



DATA REPORT

21-1242

September 1, 2023

Explorations and Geotechnical Services

Proposed Offshore Wind Terminal
Mack Point
Searsport, Maine

Prepared For:

Moffatt & Nichol
Attention: Jordan Greer, P.E.
180 Wells Avenue, Suite 302
Newton, MA 02459

Prepared By:

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21-1242

September 1, 2023

Moffatt & Nichol
Attention: Jordan Greer, P.E.
180 Wells Avenue, Suite 302
Newton, MA 02459

Subject: Data Report
Explorations and Geotechnical Services
Proposed Offshore Wind Terminal
Mack Point
Searsport, Maine

Dear Jordan:

In accordance with our Contract Addendum 02, dated October 18, 2022, we have performed subsurface explorations and completed laboratory testing for the subject project. This report summarizes our findings, and its contents are subject to the limitations set forth in Appendix A.

1.0 INTRODUCTION

1.1 Scope and Purpose

The purpose of our services was to obtain subsurface information for use by others. Our scope of services included marine test borings and land test borings explorations, soils laboratory testing, and preparation of this report.

1.2 Site and Proposed Construction

The site is located on Mack Point at the south of the Sprague Energy facility and west of Sears Island in Searsport, Maine. Based on discussions with you, we understand Mack Point will be evaluated as an alternative site to the development of Sears Island.

Existing site features are shown on the “Exploration Location Plan” attached in Appendix B.

2.0 EXPLORATION AND TESTING

2.1 Explorations

Five marine test borings (MB-101 through MB-104, and MB-104A) were made at the site on June 5 to June 14, 2023, by New England Boring Contractors working under subcontract to S. W. Cole Engineering, Inc. (S.W.COLE). Three land test borings (LB-101 through LB-103) were made at the site on June 13, 2023, by S. W. Cole Explorations, LLC.

The exploration locations were selected by Moffatt & Nichol and established in the field by S.W.COLE using mapping-grade GPS methods. The approximate exploration locations are shown on the “Exploration Location Plan” attached in Appendix B. Logs of the test boring and test pit explorations and a key to the notes and symbols used on these logs are attached in Appendix C.

2.2 Field Testing

The test borings were drilled using a combination of cased wash-boring techniques. The soils in the test borings were generally sampled at 2-to-5-foot intervals using a split-spoon sampler and Standard Penetration Testing (SPT) methods. Pocket Penetrometer Tests (PPT) were performed where stiffer cohesive soils were encountered in the test boring. SPT blow counts and PPT results are shown on the boring logs.

2.3 Laboratory Testing

Soil samples obtained from the explorations were returned to our laboratory for further classification and testing. Laboratory testing was completed on selected samples, as requested, and included:

- 8, Moisture Content Tests
- 8, Atterberg Limits Tests
- 7, Percent Passing 200-sieve Tests
- 9, Gradation Tests
- 3, Unconfined Rock Core Compressive Strength Tests – Method C
- 3, Unconfined Rock Core Compressive Strength Tests – Method D

Moisture content, Atterberg Limits, percent passing the 200-sieve, and unconfined rock core compressive strength test results are noted on the logs. The results of the gradation testing are attached in Appendix D.

3.0 SUBSURFACE CONDITIONS

3.1 Soil and Bedrock

3.1.1 Marine Borings

The marine test borings encountered a soil profile generally consisting of bay mud, consisting of silty clay with organics except at MB-101 where silty sand and gravel was encountered. The bay mud or sand and gravel extended to depths varying from about 2 to 10 feet below mudline. Below the bay mud or sand and gravel, the explorations except MB-104 and MB-104A encountered marine deposit consisting of medium dense silty sand or very soft to soft silty clay to depths varying from about 15 to 25 feet overlying dense to very dense glacial till. At boring MB-104, the bay mud was underlain by glacial till. The glacial till soils generally consisted of sandy silt to silt and sand with varying amounts of gravel, cobbles and boulders, overlying bedrock at depths varying from about 45 to 70 feet below mudline, where encountered.

Marine borings MB-104 was terminated in the very dense glacial till at depth of 35.8 feet below mudline. Marine borings MB-101, MB-102, MB-103, and MB-104 were advanced into and terminated in bedrock. Where rock cores were obtained, the bedrock consisted of gray to dark gray, Schist of the Penobscot Formation.

Not all the strata were encountered at each exploration; refer to the attached logs for more detailed subsurface information.

3.1.2 Land Borings

As requested, the landside borings were vacuum excavated to depths of 2 to 5 feet to confirm no utilities were present within the energy facility. Topsoil was observed in the side wall of each excavation. Below the topsoil, the landside borings generally encountered glacial till or marine deposits overlying glacial till.

The marine deposits were encountered to a depth of about 10 to 15 feet and consisted of stiff to hard silty clay in LB-101 and medium dense sandy silt with some gravel and clay in

LB-103. Below the marine deposit, the land borings encountered glacial till generally consisting of stiff to hard, silt and sand to sandy silt with varying amounts of gravel, and some to trace clay. The land borings were terminated in the glacial till at depths of about 42 feet.

Not all the strata were encountered at each exploration; refer to the attached logs for more detailed subsurface information.

3.2 Groundwater

The soils encountered in the landside test borings were generally damp to wet from the ground surface. Where encountered, groundwater was observed at depths generally ranging from about 1 to 4 feet below the ground surface.

4.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the design phase of the project.

Sincerely,

S. W. Cole Engineering, Inc.



Michael A. St. Pierre, P.E.
Senior Geotechnical Engineer

MAS:tjb

APPENDIX A

Limitations

This report has been prepared for the exclusive use of Moffatt & Nichol for specific application to the proposed Offshore Wind Terminal on Mack Point in Searsport, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and geotechnical practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

APPENDIX B

Figures



BORING LOCATIONS - AS DRILLED

Boring No.	Northing, MSP 1983 East	Easting, MSP 1983 East	Latitude	Longitude
LB-101	287558.7278	878644.7537	44.454846	-68.904465
LB-102	286808.4786	879178.4573	44.452795	-68.902407
LB-103	286856.2095	878036.3343	44.45291	-68.906782
MB-102	285772.0338	879388.6085	44.449954	-68.901583
MB-101	286250.7576	878903.2328	44.451261	-68.903451
MB-104	284882.8056	879315.8196	44.447514	-68.901845
MB-104A	284881.9228	879318.4187	44.447512	-68.901835
MB-103	285527.2459	878550.0603	44.449272	-68.904789

LEGEND

APPROXIMATE BORING LOCATION

NOTES:

- EXPLORATION LOCATION PLAN WAS PREPARED FROM IMAGERY ENTITLED "MAINE ORTHOIMAGERY REGIONAL 2015," PROVIDED BY THE MAINE GEOLIBRARY.
- THE EXPLORATIONS WERE LOCATED IN THE FIELD BY S. W. COLE ENGINEERING, INC. USING A MAPPING GRADE GPS RECEIVER.
- THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
- THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.



MOFFATT & NICHOL
EXPLORATION LOCATION PLAN
 PROPOSED OFFSHORE WIND TERMINAL
 MACK POINT
 SEARSPORT, MAINE

Job No. 22-1242 Scale 1" = 150'
 Date: 06/27/2023 Sheet 1

APPENDIX C

Exploration Logs and Key

KEY TO NOTES & SYMBOLS

Test Boring and Test Pit Explorations

Stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

w	-	water content, percent (dry weight basis)
q _u	-	unconfined compressive strength, kips/sq. ft. - laboratory test
S _v	-	field vane shear strength, kips/sq. ft.
L _v	-	lab vane shear strength, kips/sq. ft.
q _p	-	unconfined compressive strength, kips/sq. ft. – pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W _L	-	liquid limit - Atterberg test
W _P	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass.
γ _T	-	total soil weight
γ _B	-	buoyant soil weight

Description of Proportions:

Trace:	0 to 5%
Some:	5 to 12%
“Y”	12 to 35%
And	35+%
With	Undifferentiated

Description of Stratified Soils

Parting:	0 to 1/16” thickness
Seam:	1/16” to 1/2” thickness
Layer:	½” to 12” thickness
Varved:	Alternating seams or layers
Occasional:	one or less per foot of thickness
Frequent:	more than one per foot of thickness

REFUSAL: Test Boring Explorations - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: Test Pit Explorations - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.



BORING LOG

BORING NO.: LB-101
SHEET: 1 of 2
PROJECT NO.: 21-1242
DATE START: 6/13/2023
DATE FINISH: 6/13/2023

CLIENT: Moffatt & Nichol
PROJECT: Mack Point Offshore Wind Terminal
LOCATION: Mack Point, Searsport, Maine

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** _____ **TOTAL DEPTH (FT):** 42.0 **LOGGED BY:** John Cozens
DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Kevin Hanscom **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic **HAMMER WEIGHT (lbs):** 140 / 140 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:** _____
HAMMER CORRECTION FACTOR: _____ **HAMMER DROP (inch):** 30 / 30
WATER LEVEL DEPTHS (ft): ∇ 1 ft Water level in vacuum excavated hole

GENERAL NOTES: Borehole vacuum excavated prior to drilling.

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)
 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	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
								Vacuum excavated to 2ft	∇		
	5		1D	X	2-4	24/20	4-6-7-8	q _p =6 to 7 ksf	2.0'	Stiff to hard, gray, saturated, silty CLAY	
			2D	X	4-6	24/24	3-5-4-6	q _p =3 to 5 ksf ID 14923A w =25.6 % W _L =34 W _p =15 90.2% Fines			
	10		3D	X	10-12	24/13	11-10-12-11	ID 14924A	10.0'	Medium dense to very dense, gray, saturated, gravelly sandy SILT, some clay, occasional cobbles (GLACIAL TILL)	
	15		4D	X	15-17	24/13	14-19-18-15				
	20		5D	X	20-22	24/13	14-24-35-56				
	25		6D	X	25-27	24/14	7-16-15-19	ID 14925A			
	30		7D	X	30-32	24/16	7-16-15-19				
	35		8D	X	35-37	24/21	16-24-30-43				

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.

(Continued Next Page)

BORING NO.: LB-101



BORING LOG

BORING NO.: LB-101
SHEET: 2 of 2
PROJECT NO.: 21-1242
DATE START: 6/13/2023
DATE FINISH: 6/13/2023

CLIENT: Moffatt & Nichol
PROJECT: Mack Point Offshore Wind Terminal
LOCATION: Mack Point, Searsport, Maine

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION				Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)				
			9D	X	40-42	24/9	17-36-45-44			

Bottom of Exploration at 42.0 feet

BORING / WELL: 10-12-2022 21-1242 MACK POINT.GPJ SWCE TEMPLATE.GDT 9/5/23

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.: LB-101



BORING LOG

BORING NO.: LB-102
SHEET: 1 of 2
PROJECT NO.: 21-1242
DATE START: 6/13/2023
DATE FINISH: 6/13/2023

CLIENT: Moffatt & Nichol
PROJECT: Mack Point Offshore Wind Terminal
LOCATION: Mack Point, Searsport, Maine

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** _____ **TOTAL DEPTH (FT):** 42.0 **LOGGED BY:** John Cozens
DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Kevin Hanscom **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic **HAMMER WEIGHT (lbs):** 140 / 140 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:** _____
HAMMER CORRECTION FACTOR: _____ **HAMMER DROP (inch):** 30 / 30
WATER LEVEL DEPTHS (ft): ∇ 4 ft Water level in vacuum excavated hole

GENERAL NOTES: Borehole vacuum excavated prior to drilling.

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				Field / Lab Test Data	Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)					
								Borehole vacuum excavated to 5 ft Topsoil and granular soil observed in sidewall.			
	5		1D	X	5-7	24/1	4-12-13-24		5.0	Medium dense, gray, saturated, gravelly sandy SILT, some clay, occasional cobbles (GLACIAL TILL)	
	10		2D	X	10-12	24/19	10-12-9-9				
	15		3D	X	15-17	24/12	10-11-10-11	ID 14926A 51.9% Fines			
	20		4D	X	20-22	24/17	14-20-25-28			Dense to very dense, gray, saturated, gravelly sandy SILT, some clay, occasional cobbles (GLACIAL TILL)	
	25		5D	X	25-27	24/23	32-47-43-46				
	30		6D	X	30-32	24/20	26-34-37-43	ID 14927A 55.2% Fines			
	35		7D	X	35-37	24/24	28-30-34-50				

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.

(Continued Next Page)

BORING NO.: LB-102



BORING LOG

BORING NO.: LB-102
SHEET: 2 of 2
PROJECT NO.: 21-1242
DATE START: 6/13/2023
DATE FINISH: 6/13/2023

CLIENT: Moffatt & Nichol
PROJECT: Mack Point Offshore Wind Terminal
LOCATION: Mack Point, Searsport, Maine

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
			8D	X	40-42	24/20	25-36-41-52				

Bottom of Exploration at 42.0 feet

BORING / WELL: 10-12-2022 21-1242 MACK POINT.GPJ SWCE TEMPLATE.GDT 9/5/23

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.: LB-102



BORING LOG

BORING NO.: LB-103
SHEET: 1 of 2
PROJECT NO.: 21-1242
DATE START: 6/13/2023
DATE FINISH: 6/13/2023

CLIENT: Moffatt & Nichol
PROJECT: Mack Point Offshore Wind Terminal
LOCATION: Mack Point, Searsport, Maine

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** _____ **TOTAL DEPTH (FT):** 42.0 **LOGGED BY:** John Cozens
DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Kevin Hanscom **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic **HAMMER WEIGHT (lbs):** 140 / 140 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:** _____
HAMMER CORRECTION FACTOR: _____ **HAMMER DROP (inch):** 30 / 30
WATER LEVEL DEPTHS (ft): ∇ 4 ft Water level in vacuum excavated hole

GENERAL NOTES: Borehole vacuum excavated prior to drilling.

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)
 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	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)				
										Borehole vacuum excavated to 5 ft Topsoil and granular soil observed in sidewall.
	5		1D	X	5-7	24/15	4-7-10-15			5.0 Medium dense, brown, saturated, sandy clayey SILT, some gravel
	10		2D	X	10-12	24/12	10-9-16-13	ID 14928A w = 12.2 % W _L = 20 W _p = 13		
	15		3D	X	15-17	24/11	4-13-13-7			15.0 Medium dense to very dense, gray, saturated, gravelly sandy SILT, trace clay occasional cobbles (GLACIAL TILL)
	20		4D	X	20-22	24/14	6-6-11-13			
	25		5D	X	25-27	24/11	12-13-20-20	ID 14929A		
	30		6D	X	30-32.6	32/9	18-19-48-50			
	35		7D	X	35-37	24/17	15-16-20-25	ID 14930A 51.4% Fines		

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.

(Continued Next Page)

BORING NO.: LB-103



BORING LOG

BORING NO.: LB-103
SHEET: 2 of 2
PROJECT NO.: 21-1242
DATE START: 6/13/2023
DATE FINISH: 6/13/2023

CLIENT: Moffatt & Nichol
PROJECT: Mack Point Offshore Wind Terminal
LOCATION: Mack Point, Searsport, Maine

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
			8D	X	40-42	24/22	11-16-24-23				

Bottom of Exploration at 42.0 feet

BORING / WELL: 10-12-2022 21-1242 MACK POINT.GPJ SWCE TEMPLATE.GDT 9/5/23

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.: LB-103



BORING LOG

BORING NO.: MB-101
SHEET: 1 of 2
PROJECT NO.: 21-1242
DATE START: 6/7/2023
DATE FINISH: 6/8/2023

CLIENT: Moffatt & Nichol
PROJECT: Mack Point Offshore Wind Terminal
LOCATION: Mack Point, Searsport, Maine

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** _____ **TOTAL DEPTH (FT):** 90.0 **LOGGED BY:** Matteo Socci
DRILLING CO.: New England Boring **DRILLER:** Sam Cooley **DRILLING METHOD:** Cased Boring
RIG TYPE: GEFCO STRATASTAR 5 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Safety **HAMMER WEIGHT (lbs):** 140 / 300 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:** NQ2
HAMMER CORRECTION FACTOR: _____ **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): Marine Boring

GENERAL NOTES: Borehole logged from mudline.

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	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
			1D	X	0-2	24/1	16-7-9-10		Medium dense, brown, wet, silty GRAVEL and SAND		
	5		2D	X	5-7	24/10	10-6-13-11	ID 14931A w = 13.5% W _L = 18 W _P = 16 56.4% Fines	5.0- Medium dense, brown to gray, wet, SAND and SILT, some clay, trace gravel		
	10		3D	X	10-12	24/12	12-14-12-12		Medium dense, brown to gray, wet, silty SAND, some gravel		
	15		4D	X	15-17	24/6	3-12-8-10		15.0- Medium dense to very dense, gray, wet, silty SAND and GRAVEL (GLACIAL TILL)		
	20		5D	X	20-22	24/12	29-29-32-25		Occassional boulders and cobbles below 20 feet		
	25		6D	X	25-27	24/4	22-19-65-43				
	30								29.5- Cobbles/boulder from 29.5 to 32.5 feet		
	35		7D	X	35-36.3	15/5	25-50-50/3"	ID 14933A	32.5- Very dense, gray, wet, sandy SILT, trace gravel (GLACIAL TILL)		

BORING / WELL 10-12-2022 21-1242 MACK POINT.GPJ SWCE TEMPLATE.GDT 9/5/23

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.

(Continued Next Page)

BORING NO.: MB-101



BORING LOG

BORING NO.: MB-101
SHEET: 2 of 2
PROJECT NO.: 21-1242
DATE START: 6/7/2023
DATE FINISH: 6/8/2023

CLIENT: Moffatt & Nichol
PROJECT: Mack Point Offshore Wind Terminal
LOCATION: Mack Point, Searsport, Maine

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
			8D	X	40-41.4	17/5	48-49-50/5"				
45			9D	X	45-46.4	17/12	28-39-50/5"		Very dense, gray, wet, sandy SILT, some gravel (GLACIAL TILL)		
50			10D	X	50-50.4	5/5	50/5"		Very dense, gray, wet, gravelly SAND and SILT (GLACIAL TILL)		
55			11D	X	55-55.8	10/5	47-50/4"		Very dense, gray, wet, silty SAND and GRAVEL (GLACIAL TILL)		
60			12D	X	60-60.4	5/5	50/5"		Very dense, gray, wet, silty GRAVEL and SAND (GLACIAL TILL)		
65			13D	X	65-65.3	4/0	50/4"				
70			1R	█	70-75	60/38	0		BEDROCK Advanced by roller cone to 70 ft. Dark gray, SCHIST, with some calcite veins, hard; moderately weathered; joints vary from low angle (0-35°) to moderately steep (35-55°), occasionally steep (55-85°), very close (<2"), and tight to open, (PENOBSCOT FORMATION)		
75			2R	█	75-77.5	30/10	0				
80			3R	█	77.5-80.5	36/5	0				
85			4R	█	85-90	60/33	13				
90											Bottom of Exploration at 90.0 feet

BORING / WELL 10-12-2022 21-1242 MACK POINT.GPJ SWCE TEMPLATE.GDT 9/5/23

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.: MB-101



BORING LOG

BORING NO.: MB-102
SHEET: 1 of 2
PROJECT NO.: 21-1242
DATE START: 6/5/2023
DATE FINISH: 6/6/2023

CLIENT: Moffatt & Nichol
PROJECT: Mack Point Offshore Wind Terminal
LOCATION: Mack Point, Searsport, Maine

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** _____ **TOTAL DEPTH (FT):** 70.0 **LOGGED BY:** Matteo Socci
DRILLING CO.: New England Boring **DRILLER:** Sam Cooley **DRILLING METHOD:** Cased Boring
RIG TYPE: GEFCO STRATASTAR 5 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Safety **HAMMER WEIGHT (lbs):** 140 / 300 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:** NQ2
HAMMER CORRECTION FACTOR: _____ **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): Marine Boring

GENERAL NOTES: Borehole logged from mudline.

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 Pen. = Penetration Length WOR = Weight of Rods S_v = Field Vane Shear Strength, kips/sq.ft.
 R = Rock Core Sample V = Field Vane Shear Rec. = Recovery Length WOH = Weight of Hammer q_u = Unconfined Compressive Strength, kips/sq.ft.
 bpf = Blows per Foot RQD = Rock Quality Designation Ø = Friction Angle (Estimated)
 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	Remarks			
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD					Field / Lab Test Data		
			1D		0-2	24/20	WOR/24							
	5		2D		5-7	24/24	WOR/24	q _p =.09 ksf ID 14936A w =103 % W _L =65 W _p =27						
	10		3D		10-12	24/20	WOR/24	q _p =.09 ksf ID 14937A w =84.2 % W _L =64 W _p =32	10.0					
	15		4D		15-17	24/14	4-5-5-6	q _p =1.5 ksf	15.0					
	20		5D		20-22	24/24	WOH/24	q _p =.4 ksf ID 14938A w =30.4 % W _L =37 W _p =18 98.4% Fines						
	25		6D		25-27	24/18	1-2-10-5		25.0					
	30		7D		30-32	24/14	7-9-11-17	ID 14939A						
	35		8D		35-37	24/10	12-15-24-14							

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.

(Continued Next Page)

BORING NO.: MB-102



BORING LOG

BORING NO.: MB-102
SHEET: 2 of 2
PROJECT NO.: 21-1242
DATE START: 6/5/2023
DATE FINISH: 6/6/2023

CLIENT: Moffatt & Nichol
PROJECT: Mack Point Offshore Wind Terminal
LOCATION: Mack Point, Searsport, Maine

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
			9D		40-42	24/12	9-18-32-33				
	45		10D		45-47	24/8	34-48-25-50		Dense to very dense, gray, wet, silty SAND (GLACIAL TILL)		
	50		11D		50-52	24/4	28-25-23-31				
	55		12D		55-55.3	3/0	50/3"				
	60		1R		60-65	60/30	23	ID 14940A Qu=2,870psi		58.0 BEDROCK Advanced by roller cone to 60 ft. Dark gray, SCHIST, with some calcite veins, hard; fresh to slightly weathered; joints vary from low angle (0-35°) to moderately steep (35-55°), very close (<2") to moderately close (1'-3'), and tight to open, (PENOBSCOT FORMATION)	
	65		2R		65-70	60/57	31	ID GTX Qu=2,920psi			
	70										

Bottom of Exploration at 70.0 feet

BORING / WELL 10-12-2022 21-1242 MACK POINT.GPJ SWCE TEMPLATE.GDT 9/5/23

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.: MB-102



BORING LOG

BORING NO.: MB-103
SHEET: 1 of 2
PROJECT NO.: 21-1242
DATE START: 6/13/2023
DATE FINISH: 6/14/2023

CLIENT: Moffatt & Nichol
PROJECT: Mack Point Offshore Wind Terminal
LOCATION: Mack Point, Searsport, Maine

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** _____ **TOTAL DEPTH (FT):** 54.5 **LOGGED BY:** Matteo Socci
DRILLING CO.: New England Boring **DRILLER:** Sam Cooley **DRILLING METHOD:** Cased Boring
RIG TYPE: GEFCO STRATASTAR 5 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Safety **HAMMER WEIGHT (lbs):** 140 / 300 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:** NQ2
HAMMER CORRECTION FACTOR: _____ **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): Marine Boring

GENERAL NOTES: Borehole logged from mudline.

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)
 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	Remarks		
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD					Field / Lab Test Data	
			1D		0-2	24/24	WOR/24				Very soft, gray, wet, silty CLAY (BAY MUD)		
	5		2D		5-7	24/24	WOR/24	ID 14942A w = 77.1 % W _L = 38 W _p = 19	5.0		Very soft, gray, wet, silty CLAY, trace sand (BAY MUD)		
	10		3D		10-12	24/24	3-5-6-6	ID 14943A w = 26 % W _L = 37 W _p = 18 80.4% Fines	10.0		Stiff, gray, wet, silty CLAY, trace sand, trace gravel		
	15		4D		15-17	24/18	8-6-7-14		15.0		Medium dense, gray, wet, gravelly sandy SILT (GLACIAL TILL)		
	20		5D		20-22	24/2	9-12-11-24				Occasional boulders and cobbles below 20 feet		
	25		6D		25-27	24/0	17-17-18-20				Very dense, gray, wet, gravelly SILT and SAND (GLACIAL TILL)		
	30		7D		30-32	24/12	30-25-26-27						
	35		8D		35-37	24/10	44-38-16-24	ID 14944A			Very dense, gray, wet, sandy SILT, some gravel (GLACIAL TILL)		

BORING / WELL 10-12-2022 21-1242 MACK POINT.GPJ SWCE TEMPLATE.GDT 9/5/23

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.

(Continued Next Page)

BORING NO.: MB-103



BORING LOG

BORING NO.: MB-103
SHEET: 2 of 2
PROJECT NO.: 21-1242
DATE START: 6/13/2023
DATE FINISH: 6/14/2023

CLIENT: Moffatt & Nichol
PROJECT: Mack Point Offshore Wind Terminal
LOCATION: Mack Point, Searsport, Maine

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
			9D	⊗	40-40.4	5/5	50/5"		Very dense, gray, wet, gravelly SILT and SAND (GLACIAL TILL)		
45			1R	█	45-50.2	62/62	82	ID 14945A Qu=3,250psi	45.0 BEDROCK. Dark gray, SCHIST, hard; fresh to slightly weathered; joints generally low angle (0-35°) to vertical (85-90°), very close (<2") to moderately close (1'-3') and tight to open, (PENOBSCOT FORMATION)		
50			2R	█	50.2-51.5	16/16	0				
			3R	█	51.5-54.5	36/34	19	ID GTX Qu=4,560psi			

Bottom of Exploration at 54.5 feet

BORING / WELL: 10-12-2022 21-1242 MACK POINT.GPJ SWCE TEMPLATE.GDT 9/5/23

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.: MB-103



BORING LOG

BORING NO.: MB-104
SHEET: 1 of 1
PROJECT NO.: 21-1242
DATE START: 6/9/2023
DATE FINISH: 6/9/2023

CLIENT: Moffatt & Nichol
PROJECT: Mack Point Offshore Wind Terminal
LOCATION: Mack Point, Searsport, Maine

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** _____ **TOTAL DEPTH (FT):** 35.8 **LOGGED BY:** Matteo Socci
DRILLING CO.: New England Boring **DRILLER:** Sam Cooley **DRILLING METHOD:** Cased Boring
RIG TYPE: GEFCO STRATASTAR 5 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Safety **HAMMER WEIGHT (lbs):** 140 / 300 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:** NQ2
HAMMER CORRECTION FACTOR: _____ **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): Marine Boring

GENERAL NOTES: Borehole logged from mudline.

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)
 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	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
			1D	×	0-2	24/24	WOR/24		Very soft, gray, wet, sandy SILT, some clay, some roots, organic odor (BAY MUD)		
	5		2D	×	5-7	24/6	16-16-62-33		Very dense, gray, wet, silty gravelly SAND (GLACIAL TILL)		
	10		3D	×	10-10.9	11/11	17-50/5"		Very dense, gray to brown, wet, SILT and SAND, some gravel (GLACIAL TILL) Occasional cobbles and boulders below 10 feet		
	15		4D	×	15-17	24/12	22-46-36-49	ID 14947A	Very dense, gray to brown, wet, gravelly SILT and SAND (GLACIAL TILL)		
	20		5D	×	20-21.3	16/10	32-50-50/4"				
	25		6D	×	25-26.9	23/10	17-45-50-50/5"		Very dense, gray, wet, silty SAND and GRAVEL (GLACIAL TILL)		
	30		7D	×	30-30.3	4/0	50/4"				
	35		8D	×	35-35.8	10/6	50-50/4"		Very dense, gray, wet, silty gravelly SAND (GLACIAL TILL)		
Bottom of Exploration at 35.8 feet											

BORING / WELL 10-12-2022 21-1242 MACK POINT.GPJ SWCE TEMPLATE.GDT 9/5/23

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.: MB-104



BORING LOG

BORING NO.: MB-104A
SHEET: 1 of 2
PROJECT NO.: 21-1242
DATE START: 6/12/2023
DATE FINISH: 6/13/2023

CLIENT: Moffatt & Nichol
PROJECT: Mack Point Offshore Wind Terminal
LOCATION: Mack Point, Searsport, Maine

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** _____ **TOTAL DEPTH (FT):** 83.5 **LOGGED BY:** Matteo Succi
DRILLING CO.: New England Boring **DRILLER:** Sam Cooley **DRILLING METHOD:** Cased Boring
RIG TYPE: GEFCO STRATASTAR 5 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Safety **HAMMER WEIGHT (lbs):** 140 / 300 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:** NQ2
HAMMER CORRECTION FACTOR: _____ **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): Marine Boring

GENERAL NOTES: Borehole logged from mudline.

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	Remarks	
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD					Field / Lab Test Data
	5										See boring MB-104 for description of subsurface strata from 0 to 35 ft.	
	10											
	15											
	20											
	25											
	30											
	35		1D	⊗	35-36.4	17/12	40-50-50/5"		35.0	Very dense, gray, wet, silty gravelly SAND (GLACIAL TILL)		

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.

(Continued Next Page)

BORING NO.: MB-104A



BORING LOG

BORING NO.: MB-104A
SHEET: 2 of 2
PROJECT NO.: 21-1242
DATE START: 6/12/2023
DATE FINISH: 6/13/2023

CLIENT: Moffatt & Nichol
PROJECT: Mack Point Offshore Wind Terminal
LOCATION: Mack Point, Searsport, Maine

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
			2D	⊗	40-41.8	22/18	26-38-49-50/4"		Very dense, gray, wet, gravelly, SAND and SILT (GLACIAL TILL)		
	45		3D	⊗	45-45.8	10/6	49-50/4"				
	50		4D	⊗	50-51.9	23/12	26-44-50-50/5"				
	55		5D	⊗	55-55.9	11/4	22-50/5"				
	60		6D	⊗	60-60.4	5/1	50/5"				
	65		7D	⊗	65-65.3	4/3	50/4"				
	70		1R	█	70-73.5	42/12	0			65.0	Very dense, gray, wet, silty gravelly, SAND (WEATHERED BEDROCK)
	75		2R	█	73.5-78.5	60/59	20	ID GTX Qu=2,620psi	70.0	Bedrock. Dark gray, SCHIST, with some calcite veins, hard; fresh to slightly weathered; joints vary from low angle (0-35°) to moderately steep (35-55°), occasionally steep (55-85°), very close (<2") to moderately close (1'-3'), and tight to open, (PENOBSCOT FORMATION)	
	80		3R	█	78.5-83.5	60/60	73		ID 14949A Qu=4,050psi		

Bottom of Exploration at 83.5 feet

BORING / WELL 10-12-2022 21-1242 MACK POINT.GPJ SWCE TEMPLATE.GDT 9/5/23

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.: MB-104A



MB-102 – Runs 1 and 2
MB-101 – Runs 1, 2, 3 and 4



MB-103 – Runs 1, 2, and 3



MB-104A, Runs 1, 2, and 3

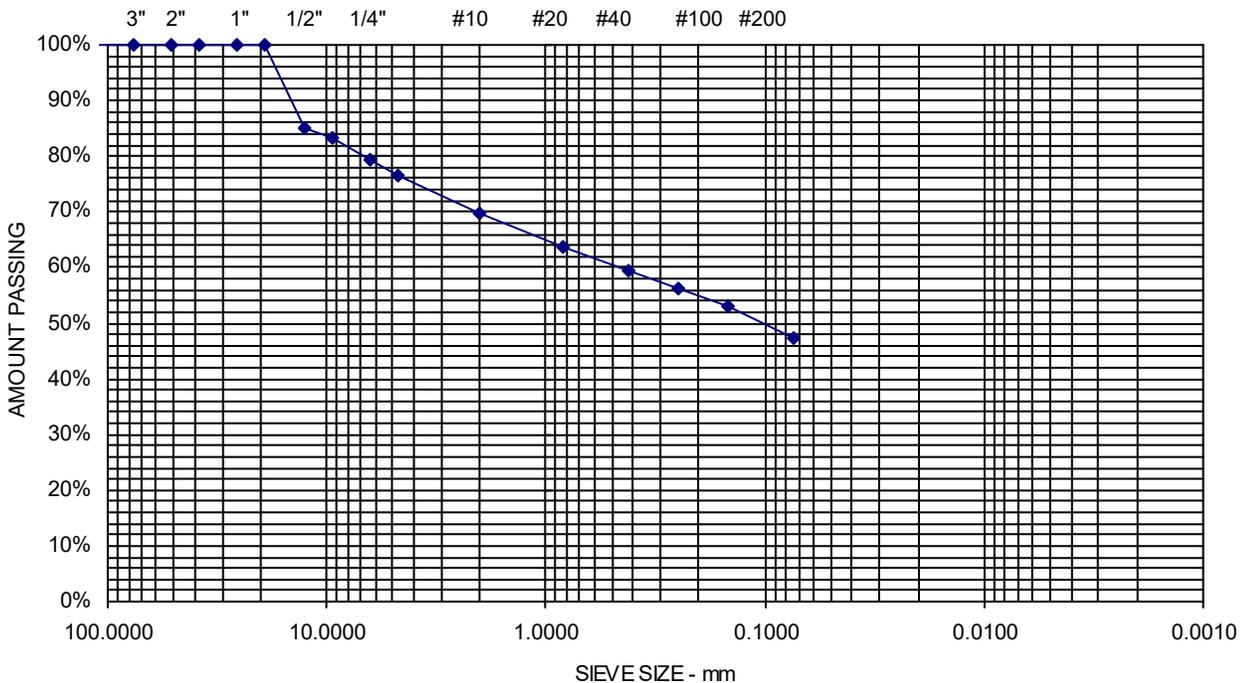
APPENDIX D

Laboratory Test Results

Project Name SEARSPORT ME - SEARS ISLAND OFFSHORE WIND TERMINAL -
EXPLORATIONS AND GEOTECHNICAL ENGINEERING SERVICES
Client MOFFATT & NICHOL
Exploration **LB-101**
Material Source **3D, 10FT**

Project Number 21-1242
Lab ID 14924A
Date Received 7/18/2023
Date Completed 7/20/2023
Tested By EMMA ROBERTS

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	100	
12.5 mm	1/2"	85	
9.5 mm	3/8"	83	
6.3 mm	1/4"	79	
4.75 mm	No. 4	77	23.5% Gravel
2.00 mm	No. 10	70	
850 μm	No. 20	64	
425 μm	No. 40	60	29.1% Sand
250 μm	No. 60	56	
150 μm	No. 100	53	
75 μm	No. 200	47.4	47.4% Fines

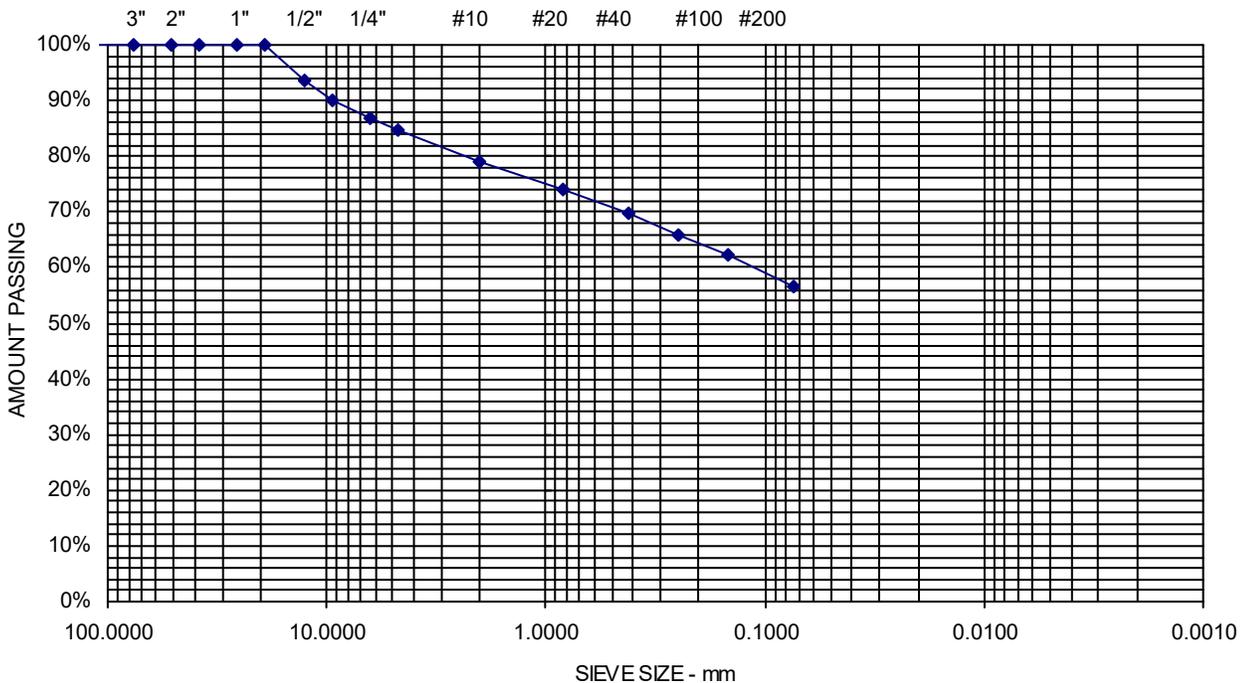


Comments:

Project Name SEARSPORT ME - SEARS ISLAND OFFSHORE WIND TERMINAL -
EXPLORATIONS AND GEOTECHNICAL ENGINEERING SERVICES
Client MOFFATT & NICHOL
Exploration **LB-101**
Material Source **6D, 25FT**

Project Number 21-1242
Lab ID 14925A
Date Received 7/18/2023
Date Completed 7/20/2023
Tested By EMMA ROBERTS

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	100	
12.5 mm	1/2"	94	
9.5 mm	3/8"	90	
6.3 mm	1/4"	87	
4.75 mm	No. 4	85	15.2% Gravel
2.00 mm	No. 10	79	
850 μm	No. 20	74	
425 μm	No. 40	70	28.1% Sand
250 μm	No. 60	66	
150 μm	No. 100	62	
75 μm	No. 200	56.6	56.6% Fines

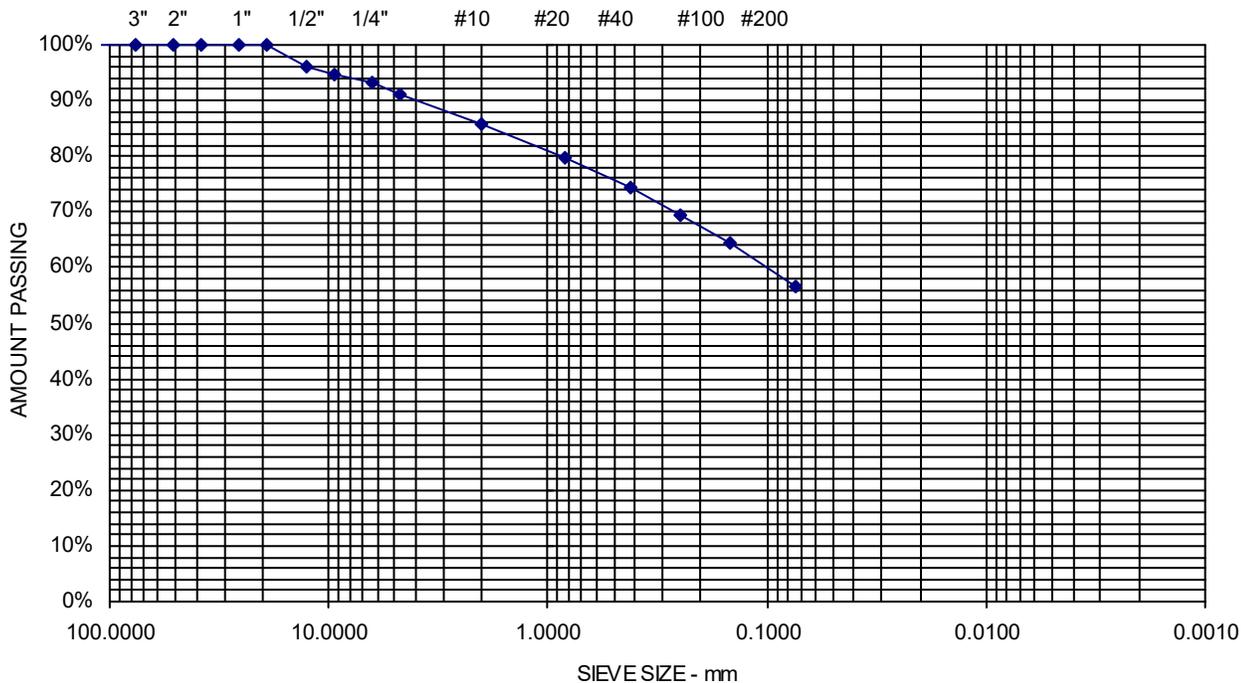


Comments:

Project Name SEARSPORT ME - SEARS ISLAND OFFSHORE WIND TERMINAL -
EXPLORATIONS AND GEOTECHNICAL ENGINEERING SERVICES
Client MOFFATT & NICHOL
Exploration **LB-103**
Material Source **2D, 10FT**

Project Number 21-1242
Lab ID 14928A
Date Received 7/18/2023
Date Completed 7/21/2023
Tested By EMMA ROBERTS

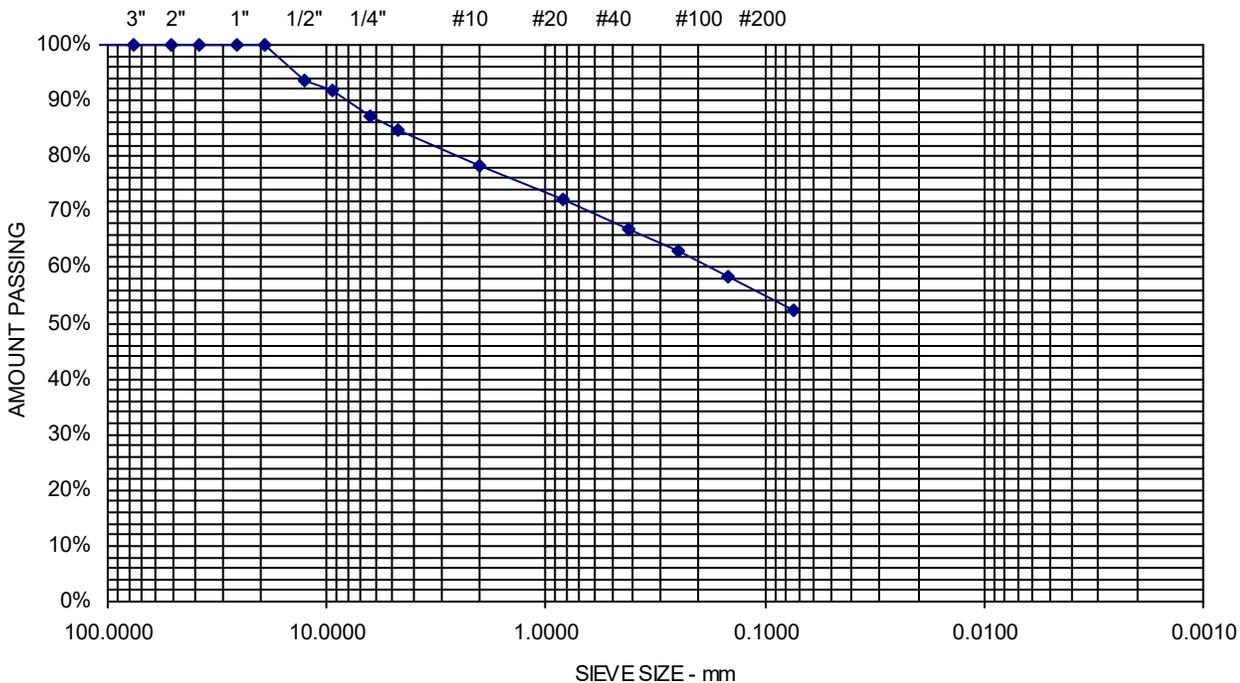
<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	100	
12.5 mm	1/2"	96	
9.5 mm	3/8"	95	
6.3 mm	1/4"	93	
4.75 mm	No. 4	91	8.9% Gravel
2.00 mm	No. 10	86	
850 μm	No. 20	80	
425 μm	No. 40	74	34.7% Sand
250 μm	No. 60	69	
150 μm	No. 100	64	
75 μm	No. 200	56.5	56.5% Fines



Project Name SEARSPORT ME - SEARS ISLAND OFFSHORE WIND TERMINAL -
EXPLORATIONS AND GEOTECHNICAL ENGINEERING SERVICES
Client MOFFATT & NICHOL
Exploration **LB-103**
Material Source **5D, 25FT**

Project Number 21-1242
Lab ID 14929A
Date Received 7/18/2023
Date Completed 7/20/2023
Tested By EMMA ROBERTS

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	100	
12.5 mm	1/2"	94	
9.5 mm	3/8"	92	
6.3 mm	1/4"	87	
4.75 mm	No. 4	85	15.2% Gravel
2.00 mm	No. 10	78	
850 μm	No. 20	72	
425 μm	No. 40	67	32.5% Sand
250 μm	No. 60	63	
150 μm	No. 100	59	
75 μm	No. 200	52.3	52.3% Fines

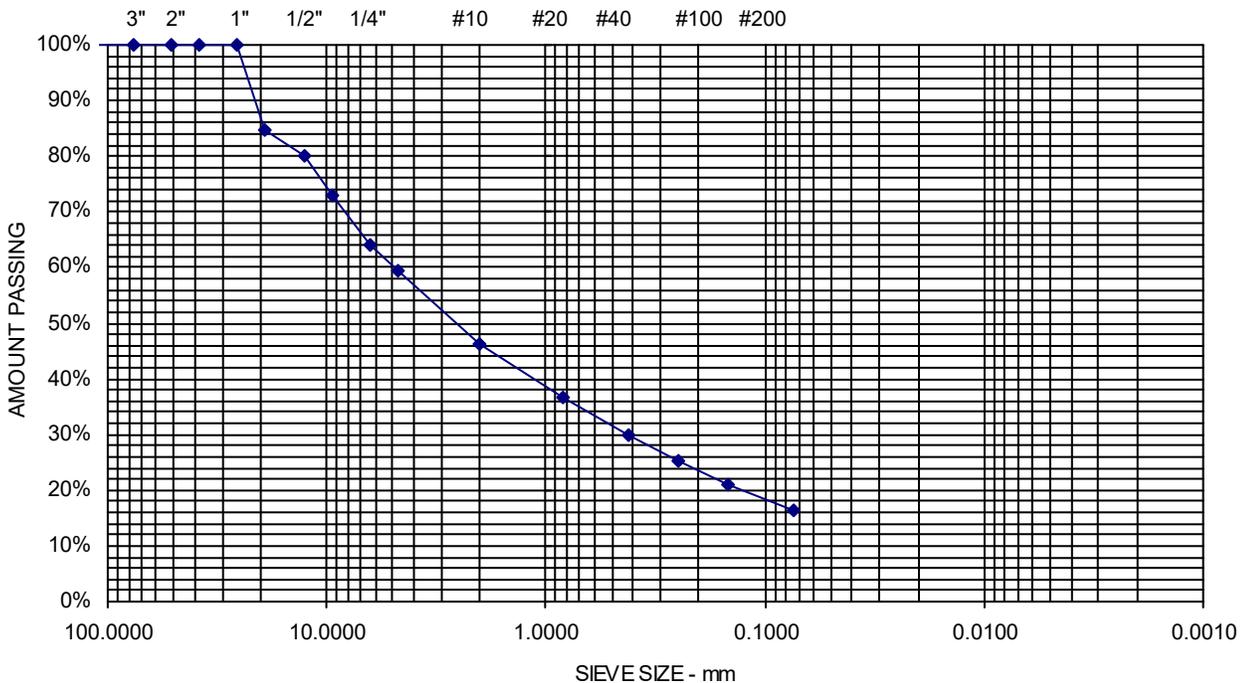


Comments:

Project Name SEARSPORT ME - SEARS ISLAND OFFSHORE WIND TERMINAL -
EXPLORATIONS AND GEOTECHNICAL ENGINEERING SERVICES
Client MOFFATT & NICHOL
Exploration **MB-101**
Material Source **5D, 20FT**

Project Number 21-1242
Lab ID 14932A
Date Received 7/18/2023
Date Completed 7/20/2023
Tested By EMMA ROBERTS

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	85	
12.5 mm	1/2"	80	
9.5 mm	3/8"	73	
6.3 mm	1/4"	64	
4.75 mm	No. 4	59	40.7% Gravel
2.00 mm	No. 10	46	
850 μm	No. 20	37	
425 μm	No. 40	30	42.9% Sand
250 μm	No. 60	25	
150 μm	No. 100	21	
75 μm	No. 200	16.4	16.4% Fines

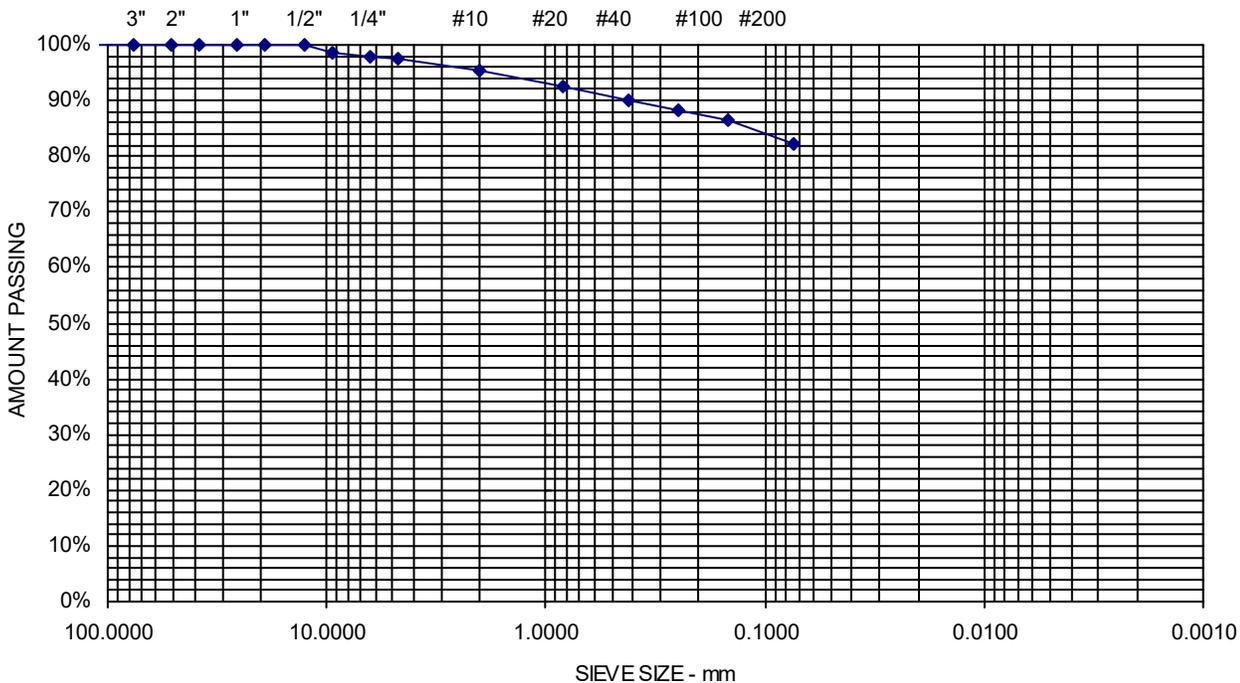


Comments:

Project Name SEARSPORT ME - SEARS ISLAND OFFSHORE WIND TERMINAL -
EXPLORATIONS AND GEOTECHNICAL ENGINEERING SERVICES
Client MOFFATT & NICHOL
Exploration **MB-101**
Material Source **7D, 35FT**

Project Number 21-1242
Lab ID 14933A
Date Received 7/18/2023
Date Completed 7/20/2023
Tested By EMMA ROBERTS

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	100	
12.5 mm	1/2"	100	
9.5 mm	3/8"	99	
6.3 mm	1/4"	98	
4.75 mm	No. 4	97	2.6% Gravel
2.00 mm	No. 10	95	
850 μm	No. 20	92	
425 μm	No. 40	90	15.3% Sand
250 μm	No. 60	88	
150 μm	No. 100	86	
75 μm	No. 200	82.1	82.1% Fines

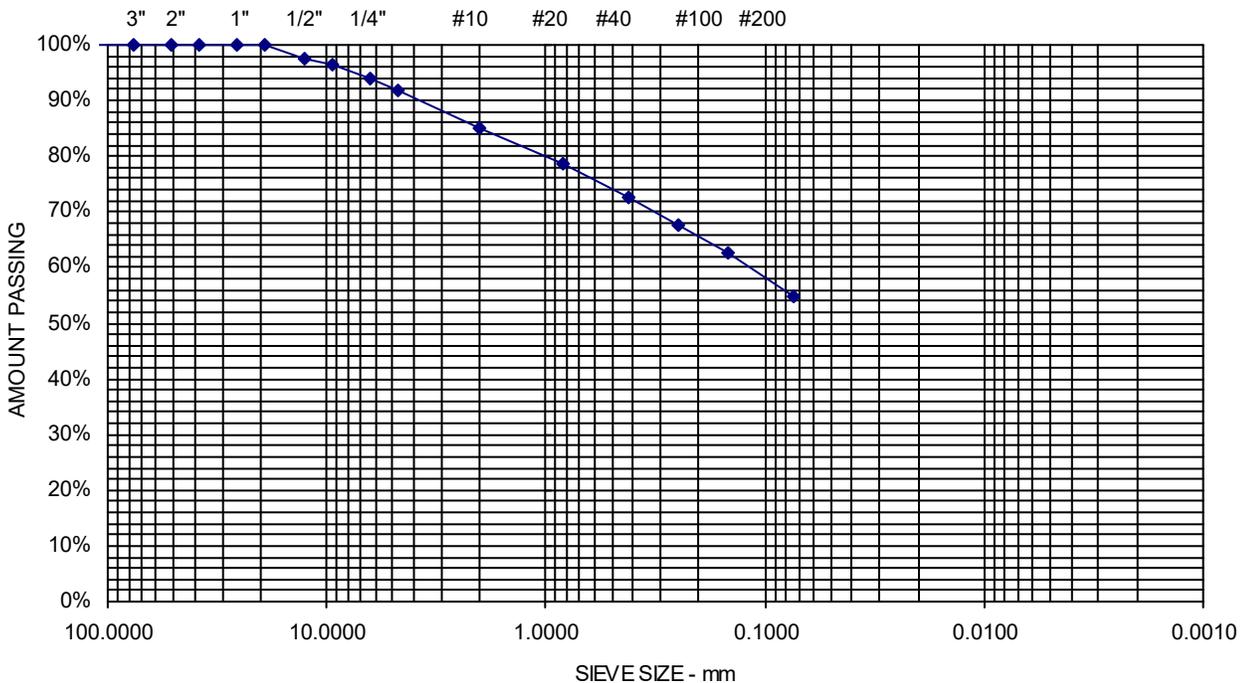


Comments:

Project Name SEARSPORT ME - SEARS ISLAND OFFSHORE WIND TERMINAL -
EXPLORATIONS AND GEOTECHNICAL ENGINEERING SERVICES
Client MOFFATT & NICHOL
Exploration **MB-102**
Material Source **7D, 30FT**

Project Number 21-1242
Lab ID 14939A
Date Received 7/18/2023
Date Completed 7/20/2023
Tested By EMMA ROBERTS

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	100	
12.5 mm	1/2"	98	
9.5 mm	3/8"	96	
6.3 mm	1/4"	94	
4.75 mm	No. 4	92	8.1% Gravel
2.00 mm	No. 10	85	
850 μm	No. 20	78	
425 μm	No. 40	73	37.1% Sand
250 μm	No. 60	68	
150 μm	No. 100	63	
75 μm	No. 200	54.9	54.9% Fines

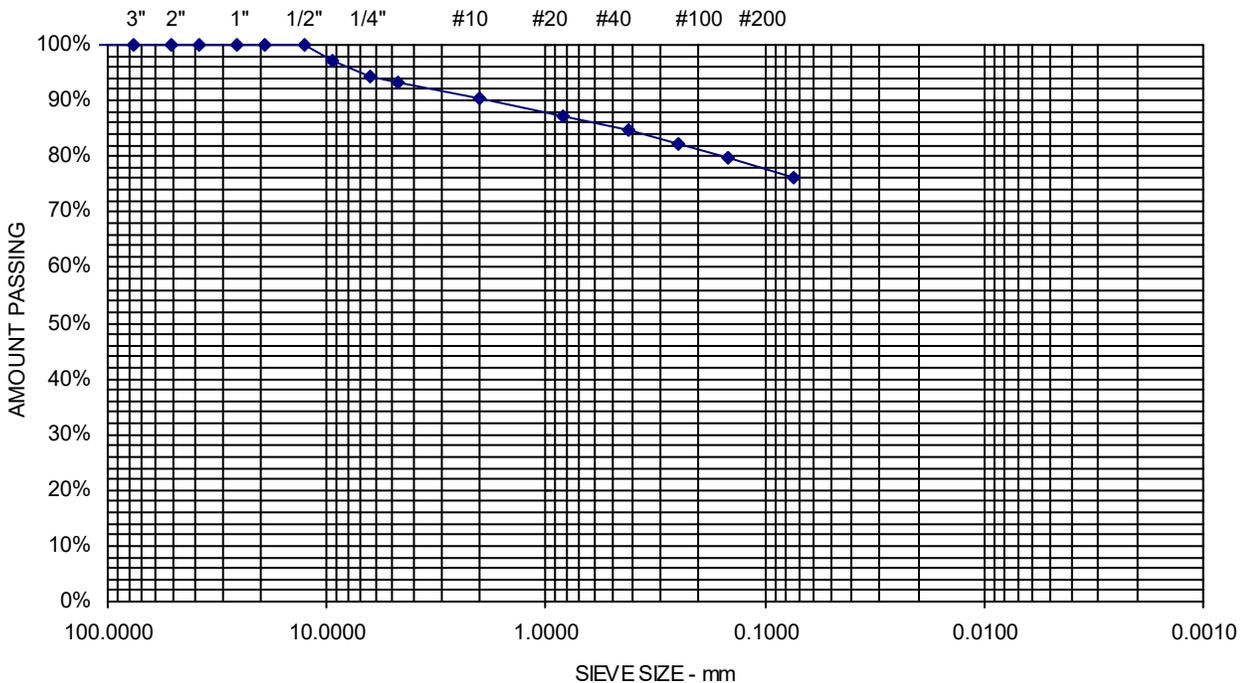


Comments:

Project Name SEARSPORT ME - SEARS ISLAND OFFSHORE WIND TERMINAL -
EXPLORATIONS AND GEOTECHNICAL ENGINEERING SERVICES
Client MOFFATT & NICHOL
Exploration **MB-103**
Material Source **8D, 35FT**

Project Number 21-1242
Lab ID 14944A
Date Received 7/18/2023
Date Completed 7/20/2023
Tested By EMMA ROBERTS

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
150 mm	6"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	100	
12.5 mm	1/2"	100	
9.5 mm	3/8"	97	
6.3 mm	1/4"	94	
4.75 mm	No. 4	93	6.8% Gravel
2.00 mm	No. 10	90	
850 μm	No. 20	87	
425 μm	No. 40	85	16.9% Sand
250 μm	No. 60	82	
150 μm	No. 100	80	
75 μm	No. 200	76.3	76.3% Fines

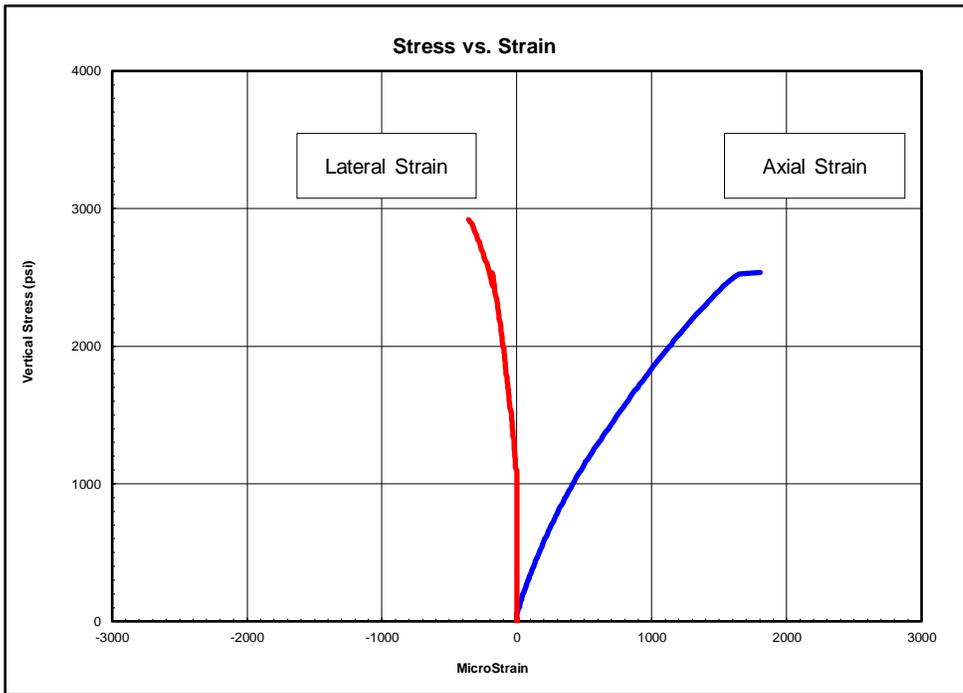


Comments:



Client:	S.W. Cole Engineering, Inc.
Project Name:	Mack Point Development
Project Location:	Searsport, ME
GTX #:	317561
Test Date:	8/7/2023
Tested By:	te
Checked By:	jsc
Boring ID:	MB-102
Sample ID:	R3
Depth, ft:	66.8
Sample Type:	rock core
Sample Description:	See photographs Intact material and discontinuity failure

Compressive Strength and Elastic Moduli of Rock by ASTM D7012 - Method D



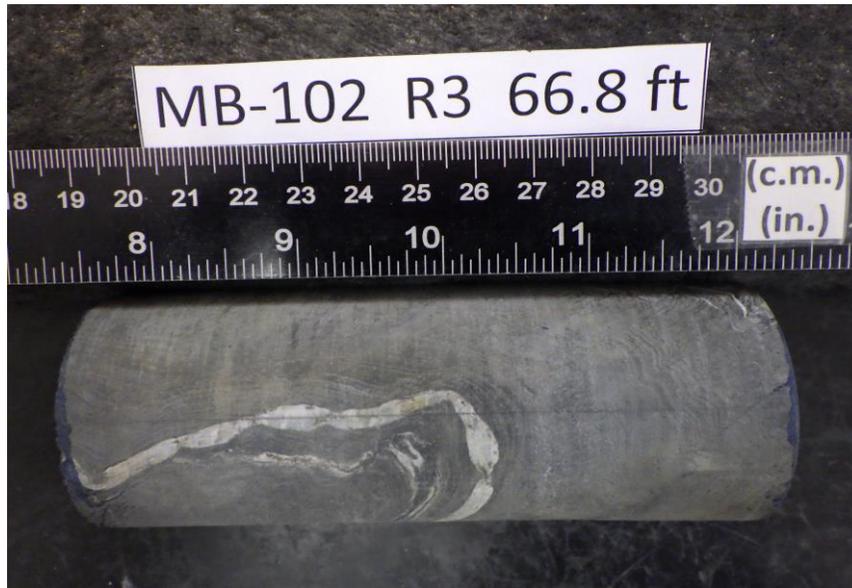
Peak Compressive Stress: 2,919 psi

Poisson's Ratio within the first stress range could not be determined.

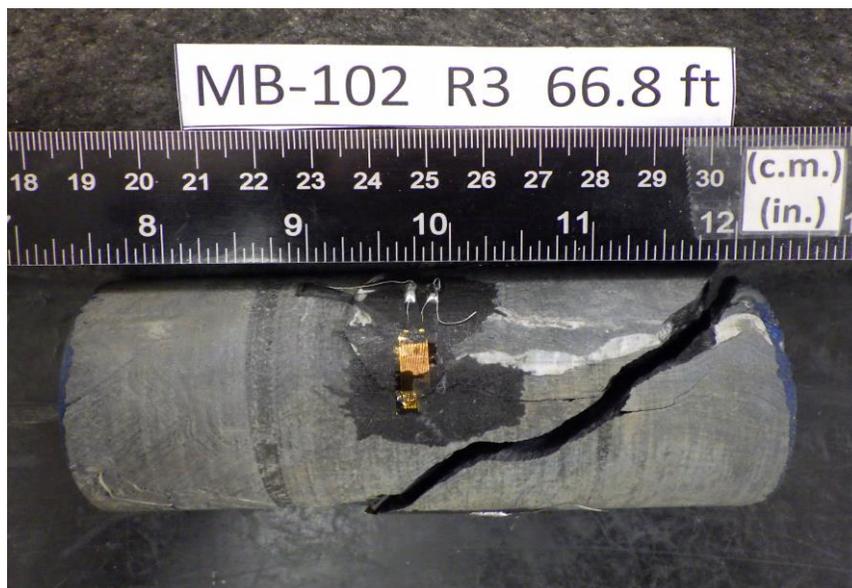
Stress Range, psi	Young's Modulus, psi	Poisson's Ratio
300-1100	2,050,000	---
1100-1800	1,410,000	0.15
1800-2600	230,000	0.04

Notes: Test specimen tested at the approximate as-received moisture content and at standard laboratory temperature. The axial load was applied continuously at a stress rate that produced failure in a test time between 2 and 15 minutes. Young's Modulus and Poisson's Ratio calculated using the tangent to the line in the stress range listed. Calculations assume samples are isotropic, which is not necessarily the case.

Client:	S.W. Cole Engineering, Inc.
Project Name:	Mack Point Development
Project Location:	Searsport, ME
GTX #:	317561
Test Date:	8/7/2023
Tested By:	te
Checked By:	smd
Boring ID:	MB-102
Sample ID:	R3
Depth, ft:	66.8



After cutting and grinding

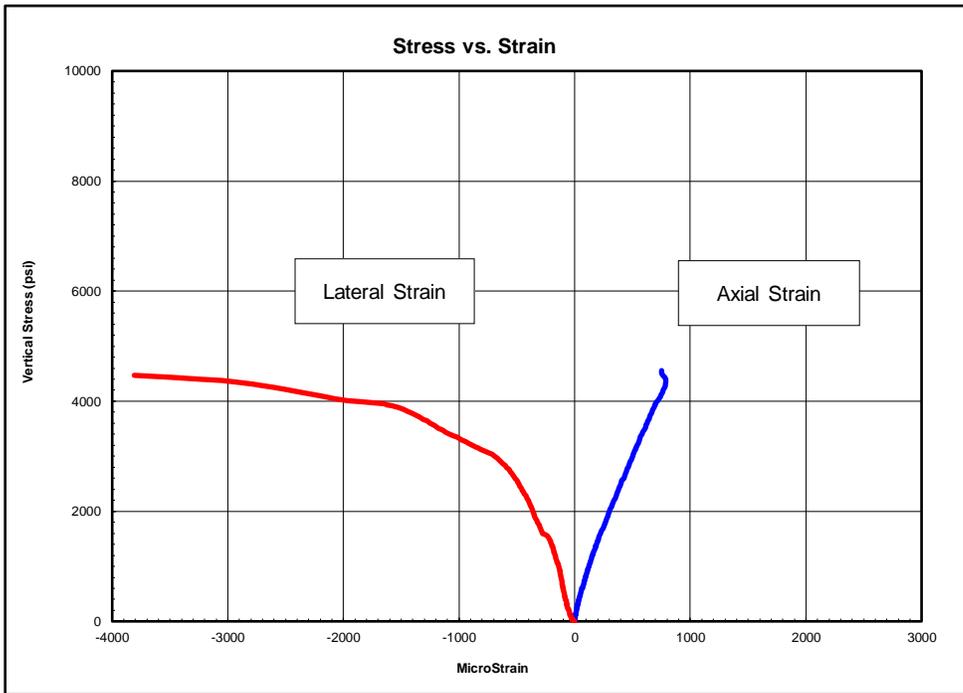


After break



Client:	S.W. Cole Engineering, Inc.
Project Name:	Mack Point Development
Project Location:	Searsport, ME
GTX #:	317561
Test Date:	8/7/2023
Tested By:	te
Checked By:	jsc
Boring ID:	MB-103
Sample ID:	R3
Depth, ft:	51.9
Sample Type:	rock core
Sample Description:	See photographs Intact material and discontinuity failure

Compressive Strength and Elastic Moduli of Rock by ASTM D7012 - Method D



Peak Compressive Stress: 4,556 psi

The strain values recorded for this test produce values of Poisson's Ratio that exceed maximum values found in rocks.

Stress Range, psi	Young's Modulus, psi	Poisson's Ratio
500-1700	6,220,000	---
1700-2900	5,070,000	---
2900-4100	4,670,000	---

Notes: Test specimen tested at the approximate as-received moisture content and at standard laboratory temperature.
The axial load was applied continuously at a stress rate that produced failure in a test time between 2 and 15 minutes.
Young's Modulus and Poisson's Ratio calculated using the tangent to the line in the stress range listed.
Calculations assume samples are isotropic, which is not necessarily the case.



Client:	S.W. Cole Engineering, Inc.	Test Date:	8/3/2023
Project Name:	Mack Point Development	Tested By:	te
Project Location:	Searsport, ME	Checked By:	smd
GTX #:	317561		
Boring ID:	MB-103		
Sample ID:	R3		
Depth:	51.9 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D4543

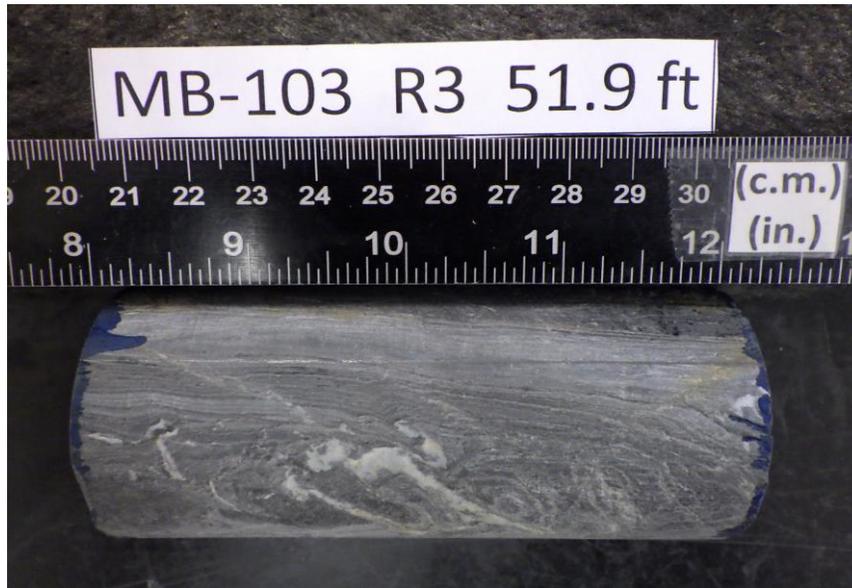
BULK DENSITY				DEVIATION FROM STRAIGHTNESS (Procedure S1)			
	1	2	Average	Maximum gap between side of core and reference surface plate: Is the maximum gap \leq 0.02 in.? YES			
Specimen Length, in:	4.22	4.22	4.22	<i>Maximum difference must be < 0.020 in.</i> Straightness Tolerance Met? YES			
Specimen Diameter, in:	1.98	1.98	1.98				
Specimen Mass, g:	584.05						
Bulk Density, lb/ft ³	171						
Length to Diameter Ratio:	2.1						
		Minimum Diameter Tolerance Met?	YES				
		Length to Diameter Ratio Tolerance Met?	YES				

END FLATNESS AND PARALLELISM (Procedure FP1)															
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Diameter 2, in (rotated 90°)	0.00010	0.00010	0.00010	0.00010	0.00010	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010	-0.00010	-0.00010	-0.00010	-0.00010
	Difference between max and min readings, in: 0° = 0.00030 90° = 0.00020														
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00000	0.00000	0.00000	0.00010	0.00010	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010
Diameter 2, in (rotated 90°)	-0.00020	-0.00020	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	Difference between max and min readings, in: 0° = 0.0001 90° = 0.0002 <i>Maximum difference must be < 0.0020 in.</i> Difference = \pm 0.00015 Flatness Tolerance Met? YES														

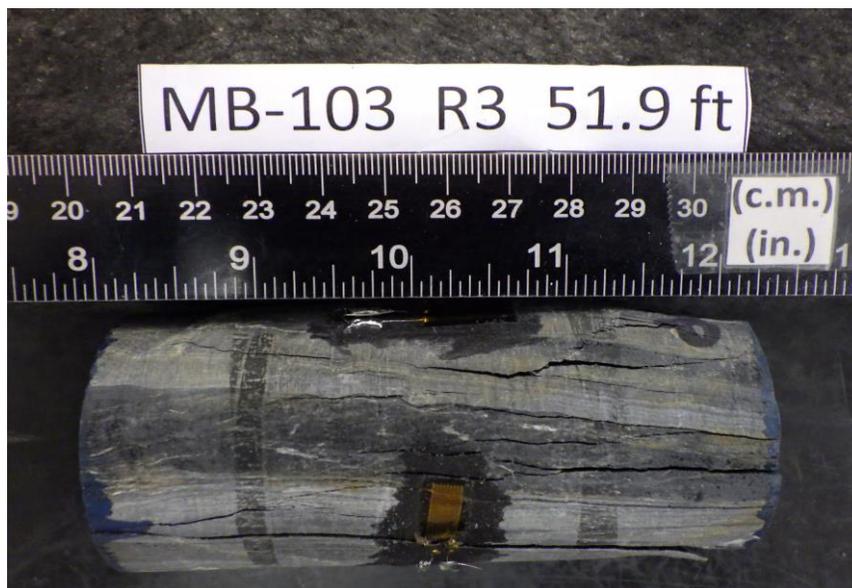
<div style="text-align: center;"> <p>End 1 Diameter 1 $y = 0.00011x - 0.00004$</p> </div> <div style="text-align: center;"> <p>End 2 Diameter 1 $y = 0.00006x + 0.00005$</p> </div>	<div style="text-align: center;"> <p>End 1 Diameter 2 $y = -0.00015x - 0.00001$</p> </div> <div style="text-align: center;"> <p>End 2 Diameter 2 $y = 0.00012x - 0.00005$</p> </div>	<p>DIAMETER 1</p> <p>End 1: Slope of Best Fit Line: 0.00011 Angle of Best Fit Line: 0.00622</p> <p>End 2: Slope of Best Fit Line: 0.00006 Angle of Best Fit Line: 0.00327</p> <p>Maximum Angular Difference: 0.00295</p> <p align="right">Parallelism Tolerance Met? YES Spherically Seated</p>	<p>DIAMETER 2</p> <p>End 1: Slope of Best Fit Line: 0.00015 Angle of Best Fit Line: 0.00851</p> <p>End 2: Slope of Best Fit Line: 0.00012 Angle of Best Fit Line: 0.00704</p> <p>Maximum Angular Difference: 0.00147</p> <p align="right">Parallelism Tolerance Met? YES Spherically Seated</p>
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PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)						
END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?	<i>Maximum angle of departure must be \leq 0.25°</i>
Diameter 1, in	0.00030	1.980	0.00015	0.009	YES	Perpendicularity Tolerance Met? YES
Diameter 2, in (rotated 90°)	0.00020	1.980	0.00010	0.006	YES	
END 2						
Diameter 1, in	0.00010	1.980	0.00005	0.003	YES	
Diameter 2, in (rotated 90°)	0.00020	1.980	0.00010	0.006	YES	

Client:	S.W. Cole Engineering, Inc.
Project Name:	Mack Point Development
Project Location:	Searsport, ME
GTX #:	317561
Test Date:	8/7/2023
Tested By:	te
Checked By:	smd
Boring ID:	MB-103
Sample ID:	R3
Depth, ft:	51.9



After cutting and grinding

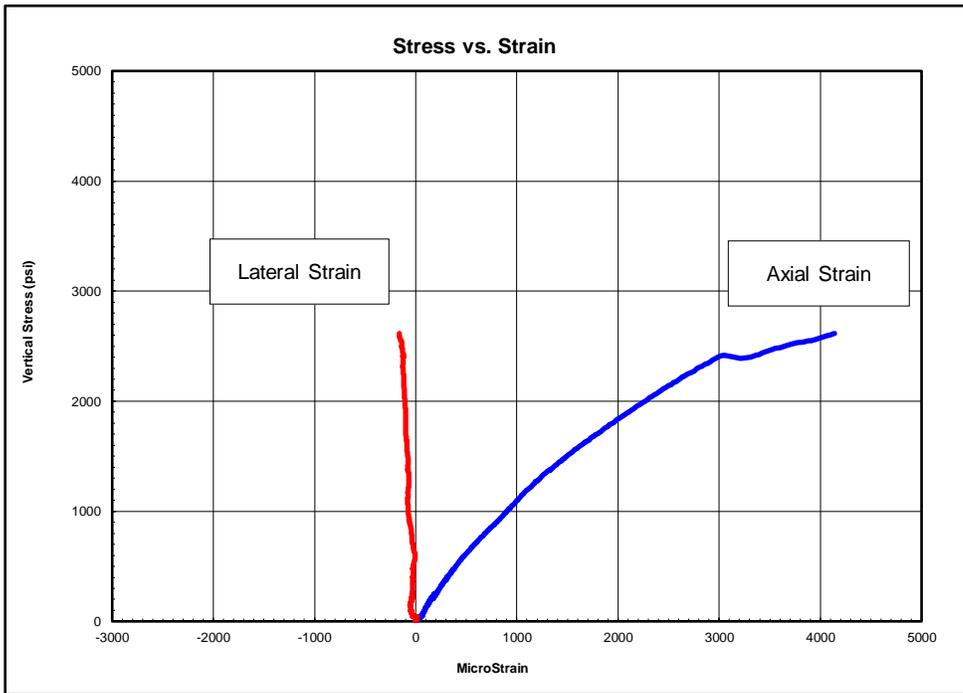


After break



Client:	S.W. Cole Engineering, Inc.
Project Name:	Mack Point Development
Project Location:	Searsport, ME
GTX #:	317561
Test Date:	8/7/2023
Tested By:	te
Checked By:	jsc
Boring ID:	MB-104A
Sample ID:	R2
Depth, ft:	75.8
Sample Type:	rock core
Sample Description:	See photographs Intact material and discontinuity failure

Compressive Strength and Elastic Moduli of Rock by ASTM D7012 - Method D



Peak Compressive Stress: 2,616 psi

Stress Range, psi	Young's Modulus, psi	Poisson's Ratio
300-1000	1,050,000	0.12
1000-1700	790,000	0.04
1700-2400	588,000	0.03

Notes: Test specimen tested at the approximate as-received moisture content and at standard laboratory temperature. The axial load was applied continuously at a stress rate that produced failure in a test time between 2 and 15 minutes. Young's Modulus and Poisson's Ratio calculated using the tangent to the line in the stress range listed. Calculations assume samples are isotropic, which is not necessarily the case.



Client:	S.W. Cole Engineering, Inc.	Test Date:	8/2/2023
Project Name:	Mack Point Development	Tested By:	te
Project Location:	Searsport, ME	Checked By:	smd
GTX #:	317561		
Boring ID:	MB-104A		
Sample ID:	R2		
Depth:	75.8 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D4543

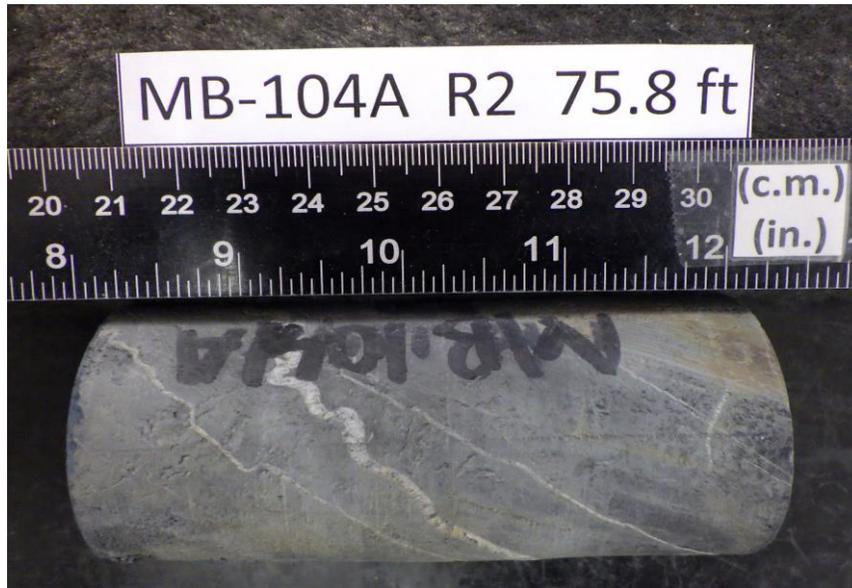
BULK DENSITY				DEVIATION FROM STRAIGHTNESS (Procedure S1)			
	1	2	Average	Maximum gap between side of core and reference surface plate: Is the maximum gap \leq 0.02 in.? NO			
Specimen Length, in:	4.19	4.18	4.19	Maximum difference must be $<$ 0.020 in. Straightness Tolerance Met? NO			
Specimen Diameter, in:	1.95	1.97	1.96				
Specimen Mass, g:	525.89						
Bulk Density, lb/ft ³ :	158						
Length to Diameter Ratio:	2.1						
		Minimum Diameter Tolerance Met?	YES				
		Length to Diameter Ratio Tolerance Met?	YES				

END FLATNESS AND PARALLELISM (Procedure FP1)															
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010
Diameter 2, in (rotated 90°)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020
	Difference between max and min readings, in: 0° = 0.00040 90° = 0.00020														
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00020	0.00020	0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00020
Diameter 2, in (rotated 90°)	0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020
	Difference between max and min readings, in: 0° = 0.0004 90° = 0.0003 Maximum difference must be $<$ 0.0020 in. Difference = \pm 0.00020 Flatness Tolerance Met? YES														

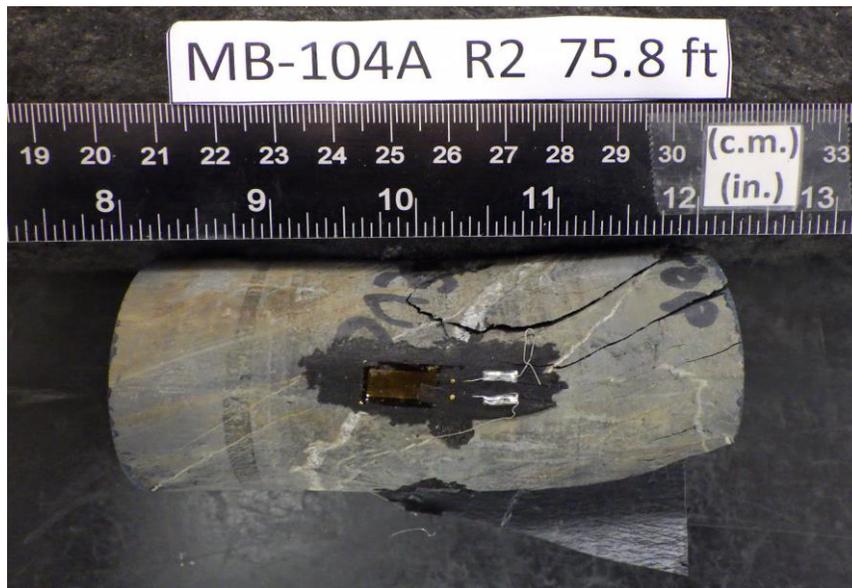
<div style="text-align: center;"> <p>End 1 Diameter 1 $y = 0.00013x - 0.00003$</p> </div> <div style="text-align: center;"> <p>End 2 Diameter 1 $y = -0.00013x + 0.00002$</p> </div>	<div style="text-align: center;"> <p>End 1 Diameter 2 $y = -0.00006x - 0.00002$</p> </div> <div style="text-align: center;"> <p>End 2 Diameter 2 $y = -0.00008x - 0.00001$</p> </div>	<p>DIAMETER 1</p> <p>End 1: Slope of Best Fit Line: 0.00013 Angle of Best Fit Line: 0.00737</p> <p>End 2: Slope of Best Fit Line: 0.00013 Angle of Best Fit Line: 0.00737</p> <p>Maximum Angular Difference: 0.00000</p> <p>Parallelism Tolerance Met? YES Spherically Seated</p>	<p>DIAMETER 2</p> <p>End 1: Slope of Best Fit Line: 0.00006 Angle of Best Fit Line: 0.00327</p> <p>End 2: Slope of Best Fit Line: 0.00008 Angle of Best Fit Line: 0.00442</p> <p>Maximum Angular Difference: 0.00115</p> <p>Parallelism Tolerance Met? YES Spherically Seated</p>
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PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)						<i>Maximum angle of departure must be \leq 0.25°</i>
END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?	
Diameter 1, in	0.00040	1.960	0.00020	0.012	YES	
Diameter 2, in (rotated 90°)	0.00020	1.960	0.00010	0.006	YES	Perpendicularity Tolerance Met? YES
END 2						
Diameter 1, in	0.00040	1.960	0.00020	0.012	YES	
Diameter 2, in (rotated 90°)	0.00030	1.960	0.00015	0.009	YES	

Client:	S.W. Cole Engineering, Inc.
Project Name:	Mack Point Development
Project Location:	Searsport, ME
GTX #:	317561
Test Date:	8/7/2023
Tested By:	te
Checked By:	smd
Boring ID:	MB-104A
Sample ID:	R2
Depth, ft:	75.8



After cutting and grinding



After break