



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

A. Facility Information

McLaughlin Family Living Trust

Owner Name

17 Rice Road

Street Address

Millbury

City

MA
State

Map 63 Parcels 75 & 144

Map/Lot #

01527

Zip Code

B. Site Information

1. (Check one) New Construction Upgrade Repair

2. Soil Survey Available? Yes No If yes:

Merrimac

Soil Name

outwash

Soil Parent material

severe: poor filter
Soil Limitations

uncertain
Landform

NRCS
Source

254B
Soil Map Unit

DA 20821
5/4/2021

3. Surficial Geological Report Available? Yes No If yes:

Year Published/Source

Map Unit

Description of Geologic Map Unit:

4. Flood Rate Insurance Map Within a regulatory floodway? Yes No

5. Within a velocity zone? Yes No

6. Within a Mapped Wetland Area? Yes No If yes, MassGIS Wetland Data Layer:

7. Current Water Resource Conditions (USGS):

May 4, 2021
Month/Day/ Year

Range: Above Normal

Wetland Type

Normal Below Normal

8. Other references reviewed:



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

Deep Observation Hole Number: 20 Hole #
 Date: 5/4/2011 Time: 10:00 Weather: 48° cloudy Latitude: _____ Longitude: _____
 Land Use: LAWN (e.g., woodland, agricultural field, vacant lot, etc.) Vegetation: GRASS Surface Stones (e.g., cobbles, stones, boulders, etc.): NONE Slope (%): ≈ 5/0

Description of Location: WEST OF EXISTING DRIVE

2. Soil Parent Material: OUTWASH Landform: UNCERTAIN Position on Landscape (SU, SH, BS, FS, TS): UNCERTAIN

3. Distances from:
 Open Water Body: — feet
 Drainage Way: — feet
 Property Line: ≈ 30 feet
 Drinking Water Well: — feet
 Wetlands: — feet
 Other: — feet

4. Unsuitable Materials Present: Yes No
 If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock

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

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-56"	FILL	—	—								
56"-126"	C	SAND	10YR 7/4				15	1			

Additional Notes: — NO REFUSAL
— GRAVEL CONTENT VARIED



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

Deep Observation Hole Number: 21 Hole # 5/4/21 Date 10:30 Time 48° cloudy Weather Latitude Longitude: 26

1. Land Use: WOODLAND (e.g., woodland, agricultural field, vacant lot, etc.) DECIDUOUS TREES Vegetation SOME STONES Surface Stones (e.g., cobbles, stones, boulders, etc.) 26 Slope (%)

Description of Location: AT TOP OF RIDGE, BETWEEN DH'S 3 & 14

2. Soil Parent Material: TILL Landform UNCERTAIN Position on Landscape (SU, SH, BS, FS, TS) UNCERTAIN

3. Distances from: Open Water Body ~130 feet Drainage Way feet Wetlands ~110 feet
Property Line ~180 feet Drinking Water Well feet Other feet

4. Unsuitable Materials Present: Yes No If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock
5. Groundwater Observed: Yes No If yes: Depth Weeping from Pit Depth Standing Water in Hole

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-6"	A	SANDY LOAM	10YR 3/2								
6-24"	B	SANDY LOAM	10YR 2.5/6								
24-96"	C	SANDY LOAM	10YR 2.5/3				15	10			

Additional Notes: - NOT SUFFICIENT HIGH OR LOW CHROMA MOTTLES TO DETERMINE SHGW
- NO REFUSAL



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D. Determination of High Groundwater Elevation

1. Method Used:

- Depth observed standing water in observation hole
- Depth weeping from side of observation hole
- Depth to soil redoximorphic features (mottles)
- Depth to adjusted seasonal high groundwater (S_h) (USGS methodology)

Obs. Hole # 20

Obs. Hole # 21

~~NOT OBSERVED~~ inches

~~NOT OBSERVED~~ inches

~~NOT OBSERVED~~ inches

~~NOT OBSERVED~~ inches

~~NOT OBSERVED~~ inches

~~NOT OBSERVED~~ inches

_____ inches

_____ inches

Index Well Number _____

Reading Date _____

$$S_h = S_c - [S_r \times (OW_c - OW_{max}) / OW_r]$$

Obs. Hole/Well# _____ S_c _____ S_r _____ OW_c _____ OW_{max} _____ OW_r _____ S_h _____

2. Estimated Depth to High Groundwater: _____ inches

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 (exclude A and O Horizons)?

Upper boundary: 56" 6"
inches

Lower boundary: 126" 96"
inches

c. If no, at what depth was impervious material observed?

Upper boundary: _____
inches

Lower boundary: _____
inches



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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.

Signature of Soil Evaluator *James Tetrowalt*

Date 5/4/2021

Typed or Printed Name of Soil Evaluator / License # JAMES TETROWALT SE 2421

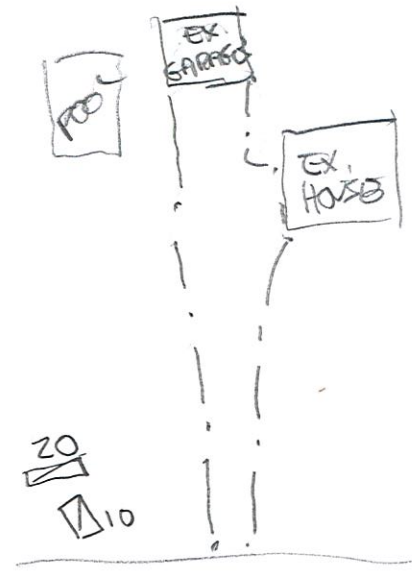
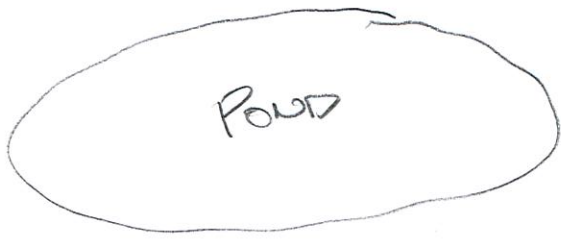
Expiration Date of License JULY 2022

Name of Approving Authority Witness J. GRARAM

Approving Authority STANTEE

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 area for field diagrams:





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2. Soil Survey Available? Yes No If yes:

Merrimac

Soil Name

outwash

Soil Parent material

severe: poor filter
Soil Limitations

uncertain
Landform

NRCS
Source

254B
Soil Map Unit

DH's 22823
5/4/2021

3. Surficial Geological Report Available? Yes No If yes:

Year Published/Source

Map Unit

Description of Geologic Map Unit:

4. Flood Rate Insurance Map Within a regulatory floodway? Yes No

5. Within a velocity zone? Yes No

6. Within a Mapped Wetland Area? Yes No If yes, MassGIS Wetland Data Layer:

7. Current Water Resource Conditions (USGS):

May 4, 2021
Month/Day/ Year

Range: Above Normal

Wetland Type

Normal Below Normal

8. Other references reviewed:



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

Deep Observation Hole Number: 22 Hole # 5/4/21 Date 10:45 Time 48° CLOUDY Weather _____ Latitude _____ Longitude:

1. Land Use WOODLAND (e.g., woodland, agricultural field, vacant lot, etc.) VARIOUS TREES & BRUSH Vegetation SOMES Surface Stones (e.g., cobbles, stones, boulders, etc.) 26 Slope (%)
Description of Location: AT TOE OF SLOPE NEAR RAILROAD PROPERTY

2. Soil Parent Material: OUTWASH Landform UNCERTAIN Position on Landscape (SU, SH, BS, FS, TS) UNCERTAIN

3. Distances from: Open Water Body N/A feet Drainage Way N/A feet Wetlands N/A feet
Property Line ~40 feet Drinking Water Well _____ feet Other _____ feet

4. Unsuitable Materials Present: Yes No If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock

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

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-7"	A	SANDY LOAM	10YR3/2								
7-26"	B	SANDY LOAM	10YR8/6								
26-112"	C	SAND	10YR7/4			NONE	10	2			

Additional Notes: — NO REFUSAL



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

Deep Observation Hole Number: 23 Hole #
 Date: 5/4/21 Time: 11:15 Weather: 48° cloudy
 Latitude: _____ Longitude: _____

1. Land Use: WOODLAND (e.g., woodland, agricultural field, vacant lot, etc.)
 Vegetation: DECIDUOUS TREES Surface Stones (e.g., cobbles, stones, boulders, etc.): SOME
 Slope (%): ~8

Description of Location: NEAR TOP OF SLOPE BETWEEN DR 19 AND RAILROAD

2. Soil Parent Material: OUTWASH Landform: UNCERTAIN Position on Landscape (SU, SH, BS, FS, TS): UNCERTAIN

3. Distances from: Open Water Body — feet
 Drainage Way — feet
 Property Line ~30 feet
 Drinking Water Well — feet
 Wetlands — feet
 Other — feet

4. Unsuitable Materials Present: Yes No
 If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock
 5. Groundwater Observed: Yes No
 If yes: _____ Depth Weeping from Pit _____ Depth Standing Water in Hole

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-7"	A	SANDY LOAM	10YR5/2								
7"-25"	B	SANDY LOAM	10YR5/6								
25"-138"	C	SAND	10YR7/4				5	2			

Additional Notes: - NO ROOTS
- SOME MOIST GRANULAR STRATA



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D. Determination of High Groundwater Elevation

1. Method Used:

- Depth observed standing water in observation hole
- Depth weeping from side of observation hole
- Depth to soil redoximorphic features (mottles)
- Depth to adjusted seasonal high groundwater (S_h) (USGS methodology)

	Obs. Hole # <u>22</u>	Obs. Hole # <u>23</u>
	<u>NOT OBSERVED</u> inches	<u>NOT OBSERVED</u> inches
	<u>NOT OBSERVED</u> inches	<u>NOT OBSERVED</u> inches
	<u>> 112</u> inches	<u>> 138</u> inches
	_____ inches	_____ inches

Index Well Number _____

Reading Date _____

$$S_h = S_c - [S_r \times (OW_c - OW_{max}) / OW_r]$$

Obs. Hole/Well# _____ S_c _____ S_r _____ OW_c _____ OW_{max} _____ OW_r _____ S_h _____

2. Estimated Depth to High Groundwater: _____ inches

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 (exclude A and O Horizons)?

Upper boundary:	<u>7" 7"</u> inches	Lower boundary:	<u>112", 138"</u> inches
Upper boundary:	_____ inches	Lower boundary:	_____ inches

c. If no, at what depth was impervious material observed?



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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.

Signature of Soil Evaluator
[Handwritten Signature]

Date
5/4/21

Typed or Printed Name of Soil Evaluator / License #
JAMES TETREAU SE 2421

Expiration Date of License
JULY 2022

Name of Approving Authority Witness
J. GRAY

Approving Authority

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 area for field diagrams:

