LaRose Surveys

Land Surveyors – Boundary Consultants
Water & Wastewater System Designers
P.O. Box 388 – 25A West Street
Bristol, Vermont 05443

Ronald L. LaRose, L.S.

Kevin R. LaRose, L.S.

September 3, 2009

Mr. & Mrs. Samuel Spear
518 Layport Drive
Sebastian, FL 32958

Mr. Mike Spear
2954 Mt. Philo Road
Charlotte, Vermont 05445

RE: State of Vermont Septic Permit

Dear Mr. Spear:

Please find enclosed the State of Vermont application package concerning your proposed development on Lake Road in Charlotte.

In the package, you will find two sets of the application. The original is paper-clipped to an envelope that needs to be signed by you and sent to the Town of Charlotte along with a check for $500.00 payable to the Town of Charlotte. The other set is for your records.

When the time comes that you are ready to construct the system, you or your contractor should contact me so that I can perform the required inspections and certifications. Those will be billed when the system is complete. The inspections and certification generally run around $400-500. They include necessary stakeout, inspections, and a certification letter. It should be noted that the above-stated costs assume that the wastewater system and well site will be constructed in their designed location. Any deviation from the designed/permitted location may require an as-built drawing and possibly a permit amendment from the State of Vermont. The permit from the State of Vermont will in no way relieve you from any local permits that may be required. Also, we have indicated on the application to the State of Vermont that there will be no floor drains as part of this project.

Please keep in mind that this is for the State of Vermont septic permit only. You will have to go through the Town of Charlotte for their permit as well when you are ready. When that time comes, the parcel will need to be subdivided as the Town of Charlotte will not allow two primary dwellings on the same lot. That should be fairly simple- update the survey map and amend the state permit to identify the two lots.

If you have any questions, please do not hesitate to give me a call.

Sincerely,

COPY

Kevin R. LaRose, L.S.
Licensed Class B Designer

p.802.453.3818
f.802.329.2138

www.larosesurveys.com
info@larosesurveys.com

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September 3, 2009

Town of Charlotte
Attn: Mr. Tom Mansfield
PO Box 119
Charlotte, Vermont 05445

RE: Spear Parcel, Lake Road

Dear Tom:

We are writing on behalf of Samuel & Priscilla Spear in regard to their proposed development of a vacant parcel of land on Lake Road in Charlotte.

Specifically, the Spear's wish to develop their 38.8 acre parcel with two three-bedroom single-family residences. The residences will be served by individual drilled bedrock wells and a shared mound disposal system to be located adjacent to the parcel. Spencer Harris of the Town of Charlotte witnessed the soils evaluation on December 8, 2008.

For your review, we have included the following:

1. Wastewater System & Potable Water Supply Permit Application;
2. Permit fee of $500 per our discussion;
3. Subdivision Plat & Site Plan (two copies each);
4. Performance Based Calculations;
5. Test Pit logs;
6. Pump specifications.

The Spear's are looking forward to your review of their application and subsequent issuance of a permit. If you have any questions, please do not hesitate to give me a call.

Sincerely,

Kevin R. LaRose, L.S.
Licensed Class B Designer

Cc: Sam & Priscilla Spear
Mike Spear

Wastewater Management Division - Permit Application

Wastewater System & Potable Water Supply

VERMONT
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

For Office Use Only:

Application#	PIN#	Date Complete Application Received

Authority

10 V.S.A. Chapter 64, the Environmental Protection Rules, Chapter 1, Wastewater System & Potable Water Supply Rules, and Chapter 21, Water Supply Rules, Appendix A. Part 11 - Small Scale Water Systems.

General Information

The organization and/or content of this form may not be altered, however, the form is designed to expand to allow additional information to be entered. Changes in the organization and/or content of the form may result in an invalid application or permit.

In most cases a licensed designer will be required for your project and to help complete this application form. There are also line-by-line instructions available to assist with completing this form.

NOTE: ***We strongly suggest referring to the application instructions while completing this application form.***

Part I Applicant (Landowner) & Project Contact Information

Section A - Applicant Details (if Landowner is an Individual or Individuals)

1 Last Name	2 First Name (and Middle Initial if appropriate)
Spear	Samuel W. & Priscilla L.

3 Mailing Address Line 1	4 Mailing Address Line 2
518 Layport Drive	

5 Town/City	6 State/Province	7 Country	8 Zip/Postal Code
Sebastian	FL	United States	32958

9 Email Address	10 Telephone
	772-589-1585

Remove This Applicant

Add Another Applicant

Section B - Applicant Details (if Landowner is other than an Individual or Individuals, e.g. Corporations, Homeowner's Associations, etc.)

1 Registered Legal Entity or Organization Name	2 Telephone

3 Mailing Address Line 1	4 Mailing Address Line 2

5 Town/City	6 State/Province	7 Country	8 Zip/Postal Code
		United States	

Certifying Official

The Certifying Official must be a person who has signatory authority for the legal entity or organization that is the Applicant. A copy of the document authorizing this person to act as a signatory authority must be attached to this application.

9 Certifying Official Last Name	10 Certifying Official First Name (and MI if appropriate)

11 Certifying Official Title

12 Certifying Official Email Address	13 Telephone

Remove This Applicant

Add Another Applicant

Section C - Primary Contact Information (if other than Applicant)

1 Last Name	2 First Name (and Middle Initial if appropriate)

3 Mailing Address Line 1	4 Mailing Address Line 2

5 Town/City	6 State/Province	7 Country	8 Zip/Postal Code
		United States	

9 Email Address	10 Telephone

Section D - Building/Business Owner Information

1 Last Name	2 First Name (and Middle Initial if appropriate)

3 Mailing Address Line 1	4 Mailing Address Line 2

5 Town/City	6 State/Province	7 Country	8 Zip/Postal Code
		United States	

9 Email Address	10 Telephone

Part II Certifying Designer(s) Information

1 Designer Last Name	2 Designer First Name (and Middle Initial if appropriate)
LaRose	Kevin

3 Designer License#	4 Company Name
00443	LaRose Surveys, P.C.

5 Mailing Address Line 1	6 Mailing Address Line 2
P.O. Box 388	

7 Town/City	8 State/Province	9 Country	10 Zip/Postal Code
Bristol	Vermont	United States	05443

11 Email Address	12 Telephone
kevin@larosesurveys.com	453-3818

13 Designer Role(s) (check all that apply)

- ☒ Water Supply Designer
- ☒ Wastewater Disposal System Designer

Remove This Designer

Add Another Designer

Part III Property Location Information

Section A - Property Parcel ID#(s) and Location(s)

1 Please provide the property location information including Town or City Parcel ID#, Town/City, and Street or Road location in the table below:

	(a) Town/City Parcel ID#	(b) Town or City	(c) Street or Road Location
X	04-01-45.1	Charlotte	Lake Road

Add Another Property

Section B - Center of Property GPS Coordinates

1 Enter the approximate center of property coordinates using GPS set for NAD83 or as derived from a map (map must be based on NAD83).

(a) Latitude
(in decimal degrees to five decimal places, ex. 44.38181°)

N 44 3017 °

(b) Longitude
(in decimal degrees to five decimal places, ex. -72.31392 °)

W (-) 73.27633 °

Part IV Project Information

Section A - General Project Information & Questions

1 Project Name (if applicable)

2 Total Acreage of Property: 38.8

3 Business Name (if applicable)

4 Detailed Project Description

Creation of two single-family residences on a vacant parcel.

5 Were all buildings or structures, campgrounds, and their associated potable water supplies and wastewater systems substantially completed before January 1, 2007 and all improved and unimproved lots in existence before January 1, 2007? ..... (•) Yes ( ) No

6 Does this application include subdividing the property? ..... ( ) Yes (•) No

7 Has anyone from the Wastewater Management Division's Regional Office been to the property? ..... (•) Yes ( ) No

If Yes, enter the staff person's name and the date of the visit.

(a) Name of Staff Person: Spencer Harris

(b) Date of Visit: 12-08-2008

8 Will any construction occur within 50 feet of a wetland boundary, mapped or designated? ..... ( ) Yes (•) No

If Yes, contact the Wetlands Program of the Water Quality Division at (802) 241-3770.

9 Will more than one acre be disturbed during the entire course of construction, including all lots and phases? ..... (•) Yes ( ) No

If Yes, contact the Stormwater Program of the Water Quality Division at (802) 241-4320.

10 Will there be any stream crossings by roads, utilities, or other construction? ..... ( ) Yes (•) No

If Yes, contact the River Corridor Mgmt. Program of the Water Quality Division at:

Central & Northwest Vermont ..... (802) 879-5631
Southern Vermont ..... (802) 786-5906
Northeastern Vermont ..... (802) 751-0129

11 Is the project located in a special flood hazard area as designated on the flood insurance maps prepared for a municipality by the Federal Emergency Management Agency? ..... ( ) Yes (•) No

If Yes, show the special flood hazard area limits on the site plan.

12 Act 250: Has the Applicant (Landowner) subdivided any other lots of any size within a five mile radius of this subdivision, or within the environmental district within the last five years ? ..... ( ) Yes (•) No

If Yes, enter the town(s) and the associated number of lots in the table below:

	(a) Town	(b) Number of Lots
X		

Add Another Town/Lot

13 Is there any prior Act 250 jurisdiction on the tract of land? ..... ( ) Yes (•) No

If Yes, enter the Act 250 permit number:

(a) Act 250 Permit Number

Section B - Project Deed Reference

1 Please provide the Town, Book, and Page reference for the current landowner's deed(s) to this property in the table below:

	(a) Town	(b) Book	(c) Page(s)
X	Charlotte	149	427

Add Another Deed Reference

Section C - Project Plan Reference

1 Please provide the following information for all water supply and wastewater disposal system plans being submitted.

	(a) Sheet#	(b) Title	(c) Plan Date	(d) Plan Revision Date
X	1	plat showing a subdivision of lands of Samual & Priscilla Spear	08-18-2008	
X	2	a site plan showing a portion of lands of the Samuel & Priscilla Spear Revocable	09-01-2009	

Add Another Plan Reference

Section D - Existing Project Lot/BuildingDetails

Please provide the existing project details. This section is used to describe what is existing for the project. For example, if you are subdividing an undeveloped 21-acre parcel, you would list the existing parcel. If you are revising the boundary lines of two commercial lots in an industrial park, and constructing an addition to an existing building you would list the existing lot numbers, existing acres, existing buildings, existing uses, construction date(s), prior permits, and answer the compliance questions.

1 Lot#	2 Lot Size (acres)	3 Existing Use of the Lot
4	38.8	vacant

4 Provide the following information for each building on the lot:

	(a) Building ID	(b) Existing Use	(c) Date Construction of Building Substantially Complete	(d) Prior Permits	(e) In compliance with with existing permits?
X				WW-4-2642	(•) Yes ( ) No

Add Another Building

Remove This Lot

Add Another Lot

Section E - Proposed Project Lot/BuildingDetails

This section is used to describe what you are proposing to do in this project. For example, if you were going to create 4 lots for construction of single family residences, you would list each lot, proposed acreage, proposed buildings, and proposed use.

1 Lot#	2 Lot Size (acres)	3 Proposed Use of the Lot
4	38.8	two single-family residences

4 Is the lot being created as part of a subdivision? ( ) Yes (•) No

5 Are you requesting that the Blood, Marriage, or Civil Union special fee be applied to this lot? (•) Yes ( ) No

6 If the lot is exempt, please indicate the specific exemption from the Wastewater System and Potable Water Supply Rules?

7 Provide the following information for each building on the lot:

	(a) Building ID	(b) If building is exempt, indicate exemption	(c) Construction or increased flow?	(d) Proposed Use
X	4A		☒	three-bedroom SFR
X	4B		☒	two-bedroom SFR

Add Another Building

Remove This Lot

Add Another Lot

Part V Water Supply Information

Section A - Water Supply Screening Questions

1 Are you proposing a new water supply for this project? ..... (•) Yes ( ) No

2 Are you proposing changes to an existing water supply for this project? ..... ( ) Yes (•) No

3 Is there a connection to an existing water supply for the project? ..... ( ) Yes (•) No

*If you answered **No** to **all three of the above questions**, skip to Part VI. Otherwise, proceed with Part V.*

Section B - General Water Supply Questions

1 Does this project involve a failed water supply? ..... ( ) Yes (•) No

2 Will any of the proposed water sources serve 25 or more people or have 15 or more service connections? ..... ( ) Yes (•) No

If Yes, the applicant must contact the Water Supply Division at (802) 241-3400 for source, construction and operating

3 Are any of the existing or proposed water sources located within a special flood hazard area? ..... ( ) Yes (•) No

4 Are any of the existing or proposed water sources located within a floodway? ..... ( ) Yes (•) No

5 Are any of the proposed water sources located within 1 mile of a hazardous waste site as designated by the Waste Management Division and identified on the Agency mapping website? ..... ( ) Yes (•) No

If Yes, please submit additional information on the site. The Waste Management Division can be reached at (802) 241-3888.

6 Does this project require an approval letter from the Water Supply Division for the construction of a public water system, municipal water line extension over 500 feet, or hydrants or sprinkler systems? ..... ( ) Yes (•) No

If Yes, please submit a copy of the approval letter from the Water Supply Division.

7 Does the proposed or existing water supply(ies) use a water treatment device to obtain compliance with the quality requirements in the Water Supply Rule? ..... ( ) Yes (•) No

If Yes, please submit additional information regarding the constituent(s) that exceeds the standards and plans, details, and specifications of the treatment device.

8 Is any portion of the proposed water supply located in or near a Water Source Protection Area as designated by the Water Supply Division? ..... ( ) Yes (•) No

If in areas of known interference issues, please contact the Water Supply Division at (802) 241-3400.

Section C - Individual Water Supply Details

Please provide the following information for each of the existing and proposed water supply(ies) serving a building or structure, or campground on the property.

1 Water Supply Name/Identifier	2 Water Supply Owner (if not Applicant)
Proposed well	
3 Water Source Type	**4 Type of Change to Supply**
Non-Public Drilled Bedrock Well	New System

5 Lots/Buildings Served by this Water Supply System

	(a) Lot#	(b) Building ID	(c) Type of Change to the Building's Supply	Design Flows (Gallons Per Day) (d) Existing	(e) Increase	(f) Total	(g) Rule or Meter Based Flows
X	4	4A	Connection to New System	0	420	420	Rule-based
			6	0	7 420	8 420	

Add Another Lot/Building Served by this Supply

9 Is this water supply located off-lot? ○ Yes ◉ No

10 Is this water supply shared? ○ Yes ◉ No

If the water supply is located off-lot or shared, submit a copy of the agreement to provide an easement prior to construction.

11 Is a variance being requested for this water supply? ○ Yes ◉ No

If Yes, please submit additional details related to the variance request.

Remove This Water Supply

1 Water Supply Name/Identifier	2 Water Supply Owner (if not Applicant)
Proposed well	
3 Water Source Type	**4 Type of Change to Supply**
Non-Public Drilled Bedrock Well	New System

5 Lots/Buildings Served by this Water Supply System

	(a) Lot#	(b) Building ID	(c) Type of Change to the Building's Supply	Design Flows (Gallons Per Day) (d) Existing	(e) Increase	(f) Total	(g) Rule or Meter Based Flows
X	4	4B	Connection to New System	0	280	280	Rule-based
				6	7	8	
				0	280	280	

Add Another Lot/Building Served by this Supply

9 Is this water supply located off-lot? ○ Yes ◉ No

10 Is this water supply shared? ○ Yes ◉ No

If the water supply is located off-lot or shared, submit a copy of the agreement to provide an easement prior to construction.

11 Is a variance being requested for this water supply? ○ Yes ◉ No

If Yes, please submit additional details related to the variance request.

Remove This Water Supply

Add Another Water Supply

Section D - Water Supply Design Flows Summary Table

1 If the project includes more than one water supply, please list each water supply system and provide the total water supply design flows for the project. **IMPORTANT**: Please don't include systems that were identified in this Part on Section C, Line 4 as a "Replacement Area Designation" in this summary table

	(a) Water Supply Name/Identifier	Design Flows (Gallons Per Day) (b) Existing	(c) Increase	(d) Total
X	Proposed well	0	420	420
X	Proposed well	0	280	280
		2	3	4
		0	700	700

Add Another Water Supply

Part VI Wastewater Disposal System information

Section A - Wastewater Disposal System Screening Questions

1 Are you proposing a new wastewater disposal system or replacement area for this project? ◉ Yes ○ No

2 Are you proposing changes to an existing wastewater disposal system for this project? ○ Yes ◉ No

3 Is there a connection to an existing wastewater disposal system for the project? ○ Yes ◉ No

*If you answered **No** to **all three of the above questions**, skip to Part VII. Otherwise, proceed with Part VI.*

Section B - General Wastewater Disposal System Questions

1 Does this project involve a failed wastewater disposal system? ○ Yes ◉ No

2 Do any of the systems require a curtain or dewatering drain as part of the design? ○ Yes ◉ No

3 Is a hydrogeologic study required for this project? ◉ Yes ○ No

4 If the project has a soil-based wastewater disposal system with design flows that exceed 1,000 GPD, is this project located in a Class A Watershed? ○ Yes ○ No ◉ NA

If Yes, indicate the Class A Watershed in which the system(s) is located:

(a) Class A Watershed Name

5 Are there any existing or proposed floor drains as part of this project? ○ Yes ◉ No

If Yes, indicate where the floor drains will discharge:

(a) Floor Drain Discharge Point

6 If the project utilizes an Innovative/Alternative System or Product, has the applicant received a copy of the Wastewater Management Division's approval letter? ○ Yes ○ No ◉ NA

7 Is any portion of the proposed wastewater disposal system located in or near a Water Source Protection Area as designated by the Water Supply Division? ○ Yes ◉ No

If Yes, contact the Water Supply Division at (802) 241-3400.

Section C - Individual Wastewater Disposal System Details

Please provide the following information for each of the existing and proposed wastewater disposal systems serving a building or structure, or campground on the property.

1 Wastewater Disposal System Name/Identifier	2 Wastewater Disposal System Owner (if not Applicant)
Proposed mound	
3 Wastewater Disposal System Type	**4 Type of Change to System**
Mound	New System

5 Lots/Buildings Served by this Wastewater Disposal System

	(a) Lot#	(b) Building ID	(c) Type of Change to the Building's System	Design Flows (Gallons Per Day) (d) Existing	(e) Increase	(f) Infiltration	(g) Total	(h) Rule or Meter Based Flows
X	4	4A	Connection to New System	0	420	0	420	Rule-based
X	4	4B	Connection to New System	0	280	0	280	Rule-based
				6	7	8	9	
				0	700	0	700	

Add Another Lot/Building Served by this System

10 Is this wastewater disposal system located off-lot? ○ Yes ◉ No

11 Is this wastewater disposal system shared? ◉ Yes ○ No

If the wastewater disposal system is located off-lot or shared, submit a copy of the agreement to provide an easement prior to initiation of construction.

12 Is a variance being requested for this wastewater disposal system? ○ Yes ◉ No

If Yes, please submit additional details related to the variance request.

13 If this wastewater disposal system type is a connection to an Indirect Discharge System, please provide the Indirect Discharge System ID number.

Indirect Discharge System ID Number

14 If this wastewater disposal system type is a connection to a municipal system, please select the town.

Town

15 If this wastewater disposal system is a soil-based system, please select the design approach used.

Design Approach Used

Performance Based

16 For soil-based systems, please check all that apply.

☒ Storage and Dose ☐ Filtrate

17 If this is an Innovative/Alternative soil-based system, please select the system use type.

Innovative/Alternative System Use Type

18 If this is an Innovative/Alternative soil-based system, please select the Innovative/Alternative system or product.

Innovative/Alternative System or Product

Remove This Wastewater System

Add Another Wastewater System

Section D - Wastewater Disposal Systems Design Flows Summary Table

1 If the project includes more than one wastewater disposal system, please list each system on this page and provide the total wastewater disposal design flows for the project. **IMPORTANT**: Please don't include systems that were identified in this Part on Section C, Line 4 as a "Replacement Area Designation" in this summary table.

	(a) Wastewater Disposal System Name/Identifier	Design Flows (Gallons Per Day) (b) Existing	(c) Increase	(d) Infiltration	(e) Total
X	Proposed mound	0	700	0	700
	Add Another Wastewater System				
	2	0	700	0	700
	3				
	4				
	5				

Part VII Application Fees

1 Fee Amount $500.00

2 Fee Calculation Details

Per conversation with Tom Mansfield

Part VIII Designer Certification & Copyright License

Section A - Certifying Designer 1 Certification & Copyright License

"I hereby certify that in the exercise of my reasonable professional judgment, the design-related information submitted with this application is true and correct, and that the design included in this application for a permit complies with the Vermont Wastewater System and Potable Water Supply Rules and the Vermont Water Supply Rules.

As the individual who prepared this application, including all documents that are marked as copyrighted, I hereby grant a non-exclusive, limited license to the State to allow the documents to be made available for public review and copying in order to properly implement and operate the permitting programs for Wastewater Systems and Potable Water Supplies, and for no other purposes. As a condition to this license, the State agrees that it will not make any changes to such documents, nor will the State delete any copyright notices on such documents."

1 Check the design(s) you are certifying. This should be the same as the Designer Role(s) you selected in Part II, Section A, Line 13.

- [x] Water Supply Designer
- [x] Wastewater Disposal System Designer

1 Designer 1 Name	2 Designer 1 Signature	3 Signature Date
Kevin R. LaRose		9/15/09

Section B - Certifying Designer 2 Certification & Copyright License

"I hereby certify that in the exercise of my reasonable professional judgment, the design-related information submitted with this application is true and correct, and that the design included in this application for a permit complies with the Vermont Wastewater System and Potable Water Supply Rules and the Vermont Water Supply Rules.

As the individual who prepared this application, including all documents that are marked as copyrighted, I hereby grant a non-exclusive, limited license to the State to allow the documents to be made available for public review and copying in order to properly implement and operate the permitting programs for Wastewater Systems and Potable Water Supplies, and for no other purposes. As a condition to this license, the State agrees that it will not make any changes to such documents, nor will the State delete any copyright notices on such documents."

1 Check the design(s) you are certifying. This should be the same as the Designer Role(s) you selected in Part II, Section B, Line 13.

- [ ] Water Supply Designer
- [ ] Wastewater Disposal System Designer

1 Designer 2 Name	2 Designer 2 Signature	3 Signature Date

Part IX Applicant(s) Signature & Acknowledgements

In order to insure compliance with the requirements of the regulations administered by the Department of Environmental Conservation, Wastewater Management Division, it may be necessary to visit the property. As this would involve a Department employee entering private property, we request your approval to do so.

1 If we do visit your property, do you have any special instructions?

Contact Designer prior

"As landowner of the property for which I am requesting a permit from the Department of Environmental Conservation, I understand that by signing this application I am granting permission for the Department employees to enter the property, during normal working hours, to insure compliance of the property with the applicable rules of the Department.

I also understand that I am not allowed to commence any site work or construction on this project without written approval from the Department of Environmental Conservation.

If my project utilizes an Innovative/Alternative System or Product, I have received a copy of the Wastewater Management Division's approval letter and agree to abide by the conditions of the approval.

I also certify that to the best of my knowledge and belief the information submitted above is true, accurate and complete."

	2 Print Applicant Name	3 Applicant Signature	4 Signature Date
X	Samuel W Spear		
X	Priscilla L. Spear		

Add Applicant Signature Block

LaRose Surveys, P.C.

Performance Based Calculations

Client: Spear

Site Address: Lake Road, Charlotte

Project#: 08100

Date: August 18, 2009

	SYSTEM
Simplified Desktop Mounding Analysis	shared mound
Wastewater flow (gpd)	700
Slope (%)	6.0%
Soil texture	v f. sandy loam
Linear loading rate factor (f)	7.5
Depth to seasonal high water table (in)	12
Depth to seasonal high water table (ft)	1.0
Max. soil thickness available for groundwater mounding (ft) (SHWT-0.5')	0.5
Linear loading rate (LLR)	3.8
Calculated minimum length of seepage bed (ft)	186.7
Calculated maximum width of seepage bed (ft)	3.8
Is calculated length to width ratio = or > 3:1?	Yes
Required sand thickness beneath seepage bed (ft)	2.5'
Proposed System Parameters	
Length of seepage bed (ft)	200
Width of seepage bed (ft)	3.5
Total seepage area (ft)	700
Linear loading rate factor (f)	7.5
Calculated induced groundwater mound thickness (ft)	0.47
Calculated linear loading rate (LLR)	3.50
Calculated depth to seasonal high groundwater & induced mound (ft)	0.53
Minimum sand thickness required beneath seepage bed (ft)	2.47
Confirm Design Parameters Comply with Simplified Mounding Analysis	
Proposed LLR </= Simplified LLR	Yes
Proposed seepage bed length >/= Simplified minimum bed length	Yes
Proposed seepage bed width </= Simplified maximum bed width	Yes
Calculated length to width ratio =/> 3:1	Yes
Depth to proposed induced groundwater mound >/= 0.5'	Yes
Thickness of "dry" soil from induced groundwater mound & seepage bed >/= 3'	Yes

LaRose Surveys, P.C.
Test Pit Evaluation

Client: Spear Project#: 08100 Date: December 8, 2008 Site Address: Lake Road, Charlotte

Project Description: Two SFR's

Logged By: Kevin LaRose Witnessed By: Spencer Harris, Town of Charlotte

Topographical Description: woods Slope: 4-8% Vegetation: mix of hard and soft wood

Weather: Sunny, 10 degrees Method of Excavation: tracked excavator Excavating Company: Lewis

Test Pit #	Horizon	Depth (inches)	Texture	Color	Consistency	Structure	Redoximorphic Features	Comments
101		0-8" 8-15" 15-28"	fine sandy loam very fine sandy loam very fine sandy loam	med.brown reddish brown dark olive gray	friable friable friable	blocky subang. Blocky blocky	none f/f@14" common	
102		0-8" 8-12" 12-20"	fine sandy loam very fine sandy loam very fine sandy loam	med.brown reddish brown dark olive gray	friable friable friable	blocky subang. Blocky blocky	none f/f@12" common	
103		0-9" 9-14" 14-22"	fine sandy loam very fine sandy loam very fine sandy loam	med.brown reddish brown dark olive gray	friable friable friable	blocky subang. Blocky blocky	none f/f@ 13" common	
104		0-6" 6-12" 12-19"	fine sandy loam very fine sandy loam very fine sandy loam	med.brown reddish brown dark olive gray	friable friable friable	blocky subang. Blocky blocky	none f/f@12" common	
105		0-4" 4-10" 10-16"	fine sandy loam very fine sandy loam very fine sandy loam	med.brown reddish brown dark olive gray	friable friable friable	blocky subang. Blocky blocky	none f/f@10" common	
106		0-4" 4-10" 10-18"	fine sandy loam sandy clay loam sandy clay loam	med.brown reddish brown dark olive gray	friable friable friable	blocky subang. Blocky blocky	none f/f@10" common	

LaRose Surveys, P.C.
Test Pit Evaluation

Client: Spear Project#: 08100 Date: December 8, 2008 Site Address: Lake Road, Charlotte

Project Description: Two SFR's

Logged By: Kevin LaRose Witnessed By: Spencer Harris, Town of Charlotte

Topographical Description: woods Slope: 4-8% Vegetation: mix of hard and soft wood

Weather: Sunny, 10 degrees Method of Excavation: tracked excavator Excavating Company: Lewis

Test Pit #	Horizon	Depth (inches)	Texture	Color	Consistency	Structure	Redoximorphic Features	Comments
107		0-4" 4-7" 7-15"	fine sandy loam clay loam clay loam	med.brown reddish brown dark olive gray	friable friable friable	blocky subang. Blocky blocky	none common @ 7 common	
108		0-4" 4-6" 6-12"	fine sandy loam clay loam clay loam	med.brown reddish brown dark olive gray	friable friable friable	blocky subang. Blocky blocky	none f/f@6 common	
109		0-5" 5-12" 12-19"	fine sandy loam very fine sandy loam very fine sandy loam	med.brown reddish brown dark olive gray	friable friable friable	blocky subang. Blocky blocky	none f/f@14" common	
110		0-7" 7-12" 12-40"	fine sandy loam very fine sandy loam very fine sandy loam	med.brown reddish brown dark olive gray	friable friable friable	blocky subang. Blocky blocky	none f/f@14" common	
111		0-5" 5-14" 14-40"	fine sandy loam very fine sandy loam very fine sandy loam	med.brown light brown reddish brown	friable friable friable	blocky subang. Blocky blocky	none f/f@14" common	
112		0-4" 4-5" 5-14"	fine sandy loam very fine sandy loam very fine sandy loam	med.brown grayish brown yellow brown	friable friable friable	blocky subang. Blocky blocky	none common @ 5 common	

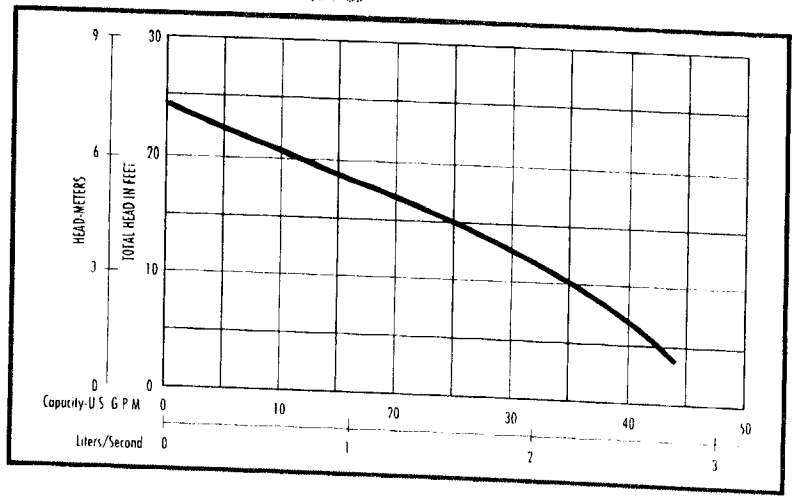
SHEF30 - Submersible Effluent Pump

Details

Pump Characteristics

Pump/Motor Unit	Submersible
Automatic Model	SHEF30A1
Manual Model	SHEF30 MI
Horsepower	.30
Full Load Amps	8.0
Motor Type	Shaded Pole (4 pole)
R.P.M.	1550
Phase Ø	1
Voltage	115
Hertz	60
Temperature	120°F Ambient
NEMA Design	A
Insulation	Class B
Discharge Size	1-1/2" NPT (38mm)
Solids Handling	3/4" (19mm)
Unit Weight	30 lbs.
Power Cord	18/3, SJTW, 20' std.

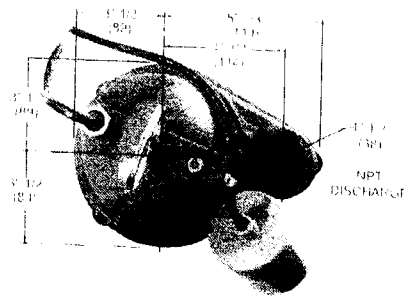
Performance Data

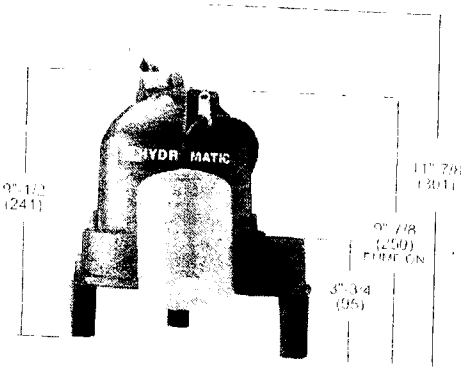


Materials of Construction

Handle	Stainless Steel
Lubricating Oil	Dielectric Oil
Motor Housing	Cast Iron
Pump Volute	Cast Iron
Shaft	Steel
Mechanical Shaft Seal	Seal Faces: Carbon/Ceramic Seal Body: Anodized Steel Spring: Stainless Steel Bellows: Buna-N
Impeller	Engineered Thermoplastic
Upper Bearing	Cast Iron Sleeve
Lower Bearing	Single Row Ball Bearing
Legs	Engineered Thermoplastic
Fastener	Stainless Steel

Dimensional Data





All dimensions in inches. Component dimensions may vary ± 1/8 inch. Dimensional data not for construction purpose unless certified. Dimensions and weights are approximate. On/Off level adjustable. We reserve the right to make revisions to our product and their specifications without notice.

HYDROMATIC
Pentair Water

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Tel. 519 896 2163 Fax. 519 896 6337

SSPMA Certified Pump

Your Authorized Local Distributor

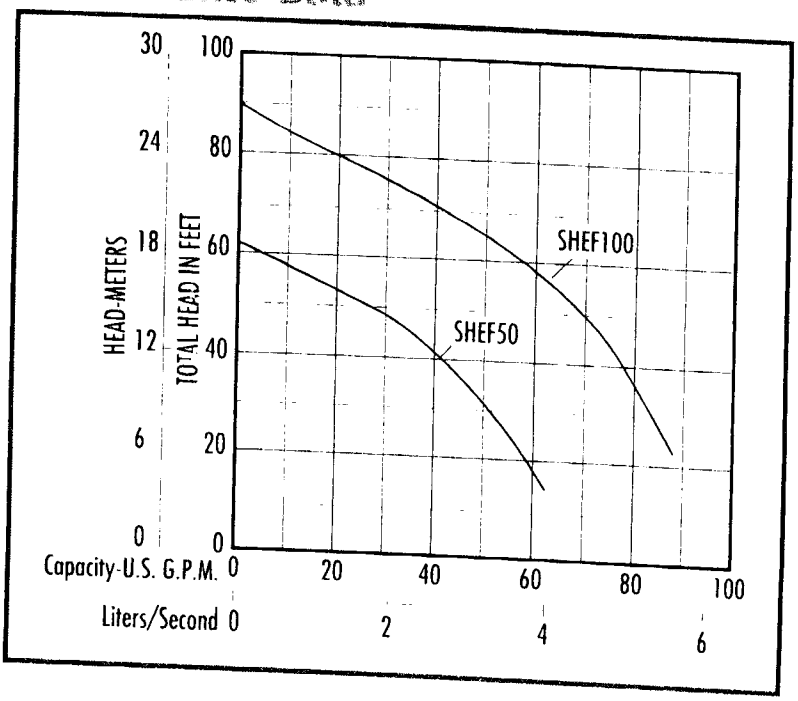
SHEF50/100 Submersible Effluent Pumps

Details

Pump Characteristics

Pump/Motor Unit	Submersible				
Manual Models (50)	M1	M2	M3	M4	M5
Automatic Models	A1	A2	-	-	-
Horsepower	1/2				
Full Load Amps	14.5	7.6/7.1	3.2/3.1	1.6	1.2
Motor Type	Capacitor Start				
R.P.M.	3450				
Phase Ø	1 Ø		3 Ø		
Voltage	115	208-230	208-230	460	575
Manual Models (100)		M2	M3	M4	M5
Automatic Models		A2	-	-	-
Horsepower	1				
Full Load Amps	13.6/12.1		6.0/5.8	2.8	1.9
Motor Type	Capacitor Start		3 Ø		
R.P.M.	3450				
Phase Ø	1 Ø		3 Ø		
Voltage	208-230	208-230	460	575	
Hertz	60				
Temperature	140°F Max Fluid Temp.				
NEMA Design	L		B		
Insulation	Class B				
Discharge Size	2" NPT std.				
Solids Handling	3/4"				
Unit Weight	58 lbs. (50)		65 lbs. (100)		
Power Cord	115V, 14/3, SJTW-A; 230V, 1o, 16/3 SWT-A; 3o, 16/4, STW-A, All cords 20' std. with 30' opt.				

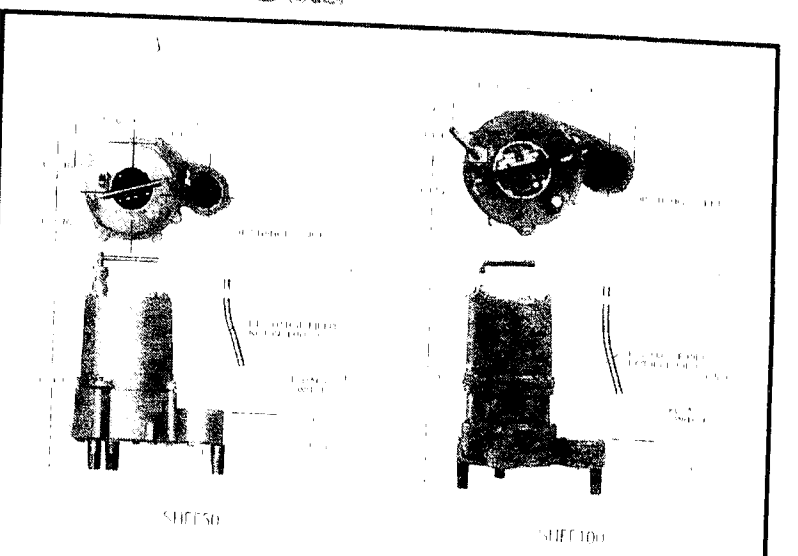
Performance Data



Materials of Construction

Handle	Stainless Steel
Lubricating Oil	Dielectric Oil
Motor Housing	Cast Iron
Pump Casing	Cast Iron
Shaft	Stainless Steel
Mechanical Shaft Seal	Seal Faces: Carbon/Ceramic Seal Body: Brass Spring: Stainless Steel Bellows: Buna-N
Impeller	Engineered Thermoplastic
Upper Bearing	Single Row Ball Bearing
Lower Bearing	Single Row Ball Bearing
Bottom Plate	Single Row Ball Bearing
Fasteners	Stainless Steel
Legs	Engineered Thermoplastic

Dimensional Data



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