



August 25, 2025

Mason County PUD 1
North 21971 Highway 101
Shelton, Washington 98584
Attention: Jeremiah Waugh

Report
Geotechnical Services
Proposed Directional Boring
Lilliwaup, Washington
Project No. 1171-004-01

INTRODUCTION

Insight Geologic, Inc. is pleased to provide our report regarding our geotechnical services in support of the proposed horizontal boring to be directionally-drilled beneath Lilliwaup Bay in Lilliwaup, Washington. The proposed boring is to contain power lines and fiber optic cables for Mason County PUD 1. The site is shown relative to surrounding physical features in the Vicinity Map, Figure 1.

SCOPE OF SERVICES

The purpose of our services was to evaluate geologic materials beneath the bay along the alignment of the proposed horizontal boring with respect to preventing drilling mud breakout during the boring process. Our specific tasks to be performed are outlined below:

1. Conducted a site reconnaissance to evaluate site conditions and access.
2. Drill a series of 3 borings along the proposed boring alignment to depths of about 100 feet each. The borings were drilled using a mud-rotary drilling rig mounted on a motorized barge. The barge was maintained on the drill hole locations using retractable "spuds" to hold the barge in place.
3. Collect relatively undisturbed soil samples from the borings at 5-foot intervals during drilling. The samples were collected using a SPT split-spoon sampler and transferred to sample containers following collection. Blow counts which provide an estimate of the relative density of the soils were collected for each 6-inch interval over the 18-inch sampling interval and recorded on the boring logs.
4. Log the soils encountered in general accordance with the Unified Soil Classification System (ASTM D2487) in the field.
5. Conduct field testing of relatively undisturbed soil samples for unconfined compressive strength using a pocket penetrometer and for shear strength using a field vane shear test.

6. Perform laboratory analyses on 15 soil samples for gradation using ASTM D6913 (dry) and ASTM C117 (wet) methods.
7. Prepare a report of our findings including soil descriptions, relative density and groundwater presence.

GEOLOGY

The site is located beneath the mudflats of Lilliwaup Bay within fluvial sediments deposited by Lilliwaup Creek to the west. Glacial deposits consisting of glacial till and advance outwash sands and gravels form the sides of the bay to the north and south. These materials were deposited during the most recent glacial period in the Puget Sound area which ended approximately 13,000 years before present. These deposits are underlain on the north side of the bay by silts and peat contained within the Olympia Beds (formerly Kitsap Formation) which are non-glacial in origin and by oceanic basalts of the Miocene Crescent Formation on the south side of the bay as noted in roadside exposures along Highway 101 a short distance south of the study area.

The fluvial sediments within the bay consist of fine silty sand (SM) and silt (ML) with channelized zones of gravel (GP) interspersed at various zones within the geologic profile. A geologic cross-section based on our boring information is shown in Figure 3.

METHODS

We drilled 5 exploratory borings (B-1, B-2A, B-2B, B-2C and B-3) between May 20 and May 28, 2025 along the alignment of the proposed horizontal boring. Borings B-2A and B-2B were terminated at shallow depths due to either an obstruction or deviation of the surface casing during drilling. The locations of the borings are shown in the Site Plan, Figure 2. The boring locations were located the week prior to drilling and were marked using buoys weighted at the boring locations. A Diedrich D70, drilling rig onboard a motorized barge having a “moon pool” was used to drill the borings using mud-rotary techniques. The barge was anchored over each boring location using retractable “spuds” which held the barge and the drill rig in position during drilling. The depth between the barge deck and the mud surface was measured at the beginning and end of each borehole and noted in the field notes. Generally, this depth did not change more than about 2 feet during drilling. The depth between the barge deck and the mud line was accounted for in the boring logs and all depths noted are relative to the mud line.

A steel surface casing was driven into the mud a distance of approximately 10 feet and extended to the barge deck to conduct the mud and drill cuttings upward to the deck of the barge. The drilling mud and cuttings were circulated through a mud tank where the drill cuttings settled to the bottom of the tank and the mud was recirculated back into the boring. The drilling mud consisted of powdered bentonite clay mixed with water. Spent drilling mud was collected into 55-gallon drums located on the deck of the barge at the conclusion of each boring, for transport to land and for appropriate disposal. The drilling mud was allowed to remain in the borings as backfill at the conclusion of drilling.

We collected relatively undisturbed soil samples at 5-foot intervals during drilling using a split-barrel SPT sampler. The sampler was driven into the soil at the base of the boring at each sampling interval a distance of 18 inches using a drop of a 130-pound hammer falling a distance of 30 inches. The

number of hammer blows to drive the sampler each 6-inches over the 18-inch distance was noted on the field logs. The number of blows for the last two 6-inch intervals were added together and are presented as blows per foot on the boring logs. This “N-value” provides a measure of the relative density of the soils encountered. Representative material from the sampler was collected into labeled sample bags and stored pending laboratory analysis.

FINDINGS

Borings B-2C and B-3 encountered approximately 100 feet of unconsolidated to semi-consolidated sediments consisting of silty sand, silt and gravel. Boring B-1 encountered approximately 75 feet of unconsolidated sediments before contacting basalt of the Crescent Formation which stopped further drilling. Boring logs are contained in Attachment A.

The unconsolidated sediments were found to be in a loose to medium dense condition. Increased blow counts were encountered in zones containing gravel. We interpret the higher blow counts to be indicative of the clast size within the gravel zones, rather than an actual increase in the density of the material.

A medium dense to dense silt layer was encountered in boring B-2C at a depth of about 50 feet and extended to the termination of the boring at a depth of 93.5 feet. We interpret this dense silt layer as being the non-glacial Olympia Beds (formerly Kitsap Formation) based on the density, composition and the presence of peat and wood fragments in the samples.

The unconsolidated sediments generally exhibited unconfined compressive strengths of between 1,000 to 4,000 pounds per square foot (psf) with shear strengths of between 2,000 to 4,000 psf. Unconfined compressive strengths and shear strengths were significantly higher in the more consolidated Olympia Beds sediments with unconfined compressive strength greater than 9,000 psf and shear strength of 11,500 psf.

Groundwater

Identifying individual groundwater zones was difficult due to the mud-rotary drilling methodology employed. All geologic materials were considered to be saturated based on their position beneath the daily tidal exchanges. We did not identify any confined aquifer zones which would be indicated by mud flowing up the hole, but this does not preclude the existence of such zones as the aquifer pressure could be offset by the weight of the drilling mud used.

Laboratory

We analyzed 15 soil samples collected from the borings for gradation characteristics and to assist in classifying the soils encountered. The samples were analyzed using ASTM D6913 (dry) and ASTM C117 (wet) methods. The laboratory reports and gradation curves are contained in Attachment B.

CONCLUSIONS

Insight Geologic drilled 5 borings in Lilliwaup Bay along the proposed alignment of a directional bore beneath the bay. In our borings we encountered unconsolidated sediments extending to between 75 and 95 feet below the mudline of the bay. The unconsolidated sediments consisted of silty sand, silt and channelized gravel deposited by Lilliwaup Creek. These sediments are underlain by semi-

consolidated Olympia Beds consisting of silt and peat, and by oceanic basalt of the Crescent formation. We assume that the horizontal boring will be drilled through the unconsolidated sediments beneath the bay possibly encountering some dense glacial deposits in the entrance and exit areas of the horizontal boring.

Because the sediments are in a loose to medium dense condition, the drilling company will need to be cautious to prevent “breakout”; a condition where drilling mud under pressure is able to make its way to the surface of the tideflats or into the waters of Puget Sound. We assume that the drilling company is experienced with geologic conditions similar to those present beneath Lilliwaup Bay and will be prepared to prevent breakout conditions. We recommend that the drilling company have an emergency response plan in place that will be implemented in the unlikely event of breakout. It is likely that the Washington Department of Natural Resources, having jurisdiction over the tidelands will require such a plan be prepared. Further, our drilling experienced the loss of drilling mud circulation into the gravel deposits. The drilling contractor should be prepared to deal with these conditions with the proper mud additives. We are prepared to work closely with your selected contractor during preparation and drilling activities.

LIMITATIONS

We have prepared this report for the exclusive use of Mason County PUD 1 and their authorized agents for the proposed project located in Lilliwaup, Washington.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in the field of geotechnical engineering in this area at the time this report was prepared. No warranty or other conditions, expressed or implied, should be understood.

Please refer to Attachment C titled “Report Limitations and Guidelines for Use” for additional information pertaining to use of this report.



We appreciate the opportunity to be of service to you on this project. Please contact us if you have questions or require additional information.

Respectfully Submitted,
INSIGHT GEOLOGIC, INC.

William E. Halbert L.H.G., L.E.G.
Principal

Attachments



William E. Halbert

FIGURES

Figure 1 Vicinity Map



Source: Google Earth (c) 2025

LEGEND:

-  **B-1** APPROXIMATE SOIL BORING LOCATION
-  APPROXIMATE PROJECT BOUNDARY



SCALE: 1" = 300'

LILLIWAUP BAY
LILLIWAUP, WASHINGTON

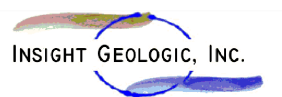
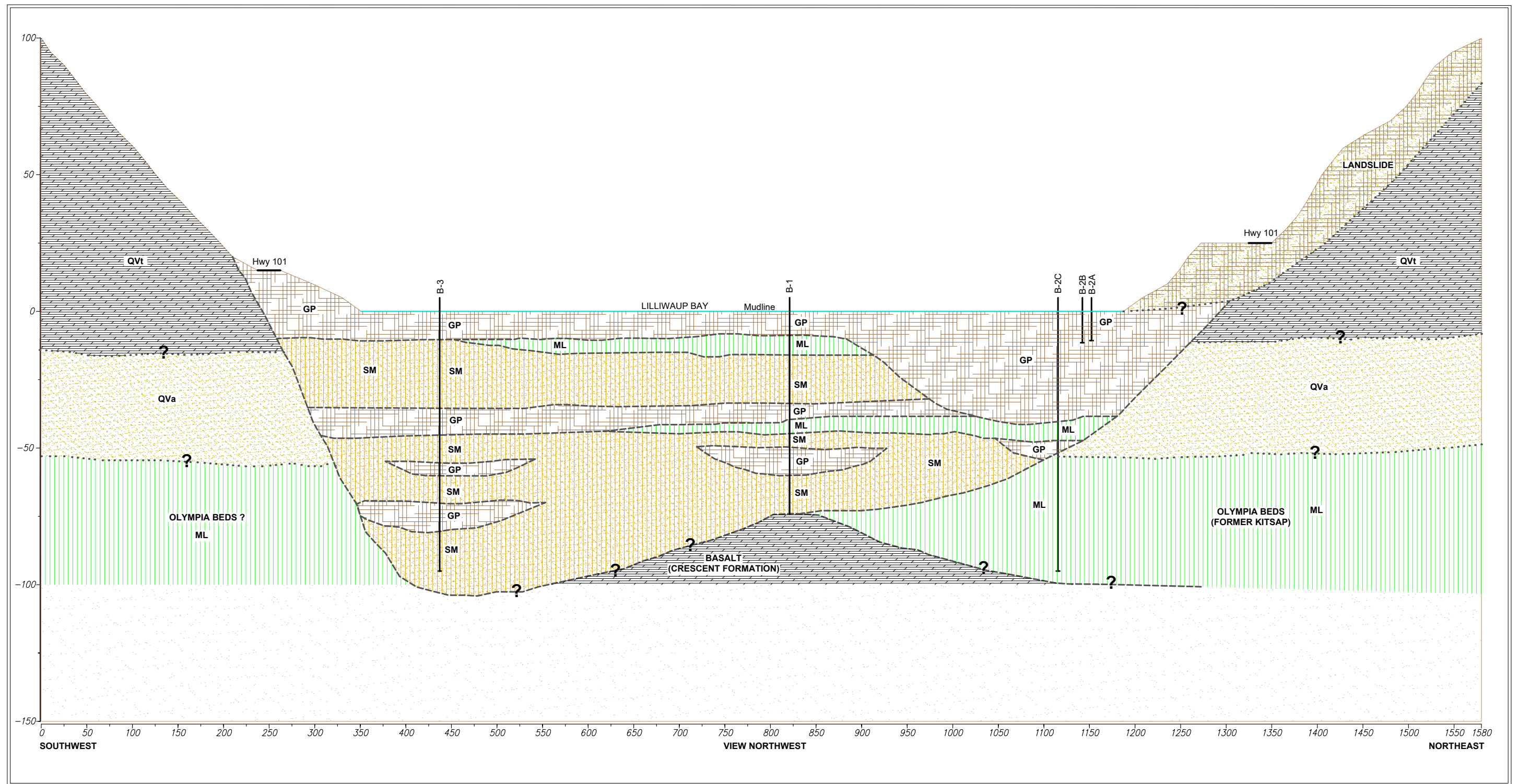


Figure 2
Site Plan



LILLIWAUP BAY LILLIWAUP, WASHINGTON

Figure 3
Cross Section



0 27.5 55 110 220
HORIZONTAL: 1" = 110'
VERTICAL SCALE: 1" = 38'
NOTE: GENERALIZED CROSS SECTION.
MEASUREMENTS ARE APPROXIMATE

ATTACHMENT A
EXPLORATION LOGS

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		GROUP NAME
COARSE GRAINED SOILS MORE THAN 50% RETAINED ON NO. 200 SIEVE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVEL <5% FINES		GW	WELL-GRADED GRAVEL, FINE TO COARSE GRAVEL
				GP	POORLY GRADED GRAVEL
		GRAVEL WITH FINES >12% FINES		GM	SILTY GRAVEL
				GC	CLAYEY GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	CLEAN SAND <5% FINES		SW	WELL-GRADED SAND, FINE TO COARSE SAND
				SP	POORLY GRADED SAND
		SAND WITH FINES >12% FINES		SM	SILTY SAND
				SC	CLAYEY SAND
FINE GRAINED SOILS MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50	INORGANIC		ML	SILT
				CL	CLAY
		ORGANIC		OL	ORGANIC SILT, ORGANIC CLAY
	SILTS AND CLAYS 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

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS	TYPICAL DESCRIPTION	
	CC	CEMENT CONCRETE
	AC	ASPHALT CONCRETE
	CR	CRUSHED ROCK / QUARRY SPALLS
	TS	TOPSOIL/SOD/DUFF

GROUNDWATER EXPLORATION SYMBOLS

- MEASURED GROUNDWATER LEVEL IN EXPLORATION, WELL, OR PIEZOMETER
- GROUNDWATER OBSERVED AT TIME OF EXPLORATION
- PERCHED WATER OBSERVED AT TIME OF EXPLORATION
- MEASURED FREE PRODUCT IN WELL OR PIEZOMETER

STRATIGRAPHIC CONTACT

- APPROXIMATE CONTACT BETWEEN SOIL STRATA OR GEOLOGIC UNIT
- APPROXIMATE LOCATION OF SOIL STRATA CHANGE WITHIN GEOLOGIC SOIL UNIT
- APPROXIMATE GRADUAL CHANGE BETWEEN SOIL STRATA OR GEOLOGIC SOIL UNIT
- APPROXIMATE GRADUAL CHANGE OF SOIL STRATA WITHIN GEOLOGIC SOIL UNIT

LABORATORY / FIELD TEST CLASSIFICATIONS

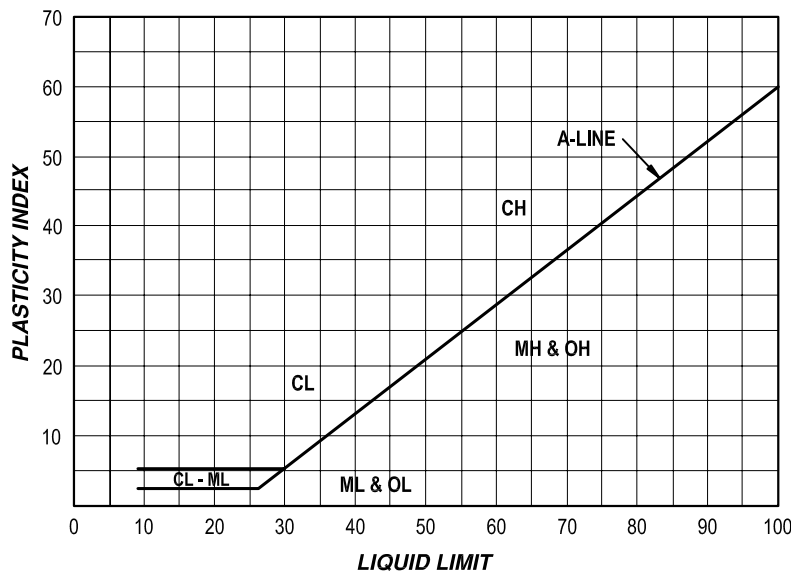
- %F** PERCENT FINES
- AL** ATTERBERG LIMITS
- CA** CHEMICAL ANALYSIS
- CP** LABORATORY COMPACTION TEST
- CS** CONSOLIDATION TEST
- DS** DIRECT SHEAR
- HA** HYDROMETER ANALYSIS
- MC** MOISTURE CONTENT
- MD** MOISTURE CONTENT AND DRY DENSITY
- OC** ORGANIC COMPOUND
- PM** PERMEABILITY OR HYDRAULIC CONDUCTIVITY
- PP** POCKET PENETROMETER
- SA** SIEVE ANALYSIS
- TX** TRIAXIAL COMPRESSION
- UC** UNCONFINED COMPRESSION
- VS** VANE SHEAR

SAMPLER SYMBOLS

- 2.4 INCH I.D. SPLIT BARREL
- DIRECT-PUSH
- STANDARD PENETRATION TEST
- SHELBY TUBE
- PISTON
- BULK OR GRAB

SHEEN CLASSIFICATIONS

- NS** NO VISIBLE SHEEN
- SS** SLIGHT SHEEN
- MS** MODERATE SHEEN
- HS** HEAVY SHEEN
- NT** NOT TESTED



SOIL MOISTURE MODIFIERS:

- DRY - ABSENCE OF MOISTURE, DUSTY, DRY TO THE TOUCH
- MOIST - DAMP, BUT NO VISIBLE WATER
- WET - VISIBLE FREE WATER OR SATURATED, USUALLY SOIL IS OBTAINED BELOW WATER TABLE



PROJECT: **Mason County PUD 1**DATE: **May 20, 2025**PROJECT NO.: **1171-004-001****B-1**LOCATION: **Lilliwaup, WA**TOTAL DEPTH: **76.5**

Depth (feet)	Lithology	USCS	Sample Interval	Inches Driven/ Recovered	Blows per Foot	Sample No.	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0							GP: Gray to black fine to coarse gravel with fine to medium sand and silt, medium dense, wet	
5		GP		18/7	22	1		
10		ML		18/8	2	2	ML: Gray to black silt, soft, wet	
15				18/15	2	3	SM: Gray to black silty fine to medium sand, very loose, wet	PP=0.5 VS=1
20				18/18	2	4		PP=1 VS=1
25		SM		18/12	2	5		PP=1.5 VS=1
30				18/8	15	6	Grades to with fine gravel	PP=0.5 VS=0.75
35		GP		18/5	26	7	GP: Gray to black fine to coarse gravel with fine to medium sand and silt, medium dense, moist	PP=0 VS=0
40		ML		18/18	9	8	ML: Dark gray silt with fine to medium sand, stiff, moist (shell fragments)	PP=1.25 VS=1.75
45		SM		18/18	12	9	SM: Dark gray silty fine to medium sand, medium dense, moist (shell fragments)	PP=1 VS=0.5
50				18/7	30	10	GP: Dark gray fine to coarse gravel with fine to medium sand, medium dense, moist	PP=1 VS=0.75
55		GP		18/6	51	11	Grades to wet	VS=0 VS=0
60				18/9	8	12	SM: Dark gray silty fine to medium sand, loose, moist to wet	VS=0 VS=0.25
65		SM		18/4	1	13		NR
70				18/0	2	14		NR
75	Basalt	Basalt		18/10	53	15	Basalt: Basalt bedrock	
80								Boring completed to 76.5 feet.
85								
90								
95								
100								

Drilling Contractor: **Holocene**Driller: **Chris D.**Drilling Equipment: **Diedrich D 70**Drilling Method: **HSA**Logged By: **Neal Graham**

PROJECT: **Mason PUD 1**
PROJECT NO.: **1171-004-001**
LOCATION: **Lilliwaup Bay, Washington**

B-2A

DATE: **May 22, 2025**

TOTAL DEPTH: **11.5**

Depth (feet)	Lithology	USCS	Sample Interval	Inches Driven/ Recovered	Blows per Foot	Sample No.	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0		GP		18/7	41	1	GP: Dark gray to black fine to coarse gravel and cobbles, loose, wet	
5								
10						2		
15								Boring completed to 11.5 feet. Boring terminated @ 11.5 feet due to casing slippage
20								
25								
30								
35								
40								
45								
50								
55								
60								
65								
70								
75								
80								
85								
90								
95								
100								

Drilling Contractor: **Holocene**
Drilling Equipment: **Diedrich D 70**
Logged By: **Graham**

Driller: **Chris D**
Drilling Method: **Hollow Stem Auger**



PROJECT: **Mason PUD 1**
PROJECT NO.: **1171-004-001**
LOCATION: **Lilliwaup Bay, Washington**

B-2B

DATE: **May 22, 2025**

TOTAL DEPTH: **13.5**

Depth (feet)	Lithology	USCS	Sample Interval	Inches Driven/ Recovered	Blows per Foot	Sample No.	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0		GP		18/6	49	1	GP: Dark gray to black fine to coarse gravel and cobbles, loose, wet	
5								
10								Boring completed to 6.5 feet. Refusal @ 6.5 feet
15								
20								
25								
30								
35								
40								
45								
50								
55								
60								
65								
70								
75								
80								
85								
90								
95								
100								

Drilling Contractor: **Holocene**
Drilling Equipment: **Diedrich D 70**
Logged By: **Graham**

Driller: **Chris D**
Drilling Method: **Hollow Stem Auger**



PROJECT: **Mason PUD 1**
 PROJECT NO.: **1171-004-001**
 LOCATION: **Lilliwaup Bay, Washington**

B-2C

DATE: **May 22, 2025**

TOTAL DEPTH: **93.5**

Depth (feet)	Lithology	USCS	Sample Interval	Inches Driven/ Recovered	Blows per Foot	Sample No.	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0							GP: Dark gray to black fine to coarse gravel and cobbles, loose, wet	
5								
10								
15								
20								
25								
30								
35								
40								PP=0.5 VS=1.5
45							SM: Dark gray silty sand with fine to coarse gravel, medium dense, wet	PP=1.0 VS=2.0
50							Grades to dense	PP=3.0 VS=1.75
55								PP=0.5 VS=1.0
60							ML: Dark gray silt with fine to coarse gravel and fine sand. medium stiff, moist	PP=0.5 VS=2.0
65								No Recovery
70								No Recovery
75							Grades to very stiff, with wood fragments (Kitsap Fmn?)	PP=2.0 VS=3.0
80							Grades to stiff	No Recovery
85							Grades to brown, clayey, hard	PP = <4.5 VS=5.75
90								PP = <4.5 VS=5.75
95								PP = <4.5 VS=5.75 Boring completed to 93.5 feet.
100								

Drilling Contractor: **Holocene**
 Drilling Equipment: **Diedrich D 70**
 Logged By: **Graham**

Driller: **Chris D**
 Drilling Method: **Hollow Stem Auger**



PROJECT: **Mason PUD 1**
 PROJECT NO.: **1171-004-001**
 LOCATION: **Lilliwaup Bay, Washington**

B-3

DATE: **May 28, 2025**
 TOTAL DEPTH: **96.5**

Depth (feet)	Lithology	USCS	Sample Interval	Inches Driven/ Recovered	Blows per Foot	Sample No.	SOIL DESCRIPTION	REMARKS AND OTHER TESTS
0							GP: Gray fine to coarse gravel and cobbles with fine to coarse sand, silt, medium dense, wet	
5		GP		18/9	16	1		PP=- - VS=- -
10				18/13	6	2	SM: Dark gray silty sand with fine to coarse gravel, loose, wet	PP=0.5 VS=1.5
15				18/13	5	3		PP=2.0 VS=1.5
20		SM		18/18	7	4		PP=1.0 VS=2.0
25				18/121	11	5		PP=1.75 VS= 1.0
30				18/12	31	6		PP=0.75 VS=1.0
35				18/11	45	7	GP: Dark gray to black fine to coarse gravel with fine to coarse sand and silt, medium dense, moist	PP=2.0 VS=1.0
40		GP		18/10	56	8		PP=2.5 VS=2.5
45				18/13	28	9	SP: Dark gray fine to coarse sand with fine to coarse gravel and silt. medium dense, moist	PP=1.5 VS=2.0
50		SP		18/12	20	10		PP = 0.75 VS=0.25
55				18/10	71	11	GP: Brown fine to coarse gravel with fine to coarse sand and silt, dense, wet	PP = - - VS=0.5
60		GP		18/14	29	12	SP: Dark gray fine sand with silt, medium dense, moist	PP = 1.75 VS=3.0
65		SP		18/13	33	13		Boring completed to 96.5 feet.
70				18/3	37	14	GP: Gray fine to coarse gravel with fine to coarse sand, medium dense, wet	PP=- - VS=- -
75		GP		18/11	15	15		PP=- - VS=- -
80				18/12	52	16	SP: Brown fine to coarse sand with fine to coarse gravel, medium dense, wet	PP=0.5 VS=1.5
85				18/13	69	17		PP=0.5 VS=0
90		SP		18/12	84	18		PP=1.0 VS=1.0
95				18/11	60	19		PP=1.5 VS=1.0
100								Boring completed to 96.5 feet.

Drilling Contractor: **Holocene**
 Drilling Equipment: **Diedrich D 70**
 Logged By: **Graham**

Driller: **Chris D**
 Drilling Method: **Hollow Stem Auger**



ATTACHMENT B
LABORATORY ANALYTICAL RESULTS

Gradation Analysis Summary Data

Job Name: Mason PUD 1
Job Number: 1171-004-01
Date Tested: 6/16/25
Tested By: Neal Graham

Sample Name: B-1-5
Sample #: 5
Depth: 25-26.5

Moisture Content (%)	29.8%	
Organic Content (%)	N/A	ASTM Method D 2974 - 87

Sieve Size	Percent Passing	Size Fraction	Percent by Weight
3.0 in. (75.0)	100.0	Coarse Gravel	9.2
1.5 in. (37.5)	99.6	Fine Gravel	5.1
3/4 in. (19.0)	90.8		
3/8 in. (9.5-mm)	89.0	Coarse Sand	3.1
No. 4 (4.75-mm)	85.7	Medium Sand	11.1
No. 10 (2.00-mm)	82.5	Fine Sand	50.7
No. 20 (.850-mm)	77.2		
No. 40 (.425-mm)	71.4	Fines	20.8
No. 60 (.250-mm)	62.6	Total	100.0
No. 100 (.150-mm)	45.8		
No. 200 (.075-mm)	20.8		

LL --
PL --
PI --

D₁₀ 0.089
D₃₀ 0.170
D₆₀ 0.260
D₉₀ 0.390

Cc 1.249
Cu 2.921

ASTM Classification
 Group Name: **Silty Sand**
 Symbol: **SM**

Gradation Analysis Summary Data

Job Name: Mason PUD 1
Job Number: 1171-004-01
Date Tested: 6/16/25
Tested By: Neal Graham

Sample Name: B-1-7
Sample #: 7
Depth: 35-36.5

Moisture Content (%) 8.7%
 Organic Content (%) N/A ASTM Method D 2974 - 87

Sieve Size	Percent Passing	Size Fraction	Percent by Weight
3.0 in. (75.0)	100.0	Coarse Gravel	0.0
1.5 in. (37.5)	100.0	Fine Gravel	57.8
3/4 in. (19.0)	100.0		
3/8 in. (9.5-mm)	82.6	Coarse Sand	15.8
No. 4 (4.75-mm)	42.2	Medium Sand	16.6
No. 10 (2.00-mm)	26.3	Fine Sand	7.3
No. 20 (.850-mm)	15.4		
No. 40 (.425-mm)	9.7	Fines	2.4
No. 60 (.250-mm)	6.6	Total	100.0
No. 100 (.150-mm)	4.3		
No. 200 (.075-mm)	2.4		

LL - -
PL - -
PI - -

D₁₀ 0.130
D₃₀ 0.190
D₆₀ 0.270
D₉₀ 0.420

Cc 1.028
Cu 2.077

ASTM Classification
 Group Name: **Poorly Graded Gravel with Sand**
 Symbol: **GP**

Gradation Analysis Summary Data

Job Name: Mason PUD 1
Job Number: 1171-004-01
Date Tested: 6/16/25
Tested By: Neal Graham

Sample Name: B-1-9
Sample #: 9
Depth: 45-46.5

Moisture Content (%)	24.7%	ASTM Method D 2974 - 87
Organic Content (%)	N/A	

Sieve Size	Percent Passing	Size Fraction	Percent by Weight
3.0 in. (75.0)	100.0	Coarse Gravel	0.7
1.5 in. (37.5)	100.0	Fine Gravel	5.1
3/4 in. (19.0)	99.3		
3/8 in. (9.5-mm)	99.0	Coarse Sand	5.1
No. 4 (4.75-mm)	94.2	Medium Sand	21.0
No. 10 (2.00-mm)	89.1	Fine Sand	49.3
No. 20 (.850-mm)	80.4		
No. 40 (.425-mm)	68.1	Fines	18.8
No. 60 (.250-mm)	47.6	Total	100.0
No. 100 (.150-mm)	30.8		
No. 200 (.075-mm)	18.8		

LL --
PL --
PI --

D₁₀ 0.170
D₃₀ 0.240
D₆₀ 0.370
D₉₀ 1.400

Cc 0.916
Cu 2.176

ASTM Classification
Group Name: **Silty Sand**
Symbol: **SM**

Gradation Analysis Summary Data

Job Name: Mason PUD 1
Job Number: 1171-004-01
Date Tested: 6/16/25
Tested By: Neal Graham

Sample Name: B-1-11
Sample #: 11
Depth: 55-56.5

Moisture Content (%) 8.1%
 Organic Content (%) N/A ASTM Method D 2974 - 87

Sieve Size	Percent Passing	Size Fraction	Percent by Weight
3.0 in. (75.0)	100.0	Coarse Gravel	15.4
1.5 in. (37.5)	99.5	Fine Gravel	64.8
3/4 in. (19.0)	84.6		
3/8 in. (9.5-mm)	58.6	Coarse Sand	11.0
No. 4 (4.75-mm)	19.8	Medium Sand	5.5
No. 10 (2.00-mm)	8.9	Fine Sand	2.4
No. 20 (.850-mm)	5.3		
No. 40 (.425-mm)	3.4	Fines	1.0
No. 60 (.250-mm)	2.4	Total	100.0
No. 100 (.150-mm)	1.7		
No. 200 (.075-mm)	1.0		

LL - -
 PL - -
 PI - -

D₁₀ 0.160
 D₃₀ 0.230
 D₆₀ 0.350
 D₉₀ 1.500

Cc 0.945
 Cu 2.188

ASTM Classification
 Group Name: **Poorly Graded Gravel**
 Symbol: **GP**

Gradation Analysis Summary Data

Job Name: Mason PUD 1
Job Number: 1171-004-01
Date Tested: 6/16/25
Tested By: Neal Graham

Sample Name: B3 #2
Sample #: 2
Depth: 10-11.5

Moisture Content (%) 23.5%
 Organic Content (%) N/A ASTM Method D 2974 - 87

Sieve Size	Percent Passing	Size Fraction	Percent by Weight
3.0 in. (75.0)	100.0	Coarse Gravel	0.0
1.5 in. (37.5)	100.0	Fine Gravel	27.5
3/4 in. (19.0)	100.0		
3/8 in. (9.5-mm)	85.9	Coarse Sand	13.3
No. 4 (4.75-mm)	72.5	Medium Sand	19.5
No. 10 (2.00-mm)	59.2	Fine Sand	26.1
No. 20 (.850-mm)	47.3		
No. 40 (.425-mm)	39.7	Fines	13.5
No. 60 (.250-mm)	32.7	Total	100.0
No. 100 (.150-mm)	25.2		
No. 200 (.075-mm)	13.5		

LL --
 PL --
 PI --

D₁₀ 0.089
 D₃₀ 0.170
 D₆₀ 0.260
 D₉₀ 0.390

Cc 1.249
 Cu 2.921

ASTM Classification
 Group Name: **Silty Sand with Gravel**
 Symbol: **SM**

Gradation Analysis Summary Data

Job Name: Mason PUD 1
Job Number: 1171-004-01
Date Tested: 6/16/25
Tested By: Neal Graham

Sample Name: B3 #4
Sample #: 4
Depth: 20-21.5

Moisture Content (%) 27.1%
 Organic Content (%) N/A ASTM Method D 2974 - 87

Sieve Size	Percent Passing	Size Fraction	Percent by Weight
3.0 in. (75.0)	100.0	Coarse Gravel	0.0
1.5 in. (37.5)	100.0	Fine Gravel	0.8
3/4 in. (19.0)	100.0		
3/8 in. (9.5-mm)	99.3	Coarse Sand	1.8
No. 4 (4.75-mm)	99.2	Medium Sand	18.0
No. 10 (2.00-mm)	97.4	Fine Sand	62.8
No. 20 (.850-mm)	89.1		
No. 40 (.425-mm)	79.4	Fines	16.6
No. 60 (.250-mm)	65.6	Total	100.0
No. 100 (.150-mm)	41.3		
No. 200 (.075-mm)	16.6		

LL --
 PL --
 PI --

D₁₀ 0.130
 D₃₀ 0.190
 D₆₀ 0.270
 D₉₀ 0.420

Cc 1.028
 Cu 2.077

ASTM Classification
 Group Name: **Silty Sand**
 Symbol: **SM**

Gradation Analysis Summary Data

Job Name: Mason PUD 1
Job Number: 1171-004-01
Date Tested: 6/16/25
Tested By: Neal Graham

Sample Name: B3 #6
Sample #: 6
Depth: 30-31.5

Moisture Content (%)	16.9%	
Organic Content (%)	N/A	ASTM Method D 2974 - 87

Sieve Size	Percent Passing	Size Fraction	Percent by Weight
3.0 in. (75.0)	100.0	Coarse Gravel	0.1
1.5 in. (37.5)	100.0	Fine Gravel	35.4
3/4 in. (19.0)	99.9		
3/8 in. (9.5-mm)	84.5	Coarse Sand	15.9
No. 4 (4.75-mm)	64.5	Medium Sand	23.4
No. 10 (2.00-mm)	48.6	Fine Sand	20.1
No. 20 (.850-mm)	35.9		
No. 40 (.425-mm)	25.2	Fines	5.1
No. 60 (.250-mm)	15.7	Total	100.0
No. 100 (.150-mm)	9.5		
No. 200 (.075-mm)	5.1		

LL --
 PL --
 PI --

D₁₀ 0.170
 D₃₀ 0.240
 D₆₀ 0.370
 D₉₀ 1.400

Cc 0.916
 Cu 2.176

ASTM Classification
 Group Name: **Poorly Graded Sand with Silt and Gravel**
 Symbol: **SP-SM**

Gradation Analysis Summary Data

Job Name: Mason PUD 1
Job Number: 1171-004-01
Date Tested: 6/16/25
Tested By: Neal Graham

Sample Name: B3 #10
Sample #: 10
Depth: 50-51.5

Moisture Content (%)	12.1%	
Organic Content (%)	N/A	ASTM Method D 2974 - 87

Sieve Size	Percent Passing	Size Fraction	Percent by Weight
3.0 in. (75.0)	100.0	Coarse Gravel	13.1
1.5 in. (37.5)	98.6	Fine Gravel	27.9
3/4 in. (19.0)	86.9		
3/8 in. (9.5-mm)	73.2	Coarse Sand	13.9
No. 4 (4.75-mm)	59.1	Medium Sand	21.5
No. 10 (2.00-mm)	45.1	Fine Sand	18.0
No. 20 (.850-mm)	34.0		
No. 40 (.425-mm)	23.7	Fines	5.7
No. 60 (.250-mm)	14.2	Total	100.0
No. 100 (.150-mm)	9.3		
No. 200 (.075-mm)	5.7		

LL --
PL --
PI --

D₁₀ 0.160
D₃₀ 0.230
D₆₀ 0.350
D₉₀ 1.500

Cc 0.945
Cu 2.188

ASTM Classification
 Group Name: **Poorly Graded Gravel with Silt and Sand**
 Symbol: **GP-GM**

Gradation Analysis Summary Data

Job Name: Mason PUD 1
Job Number: 1171-004-01
Date Tested: 6/16/25
Tested By: Neal Graham

Sample Name: 2C #1
Sample #: 1
Depth: 7-8.5

Moisture Content (%) 13.7%
 Organic Content (%) N/A ASTM Method D 2974 - 87

Sieve Size	Percent Passing	Size Fraction	Percent by Weight
3.0 in. (75.0)	100.0	Coarse Gravel	0.4
1.5 in. (37.5)	100.0	Fine Gravel	43.0
3/4 in. (19.0)	99.6		
3/8 in. (9.5-mm)	98.2	Coarse Sand	46.9
No. 4 (4.75-mm)	56.6	Medium Sand	9.0
No. 10 (2.00-mm)	9.8	Fine Sand	0.7
No. 20 (.850-mm)	1.5		
No. 40 (.425-mm)	0.8	Fines	0.1
No. 60 (.250-mm)	0.5	Total	100.0
No. 100 (.150-mm)	0.3		
No. 200 (.075-mm)	0.1		

LL --
 PL --
 PI --

D₁₀ 0.140
 D₃₀ 0.210
 D₆₀ 0.330
 D₉₀ 0.610

Cc 0.955
 Cu 2.357

ASTM Classification
 Group Name: **Poorly Graded Gravel with Sand**
 Symbol: **GP**

Gradation Analysis Summary Data

Job Name: Mason PUD 1
Job Number: 1171-004-01
Date Tested: 6/16/25
Tested By: Neal Graham

Sample Name: 2C #3
Sample #: 3
Depth: 12-13.5

Moisture Content (%)	7.0%	
Organic Content (%)	N/A	ASTM Method D 2974 - 87

Sieve Size	Percent Passing	Size Fraction	Percent by Weight
3.0 in. (75.0)	100.0	Coarse Gravel	32.5
1.5 in. (37.5)	97.3	Fine Gravel	39.7
3/4 in. (19.0)	67.5		
3/8 in. (9.5-mm)	38.9	Coarse Sand	6.8
No. 4 (4.75-mm)	27.8	Medium Sand	7.9
No. 10 (2.00-mm)	20.9	Fine Sand	10.1
No. 20 (.850-mm)	17.4		
No. 40 (.425-mm)	13.0	Fines	2.9
No. 60 (.250-mm)	8.4	Total	100.0
No. 100 (.150-mm)	5.2		
No. 200 (.075-mm)	2.9		

LL --
PL --
PI --

D₁₀ 0.190
D₃₀ 0.280
D₆₀ 0.380
D₉₀ 0.900

Cc 1.086
Cu 2.000

ASTM Classification
 Group Name: **Poorly Graded Gravel with Sand**
 Symbol: **GP**

Gradation Analysis Summary Data

Job Name: Mason PUD 1
Job Number: 1171-004-01
Date Tested: 6/16/25
Tested By: Neal Graham

Sample Name: 2C #4
Sample #: 4
Depth: 17-18.5

Moisture Content (%)	12.3%	
Organic Content (%)	N/A	ASTM Method D 2974 - 87

Sieve Size	Percent Passing	Size Fraction	Percent by Weight
3.0 in. (75.0)	100.0	Coarse Gravel	22.4
1.5 in. (37.5)	99.6	Fine Gravel	56.4
3/4 in. (19.0)	77.6		
3/8 in. (9.5-mm)	50.8	Coarse Sand	7.6
No. 4 (4.75-mm)	21.1	Medium Sand	6.0
No. 10 (2.00-mm)	13.6	Fine Sand	5.7
No. 20 (.850-mm)	10.7		
No. 40 (.425-mm)	7.6	Fines	1.9
No. 60 (.250-mm)	5.0	Total	100.0
No. 100 (.150-mm)	3.2		
No. 200 (.075-mm)	1.9		

LL --
PL --
PI --

D₁₀ 0.190
D₃₀ 0.290
D₆₀ 0.390
D₉₀ 0.670

Cc 1.135
Cu 2.053

ASTM Classification
 Group Name: **Poorly Graded Gravel with Sand**
 Symbol: **GP**

Gradation Analysis Summary Data

Job Name: Mason PUD 1
Job Number: 1171-004-01
Date Tested: 6/16/25
Tested By: Neal Graham

Sample Name: 2C #5
Sample #: 5
Depth: 22-23.5

Moisture Content (%)	11.1%	
Organic Content (%)	N/A	ASTM Method D 2974 - 87

Sieve Size	Percent Passing	Size Fraction	Percent by Weight
3.0 in. (75.0)	100.0	Coarse Gravel	25.5
1.5 in. (37.5)	99.9	Fine Gravel	52.2
3/4 in. (19.0)	74.5		
3/8 in. (9.5-mm)	47.8	Coarse Sand	8.2
No. 4 (4.75-mm)	22.4	Medium Sand	6.4
No. 10 (2.00-mm)	14.1	Fine Sand	6.1
No. 20 (.850-mm)	10.8		
No. 40 (.425-mm)	7.7	Fines	1.6
No. 60 (.250-mm)	5.0	Total	100.0
No. 100 (.150-mm)	3.0		
No. 200 (.075-mm)	1.6		

LL --
PL --
PI --

D₁₀ 0.000
D₃₀ 0.110
D₆₀ 0.250
D₉₀ 0.400

Cc --
Cu --

ASTM Classification
 Group Name: **Poorly Graded Gravel with Sand**
 Symbol: **GP**

Gradation Analysis Summary Data

Job Name: Mason PUD 1
Job Number: 1171-004-01
Date Tested: 6/16/25
Tested By: Neal Graham

Sample Name: 2C 8
Sample #: 8
Depth: 42-43.5

Moisture Content (%)	31.2%	
Organic Content (%)	N/A	ASTM Method D 2974 - 87

Sieve Size	Percent Passing	Size Fraction	Percent by Weight
3.0 in. (75.0)	100.0	Coarse Gravel	0.5
1.5 in. (37.5)	100.0	Fine Gravel	13.0
3/4 in. (19.0)	99.5		
3/8 in. (9.5-mm)	94.0	Coarse Sand	9.5
No. 4 (4.75-mm)	86.6	Medium Sand	7.9
No. 10 (2.00-mm)	77.0	Fine Sand	31.6
No. 20 (.850-mm)	73.1		
No. 40 (.425-mm)	69.1	Fines	37.5
No. 60 (.250-mm)	62.6	Total	100.0
No. 100 (.150-mm)	54.3		
No. 200 (.075-mm)	37.5		

LL --
PL --
PI --

D₁₀ 0.110
D₃₀ 0.240
D₆₀ 0.330
D₉₀ 0.550

Cc 1.587
Cu 3.000

ASTM Classification
 Group Name: **Silty Sand**
 Symbol: **SM**

Gradation Analysis Summary Data

Job Name: Mason PUD 1
Job Number: 1171-004-01
Date Tested: 6/16/25
Tested By: Neal Graham

Sample Name: 2C 9
Sample #: 9
Depth: 47-48.5

Moisture Content (%)	18.7%	
Organic Content (%)	N/A	ASTM Method D 2974 - 87

Sieve Size	Percent Passing	Size Fraction	Percent by Weight
3.0 in. (75.0)	100.0	Coarse Gravel	3.3
1.5 in. (37.5)	98.7	Fine Gravel	21.8
3/4 in. (19.0)	96.7		
3/8 in. (9.5-mm)	77.8	Coarse Sand	6.1
No. 4 (4.75-mm)	74.9	Medium Sand	6.9
No. 10 (2.00-mm)	68.8	Fine Sand	21.5
No. 20 (.850-mm)	64.6		
No. 40 (.425-mm)	62.0	Fines	40.5
No. 60 (.250-mm)	56.6	Total	100.0
No. 100 (.150-mm)	48.4		
No. 200 (.075-mm)	40.5		

LL --
PL --
PI --

D₁₀ 0.081
D₃₀ 0.160
D₆₀ 0.240
D₉₀ 0.380

Cc 1.317
Cu 2.963

ASTM Classification
 Group Name: **Poorly-Graded Sand with Silt**
 Symbol: **SP-SM**

Gradation Analysis Summary Data

Job Name: Mason PUD 1
Job Number: 1171-004-01
Date Tested: 6/16/25
Tested By: Neal Graham

Sample Name: 2C 10
Sample #: 10
Depth: 52-53,5

Moisture Content (%) 11.3%
 Organic Content (%) N/A ASTM Method D 2974 - 87

Sieve Size	Percent Passing	Size Fraction	Percent by Weight
3.0 in. (75.0)	100.0	Coarse Gravel	5.0
1.5 in. (37.5)	99.8	Fine Gravel	37.0
3/4 in. (19.0)	95.0		
3/8 in. (9.5-mm)	76.4	Coarse Sand	16.8
No. 4 (4.75-mm)	58.0	Medium Sand	16.4
No. 10 (2.00-mm)	41.2	Fine Sand	18.1
No. 20 (.850-mm)	31.1		
No. 40 (.425-mm)	24.8	Fines	6.7
No. 60 (.250-mm)	18.0	Total	100.0
No. 100 (.150-mm)	11.6		
No. 200 (.075-mm)	6.7		

LL --
 PL --
 PI --

D₁₀ 0.100
 D₃₀ 0.180
 D₆₀ 0.270
 D₉₀ 0.440

Cc 1.200
 Cu 2.700

ASTM Classification
 Group Name: **Poorly Graded Sand with Silt and Gravel**
 Symbol: **SM**

Gradation Analysis Summary Data

Job Name: Mason PUD 1
Job Number: 1171-004-01
Date Tested: 6/16/25
Tested By: Neal Graham

Sample Name: 2C 14
Sample #: 14
Depth: 72-73.5

Moisture Content (%)	26.2%	
Organic Content (%)	N/A	ASTM Method D 2974 - 87

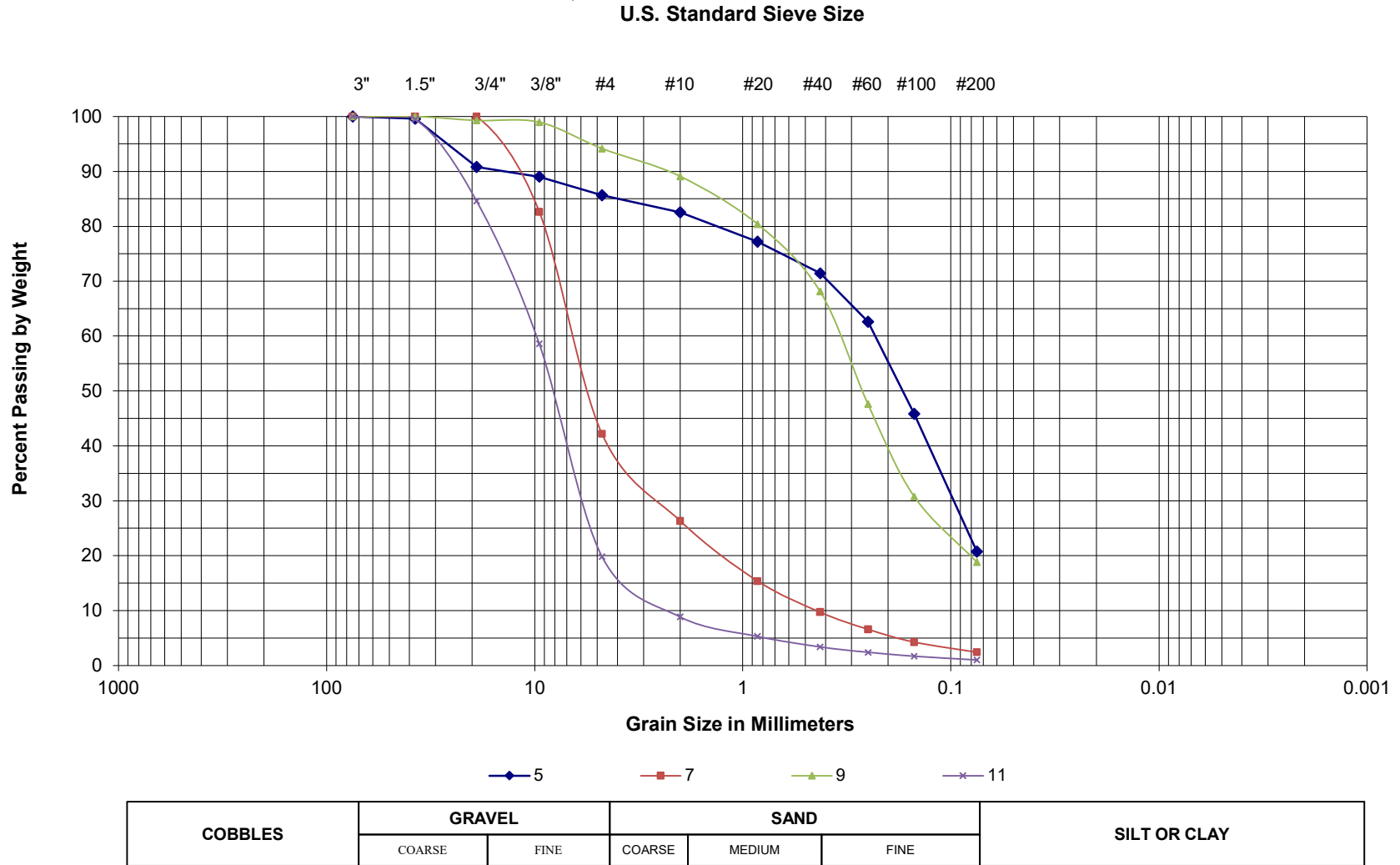
Sieve Size	Percent Passing	Size Fraction	Percent by Weight
3.0 in. (75.0)	100.0	Coarse Gravel	6.8
1.5 in. (37.5)	100.0	Fine Gravel	1.2
3/4 in. (19.0)	93.2		
3/8 in. (9.5-mm)	92.7	Coarse Sand	0.9
No. 4 (4.75-mm)	92.0	Medium Sand	2.2
No. 10 (2.00-mm)	91.1	Fine Sand	7.2
No. 20 (.850-mm)	89.9		
No. 40 (.425-mm)	88.8	Fines	81.7
No. 60 (.250-mm)	87.3	Total	100.0
No. 100 (.150-mm)	85.0		
No. 200 (.075-mm)	81.7		

LL --
PL --
PI --

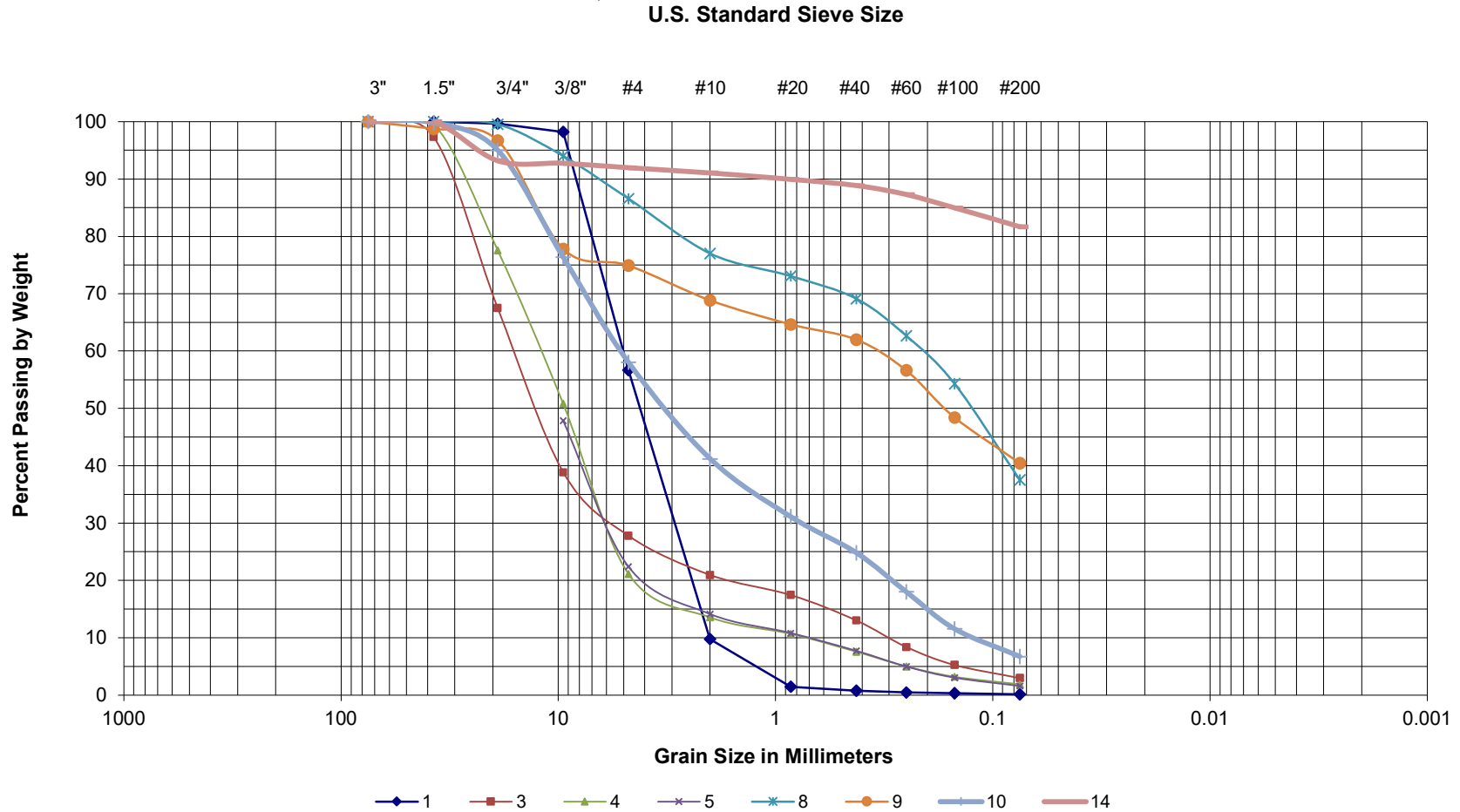
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D₃₀ 0.300
D₆₀ 0.500
D₉₀ 3.500

Cc 0.947
Cu 2.632

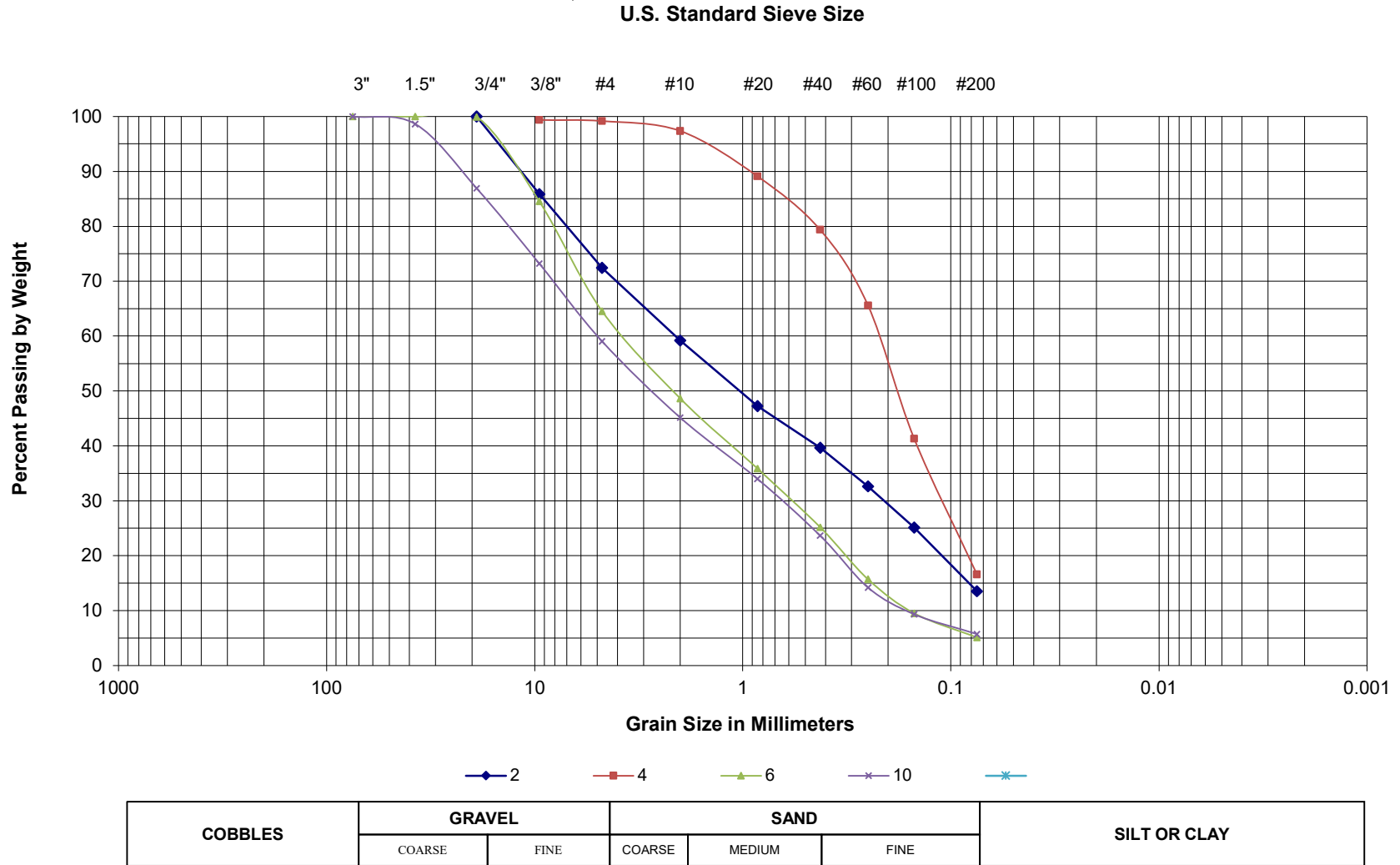
ASTM Classification
 Group Name: **Poorly-Graded Sand**
 Symbol: **SP**



Graph 1
Gradation Analysis Results B-1



Graph 2
Gradation Analysis Results B-2C



Graph 3
Gradation Analysis Results B-3

ATTACHMENT C
REPORT LIMITATIONS AND GUIDELINES FOR USE

ATTACHMENT C

REPORT LIMITATIONS AND GUIDELINES FOR USE¹

This attachment provides information to help you manage your risks with respect to the use of this report.

GEOTECHNICAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES, PERSONS AND PROJECTS

This report has been prepared for the exclusive use of Mason County PUD (Client) and their authorized agents. This report may be made available to regulatory agencies for review. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

Insight Geologic Inc. structures our services to meet the specific needs of our clients. For example, a geotechnical or geologic study conducted for a civil engineer or architect may not fulfill the needs of a construction contractor or even another civil engineer or architect that are involved in the same project. Because each geotechnical or geologic study is unique, each geotechnical engineering or geologic report is unique, prepared solely for the specific client and project site. Our report is prepared for the exclusive use of our Client. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted geotechnical practices in this area at the time this report was prepared. This report should not be applied for any purpose or project except the one originally contemplated.

A GEOTECHNICAL ENGINEERING OR GEOLOGIC REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

Insight Geologic, Inc. considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless Insight Geologic specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

For example, changes that can affect the applicability of this report include those that affect:

- the function of the proposed structure;
- elevation, configuration, location, orientation or weight of the proposed structure;
- composition of the design team; or
- project ownership.

If important changes are made after the date of this report, Insight Geologic should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

¹ Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org .

SUBSURFACE CONDITIONS CAN CHANGE

This geotechnical or geologic report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, or by natural events such as floods, earthquakes, slope instability or ground water fluctuations. Always contact Insight Geologic before applying a report to determine if it remains applicable.

MOST GEOTECHNICAL AND GEOLOGIC FINDINGS ARE PROFESSIONAL OPINIONS

Our interpretations of subsurface conditions are based on field observations from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Insight Geologic reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ, sometimes significantly, from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

GEOTECHNICAL ENGINEERING REPORT RECOMMENDATIONS ARE NOT FINAL

Do not over-rely on the preliminary construction recommendations included in this report. These recommendations are not final, because they were developed principally from Insight Geologic's professional judgment and opinion. Insight Geologic's recommendations can be finalized only by observing actual subsurface conditions revealed during construction. Insight Geologic cannot assume responsibility or liability for this report's recommendations if we do not perform construction observation.

Sufficient monitoring, testing and consultation by Insight Geologic should be provided during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should the conditions revealed during the work differ from those anticipated, and to evaluate whether or not earthwork activities are completed in accordance with our recommendations. Retaining Insight Geologic for construction observation for this project is the most effective method of managing the risks associated with unanticipated conditions.

A GEOTECHNICAL ENGINEERING OR GEOLOGIC REPORT COULD BE SUBJECT TO MISINTERPRETATION

Misinterpretation of this report by other design team members can result in costly problems. You could lower that risk by having Insight Geologic confer with appropriate members of the design team after submitting the report. Also retain Insight Geologic to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering or geologic report. Reduce that risk by having Insight Geologic participate in pre-bid and pre-construction conferences, and by providing construction observation.

DO NOT REDRAW THE EXPLORATION LOGS

Geotechnical engineers and geologists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering or geologic report should never be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, but recognize that separating logs from the report can elevate risk.

GIVE CONTRACTORS A COMPLETE REPORT AND GUIDANCE

Some owners and design professionals believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering or geologic report, but preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with Insight Geologic and/or to conduct additional study to obtain the specific types of information they need or prefer. A pre-bid conference can also be valuable. Be sure contractors have sufficient time to perform additional study. Only then might an owner be in a position to give contractors the best information available, while requiring them to at least share the financial responsibilities stemming from unanticipated conditions. Further, a contingency for unanticipated conditions should be included in your project budget and schedule.

CONTRACTORS ARE RESPONSIBLE FOR SITE SAFETY ON THEIR OWN CONSTRUCTION PROJECTS

Our geotechnical recommendations are not intended to direct the contractor's procedures, methods, schedule or management of the work site. The contractor is solely responsible for job site safety and for managing construction operations to minimize risks to on-site personnel and to adjacent properties.

READ THESE PROVISIONS CLOSELY

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering or geology) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. Insight Geologic includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with Insight Geologic if you are unclear how these "Report Limitations and Guidelines for Use" apply to your project or site.

GEOTECHNICAL, GEOLOGIC AND ENVIRONMENTAL REPORTS SHOULD NOT BE INTERCHANGED

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.