY:**	AES
TOP ELEVATION:	306	**DRILLING COMPANY:**	Boretec 1, Inc	**HAMMER TYPE:**	Cathead
LATITUDE:		**DRILL RIG:**	EC 95 Track Drill	**HAMMER WEIGHT:**	140 lbs
LONGITUDE:		**NOTES:**	Well Tag BJI 162		

Depth	Elevation	SOIL DESCRIPTION	DRILLING NOTES	Sample	Sampler	Symbol	TEST RESULTS Test Results Plastic Limit ⊢——⊣ Liquid Limit % Water Content ● % Fines (<0.075mm) ◇ Penetration - ▲ (blows per foot) 10 20 30 40 50	Blow Count	Ground Water
	280							28	
28		gray SAND with silt (very dense, moist)		7				23 40 44	
	276	gray, iron oxide stained sandy gravel with silt (GP-GM0 (very dense, moist)		8				25 40 50/6"	
32		Bottom of Boring Completed11/26/2019							
	272								
36									
	268								
40									
	264								
44									
	260								
48									
	256								

NOTES

1. Refer to log key for definition of symbols, abbreviations and codes
2. USCS designation is based on visual manual classification and selected lab testing
3. Groundwater level, if indicated, is for the date shown and may vary
4. N.E. = Not Encountered
5. ATD = At the Time of Drilling

OVAHIILLC.OrlandoSt.PhII
xxx - Orlando St
Port Orchard, Washington

LOG OF BORING B-104

JOB: OVAHIILLC.OrlandoSt.PhII *Sheet 2 of 2*

GeoResources, LLC | FIG. A-7

Test Pit TP-1

Location: Upper NE portion of site
Approximate Elevation: 316'

Depth (ft)			Soil Type	Soil Description
0	-	½	SM	Brown silty SAND, minor roots (loose, moist)
½	-	7	SP	Grey to grey brown SAND (loose to medium dense, moist) (Recessional outwash)
7	-	7¾	SM-SP	Mottled grey brown sandy SILT/silty SAND (loose to medium dense, moist to damp) (Rec. outwash)

Terminated at 7¾ feet below ground surface.
No caving observed at the time of exploration.
No groundwater seepage observed at the time of exploration.

Test Pit TP-2

Location: Upper E central portion of site
Approximate Elevation: 322'

Depth (ft)			Soil Type	Soil Description
0	-	¾	-	Dark brown topsoil/forest duff
¾	-	2½	SM	Brown silty SAND, minor roots (loose, moist) (Rec. outwash)
2½	-	10	SP	Grey brown SAND (loose to medium dense, moist) (Rec. outwash)

Terminated at 10 feet below ground surface.
No caving observed at the time of exploration.
No groundwater seepage observed at the time of exploration.

Test Pit TP-3

Location: Lower, S portion of site
Approximate Elevation: 304'

Depth (ft)			Soil Type	Soil Description
0	-	½	-	Brown silty sandy topsoil
½	-	12	-	Grey to grey blue silty SAND/sandy SILT with construction debris, trash, and organics (loose to medium dense, moist to damp) (fill)

Terminated at 12 feet below ground surface.
No caving observed at the time of exploration.
No groundwater seepage observed at the time of exploration.

Logged by: JLK **Excavated on: February 15, 2018**

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Test Pit Logs
Proposed Residential Development
xxx – SE Orlando Street
Port Orchard, Washington
PN: 302402-3-063-2008, 4598-005-028-0007, -022-0003, -017-0109, -001-0303, -004-0003, -007-0000, -010-0104

Test Pit TP-4

Location: Lower, S portion of site
Approximate Elevation: 299'

Depth (ft)			Soil Type	Soil Description
0	-	1¼	-	Brown silty sandy topsoil
1¼	-	4½	SM	Mottled tan silty SAND with organics (loose to medium dense, moist to damp) (fill?)
4½	-	5	SM	Brown to dark brown silty SAND, minor roots, some cobbles (loose to medium dense, moist) (relict topsoil?)
5	-	9½	SM	Mottled tan silty SAND with organics (loose to medium dense, damp) (Rec. outwash)

Terminated at 9½ feet below ground surface.
No caving observed at the time of exploration.
No groundwater seepage observed at the time of exploration.

Test Pit TP-5

Location: Lower, SE portion of site
Approximate Elevation: 312'

Depth (ft)			Soil Type	Soil Description
0	-	¾	-	Brown silty sandy topsoil
¾	-	4	SM-SP	Mottled grey brown to tan silty SAND/sandy SILT with organics (loose to medium dense, moist to damp) (fill)
4	-	13	-	Grey to grey blue silty SAND/sandy SILT with construction debris, trash, and organics (loose to medium dense, moist to damp) (fill)

Terminated at 13 feet below ground surface.
No caving observed at the time of exploration.
Slow groundwater seepage observed around 13 feet.

Test Pit TP-6

Location: Lower, SE portion of site
Approximate Elevation: 314'

Depth (ft)			Soil Type	Soil Description
0	-	1	-	Brown silty sandy topsoil
1	-	6	SP	Tan SAND, some roots (loose to medium dense, moist) (Rec. outwash)
6	-	11	SP	Grey brown SAND (loose to medium dense, moist) (Rec. outwash)

Terminated at 11 feet below ground surface.
No caving observed at the time of exploration.
No groundwater seepage observed at the time of exploration.

Logged by: JLK **Excavated on: February 15, 2018**

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Test Pit Logs
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PN: 302402-3-063-2008, 4598-005-028-0007, -022-0003, -017-0109, -001-0303, -004-0003, -007-0000, -010-0104

Test Pit TP-7

Location: Upper, E central portion of site
Approximate Elevation: 327'

Depth (ft)			Soil Type	Soil Description
0	-	¾	-	Dark brown silty sandy topsoil
¾	-	3	SP	Brown SAND (loose to medium dense, moist) (Rec. outwash)
3	-	10	SP	Grey brown SAND with gravel (loose to medium dense, moist to damp) (Rec. outwash)
10	-	10½	SM-SP	Grey silty SAND/sandy SILT, minor mottling (medium dense, moist) (Rec. outwash)

Terminated at 8 feet below ground surface.
No caving observed at the time of exploration.
No groundwater seepage observed at the time of exploration.

Test Pit TP-8

Location: Upper, central portion of site
Approximate Elevation: 325'

Depth (ft)			Soil Type	Soil Description
0	-	1	-	Black to dark brown sandy topsoil
1	-	2	SM	Brown silty SAND (loose to medium dense, moist)
2	-	4	SP-SM	Grey brown to grey gravelly SAND, some cobbles (medium dense, moist) (Rec. outwash?)
4	-	11	SP-SM	Mottled grey silty SAND/sandy SILT with gravel (medium dense to dense, moist to damp) (till?)

Terminated at 11 feet below ground surface.
No caving observed at the time of exploration.
No groundwater seepage observed at the time of exploration.

Test Pit TP-9

Location: Lower, W central portion of site
Approximate Elevation: 284'

Depth (ft)			Soil Type	Soil Description
0	-	1½	-	Black to dark brown sandy topsoil
1½	-	8	SM	Tan to brown silty SAND (loose to medium dense, most) (Rec. outwash)
8	-	11	SP-SM	Grey to tan silty SAND with gravel, some cobbles (medium dense to dense, moist) (Rec. outwash)

Terminated at 11 feet below ground surface.
No caving observed at the time of exploration.
No groundwater seepage observed at the time of exploration.

Logged by: JLK **Excavated on: February 15, 2018**

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Test Pit Logs
Proposed Residential Development
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PN: 302402-3-063-2008, 4598-005-028-0007, -022-0003, -017-0109, -001-0303, -004-0003, -007-0000, -010-0104

Test Pit TP-10

Location: Lower, S portion of site
Approximate Elevation: 310'

Depth (ft)			Soil Type	Soil Description
0	-	1	-	Dark brown sandy topsoil
1	-	3	SM	Tan silty SAND, some organics (loose to medium dense, moist) (fill)
3	-	8	-	Grey to grey blue silty SAND/sandy SILT with construction debris, trash, and organics (loose to medium dense, moist to damp) (fill)
8	-	10+	SP	Tan to grey brown SAND (loose to medium dense, moist) (Rec. outwash)

Terminated at 10+ feet below ground surface.
Major caving observed in fill material.
No groundwater seepage observed at the time of exploration.

Logged by: JLK **Excavated on: February 15, 2018**

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Test Pit Logs
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Hand Auger 1

Location: Near gravel cut area
Approximate Elevation: 345'

Depth (ft)	Soil Type	Soil Description
0 - 1.0	-	Forest duff
1.0 - 2.3	SW	Reddish brown grading to tan SAND with some gravel (loose to medium dense, moist) (weathered advance outwash)
2.3 - 8.0	SW	Gray poorly graded sand with silt (medium dense to dense, moist) (advance outwash) (dense at 4.3 feet below existing ground surface)

Terminated at 8 feet below ground surface.
No caving observed at the time of exploration.
No groundwater seepage observed at the time of exploration.
Mottling observed at 6.5 feet below existing ground surface.

Hand Auger 2

Location: Russel Ave SE & SE Lovell St, SE of mailboxes
Approximate Elevation: 345'

Depth (ft)	Soil Type	Soil Description
0 - 1.0	-	Topsoil
1.0 - 2.5	SP	Brown gravelly SAND (dense, moist) (fill) (reworked texture)
2.5 - 3.5	SP	Gray gravelly SAND (very dense, moist) (advance outwash)

Terminated at 3.5 feet below ground surface (refusal).
No caving observed at the time of exploration.
No groundwater seepage observed at the time of exploration.
No mottling observed.

Logged by: AES **Excavated on: December 17, 2019**

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Hand Auger Logs
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Hand Auger 3

Location: Whittier Ave SE & SE Lovell St, north of road, on slope
Approximate Elevation: 350'

Depth (ft)	Soil Type	Soil Description
0 - 1.0	-	Topsoil
1.0 - 3.0	SP	Reddish brown SAND with silt and gravel (loose to medium dense, moist) (weathered advance outwash)
3.0 - 8.0	SP	Gray grading to gray SAND with gravel, coarser with depth (dense, moist) (advance outwash)

Terminated at 8.0 feet below ground surface.
No caving observed at the time of exploration.
No groundwater seepage observed at the time of exploration.
No mottling observed.

Hand Auger 4

Location: Proposed Wendell Ave, top of slope
Approximate Elevation: 335'

Depth (ft)	Soil Type	Soil Description
0 - 0.5	-	Topsoil
0.5 - 4.0	SP	Reddish brown grading to tan SAND with silt and gravel (loose to medium dense, moist)
4.0 - 5.0	SP	Gray SAND (medium dense to dense, moist)
5.0 - 6.5	SP	Tan, orange iron oxide stained SAND (dense, moist)
6.5 - 7.5	SP	Gray poorly graded SAND (dense, moist)

Terminated at 7.5 feet below ground surface.
No caving observed at the time of exploration.
No groundwater seepage observed at the time of exploration.
Mottling observed between 5.0 to 6.5 feet below the existing ground surface.

Logged by: AES **Excavated on: December 17, 2019**

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Hand Auger Logs
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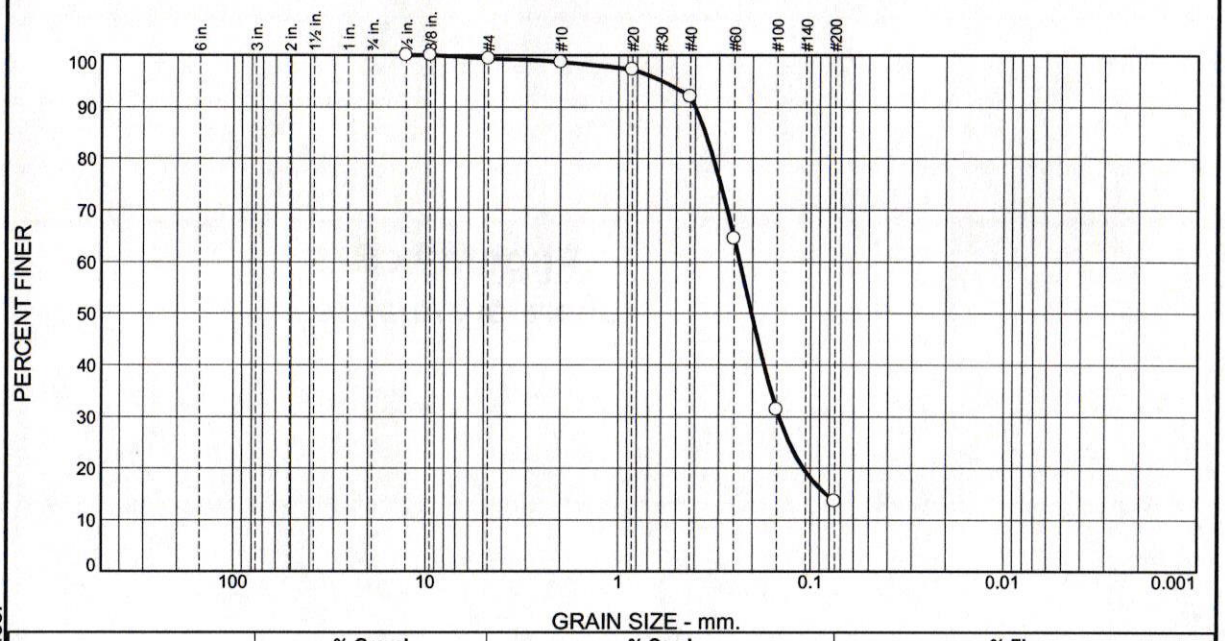
PN: 302402-3-063-2008, 4598-005-028-0007, -022-0003, -017-0109, -001-0303, -004-0003, -007-0000, -010-0104

Appendix B

Laboratory Analyses

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	0.7	6.6	78.4	13.6	

Test Results (ASTM D 422 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
.5	100.0		
0.375	100.0		
#4	99.3		
#10	98.6		
#20	97.2		
#40	92.0		
#60	64.5		
#100	31.5		
#200	13.6		

* (no specification provided)

Material Description

silty sand

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NV

Classification

USCS (D 2487)= SM AASHTO (M 145)= A-2-4(0)

Coefficients

D_{90}= 0.4000 D_{85}= 0.3548 D_{60}= 0.2340
D_{50}= 0.2027 D_{30}= 0.1456 D_{15}= 0.0829
D_{10}= C_u= C_c=

Remarks

Date Received: 2/15/18 **Date Tested:** 2/20/18

Tested By: JLK

Checked By: KSS

Title: PM

Location: TP-2, S-2
Sample Number: 093766 **Depth:** .75-2.5' **Date Sampled:** 2/15/18

GeoResources, LLC

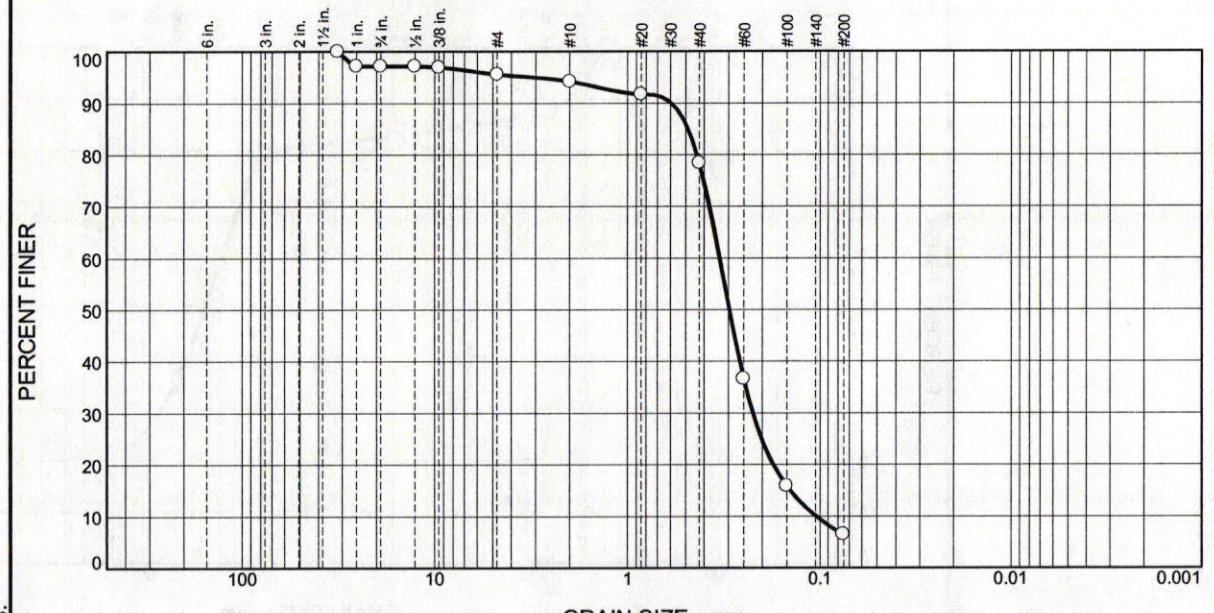
Fife, WA

Client: OVAH II LLC
Project: OVAHIILLC.OrlandoSt.PhII

Project No: OVAHIILLC.OrlandoSt.PhII **Figure** B-1

Tested By: _____ **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.8	1.6	1.4	15.8	71.9	6.5	

Test Results (ASTM D 422 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.25	100.0		
1	97.2		
.75	97.2		
.5	97.2		
0.375	96.9		
#4	95.6		
#10	94.2		
#20	91.7		
#40	78.4		
#60	36.6		
#100	15.9		
#200	6.5		

* (no specification provided)

Material Description

poorly graded sand with silt

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NV

Classification

USCS (D 2487)= SP-SM AASHTO (M 145)= A-3

Coefficients

D_{90}= 0.5926 D_{85}= 0.4868 D_{60}= 0.3332
D_{50}= 0.2965 D_{30}= 0.2243 D_{15}= 0.1438
D_{10}= 0.1051 C_u= 3.17 C_c= 1.44

Remarks

Date Received: 2/15/2018 **Date Tested:** 2/20/2018

Tested By: JLK

Checked By: KSS

Title: PM

Location: TP-7, S-1 **Date Sampled:** 2/15/2018
Sample Number: 093770 **Depth:** 7-10'

GeoResources, LLC

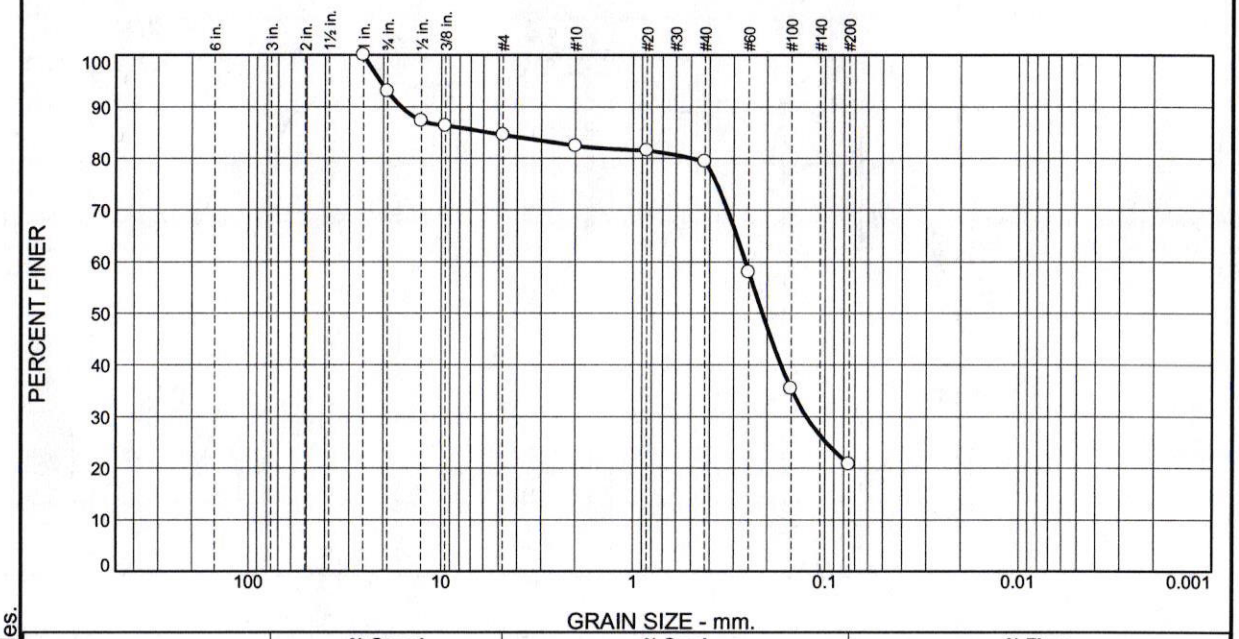
Fife, WA

Client: OVAH II LLC
Project: OVAHIILLC.OrlandoSt.PhII

Project No: OVAHIILLC.OrlandoSt.PhII **Figure** B-2

Tested By: _____ **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.0	8.4	2.2	3.0	58.7	20.7	

Test Results (ASTM D 422 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1	100.0		
.75	93.0		
.5	87.3		
0.375	86.4		
#4	84.6		
#10	82.4		
#20	81.6		
#40	79.4		
#60	58.0		
#100	35.5		
#200	20.7		

* (no specification provided)

Material Description

silty sand with gravel

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NP

Classification

USCS (D 2487)= SM AASHTO (M 145)= A-2-4(0)

Coefficients

D_{90}= 16.1738 D_{85}= 5.5693 D_{60}= 0.2603
D_{50}= 0.2118 D_{30}= 0.1248 D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 2/15/2018 **Date Tested:** 2/20/2018

Tested By: JLK

Checked By: KSS

Title: PM

Location: TP-9, S-1 **Date Sampled:** 2/15/2018
Sample Number: 093772 **Depth:** 11-11.5'

GeoResources, LLC

Fife, WA

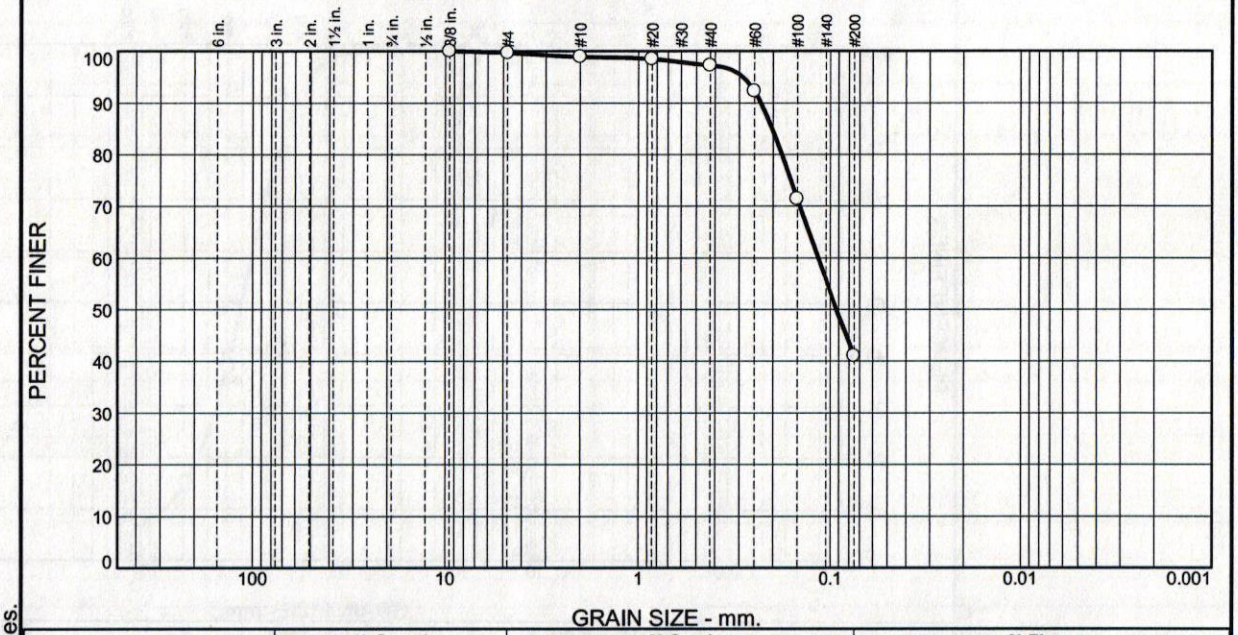
Client: OVAH II LLC
Project: OVAHIILLC.OrlandoSt.PhII

Project No: OVAHIILLC.OrlandoSt.PhII **Figure** B-3

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicitive of apparently identical samples.

Tested By: _____ **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.8	1.7	56.2	41.0	

Test Results (ASTM D 6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375	100.0		
#4	99.7		
#10	98.9		
#20	98.5		
#40	97.2		
#60	92.2		
#100	71.4		
#200	41.0		

* (no specification provided)

Material Description

gray silty sand

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NV

Classification

USCS (D 2487)= SM AASHTO (M 145)= A-4(0)

Coefficients

D_{90}= 0.2315 D_{85}= 0.2023 D_{60}= 0.1166
D_{50}= 0.0926 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 11/20/2019 **Date Tested:** 12/19/2019

Tested By: AES

Checked By: KSS

Title: PM

Source of Sample: B-101 **Depth:** 20' **Date Sampled:** 11/20/2019
Sample Number: 6

GeoResources, LLC

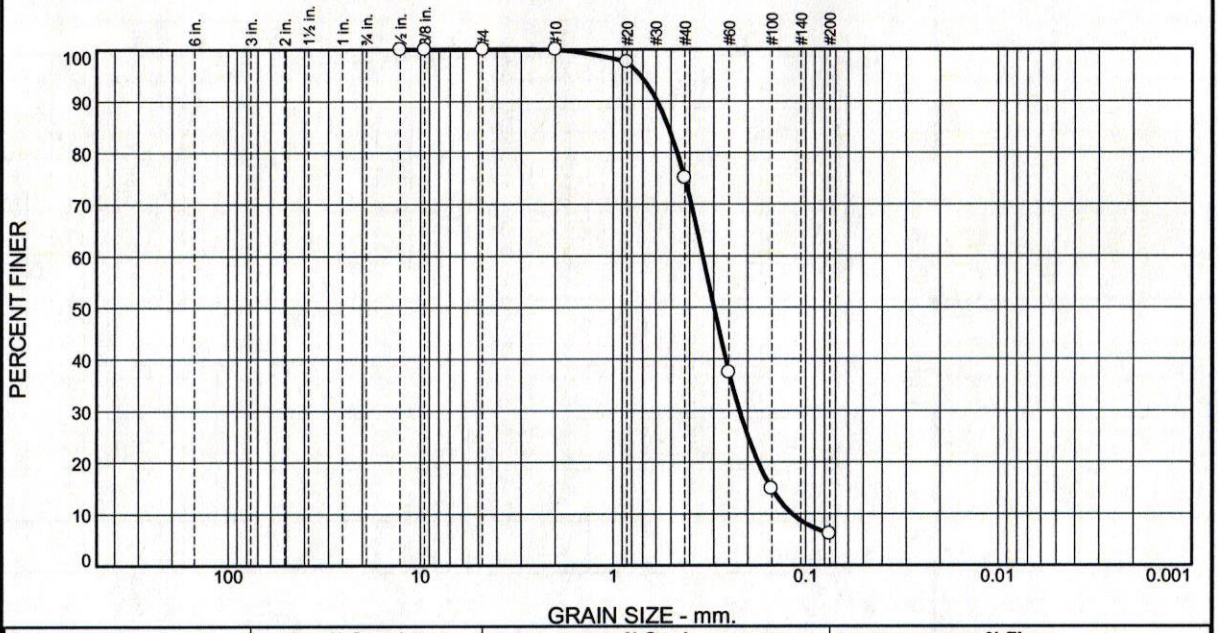
Fife, WA

Client: OVAH II LLC
Project: OVAHIILLC.OrlandoSt.PhII

Project No: OVAHIILLC.OrlandoSt.PhII **Figure** B-4

Tested By: _____ **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	24.9	69.0	6.1	

Test Results (ASTM D 6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
.5	100.0		
0.375	100.0		
#4	100.0		
#10	100.0		
#20	97.6		
#40	75.1		
#60	37.4		
#100	14.9		
#200	6.1		

* (no specification provided)

Material Description

gray poorly graded sand with silt

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NV

Classification

USCS (D 2487)= SP-SM AASHTO (M 145)= A-3

Coefficients

D_{90}= 0.5906 D_{85}= 0.5156 D_{60}= 0.3414
D_{50}= 0.2988 D_{30}= 0.2204 D_{15}= 0.1508
D_{10}= 0.1177 C_u= 2.90 C_c= 1.21

Remarks

Date Received: 11/20/2019 **Date Tested:** 12/30/2019

Tested By: AES

Checked By: KSS

Title: PM

Source of Sample: B-101 **Depth:** 30' **Date Sampled:** 11/20/2019

Sample Number: 9

GeoResources, LLC

Fife, WA

Client: OVAH II LLC

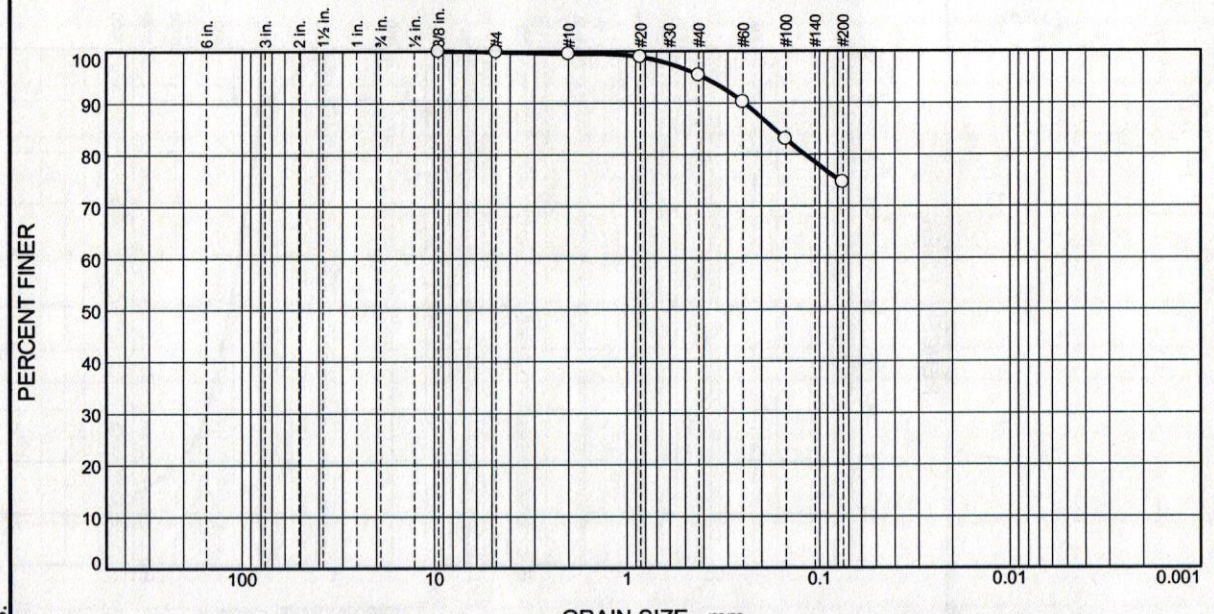
Project: OVAHIILLC.OrlandoSt.PhII

Project No: OVAHIILLC.OrlandoSt.PhII **Figure** B-5

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicitive of apparently identical samples.

Tested By: _____ **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.4	4.1	20.8	74.6	

Test Results (ASTM D 6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375	100.0		
#4	99.9		
#10	99.5		
#20	98.9		
#40	95.4		
#60	90.2		
#100	83.0		
#200	74.6		

* (no specification provided)

Material Description

gray silt with sand

Atterberg Limits (ASTM D 4318)

PL= np LL= nv PI= nv

Classification

USCS (D 2487)= ML AASHTO (M 145)= A-4(0)

Coefficients

D_{90}= 0.2462 D_{85}= 0.1730 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 11/20/2019 **Date Tested:** 12/19/2019

Tested By: aes

Checked By: kss

Title: pm

Source of Sample: B-102 **Depth:** 15' **Date Sampled:** 11/20/2019

Sample Number: 4

GeoResources, LLC

Fife, WA

Client: OVAH II LLC

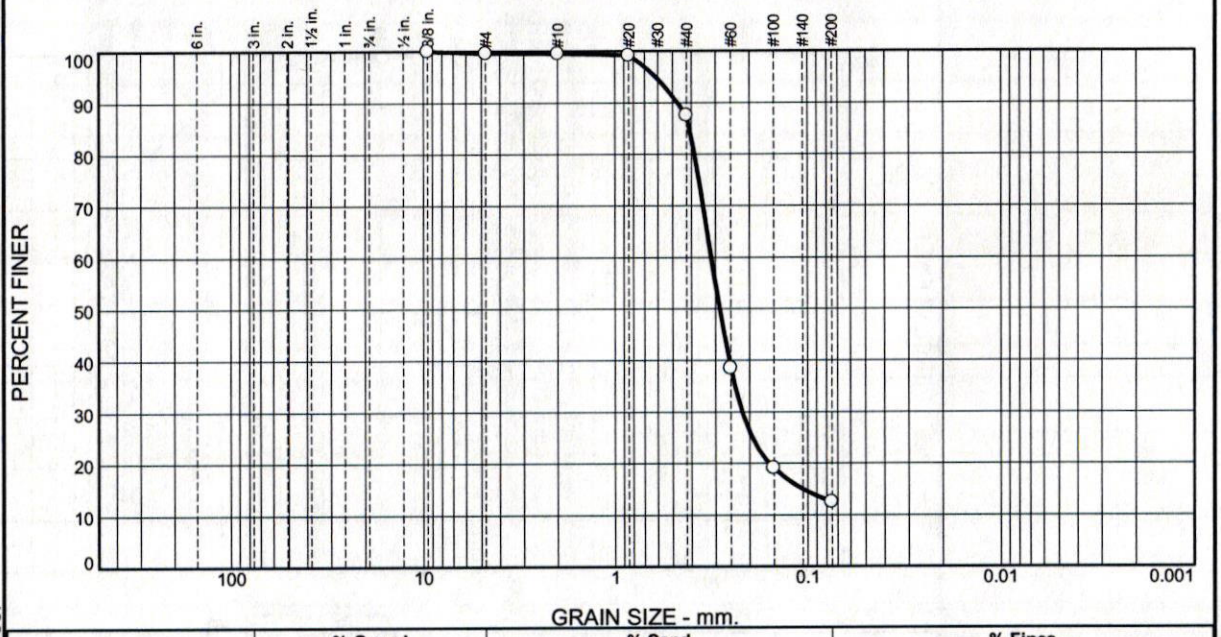
Project: OVAHIILLC.OrlandoSt.PhII

Project No: OVAHIILLC.OrlandoSt.PhII **Figure** B-6

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicitive of apparently identical samples.

Tested By: _____ **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	0.1	12.0	75.0	12.5	

Test Results (ASTM D 6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375	100.0		
#4	99.6		
#10	99.5		
#20	99.2		
#40	87.5		
#60	38.5		
#100	19.1		
#200	12.5		

* (no specification provided)

Material Description

gray silty sand

Atterberg Limits (ASTM D 4318)

PL= np LL= nv PI= nv

Classification

USCS (D 2487)= SM AASHTO (M 145)= A-2-4(0)

Coefficients

D_{90}= 0.4730 D_{85}= 0.4104 D_{60}= 0.3150
D_{50}= 0.2850 D_{30}= 0.2183 D_{15}= 0.1058
D_{10}= C_u= C_c=

Remarks

Date Received: 11/20/2019 **Date Tested:** 12/30/2019

Tested By: aes

Checked By: kss

Title: pm

Source of Sample: B-102 **Depth:** 30' **Date Sampled:** 11/20/2019

Sample Number: 9

GeoResources, LLC

Fife, WA

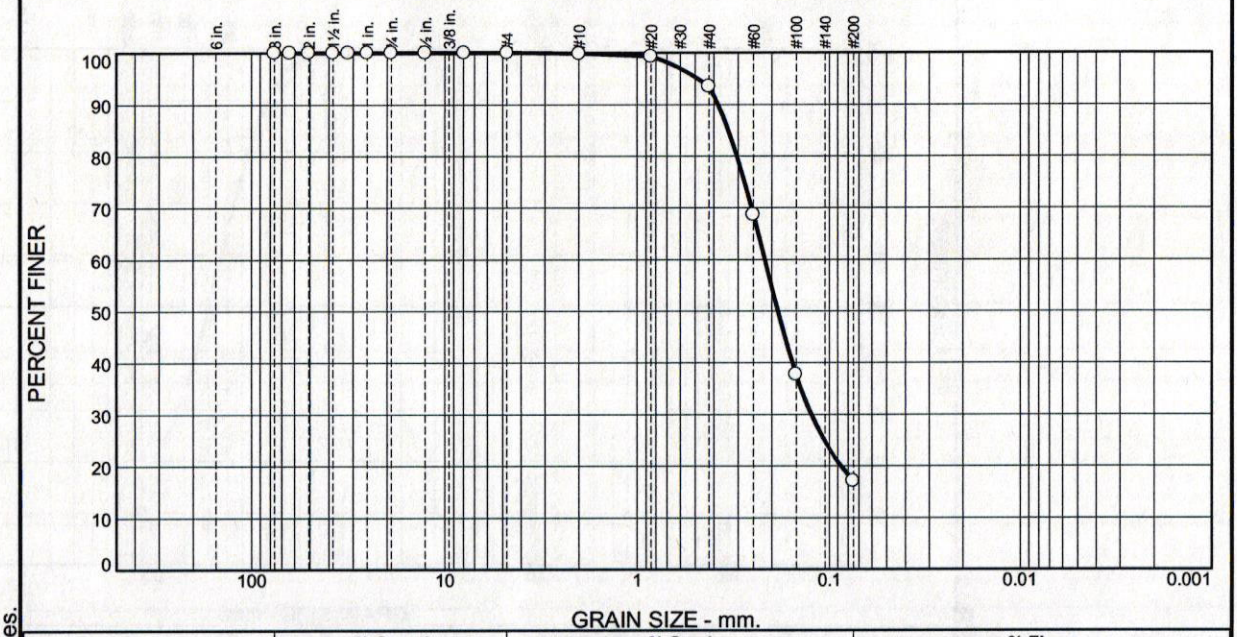
Client: OVAH II LLC

Project: OVAHIILLC.OrlandoSt.PhII

Project No: OVAHIILLC.OrlandoSt.PhII **Figure** B-7

Tested By: _____ **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	6.4	76.4	17.1	

Test Results (ASTM D 6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3.0	100.0		
2.5	100.0		
2.0	100.0		
1.5	100.0		
1.25	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.3125	100.0		
#4	100.0		
#10	99.9		
#20	99.3		
#40	93.5		
#60	68.7		
#100	37.7		
#200	17.1		

* (no specification provided)

Material Description

Silty SAND

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NP

Classification

USCS (D 2487)= SM AASHTO (M 145)= A-2-4(0)

Coefficients

D_{90}= 0.3814 D_{85}= 0.3379 D_{60}= 0.2179
D_{50}= 0.1863 D_{30}= 0.1250 D_{15}=
D_{10}= C_u= C_c=

Remarks

Moisture: 6.6%

Date Received: 11/2019 **Date Tested:** 1/13/2019

Tested By: DC

Checked By: KSS

Title: PM

Location: B-103 S3 **Date Sampled:** 11/2019
Sample Number: 099063 **Depth:** 15

GeoResources, LLC

Fife, WA

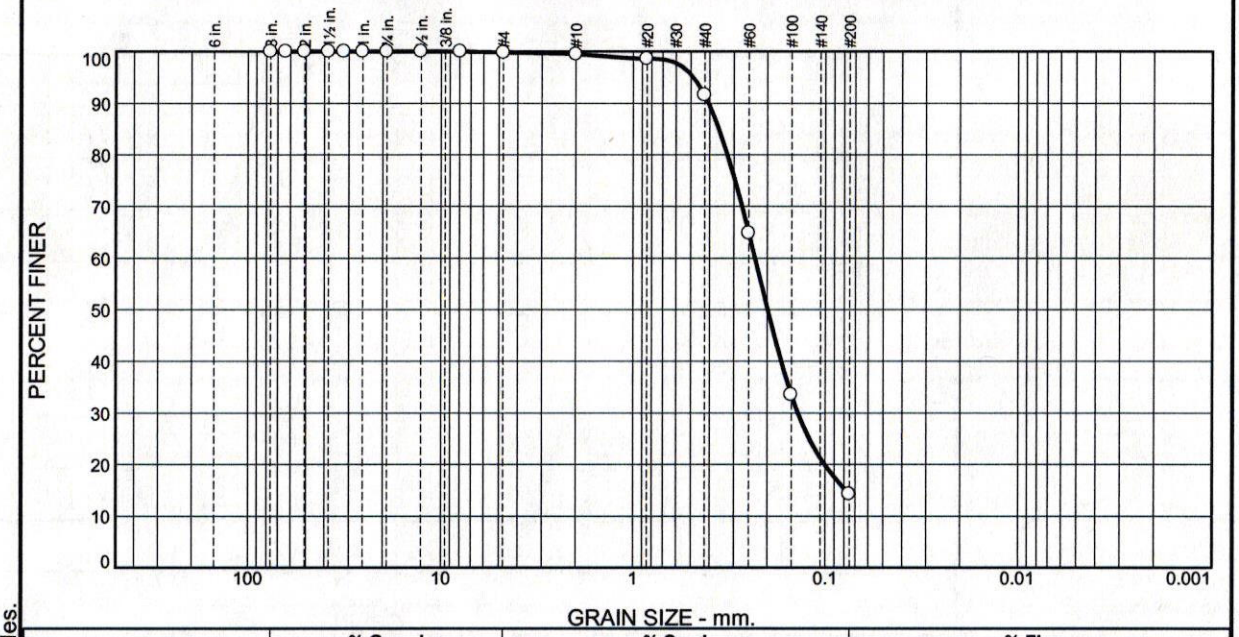
Client: OVAH II LLC
Project: OVAHIILLC.OrlandoSt.PhII

Project No: OVAHIILLC.OrlandoSt.PhII **Figure** B-8

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicitive of apparently identical samples.

Tested By: _____ **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.3	7.9	77.3	14.3	

Test Results (ASTM D 6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3.0	100.0		
2.5	100.0		
2.0	100.0		
1.5	100.0		
1.25	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.3125	100.0		
#4	99.8		
#10	99.5		
#20	98.6		
#40	91.6		
#60	64.8		
#100	33.5		
#200	14.3		

* (no specification provided)

Material Description

Silty SAND

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NP

Classification

USCS (D 2487)= SM AASHTO (M 145)= A-2-4(0)

Coefficients

D_{90}= 0.4051 D_{85}= 0.3584 D_{60}= 0.2321
D_{50}= 0.1992 D_{30}= 0.1387 D_{15}= 0.0782
D_{10}= C_u= C_c=

Remarks

Moisture: 6.5%

Date Received: 11/2019 **Date Tested:** 1/13/2020

Tested By: DC

Checked By: KSS

Title: PM

Location: B-103 S4 **Date Sampled:** 11/2019
Sample Number: 099064 **Depth:** 17.5'

GeoResources, LLC

Fife, WA

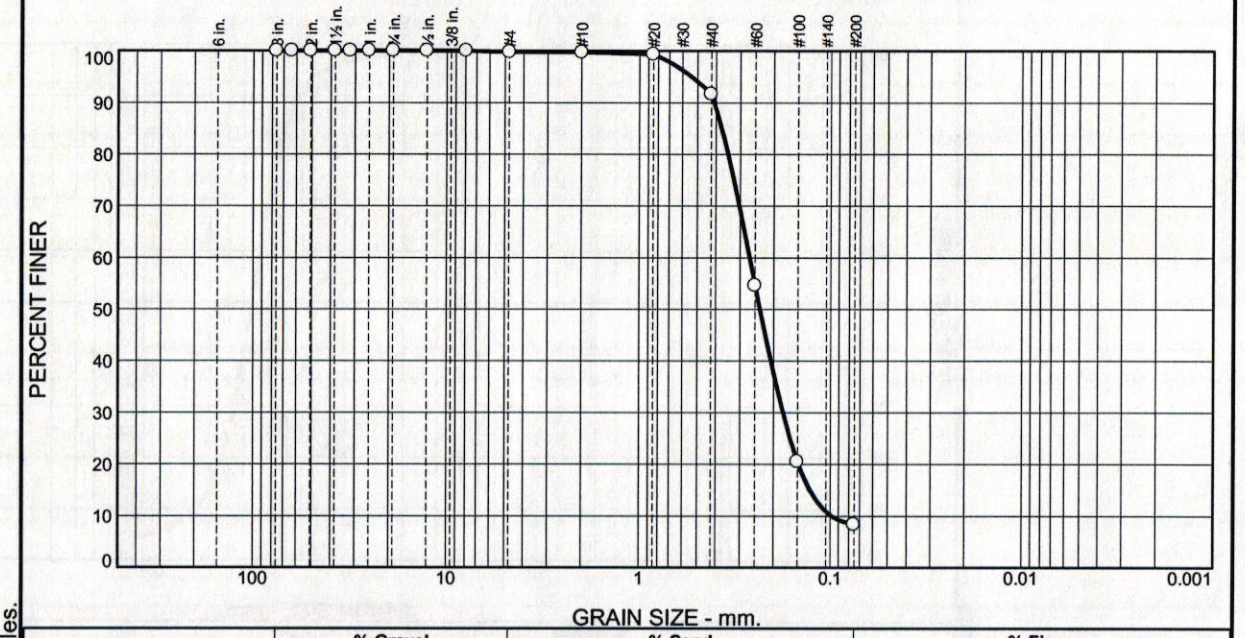
Client: OVAH II LLC
Project: OVAHIILLC.OrlandoSt.PhII

Project No: OVAHIIILLC.OrlandoSt.PhII **Figure** B-9

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicitive of apparently identical samples.

Tested By: _____ **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.1	8.0	83.3	8.4	

Test Results (ASTM D 6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3.0	100.0		
2.5	100.0		
2.0	100.0		
1.5	100.0		
1.25	100.0		
1	100.0		
.75	100.0		
.5	100.0		
.3125	100.0		
#4	99.8		
#10	99.7		
#20	99.3		
#40	91.7		
#60	54.6		
#100	20.5		
#200	8.4		

* (no specification provided)

Material Description

Poorly graded SAND with Silt

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NP

Classification

USCS (D 2487)= SP-SM AASHTO (M 145)= A-3

Coefficients

D_{90}= 0.4101 D_{85}= 0.3749 D_{60}= 0.2673
D_{50}= 0.2359 D_{30}= 0.1786 D_{15}= 0.1290
D_{10}= 0.0983 C_u= 2.72 C_c= 1.21

Remarks

Moisture:17.3%

Date Received: 11/2019 **Date Tested:** 1/13/2020

Tested By: DC

Checked By: KSS

Title: PM

Location: B-103 S6 **Date Sampled:** 11/2019
Sample Number: 099065 **Depth:** 22.5'

GeoResources, LLC

Fife, WA

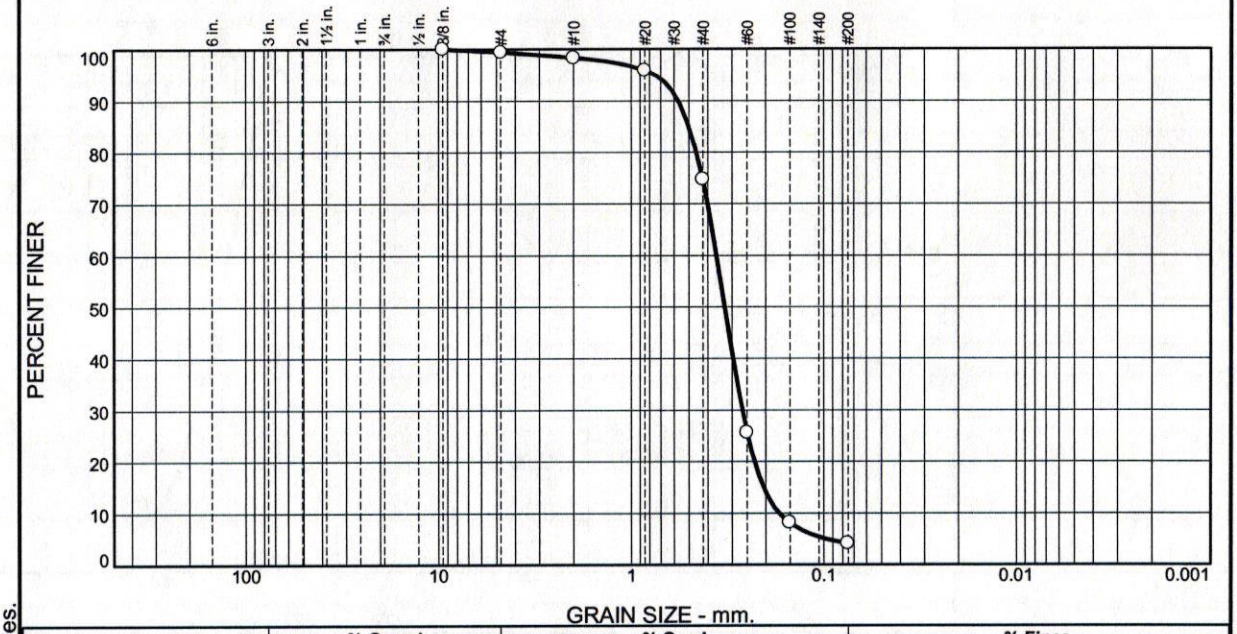
Client: OVAH II LLC
Project: OVAHIILLC.OrlandoSt.PhII

Project No: OVAHIILLC.OrlandoSt.PhII **Figure** B-10

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicitive of apparently identical samples.

Tested By: _____ **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	1.1	23.5	70.6	4.2	

Test Results (ASTM D 6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375	100.0		
#4	99.4		
#10	98.3		
#20	95.9		
#40	74.8		
#60	25.6		
#100	8.2		
#200	4.2		

* (no specification provided)

Material Description

gray poorly graded sand

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NV

Classification

USCS (D 2487)= SP AASHTO (M 145)= A-3

Coefficients

D_{90}= 0.5700 D_{85}= 0.5016 D_{60}= 0.3603
D_{50}= 0.3263 D_{30}= 0.2645 D_{15}= 0.2053
D_{10}= 0.1702 C_u= 2.12 C_c= 1.14

Remarks

Date Received: 11/26/2019 **Date Tested:** 12/19/2019

Tested By: AES

Checked By: KSS

Title: PM

Source of Sample: B-104 **Depth:** 22.5 **Date Sampled:** 11/26/2019

Sample Number: 5

GeoResources, LLC

Fife, WA

Client: OVAH II LLC

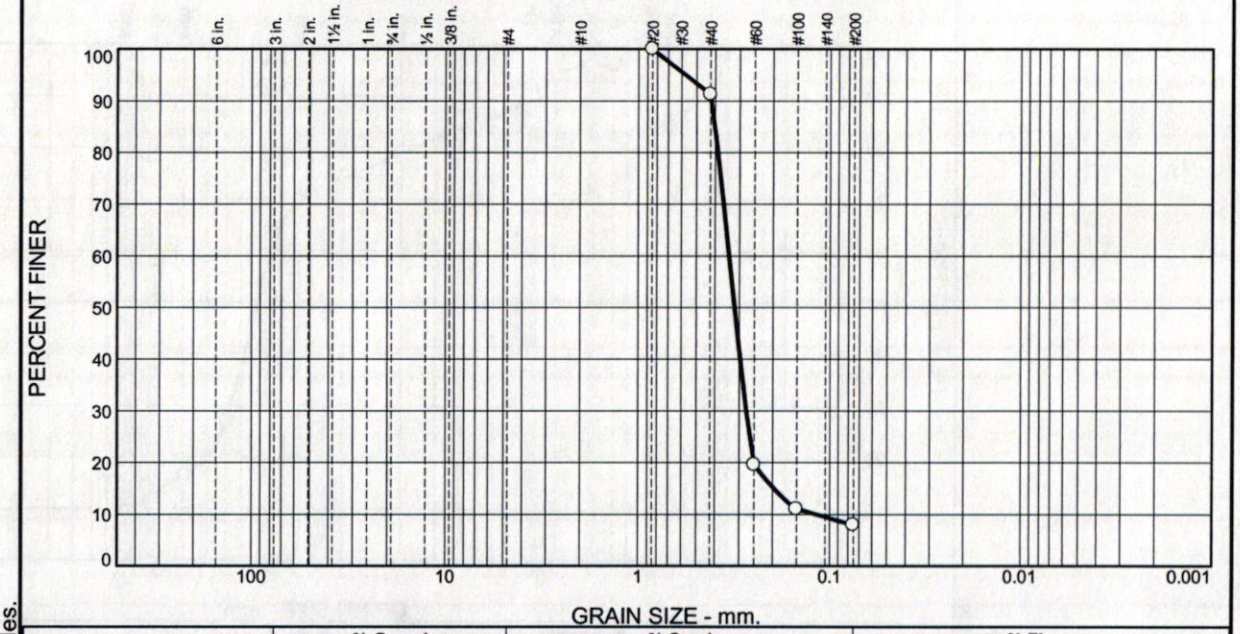
Project: OVAHIILLC.OrlandoSt.PhII

Project No: OVAHIILLC.OrlandoSt.PhII **Figure** B-11

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicitive of apparently identical samples.

Tested By: _____ **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	8.7	83.3	8.0	

Test Results (ASTM D 6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#20	100.0		
#40	91.3		
#60	19.6		
#100	11.1		
#200	8.0		

* (no specification provided)

Material Description

poorly graded sand with silt

Atterberg Limits (ASTM D 4318)

PL= np LL= nv PI= nv

Classification

USCS (D 2487)= SP-SM AASHTO (M 145)= A-3

Coefficients

D_{90}= 0.4198 D_{85}= 0.4023 D_{60}= 0.3379
D_{50}= 0.3167 D_{30}= 0.2750 D_{15}= 0.1974
D_{10}= 0.1181 C_u= 2.86 C_c= 1.90

Remarks

Date Received: 12/17/2019 **Date Tested:** 12/19/2019

Tested By: aes

Checked By: kss

Title: pm

Location: HA-1, S-2 **Date Sampled:** 12/17/2019
Sample Number: 098900 **Depth:** 3'

GeoResources, LLC

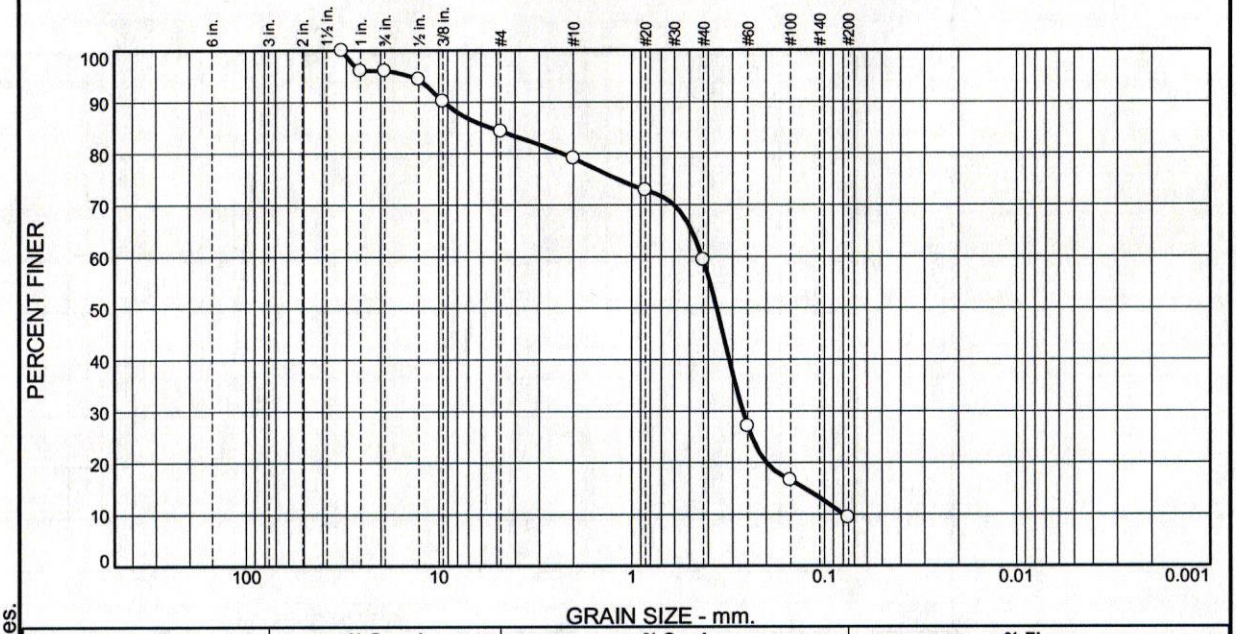
Fife, WA

Client: OVAH II LLC
Project: OVAHIILLC.OrlandoSt.PhII

Project No: OVAHIILLC.OrlandoSt.PhII **Figure** B-12

Tested By: _____ **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.9	11.7	5.4	19.6	50.0	9.4	

Test Results (ASTM D 6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.25	100.0		
1	96.1		
.75	96.1		
.5	94.4		
0.375	90.2		
#4	84.4		
#10	79.0		
#20	72.9		
#40	59.4		
#60	27.1		
#100	16.6		
#200	9.4		

* (no specification provided)

Material Description

poorly graded sand with silt and gravel

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NV

Classification

USCS (D 2487)= SP-SM AASHTO (M 145)= A-3

Coefficients

D_{90}= 9.3965 D_{85}= 5.3248 D_{60}= 0.4305
D_{50}= 0.3624 D_{30}= 0.2651 D_{15}= 0.1262
D_{10}= 0.0794 C_u= 5.42 C_c= 2.06

Remarks

Date Received: 12/17/2019 **Date Tested:** 12/19/2019

Tested By: AES

Checked By: KSS

Title: PM

Location: HA-3, S-1 **Date Sampled:** 12/17/2019

Sample Number: 098901 **Depth:** 1'

GeoResources, LLC

Fife, WA

Client: OVAH II LLC

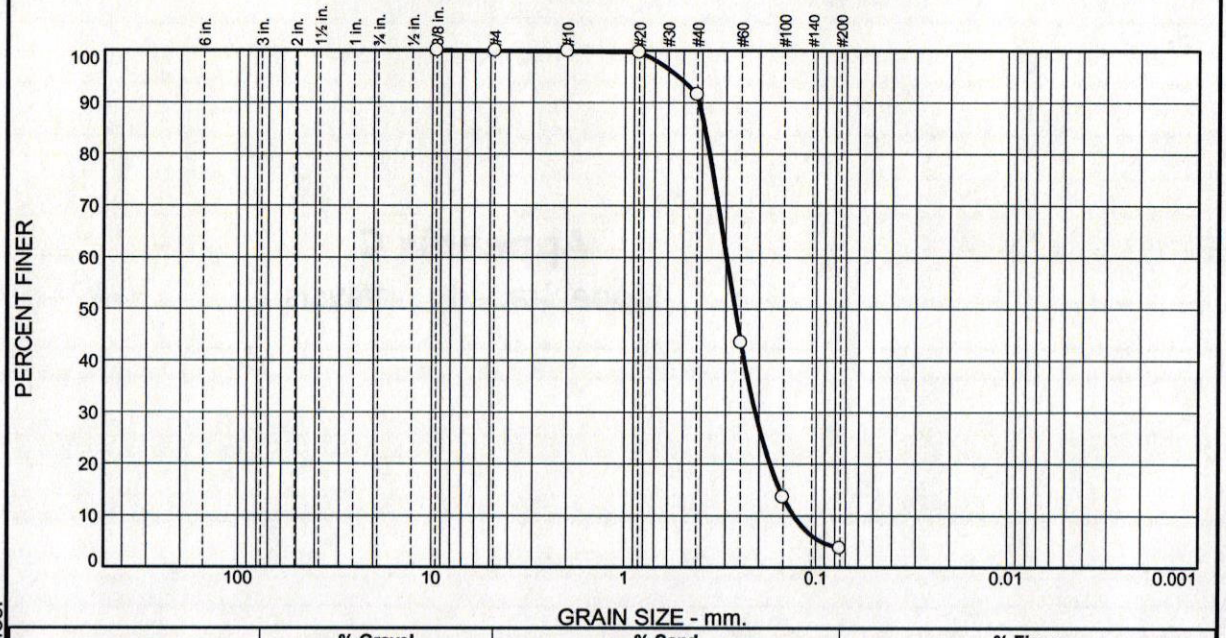
Project: OVAHIILLC.OrlandoSt.PhII

Project No: OVAHIILLC.OrlandoSt.PhII **Figure** B-13

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicitive of apparently identical samples.

Tested By: _____ **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.0	8.4	87.8	3.7	

Test Results (ASTM D 6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375	100.0		
#4	99.9		
#10	99.9		
#20	99.7		
#40	91.5		
#60	43.5		
#100	13.6		
#200	3.7		

* (no specification provided)

Material Description

poorly graded sand

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI= NV

Classification

USCS (D 2487)= SP AASHTO (M 145)= A-3

Coefficients

D_{90}= 0.4149 D_{85}= 0.3876 D_{60}= 0.2970
D_{50}= 0.2683 D_{30}= 0.2097 D_{15}= 0.1562
D_{10}= 0.1322 C_u= 2.25 C_c= 1.12

Remarks

Date Received: 12/19/2019 **Date Tested:** 12/19/2019

Tested By: AES

Checked By: KSS

Title: PM

Location: HA-4, S5 **Date Sampled:** 12/17/2019
Sample Number: 098902 **Depth:** 7'

GeoResources, LLC

Fife, WA

Client: OVAH II LLC
Project: OVAHIILLC.OrlandoSt.PhII

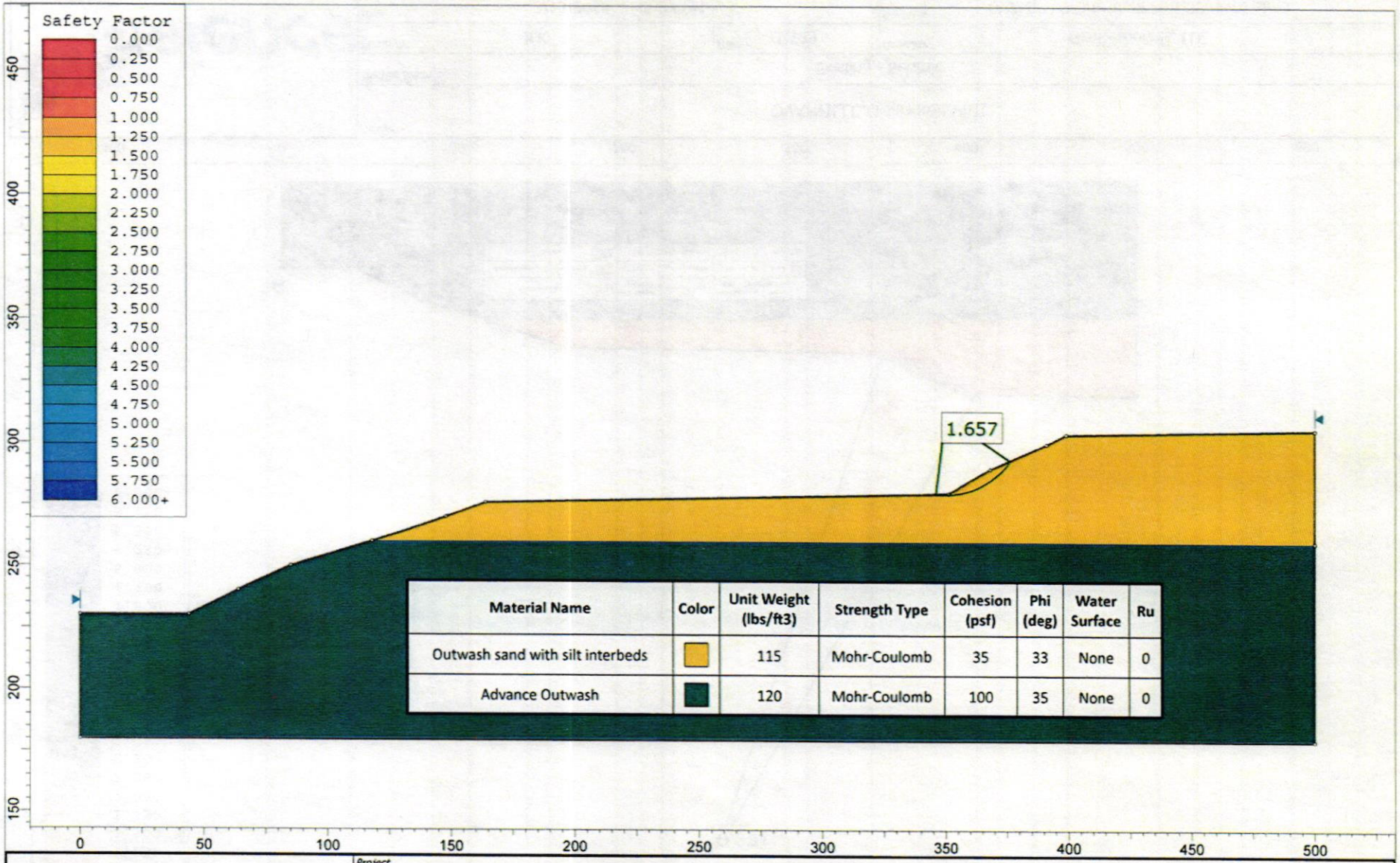
Project No: OVAHIILLC.OrlandoSt.PhII **Figure** B-14

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicitive of apparently identical samples.

Tested By: _____ **Checked By:** _____

Appendix C

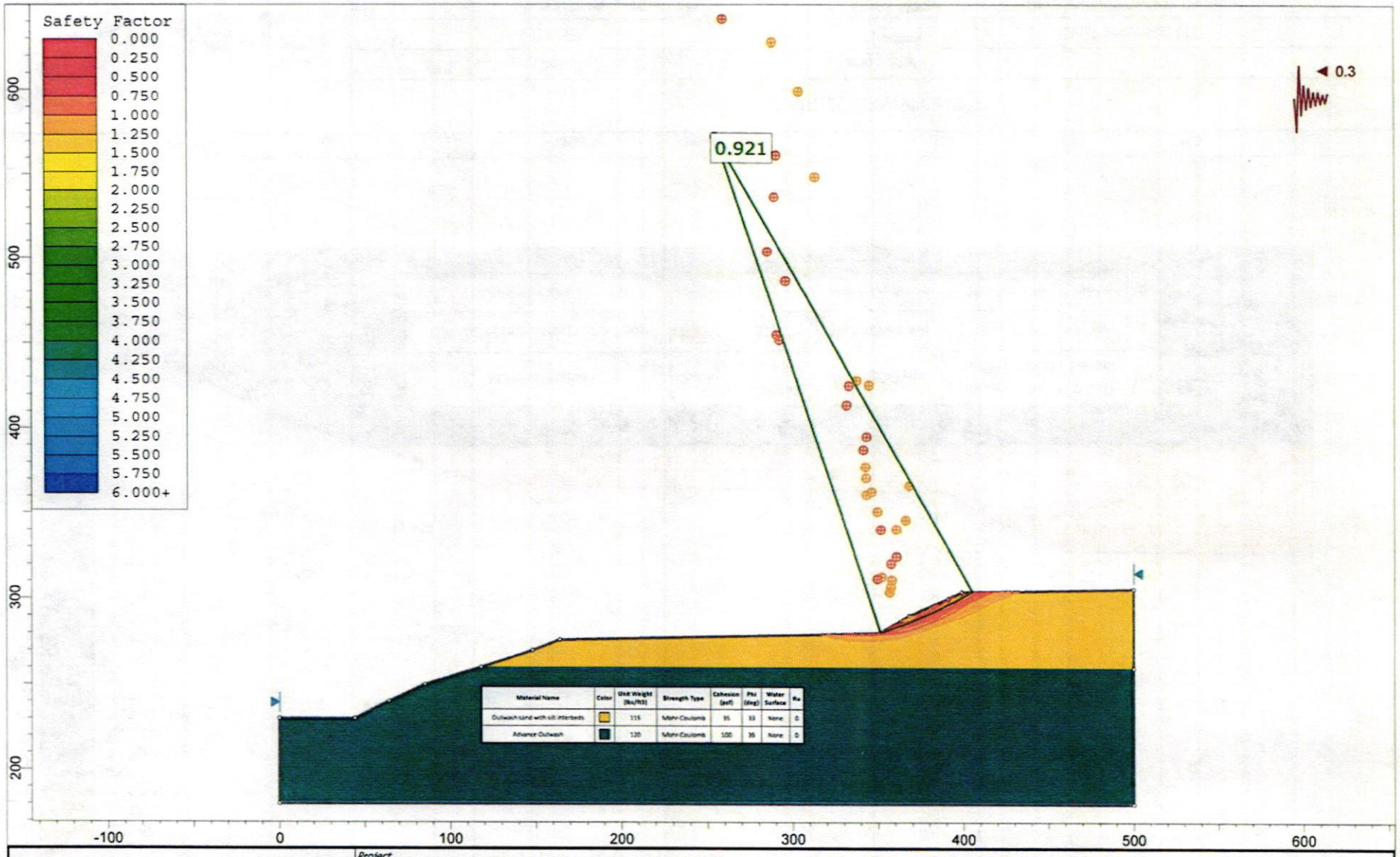
Slope Stability Analysis



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Outwash sand with silt interbeds		115	Mohr-Coulomb	35	33	None	0
Advance Outwash		120	Mohr-Coulomb	100	35	None	0

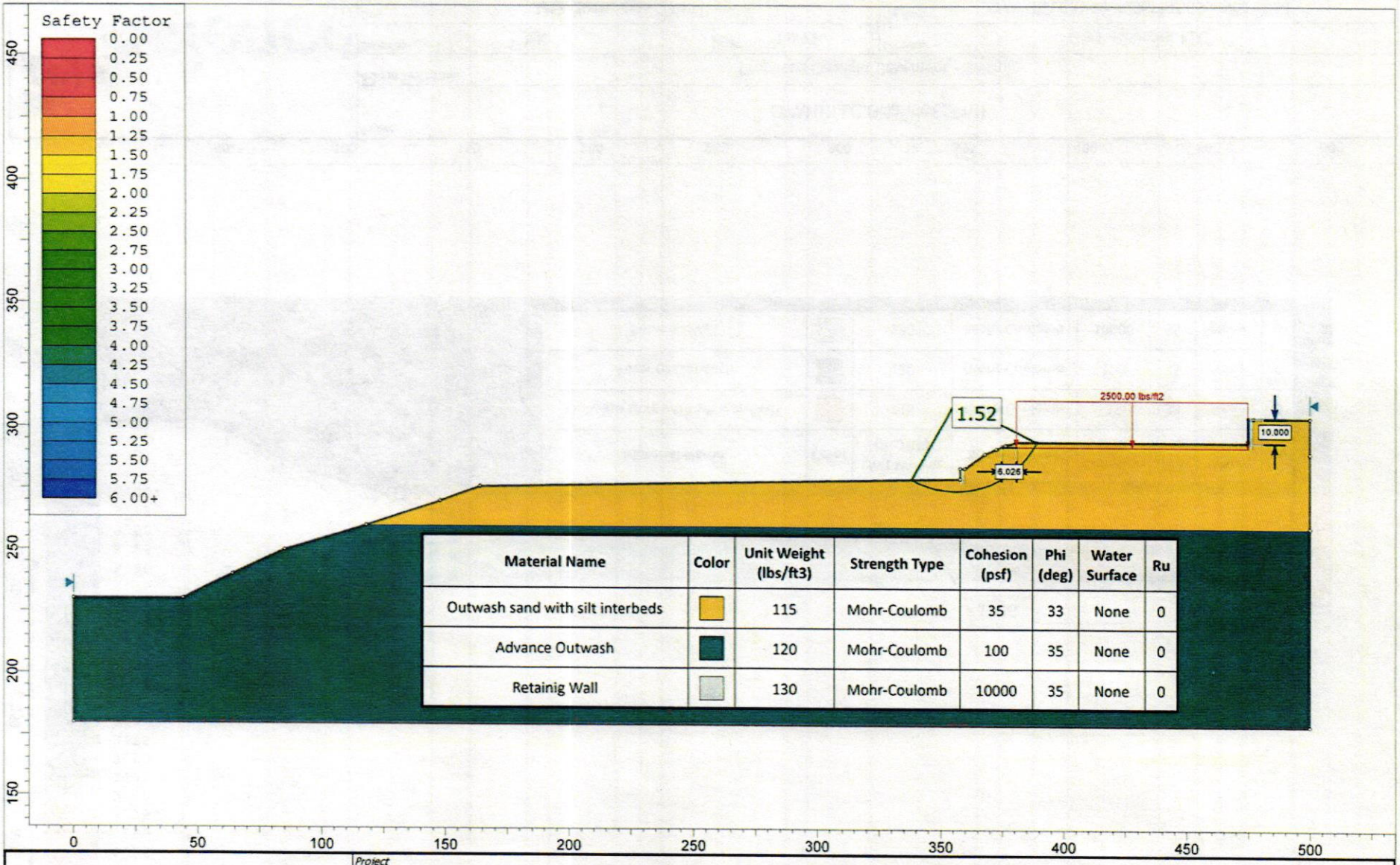
SLIDEINTERPRET 7.018

Project	OVAHIILLC.OrlandoSt.PhII			
Analysis Description	Existing - Static			
Drawn By	JLK	Scale	1:644	Company: GeoResources, LLC
Date	3/13/2018, 2:45:27 PM			File Name: OVAHIILLC.OrlandoSt.PhII.SS.rev01.slmd



rocscience	Project	OVAHIILLC.OrlandoSt.PhII		
	Analysis Description	Existing - Seismic		
	Drawn By	JLK	Scale 1:929	Company GeoResources, LLC
	Date	3/13/2018, 2:45:27 PM		File Name OVAHIILLC.OrlandoSt.PhII.SS.rev01.slmd

SLIDEINTERPRET 7.018

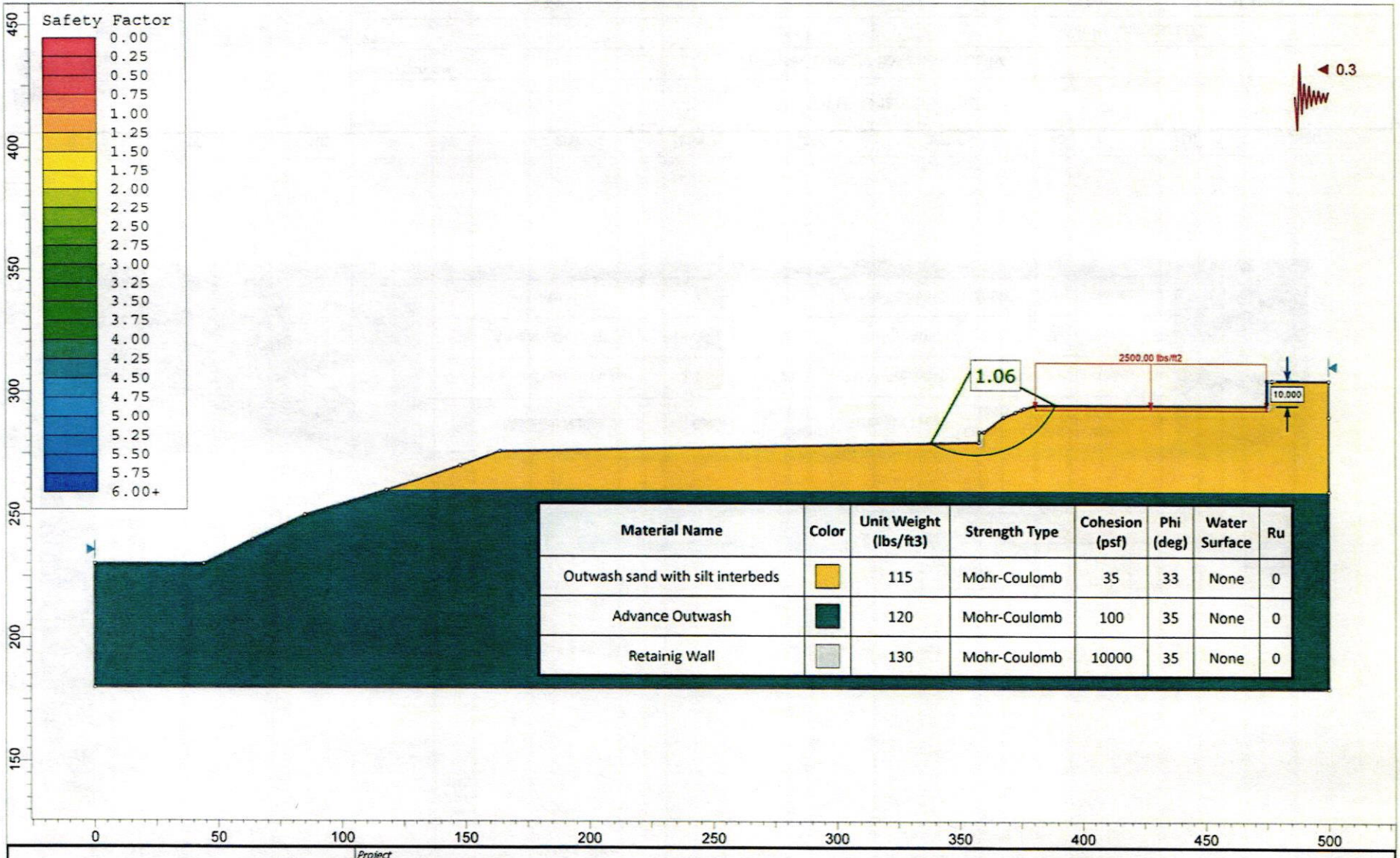


Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Outwash sand with silt interbeds		115	Mohr-Coulomb	35	33	None	0
Advance Outwash		120	Mohr-Coulomb	100	35	None	0
Retainig Wall		130	Mohr-Coulomb	10000	35	None	0

rocscience

SLIDEINTERPRET 7.018

Project	OVAHIILLC.OrlandoSt.PhII				
Analysis Description	Proposed Daylight Basement - Static				
Drawn By	JLK	Scale	1:643	Company	GeoResources, LLC
Date	3/13/2018, 2:45:27 PM			File Name	OVAHIILLC.OrlandoSt.PhII.SS.rev01.slmd

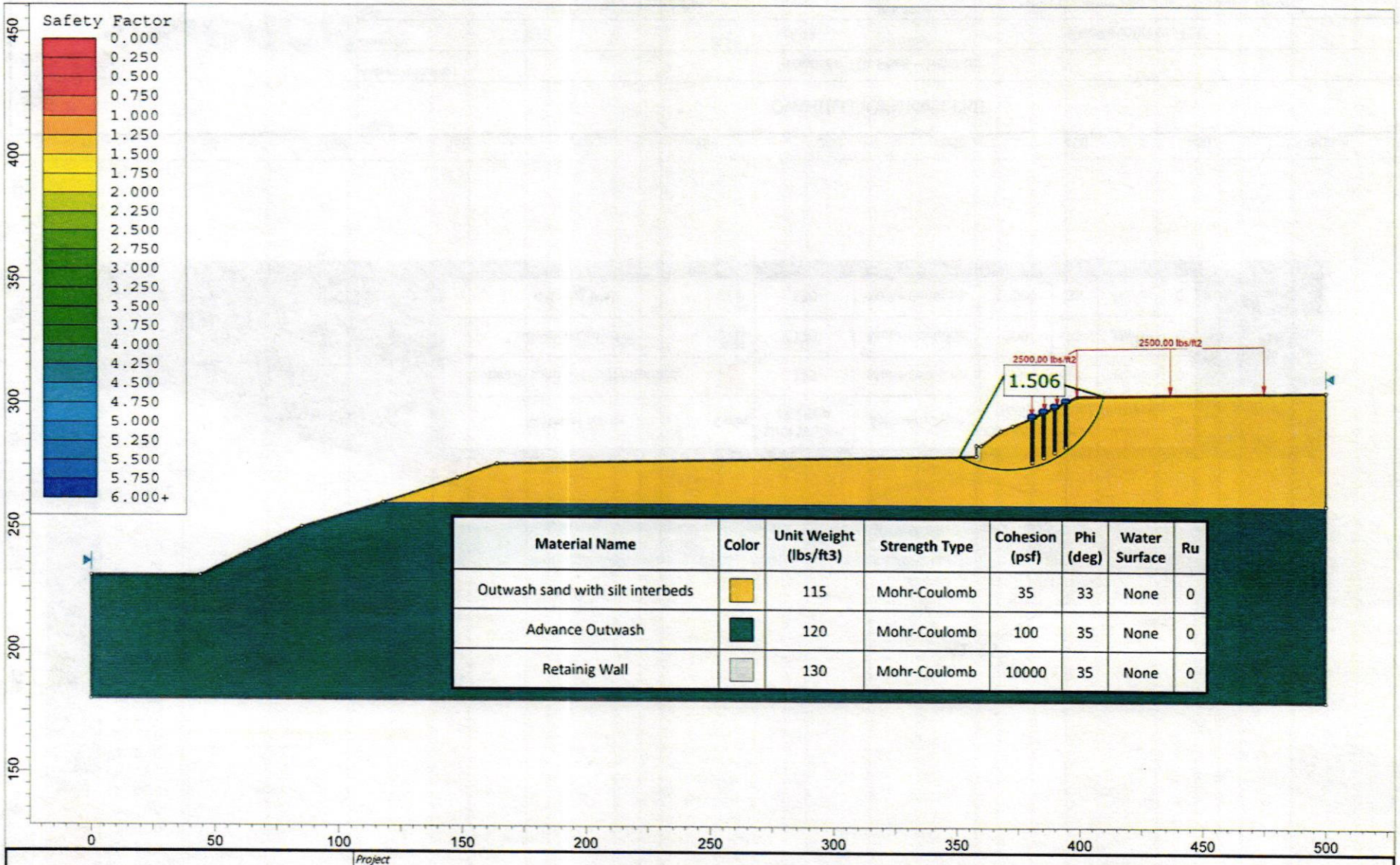


Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Outwash sand with silt interbeds		115	Mohr-Coulomb	35	33	None	0
Advance Outwash		120	Mohr-Coulomb	100	35	None	0
Retainig Wall		130	Mohr-Coulomb	10000	35	None	0

rocscience

SLIDEINTERPRET 7.018

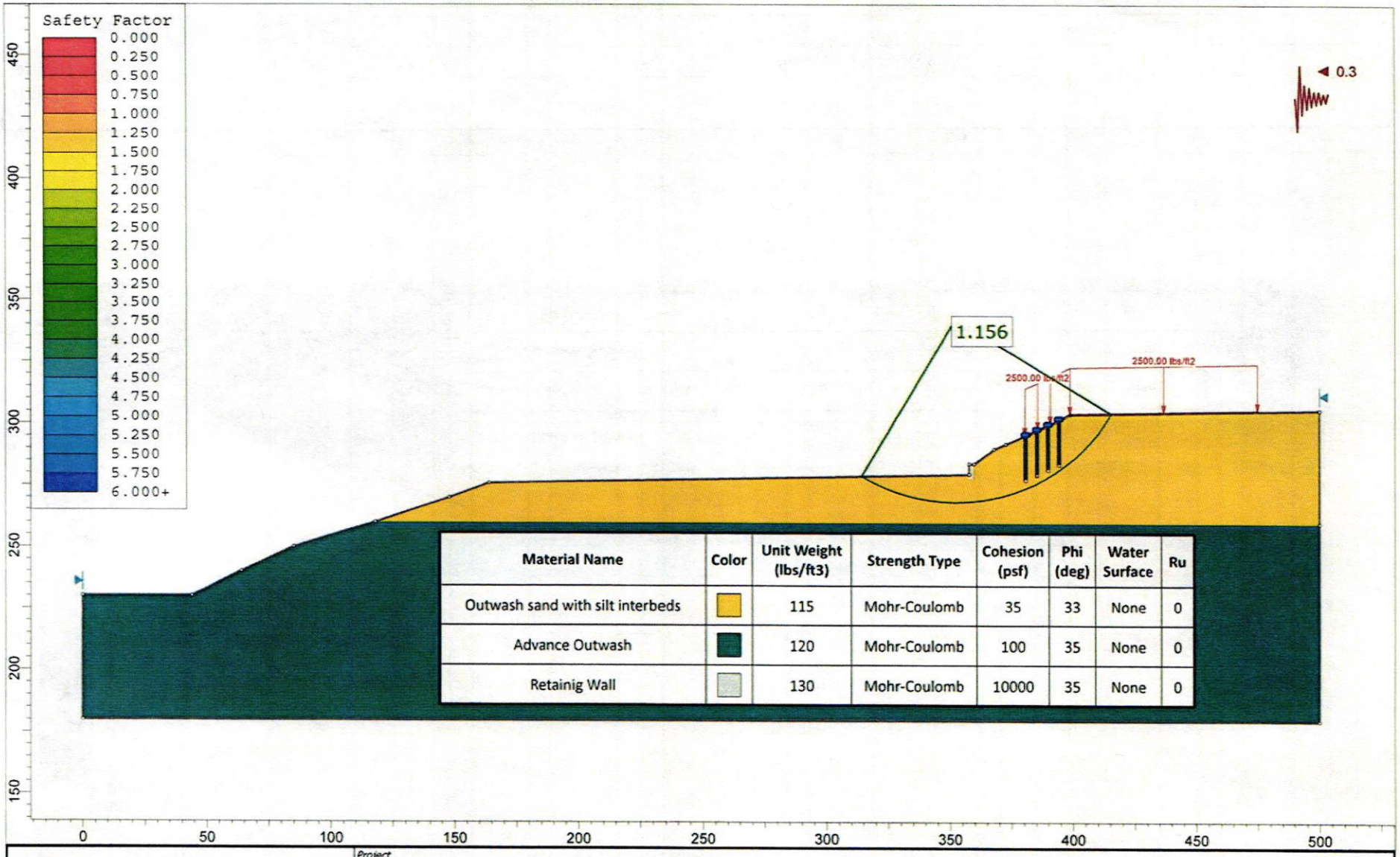
Project	OVAHIILLC.OrlandoSt.PhII		
Analysis Description	Proposed Daylight Basement - Seismic		
Drawn By	JLK	Scale 1:643	Company GeoResources, LLC
Date	3/13/2018, 2:45:27 PM		File Name OVAHIILLC.OrlandoSt.PhII.SS.rev01.slmd



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Outwash sand with silt interbeds		115	Mohr-Coulomb	35	33	None	0
Advance Outwash		120	Mohr-Coulomb	100	35	None	0
Retainig Wall		130	Mohr-Coulomb	10000	35	None	0

SLIDEINTERPRET 7.018

Project	OVAHIILLC.OrlandoSt.PhII			
Analysis Description	Proposed Pin Piles - Static			
Drawn By	JLK	Scale	1:643	Company GeoResources, LLC
Date	3/13/2018, 2:45:27 PM			File Name OVAHIILLC.OrlandoSt.PhII.SS.rev01.slmd



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Outwash sand with silt interbeds		115	Mohr-Coulomb	35	33	None	0
Advance Outwash		120	Mohr-Coulomb	100	35	None	0
Retainig Wall		130	Mohr-Coulomb	10000	35	None	0

SLIDEINTERPRET 7.018

Project	OVAHIILLC.OrlandoSt.PhII			
Analysis Description	Proposed Pin Piles - Seismic			
Drawn By	JLK	Scale	1:642	Company: GeoResources, LLC
Date	3/13/2018, 2:45:27 PM			File Name: OVAHIILLC.OrlandoSt.PhII.SS.rev01.slmd

Slide Analysis Information
OVAHIILLC.OrlandoSt.PhII

Project Summary

File Name:	OVAHIILLC.OrlandoSt.PhII.SS.rev01.slmd - Existing - Static
Slide Modeler Version:	7.018
Project Title:	OVAHIILLC.OrlandoSt.PhII
Analysis:	Existing - Static
Author:	JLK
Company:	GeoResources, LLC
Date Created:	3/13/2018, 2:45:27 PM

General Settings

Units of Measurement:	Imperial Units
Time Units:	days
Permeability Units:	feet/second
Failure Direction:	Right to Left
Data Output:	Standard
Maximum Material Properties:	20
Maximum Support Properties:	20

Analysis Options

Slices Type:	Vertical
Analysis Methods Used	
GLE/Morgenstern-Price with interslice force function:	Half Sine
Number of slices:	50
Tolerance:	0.005
Maximum number of iterations:	75
Check malpha < 0.2:	Yes
Create Interslice boundaries at intersections with water tables and piezos:	Yes
Initial trial value of FS:	1
Steffensen Iteration:	Yes

Groundwater Analysis

Groundwater Method:	Water Surfaces
Pore Fluid Unit Weight [lbs/ft3]:	62.4
Use negative pore pressure cutoff:	Yes
Maximum negative pore pressure [psf]:	0
Advanced Groundwater Method:	None

Random Numbers

Pseudo-random Seed:	10116
Random Number Generation Method:	Park and Miller v.3

Surface Options

Surface Type:	Circular
Search Method:	Slope Search
Number of Surfaces:	5000
Upper Angle:	Not Defined
Lower Angle:	Not Defined
Composite Surfaces:	Disabled
Reverse Curvature:	Invalid Surfaces
Minimum Elevation:	Not Defined
Minimum Depth [ft]:	3
Minimum Area:	Not Defined
Minimum Weight:	Not Defined

Seismic

Advanced seismic analysis:	No
Staged pseudostatic analysis:	No

Material Properties

Property	Outwash sand with silt interbeds	Advance Outwash
Color		
Strength Type	Mohr-Coulomb	Mohr-Coulomb
Unit Weight [lbs/ft3]	115	120
Cohesion [psf]	35	100
Friction Angle [deg]	33	35
Water Surface	None	None
Ru Value	0	0

Global Minimums

Method: gle/morgenstern-price

FS	**1.656500**
Center:	349.836, 311.513
Radius:	31.860
Left Slip Surface Endpoint:	345.944, 279.892
Right Slip Surface Endpoint:	376.143, 293.541
Resisting Moment:	219389 lb-ft
Driving Moment:	132442 lb-ft
Resisting Horizontal Force:	6060.66 lb
Driving Horizontal Force:	3658.72 lb
Total Slice Area:	81.9929 ft2
Surface Horizontal Width:	30.1993 ft
Surface Average Height:	2.71506 ft

Valid / Invalid Surfaces

Method: gle/morgenstern-price

Number of Valid Surfaces: 4558
Number of Invalid Surfaces: 442

Error Codes:

Error Code -103 reported for 257 surfaces
Error Code -106 reported for 14 surfaces
Error Code -108 reported for 9 surfaces
Error Code -114 reported for 41 surfaces
Error Code -115 reported for 121 surfaces

Error Codes

The following errors were encountered during the computation:

-103 = Two surface / slope intersections, but one or more surface / nonslope external polygon intersections lie between them. This usually occurs when the slip surface extends past the bottom of the soil region, but may also occur on a benched slope model with two sets of Slope Limits.
-106 = Average slice width is less than 0.0001 * (maximum horizontal extent of soil region). This limitation is imposed to avoid numerical errors which may result from too many slices, or too small a slip region.
-108 = Total driving moment or total driving force < 0.1. This is to limit the calculation of extremely high safety factors if the driving force is very small (0.1 is an arbitrary number).
-114 = Surface with Reverse Curvature.
-115 = Surface too shallow, below the minimum depth.

Slice Data

Global Minimum Query (gle/morgenstern-price) - Safety Factor: 1.6565

Slice Number	Width [ft]	Weight [lbs]	Angle of Slice Base [degrees]	Base Material	Base Cohesion [psf]	Base Friction Angle [degrees]	Shear Stress [psf]	Shear Strength [psf]	Base Normal Stress [psf]	Pore Pressure [psf]	Effective Normal Stress [psf]
1	0.603986	2.8278	-6.47091	Outwash sand with silt interbeds	35	33	24.3684	40.3662	8.26324	0	8.26324
2	0.603986	8.07927	-5.37883	Outwash sand with silt	35	33	28.5076	47.2228	18.8215	0	18.8215

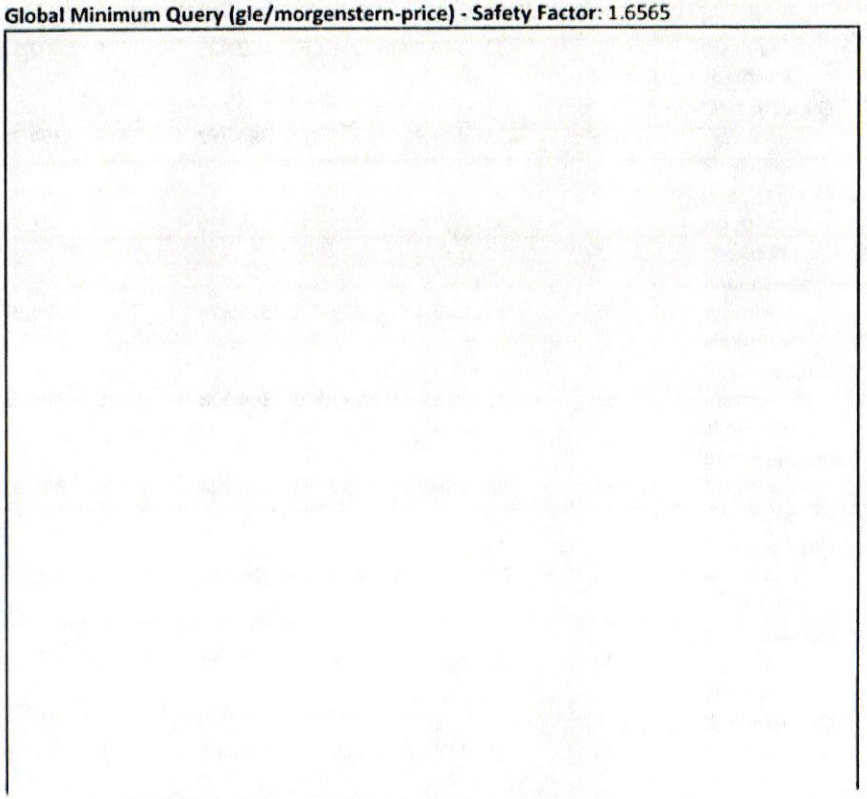
				interbeds							
3	0.603986	12.5247	-4.28871	Outwash sand with silt interbeds	35	33	32.1902	53.3231	28.2151	0	28.2151
4	0.603986	16.1678	-3.20014	Outwash sand with silt interbeds	35	33	35.3714	58.5928	36.3297	0	36.3297
5	0.603986	19.0118	-2.11273	Outwash sand with silt interbeds	35	33	38.0089	62.9617	43.0572	0	43.0572
6	0.603986	21.0587	-1.02608	Outwash sand with silt interbeds	35	33	40.0647	66.3672	48.3013	0	48.3013
7	0.603986	22.3097	0.0601993	Outwash sand with silt interbeds	35	33	41.5072	68.7566	51.9807	0	51.9807
8	0.603986	22.7652	1.1465	Outwash sand with silt interbeds	35	33	42.3114	70.0889	54.0322	0	54.0322
9	0.603986	27.1285	2.23322	Outwash sand with silt interbeds	35	33	45.7839	75.8411	62.8898	0	62.8898
10	0.603986	48.1341	3.32074	Outwash sand with silt interbeds	35	33	60.8691	100.83	101.369	0	101.369
11	0.603986	69.9771	4.40946	Outwash sand with silt interbeds	35	33	76.3905	126.541	140.961	0	140.961
12	0.603986	91.0175	5.49977	Outwash sand with silt interbeds	35	33	91.0981	150.904	178.477	0	178.477
13	0.603986	111.251	6.59209	Outwash sand with silt interbeds	35	33	104.9	173.767	213.682	0	213.682
14	0.603986	130.674	7.68683	Outwash sand with silt interbeds	35	33	117.719	195.002	246.383	0	246.383
15	0.603986	149.279	8.78439	Outwash sand with silt interbeds	35	33	129.497	214.512	276.424	0	276.424
16	0.603986	167.06	9.88521	Outwash sand with silt interbeds	35	33	140.19	232.225	303.699	0	303.699
17	0.603986	184.008	10.9897	Outwash sand with silt interbeds	35	33	149.774	248.1	328.146	0	328.146
18	0.603986	200.116	12.0984	Outwash sand with silt interbeds	35	33	158.241	262.126	349.743	0	349.743
19	0.603986	215.373	13.2117	Outwash sand with silt interbeds	35	33	165.6	274.316	368.515	0	368.515
20	0.603986	229.768	14.3301	Outwash sand with silt interbeds	35	33	171.873	284.708	384.517	0	384.517
21	0.603986	243.288	15.4541	Outwash sand with silt interbeds	35	33	177.097	293.362	397.842	0	397.842
				Outwash sand							

				with silt interbeds							
23	0.603986	267.648	17.7211	Outwash sand with silt interbeds	35	33	184.595	305.781	416.966	0	416.966
24	0.603986	278.455	18.8652	Outwash sand with silt interbeds	35	33	186.983	309.738	423.059	0	423.059
25	0.603986	288.323	20.0171	Outwash sand with silt interbeds	35	33	188.552	312.337	427.062	0	427.062
26	0.603986	297.233	21.1776	Outwash sand with silt interbeds	35	33	189.368	313.688	429.142	0	429.142
27	0.603986	305.161	22.3472	Outwash sand with silt interbeds	35	33	189.497	313.902	429.472	0	429.472
28	0.603986	312.083	23.5267	Outwash sand with silt interbeds	35	33	189.004	313.085	428.213	0	428.213
29	0.603986	317.973	24.7169	Outwash sand with silt interbeds	35	33	187.948	311.336	425.521	0	425.521
30	0.603986	322.801	25.9186	Outwash sand with silt interbeds	35	33	186.385	308.746	421.532	0	421.532
31	0.603986	326.536	27.1327	Outwash sand with silt interbeds	35	33	184.361	305.394	416.371	0	416.371
32	0.603986	329.142	28.3602	Outwash sand with silt interbeds	35	33	181.919	301.348	410.14	0	410.14
33	0.603986	330.58	29.602	Outwash sand with silt interbeds	35	33	179.089	296.661	402.923	0	402.923
34	0.603986	330.807	30.8592	Outwash sand with silt interbeds	35	33	175.898	291.375	394.782	0	394.782
35	0.603986	329.775	32.1333	Outwash sand with silt interbeds	35	33	172.36	285.515	385.759	0	385.759
36	0.603986	327.433	33.4253	Outwash sand with silt interbeds	35	33	168.485	279.095	375.874	0	375.874
37	0.603986	322.972	34.7369	Outwash sand with silt interbeds	35	33	163.92	271.533	364.228	0	364.228
38	0.603986	312.251	36.0697	Outwash sand with silt interbeds	35	33	156.783	259.711	346.024	0	346.024
39	0.603986	299.16	37.4255	Outwash sand with silt interbeds	35	33	148.94	246.719	326.018	0	326.018
40	0.603986	284.479	38.8063	Outwash sand with silt interbeds	35	33	140.755	233.16	305.14	0	305.14
41	0.603986	268.114	40.2145	Outwash sand with silt interbeds	35	33	132.179	218.954	283.264	0	283.264

42	0.603986	249.961	41.6526	Outwash sand with silt interbeds	35	33	123.154	204.004	260.244	0	260.244
43	0.603986	229.899	43.1235	Outwash sand with silt interbeds	35	33	113.609	188.194	235.899	0	235.899
44	0.603986	207.786	44.6308	Outwash sand with silt interbeds	35	33	103.46	171.382	210.011	0	210.011
45	0.603986	183.462	46.1783	Outwash sand with silt interbeds	35	33	92.6049	153.4	182.32	0	182.32
46	0.603986	156.735	47.7707	Outwash sand with silt interbeds	35	33	80.9178	134.04	152.509	0	152.509
47	0.603986	127.381	49.4136	Outwash sand with silt interbeds	35	33	68.2492	113.055	120.194	0	120.194
48	0.603986	95.1277	51.1135	Outwash sand with silt interbeds	35	33	54.4156	90.1395	84.9073	0	84.9073
49	0.603986	59.6457	52.8786	Outwash sand with silt interbeds	35	33	39.1928	64.9229	46.0773	0	46.0773
50	0.603986	20.526	54.7188	Outwash sand with silt interbeds	35	33	22.3067	36.9511	3.00442	0	3.00442

Interslice Data

Global Minimum Query (gle/morgenstern-price) - Safety Factor: 1.6565



Slice Number	X coordinate [ft]	Y coordinate - Bottom [ft]	Interslice Normal Force [lbs]	Interslice Shear Force [lbs]	Interslice Force Angle [degrees]
1	345.944	279.892	0	0	0
2	346.548	279.823	15.2967	0.492053	1.84241
3	347.152	279.766	33.5999	2.15736	3.67377
4	347.756	279.721	54.3368	5.21602	5.48326
5	348.36	279.687	76.9456	9.80305	7.2605
6	348.964	279.665	100.881	15.9703	8.99574
7	349.568	279.654	125.623	23.691	10.6799
8	350.172	279.655	150.681	32.8671	12.3048
9	350.776	279.667	175.605	43.3392	13.8635
10	351.38	279.691	201.8	55.3943	15.3497
11	351.984	279.726	235.043	70.7758	16.758
12	352.588	279.772	274.656	89.6884	18.0844
13	353.192	279.83	319.345	111.991	19.3252
14	353.796	279.9	367.842	137.369	20.4779
15	354.4	279.982	418.918	165.359	21.5406
16	355.004	280.075	471.399	195.374	22.5118
17	355.608	280.18	524.179	226.73	23.3906
18	356.212	280.298	576.229	258.684	24.1765
19	356.816	280.427	626.605	290.455	24.8695
20	357.42	280.569	674.457	321.256	25.4693
21	358.024	280.723	719.026	350.324	25.9763
22	358.628	280.89	759.65	376.938	26.3906
23	359.232	281.07	795.758	400.441	26.7124
24	359.836	281.263	826.87	420.26	26.9421
25	360.44	281.469	852.59	435.915	27.0799
26	361.044	281.689	872.6	447.028	27.1258
27	361.648	281.923	886.654	453.331	27.0799
28	362.252	282.172	894.57	454.669	26.9421
29	362.856	282.435	896.221	450.996	26.7124
30	363.46	282.713	891.533	442.378	26.3906
31	364.064	283.006	880.473	428.985	25.9763
32	364.668	283.316	863.048	411.086	25.4693
33	365.272	283.642	839.299	389.046	24.8695
34	365.876	283.985	809.3	363.316	24.1766
35	366.48	284.346	773.155	334.423	23.3906
36	367.084	284.725	731.001	302.967	22.5118
37	367.688	285.124	683.012	269.605	21.5406
38	368.291	285.543	629.564	235.108	20.4779
39	368.895	285.982	572.107	200.632	19.3252
40	369.499	286.445	511.453	167.014	18.0844
41	370.103	286.93	448.324	134.999	16.7581
42	370.707	287.441	383.571	105.291	15.3497
43	371.311	287.978	318.205	78.5329	13.8635
44	371.915	288.544	253.443	55.282	12.3049
45	372.519	289.14	190.765	35.9761	10.6799
46	373.123	289.77	132.001	20.8968	8.99572
47	373.727	290.435	79.4336	10.12	7.26048
48	374.331	291.14	35.9509	3.45108	5.48326
49	374.935	291.889	5.25882	0.337655	3.67377
50	375.539	292.687	-7.81848	-0.251499	1.84241
51	376.143	293.541	0	0	0

List Of Coordinates

External Boundary

X	Y
0	180
500	180
500	260
500	306
399	304
391	300
368	290
351	280
164	276
148	270
118	260
85	250
64	240
44	230
0	230

Material Boundary

X	Y
118	260
500	260

APPENDIX D

Flow Control and
Water Quality Calculations

WWHM2012

PROJECT REPORT

NORTH INFILTRATION SYSTEM

General Model Information

Project Name:	16-300 North and P3
Site Name:	
Site Address:	
City:	
Report Date:	2/13/2020
Gage:	Quilcene
Data Start:	1948/10/01
Data End:	2009/09/30
Timestep:	15 Minute
Precip Scale:	0.800
Version Date:	2019/09/13
Version:	4.2.17

POC Thresholds

Low Flow Threshold for POC1:	50 Percent of the 2 Year
High Flow Threshold for POC1:	50 Year

Landuse Basin Data
Predeveloped Land Use

Basin 1

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C, Forest, Mod	2.32
Pervious Total	2.32
Impervious Land Use	acre
Impervious Total	0
Basin Total	2.32

Element Flows To:

Surface	Interflow	Groundwater

Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
C, Pasture, Flat	0.42
Pervious Total	0.42

Impervious Land Use	acre
ROADS MOD	1.21
ROOF TOPS FLAT	0.69
Impervious Total	1.9
Basin Total	2.32

Element Flows To:

Surface	Interflow	Groundwater
Vault 1	Vault 1	

Mitigated Routing

Vault 1

Width:	56.75 ft.	
Length:	56.75 ft.	
Depth:	8 ft.	
Infiltration On		
Infiltration rate:	4.25	
Infiltration safety factor:	1	
Total Volume Infiltrated (ac-ft.):		444.001
Total Volume Through Riser (ac-ft.):		0
Total Volume Through Facility (ac-ft.):		444.001
Percent Infiltrated:		100
Total Precip Applied to Facility:		0
Total Evap From Facility:		0
Discharge Structure		
Riser Height:	6.2 ft.	
Riser Diameter:	12 in.	
Element Flows To:		
Outlet 1	Outlet 2	

Vault Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.073	0.000	0.000	0.000
0.0889	0.073	0.006	0.000	0.316
0.1778	0.073	0.013	0.000	0.316
0.2667	0.073	0.019	0.000	0.316
0.3556	0.073	0.026	0.000	0.316
0.4444	0.073	0.032	0.000	0.316
0.5333	0.073	0.039	0.000	0.316
0.6222	0.073	0.046	0.000	0.316
0.7111	0.073	0.052	0.000	0.316
0.8000	0.073	0.059	0.000	0.316
0.8889	0.073	0.065	0.000	0.316
0.9778	0.073	0.072	0.000	0.316
1.0667	0.073	0.078	0.000	0.316
1.1556	0.073	0.085	0.000	0.316
1.2444	0.073	0.092	0.000	0.316
1.3333	0.073	0.098	0.000	0.316
1.4222	0.073	0.105	0.000	0.316
1.5111	0.073	0.111	0.000	0.316
1.6000	0.073	0.118	0.000	0.316
1.6889	0.073	0.124	0.000	0.316
1.7778	0.073	0.131	0.000	0.316
1.8667	0.073	0.138	0.000	0.316
1.9556	0.073	0.144	0.000	0.316
2.0444	0.073	0.151	0.000	0.316
2.1333	0.073	0.157	0.000	0.316
2.2222	0.073	0.164	0.000	0.316
2.3111	0.073	0.170	0.000	0.316
2.4000	0.073	0.177	0.000	0.316
2.4889	0.073	0.184	0.000	0.316
2.5778	0.073	0.190	0.000	0.316
2.6667	0.073	0.197	0.000	0.316
2.7556	0.073	0.203	0.000	0.316

2.8444	0.073	0.210	0.000	0.316
2.9333	0.073	0.216	0.000	0.316
3.0222	0.073	0.223	0.000	0.316
3.1111	0.073	0.230	0.000	0.316
3.2000	0.073	0.236	0.000	0.316
3.2889	0.073	0.243	0.000	0.316
3.3778	0.073	0.249	0.000	0.316
3.4667	0.073	0.256	0.000	0.316
3.5556	0.073	0.262	0.000	0.316
3.6444	0.073	0.269	0.000	0.316
3.7333	0.073	0.276	0.000	0.316
3.8222	0.073	0.282	0.000	0.316
3.9111	0.073	0.289	0.000	0.316
4.0000	0.073	0.295	0.000	0.316
4.0889	0.073	0.302	0.000	0.316
4.1778	0.073	0.308	0.000	0.316
4.2667	0.073	0.315	0.000	0.316
4.3556	0.073	0.322	0.000	0.316
4.4444	0.073	0.328	0.000	0.316
4.5333	0.073	0.335	0.000	0.316
4.6222	0.073	0.341	0.000	0.316
4.7111	0.073	0.348	0.000	0.316
4.8000	0.073	0.354	0.000	0.316
4.8889	0.073	0.361	0.000	0.316
4.9778	0.073	0.368	0.000	0.316
5.0667	0.073	0.374	0.000	0.316
5.1556	0.073	0.381	0.000	0.316
5.2444	0.073	0.387	0.000	0.316
5.3333	0.073	0.394	0.000	0.316
5.4222	0.073	0.400	0.000	0.316
5.5111	0.073	0.407	0.000	0.316
5.6000	0.073	0.414	0.000	0.316
5.6889	0.073	0.420	0.000	0.316
5.7778	0.073	0.427	0.000	0.316
5.8667	0.073	0.433	0.000	0.316
5.9556	0.073	0.440	0.000	0.316
6.0444	0.073	0.446	0.000	0.316
6.1333	0.073	0.453	0.000	0.316
6.2222	0.073	0.460	0.035	0.316
6.3111	0.073	0.466	0.389	0.316
6.4000	0.073	0.473	0.907	0.316
6.4889	0.073	0.479	1.447	0.316
6.5778	0.073	0.486	1.879	0.316
6.6667	0.073	0.492	2.138	0.316
6.7556	0.073	0.499	2.347	0.316
6.8444	0.073	0.506	2.528	0.316
6.9333	0.073	0.512	2.697	0.316
7.0222	0.073	0.519	2.856	0.316
7.1111	0.073	0.525	3.006	0.316
7.2000	0.073	0.532	3.149	0.316
7.2889	0.073	0.538	3.286	0.316
7.3778	0.073	0.545	3.418	0.316
7.4667	0.073	0.552	3.544	0.316
7.5556	0.073	0.558	3.667	0.316
7.6444	0.073	0.565	3.785	0.316
7.7333	0.073	0.571	3.900	0.316
7.8222	0.073	0.578	4.011	0.316
7.9111	0.073	0.584	4.120	0.316

8.0000	0.073	0.591	4.225	0.316
8.0889	0.073	0.598	4.328	0.316
8.1778	0.000	0.000	4.429	0.000