

SOIL REPORT

May 14, 2018

Reviewed & corrected to match HISS on 07-05-22

Mulhern

93 Bagdad Rd., Durham NH

Location: In Durham NH - 93 Bagdad Rd; Map 10 Lot 8-6: +/-14 acres
In Madbury NH – 121 Route 108; Map 9 Lot 32: +/-2 acres

The property is nearly bounded on the north by the Durham/Madbury town line and a small unnamed stream, on the east by backyards of properties on Route 108, on the south by a 500-foot long right-of-way to Bagdad Road, and on the east by backyards of properties on Ambler Way.

Landscape: A few knolls on the eastern half of the lot slope to the north and west to a wetland parallel to the westerly property line. A stream cuts across the NW corner in Madbury

Wetlands: A large wetland parallels the westerly property line and varies in width from about 25' in the NW corner just south of the stream to nearly 150' at its widest point. The wetland is classified as Palustrine Forested (PFO).

Wetlands were identified in accordance with the 1987 *US Army Corps of Engineers Wetland Delineation Manual* and the 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0*. Hydric soils were identified by *Field Indicators for Identifying Hydric Soils in New England*, version 4, May 2017. A routine determination, as described in the manual, was followed. The wetland boundary was flagged in pink and numbered for future location by Trittech Engineering, Dover NH

Soils: Soils consist of moderately well drained glacial till on a few knolls at the highest elevations but dominated by moderately well drained silty marine sediments over most of the remainder of the property. Poorly drained and very poorly drained silty to clayey marine sediments occupy the wetlands with a narrow band of somewhat poorly drained soil around the perimeter. Several bedrock outcrops were observed and located, but they drop off quickly leaving few areas of soils with bedrock at depths less than 40"

Purpose: The high intensity soil map was prepared for a proposed residential subdivision with city water and on-site subsurface wastewater disposal.

Methodology: The soil map was prepared in accordance with the *Standards for a High Intensity Soil Map, New Hampshire*, December 2017 by the Society of Soil Scientists of Northern New England and standards established by the National Cooperative Soil Survey. The soil survey was prepared by Michael Mariano, NH Certified Soil Scientist #076.

A plan provided by Trittech Engineering, Dover NH at 1" = 100' with 2' contours was used as a base map. Existing monumentation, survey transects, and topographic features were used as control. Pits were dug by an excavator to classify soils at the series level. Pits were located by Trittech Engineering.

Soil boundaries were observed throughout their length and their placement corresponds to changes in soil properties or landform. Boundary line placement is accurate within 20 feet. The identification of soils is based on the connotative legend used for high intensity soil maps in NH (see attachment).

Map unit purity:

- Map units contain 75 percent or more of pedons that fit within the range of the taxon that provides the name for the map unit, or are in similar taxa.
- No one dissimilar soil is greater than the named taxa
- Individual dissimilar inclusions are less than 2,000 square feet in area. Dissimilar inclusions may total no more than 25% per map unit delineation in the aggregate, if not continuous.

Drainage Classes: (slope designation and high intensity classifier not included. Soil series name added for those familiar with that nomenclature)

Very Poorly Drained: Water is removed from the soil so slowly that free water remains at or near the ground surface during much of the growing season. The occurrence of internal free water is very shallow and persistent or permanent. Unless the soil is artificially drained, most mesophytic crops cannot be grown. The soils are commonly level or in depressions. Some may be seasonally ponded.

653 North and east of the high knoll at test pit 5. (Maybid)

Poorly Drained: Poorly drained soils occupy the areas delineated as wetlands. In these soils, water is removed so slowly that the soil is wet at shallow depths periodically during the growing season or remains wet for long periods. The occurrence of free water is shallow or very shallow and common or persistent.

553 These soils are found in the wetlands and in drainageways where slopes preclude classification as very poorly drained. (Scitico)

Somewhat Poorly Drained: Water is removed slowly enough to keep the soil wet for significant periods of time, but not the entire year. A seasonal high water table ranges from 7-15 inches in depth from October to May, but may recede to over 30 inches in depth during the summer. These soils may be classified as hydric soils in depressions. Subsurface wastewater disposal is not permitted in somewhat poorly drained soil in Durham.

453 These soils occupy narrow bands at the toe slopes just above poorly drained soils. (Boxford somewhat poorly drained)

Moderately Well Drained: Water is removed from the soil somewhat slowly. There is a seasonal high water table at 15-40 inches from November through May. The 353 soils contain a hardpan in the subsoil. There are few limitations that can't be overcome. In Durham, subsurface wastewater disposal is permitted only in areas where the depth to the hardpan or to the water table is greater than 24".

353 These are the dominant soils on the landscape and occupy most of the land between the poorly drained wetlands and the glacial till on the highest knolls. Mapping units include small areas with similar soils that are somewhat poorly drained. (Boxford)

321 These soils occupy the few knolls on the property. Subsurface wastewater disposal is permitted where the depth to the seasonal water table is greater than 24". (Sutton)

324 This is a soil shallow to bedrock. The only area large enough to be separated into a mapping unit is a flat table between outcrops at the center east of the property. (Hollis)

Well Drained: Water is removed from the soil readily but not rapidly and the soil does not have a water table at less than 40 inches of the surface throughout the year. Subsurface wastewater disposal is allowed, but individual test pits at each disposal area are required

221 This soil is limited to the top of the small knoll near the center of the property above elevation 66. (Charlton)

Excessively Drained: There are no excessively drained soils on the property

Soil Map Legend

See attachment.

This map product is within the technical standards of the National Cooperative Soil Survey and produced in accordance with the Society of Soil Scientists of Northern New England Publication *Standards for a High Intensity Soil Map, New Hampshire*. It was produced by a professional soil scientist, and is not a product of the USDA Natural Resources Conservation Service. There is a map that accompanies this report.



07-05-22

KEY TO SOIL TYPES

This key is used in determining soil types that are utilized in high intensity soil surveys. The soil types are defined as soils having the same soil characteristics of drainage class, parent material, restrictive features, and slope; and are designated by a five-part symbol, the parts being A, B, C, D and E.

SYMBOL: A Drainage Class

- 1- Excessively drained
- 2- Well drained
- 3- Moderately well drained
- 4- Somewhat poorly drained
- 5- Poorly drained
- 6- Very poorly drained
- 7- Not determinable (to be used only with Symbol B-6)

SYMBOL: B Parent Material

- 1- Glaciofluvial Deposits (outwash/terraces of sand or sand and gravel).
- 2- Glacial Till Material (active ice)
Marine or Glaciolacustrine Deposits (3, 4 or 5)
- 3- Very fine sand and silt deposits (glacial lakes)
- 4- Loamy/sandy over silt/clay deposits
- 5- Silt and clay deposits (ocean waters)
- 6- Excavated, Regraded or Human Transported Material (see Connotative Soil Legend)
- 7- Alluvial Deposits (flood plains)
- 8- Organic Materials - Fresh Water Wetlands
- 9- Organic Materials - Tidal Wetlands

SYMBOL: C Restrictive Features (if more than one applies, list the most restrictive)

- 1- None
- 2- Bouldery, with more than 15% of the surface covered with boulders (larger than 24 inches in diameter).
- 3- Mineral restrictive layer(s) are present in the soil profile less than 40 inches below the soil surface - such as "hard pan", densic material, platy structure or clayey texture with consistence of at least firm, i.e. more than 20 newtons. For other examples of soil characteristics that qualify for restrictive layer, see Soil Manual for Site Evaluations in New Hampshire, 2nd Ed., page 3-17, figure 3-14.
(continued)
- 4- Bedrock present in the soil profile 0-20 inches below the mineral soil

surface (Bedrock is either a lithic or paralithic contact - See *User Note: Soil Taxonomy*. Paralithic references bedrock that can be removed by an excavator, backhoe or by hand shovel with difficulty. Bedrock fractures are spaced more than 4 inches.

- 5- Subject to flooding.
- 6- Does not meet fill standards (see addendum - Standards for Human Transported Material) (only to be used with Symbol B-6).
- 7- Bedrock present in the soil profile 20 to 40 inches below the mineral soil surface. (Bedrock is either lithic or paralithic contact; see *Soil Taxonomy*).
- 8- Areas where depth to bedrock is so variable that a single soil type cannot be applied, will be mapped as a complex of soil types and will have a symbol C of 8.

SYMBOL: D Slope Class

- B- 0% to 8%
- C- 8% to 15%
- D- 15% to 25%
- E- 25% to 35%
- F- 35%+

SYMBOL: E -High Intensity Soil Map Identifier - H. (see addendum)

Boxford Silt Loam
3 to >25 Percent Slopes

High Intensity Map Symbol: 353, moderately well drained
453, somewhat poorly drained

Setting

Parent Material: Silty marine sediments
Landform: Convex plains, broad drainageways
Position on Landscape: Uplands at lower elevations or in drainageways
Slope Range: 3 to >25 percent

Composition and Soil Characteristics

Drainage Class: Moderately well drained; seasonal high water table at 15 to 40 inches. OR..somewhat poorly drained with seasonal high water table at 7-15”
Hydrologic Group: C/D
Surface Runoff: Rapid
Permeability: Slow. Very slow in subsoil
Depth to Bedrock: > 40 inches
Hydric conditions: Possible in somewhat poorly drained areas

Inclusions within Mapping Unit

Similar: Scitico silt loam – poorly drained
Contrasting: None

Use and Management

With improvements and engineering practices, this soil is fairly well suited to development. Slow permeability and a seasonal high water table are the limiting factors. Position on the landscape allows engineering practices to overcome the limitations. Subsurface wastewater disposal is permitted. See Test Pit 6 for a typical description.

Charlton Fine Sandy Loam
3-8 Percent Slopes

High Intensity Map Symbol: 221, well drained

Setting

Parent Material: Glacial till
Landform: Glaciated uplands
Position on Landscape: Ridgetops and upper side slopes
Slope Range: 3 to 8 percent

Composition and Soil Characteristics

Drainage Class: Well drained; seasonal high water table at >40 inches.
Hydrologic Group: A
Surface Runoff: Slow
Permeability: Rapid
Depth to Bedrock: > 40 inches
Hydric conditions: No

Inclusions within Mapping Unit

Similar: Sutton – moderately well drained
Contrasting: None

Use and Management

This soil is well suited to development. There are few limitations. See test pit 5 for a typical description

Hollis Fine Sandy Loam
0 - 8 Percent Slopes

High Intensity Map Symbol: 324, moderately well drained

Setting

Parent Material: Glacial till
Landform: Glaciated uplands
Position on Landscape: bedrock controlled ridges
Slope Range: 0 to 8 percent

Composition and Soil Characteristics

Drainage Class: Moderately well drained; usually no seasonal water table above bedrock
Hydrologic Group: D
Surface Runoff: Moderate
Permeability: Moderate
Depth to Bedrock: 0 to 20 inches
Hydric conditions: No

Inclusions within Mapping Unit

Similar: Tunbridge - > 20" to bedrock
Contrasting: Boxford – silty marine sediments
Sutton – Bedrock at >40"

Use and Management

This soil is poorly to most development. Depth to bedrock is the limiting factor. See test pit 17 for a typical description

Maybid
0-3 Percent Slopes

High Intensity Map Symbol: 653, very poorly drained

Setting

Parent Material: Silty marine sediments
Landform: Nearly level lowlands
Position on Landscape: Depressions, drainageways, wetlands
Slope Range: 0 to 3 percent

Composition and Soil Characteristics

Drainage Class: Very poorly drained; seasonal high water table at 0".
Hydrologic Group: D
Surface Runoff: Slow
Permeability: Slow. Very slow in subsoil
Depth to Bedrock: > 40 inches
Hydric conditions: Yes

Inclusions within Mapping Unit

Similar: Scitico - poorly drained
Biddeford – organic surface
Contrasting: None

Use and Management

This soil is poorly suited to development. Areas mapped as Maybid are classified as wetlands and permitting is required for any activity in those wetlands. Wetness is the limiting factor with a water table at or near the surface during most months of the year.

Scitico Silt Loam
0-8 Percent Slopes

High Intensity Map Symbol: 553, poorly drained

Setting

Parent Material: Silty marine sediments
Landform: Lowlands
Position on Landscape: Depressions, drainageways, wetlands
Slope Range: 0 to 8 percent

Composition and Soil Characteristics

Drainage Class: Poorly drained; seasonal high water table at 0 to 7 inches.
Hydrologic Group: D
Surface Runoff: Slow
Permeability: Slow. Very slow in subsoil
Depth to Bedrock: > 40 inches
Hydric conditions: Yes

Inclusions within Mapping Unit

Similar: Boxford - somewhat poorly drained
Maybid/Biddeford – very poorly drained
Contrasting: None

Use and Management

This soil is poorly suited to development. Areas mapped as Scitico are classified as wetlands and permitting is required for any activity in those wetlands. Wetness is the limiting factor with a water table at or near the surface during most months of the year. Subsurface wastewater disposal is not permitted. See test pit 3 for a typical description

Sutton Fine Sandy Loam
3 - >25 Percent Slopes

High Intensity Map Symbol: 321, moderately well drained

Setting

Parent Material: Glacial till
Landform: Glaciated uplands
Position on Landscape: Ridgetops and upper side slopes
Slope Range: 3 to >25 percent

Composition and Soil Characteristics

Drainage Class: Moderately well drained; seasonal high water table at 15 to 40 inches
Hydrologic Group: B
Surface Runoff: Moderate
Permeability: Moderate
Depth to Bedrock: > 40 inches
Hydric conditions: No

Inclusions within Mapping Unit

Similar: Charlton – well drained
Contrasting: Boxford – silty marine sediments
Tunbridge – Bedrock at <40”

Use and Management

This soil is well suited to development. A seasonal high water table is present during seasonally wet periods See test pit 12 for a typical description

Test Pit Descriptions

Durham NH

Mulhern – Bagdad Rd

May 12, 2018

Test pits described on 02-15-18 & 04-09-18

Test Pit 1

- 00 – 06” Dark brown (10YR4/3) sandy loam; weak fine granular structure; moist, friable.
- 06 – 13” Strong brown (7.5Y5/8) sandy loam; weak medium granular structure; moist, friable.
- 13 – 24” Yellowish brown (10YR5/6) loamy sand; moderate medium granular structure; moist, friable
- 24 – 48” Olive brown (2.5Y5/3) loamy sand; moderate medium granular structure; moist, friable.

Series: Charlton

Estimated seasonal high water table: None to 48”

Observed water: none

Restrictive layer: None

Soil Hydrologic Group: A

Test Pit 2

- 00 – 04” Dark brown (10YR4/3) sandy loam; weak fine granular structure; moist, friable.
- 04 – 16” Yellowish brown (10YR5/6) sandy loam; weak medium granular structure; moist, friable.
- 16 – 37” Light olive brown (2.5Y5/4) loamy sand; moderate medium granular structure; moist, friable
- 37 – 54” Olive brown (2.5Y5/3) loamy sand; few redox features in 10YR6/1 and 10YR5/6; moderate medium granular structure; moist, friable.

Series: Sutton

Estimated seasonal high water table 37”

Observed water: None

Restrictive layer: none

Soil Hydrologic Group: A

Test Pit Descriptions

Durham NH
Mulhern – Bagdad Rd
May 12, 2018
Test pits described on 02-15-18 & 04-09-18

Test Pit 3

- 00 – 06” Dark brownish gray (10YR4/2) very fine sandy loam; weak fine granular structure; moist, friable.
- 06 – 20” Light olive brown (2.5Y5/4) silt loam; many redox features in 10YR6/1 and 7.5YR5/8; massive structure; moist, friable.
- 20” + Olive gray (2.5Y5/2) silty clay loam; many redox features in 10YR6/1 and 10YR4/4; strong medium subangular blocky structure; moist, friable.

Series: Scitico
Estimated seasonal high water table: 0”
Observed water: 12”
Restrictive layer: 20”
Soil Hydrologic Group: D

Test Pit 4

- 00 – 06” Dark brown (10YR4/3) fine sandy loam; weak fine granular structure; moist, friable.
- 06 – 17” Light olive brown (2.5Y5/4) fine sandy loam; weak fine granular structure; moist, friable.
- 17 – 32” Light olive brown (2.5Y5/4) loamy sand; few fine redox features in 10YR6/1 and 7.5YR5/8; weak medium granular structure; moist, friable.
- 32 – 48” Yellowish brown (10YR5/6) sandy loam; many medium redox features in 10YR6/1 and 7.5YR5/8; moderate medium granular structure; moist, friable.

Series: Sutton
Estimated seasonal high water table: 17”
Observed water: none
Restrictive layer: none
Soil Hydrologic Group: D

Test Pit Descriptions

Durham NH
Mulhern – Bagdad Rd
May 12, 2018
Test pits described on 02-15-18 & 04-09-18

Test Pit 5

- 00 – 05” Dark brown (10YR4/3) fine sandy loam; weak fine granular structure; moist, friable.
- 05 – 15” Strong brown (7.5Y5/8) sandy loam; weak medium granular structure; moist, friable.
- 15 – 34” Yellowish brown (10YR5/6) sandy loam; moderate medium granular structure; moist, friable
- 34 – 50” Light olive brown (2.5Y5/6) loamy sand; moderate medium granular structure; moist, friable.

Series: Charlton
Estimated seasonal high water table: None to 50”
Observed water: none
Restrictive layer: None
Soil Hydrologic Group: A

Test Pit 6

- 00 – 05” Dark brown (10YR4/4) very fine sandy loam; weak fine granular structure; moist, friable.
- 05 – 11” Dark brown (10YR4/4) very fine sandy loam; massive structure; moist, friable.
- 11 – 18” Light olive brown (2.5Y5/4) silt loam; massive structure; moist, friable.
- 18 – 25” Light olive brown (2.5Y5/4) silty clay loam; common fine and medium redox features in 10YR6/1 and 7.5YR5/8); strong medium subangular blocky structure; moist, firm.
- 25 – 50” Olive gray (2.5Y5/2) silty clay loam; common fine and medium redox features in 10YR6/1 and 7.5YR5/8); strong medium subangular blocky structure; moist, firm.

Series: Boxford
Estimated seasonal high water table: 18”
Observed water: none
Restrictive layer: 18”
Soil Hydrologic Group: D

Test Pit Descriptions

Durham NH
Mulhern – Bagdad Rd
May 12, 2018
Test pits described on 02-15-18 & 04-09-18

Test Pit 7

- 00 – 06” Dark brown (10YR4/4) silt loam; weak fine granular structure; moist, friable.
- 06 – 21” Light olive brown (2.5Y5/6) silt loam; massive structure; moist, friable.
- 21 – 33” Light olive brown (2.5Y5/6) very fine sandy loam; few redox features in 10YR6/1 and 10YR5/6); massive structure; moist, friable.
- 33 – 48” Olive gray (2.5Y5/2) silty clay loam; common fine and medium redox features in 10YR6/1 and 7.5YR5/8); strong medium subangular blocky structure; moist, firm.

Series: Boxford
Estimated seasonal high water table: 21”
Observed water: none
Restrictive layer: 21”
Soil Hydrologic Group: D

Test Pit 8

- 00 – 05” Dark brown (10YR4/3) fine sandy loam; weak fine granular structure; moist, friable.
- 05 – 15” Yellowish brown (10YR5/6) fine sandy loam; weak fine granular structure; moist, friable.
- 15 – 26” Light olive brown (2.5Y5/4) fine sandy loam; moderate medium granular structure; moist, friable.
- 26 – 45” Light olive brown (2.5Y5/4) fine sandy loam; common fine and medium redox features in 10YR6/1 and 10YR5/6); moderate medium granular structure; moist, friable.
- @45” Bedrock

Series: Sutton
Estimated seasonal high water table: 26”
Observed water: none
Restrictive layer: none
Bedrock at 45”
Soil Hydrologic Group: C

Test Pit Descriptions

Durham NH

Mulhern – Bagdad Rd

May 12, 2018

Test pits described on 02-15-18 & 04-09-18

Test Pit 9

- 00 – 05” Dark brownish gray (10YR4/2) silt loam; weak fine granular structure; wet, slightly sticky, slightly plastic
- 05 – 09” Olive gray (2.5Y5/2) silt loam; massive structure; wet, slightly sticky, slightly plastic
- 09 – 18” Light olive brown (2.5Y5/4) silt loam; many redox features in 10YR6/1 and 10YR4/4; strong medium subangular blocky structure; moist, friable.
- 18 – 36” Olive gray (2.5Y5/2) silty clay loam; strong medium subangular blocky structure; moist, very firm

Series: Scitico

Estimated seasonal high water table: 0”

Observed water: 14”

Restrictive layer: 18”

Soil Hydrologic Group: D

Test Pit 10

- 00 – 04” Dark brown (10YR4/4) silt loam; weak fine granular structure; moist, friable.
- 04 – 08” Strong brown (7.5YR5/8) silt loam; massive structure; moist, friable.
- 08 – 17” Light olive brown (2.5Y5/4) silt loam; massive structure; moist, friable.
- 17 – 24” Light olive brown (2.5Y5/4) silt loam; common fine and medium redox features in 10YR6/1 and 10YR5/6; massive structure; moist, friable.
- 24 – 42” Olive gray (2.5Y5/2) silty clay loam; common fine and medium redox features in 10YR6/1 and 7.5YR5/8); strong medium subangular blocky structure; moist, firm.

Series: Boxford

Estimated seasonal high water table: 17”

Observed water: none

Restrictive layer: 24”

Soil Hydrologic Group: D

Test Pit Descriptions

Durham NH

Mulhern – Bagdad Rd

May 12, 2018

Test pits described on 02-15-18 & 04-09-18

Test Pit 11

- 00 – 06” Dark brown (10YR4/4) silt loam; weak fine granular structure; moist, friable.
- 06 – 11” Yellowish brown (10YR5/6) silt loam; massive structure; moist, friable.
- 11 – 20” Light olive brown (2.5Y5/4) silt loam; massive structure; moist, friable.
- 20 – 48” Olive gray (2.5Y5/2) silty clay loam; common fine and medium redox features in 10YR6/1 and 7.5YR5/8); strong medium subangular blocky structure; moist, firm.

Series: Boxford

Estimated seasonal high water table: 20”

Observed water: none

Restrictive layer: 20”

Soil Hydrologic Group: D

Test Pit 12

- 00 – 06” Dark brown (10YR4/3) fine sandy loam; weak fine granular structure; moist, friable.
- 06 – 15” Strong brown (7.5YR5/6) fine sandy loam; weak fine granular structure; moist, friable.
- 15 – 32” Light olive brown (2.5Y5/4) sandy loam; moderate medium granular structure; moist, friable.
- 32 – 60” Light olive brown (2.5Y5/4) loamy sand; common fine and medium redox features in 10YR6/1 and 7.5YR5/8); moderate medium granular structure; moist, friable.

@50” Bedrock

Series: Sutton

Estimated seasonal high water table: 32”

Observed water: none

Restrictive layer: none

Bedrock at 50”

Soil Hydrologic Group: B

Test Pit Descriptions

Durham NH
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Test pits described on 02-15-18 & 04-09-18

Test Pit 13

00 – 06” Dark brown (10YR4/3) fine sandy loam; weak fine granular structure; moist, friable.
06 – 12” Strong brown (7.5YR5/8) fine sandy loam; weak fine granular structure; moist, friable.
12 – 30” Light olive brown (2.5Y5/4) sandy loam; moderate medium granular structure; moist, friable.
30 – 38” Light olive brown (2.5Y5/4) loamy sand; moderate medium granular structure; moist, friable.
@38” Refusal - boulder

Series: Sutton (depth not reached for Charlton classification)
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Refusla at 38”
Soil Hydrologic Group: C

Test Pit 14

00 – 04” Dark brown (10YR4/4) fine sandy loam; weak fine granular structure; moist, friable.
04 – 12” Yellowish brown (10YR5/6) fine sandy loam; weak fine granular structure; moist, friable.
12 – 18” Light olive brown (2.5Y5/4) very fine sandy loam; massive structure; moist, friable.
18 – 42” Olive gray (2.5Y5/2) silty clay loam; common fine and medium redox features in 10YR6/1 and 7.5YR5/8); strong medium subangular blocky structure; moist, firm.

Series: Boxford
Estimated seasonal high water table: 18”
Observed water: none
Restrictive layer: 18”
Soil Hydrologic Group: D

Test Pit Descriptions

Durham NH
Mulhern – Bagdad Rd
May 12, 2018
Test pits described on 02-15-18 & 04-09-18

Test Pit 15

- 00 – 06” Dark brown (10YR4/4) fine sandy loam; weak fine granular structure; moist, friable.
- 06 – 16” Yellowish brown (10YR5/6) silt loam; weak fine granular structure; moist, friable.
- 16 – 21” Light olive brown (2.5Y5/4) silt loam; massive structure; moist, friable.
- 21 – 42” Olive gray (2.5Y5/2) silty clay loam; common fine and medium redox features in 10YR6/1 and 7.5YR5/8); strong medium subangular blocky structure; moist, firm.

Series: Boxford
Estimated seasonal high water table: 18”
Observed water: none
Restrictive layer: 18”
Soil Hydrologic Group: D

Test Pit 16

- 00 – 09” Dark brown (10YR4/3) sandy loam; weak fine granular structure; moist, friable.
- 09 – 15” Yellowish brown (10YR5/6) fine sandy loam; weak fine granular structure; moist, friable.
- 15 – 36” Light olive brown (2.5Y5/4) sandy loam; moderate medium granular structure; moist, friable.
- 36 – 42” Light olive brown (2.5Y5/4) sandy loam; common fine and medium redox features in 10YR6/1 and 10YR5/6); moderate medium granular structure; moist, friable.
- @42” Refusal – small machine; assumed boulders

Series: Sutton
Estimated seasonal high water table: 36”
Observed water: none
Restrictive layer: none
Refusal at 42”
Soil Hydrologic Group: C

Test Pit Descriptions

Durham NH
Mulhern – Bagdad Rd
May 12, 2018
Test pits described on 02-15-18 & 04-09-18

Test Pit 17

00 – 06” Dark Brown (10YR4/3) fine sandy loam; weak fine granular structure; moist, friable

At 6” Bedrock

Series: Hollis
Estimated seasonal high water table: none
Observed water: none
Restrictive layer: none
Bedrock at 6”
Soil Hydrologic Group: D

Test Pit 18

00 – 03” Dark brown (10YR4/4) very fine sandy loam; weak fine granular structure; moist, friable.
03 – 12” Light olive brown (2.5Y5/6) very fine sandy loam; massive structure; moist, friable.
12 – 18” Light olive brown (2.5Y5/4) silt loam; massive structure; moist, friable.
18 – 32” Light olive brown (2.5Y5/4) silty clay loam; common fine and medium redox features in 10YR6/1 and 7.5YR5/8; strong medium subangular blocky structure; moist, firm.
32 – 50” Olive gray (2.5Y5/2) silty clay loam; common fine and medium redox features in 7.5YR5/8; strong medium subangular blocky structure; moist, very firm.

Series: Boxford
Estimated seasonal high water table: 18”
Observed water: none
Restrictive layer: 18”
Soil Hydrologic Group: D

Test Pit 19

There is no test pit 19; number skipped in field

Test Pit Descriptions

Durham NH

Mulhern – Bagdad Rd

May 12, 2018

Test pits described on 02-15-18 & 04-09-18

Test Pit 20

- 00 – 06” Dark brown (10YR4/4) very fine sandy loam; weak fine granular structure; moist, friable.
- 06 – 11” Light olive brown (2.5Y5/6) very fine sandy loam; massive structure; moist, friable.
- 11 – 26” Light olive brown (2.5Y5/4) silt loam; massive structure; moist, friable.
- 26 – 35” Light olive brown (2.5Y5/4) silt loam; few fine redox features in 10YR6/1; moderate medium subangular blocky structure; moist, friable.
- 35 – 54” Light olive brown (2.5Y5/6) silty clay loam; common fine and medium redox features in 7.5YR5/8; strong medium subangular blocky structure; moist, very firm.

Series: Boxford

Estimated seasonal high water table: 26”

Observed water: none

Restrictive layer: 35”

Soil Hydrologic Group: C

Test Pit 21

- 00 – 04” Dark brown (10YR4/4) silt loam; weak fine granular structure; moist, friable.
- 04 – 16” Olive brown (2.5Y5/3) silt loam; massive structure; moist, friable.
- 16 – 22” Light olive brown (2.5Y5/4) silt loam; massive structure; moist, friable.
- 22 – 32” Light olive brown (2.5Y5/4) silt loam; few fine redox features in 10YR6/1 and 7.5YR5/8; moderate medium subangular blocky structure; moist, friable.
- 32 – 50” Light olive brown (2.5Y5/6) silty clay loam; common fine and medium redox features in 7.5YR5/8; strong medium subangular blocky structure; moist, very firm.

Series: Boxford

Estimated seasonal high water table: 22”

Observed water: none

Restrictive layer: 32”

Soil Hydrologic Group: D

Test Pit Descriptions

Durham NH

Mulhern – Bagdad Rd

May 12, 2018

Test pits described on 02-15-18 & 04-09-18

Test Pit 22

- 00 – 07” Dark brown (10YR4/3) sandy loam; weak fine granular structure; moist, friable.
- 07 – 19” Yellowish brown (10YR5/6) fine sandy loam; weak fine granular structure; moist, friable.
- 19 – 24” Yellowish brown (10YR5/6) sandy loam; moderate medium granular structure; moist, friable.
- 24 – 32” Light olive brown (2.5Y5/4) sandy loam; moderate medium granular structure; moist, friable.
- 32 – 50” Light olive brown (2.5Y5/4) loamy sand; strong medium platy structure; moist, firm.

Series: Scituate

Estimated seasonal high water table: 32”

Observed water: none

Restrictive layer: 32”

Soil Hydrologic Group: C

Test Pit 23

- 00 – 06” Dark brown (10YR4/4) silt loam; weak fine granular structure; moist, friable.
- 06 – 12” Yellowish brown (10YR5/6) silt loam; massive structure; moist, friable.
- 12 – 17” Light olive brown (2.5Y5/4) silt loam; massive structure; moist, friable.
- 17 – 42” Olive gray (2.5Y5/2) silty clay loam; common fine and medium redox features in 7.5YR5/8; strong medium subangular blocky structure; moist, very firm.

Series: Boxford

Estimated seasonal high water table: 17”

Observed water: none

Restrictive layer: 17”

Soil Hydrologic Group: D

Test Pit Descriptions

Durham NH

Mulhern – Bagdad Rd

May 12, 2018

Test pits described on 02-15-18 & 04-09-18

Test Pit 24

- 00 – 03” Dark brown (10YR4/4) silt loam; weak fine granular structure; moist, friable.
- 03 – 17” Yellowish brown (10YR5/6) silt loam; massive structure; moist, friable.
- 17 – 30” Light olive brown (2.5Y5/4) silt loam; few redox features in 10YR6/1; strong medium subangular blocky structure; moist, very firm
- 30 – 42” Light olive brown (2.5Y5/4) silt loam; many fine and medium redox features in 7.5YR5/8 and 10YR6/1; strong medium subangular blocky structure; moist, very firm.

Series: Boxford

Estimated seasonal high water table: 17”

Observed water: none

Restrictive layer: 17”

Soil Hydrologic Group: D

Test Pit 25

- 00 – 05” Dark brown (10YR4/4) silt loam; weak fine granular structure; moist, friable.
- 05 – 20” Light olive brown (2.5Y5/4) silt loam; massive structure; moist, friable.
- 20 – 42” Olive gray (2.5Y5/2) silty clay loam; few fine and medium redox depletions in 10YR6/1; strong medium subangular blocky structure; moist, firm.

Series: Boxford

Estimated seasonal high water table: 20”

Observed water: none

Restrictive layer: 20”

Soil Hydrologic Group: D

Test Pit Descriptions

Durham NH

Mulhern – Bagdad Rd

May 12, 2018

Test pits described on 02-15-18 & 04-09-18

Test Pit 26

- 00 – 05” Dark brown (10YR4/4) silt loam; weak fine granular structure; moist, friable.
- 02 – 17” Light olive brown (2.5Y5/4) silt loam; massive structure; moist, friable.
- 17 – 42” Olive gray (2.5Y5/2) silty clay loam; few fine and medium redox depletions in 10YR6/1; strong medium subangular blocky structure; moist, firm.

Series: Boxford

Estimated seasonal high water table: 20”

Observed water: none

Restrictive layer: 20”

Soil Hydrologic Group: D

Test Pit 27

- 00 – 07” Dark brown (10YR4/3) fine sandy loam; weak fine granular structure; moist, friable.
- 07 – 15” Yellowish brown (10YR5/6) fine sandy loam; weak medium granular structure; moist, friable.
- 15 – 25” Light olive brown (2.5Y5/4) fine sandy loam; few redox features in 10YR6/1; moderate medium granular structure; moist, friable
- 25 – 32” Light olive brown (2.5Y5/4) fine sandy loam; few fine and medium redox features in 7.5YR5/8 and 10YR6/1; moderate medium granular structure; moist, friable.
- 32 – 48” Light olive brown (2.5Y5/4) silt loam; common fine and medium redox features in 10YR6/1 and 7.5YR5/8; strong medium subangular blocky structure; moist, firm

Series: Boxford

Estimated seasonal high water table: 25”

Observed water: none

Restrictive layer: 32”

Soil Hydrologic Group: D