AECOM
9 Jonathan Bourne Drive
Pocasset, MA 02559
www.aecom.com

508.833.6950 tel
508.833.6951 fax

Memorandum

To	George Meservey, Director of Planning & Community Development Michael Domenica, PE, Program Manager
CC	Betsy Shreve, AICP, AECOM Project Director Paula Winchell, AECOM Reggie Donoghue, P.E., AECOM
Subject	**Town of Orleans, MA** **Water Quality and Wastewater Planning** **Task Number 10.1.C – 25% Preliminary Design Report** **Draft Deliverable 10.1.C.2 – Geotechnical Evaluation**
Project Number	60476644
From	Thomas Parece, P.E., AECOM Project Manager
Date	April 14, 2017

Approvals	Date	Signature / Initials
George Meservey, Orleans, MA Director of Planning & Community Development		
Michael Domenica, PE, Water Resources Associates, Program Manager		

1. Introduction

This Technical Memorandum outlines the scope of the Geotechnical Evaluation performed by AECOM and New England Geotech, LLC. Refer to the attachments for the boring logs and a plan showing the location of the borings performed for the Geotechnical Evaluation.

As part of the Preliminary Design Report (25% Design) for the Downtown Orleans Wastewater Collection System, New England Geotech, LLC, was engaged by AECOM to perform preclearing and drilling for a Geotechnical Evaluation relative to the design of the proposed new wastewater collection system in the Downtown Area of Orleans, Massachusetts.

The Proposed Collection system in the Orleans Downtown Area includes construction of a proposed hybrid collection system (gravity sewer, low pressure sewer, STEP/STEG and/or vacuum sewer) within publicly and privately owned rights-of-way and privately owned properties in the Orleans Downtown Area. The Project will provide approximately 30,000 linear feet of pipelines within the publicly and privately owned right of way and sewer service connections within the privately owned properties. The project includes evaluating subsurface soils for the design of the collection system in the Orleans Downtown Area. Drilling to date included performing 95 borings within the Downtown Area of the Town of Orleans. The soil borings were drilled to a depth of 10 to 40 feet with an average depth of 15 feet. Continuous soil samples were collected from the borings. Ten additional borings were constructed as monitor wells. Each location was pre-cleared to a minimum depth of 5-feet using “soft-dig” methods prior to drilling.

Proposed Downtown Area Groundwater Discharge Locations – The Geotechnical Evaluation included evaluating subsurface soils for a groundwater discharge from the Downtown Area wastewater treatment facility. Drilling included ten soil borings and installing monitor wells. The soil borings were drilled to a depth of approximately 80 feet. Continuous soil samples were collected between 5 to 80 feet. Each location was pre-cleared using "soft-dig" methods to a depth of 5-feet prior to drilling. A total of ten monitoring wells were installed. The 2-inch diameter monitoring wells were installed with 10-feet to 15-feet of 10-slot well screen to approximately 10-feet below the water table. The total depth of the wells varied, but did not exceed 80 feet.

2. Goals and Objectives of the Geotechnical Evaluation

The goal of the Geotechnical Evaluation was to collect soil data along the proposed sewer alignment necessary for the preparation of the Preliminary Design Report (25% Design). The data collected included depth of pavement, soil types, depth to groundwater, if encountered, and the recording of any fill or obstructions encountered during the drilling. The information from the geotechnical evaluation will be used for the preliminary design of the wastewater collection system. In addition, the information from the soil investigation can be used by prospective sewer system construction bidders to determine the soil conditions in the area of the proposed collection system. The observation wells will be tested and information collected from the wells will be used for hydrogeological studies for the potential treated wastewater effluent discharge sites. The wells will also be available for long term monitoring of groundwater levels and quality.

3. Geotechnical Investigation

The Geotechnical Evaluation included the drilling 95 borings in the Downtown Area in order to document the soil and groundwater conditions along the proposed Downtown Area sewer collection system route as necessary for the preparation of the Preliminary Design Report (25% Design). The depth of the borings ranged from 5 feet to 45 feet with an average depth of 15 feet depending upon the depth of the preliminary sewer collection system design profiles.

A. Prior to performing the borings in the Town roadways, approval from the Town of Orleans Highway Dept. was required. A Road Opening Permit was submitted to the Orleans Highway Dept. by N.E. Geotech, LLC. The Permit application was circulated through town departments for review and comment. On January 23, 2017 a preconstruction conference was held including Frank Nichols of the Olreans Highway Department, Lt. Kevin Higgins of the Orleans Police Department, Dan Regan of N.E. Geotech, LLC, and Reggie Donoghue of AECOM. On February 2, 2017 the Orleans Highway Dept. issued a Road Opening Permit allowing the geotechnical investigation within the town controlled streets to proceed.

B. An Application for a Permit to Access State Highway was filed with MassDOT in order to perform the borings in the state highway layout of Route 6A and Route 28. On February 3, 2017 representatives of AECOM met with MassDOT officials at the MassDOT Division 5 office in Taunton MA to discuss the proposed Geotechnical Evaluation. On February, 16, 2017 MassDOT issued a Permit to Access State Highway allowing the Geotechnical Investigation to proceed within the State Highway Layouts.

C. Prior to the start of the drilling operations, each boring site was staked or marked in the pavement with paint and Dig Safe was contacted by the drilling contractor to mark out the utilities in the area of the proposed borings. Several of the sites required remarking due to weather and traffic disturbing the marked locations.

D. For work in the roadways, a police detail and cruiser accompanied the drilling and preclearing crews for safety and traffic control. A second police detail was employed with the preclearing and drilling crews for traffic control along busy sections of the state highways.

F. A trailer mounted Hurricane 500 vacuum unit was used by a two man crew from Strategic Environmental Services to preclear the first five feet of excavation using "soft-dig" techniques. The pre-clearing is performed in order to avoid impacting underground utilities during the boring operation. Technical personnel from AECOM accompanied the preclearing crew and documented the pre-clearing excavations.

G. Drilling was performed by N.E. Geotech, LLC. A Geoprobe Model 6600 truck mounted direct push drill rig was employed for drilling the borings below the five foot pre-cleared depth. Direct push drilling is a method in which a drill string is advanced by pushing or vibrating. Technical personnel from AECOM accompanied the drill rig and documented the soil information from the borings.

H. In addition to the borings for the Geotechnical Investigation, ten deep observation wells were installed by N.E. Geotech, LLC to allow for sampling of groundwater and the measurement of groundwater levels at the observation well sites.

I. Record boring information from a geotechnical investigation performed for MassDOT during the design of roadway improvements that are underway at the intersections of Main Street and Route 6A, and Main Street and Route 28 was used to supplement the information from the geotechnical evaluation. Borings were not performed at the intersection of Route 6A and West Road, and in the area of the new roundabout at the intersection of Route 6A and Route 28. Borings were not performed in those locations due to a MassDOT prohibition on cutting new pavement, the location of existing utilities, and the proximity of the paving to the limit of the State Highway Layout. Both of the aforementioned projects were treated as overlay projects by MassDOT and no deep borings were performed as part of the design of the roadway improvements.

J. The proposed "Cross Country" portion of the collection system between Canal Road and Route 6A traverses through private property. Permission from the property owner will be required prior to entering onto the property for the Geotechnical Evaluation. The Town of Orleans has been in contact with the property owner and it is anticipate that permission to proceed with the remaining borings will be forthcoming. When the owner has granted permission to enter the property and proceed with the borings, we expect that it will require one day with the preclearing crew, and one day with the drilling crew to complete the borings on private property. At that time, four remaining borings in the State Highway Layout will also be completed.

4. Program Status

Boring logs have been prepared by AECOM for the completed borings and will be included in the Preliminary Design Report (25% Design). The boring locations, depth, and notation as to whether groundwater was encountered have been added to the preliminary sewer profile plans prepared by AECOM to accompany the Preliminary Design Report (25% Design).

When the Town of Orleans has permission from the private property owner to enter onto the property at the Cross-Country portion of the sewer collection system, the remaining eight borings will be completed. Four of the borings are on in the State Highway Layout and four are along the Cross-Country section of the sewer collection system route.

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Lots Hollow Road
Orleans, MA

Boring: B-1

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donoghue
Field Techs: C.Hayden, B.Morrill
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/16/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/22/2017

Depth	Sample Identification	Rec (ft	Moist		Field Identification	Description	Fill Mat.	Tube	Fill Mat	Depth
1	0 ft to 5 ft				0 - 8" : Asphalt					1
2					8" - 10" : Gravel					2
3					10" - 5' : Orange/Brown fine sand					3
4										4
5										5
6	5 ft to 10 ft	3.8 ft	dry		Tan to Light Brown medium sand					6
7										7
8										8
9										9
10					---------- End of Boring at 10' ----------					10
11										11
12										12
13										13
14										14
15										15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Lots Hollow Road
Orleans, MA

Boring: B-2

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: C.Hayden, B.Morrill
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/16/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/22/2017

Depth	Sample Identification	Rec (ft	Moistu		Field Identification	Description	Fill Mat.	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0 - 8" : Asphalt 8" - 10" : Gravel 10" - 5' : Brown\Orange fine sand					1
2										2
3										3
4										4
5										5
6	5 ft to 10 ft	3.8 ft	dry		5 to 8 ft: Tan fine sand, intermittent Iron-staining 8 to 8.8 ft: Tan fine silty sand					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft	3.3 ft	dry		10 to 10.7 ft: Brown silt, trace clay 10.7 to 12.9 ft: Tan fine/very fine sand 12.9 to 13.3 ft: Brown silt					11
12										12
13										13
14										14
15					---------- End of Boring at 13' ----------					15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Lots Hollow Road
Orleans, MA

Boring: B-3

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: C.Hayden, B.Morrill
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/16/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/22/2017

Depth	Sample Identification	Rec (ft	Moist		Field Identification	Description	Fill Mat.	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0-10" : Asphalt 10" - 16" : Gravel road base 16" - 5' : Orange/Brown fine sands					1
6	5 ft to 10 ft	3.7 ft	dry		5 to 5.8 ft: Tan fine sand, little medium sand 5.8 to 13.9 ft: Tan-Light Brown fine to medium sand, trace coarse sand					6
11	10 ft to 15 ft	3.9 ft	dry		---------- End of Boring at 14' ----------					11
16										16
21										21
26										26

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Lots Hollow Road
Orleans, MA

Boring: B-4

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh Field Techs: C.Hayden, B.Morrill
Pre-Clear Contractor: Strategic Pre-Clear Date: 2/16/2017
Drill Contractor: NE Geotech Driller: Hayes Drill Date: 2/22/2017

Depth	Sample Identification	Rec (ft	Moist		Field Identification	Description	Fill Mat.	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0 - 8" : Asphalt 8" - 16" : Gravel 16" - 5' : Orange/Brown, fine to med sand. Large cobbles encountered					1
2										2
3										3
4										4
5										5
6	5 ft to 10 ft	3.5 ft	dry		Tan fine sand					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft	4 ft	dry		Tan fine sand, mottled					11
12										12
13										13
14										14
15					---------- End of Boring at 13' ----------					15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Lots Hollow Road
Orleans, MA

Boring: B-5

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: C.Hayden, B.Morrill
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/16/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/22/2017

Depth	Sample Identification	Rec (ft	Moist		Field Identification	Description	Fill Mat.	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0 - 5" : Asphalt 5" - 11" : Gravel 11"-13" : Dark brown soil 13" - 14" : Organic looking material 14" - 5' : Orange\Brown fine sand					
6	5 ft to 10 ft	3.3 ft	dry		5 to 7.6 ft: Tan medium sand, trace small gravel 7.6 to 8.3 ft: Brown fine sand, little silt					
11	10 ft to 15 ft	3.5 ft	dry		10 to 12.6 ft: Tan medium sand, trace small gravel 12.6 to 13.5 ft: Tan medium to coarse sand ---------- End of Boring at 13' ----------					

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Route 6A
Orleans, MA

Boring: B-8

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: S.Chmiel, B.Morrill
Pre-Clear Contractor: Strategic
Pre-Clear Date: 3/13/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 3/16/2017

Depth	Sample Identification	Rec (ft	Moist	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0 to 6” Dark Brown Loamy Sand With Fine Roots (Topsoil)					1
2					6 to 60” Tan Medium to Coarse Sand With Pebbles					2
3										3
4										4
5										5
6	5 ft to 10 ft	3.75			5.00' - 6.25' : Orange\Brown medium - coarse sand					6
7					6.25' - 6.75' : Some cobbles					7
8					6.75' - 7.00' : Medium - coarse sand					8
9					7.00' - 8.25' : Fine sand (bagged)					9
10					8.25' - 8.75' : Very fine w/ some silt					10
11	10 ft to 15 ft	4.0			10.00' - 10.25' : Organic silt and fine sand					11
12					10.25' - Bottom ; Orange\Brown fine to medium sand.					12
13										13
14										14
15					---------- End of Boring @ 15' ----------					15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Route 6A
Orleans, MA

Boring: B-9

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh Field Techs: S.Chmiel, B.Morrill
Pre-Clear Contractor: Strategic Pre-Clear Date: 3/13/2017
Drill Contractor: NE Geotech Driller: Hayes Drill Date: 3/16/2017

Depth	Sample Identification	Rec (ft	Moist	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0 to 2" Dark Brown Loamy Sand With Fine Roots (Topsoil)					1
2					2 to 24" Light Tan Medium to Fine Sand with Small to Medium Roots					2
3					24 to 60" Tan Fine Sand With Pebbles					3
4										4
5										5
6	5 ft to 10 ft	4			5.00' - 6.00' : Orange\Tan fine to medium sand					6
7					6.00' - 6.75' : Tan medium-coarse sand w/ silt fines					7
8					6.75' - 7.75' : Medium-coarse sand					8
9					7.75' - 8.5': Silt fine layer over medium - coarse sand					9
10					8.50' - 9.00' : Light tan coarse sand					10
11	10 ft to 15 ft	4	Damp		10.00' - 15.00' : Tan coarse sand with medium sand mixed.					11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft	5			15.00' - 16.75' : Light Tan coarse sand					16
17					16.75' - 19.50' : Light Tan fine and medium sand					17
18					19.50' - 20.00' : Orange fine and medium sand					18
19										19
20										20
21	20 ft to 25 ft	5			20.00' - 21.50' : Fine to medium sand. (bagged @ 21.50 and 22.50)					21
22					21.50' - 26.00' : Fine, dense, sand w/ some clay-like materials					22
23										23
24										24
25										25
26	25 ft to 30 ft				---------- End of Boring @ 26' ----------					26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Route 6A
Orleans, MA

Boring: B-10

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Field Techs: S.Chmiel, B.Morrill
Pre-Clear Contractor: Strategic
Pre-Clear Date: 3/13/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date:

Well Data

Boring Depth:
Screen Depth:
Screen length:

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 6” Dark Brown Loamy Sand With Fine Roots (Topsoil)					1
2					6 to 60” Medium to Fine Silty Sand					2
3										3
4										4
5										5
6	5 ft to 10 ft				Location needs to be re pre-cleared due to running into some hard material ~ 3-4 ft down					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft									11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Route 6A
Orleans, MA

Project Manager: Reggie Donoghu
Pre-Clear Contractor: Strategic
Drill Contractor: NE Geotech

Field Techs: S.Chmiel, B.Morrill
Driller: Hayes

Pre-Clear Date: 3/13/2017
Drill Date: 3/16/2017

Boring: B-11

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Depth	Sample Identification	Rec (ft	Moistu	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0 to 7" Dark Brown Loamy Sand With Fine Roots (Topsoil)					1
2					7 to 60" Brown Medium Damp Silty Sand With Stones and Cobbles					2
3										3
4										4
5										5
6	5 ft to 10 ft	4			5.00' - 6.00' : Brown fine sand					6
7					6.00' - 9.00' : Brown\Tan, densely packed, fine silty sand					7
8										8
9										9
10										10
11	10 ft to 15 ft	4.5			10.00' - 13.00' : Tan\Orange, densely packed, fine silty sand					11
12					13.00' - 13.50' : Light tan fine sand					12
13					13.50' - 14.00' : Dense silt layer					13
14					14.00' - 14.50' : Light tan fine sand					14
15										15
16	15 ft to 20 ft	4.5			15.00' - 17.25' : Light tan fine sand					16
17					17.25' - 20.00' : Light tan medium - coarse sand					17
18										18
19										19
20										20
21	20 ft to 25 ft	4			20.00' - 25.00' : Light tan fine sand					21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft	5			25.00' - 25.50' : Light tan fine sand					26
27					25.50' - 26.00' : Brown fine to medium sand					27
28					26.00' - 28.00' : light tan fine sand					28
29					28.00' - 28.50' : Silt layer					29
30					28.50' - 29.00' : Tan fine to medium sand 29.00' - 30.00' : Rusty and grey fine sand and silt. Lg rock at 30'					30
31	30 ft to 32 ft	2			30.00' - 30.25' : Rest of rock for previous core					31
32					30.25' - 32.00' : Medium - coarse sand					32
33					---------- End of Boring @ 32' ----------					33
34										34
35										35

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Route 6A
Orleans, MA

Boring: B-12

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: S.Chmiel, B.Morrill
Pre-Clear Contractor: Strategic
Pre-Clear Date: 3/13/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 3/16/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				Fine Roots					1
2					36" to 60" Tan Medium to Course Sand with Stones and Cobbles					2
3										3
4										4
5										5
6	5 ft to 10 ft	3.5			5.00' - 7.25' : Orange fine to medium sand					6
7					7.5' - 7.50' : Brown fine sand					7
8					7.75 : Tree root					8
9					8.00' - 8.50' : Tan fine sand					9
10										10
11	10 ft to 15 ft	4			10.00' - 11.50' : Tan fine sand					11
12					11.50' - 15.00' : Fine to medium sand					12
13										13
14										14
15					---------- End of Boring @ 15' ----------					15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Route 6A
Orleans, MA

Boring: B-13

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: S.Chmiel, B.Morrill
Pre-Clear Contractor: Strategic
Pre-Clear Date: 3/13/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 3/16/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 3" Dark Brown Loamy Sand With Fine Roots (Topsoil)					1
2					3 to 60" Tan Fine to Medium Silty Sand					2
3										3
4										4
5										5
6	5 ft to 10 ft	5			5.00' - 6.00' : Tan fine to medium sand					6
7					6.00' - 7.00' : Fine sand					7
8					7.00' - 8.00' : Fine to medium sand					8
9					8.00' - 11.00' : Fine silty sand					9
10										10
11	10 ft to 15 ft				---------- End of Boring @ 11' ----------					11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Route 6A
Orleans, MA

Boring: B-14

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: S.Chmiel, B.Morrill
Pre-Clear Contractor: Strategic
Pre-Clear Date: 3/13/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 3/16/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 6" Dark Brown Loamy Sand With Fine Roots (Topsoil)					1
2					6 to 60" Tan Fine to Medium Silty Sand With Pebbles					2
3										3
4										4
5										5
6	5 ft to 10 ft	3.75			5.00' - 6.00' : Brown, dense, silty sand					6
7					6.00' - 7.50' : Brown fine sand					7
8					7.50' - 8.00' : Rust colored, silt material					8
9					8.00' - 10.00' : Grey clay-like material					9
10										10
11	10 ft to 15 ft				10.00' - 13.00' : True clay, grey					11
12										12
13					---------- End of Boring @ 13' ----------					13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Route 6A
Orleans, MA

Boring: B-15

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: S. Chmiel
Pre-Clear Contractor: Strategic
Pre-Clear Date: 3/13/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 3/22/2017

Depth	Sample Identification	Rec (ft)	Moistu	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0 to 10" Dark Brown Loamy Sand With Landscape Material					1
2					10 to 60" Tan Fine Sand					2
3										3
4										4
5										5
6	5 ft to 10 ft				5 to 7 Ft: Tan Fine to Medium Sand with Stones and Pebbles					6
7					7 to 10 Ft: Light Tan Dense Silty Fine Sand with Stones and Pebbles					7
8										8
9										9
10					10 to 12.2 Ft: Tan Medium Sand with Pebbles					10
11	10 ft to 15 ft									11
12					12.2 to 13.4 Ft: Light Gray Dense Silty Clay Sand					12
13					13.4 to 18 Ft: Light Tan Fine Sand					13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18			Wet		18 to 19.6 Ft: Tan to Brown Dense Damp Silty Sand with Pebbles					18
19					19.6 to 21.3 Ft: Light Tan Fine Sand					19
20										20
21	20 ft to 25 ft				21.3 to 23 Ft: Light Tan to Gray Damp Silty Clay Sand					21
22										22
23					23 to 25 Ft: Tan to Brown Fine to Medium Sand					23
24										24
25					25 to 27 Ft: Dense Damp Tan to Gray Silty Sand					25
26	25 ft to 30 ft									26
27										27
28					---------- End of Boring @ 27' ----------					28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Route 6A
Orleans, MA

Project Manager: Reggie Donogh | Field Techs: S. Chmiel
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/13/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 3/22/2017

Boring: B-16

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Depth	Sample Identification	Rec (ft)	Moist	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 8" Dark Brown Loamy Sand With Landscape Material					1
2					8 to 60" Tan Fine to Medium Sand With Pebbles					2
3										3
4										4
5										5
6	5 ft to 10 ft				5 to 6.5 Ft: Tan Fine Sand					6
7					6.5 to 11 Ft: Gray to Light Brown Dense Silty Fine Sand with Trace Clay and Multiple Fine Sand					7
8										8
9										9
10										10
11	10 ft to 15 ft				---------- End of Boring @ 11' ----------					11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Route 6A
Orleans, MA

Boring: B-17

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: S. Chmiel, B.Morrill
Pre-Clear Contractor: Strategic
Pre-Clear Date: 3/13/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 3/17/2017

Depth	Sample Identification	Rec (ft)	Moistu	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0 to 6" Dark Brown Loamy Sand With Landscape Material					1
2					6 to 60" Tan Medium to Course Sand With Pebbles					2
3										3
4										4
5										5
6	5 ft to 10 ft	3.5			5.00' - 5.75' : Tan fine sand					6
7					5.75' -7.00' : Cobble and gravel layer					7
8					7.00' - 7.50' : Fine sand with small amounts of silty sand					8
9					7.50' - 8.00' : Fine to medium sand					9
10										10
11	10 ft to 15 ft				10.00' - 11.00' : Brown fine to medium sand					11
12					11.00' - 13.00' : Orange coarse sand					12
13					---------- End of Boring @ 12' ----------					13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: RT 6A
Orleans, MA

Boring: B-18

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donoghue | Field Techs: S. Chmiel, B.Morrill
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/16/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 3/17/2017

Depth	Sample Identification	Rec (ft)	Moist	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 10" Dark Brown Loamy Sand (Topsoil)					1
2					10 to 60" Light Brown Silty Sand with Pebbles and Stones					2
3										3
4										4
5										5
6	5 ft to 10 ft	4			5.00' - 6.25' : Brown\Orange, silty (50%) fine sand					6
7					6.25' - 7.00' : Orange fine sand					7
8					7.00' - 7.25' : Silt with fine sand					8
9					7.25' - 8.00' : Orange fine to medium sand					9
10					8.00' - 9.00' : Fine silty sand ---------- End of Boring @ 10' ----------					10
11	10 ft to 15 ft									11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644 Client: Town of Orleans	AECOM 250 Apollo Drive Chelmsford, Massachusetts (978) 905-2100	**Boring: B-22**	
Site Location: RT 6A Orleans, MA		Boring Number: Sheet: 1 of 1 Surface Elevation (ft-asl):	**Well Data** Boring Depth: Screen Depth: Screen length:
Project Manager: Reggie Donogh	Field Techs: S. Chmiel, B.Morrill	Equipment: Geoprobe 6620, Vac-truck Inside Diameter: 2"	
Pre-Clear Contractor: Strategic	Pre-Clear Date: 3/16/2017		
Drill Contractor: NE Geotech	Driller: Hayes	Drill Date: 3/17/2017	

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 10" Dark Brown Loamy Sand (Topsoil)					1
2					10 to 60" Light Tan Saturated Silty Sand					2
3										3
4										4
5										5
6	5 ft to 10 ft	3.5			5.00' - 6.50' : Fine medium sand					6
7					6.50' - 6.75' : Silty fine sand					7
8					6.75' - 8.50' : Tan\Orange coarse - medium sand					8
9										9
10										10
11	10 ft to 15 ft	2			10.00' - 12.00' : Orange\Tan coarse sand with some medium material					11
12					---------- End of Boring @ 12' ----------					12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644 Client: Town of Orleans Site Location: RT 6A Orleans, MA	AECOM 250 Apollo Drive Chelmsford, Massachusetts (978) 905-2100				**Boring: B-23**						
					Boring Number: Sheet: 1 of 1 Surface Elevation (ft-asl): Equipment: Geoprobe 6620, Vac-truck Inside Diameter: 2"				**Well Data** Boring Depth: Screen Depth: Screen length:		
Project Manager: Reggie Donogh	Field Techs: S. Chmiel, B.Morrill										
Pre-Clear Contractor: Strategic		Pre-Clear Date: 3/16/2017									
Drill Contractor: NE Geotech	Driller: Hayes	Drill Date: 3/17/2017									

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 20" Dark Brown Loamy Sand (Topsoil)					1
2					20 to 60" Tan Fine to Medium Sand					2
3										3
4										4
5										5
6	5 ft to 10 ft	3.5			5.00' - 6.25' : Tan fine to medium sand					6
7					6.25' - 6.50' : Silty fine sand					7
8					6.50' - 7.00' : Orange fine to medium sand					8
9					7.00' - 8.00' : Brown silty fine sand					9
10					8.00' - 8.50' : Orange fine to medium sand ---------- End of Boring @ 10' ----------					10
11	10 ft to 15 ft									11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: RT 6A
Orleans, MA

Boring: B-24

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: S. Chmiel, B.Morrill
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/16/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 3/17/2017

Depth	Sample Identification	Rec (ft)	Moist	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 14" Dark Brown Loamy Sand with Fine Roots (Topsoil)					1
2					14 to 18" Tan Sand Mixed with Gravel					2
3					18 to 60" Light Tan to Gray Damp Silty Sand with Clay					3
4										4
5										5
6	5 ft to 10 ft				5.50' : Came into contact with water main, Stop work					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft									11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: RT 6A
Orleans, MA

Boring: B-25

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: S. Chmiel
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/16/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date:

Depth	Sample Identification	Rec (ft)	Moist	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 12" Dark Brown Loamy Sand (Topsoil)					1
2					12 to 18" Gravel					2
3					18 to 60" Tan Fine to Medium Sand with Stones and Pebbles					3
4										4
5										5
6	5 ft to 10 ft				Potential Unmarked Waterline, did not complete					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft									11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: RT 6A
Orleans, MA

Boring: B-26

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: S. Chmiel, B.Morrill
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/16/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 3/17/2017

Depth	Sample Identification	Rec (ft)	Moist	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 8" Dark Brown Loamy Sand (Topsoil)					1
2					8 to 60" Tan Fine Sand					2
3										3
4										4
5										5
6	5 ft to 10 ft	4			5.00' - 9.00' : Tan fine sand					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft	4			10.00' - 14.00' : Tan fine sand. Silty horizons at 11.5 & 12.0					11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft	3			15.00' - 16.50' : Brown fine sand					16
17					16.50' - 17.50' : Silty clay material					17
18					17.50' - 18.00' : Tan medium sand					18
19					---------- End of Boring @ 18' ----------					19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: RT 6A
Orleans, MA

Boring: B-27

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: S. Chmiel
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/16/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date:

Depth	Sample Identification	Rec (ft	Moistu	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fil Ma	Depth
1	0 ft to 5 ft				0 to 20" Dark Brown Loamy Sand (Topsoil)					1
2					20 to 60" Tan Fine Sand with Pebbles					2
3										3
4										4
5										5
6	5 ft to 10 ft				Potential Unmarked Waterline, did not complete					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft									11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: RT 6A
Orleans, MA

Boring: B-31

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: S. Chmiel
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/15/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 3/21/2017

Depth	Sample Identification	Rec (ft)	Moist	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 6" Dark brown Loamy Sand (Topsoil)					1
2					6 to 60" Tan Course Sand with Pebbles and Stones					2
3										3
4										4
5										5
6	5 ft to 10 ft				5 to 9 Ft: Dark Brown Damp Course Sand with Small Stones or Pebbles					6
7										7
8										8
9					9 to 9.4 Ft: Dark Brown and Gray Damp Clay Sand					9
10					9.4 to 11 Ft: Light Tan Damp Fine Sand					10
11	10 ft to 15 ft				11 to 14 Ft: Light Tan Damp Fine to Medium Sand with Stones and Pebbles					11
12										12
13										13
14										14
15					---------- End of Boring @ 14' ----------					15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: RT 6A
Orleans, MA

Boring: B-32

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: S. Chmiel
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/15/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 3/21/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 8" Dark Brown Loamy Sand (Topsoil)					1
2					8 to 60" Tan Fine to Medium Sand with Pebbles					2
3										3
4										4
5										5
6	5 ft to 10 ft				Unclear Gas Line Markings, did not complete					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft									11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: RT 6A
Orleans, MA

Boring: B-33

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donoghue | Field Techs: S. Chmiel
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/15/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 3/21/2017

Depth	Sample Identification	Rec (ft)	Moist	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 20" Dark Brown Loamy Sand (Topsoil)					1
2					20 to 30" Pavement					2
3					30 to 60" Tan Medium to Course Sand with Pebbles					3
4										4
5										5
6	5 ft to 10 ft				5 to 6 Ft. Light Tan Fine Sand					6
7					6 to 7.7 Ft: Tan Medium to Course Sand with Stones 7.7 to 8.5 Ft: Light Tan Fine Sand with Pebbles					7
8										8
9					8.5 to 9.3 Ft: Light Tan Medium to Course Sand 9.3 to 11.9 Ft: Light Tan Fine to Medium Sand					9
10										10
11	10 ft to 15 ft				11.9 to 12.7 Ft: Light Tan Fine Sand					11
12					12.7 to 13.5 Ft: Tan Fine to Medium Sand					12
13										13
14					14.7 to 15.3 Ft: Gray to Blue Dense Damp Clay					14
15					15.3 to 17 Ft: Gray Saturated Medium to Course Sand					15
16	15 ft to 20 ft									16
17					17 to 18.3 Ft: Tan Damp Fine to Medium Sand					17
18					18.3 to 19.5 Ft: Brown to Gray Damp Fine to Medium Sand					18
19					19.5 to 20 Ft: Gray Damp Medium to Course Sand					19
20					20 to 21.4 Ft: Dark Brown Damp Course Sand with Stones and Pebbles					20
21	20 ft to 25 ft				21.4 to 22 Ft: Gray Damp Fine to Medium Silty Sand					21
22					---------- End of Boring @ 22' ----------					22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: RT 6A
Orleans, MA

Boring: B-34

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: S. Chmiel
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/15/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 3/21/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 12" Dark Brown Loamy Sand (Landscape Medium)					1
2					12 to 14" Pavement					2
3					14 to 36" Tan to Gray Damp Silty Sand					3
4					36 to 60" Gray Silty Clay Sand					4
5										5
6	5 ft to 10 ft				5 to 6 Ft: Tan Fine Sand					6
7					6 to 12 Ft: Tan Fine to Medium Sand with Stones and Pebbles					7
8										8
9										9
10										10
11	10 ft to 15 ft									11
12					12 to 12.3 Ft: Dense Damp Gray Silty Sand with Trace of Clay					12
13					12.3-14 Ft: Gray Damp Fine to Medium Sand with Stones and Pebbles					13
14					14 to 15 Ft: Dark Brown Damp Medium to Course Sand					14
15					---------- End of Boring @ 15' ----------					15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: RT 6A
Orleans, MA

Boring: B-35

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: S. Chmiel
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/15/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date:

Depth	Sample Identification	Rec (ft)	Moist	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fil Mat	Depth
1	0 ft to 5 ft				0 to 10" Dark Brown Loamy Sand (Landscape Material)					1
2					10 to 20" Light Tan Silty Fine to Medium Sand					2
3					20 to 48" Gray Silty Clay Sand					3
4					Refusal at 48" Due to Silt and Clay					4
5										5
6	5 ft to 10 ft									6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft									11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: RT 6A
Orleans, MA

Boring: B-36

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: S. Chmiel
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/15/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 3/21/2017

Depth	Sample Identification	Rec (ft)	Moist	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 10" Dark Brown Loamy Sand (Topsoil)					1
2					10 to 18" Pavement					2
3					18 to 30" Tan Course Sand					3
4					30 to 60" Silty Clay Sand					4
5										5
6	5 ft to 10 ft				5 to 9.3 Ft: Tan Medium to Course Sand with Small Stones and Pebbles					6
7										7
8										8
9					9.3 to 10 Ft: Gray Silty Fine Sand					9
10					---------- End of Boring at 10' ----------					10
11	10 ft to 15 ft									11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Cottage Street
Orleans, MA

Boring: B-38

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/21/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/23/2017

Depth	Sample Identification	Rec (ft)	Moisture		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1-5	0 ft to 5 ft				0 - 6" : Grass, loam 6" - 5' : Orange\Brown medium sand. Large cobble encountered					1-5
6-10	5 ft to 10 ft	4 ft	dry		Tan-Brown fine to medium sand, trace silt					6-10
11-15	10 ft to 15 ft	4.1 ft	dry		10 to 10.6 ft: Tan-Brown fine to medium sand, trace silt 10.6 to 12.4 ft: Brown fine sand, little medium silty sand 12.4 to 14.1 ft: Brown silt, some fine sand fining to clay					11-15
16-20	15 ft to 20 ft	3.7 ft	dry		Tan fine to medium sand, Iron-staining from 15 to 16.4 ft					16-20
21-25	20 ft to 25 ft	3.4 ft	dry		20 to 28.4 ft: Tan medium sand, little coarse sand					21-25
26-30	25 ft to 30 ft	3.4 ft	dry		---------- End of Boring at 30' ----------					26-30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: RT 28
Orleans, MA

Boring: B-39

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: S. Chmiel
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/15/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 3/21/2017

Depth	Sample Identification	Rec (ft)	Moist	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 8" Landscape Medium of Mulch and Loamy Sand					1
2					8 to 12" Loamy Sand					2
3					12 to 36" Tan Medium to Course Sand					3
4					36 to 60" Light Tan Fine Silty Damp Sand					4
5										5
6	5 ft to 10 ft				5 to 7 Ft: Tan Fine Silty Sand					6
7					7 to 7.8 Ft: Gray to Brown Damp Fine Silty Sand with Trace of Gray Clay					7
8					7.8 to 11.5 Ft: Light Tan Fine Sand					8
9										9
10										10
11	10 ft to 15 ft				11.5 to 13 Ft: Tan to Light Tan Damp Silty Sand					11
12										12
13					13 to 14 Ft: Tan Medium to Course Sand with Stones					13
14										14
15					---------- End of Boring at 14' ----------					15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: RT 28
Orleans, MA

Boring: B-40

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: S.Chmiel
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/15/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 3/21/2017

Depth	Sample Identification	Rec (ft)	Moist	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 10" Dark Brown Loamy Sand with Small Roots (Topsoil)					1
2					10 to 60" Tan Fine to Medium Sand					2
3										3
4										4
5										5
6	5 ft to 10 ft				5 to 7.5 Ft: Tan Fine Sand					6
7					7.5 to 8.6 Ft: Tan Fine to Medium Sand					7
8					8.6 to 11.2 Ft: Tan Fine Sand					8
9										9
10										10
11	10 ft to 15 ft				11.2 to 13.4 Ft: Light Tan Saturated Fine Silty Sand					11
12										12
13					13.4 to 15 Ft: Light Tan to Gray Damp Sand					13
14					---------- End of Boring at 13' ----------					14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: North Cottage Stree
Orleans, MA

Boring: B-41

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/21/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/23/2017

Depth	Sample Identification	Rec (ft)	Moistu		Field Identification	Description	Fill Mat.	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0 - 4" : Asphalt					1
2					4" - 5" : Gravel					2
3					5" - 5' : Brown medium sand					3
4										4
5										5
6	5 ft to 10 ft	3.7 ft	dry		Tan medium to coarse sand					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft	3.6 ft	dry		10 to 10.6 ft: Tan medium to coarse sand					11
12					10.6 to 11.2 ft: Tan-Orange coarse sand, some medium sand					12
13					11.2 18.9 ft: Tan medium to coarse sand, trace fine gravel					13
14										14
15										15
16	15 ft to 20 ft	3.9 ft	dry							16
17										17
18										18
19										19
20					---------- End of Boring 20' ----------					20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Brewster Cross Ro, Orleans, MA

Boring: B-43

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 15 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/17/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/23/2017

Depth	Sample Identification	Rec (ft)	Moisture		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 - 6" : Asphalt					1
2					6" - 12" : Tar gravel					2
3					12" - 5' : Brown fine to medium sand					3
4										4
5										5
6	5 ft to 10 ft	3.6 ft	dry		5 to 6 ft: Tan fine sand, trace medium gravel					6
7					6 to 13.7 ft: Brown-Grey fine sand, trace silt					7
8										8
9										9
10										10
11	10 ft to 15 ft	3.7 ft	dry							11
12										12
13										13
14										14
15					---------- End of Boring 15' ----------					15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Brewster Cross Ro
Orleans, MA

Boring: B-44

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 10 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donog
Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date 2/17/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/23/2017

Depth	Sample Identification	Rec (ft)	Moisture		Field Identification	Description	Fil Mat.	Tube	Fil Mat.	Depth
1	0 ft to 5 ft				0 - 6" : Asphalt					1
2					6" - 12" : Tar gravel					2
3					12" - 5' : Brown fine to medium sand					3
4										4
5										5
6	5 ft to 10 ft	4.1 ft	dry		5 to 8.3 ft: Brown fine sand, little silt					6
7					8.3 to 8.8 ft: Tan medium sand, some fine sand					7
8					8.8 to 9.1 ft: Tan fine sand, little silt					8
9										9
10					---------- End of Boring 10' ----------					10
11										11
12										12
13										13
14										14
15										15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Brewster Cross Ro
Orleans, MA

Boring: B-45

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 25 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donog
Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/17/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/23/2017

Depth	Sample Identification	Rec (ft)	Moisture		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 - 6" : Asphalt					1
2					6" - 12" : Tar gravel					2
3					12" - 5' : Brown fine to medium sand					3
4										4
5										5
6	5 ft to 10 ft	2 ft	dry		Brown/Light Brown fine to medium sand					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft	4.1 ft	dry		10 to 11.5 ft: Tan medium sand, little coarse sand					11
12					11.5 to 14.1 ft: Brown-Grey, mottled fine sand, some silt					12
13										13
14										14
15										15
16	15 ft to 20 ft	4.4 ft	dry		Brown, Iron-stain-mottled fine to medium sand					16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft	3.5 ft	dry		20 to 22 ft: Tan/Grey fine sand, little silt					21
22					22 to 22.8 ft: Tan fine sand, little medium sand					22
23					22.8 to 23.5 ft: Grey, Iron-stain-mottled fine sand, little silt					23
24										24
25					---------- End of Boring 25' ----------					25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Brewster Cross Ro
Orleans, MA

Project Manager: Reggie Donogh
Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/17/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/23/2017

Boring: B-46

Boring Number:
Sheet: 1 of 2
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 40 ft
Screen Depth:
Screen length:

Depth	Sample Identification	Rec (ft)	Moist		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 - 8" : Asphalt					1
2					8" - 12" : Gravel					2
3					12" - 5' : Brown fine to medium sand					3
4										4
5										5
6	5 ft to 10 ft	4.2 ft	dry		5 to 7.2 ft: Tan fine to medium sand					6
7					7.2 to 7.4 ft: Broken cobble					7
8					7.4 to 9.2 ft: Brown fine sand, little silt					8
9										9
10										10
11	10 ft to 15 ft	4 ft	dry		Brown silt, some fine sand					11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft	3.1 ft	dry		15 to 16.7 ft: Brown silt, trace fine sand					16
17					16.7 to 17 ft: Grey silt, little clay					17
18					17 to 26.7 ft: Plastic Grey clay					18
19										19
20										20
21	20 ft to 25 ft	4 ft	moist							21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft	4 ft	moist /	wet						26
27					26.7 to 27.5 ft:Grey sandy silt					27
28					27.5 to 28.8 ft: Brown, Iron-stain-mottled fine sand, little silt					28
29					28.8 to 29 ft: Tan medium sand, some fine sand					29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Main Street
Orleans, MA

Boring: B-46, continued

Boring Number:
Sheet: 2 of 2

Surface Elevation (ft-asl): ____

Equipment: Geoprobe 6620
Inside Diameter: 2"

Well Data

Boring Depth: 40 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donoghue
Pre-Clear Contractor: Strategic
Drill Contractor: NE Geotech

Pre-Clear Date: 2/17/2017
Drill Date: 2/23/2017

Depth	Sample Identification	Rec (ft)	Moisture		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
31	30 ft to 35 ft	3.5 ft	wet		30 to 30.4 ft: Tan medium to coarse sand					31
32					30.4 to 33 ft: Brown, Iron-stain-mottled fine sand, little silt					32
33					33 to 33.5 ft: Tan medium sand					33
34										34
35										35
36	35 ft to 40 ft	3 ft	wet		Tan medium sand, little coarse sand					36
37										37
38										38
39										39
40					---------- End of Boring 40' ----------					40

Project Number: 60476644
Client: Town of Orleans

Site Location: Main Street
Orleans, MA

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Project Manager: Reggie Donogh | Field Techs: C.Hayden

Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/20/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/21/2017

Boring: B-47

Boring Number:
Sheet: 1 of 2
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620
Inside Diameter: 2"

Well Data

Boring Depth: 10 ft
Screen Depth:
Screen length:

Depth	Sample Identification	Rec (ft)	Sorting	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1–5	0 ft to 5 ft					Pre-Cleared to 5 ft Brown fine to medium sand					1–5
6–10	5 ft to 10 ft	3.8 ft		dry		5 to 6 ft: Dense, Brown fine sand 6 to 8.6 ft: Loose, Tan fine sand, little medium sand 8.6 to 8.8 ft: Tan/Grey fine sand, little silt					6–10
11–15	10 ft to 15 ft	3.2 ft		dry		10 to 10.7 ft: Tan /Grey silt, trace fine sand 10.7 to 12 ft: Tan fine to medium sand 12 to 13.2 ft: Tan fine to medium sand, little coarse sand, trace fine gravel					11–15
16–20	15 ft to 20 ft	3.8 ft		dry		Tan fine to medium sand, little coarse sand, trace fine gravel					16–20
21–25	20 ft to 25 ft	3.9 ft		dry		Tan fine to medium sand, little coarse sand, trace fine gravel					21–25
26–30	25 ft to 30 ft	3.7 ft		dry		Tan medium sand, little fine sand					26–30

Project Number: 60476644
Client: Town of Orleans

Site Location: Main Street
Orleans, MA

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Boring: B-47, continued

Boring Number:
Sheet: 2 of 2

Surface Elevation (ft-asl): ____

Equipment: Geoprobe 6620
Inside Diameter: 2"

Well Data

Boring Depth: 40 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donoghue | Field Techs: C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/20/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/21/2017

Depth	Sample Identification	Rec (ft)	Sorting	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
31	30 ft to 35 ft	3.7 ft		wet		Tan medium sand, little fine sand					31
32											32
33											33
34											34
35											35
36	35 ft to 40 ft	3.5 ft		wet		35 to 37.8 ft: Tan medium sand, **wet**					36
37						37.8 to 38.5 ft: Coarse sand, little medium sand					37
38						---Red/Orange Iron staining from 38.2 to 38.5 ft					38
39											39
40						---------- End of Boring at 40' ----------					40

Project Number: 60476644
Client: Town of Orleans

Site Location: Main Street
Orleans, MA

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Boring: B-48

Boring Number:
Sheet: 1 of 1

Surface Elevation (ft-asl): ____

Equipment: Geoprobe 6620
Inside Diameter: 2"

Well Data

Boring Depth: 15 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donoghu | Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/21/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/21/2017

Depth	Sample Identification	Rec (ft)	Sorting	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.
1	0 ft to 5 ft					0 - 10" : Asphalt 10" - 12" : Gravel 12" - 5' : Orange\Brown fine to medium sand				
6	5 ft to 10 ft	4 ft		dry		5 to 7 ft: Tan fine to medium sand ---Brown silt lenses: 5.7 to 5.9 ft and 6.6 to 6.7 ft 7 to 7.5 ft: Mottled, Brown silt 7.5 to 7.7 ft: Loose, Tan fine to medium sand 7.7 to 9 ft: Mottled, Brown silt and fine sand				
11	10 ft to 15 ft	2.5 ft		dry		Tan/Brown fine to medium sand, broken cobble/large gravel fragments ---------- End of Boring 15' ----------				

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Brewster Cross Ro
Orleans, MA

Boring: B-49

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/21/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/23/2017

Depth	Sample Identification	Rec (ft)	Moistu		Field Identification	Description	Fill Mat.	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0 - 5" : Asphalt					1
2					5" - 6" : Gravel					2
3					6" - 5' : Orange\Brown fine to medium sand. Larger cobbles encountered					3
4										4
5										5
6	5 ft to 10 ft	4 ft	dry		10 to 11.8 ft: Tan fine to medium sand					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft	4.2 ft	moist		11.8 to 13.5 ft: Brown mottled fine sand					11
12					13.5 to 14.2 ft: Brown medium sand, trace coarse sand					12
13										13
14										14
15										15
16	15 ft to 20 ft	3.3 ft	moist		15 to 16.9 ft: Tan, Iron-stained medium sand					16
17					16.9 to 17.1 ft: Brown, mottled fine sand					17
18					17.1 to 18.3 ft: Tan, Iron-stained medium to coarse sand					18
19										19
20					---------- End of Boring 20' ----------					20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

Site Location: Main Street
Orleans, MA

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Boring: B-50

Boring Number:
Sheet: 1 of 2

Surface Elevation (ft-asl):

Equipment: Geoprobe 6620
Inside Diameter: 2"

Well Data

Boring Depth: 35 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date:
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/21/2017

Depth	Sample Identification	Rec (ft)	Sorting	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat.	Depth
1-5	0 ft to 5 ft					Brown fine to medium sand					1-5
6-10	5 ft to 10 ft	3.5 ft		dry		5 to 5.8 ft: Tight Brown-Orange fine to medium sand, trace coarse sand 5.8 to 7.7 ft: Dense brown silt and fine sand ---medium sand lenses: 6.3 to 6.5 ft and 6.6 to 6.7 ft 7.7 to 8.1 ft: Tan medium sand 8.1 to 8.5 ft: Brown medium sand					6-10
11-15	10 ft to 15 ft	4.2 ft		dry		10 to 11.5 ft: Tan medium sand, little coarse sand, **wet at 11.2 ft** 11.5 to 13.5 ft: Dense, mottled Brown/Tan fine sand, some silt 13.5 to 14.2 ft: Tan/Light brown medium sand, little coarse sand, **dry**					11-15
16-20	15 ft to 20 ft	3.2 ft				15 to 16.5 ft: Tan fine to medium sand, Iron-staining from 15.5 to 15.6 ft 16.5 to 18 ft: Tan fine/very fine sand ---intermittent brown silt lenses, ranging between 1/8" to 1" thick 18 to 18.2 ft: Tan very fine sand, multiple brown silty clay varves					16-20
21-25	20 ft to 25 ft	3.7 ft				20 to 23.3 ft: Tan fine sand ---Brown silt lenses: 22.2 to 22.4 ft and 22.8 to 22.9 ft 23.3 to 23.7 ft: Brown mottled silt					21-25
26-30	25 ft to 30 ft	3.9 ft				Mottled, Tan fine to medium sand					26-30

Project Number: 60476644
Client: Town of Orleans

Site Location: Main Street
Orleans, MA

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Boring: B-50, continued

Boring Number:
Sheet: 2 of 2

Surface Elevation (ft-asl): ____

Equipment: Geoprobe 6620
Inside Diameter: 2"

Well Data

Boring Depth: 35 ft
Screen Depth:
Screen length:

Project Manager: Mark Owen
Field Techs: C.Hayden

Pre-Clear Contractor: Strategic
Pre-Clear Date:

Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/21/2017

Depth	Sample Identification	Rec (ft)	Sorting	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
31	30 ft to 35 ft	2.3 ft		wet		30 to 30.5 ft: Tan medium sand, moist (large chunk of gravel at 30.5 ft)					31
32						30.6 to 31.1 ft: Brown fine sand, little medium sand, **wet** 31.1 to 32.3 ft: Brown medium sand, little coarse sand, **wet**					32
33											33
34						**Note:** 32.3 to 33.3 ft fell out of the liner back into borehole					34
35						---------- End of Boring 35' ----------					35
36											36
37											37
38											38
39											39
40											40

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Academy Place
Orleans, MA

Boring: B-52

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donoghue | Field Techs: S. Chmiel
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/15/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 3/21/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 13" Pavement					1
2					13 to 18" Gravel					2
3					18 to 60" Light Tan Fine to Medium Sand					3
4										4
5										5
6	5 ft to 10 ft				5 to 6 Ft: Tan Fine to Medium Sand with Stones and Pebbles					6
7					6 to 10 Ft: Light Tan Fine Sand					7
8										8
9										9
10					---------- End of Boring at 10' ----------					10
11	10 ft to 15 ft									11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Academy Place
Orleans, MA

Boring: B-53

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donoghe
Field Techs: S. Chmiel
Pre-Clear Contractor: Strategic
Pre-Clear Date: 3/15/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 3/21/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 7" Dark Brown Loamy Sand with Fine roots (Topsoil)					1
2					7 to 60" Tan Fine Sand with Pebbles and Stones					2
3										3
4										4
5										5
6	5 ft to 10 ft				5 to 5.6 Ft: Gray Dense Silty Sand					6
7					5.6 to 6.4 Ft: Tan Fine to Medium Silty Sand with Orange Redox Concentrations 6.4 to 8.5 Ft: Gray Damp Fine Silty Sand					7
8					8.5-9.5 Ft: Brown Fine Silty Sand					8
9					9.5 to 10.5 Ft: Tan Fine Sand					9
10					10.5 to 11.5 Ft: Gray Silty Clay Sand					10
11	10 ft to 15 ft				11.5 to 13 Ft: Tan to Light Tan Medium to Course Sand					11
12										12
13					---------- End of Boring at 13' ----------					13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Cove Road
Orleans, MA

Boring: B-54

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donoghue
Field Techs: S. Chmiel
Pre-Clear Contractor: Strategic
Pre-Clear Date: 3/15/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 3/21/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 8" Pavement					1
2					8 to 12" Gravel					2
3					12 to 60" Tan Fine to Medium Sand with Pebbles and Stones					3
4										4
5										5
6	5 ft to 10 ft				5 to 5.5 Ft: Light Tan Fine Sand					6
7					5.5 to 8.3 Ft: Tan Fine to Medium Sand with Pebbles and Stones					7
8					8.3 to 12.7 Ft. gray Dense Damp Fine Silty Sand					8
9										9
10										10
11	10 ft to 15 ft									11
12					12.7 to 13 Ft. Tan Medium to Course Sand with Pebbles					12
13										13
14					---------- End of Boring at 12' ----------					14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: RT 28
Orleans, MA

Boring: B-56

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: S. Chmiel
Field Techs: C.Hayden, B.Morrill
Pre-Clear Contractor: Strategic
Pre-Clear Date: 3/15/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 3/21/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 9" Dark Brown Loamy Sand with Fine Roots (Topsoil)					1
2					9 to 60" Tan Fine Silty Sand with Pebbles					2
3										3
4										4
5										5
6	5 ft to 10 ft				5 to 8.3 Ft: Tan Fine to Medium Sand with Pebbles					6
7										7
8					8.3 to 12.7 Ft: Gray to Light Brown Dense Damp Silty Sand					8
9										9
10										10
11	10 ft to 15 ft									11
12					12.7 to 13 Ft: Tan Medium to Course Sand					12
13										13
14					---------- End of Boring at 13' ----------					14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: RT 28
Orleans, MA

Boring: B-57

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: S. Chmiel
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/15/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date:

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 10" Dark Brown Loamy Sand with Fine Roots (Topsoil)					1
2					10 to 60" Tan Fine Sand					2
3										3
4										4
5										5
6	5 ft to 10 ft				Potential Unmarked Waterline, did not complete					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft									11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Locatio Cummings Roa
Orleans, MA

Boring: B-58

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Mark Ov
Field Techs: C.Hayden, B.Mon
Pre-Clear Contractor: Strategic
Pre-Clear Date:
Drill Contractor: NE Geote
Driller: Hayes
Drill Date:

Depth	Sample Identification	Rec (%	Moist	PID (ppm	Field Identification	Description	Fill Mat.	Tube	Fill W	Depth
1	0 ft to 5 ft				0 - 3" : Asphalt					1
2					~2'' of dirt fill					2
3					5''-60'' - fine to medium orange brown sand					3
4										4
5										5
6	5 ft to 10 ft				Location not yet drilled					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft									11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Cummings Road
Orleans, MA

Boring: B-59

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Mark Owen
Field Techs: C.Hayden, B.Morrill
Pre-Clear Contractor: Strategic
Pre-Clear Date:
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date:

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 - 3" : Asphalt					1
2					Some vegetative material (roots) around 3''					2
3					5''-60" - fine to medium orange brown sand					3
4										4
5										5
6	5 ft to 10 ft				Location not yet drilled					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft									11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Cove Road
Orleans, MA

Boring: B-60

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/21/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/23/2017

Depth	Sample Identification	Rec (ft)	Moisture		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 - 5" : Asphalt					1
2					5" - 5' : Fine to medium sand.					2
3										3
4										4
5										5
6	5 ft to 10 ft	3.6 ft	dry		5 to 5.6 ft: Brown fine to medium sand, trace coarse sand					6
7					5.6 to 7.9 ft: Tan fine sand					7
8			dry		7.9 to 8.4 ft: Tan-Light Brown fine sand, some medium sand					8
9			moist		8.4 to 11 ft: Brown fine to medium sand					9
10										10
11	10 ft to 15 ft	3.7 ft	moist		11 to 13.7 ft: Brown mottled fine sand, little silt					11
12										12
13										13
14										14
15					---------- End of Boring 12' ----------					15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Cove Road
Orleans, MA

Boring: B-61

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/21/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/23/2017

Depth	Sample Identification	Rec (ft)	Moistu		Field Identification	Description	Fill Mat.	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0 - 4" : Asphalt					1
2					4" - 5" : Gravel					2
3					5" - 5' : Brown\Orange fine to medium sand.					3
4										4
5										5
6	5 ft to 10 ft	3.5 ft	dry		5 to 7.7 ft: Tan, Iron-stained medium sand, some fine sand					6
7					7.7 to 8.1 ft: Brown silt					7
8					8.1 to 8.5 ft: Tan, Iron-stained medium sand, some fine sand					8
9										9
10										10
11	10 ft to 15 ft	3.5 ft	dry		10 to 11.8 ft: Brown fine sand, little medium sand					11
12					11.8 to 12.6 ft: Light Orange/Tan medium sand					12
13					12.6 to 13.5 ft: Brown silt					13
14										14
15					---------- End of Boring 12' ----------					15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Old Tote Road
Orleans, MA

Boring: B-62

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donoghue | Field Techs: C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/20/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/22/2017

Depth	Sample Identification	Rec (ft)	Moisture		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 - 60'' - Brown/ Orange medium sand with some finer material					1
2										2
3										3
4										4
5										5
6	5 ft to 10 ft	3.8 ft	dry		Tan/Brown fine to medium sand, trace coarse sand, coarsening downward					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft	3.8 ft	dry		10 to 11.6 ft: Tan-Brown medium to coarse sand, trace fine gravel					11
12					11.6 to 12.7 ft: Tan/Brown fine silty sand, little medium sand, trace gravel					12
13					12.7 to 13.1 ft: Mottled grey/brown silt, little clay					13
14					13.1 to 13.8 ft: Plastic Brown silt and clay					14
15										15
16	15 ft to 20 ft	3.8 ft	dry		15 to 15.9 ft: Plastic Brown silt and clay, trace fine sand					16
17					15.9 to 18.8 ft: Interchanging 4" layers of Brown silty clay and fine sand					17
18										18
19										19
20										20
21	20 ft to 25 ft	UNK	dry		Liner stuck in macro; soil was hammered out by driller: -Dense, mottled Grey/Tan fine sand					21
22										22
23										23
24										24
25					---------- End of Boring at 22' ----------					25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: West Road
Orleans, MA

Boring: B-63

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: C.Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/20/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/22/2017

Depth	Sample Identification	Rec (ft)	Moistu		Field Identification	Description	Fill Mat.	Tube	Fill Ma	Depth
1-5	0 ft to 5 ft				0 - 60'' - Brown fine to medium sand, moist near bottom					1-5
6-10	5 ft to 10 ft	3.7 ft	dry		Brown to Tan fine sand, little medium sand					6-10
11-15	10 ft to 15 ft	3.4 ft	dry		Tan fine sand, trace medium sand					11-15
16-20	15 ft to 20 ft	3.5 ft	dry		15 to 17.7 ft: Tan fine sand, trace medium sand 17.7 to 18.5 ft: Brown-Orange fine sand, trace medium silty sand ---------- End of Boring at 17' ----------					16-20
21-30										21-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: West Road
Orleans, MA

Boring: B-64

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 15 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: S. Chmiel, C.Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 3/13/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 3/15/2017

Depth	Sample Identification	Rec (ft)	Moisture		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 10” Pavement (Top 5” New)					1
2					10 to 12” Gravel With Pebbles					2
3					12 to 60” Tan Medium to Fine Sand With Pebbles					3
4										4
5										5
6	5 ft to 10 ft	4.2 ft	dry		5 to 12 ft: Light Brown/Tan fine sand, trace medium sand					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft	4.4 ft	dry		12 to 12.6 ft: Brown fine sand, some silt					11
12					12.6 to 13.1 ft: Tan fine to medium sand, silty clay varve at 12.8 ft					12
13					13.1 to 13.4 ft: Brown clayey silt					13
14					13.4 to 14 ft: Light Brown/Tan fine sand, trace medium sand					14
15					---------- End of Boring at 15' ----------					15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: West Road
Orleans, MA

Boring: B-65

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: C.Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/20/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/22/2017

Depth	Sample Identification	Rec (ft)	Moist		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 - 60" - Brown fine to medium sand, moist near bottom					1
2										2
3										3
4										4
5										5
6	5 ft to 10 ft	4 ft	dry		Tan-Orange fine to medium sand, trace pulverized cobble -with some coarse sand between 7.5 to 8.1 ft					6
7										7
8										8
9										9
10					---------- End of Boring at 10' ----------					10
11										11
12										12
13										13
14										14
15										15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: West Road
Orleans, MA

Boring: B-66

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: C.Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/20/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/22/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1-5	0 ft to 5 ft				0 - 60'' - Brown fine to medium sand, moist near bottom					1-5
6-10	5 ft to 10 ft	3.5 ft	dry		Tan-Light Brown fine to medium sand, little silt ---------- End of Boring at 10' ----------					6-10
11-30										11-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: West Road
Orleans, MA

Boring: B-67

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: C.Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/20/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/22/2017

Depth	Sample Identification	Rec (ft)	Moistu		Field Identification	Description	Fill Mat.	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0 - 60'' - Brown fine to medium sand, moist near bottom					1
2										2
3										3
4										4
5										5
6	5 ft to 10 ft	1 ft	dry		5 to 6 ft: Brown fine sand, root fibers					6
7					6 ft: Broken cobble in tip; cobble likely located at 7 ft due to hard drilling					7
8										8
9										9
10										10
11	10 ft to 15 ft	4 ft	dry		Dense Brown mottled fine sand, some Iron-staining					11
12										12
13										13
14										14
15					---------- End of Boring at 10' ----------					15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: West Road
Orleans, MA

Boring: B-68

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: C.Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/20/2017
Drill Contractor: NE Geotech
Driller: Hayes
Date Completed: 2/22/2017

Depth	Sample Identification	Rec (ft)	Moistu		Field Identification	Description	Fill Mat.	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0 - 60'' - Brown fine to medium sand, moist near bottom					1
2										2
3										3
4										4
5										5
6	5 ft to 10 ft	2 ft	dry		Brown/Orange fine to medium sand, trace broken cobble at 5.5 ft and in tip of macro (Broken cobble in tip caused reduction in recovery)					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft	3 ft	dry		10 to 11 ft: Brown medium sand, some fine sand, trace broken cobble					11
12					11 to 13 ft: Brown/Orange fine sand, trace coarse sand					12
13										13
14										14
15					---------- End of Boring at 11' ----------					15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Old Colony Way
Orleans, MA

Boring: B-69

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 15 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/17/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/17/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0 - 8" : Asphalt 8" - 9" : Gravel 9" - 5' : Brown fine to medium sand					1-5
6-10	5 ft to 10 ft	3.8 ft	dry		5 to 8.7 ft: Tight, Brown-Grey mottled fine sand 8.7 to 8.8 ft: Tan brown-mottled fine sand					6-10
11-15	10 ft to 15 ft	3.4	dry		Tight, Brown-Grey mottled fine sand **-->intermittent fine to medium sand lenses** ---------- End of Boring at 15' ----------					11-15
16-20	15 ft to 20 ft									16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Old Colony Way
Orleans, MA

Boring: B-70

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 10 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/17/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/17/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0 - 8" : Asphalt 8" - 9" : Gravel 9" - 5' : Brown fine to medium sand					1-5
6-10	5 ft to 10 ft	3.4 ft	dry		5 to 6.7 ft: Brown fine sand, some medium sand 6.7 to 7 ft: Tan/Brown medium sand 7 to 8.4 ft: Fine sand, trace large gravel -->Transition from Tan to Brown to Orange/Brown in color ---------- End of Boring at 10' ----------					6-10
11-15	10 ft to 15 ft									11-15
16-20	15 ft to 20 ft									16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Old Colony Way
Orleans, MA

Boring: B-71

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 15 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/17/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/17/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1	0 ft to 5 ft				0 - 8" : Asphalt 8" - 9" : Gravel 9" - 5' : Brown fine to medium sand					1
2										2
3										3
4										4
5										5
6	5 ft to 10 ft	4 ft	dry		5 to 5.1 ft: Brown fine sand 5.1 to 5.5 ft: Tan medium to coarse sand, little fine sand, pulverized cobble/large gravel 5.5 to 9 ft: Tight, Brown mottled fine sand **-->Orange in color from 7.5 to 7.6 ft**					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft	4.1	dry		10 to 13.8 ft: Tight, Brown-Grey mottle fine sand **-->pulverized cobble/large gravel from 11.6 to 12 ft** 13.8 to 14.1 ft: Orange coarse sand, some medium sand ---------- End of Boring at 15' ----------					11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Old Colony Way
Orleans, MA

Boring: B-72

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 10 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/17/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/17/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1	0 ft to 5 ft				0 - 8" : Asphalt					1
2					8" - 9" : Gravel					2
3					9" - 5' : Brown fine to medium sand					3
4										4
5										5
6	5 ft to 10 ft	4 ft	dry		5 to 5.3 ft: Red/Brown coarse sand					6
7					5.3 to 7.1 ft: Brown/Tan medium sand, little fine sand					7
8					7.1 to 7.4 ft: Brown fine sand					8
9					7.4 to 8 ft: Tan coarse sand, broken cobble fragments					9
10					8 to 9 ft: Tan brown-mottled fine sand ---------- End of Boring at 10' ----------					10
11	10 ft to 15 ft									11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Old Colony Way
Orleans, MA

Boring: B-73

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth: 10 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: B.Morrill, C. Hay | Started: 2/17/2017
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/17/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/17/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	i	Description	Fill Mat.	Tube	Fill Mat.	Depth
1-5	0 ft to 5 ft				0 - 6" : Asphalt 6" - 7" : Gravel 7" - 5' : Orange\Brown fine sand					1-5
6-10	5 ft to 10 ft	3.6 ft	dry		Tight, Brown/Tan fine to medium sand ---------- End of Boring at 10' ----------					6-10
11-15	10 ft to 15 ft									11-15
16-20	15 ft to 20 ft									16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Old Colony Way
Orleans, MA

Boring: B-74

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 10 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategoic | Pre-Clear Date: 2/16/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/17/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0 - 8" : Asphalt 8" - 5' : Orange\Brown\Lt Brown fine to medium sand					1-5
6-10	5 ft to 10 ft	3.8 ft	dry		Tan fine to medium sand **-->Trace medium gravel from 7.5 to 8.8 ft** ---------- End of Boring at 10' ----------					6-10
11-15	10 ft to 15 ft									11-15
16-20	15 ft to 20 ft									16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Old Colony Way
Orleans, MA

Boring: B-75

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 10 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/16/2017
Drill Contractor: NE Geotech | Driller: Hayes | Date Completed: 2/17/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1	0 ft to 5 ft				0 - 6" : Asphalt 6" - 7" : Gravel 7" - 5' : Orange\Brown fine to medium sand					1
2										2
3										3
4										4
5										5
6	5 ft to 10 ft	4 ft	dry		5 to 6.8 ft: Tan fine to medium sand 6.8 to 9 ft: Brown fine sand, little medium sand **-->Grey silt lens at 6.7 ft**					6
7										7
8										8
9										9
10					---------- End of Boring at 10' ----------					10
11	10 ft to 15 ft									11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Old Colony Way
Orleans, MA

Boring: B-76

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 10 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/16/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/17/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0 - 8" : Asphalt 8" - 4.5' : Orange\Brown fine to medium sand. 4.5' - 5' : Light brown sand					1-5
6-10	5 ft to 10 ft	3.4 ft	dry		5 to 6 ft: Brown fine sand, little medium sand 6 to 8 ft: Tan medium sand; intermittent, brown silty fine sand layers 8 to 8.4 ft: Brown silty fine sand ---------- End of Boring at 10' ----------					6-10
11-15	10 ft to 15 ft									11-15
16-20	15 ft to 20 ft									16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Old Colony Way
Orleans, MA

Boring: B-77

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 10 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/16/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/17/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0 - 6" : Asphalt 6" - 4.5' : Orange\Brown fine sand 4.5' -5' : Light brown sand					1-5
6-10	5 ft to 10 ft	4 ft	dry		5 to 6.1 ft: Tan fine to medium sand 6.1 to 7 ft: Tan/Brown fine to medium sand, trace fine gravel, broken cobble 7 to 8.9 ft: Tan Brown-mottled fine sand 9.0 ft: Broken cobble in drive-shoe ---------- End of Boring at 10' ----------					6-10
11-15	10 ft to 15 ft									11-15
16-20	15 ft to 20 ft									16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Old Tote Road
Orleans, MA

Boring: B-78

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/20/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/22/2017

Depth	Sample Identification	Rec (ft	Moist	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1-5	0 ft to 5 ft				0 - 60'' - Brown/ Orange medium sand with some finer material					1-5
6-10	5 ft to 10 ft	4 ft	dry		5 to 7.3 ft: Tan, Iron-stained fine to medium sand 7.3 to 9 ft: Tan fine sand					6-10
11-15	10 ft to 15 ft	3.9 ft	dry		Tan fine sand with intermittent Iron-staining ---------- End of Boring at 13' ----------					11-15
16-30										16-30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Old Tote Road
Orleans, MA

Project Manager: Reggie Donogh | Field Techs: C.Hayden

Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/20/2017

Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/22/2017

Boring: B-79

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Depth	Sample Identification	Rec (ft)	Moisture		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 - 60'' - Brown/ Orange medium sand with some finer material					1
2										2
3										3
4										4
5										5
6	5 ft to 10 ft	4.4 ft	dry		5 to 7.6 ft: Tan/Orange-mottled fine to medium sand, little coarse sand					6
7					7.6 to 9.4 ft: Mottled Tan/Brown fine sand, some silt					7
8										8
9										9
10										10
11	10 ft to 15 ft	4.1 ft	dry		Brown silt and fine sand, Iron-staining					11
12										12
13										13
14										14
15					---------- End of Boring at 14' ----------					15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Old Colony Way
Orleans, MA

Boring: B-80

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 11 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/16/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/17/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1	0 ft to 5 ft				0 - 6" : Asphalt 6" - 7" : Gravel 7" - 4' : Orange\Brown fine sand 4' - 5' : Asphalt Layer - Refusal for pre-clean					1
2										2
3										3
4										4
5										5
6	5 ft to 10 ft	3.6 ft	dry		5 to 7.2 ft: Dense, Brown fine sand, little medium sand 7.2 to 8.6 ft: Brown fine to medium sand, trace medium gravel					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft	4 ft	dry		Dense, Brown-Grey mottled fine sand, trace silt					11
12										12
13										13
14										14
15					---------- End of Boring at 15' ----------					15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Old Colony Way
Orleans, MA

Boring: B-81

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 12 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/16/2017
Drill Contractor: NE Geotech | Driller: Hayes | Date Completed: 2/17/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1-5	0 ft to 5 ft				0 - 6" : Asphalt 6" - 5' : Orange\Brown fine to medium sand with <5% angular gravel. Few cobbles encountered					1-5
6-10	5 ft to 10 ft	4.3 ft	dry		5 to 8 ft: Tan brown fine to medium sand, trace fine gravel 8 to 9.3 ft: Dense Brown fine sand, trace silt					6-10
11-15	10 ft to 15 ft	3.6 ft	dry		10 to 10.2 ft: Dense Brown fine sand, trace silt 10.2 to 13.6 ft: Tan brown-mottled fine to medium sand ---------- End of Boring at 12' ----------					11-15
16-20	15 ft to 20 ft									16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Intersection of Main St. and Old Colony Way Orleans, MA

Boring: B-82

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donoghue
Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/21/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/21/2017

Depth	Sample Identification	Rec (ft	Moistu		Field Identification	Description	Fill Mat	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0 - 6" : Asphalt					1
2					6" - 8" : Gravel					2
3					8" - 5' : Brown fine to medium sand.					3
4										4
5										5
6	5 ft to 10 ft	3.5 ft	dry		5 to 7.9 ft: Orange/Tan fine to medium sand					6
7					7.9 to 8.5 ft: Tan coarse sand and fine gravel, some medium sand					7
8										8
9										9
10										10
11	10 ft to 15 ft	3.7 ft	dry		10 to 10.3 ft: Tan coarse sand and fine gravel, some medium sand					11
12					10.3 to 11 ft: Tan/Orange mottled fine to medium sand					12
13					11 to 13.7 ft: Loose, Tan fine sand					13
14										14
15					---------- End of Boring at 13' ----------					15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Main Street West
Orleans, MA

Boring: B-83

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/14/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/21/2017

Depth	Sample Identification	Rec (ft)	Moist		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 - 10" : Asphalt					1
2					10" - 5' : Orange and brown, fine to medium sand					2
3										3
4										4
5										5
6	5 ft to 10 ft	3.8 ft	dry		5 to 5.3 ft: Brown fine to medium sand					6
7					5.3 to 8.1 ft: Tan fine sand					7
8					8.1 to 8.5 ft: Brown fine sand, trace root fibers					8
9					8.5 to 8.8 ft: Tan fine sand					9
10										10
11	10 ft to 15 ft	4.1 ft	dry		Mottled, Tan fine to medium sand, interlayered brown fine sand and silt					11
12										12
13										13
14										14
15					---------- End of Boring at 12' ----------					15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Main Street West
Orleans, MA

Boring: B-84

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/14/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/21/2017

Depth	Sample Identification	Rec (ft)	Moist		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 - 10" : Asphalt					1
2					10" - 5' : Orange and brown, fine to medium sand					2
3										3
4										4
5										5
6	5 ft to 10 ft	3.6 ft	dry		5 to 5.5 ft: Tan fine sand, trace medium gravel					6
7					5.5 to 5.7 ft: Brown fine sand, little brown silt lenses					7
8					5.7 to 8.6 ft: Tan fine sand, intermittent brown silt lenses					8
9										9
10										10
11	10 ft to 15 ft	3.7 ft	dry		10 to 13 ft: Tan medium sand, little coarse sand					11
12					---Brown silt lenses at 12 ft and 12.5 ft					12
13					13 to 13.4 ft: Mottled, Brown silt and fine sand					13
14					13.4 to 13.7 ft: Tan very fine sand					14
15					---------- End of Boring at 13' ----------					15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Main Street West
Orleans, MA

Boring: B-85

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/14/2017
Drill Contractor: NE Geotech | Driller: Hayes | Date Completed: 2/21/2017

Depth	Sample Identification	Rec (ft)	Moisture		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 - 10" : Asphalt over gravel					1
2					10" - 5' : Orange/Brown fine sand					2
3										3
4										4
5										5
6	5 ft to 10 ft	3.7 ft	dry		5 to 6 ft: Tan/Orange medium sand					6
7					6 to 6.7 ft: Brown fine sand and silt					7
8					6.7 to 8.7 ft: Brown/Tan fine to medium sand					8
9										9
10										10
11	10 ft to 15 ft	3.5 ft	dry		10 to 11.1 ft: Tan medium sand, little coarse sand					11
					---Thin layer of brown silt and root fibers at 10.9 ft					
12					11.1 to 12.3 ft: Mottled, Tan medium sand 12.3 to 12.5 ft: Orange medium to coarse sand					12
13										13
14					12.5 to 13.3 ft: Tan fine to medium sand 13.3 to 13.5 ft: Brown fine sand, little silt					14
15					---------- End of Boring at 11' ----------					15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Main St (West)
Orleans, MA

Boring: B-86

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 12 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/14/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/17/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0 - 12" : Asphalt 12" - 5' : Orange-brown, fine to medium sand					1-5
6-10	5 ft to 10 ft	3.6 ft			Tan medium sand **-->wet at 6.5 ft**					6-10
11-15	10 ft to 15 ft	3.9 ft			10 to 10.8 ft: Tan medium sand 10.8 to 12 ft: Brown fine sand, little medium sand 12 to 12.6 ft: Brown fine to medium sand 12.6 to 13.4 ft: Brown fine sand 13.4 to 13.9 ft: Dense,Brown silt, trace fine sand ---------- End of Boring at 12' ----------	5				11-15
16-20	15 ft to 20 ft									16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Locust Road
Orleans, MA

Boring: B-87

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: R. Donoghue, C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/8/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/22/2017

Depth	Sample Identification	Rec (ft	Moistur		Field Identification	Description	Fil Mat'l	Tube	Fil Ma	Depth
1	0 ft to 5 ft				0" to 8" - Pavement 8" to 10" - Gravel 10" to 60" - Fine Sand					1
2										2
3										3
4										4
5										5
6	5 ft to 10 ft	3.9 ft	dry		5 to 6.1 ft: Tan fine to medium sand 6.1 to 6.5 ft: Brown mottled fine sand and silt 6.5 to 6.7 ft: Tan fine sand lens 6.1 to 6.5 ft: Brown mottled fine sand and silt					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft	4.2	dry		10 to 12.5 ft: Dense Brown mottled fine sand and silt 12.5 to 13.2 ft: Mottled Tan fine sand, trace coarse sand 13.2 to 14.2 ft: Dense Brown mottled fine sand and silt					11
12										12
13										13
14										14
15					---------- End of Boring at 15' ----------					15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Locust Road
Orleans, MA

Boring: B-88

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 15 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: R. Donoghue, C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/8/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/17/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat.	Depth
1-5	0 ft to 5 ft				0" to 8" - Pavement 8" to 12" - Gravel 12" to 60" - Silty Fine Sand					1-5
6-10	5 ft to 10 ft	3.3 ft			5 to 5.3 ft: Brown fine sand, root fibers observed 5.3 to 6.9 ft: Tan brown-mottled fine to medium sand 6.9 to 7.4 ft: Mottled, Brown fine sand, little silt, historic root system 7.4 to 8.3 ft: Mottled, Tan medium sand					6-10
11-15	10 ft to 15 ft	3.5 ft			10 to 12 ft: Tan medium sand, trace fine sand 12 to 12.3 ft: Brown fine to medium sand, little coarse sand 12.3 to 12.7 ft: Brown/Tan fine to medium sand 12.7 to 13.5 ft: Mottled, Brown silt, little fine sand, trace clay 13.5 (tip) ft: Brown/Red medium sand ---------- End of Boring at 12' ----------					11-15
16-20	15 ft to 20 ft									16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Locust Road
Orleans, MA

Project Manager: Reggie Donogh | Field Tech: R. Donoghue, C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/8/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/17/2017

Boring: B-89

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 15 ft
Screen Depth:
Screen length:

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1	0 ft to 5 ft				0 to 8" Pavement					1
2					8 to 10" Gravel					2
3					10 to 60" Tan Medium to Course Sand with Stones					3
4										4
5										5
6	5 ft to 10 ft	3.6 ft			5 to 6.5 ft: Brown, silty fine sand					6
7					6.5 to 8.6 ft: Tan medium sand, little coarse sand					7
8										8
9										9
10										10
11	10 ft to 15 ft	3.4 ft		moist	10 to 10.6 ft: Tan medium sand, little coarse sand					11
12				wet	10.6 to 13.4 ft: Tan coarse sand, some medium sand					12
13										13
14										14
15					---------- End of Boring at 14' ----------					15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Locust Road
Orleans, MA

Project Manager: Reggie Donoghu | Field Techs: R. Donoghue, C.F

Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/8/2017

Drill Contractor: NE Geotech | Driller: Ha | Drill Date: 2/22/2017

Boring: B-90

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Depth	Sample Identification	Rec (ft)		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft			0" to 12" - Pavement					1
2				12" to 18" - Gravel					2
3				18" to 48" - Fine Sand					3
4				48" to 60" - Coarse Sand and Cobbles					4
5									5
6	5 ft to 10 ft	4 ft		5 to 6.6 ft: Tan fine to medium sand					6
7				6.6 to 9 ft: Brown fine sand, some silt, trace coarse sand					7
8									8
9									9
10									10
11	10 ft to 15 ft	4 ft		Brown mottled fine sand and silt, **wet at 12 ft**					11
12									12
13									13
14									14
15									15
16	15 ft to 20 ft	4.7		15 to 15.7 ft: Brown fine to medium sand					16
17				15.7 to 19.7 ft: Brown fine sand and silt					17
18									18
19									19
20				---------- End of Boring at 18' ----------					20
21									21
22									22
23									23
24									24
25									25
26									26
27									27
28									28
29									29
30									30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Locust Street
Orleans, MA

Boring: B-91

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 30 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: R. Donoghue, C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/8/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/16/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0" to 8" - Pavement 8" to 16" - Gravel 16" to 30" - Coarse Sand 30" to 60" - Fine Sand					1-5
6-10	5 ft to 10 ft	3.6 ft	wet		Tan brown-mottled medium sand, little coarse sand					6-10
11-15	10 ft to 15 ft	3.8 ft	wet		Orange-Light Brown medium sand, little coarse sand					11-15
16-20	15 ft to 20 ft	3.7			Tan brown-mottled medium sand, little coarse sand **-->wet at 16.3 ft**					16-20
21-25	20 ft to 25 ft	3.3			Medium to coarse sand, intermittently switches between Tan and Orange					21-25
26-30	25 ft to 30 ft				Tan coarse sand ---------- End of Boring at 27' ----------					26-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Locust Street
Orleans, MA

Project Manager: Reggie Donogh | Field Tech: R. Donoghue, C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/8/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/16/2017

Boring: B-92

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 15 ft
Screen Depth:
Screen length:

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0" to 8" - Pavement 8" to 14" - Gravel 14" to 60" - Fine Sand					1-5
6-10	5 ft to 10 ft	3.8 ft	wet		Tan medium sand, little fine sand					6-10
11-15	10 ft to 15 ft	3.8 ft	wet		Tan medium sand, little fine sand ---------- End of Boring at 11' ----------					11-15
16-20	15 ft to 20 ft									16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Locust Street
Orleans, MA

Boring: B-93

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 25 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: R. Donoghue, C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/8/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/16/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0" to 6" - Pavement 6" to 12" - Gravel 12" to 60" - Fine Sand					1-5
6-10	5 ft to 10 ft	3.7 ft	wet		5 to 5.7 ft: Tan medium sand 5.7 to 6.2 ft: Tan fine sand 6.2 to 7.2 ft: Tan fine to medium sand 7.2 to 8.7 ft: Light Brown medium sand, trace fine and coarse sand **-->tight Grey fine to medium sand at 8.4 ft**					6-10
11-15	10 ft to 15 ft	4.4 ft	wet		Brown silt and fine sand **-->coarse sand and gravel lens at 12.3 to 12.6 ft**					11-15
16-20	15 ft to 20 ft	3.3 ft	wet		15 to 15.9 ft: Brown silt and fine sand 15.9 to 17.3 ft: Dense Dark Grey fine sand and silt 17.3 to 18.3 ft: Brown medium sand, little coarse sand					16-20
21-25	20 ft to 25 ft	3 ft	wet		20 to 21 ft: Tan medium sand, trace coarse sand 21 to 23 ft: Tan coarse sand, trace medium gravel ---------- End of Boring at 21' ----------					21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Locust Street
Orleans, MA

Project Manager: Reggie Donogh | Field Tech: R. Donoghue, C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/8/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/16/2017

Boring: B-94

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 25 ft
Screen Depth:
Screen length:

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1-5	0 ft to 5 ft				0" to 12" - Pavement (2 layers) 12" to 24" - Gravel 24" to 60" - Fine Sand					1-5
6-10	5 ft to 10 ft	3.1 ft			5 to 5.7 ft: Light Brown/Orange medium sand 5.7 to 8.1 ft: Tan medium sand, some coarse sand **-->broken cobble fragment at 7.5 ft**					6-10
11-15	10 ft to 15 ft	3.5 ft	wet		10 to 11 ft: Tan coarse sand 11 to 11.4 ft: Tan fine to medium sand 11.4 to 11.7 ft: Orange/Red medium sand, trace medium gravel 11.7 to 12 ft: Tan fine sand, some fine gravel 12 to 12.8 ft: Tan medium to coarse sand 12.8 to 13.5 ft: Mottled Tan/Orange fine sand					11-15
16-20	15 ft to 20 ft	3.3 ft	wet		15 to 16 ft: Light Brown fine sand 16 to 16.4 ft: Light Brown medium sand 16.4 to 17.3 ft: Light Brown/Orange coarse sand 17.3 to 18.3 ft: Light Brown/Orange medium to coarse sand 10 to 11 ft: Tan coarse sand					16-20
21-25	20 ft to 25 ft	3.4 ft	wet		20 to 22.6 ft: Light Orange medium to coarse sand **-->Transition from Light Orange to Tan at 22 ft** 22.6 to 22.8 ft: Tan fine sand 22.8 to 23.4 ft: Tan fine sand, some medium sand ---------- End of Boring at 22' ----------					21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Locust Street
Orleans, MA

Boring: B-95

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 25 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donos | Field Tech: S. Chmiel, C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/13/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 3/15/2017

Depth	Sample Identification	Rec (ft)	Moisture		Field Identification	Description	Fil Mat	Tube	Fil Mat	Depth
1	0 ft to 5 ft				0 to 8" Pavement					1
2					8 to 10" Gravel					2
3					10 to 60" Tan Medium to Course Sand with Stones					3
4										4
5										5
6	5 ft to 10 ft	3.1 ft	moist		5 to 5.5 ft: Brown fine sand					6
7					5.5 to 8.1 ft: Brown/Tan medium sand, little coarse sand					7
8										8
9										9
10										10
11	10 ft to 15 ft	3.6 ft	moist /	wet	10 to 16 ft: Tan medium sand, some coarse sand, **wet at 12.4 ft**					11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft	3 ft	wet		16 to 18 ft: Tan coarse sand, some medium sand, trace rotted rock					16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft	3 ft	wet		20 to 22.5 ft: Tan medium to coarse sand					21
22					22.5 to 23 ft: Tan fine sand, little medium sand					22
23										23
24										24
25					---------- End of Boring at 25' ----------					25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Liberty Lane
Orleans, MA

Boring: B-96

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth: 15 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/14/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/16/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0 - 2" : Asphalt 2" - 5' : Dark orange to brown, fine to medium sand					1-5
6-10	5 ft to 10 ft	3.3 ft	wet		5 to 5.5 ft: Dark Brown fine sand, some medium sand 5.5 to 7.5 ft: Orange to Brown to Tan fine to medium sand, trace large gravel and broken cobble 7.5 to 8.3 ft: Brown fine sand and silt					6-10
11-15	10 ft to 15 ft	4.6 ft	wet		Brown/Grey silt and fine sand, little medium sand ---------- End of Boring at 13' ----------					11-15
16-30										16-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Liberty Lane
Orleans, MA

Boring: B-97

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 15 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/14/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/16/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0 - 4" : Asphalt 4" - 5' : Brown/Orange fine to medium sand. Larger cobbles encountered.					1-5
6-10	5 ft to 10 ft	4.3 ft	wet		5 to 8.6 ft: Tight brown fine sand, trace medium sand 8.6 to 9 ft: Loose, Tan fine sand					6-10
11-15	10 ft to 15 ft	3.9 ft	wet		10 to 12 ft: Brown fine sand, little medium sand 12 to 12.5 ft: Dense, Light Brown fine sand and silt 12.5 to 12.9 ft: Tan fine to medium sand 12.9 to 13.9 ft: Light Brown fine sand ---------- End of Boring at 11' ----------					11-15
16-20	15 ft to 20 ft									16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Canal Street
Orleans, MA

Boring: B-98

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 15 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/14/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/16/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0"-12" : Asphalt over gravel 12" - 5' : Orange-brown and brown, medium to fine sand					1-5
6-10	5 ft to 10 ft	3.6 ft			5 to 6.8 ft: Tan fine sand 6.8 to 8.6 ft: Tan fine to medium sand, trace coarse sand					6-10
11-15	10 ft to 15 ft	3.6 ft	wet		10 to 12.2 ft: Tan/Orange fine to coarse sand 12.2 to 13.6 ft: Orange medium sand, some coarse sand ---------- End of Boring at 12' ----------					11-15
16-20	15 ft to 20 ft									16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Canal Street
Orleans, MA

Boring: B-99

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data
Boring Depth: 15 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/14/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/16/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0"-10" : Asphalt 10" - ? : Medium to coarse sand with some fine material. Orange-brown and brown, small angular gravel 5%					1-5
6-10	5 ft to 10 ft	3.5 ft			5 to 6.8 ft: Tan medium sand, trace coarse sand 6.8 to 7 ft: Dark Red/Brown coarse sand 7 to 7.4 ft: Tan/Orange coarse to medium sand 7.4 to 7.5 ft: Dense Brown fine sand and silt, broken cobble fragments 7.5 to 8.6 ft: Tan medium sand					6-10
11-15	10 ft to 15 ft	3.5 ft	wet		10 to 11.7 ft: Tan medium to fine sand 11.7 to 12.7 ft: Tan medium to coarse sand, little fine sand **-->wet at 12.3 ft** 12.7 to 13.5 ft: Brown/Red medium to coarse sand, trace fine gravel ---------- End of Boring at 11' ----------					11-15
16-20	15 ft to 20 ft									16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Canal Street
Orleans, MA

Boring: B-100

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 15 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/14/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/15/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0 - 8" : Asphalt 8"-12" : Orange sand, fine to medium 1' - 5' : Light brown and brown, fine to medium sand with <5% medium sized cobble					1-5
6-10	5 ft to 10 ft	3.3 ft	moist		Tan medium to coarse sand, trace fine gravel					6-10
11-15	10 ft to 15 ft	3.5 ft	moist		Tan medium to coarse sand, trace fine gravel ---------- End of Boring at 12' ----------					11-15
16-20	15 ft to 20 ft									16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Canal Street
Orleans, MA

Boring: B-101

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 20 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Tech: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/14/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/15/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 44				0 to 14" : Pavement 14" to 20" : Gravel 20" to 5 ft : Orange to brown fine to medium sand					1-5
6-10	5 ft to 10 ft	3.2 ft	moist		Tan to Light Brown medium to coarse sand, trace fine gravel					6-10
11-15	10 ft to 15 ft	3.3 ft	moist		10 to 11.3 ft: Tan medium to coarse sand, trace fine gravel 11.3 to 12.5 ft: Tan/Light Grey coarse sand 12.5 to 13.3 ft: Tan/Light Grey tight, coarse sand and medium gravel, broken cobble					11-15
16-20	15 ft to 20 ft	3.3 ft	moist		15 to 15.7 ft: Grey tight, fine sand 15.7 to 18.3 ft: Tan medium sand ---------- End of Boring at 19' ----------					16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Canal Street
Orleans, MA

Boring: B-102

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth: 20 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: R. Donoghue, C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/8/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/15/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0" to 4" - Pavement 4" to 9" - Gravel 9" to 60" - Medium Sand					1-5
6-10	5 ft to 10 ft	2.8 ft	moist		5 to 7.3 ft: Tan medium to coarse sand, trace fine gravel 7.3 to 7.8 ft: Tan coarse sand, broken cobble fragments					6-10
11-15	10 ft to 15 ft	3.7 ft	wet		10 to 12.5 ft: silt, little fine sand, trace clay (Blue-Grey to Brown color transition) 12.5 to 12.6 ft: Red/Brown silt 12.6 to 13.7 ft: Brown fine sand, trace medium sand					11-15
16-20	15 ft to 20 ft	3.6 ft	wet		15 to 18.4 ft: Brown/Green-Grey mottled fine sand, little silt 18.4 to 18.6 ft: Red/Brown fine sand, little medium sand ---------- End of Boring at 18' ----------					16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Jones Way
Orleans, MA

Boring: B-103

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 20 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Tech: R. Donoghue, C.Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/8/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/15/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0" to 6" - Pavement 6" to 12" - Hardener 12" to 60" - Medium to Coarse Sand					1-5
6-10	5 ft to 10 ft	3.4 ft	moist to wet		Tan to Light Orange medium to coarse sand					6-10
11-15	10 ft to 15 ft	3.4 ft	wet		10 to 11.5 ft: Tan to Light Orange medium sand, little fine sand, trace coarse sand 11.5 to 13.4 ft: Tan/Grey medium sand					11-15
16-20	15 ft to 20 ft	3.6 ft	wet		15 to 16 ft: Grey/Tan medium sand 16 to 18.6 ft: Mottled fine sand (Tan with brown streaks) ---------- End of Boring at 18' ----------					16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Canal Street
Orleans, MA

Boring: B-104

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth: 15 ft
Screen Depth:
Screen length:

Project Manager: Mark Owen
Field Tech: R. Donoghue, C.Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/8/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/15/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1-5	0 ft to 5 ft				0" to 8" - Pavement 8" to 24" - Gravel 24" to 60" - Silty Sand & perched water Groundwater @ 60" +/-					1-5
6-10	5 ft to 10 ft	3 ft	moist to wet		5 to 5.5 ft: Tan to Light Orange medium to coarse sand 5.5 to 6 ft: Tan mottled silt, little clay 6 to 6.3 ft: Tan fine sand 6.3 to 8 ft: Tan medium sand, little coaarse sand, rock in drive-shoe					6-10
11-15	10 ft to 15 ft	3.6 ft	wet		Tan fine to medium sand ---------- End of Boring at 14' ----------					11-15
16-20	15 ft to 20 ft									16-20
21-25	20 ft to 25 ft									21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Canal Street
Orleans, MA

Boring: B-105

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth: 25 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: R. Donoghue, C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/8/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/15/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat	Depth
1-5	0 ft to 5 ft				0" to 8" - Pavement 8" to 12" - Gravel 12" to 60" - Medium Sand					1-5
6-10	5 ft to 10 ft	3.6 ft	moist to wet		5 to 8.6 ft: Tan toYellow medium to coarse sand **-->wet at 6.5 ft**					6-10
11-15	10 ft to 15 ft	3.6 ft	wet		Tan medium to coarse sand, little fine gravel					11-15
16-20	15 ft to 20 ft	3.7 ft	wet		15 to 16.5 ft: Tan fine to coarse sand, trace fine gravel 16.5 to 18.1 ft: Tan medium to coarse sand, trace fine gravel 18.1 to 18.7 ft: Grey silt, little clay					16-20
21-25	20 ft to 25 ft	4.1 ft	wet		20 to 20.9 ft: Grey silt, some clay 20.9 to 21 ft: Brown silt 21.0 to 22.9 ft: Grey fine sand 22.9 to 23.1 ft: Grey silt 23.1 to 24.1 ft: Grey fine sand ---------- End of Boring at 22' ----------					21-25
26-30	25 ft to 30 ft									26-30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Canal Street
Orleans, MA

Project Manager: Reggie Donogh | Field Tech: R. Donoghue, C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/8/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/15/2017

Boring: B-106

Boring Number:
Sheet: 1 of 2
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth: 35 ft
Screen Depth:
Screen length:

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1–5	0 ft to 5 ft				0" to 8" - Pavement 8" to 12" - Gravel 12" to 60" - Medium Sand					1–5
6–10	5 ft to 10 ft	3.2 ft	moist to wet		5 to 5.7 ft: Tan medium sand, some coarse sand 5.7 to 6.2 ft: Tan fine to medium sand 6.2 to 8 ft: Tan/Orange medium to coarse sand, trace fine gravel -->Orange from Iron-staining 8 to 8.2 ft: Brown silt					6–10
11–15	10 ft to 15 ft	3.7 ft	moist moist moist wet		10 to 10.2 ft: Brown coarse sand 10.2 to 11.2 ft: Brown to Grey to Red-Orange silt, some clay, root fibers observed 11.2 to 12.2 ft: Mottled Tan-Brown fine sand 12.2 to 13.2 ft: **SAA 10.2 to 11.2 ft** 13.2 to 13.7 ft: Red/Brown fine sand					11–15
16–20	15 ft to 20 ft	3.1 ft	wet		15 to 16.2 ft: Light Brown to Brown/Tan fine to medium sand 16.2 to 16.4 ft: Tan to Light Grey fine sand 16.4 to 16.5 ft: Grey silt 16.5 to 17.7 ft: Grey medium to coarse sand, trace fine to medium gravel 17.7 ft: Grey medium to coarse sand and fine gravel					16–20
21–25	20 ft to 25 ft	2.9 ft	wet		20 to 20.9 ft: Grey fine sand 20.9 to 21.5 ft: Grey medium sand 21.5 to 22.9 ft: Grey coarse sand, little medium sand					21–25
26–30	25 ft to 30 ft	2.9 ft			Grey medium to coarse sand					26–30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Canal Street
Orleans, MA

Boring: B-106, continued

Boring Number:
Sheet: 2 of 2
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth: 35 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donoghue | Field Tech: R. Donoghue, C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/8/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/15/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
31	30 ft to 35 ft	3.2 ft	wet		30 to 30.6 ft: Grey medium sand 30.6 to 33.2 ft: Grey medium to coarse sand					31
32										32
33										33
34										34
35					---------- End of Boring at 34' ----------					35
36	35 ft to 40 ft									36
37										37
38										38
39										39
40										40

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Canal Street
Orleans, MA

Boring: B-107

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth: 15 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Tech: R. Donoghue, C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/8/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/15/2017

Depth	Sample Identification	Rec (ft)	Moisture	PID (ppm)	Field Identification	Description	Fil Mat.	Tube	Fil Mat	Depth
1	0 ft to 5 ft				0" to 7" - Pavement					1
2					7" to 10" - Gravel					2
3					10" to 24" - Fine to Medium Sand					3
4					24" to 48" - Coarse Sand					4
5					48" to 60" - Fine to Medium Sand					5
6	5 ft to 10 ft	3 ft			5 to 7.8 ft: Tan medium to coarse sand					6
7					7.8 to 8 ft: Red/Brown fine sand					7
8										8
9										9
10										10
11	10 ft to 15 ft	3.3 ft	wet		10 to 11.1 ft: Brown medium sand, trace coarse sand					11
12					11.1 to 12.7 ft: Light Brown/Green silt, trace clay					12
13					12.7 to 12.8 ft: Brown silt, trace clay					13
14					12.8 to 13 ft: Brown fine sand					14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20					---------- End of Boring at 14' ----------					20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Cove Road
Orleans, MA

Boring: B-113

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donoghue | Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/21/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/21/2017

Depth	Sample Identification	Rec (ft)	Moistu		Field Identification	Description	Fill Mat	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0 - 5" : Asphalt					1
2					5" - 6" : Gravel					2
3					6" - 5' : Brown fine sand.					3
4										4
5										5
6	5 ft to 10 ft	3.9 ft			Tan fine to medium sand					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft	3.3 ft	dry		10 to 10.2 ft: Brown very fine sand					11
12					10.2 to 10.9 ft: Brown fine sand, intermittent brown silt lenses					12
13					10.9 to 11.4 ft: Brown/Orange fine to coarse sand and fine gravel					13
14					11.4 to 12.5 ft: Brown fine sand					14
15					12.5 to 13.2 ft: Tight, Brown fine sand ---------- End of Boring at 12' ----------					15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Academy Place
Orleans, MA

Boring: B-114

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs:
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/16/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date:

Depth	Sample Identification	Rec (ft)	Moist	PID (ppm)	Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 10" Pavement					1
2					10 to 20" Gravel					2
3					20 to 60" Tan Fine Sand					3
4										4
5										5
6	5 ft to 10 ft				Did not complete, no drill depth detrimined					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft									11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft									16
17										17
18										18
19										19
20										20
21	20 ft to 25 ft									21
22										22
23										23
24										24
25										25
26	25 ft to 30 ft									26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Cove Road
Orleans, MA

Boring: B-115

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/21/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/23/2017

Depth	Sample Identification	Rec (ft)	Moistu		Field Identification	Description	Fill Mat	Tube	Fill Ma	Depth
1	0 ft to 5 ft				0 - 4" : Asphalt					1
2					4" - 5' : Brown medium sand. Medium to large cobbles encountered.					2
3										3
4										4
5										5
6	5 ft to 10 ft	3.3 ft	moist /	wet	5 to 7.2 ft: Tan-Grey fine sand, trace fine gravel					6
7					7.2 to 7.9 ft: Orange/Light Brown medium to coarse sand, little fine gravel					7
8					7.9 to 8.3 ft: Broken cobble					8
9										9
10										10
11	10 ft to 15 ft	3.4 ft	wet		10 to 11 ft: Orange medium to coarse sand, little fine gravel					11
12					11 to 13.4 ft: Tan/Orange fine to medium sand					12
13										13
14										14
15					---------- End of Boring at 15' ----------					15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Cove Road
Orleans, MA

Project Manager: Reggie Donogh | Field Techs: B.Morrill, C. Hayden

Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/21/2017

Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/23/2017

Boring: B-116

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Depth	Sample Identification	Rec (ft)	Moist		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0" - 5" : Asphalt					1
2					5" - 5' : Orange\Brown medium sand. Medium - Large (angular and round) cobbles encountered					2
3										3
4										4
5										5
6	5 ft to 10 ft	3.4 ft	moist /	wet	Brown very fine sand and silt, **wet at 6.5 ft**					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft	3.5 ft	wet		Loose, Brown fine sand, saturated					11
12										12
13										13
14										14
15					---------- End of Boring at 15' ----------					15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Cove Road
Orleans, MA

Boring: B-117

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 2/21/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 2/23/2017

Depth	Sample Identification	Rec (ft)	Moist		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 - 6" : Asphalt					1
2					6" - 7" : Gravel					2
3					7" - 5' : Brown\Orange medium to fine sand.					3
4										4
5										5
6	5 ft to 10 ft	4 ft	dry		5 to 6.8 ft: Tan, Iron-stained medium to coarse sand, little fine gravel					6
7					6.8 to 9 ft: Tan-Light Brown fien to medium sand, some silt from 8.2 to 9 ft					7
8										8
9										9
10										10
11	10 ft to 15 ft	4 ft	dry		Tan-Brown fine sand, Trace fine gravel, broken cobble at 12.5 ft					11
12										12
13										13
14										14
15					---------- End of Boring at 12' ----------					15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM

250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: West Road
Orleans, MA

Boring: B-119

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-truck
Inside Diameter: 2"

Well Data

Boring Depth: 10 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh | Field Techs: S. Chmiel, C.Hayden
Pre-Clear Contractor: Strategic | Pre-Clear Date: 3/13/2017
Drill Contractor: NE Geotech | Driller: Hayes | Drill Date: 3/15/2017

Depth	Sample Identification	Rec (ft)	Moisture		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 8” Dark Brown Loamy Sand with Fine Roots (Topsoil)					1
2					8 to 60” Tan Medium to Fine Sand					2
3										3
4										4
5										5
6	5 ft to 10 ft	3.7 ft	dry		Light Brown/Tan fine to medium sand, trace coarse sand					6
7										7
8										8
9										9
10					---------- End of Boring at 10' ----------					10
11										11
12										12
13										13
14										14
15										15
16										16
17										17
18										18
19										19
20										20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Canal Street
Orleans, MA

Boring: B-121

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth:
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: B.Morrill, C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date: 2/14/2017
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/15/2017

Depth	Sample Identification	Rec (ft)	Moisture		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0 to 1 ft: Pavement 1 to 1.3 ft: Fine to medium orange sandl 1.3 to 1.5 ft: Brown-grey fine to medium sand 1.5 ft to 5 ft : Orange-brown, fine to medium sand					1
2										2
3										3
4										4
5										5
6	5 ft to 10 ft	3 ft	moist		5 to 7.8 ft: Tan medium to coarse sand 7.8 to 8 ft: Red/Brown fine sand					6
7										7
8										8
9										9
10										10
11	10 ft to 15 ft	3.3 ft	wet		10 to 11.5 ft: Brown medium to coarse sand, trace fine gravel 11.5 to 12.1 ft: Grey fine sand, little medium sand 12.1 to 13.3 ft: Grey medium sand					11
12										12
13										13
14										14
15										15
16	15 ft to 20 ft	2.7	wet		15 to 16 ft: Grey medium to coarse sand 16 to 17.7 ft: Grey fine to medium sand					16
17										17
18										18
19										19
20					---------- End of Boring at 16' ----------					20
21										21
22										22
23										23
24										24
25										25
26										26
27										27
28										28
29										29
30										30

Project Number: 60476644
Client: Town of Orleans

AECOM
250 Apollo Drive
Chelmsford, Massachusetts
(978) 905-2100

Site Location: Canal Street
Orleans, MA

Boring: B-123

Boring Number:
Sheet: 1 of 1
Surface Elevation (ft-asl):
Equipment: Geoprobe 6620, Vac-Truck
Inside Diameter: 2"

Well Data

Boring Depth: 15 ft
Screen Depth:
Screen length:

Project Manager: Reggie Donogh
Field Techs: C. Hayden
Pre-Clear Contractor: Strategic
Pre-Clear Date:
Drill Contractor: NE Geotech
Driller: Hayes
Drill Date: 2/15/2017

Depth	Sample Identification	Rec (ft)	Moisture		Field Identification	Description	Fill Mat.	Tube	Fill Mat.	Depth
1	0 ft to 5 ft				0-4" Gravel (driveway material) 4-60" - Fine to medium orange, brown sand					1
6	5 ft to 10 ft	3.5 ft	moist /	wet	Dark Brown-Brown fine to medium sand, trace coarse sand and root fibers -wet at 6 ft -some coarse sand and fine gravel from 8 to 8.4 ft					6
11	10 ft to 15 ft	4.4 ft	wet		10 to 13.5 ft: Light brown fine to medium sand, trace gravel 13.5 to 14.4 ft: Light Brown fine sand, little medium sand, trace tree twigs ---------- End of Boring at 15' ----------					11
16										16
21										21
26										26

Town of Orleans, MA
25% Preliminary Design Report

Geotechnical Investigation
Downtown Borings

Legend

- Downtown Sewer Area
- Boring - Completed
- Boring - Pending

N

0 500 1,000
Feet

AECOM
April 13, 2017

HARBOR HILL ROAD
ROCK HARBOR ROAD
MID CAPE HIGHWAY
EASTHAM ROTARY
ROUTE 6A
OLD STATE HIGHWAY
ELLIS ROAD
CEDAR POND ROAD
NAMSKAKET ROAD
HOMESTEAD ROAD
CHILDS
LOCUST ROAD
JONES ROAD
CANAL ROAD
CRANBERRY HIGHWAY
COTTAGE STREET
WEST ROAD
OLD COLONY WAY
OAK RIDGE LANE
UNNAMED ROAD
OLD TOTE ROAD
BREWSTER CROSS ROAD
CENTER PLACE
CHATHAM ROAD
MAIN STREET
CLAYTON CIRCLE
UNNAMED ROAD
LOTS HOLLOW ROAD
RAMP-RT.6 EB TO RT.6A
NICKERSON ROAD
ELDREDGE PARK WAY
FINLAY ROAD
UNNAMED ROAD
OLD FARM ROAD
COFFIN LANE
TONSET ROAD
MEETING HOUSE ROAD
DRIFTWOOD LANE
UNNAMED ROAD
HOPKINS LANE
KAREN WAY

B-1 B-2 B-3 B-4 B-5 B-7 B-8 B-9 B-10 B-11 B-12 B-13 B-14 B-15 B-16 B-17 B-18 B-22 B-23 B-24 B-25 B-26 B-27 B-30 B-31 B-33 B-34 B-36 B-38 B-39 B-40 B-41 B-43 B-44 B-45 B-46 B-47 B-48 B-49 B-50 B-51 B-52 B-53 B-54 B-55 B-56 B-57 B-58 B-59 B-60 B-61 B-62 B-63 B-64 B-65 B-66 B-67 B-68 B-69 B-70 B-71 B-72 B-73 B-74 B-75 B-76 B-77 B-78 B-79 B-80 B-81 B-82 B-83 B-84 B-85 B-86 B-87 B-88 B-89 B-90 B-91 B-92 B-93 B-94 B-95 B-96 B-97 B-98 B-99 B-100 B-101 B-102 B-103 B-104 B-105 B-106 B-107 B-109 B-110 B-111 B-112 B-113 B-114 B-115 B-116 B-117 B-118 B-120 B-121 B-123 MA-4 MA-7