

REQUEST FOR PROPOSAL #2020-011

**University of Southern Maine (USM)
Public-Private Partnership for Portland Campus Student Housing and Student Center**

ADDENDUM #01

DATE: August 9, 2019

Appendix L: Geo-Tech Report



BORING LOG

BORING NO.: B-1
SHEET: 1 of 1
PROJECT NO.: 19-49
DATE START: 7/30/2019
DATE FINISH: 7/30/2019

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** N/A **TOTAL DEPTH (FT):** 25.5 **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Corey Culligan **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 **AUGER ID/OD:** 2 1/4 in / 5 5/8 in **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic **HAMMER WEIGHT (lbs):** 140 **CASING ID/OD:** N/A /N/A **CORE BARREL:** _____
HAMMER EFFICIENCY FACTOR: _____ **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): ∇ 16 ft 7/30/2019 Soils Saturated at 16 +/- ft

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
∇ Water Level
∇ At time of Drilling
∇ At Completion of Drilling
∇ After Drilling
D = Split Spoon Sample
U = Thin Walled Tube Sample
R = Rock Core Sample
V = Field Vane Shear
Pen. = Penetration Length
Rec. = Recovery Length
bpf = Blows per Foot
mpf = Minute per Foot
WOR = Weight of Rods
WOH = Weight of Hammer
RQD = Rock Quality Designation
PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.
q_u = Unconfined Compressive Strength, kips/sq.ft.
Ø = Friction Angle (Estimated)
N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD			
			1D	∅	0.4-2.4	24/18	4-7-6-6		0.3 Asphalt Pavement	
									2.0 Medium dense dark brown fine to medium SAND with some silt and gravel (Fill)	
									Very stiff becoming stiff brown Silty CLAY with some brown sand layers	
	5		2D	∅	5-7 6-	24/24	3-5-9-10	q _p =7 to 8 ksf		
	10		3D	∅	10-12 11-	24/20	WOH-2-3-5	q _p =5 to 7 ksf	9.0 Loose or soft brown Silty CLAY with silty sand layers	
									11.0 Very stiff to stiff brown Silty CLAY with some brown silty sand layers	
	15		4D	∅	14- 15-17	24/24	1-2-4-1	q _p =2 ksf	14.0 Medium brown silty CLAY with brown silty sand layers	∇
								q _p =0.3 ksf	16.5 Soft gray Silty CLAY	
	20		5D	∅	20-22 20.5-	24/24	3-3-7-10	q _p =1 ksf	19.0 Medium gray sandy silty CLAY with gray sand layers	
									21.0 Medium dense brown fine SAND with some silt, some clayey silt layers	
									Some gravel	
	25		6D	∅	25-25.3	4/4	60/4"		25.0 Dense brown Silty SAND and GRAVEL	

Auger Refusal at 25.5 feet
Probable Bedrock

BORING / WELL 19-6.GPJ SWCE TEMPLATE.GDT 8/8/19

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-1



BORING LOG

BORING NO.: B-2
SHEET: 1 of 1
PROJECT NO.: 19-49
DATE START: 7/30/2019
DATE FINISH: 7/30/2019

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** N/A **TOTAL DEPTH (FT):** 17.0 **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Brett Raiche **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 **AUGER ID/OD:** 2 1/4 in / 5 5/8 in **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic **HAMMER WEIGHT (lbs):** 140 **CASING ID/OD:** N/A /N/A **CORE BARREL:** _____
HAMMER EFFICIENCY FACTOR: _____ **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): ∇ 14 ft 7/30/2019 Saturated soils at 14 ft +/-

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level
∇ At time of Drilling D = Split Spoon Sample Pen. = Penetration Length WOR = Weight of Rods S_v = Field Vane Shear Strength, kips/sq.ft.
∇ At Completion of Drilling U = Thin Walled Tube Sample Rec. = Recovery Length WOH = Weight of Hammer q_u = Unconfined Compressive Strength, kips/sq.ft.
∇ After Drilling R = Rock Core Sample bpf = Blows per Foot RQD = Rock Quality Designation Ø = Friction Angle (Estimated)
∇ After Drilling V = Field Vane Shear mpf = Minute per Foot PID = Photoionization Detector N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				Field / Lab Test Data
			1D	∅	0.3-2.3	24/18	6-2-2-4		0.3-1.2	Asphalt Pavement Medium dense brown Silty CLAY and SAND (Mixed Fill) Medium dense brown SAND, some silt, some gravel (Fill)	
	5		2D	∅	5-7 5.5-	24/20	2-3-4-5	q _p =6 to 7 ksf		Very stiff brown Silty CLAY, occasional sand layers	
	10		3D	∅	10-12 11-	24/24	WOH-2-2-4	q _p =1 to 1.5 ksf	9.0-10.5	Soft or loose brown Silty Sandy CLAY Medium varved brown Silty Clay with frequent sand layers	
	15		4D	∅	15-16.3	16/8	6-10-50/4"		14.5	Medium dense brown Silty SAND, some fine gravel, pieces of broken rock in tip of spoon	∇

Auger Refusal at 17.0 feet
Probable Bedrock

BORING / WELL: 19-6.GPJ SWCE TEMPLATE.GDT 8/8/19

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: **B-2**



BORING LOG

BORING NO.: B-3
SHEET: 1 of 1
PROJECT NO.: 19-49
DATE START: 7/30/2019
DATE FINISH: 7/30/2019

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** N/A **TOTAL DEPTH (FT):** 11.5 **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Corey Culligan **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 **AUGER ID/OD:** 2 1/4 in / 5 5/8 in **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic **HAMMER WEIGHT (lbs):** 140 **CASING ID/OD:** N/A / N/A **CORE BARREL:** _____
HAMMER EFFICIENCY FACTOR: _____ **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): 8 ft 7/30/2019 Sand seams wet at 8 +/- ft

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level
▽ At time of Drilling D = Split Spoon Sample Pen. = Penetration Length WOR = Weight of Rods S_v = Field Vane Shear Strength, kips/sq.ft.
▽ At Completion of Drilling U = Thin Walled Tube Sample Rec. = Recovery Length WOH = Weight of Hammer q_u = Unconfined Compressive Strength, kips/sq.ft.
▽ After Drilling R = Rock Core Sample bpf = Blows per Foot RQD = Rock Quality Designation Ø = Friction Angle (Estimated)
▽ After Drilling V = Field Vane Shear mpf = Minute per Foot PID = Photoionization Detector N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD			
			1D	0.3-2.3	24/14	6-8-4-4	q _p =8 ksf	0.3	Asphalt Pavement	
				2-				1.0	Medium dense brown Gravelly SAND, trace silt (Fill)	
	5		2D	5-7	24/20	5-3-4-5	q _p =4 to 7 ksf		Very stiff brown Silty CLAY, some thin brown sand layers	
				6-				8.0	Medium dense brown SAND, some silt	▽
	10		3D	10-11.5	18/14	3-2-60		11.0	Probable weathered Bedrock	

Auger Refusal at 11.5 feet
 Probable Bedrock

BORING / WELL: 19-6.GPJ SWCE TEMPLATE.GDT 8/8/19

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: **B-3**



BORING LOG

BORING NO.: B-6
SHEET: 1 of 1
PROJECT NO.: 19-49
DATE START: 7/31/2019
DATE FINISH: 7/31/2019

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** N/A **TOTAL DEPTH (FT):** 13.3 **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Corey Culligan **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 **AUGER ID/OD:** 2 1/4 in / 5 5/8 in **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic **HAMMER WEIGHT (lbs):** 140 **CASING ID/OD:** N/A / N/A **CORE BARREL:** _____
HAMMER EFFICIENCY FACTOR: _____ **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): ∇ 11 ft 7/31/2019 Soils appear saturated at 11 ft +/-

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
∇ Water Level
∇ At time of Drilling
∇ At Completion of Drilling
∇ After Drilling
D = Split Spoon Sample
U = Thin Walled Tube Sample
R = Rock Core Sample
V = Field Vane Shear
Pen. = Penetration Length
Rec. = Recovery Length
bpf = Blows per Foot
mpf = Minute per Foot
WOR = Weight of Rods
WOH = Weight of Hammer
RQD = Rock Quality Designation
PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.
q_u = Unconfined Compressive Strength, kips/sq.ft.
Ø = Friction Angle (Estimated)
N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				Field / Lab Test Data
			1D	∅	0-2	24/14	4-16-11-10		0.3	Topsoil with organics	
			2D	∅	2-4	24/16	8-11-13-10			Medium dense brown Silty SAND, some gravel (Probable Fill or disturbed soil)	
	5		3D	∅	5-7	24/20	6-9-9-9				
	10		4D	∅	10-12	24/6	5-5-5-3			Possible loose blast spoils Fill	∇
									13.0	Probable weathered Bedrock Auger Refusal at 13.3 feet Probable Bedrock	

BORING / WELL: 19-6.GPJ SWCE TEMPLATE.GDT 8/8/19

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: **B-6**



BORING LOG

BORING NO.: B-7
SHEET: 1 of 1
PROJECT NO.: 19-49
DATE START: 7/31/2019
DATE FINISH: 7/31/2019

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** N/A **TOTAL DEPTH (FT):** 12.3 **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Corey Culligan **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 **AUGER ID/OD:** 2 1/4 in / 5 5/8 in **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic **HAMMER WEIGHT (lbs):** 140 **CASING ID/OD:** N/A /N/A **CORE BARREL:** _____
HAMMER EFFICIENCY FACTOR: _____ **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): 7/31/2019 No free water observed

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level
▽ At time of Drilling D = Split Spoon Sample Pen. = Penetration Length WOR = Weight of Rods S_v = Field Vane Shear Strength, kips/sq.ft.
▽ At Completion of Drilling U = Thin Walled Tube Sample Rec. = Recovery Length WOH = Weight of Hammer q_u = Unconfined Compressive Strength, kips/sq.ft.
▽ After Drilling R = Rock Core Sample bpf = Blows per Foot RQD = Rock Quality Designation Ø = Friction Angle (Estimated)
▽ After Drilling V = Field Vane Shear mpf = Minute per Foot PID = Photoionization Detector N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				Field / Lab Test Data
			1D	X	0.5-2.5	24/15	20-16-12-9		0.5 0.8 1.5	Asphalt Pavement Dense brown SAND and GRAVEL, trace silt (Pavement Base Fill) Medium dense brown Gravelly SAND, trace silt (Pavement Subbase Fill)	
	5		2D	X	5-7	24/20	9-11-12-16			Medium dense to dense brown silty SAND, some gravel	
	10		3D	X	10-11.7	20/16	11-28-38-50/2"		9.0 10.5 11.7	Dense brown SAND and SILT with pieces of weathered rock Very dense, highly weathered Rock (Saprolite) Probable weathered Bedrock	
										Auger Refusal at 12.3 feet Probable Bedrock	

BORING / WELL: 19-6.GPJ SWCE TEMPLATE.GDT 8/8/19

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-7



BORING LOG

BORING NO.: B-8
SHEET: 1 of 1
PROJECT NO.: 19-49
DATE START: 7/31/2019
DATE FINISH: 7/31/2019

CLIENT: University of Southern Maine
PROJECT: Proposed Student Housing
LOCATION: University of Southern Maine, Portland, Maine

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** N/A **TOTAL DEPTH (FT):** 13.9 **LOGGED BY:** Paul Kohler
DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Corey Culligan **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Truck Mounted Diedrich D-50 **AUGER ID/OD:** 2 1/4 in / 5 5/8 in **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic **HAMMER WEIGHT (lbs):** 140 **CASING ID/OD:** N/A /N/A **CORE BARREL:** _____
HAMMER EFFICIENCY FACTOR: _____ **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): ∇ 10 ft 7/31/2019 Soils appeared saturated at 10 ft +/-

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: ∇ Water Level D = Split Spoon Sample Pen. = Penetration Length WOR = Weight of Rods S_v = Field Vane Shear Strength, kips/sq.ft.
∇ At time of Drilling U = Thin Walled Tube Sample Rec. = Recovery Length WOH = Weight of Hammer q_u = Unconfined Compressive Strength, kips/sq.ft.
∇ At Completion of Drilling R = Rock Core Sample bpf = Blows per Foot RQD = Rock Quality Designation Ø = Friction Angle (Estimated)
∇ After Drilling V = Field Vane Shear mpf = Minute per Foot PID = Photoionization Detector N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				Field / Lab Test Data
			1D	∅	0.3-2.3	24/12	7-7-4-5		0.3-0.8	Asphalt Pavement Medium dense brown Gravelly SAND, trace silt (Pavement Base Fill)	
	5		2D	∅	5-7 6-	24/20	3-3-4-6	q _p =5 to 6 ksf	3.0	Loose brown silty SAND with brown silty CLAY (Mixed Fill) Very stiff brown silty CLAY	
	10		3D	∅	10-12 11-	24/20	4-6-8-7	q _p =1 to 2 ksf	9.0	Medium Dense, varved brown Silty SAND with brown silty clay layers	∇
									12.5	Probable cobbles or weathered Bedrock	

Auger Refusal at 13.9 feet
Probable Bedrock

BORING / WELL: 19-6.GPJ SWCE TEMPLATE.GDT 8/8/19

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BORING NO.: **B-8**



University of Southern Maine

**● Preliminary Test Boring
Approximate Locations**

University of Southern Maine

July 9, 2019