Archipelago

Law • Science • Policy

Michael Morse
Principal
Senior Environmental Consultant
mmorse@archipelagoNA.com
(207) 558-0102

1 Dana Street, 4th Floor
Portland, Maine 04101

Carter Becker- Temporary Boat Launch Ramp

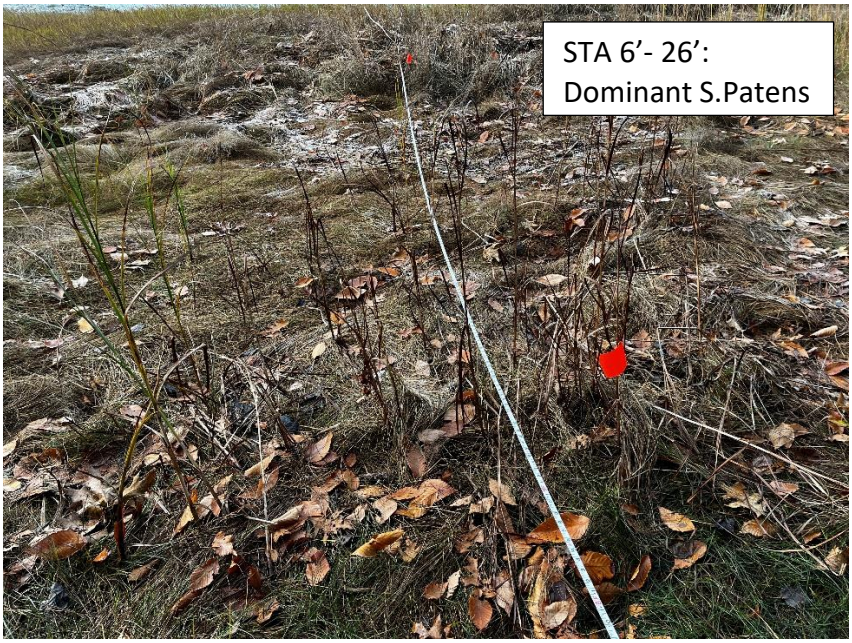
Pre- Site Inspection- Vegetation, Erosion, Soils
Coastal Wetland Assessment Report
Shore Drive, Freeport, Maine
November 8, 2023

An assessment of the coastal wetland was conducted on November 2, 2023, in response to a request for additional information by the Freeport Coastal Waters Commission. Specifically, they requested a quantification of existing salt marsh vegetation, identification of existing areas of erosion, if any, and a description of the existing soil conditions. I provide the following:

Vegetation Assessment:

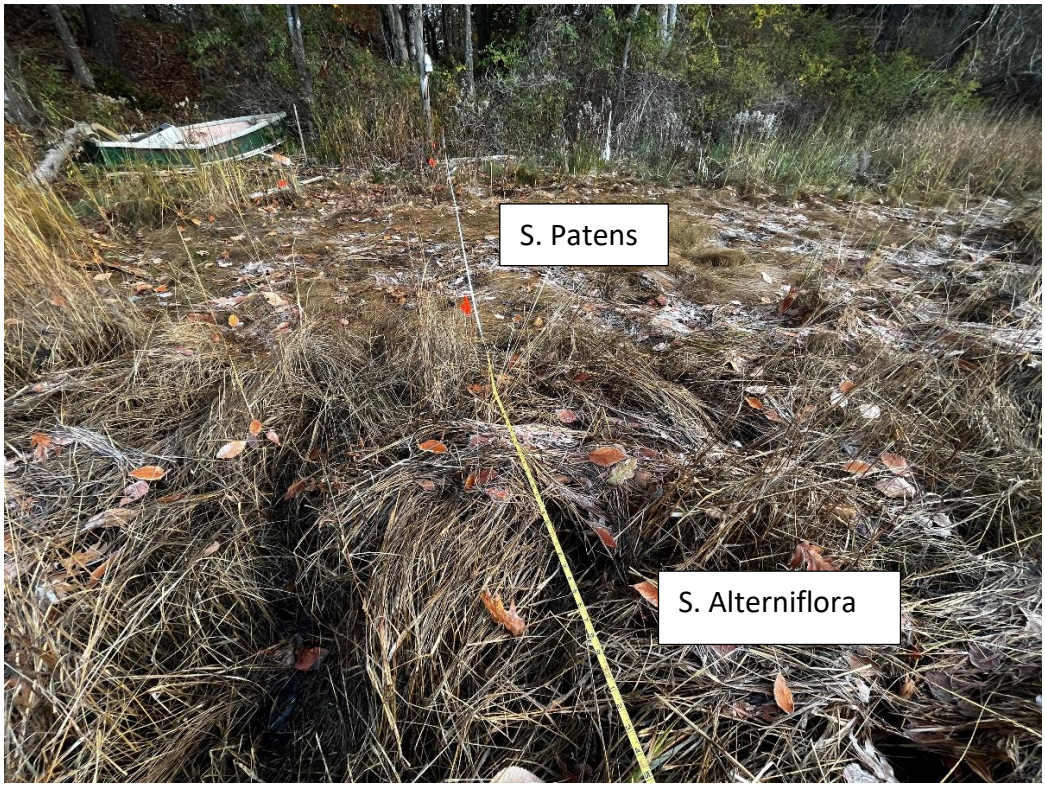
Station (HAT STA 0')	**Vegetation/ Description**	**Vegetation Approximate Density**	**Approx. CW Area Affected by Project**
0'- 3'	Primarily freshwater wetland, salt tolerant- seaside goldenrod, saltmarsh bulrush; mixed with herbaceous layer species	Moderate	60 SF
3'- 6'	Wrack line- dead seaweed and debris	Very sparse vegetation	60 SF
6'- 26'	Dominant *Spartina patens*. Occasional saltmarsh bulrush stems, STA 9'- 15'.	*S. Patens*- dense; saltmarsh bulrush- very sparse	400 SF
26'- 43'	*Spartina alterniflora*- dense monoculture (no other species noted)	Dense monoculture	340 SF
43'- 56'	*Spartina alterniflora* monoculture (no other species noted)	Moderate to sparse monoculture	260 SF
56'- 110' (terminus)	No vegetation- mudflat; sparse softshell clam presence	No vegetation	1080
		TOTAL VEGETATED AREA: ~1,120 SF	

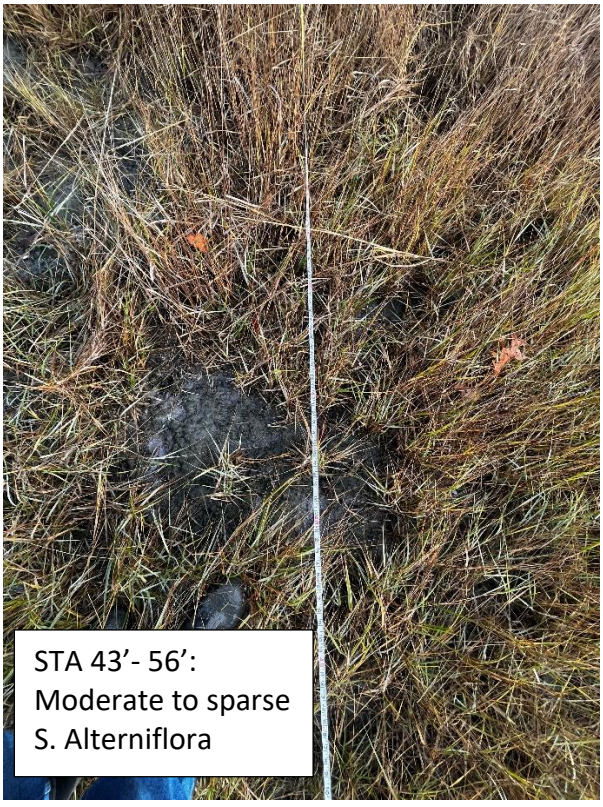
Photos: Vegetation Assessment

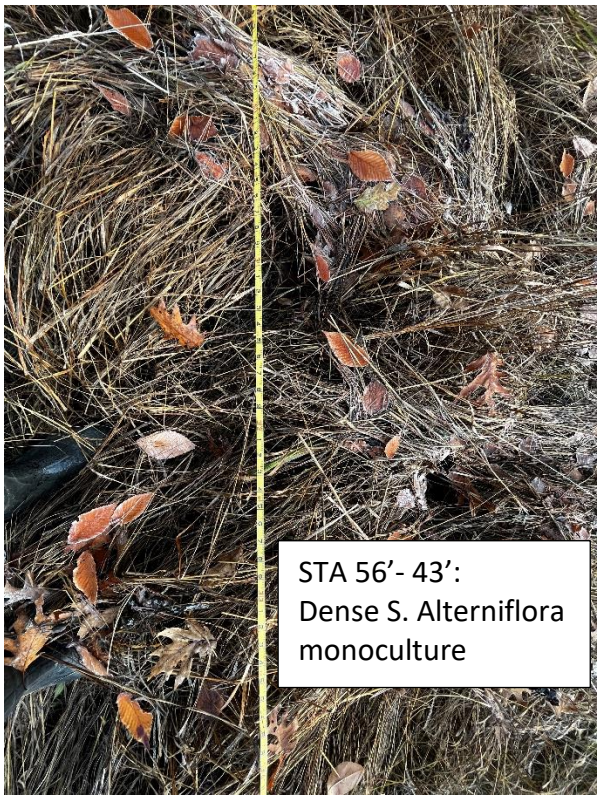

STA 6’- 26’:
Dominant S.Patens


STA 56’- 0’:
S.Alterniflora
In foreground


STA 25’: dense
S.Patens monoculture


S. Patens
S. Alterniflora

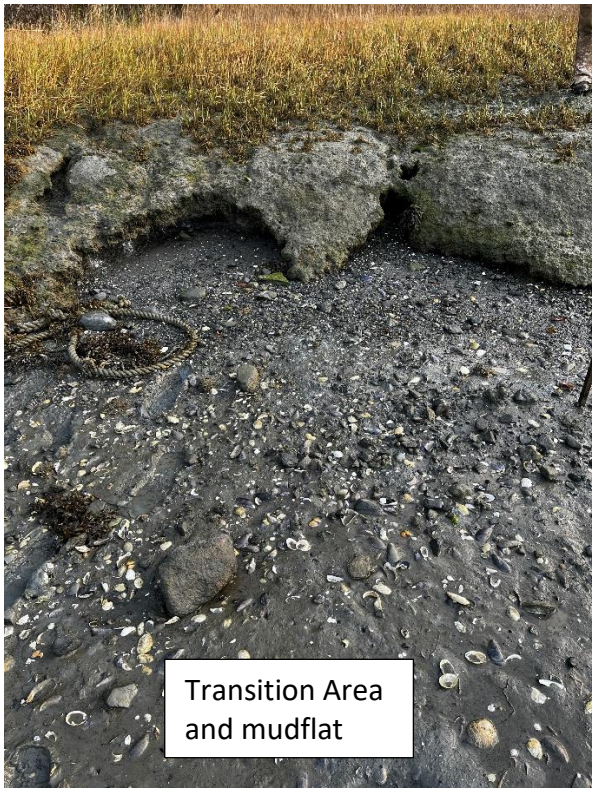

STA 43’- 56’:
Moderate to sparse
S. Alterniflora


STA 56’- 43’:
Dense S. Alterniflora
monoculture


Transition Area


Transition Area


Transition Area


Transition Area
and mudflat


STA 56’- 110’:
Mudflat

Erosion Area Assessment:

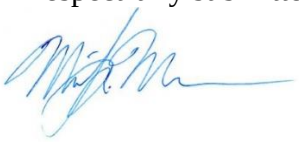
The area evaluated extends from the HAT line (STA 0') to the project terminus (~STA 110'). The furthest extent of the project area is characterized by mudflat, devoid of vegetation. Despite the absence of vegetation, the shallow-sloped mudflat does not contain any erosional features, except at the highest extent of the mudflat at the area of transition from mudflat to salt marsh (~STA 56'). The transition features an elevation change of approximately 1.5'+/- at an approximately 45-degree slope, and exhibits typical undercutting erosional scour for mudflat and saltmarsh transitional areas common along the coast of Maine. Some rill erosional features also exist within the transition area.

No significant erosional features exist within the saltmarsh portion of the project site (STA 6'-56'), or within the most landward portion of the project area (STA 0'- STA 6').

Soil Conditions:

Soils were evaluated by a Licensed Soil Scientist and that data was applied to the engineered design of the boat launch ramp. Soils data is provided as an attachment to this report.

Respectfully submitted,



Michael Morse

Albert Frick Associates, Inc.
Environmental Consultants
380B Main Street Gorham, ME 04038
T: (207) 839-5563 F: (207) 839-5564
www.albertfrick.com info@albertfrick.com

Brady Frick, LSE, President
Albert Frick, CSS, LSE
Christopher Coppi, CWS, LSE
Bryan Jordan, LSE
Matthew Logan, LSE
Jamie Latorre, Office Manager

June 20, 2018

Ross Cudlitz
10 North Road
Yarmouth, ME 04096
ztilduc@maine.rr.com

Dear Ross:

I did the 4 soil probes at the designated locations to a depth of 4' or to refusal as requested on June 4, 2018 at low tide for ease of access. Attached are the following:

1. Soil Map of the Project Area with the Soil Probe Observation Points located.
2. Soil Series Description of the Soils above high tide elevation
3. Soil Profile Logs of Soil Probes
4. Photographs
5.

Please note that the 3 probes taken in the intertidal zone exhibited Plasticity and Fluidity as noted in the profiles.

Please contact me if you have any questions or matters for additional discussion.

Respectfully;

Albert Frick

Certified Soil Scientist

Albert Frick

Enc.

WEST SHORE DRIVE
HELD FOR LINE
REF. C1080 22/18
S73°00'00"E
40.00'
50.00'
S73°00'00"E
50.00'
100.00'
RAIL FENCE
TBM#1
PK NAIL SET IN PAVEMENT
EL=26.24
S73°00'00"E
100.00' PLAN
(100.23 MEAS.)
HELD FOR LINE
12" CMP Ex.
NEW PIPE INSTALLED BY TOWN SEPT. 2016
LOAM, SEED AND LINE WITH CURLEX-II EROSION BLANKET
LOAM, SEED AND LINE WITH CURLEX-II EROSION BLANKET
RELOCATED DRAINAGE DITCH FROM EXIST. CULVERT
REVEGETATE CORNERS W/ NATIVE PINES
SEPTIC FIELD LOCATION
116'±
TM 5 LOT 96
N/F
NELSON LARKINS
TM 5 LOT 97
N/F
DARLENE ST HILARE
2 STORY WOOD FRAME
TM 5 LOT 96A
N/F
CARTER BECKER
LAMOINE B
SEE SECTION C-C FOR CONTOURS 20 TO 24
PALUSTRINE SHRUB SCRUB WETLAND (PSS1)
SCANTIC A
3" MINUS GRAVEL,12" THK. NO SILTS/CLAYS
GRAVEL DRIVEWAY
GRADE
SETBACK LINE
116.16'
S47°27'30"W
LOT B
28,600 S.F ±
LOT A
12,600 S.F. ±
S21°57'25"W
180' ±
23.68'
S22°04'15"W
75'
S23°13'28"E
70.18'
SEE SECTION B-B FOR CONTOURS 10 TO 20
EXIST. WOODED AREA
NOTE 5 TOP OF BANK "UNSTABLE BLUFF"
NEW GRASS LINED DITCH
210' ±
S35°30'00"W
BOULDERS USED FOR TERRACING ROCK SIZE 2' TO 4', OBLONG SHAPE GEOTEXTILE MIRAFI-140N BEHIND ROCKS
TM 5 LOT 94
N/F
JUDY L. WOOD
LAMOINE C
TP 4
EXIST. ALDERS, BRUSH SMALL TREES ON SLOPE
EXIST. ALDERS, BRUSH SMALL TREES ON SLOPE
TOP OF BANK "UNSTABLE BLUFF"
HAT LINE EL=6.6
IN ORDER TO VACATE THE "UNSTABLE BLUFF" DESIGNATION, WHERE TOE IS UNDERCUT (NO VEGETATION) STABILIZE EXIST. TOE OF EMBANKMENT WITH D50 = 9" - 12" ANGULAR STONE MAX. STONE 18"-18"-24" THK. LAYER UNDER LAYMENT MIRAFI 600X
TIDAL FLAT
SALT MARSH (E2EM1P)
TOE OF BANK ELV. 8.0
MEAN HIGHWATER AS PER PLAN REFERENCE 4.
MEAN HIGHWATER AS PER PLAN REFERENCE 3.
EXIST. SPOT ELEVATIONS
TP 3
TP 2
TP 1
HIGHEST ANNUAL TIDE LINE ELEVATION 7.2' NGVD 1929 BASED ON RM 38 (SEE NOTE 5)
SEE DETAIL AT LEFT SEE SECTION A-A AT RIGHT FOR CONTOURS 1 TO 10
OBSERVED EDGE OF MUD FLAT TRANSITION TO VEGETATION
TIDAL GRASSES VEGETATION
S22°26'00"W
SEE NOTE 6
S45°09'28"W
TIDAL COASTAL WETLAND
FLOATING SILT BOOM / FENCE RE'QD DURING ACTIVITY
MUD FLAT (E2US3)
TIDAL FLATS
ABUTTER EXISTING STRUCTURE

SLOPE DESIGNATION

A	0 – 3%
B	3 – 8%
C	8 – 20%
D	20%+

NOTE: SEE ACCOMPANYING SOIL NARRATIVE REPORT, DATED JUNE, 2018

THE ACCOMPANYING SOILS SURVEY WAS DONE IN ACCORDANCE WITH THE STANDARDS ADOPTED BY THE MAINE ASSOCIATION OF PROFESSIONAL SOIL SCIENTISTS, FEBRUARY 1995, AS AMENDED.

SOILS MAP LEGEND:

- SOIL TEST PIT (LOCATED BY SUBMETER GPS)
- SOIL BOUNDARY LINE
- WETLAND AREA

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 inch = 20 ft.

PROGRESS PRINT

STATE OF MAINE ALBERT FRICK 163 CERTIFIED SITE EVALUATOR

STATE OF MAINE ALBERT FRICK 66 CERTIFIED SOIL SCIENTIST

DATE:	REVISIONS:
6/5/18	TEST PITS ADDED
6/20/18	SOIL MAP INFORMATION ADDED

SOILS MAP & SITE PLAN

PREPARED FOR
CARTER BECKER
0 SHORE DRIVE
FREEPORT, MAINE

Albert Frick Associates, Inc.
Environmental Consultants
Gorham, Maine

Drawn By: B.J. | Checked By: C.C.
Date: 11/7/16 | Scale: 1" = 20'

NOTE: BASE MAP PER SURVEY PLAN BY OWEN HASKELL. INC. DATED MAY 1, 2006.

Carter Becker, Shore Road, Freeport June 4 at Low Tide PHOTOGRAPHS

C

Photo 1: View of location of TB 1 at edge of vegetation on Tidal flat in inter tidal zone

Photo 2: View from TB 1 looking to shore. The 3 pink flags are on the designated locations

Photo 3: TB 1 with soil profile laid out.

Photo 4: Location of TB 2 in intertidal zone

Photo 5: Location of TB 4 in the Drainage Ditch area above the high tide elevation.

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
FREEPORT	0 WEST SHORE DR (a.k.a. SHORE RD.	CARTER

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TB1 Test Pit [X] Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	SILTY CLAY LOAM WITH ROOTS	(FRIABLE)	DK. GRAY	FREE WATER
10–20	SILTY CLAY	PLASTIC	GRAY	(TIDAL ZONE)
20–50	LIMIT OF PROBE			

FOR WASTEWATER DISPOSAL

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	"	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING

Soil Series Name:	Drainage Class:	Hydrologic Group:
TIDAL ZONE	VPD	

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TB2 Test Pit [X] Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	SILTY CLAY LOAM WITH ROOTS	FRIABLE	OLIVE GRAY	
10–20	SILTY CLAY	PLASTIC	GRAY	
20–50	LIMIT OF PROBE			

FOR WASTEWATER DISPOSAL

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	"	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING

Soil Series Name:	Drainage Class:	Hydrologic Group:
TIDAL ZONE	VPD	

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TB3 Test Pit [X] Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	SILTY CLAY LOAM WITH ROOTS	FRIABLE	OLIVE GRAY	
10–20	SILTY CLAY	PLASTIC	GRAY	
20–50	LIMIT OF PROBE			

FOR WASTEWATER DISPOSAL

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	"	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING

Soil Series Name:	Drainage Class:	Hydrologic Group:
TIDAL ZONE	VPD	

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TB4 Test Pit [X] Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	SILT LOAM	FRIABLE	OLIVE BROWN	COMMON, DIST.
10–20	SILTY CLAY LOAM	SOMEWHAT FIRM	GRAY	
20–30	SILTY CLAY	VERY FIRM		
30–50	PROBE REFUSAL			

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	"	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
LAMOINE	SWP	

Albert Frick
Site Evaluator / Soil Scientist Signature

163/66
SE/CSS #

6/4/2018
Date

ALBERT FRICK ASSOCIATES – 380-B MAIN STREET GORHAM, MAINE 04038 – (207) 839-5563

LAMOINE
(Aeric Haplaquepts)

SETTING

Parent Material: Lacustrine or marine sediments.

Landform: Lake or marine, coastal plains or terraces.

Position in Landscape: Intermediate positions in landform.

Slope Gradient Ranges: (B) 3-8% (C) 8-20% (D) 20%+

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Somewhat poorly drained, with a perched water table 1.0 to 1.5 feet below the soil surface from November through May, and during periods of excessive precipitation.

Typical Profile Description:

Surface layer:	Dark brown silt loam, 0-7"
Subsurface layer:	Light olive brown or yellowish brown silt loam, 7-12"
Subsoil layer:	Light olive brown and olive silty clay loam, 12-21"
Substratum:	Olive silty clay, 21-65"

Hydrologic Group: Group D

Surface Run Off: Medium

Permeability: Moderate or moderately slow in surface layer, moderately slow or slow in subsoil, and slow or very slow in the dense substratum.

Depth to Bedrock: Deep, greater than 40".

Hazard to Flooding: None

INCLUSIONS
(Within Mapping Unit)

Similar: Buxton, Elmwood (S.W.P.), Lyman

Dissimilar: Scantic, Swanton

SCANTIC
(Typic Haplaquepts)

SETTING

Parent Material: Marine or lacustrine sediments.

Landform: Level or gently sloping marine or lake plains.

Position in Landscape: Lower to intermediate positions.

Slope Gradient Ranges: (A) 0-3% (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Poorly drained, with a perched water table 0.5 to 1.0 feet beneath the soil surface.

Typical Profile Description:

Surface layer:	Dark grayish brown silt loam, 0-9"
Subsurface layer:	Olive gray silt loam, 9-11"
Subsoil layer:	Olive gray, silty clay loam, 11-16"
Substratum:	Olive gray clay, 16-65"

Hydrologic Group: Group D

Surface Run Off: Slow

Permeability: Moderate or moderately slow in upper profile, slow to very slow in dense substratum.

Depth to Bedrock: Very deep, greater than 60".

Hazard to Flooding: May flood occasionally on lowest fringes during spring and periods of excessive precipitation.

INCLUSIONS
(Within Mapping Unit)

Similar: Lamoine, Enosburg (Swanton)

Dissimilar: Naskeag, Biddeford, Whately