



Commonwealth of Massachusetts

City/Town of Sudbury

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

A. Facility Information

Sudbury Station, LLC

Client Name

124 Washington Street

Street Address

Foxborough

City

MA

State

G09-0100 & 0300

Map/Lot #

02035

Zip Code

B. Site Information

- (Check one) New Construction Upgrade Repair
- Soil Survey Available? Yes No
 If yes: Sudbury GIS 255A, 260B
Source Soil Map Unit
Windsor Loamy Sand & Sudbury Fine Sandy Loam Excessively Drained - Poor Filter for Untreated Wastewater
Soil Name Soil Limitations
Outwash Outwash Plain
Geologic/Parent Material Landform
- Surficial Geological Report Available? Yes No
 If yes: _____
Year Published/Source Publication Map Unit
- Flood Rate Insurance Map
 Above the 500-year flood boundary? Yes No Within the 500-year flood boundary? Yes No
If Yes, continue to #5.
 Within the 100-year flood boundary? Yes No
- Within a velocity zone? Yes No
- Within a Mapped Wetland Area? Yes No
 MassGIS Wetland Data Layer: _____
Wetland Type
- Current Water Resource Conditions (USGS): December 2015
 Range: Above Normal Normal Below Normal
- Other references reviewed: _____



Commonwealth of Massachusetts

City/Town of Sudbury

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: TP-14 Date: 12/22/2015 Time: 7:30 Weather: Rain 50°F

1. Location

Ground Elevation at Surface of Hole: 178+/- feet Latitude/Longitude: 42-23-12 / 71-24-48

Description of Location: Wooded Area

2. Land Use: Woodland (e.g., woodland, agricultural field, vacant lot, etc.) Little Surface Boulders: 0-5% Surface Stones (e.g., cobbles, stones, boulders, etc.) Slope (%) Pine & Oak Vegetation Outwash plain Landform Bottom Position on Landscape (SU, SH, BS, FS, TS)

3. Distances from: Open Water Body >100 feet Drainage Way >10 feet Wetlands >100 feet Property Line >10 feet Drinking Water Well >100 feet Other feet

4. Parent Material: Outwash Unsuitable Materials Present: [] Yes [x] No

If Yes: [] Disturbed Soil [] Fill Material [] Impervious Layer(s) [] Weathered/Fractured Rock [] Bedrock

5. Groundwater Observed: [] Yes [x] No If yes: Depth Weeping from Pit Depth Standing Water in Hole

Estimated Depth to High Groundwater: 90 inches 170.5+/- elevation



Commonwealth of Massachusetts

City/Town of Sudbury

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (continued)

Deep Observation Hole Number: TP-14

Depth (in.)	Soil Horizon/ Layer	Soil Matrix: Color- Moist (Munsell)	Redoximorphic Features			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
0-6	A	10YR3/2				LS			MASSIVE	LOOSE	FINE
6-30	B	2.5Y6/4				LS			GRANULAR	LOOSE	MEDIUM
30-120	C	2.5Y6/3	90	7.5YR3/6	10	S			GRANULAR	V. FRIABLE	MEDIUM

Additional Notes:



Commonwealth of Massachusetts

City/Town of Sudbury

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: TP-15 Date: 12/22/2015 Time: 7:45 Weather: Rain 50°F

1. Location

Ground Elevation at Surface of Hole: 178+/- feet Latitude/Longitude: 42-23-12 / 71-24-48

Description of Location: Wooded Area

2. Land Use: Woodland (e.g., woodland, agricultural field, vacant lot, etc.) Little Surface Boulders: 0-5% (e.g., cobbles, stones, boulders, etc.) Slope (%) Pine & Oak Vegetation Outwash plain Landform Bottom Position on Landscape (SU, SH, BS, FS, TS)

3. Distances from: Open Water Body >100 feet Drainage Way >10 feet Wetlands >100 feet Property Line >10 feet Drinking Water Well >100 feet Other feet

4. Parent Material: Outwash Unsuitable Materials Present: [] Yes [x] No

If Yes: [] Disturbed Soil [] Fill Material [] Impervious Layer(s) [] Weathered/Fractured Rock [] Bedrock

5. Groundwater Observed: [] Yes [x] No If yes: Depth Weeping from Pit Depth Standing Water in Hole

Estimated Depth to High Groundwater: 84 inches 171.0+/- elevation



Commonwealth of Massachusetts

City/Town of Sudbury

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (continued)

Deep Observation Hole Number: TP-15

Depth (in.)	Soil Horizon/ Layer	Soil Matrix: Color- Moist (Munsell)	Redoximorphic Features			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
0-12	A	10YR3/2				LS			MASSIVE	LOOSE	FINE
12-30	B	2.5Y6/4				LS			GRANULAR	LOOSE	MEDIUM
30-120	C	2.5Y6/3	84	7.5YR3/6	10	S			GRANULAR	V. FRIABLE	MEDIUM

Additional Notes:



Commonwealth of Massachusetts

City/Town of Sudbury

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: TP-18 Date: 12/22/2015 Time: 8:00 Weather: Rain 50°F

1. Location

Ground Elevation at Surface of Hole: 174+/- feet Latitude/Longitude: 42-23-12 / 71-24-48

Description of Location: Wooded Area

2. Land Use: Woodland (e.g., woodland, agricultural field, vacant lot, etc.) Pine & Oak Vegetation Little Surface Boulders Surface Stones (e.g., cobbles, stones, boulders, etc.) 0-5% Slope (%) Outwash plain Landform Bottom Position on Landscape (SU, SH, BS, FS, TS)

3. Distances from: Open Water Body >100 feet Drainage Way >10 feet Wetlands >100 feet Property Line >10 feet Drinking Water Well >100 feet Other feet

4. Parent Material: Outwash Unsuitable Materials Present: [] Yes [x] No

If Yes: [] Disturbed Soil [] Fill Material [] Impervious Layer(s) [] Weathered/Fractured Rock [] Bedrock

5. Groundwater Observed: [x] Yes [] No If yes: 80 inches Depth Weeping from Pit 84 inches Depth Standing Water in Hole

Estimated Depth to High Groundwater: 42 inches 170.5+/- elevation



Commonwealth of Massachusetts

City/Town of Sudbury

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (continued)

Deep Observation Hole Number: TP-18

Depth (in.)	Soil Horizon/ Layer	Soil Matrix: Color- Moist (Munsell)	Redoximorphic Features			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
0-6	A	10YR3/2				LS			MASSIVE	LOOSE	FINE
6-120	C	2.5Y6/3	42	7.5YR3/6	10	S			GRANULAR	V. FRIABLE	MEDIUM

Additional Notes:

No "B" Horizon, area previously excavated



Commonwealth of Massachusetts

City/Town of Sudbury

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: TP-19 Date: 12/22/2015 Time: 8:00 Weather: Rain 50°F

1. Location

Ground Elevation at Surface of Hole: 179+/- feet Latitude/Longitude: 42-23-12 / 71-24-48

Description of Location: Wooded Area

2. Land Use: Woodland (e.g., woodland, agricultural field, vacant lot, etc.) Little Surface Boulders: 0-5% (e.g., cobbles, stones, boulders, etc.) Slope (%) Pine & Oak Vegetation Outwash plain Landform Bottom Position on Landscape (SU, SH, BS, FS, TS)

3. Distances from: Open Water Body >100 feet Drainage Way >10 feet Wetlands >100 feet Property Line >10 feet Drinking Water Well >100 feet Other feet

4. Parent Material: Outwash Unsuitable Materials Present: [] Yes [x] No

If Yes: [] Disturbed Soil [] Fill Material [] Impervious Layer(s) [] Weathered/Fractured Rock [] Bedrock

5. Groundwater Observed: [] Yes [x] No If yes: Depth Weeping from Pit Depth Standing Water in Hole

Estimated Depth to High Groundwater: 66 inches 173.5+/- elevation



Commonwealth of Massachusetts

City/Town of Sudbury

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (continued)

Deep Observation Hole Number: TP-19

Depth (in.)	Soil Horizon/ Layer	Soil Matrix: Color- Moist (Munsell)	Redoximorphic Features			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
0-10	A	10YR3/2				LS			MASSIVE	LOOSE	FINE
10-24	B	2.5Y6/4				LS			GRANULAR	LOOSE	MEDIUM
24-132	C	2.5Y6/3	66	7.5YR3/6	10	S			GRANULAR	V. FRIABLE	MEDIUM

Additional Notes:



Commonwealth of Massachusetts

City/Town of Sudbury

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: TP-21 Date: 12/22/2015 Time: 8:30 Weather: Rain 50°F

1. Location

Ground Elevation at Surface of Hole: 177+/- feet Latitude/Longitude: 42-23-12 / 71-24-48

Description of Location: Wooded Area

2. Land Use: Woodland (e.g., woodland, agricultural field, vacant lot, etc.) Little Surface Boulders: 0-5% (e.g., cobbles, stones, boulders, etc.) Slope (%) Pine & Oak Vegetation Outwash plain Landform Bottom Position on Landscape (SU, SH, BS, FS, TS)

3. Distances from: Open Water Body >100 feet Drainage Way >10 feet Wetlands >100 feet Property Line >10 feet Drinking Water Well >100 feet Other feet

4. Parent Material: Outwash Unsuitable Materials Present: [] Yes [x] No

If Yes: [] Disturbed Soil [] Fill Material [] Impervious Layer(s) [] Weathered/Fractured Rock [] Bedrock

5. Groundwater Observed: [] Yes [x] No If yes: Depth Weeping from Pit Depth Standing Water in Hole

Estimated Depth to High Groundwater: 48 inches 173.0+/- elevation



Commonwealth of Massachusetts

City/Town of Sudbury

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (continued)

Deep Observation Hole Number: TP-21

Depth (in.)	Soil Horizon/ Layer	Soil Matrix: Color- Moist (Munsell)	Redoximorphic Features			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
0-12	A	10YR3/2				LS			MASSIVE	LOOSE	FINE
12-24	B	2.5Y6/4				LS			GRANULAR	LOOSE	MEDIUM
24-114	C	2.5Y6/3	48	7.5YR3/6	10	S			GRANULAR	V. FRIABLE	MEDIUM

Additional Notes:



Commonwealth of Massachusetts

City/Town of Sudbury

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: TP-23 Date: 12/22/2015 Time: 9:00 Weather: Rain 50°F

1. Location

Ground Elevation at Surface of Hole: 178+/- feet Latitude/Longitude: 42-23-12 / 71-24-48

Description of Location: Wooded Area

2. Land Use: Woodland (e.g., woodland, agricultural field, vacant lot, etc.) Pine & Oak Vegetation Little Surface Boulders Surface Stones (e.g., cobbles, stones, boulders, etc.) 0-5% Slope (%) Outwash plain Landform Bottom Position on Landscape (SU, SH, BS, FS, TS)

3. Distances from: Open Water Body >100 feet Drainage Way >10 feet Wetlands >100 feet Property Line >10 feet Drinking Water Well >100 feet Other feet

4. Parent Material: Outwash Unsuitable Materials Present: [] Yes [x] No

If Yes: [] Disturbed Soil [] Fill Material [] Impervious Layer(s) [] Weathered/Fractured Rock [] Bedrock

5. Groundwater Observed: [] Yes [x] No If yes: Depth Weeping from Pit Depth Standing Water in Hole

Estimated Depth to High Groundwater: 42 inches 174.5+/- elevation



Commonwealth of Massachusetts

City/Town of Sudbury

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (continued)

Deep Observation Hole Number: TP-23

Depth (in.)	Soil Horizon/ Layer	Soil Matrix: Color- Moist (Munsell)	Redoximorphic Features			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
0-12	A	10YR3/2				LS			MASSIVE	LOOSE	FINE
12-24	B	2.5Y6/4				LS			GRANULAR	LOOSE	MEDIUM
24-108	C	2.5Y6/3	42	7.5YR3/6	10	S			GRANULAR	V. FRIABLE	MEDIUM

Additional Notes:



Commonwealth of Massachusetts
 City/Town of Sudbury
Percolation Test
Form 12

Percolation test results must be submitted with the Soil Suitability Assessment for On-site Sewage Disposal. DEP has provided this form for use by local Boards of Health. Other forms may be used, but the information must be substantially the same as that provided here. Before using this form, check with the local Board of Health to determine the form they use.

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Site Information

Sudbury Station, LLC
 Owner Name
124 Washington Street
 Street Address or Lot #
Foxborough MA 02035
 City/Town State Zip Code
Chris Claussen
 Contact Person (if different from Owner) Telephone Number

B. Test Results

	<u>12/22/2015</u> Date	<u>8:30</u> Time	<u>12/22/2015</u> Date	<u>9:30</u> Time
Observation Hole #	<u>PT-14</u>		<u>PT-23</u>	
Depth of Perc	<u>30-48 INCHES</u>		<u>42-60 INCHES</u>	
Start Pre-Soak	<u>8:35</u>		<u>9:31</u>	
End Pre-Soak	<u>8:43</u>		<u>9:46</u>	
Time at 12"	<u>N/A (*)</u>		<u>9:46</u>	
Time at 9"			<u>9:49</u>	
Time at 6"			<u>9:53</u>	
Time (9"-6")			<u>4 MINUTES</u>	
Rate (Min./Inch)	<u><2</u>		<u><2</u>	
	Test Passed: <input checked="" type="checkbox"/>		Test Passed: <input checked="" type="checkbox"/>	
	Test Failed: <input type="checkbox"/>		Test Failed: <input type="checkbox"/>	

Donald A. Provencher, P.E.
 Test Performed By:
Bruce Bouck & Michelle Ly of DEP, and Bill Murphey of Sudbury Board of Health
 Witnessed By:

Comments:
 (*) Could not maintain presoak in PT-14, saturated with over 25 gallons of water in less than 15 minutes. Assume <2 minutes / inch perc rate



Commonwealth of Massachusetts

City/Town of Sudbury

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

D. Determination of High Groundwater Elevation

1. Method Used:	Obs. Hole # <u>TP-18 & 23</u>	Obs. Hole # <u>TP-14</u>
<input type="checkbox"/> Depth observed standing water in observation hole	_____ inches	_____ inches
<input type="checkbox"/> Depth weeping from side of observation hole	_____ inches	_____ inches
<input checked="" type="checkbox"/> Depth to soil redoximorphic features (mottles)	<u>42</u> inches	<u>90</u> inches
<input type="checkbox"/> Depth to adjusted seasonal high groundwater (S _h) (USGS methodology)	_____ inches	_____ inches

_____	Index Well Number	_____	Reading Date	_____	_____	_____	_____
$S_h = S_c - [S_r \times (OW_c - OW_{max}) / OW_r]$							
Obs. Hole #	_____	S _c	_____	S _r	_____	OW _c	_____
						OW _{max}	_____
						OW _r	_____
							S _h _____
Obs. Hole #	_____	S _c	_____	S _r	_____	OW _c	_____
						OW _{max}	_____
						OW _r	_____
							S _h _____

E. Depth of Pervious Material

1. Depth of Naturally Occurring Pervious Material
 - a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?

Yes No
 - b. If yes, at what depth was it observed?

Upper boundary: 114 inches Lower boundary: 84 inches
 - c. If no, at what depth was impervious material observed?

Upper boundary: _____ inches Lower boundary: _____ inches



Commonwealth of Massachusetts

City/Town of Sudbury

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

F. Certification

I certify that I am currently approved by the Department of Environmental Protection pursuant to 310 CMR 15.017 to conduct soil evaluations and that the above analysis has been performed by me consistent with the required training, expertise and experience described in 310 CMR 15.017. I further certify that the results of my soil evaluation, as indicated in the attached Soil Evaluation Form, are accurate and in accordance with 310 CMR 15.100 through 15.107.

Donald A. Provencher

Signature of Soil Evaluator

Donald A. Provencher, P.E. / SE1076

Typed or Printed Name of Soil Evaluator / License #

Bill Murphy – Sudbury Board of Health

Name of Board of Health Witness

January 8, 2016

Date

June 30, 2016

Expiration Date of License

Michelle Ly & Bruce Bouck - DEP

Board of Health

Note: In accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with [Percolation Test Form 12](#).



Field Diagrams

Use this sheet for field diagrams:

