LINCOLN
APPLIED GEOLOGY, INC.
Environmental Consultants

October 4, 2010

Mr. Tom Mansfield
Mrs. Spencer Harris
Town of Charlotte
P.O. Box 119
Charlotte, VT 05445

RE: Renald and Agnes Lussier Property, 3 Lot Subdivision, Carpenter Road, Charlotte, VT – Water and Wastewater Application Submittal

Dear Tom and Spencer:

Renald and Agnes Lussier currently own a ± 9.52 acre property that is improved with three (3) single family residences (SFR) located on it. They are in the process of subdividing the overall property into 3 improved properties which include Lot 1, a ± 5.12 acre property with a 3 bedroom SFR; Lot 2, a ± 3.38 acre property with a 3 bedroom SFR; and Lot 3, a ± 1.02 acre property with a 2 bedroom SFR. The proposed 3-lot subdivision is shown on Plan Sheet 1 along with individual on-site sewage systems and their connection to an off-site shared spring type water supply (which is shown on Figure 1). In order to qualify the property for subdivision, a replacement disposal area must be identified for each residence and their existing disposal area must be defined as properly functioning. In this regard, Lot 1 has a functioning gravity mound type disposal area, Lot 2 has a functioning 2 trench type inground disposal area, and Lot 3 has a functioning gravity type mound disposal area. Although not required, replacement drilled bedrock well sites (and on unused well on Lot 2) have been identified. When and if they are required, they will be installed (or used) in accordance with section 1-304 (a) (22) of Chapter 1 of the Environmental Protection Rules. In this regard, no Act 145 notification is required related to replacement wells.

In order to define complying replacement disposal areas for each residence, site and soil evaluation surveys were conducted on July 2, 2010, July 12, 2010 and September 24, 2010 using test pits, auger holes and percolation tests. Seventeen test pits, three auger holes and three percolation tests were evaluated. Their locations are shown on Plan Sheet 1 and the soil profile descriptions and percolation test results are presented in Attachment Packet 1. The results indicate that there are no complying or reasonably complying replacement disposal areas on Lot 3 due to wetlands, a very high water table, very low permeability soils and too small available areas for both a performance

based replacement disposal area and a replacement water supply well. The results further indicate that no complying or reasonably complying performance

based replacement disposal area exists on Lot 2 due to poor topography, drainage swales, the presence of an existing unused replacement water supply well, a very high water table and not enough land slope where needed. The only area that is complying for performance based disposal areas for all 3 lots is the front or western lawn of Lot 1. This area has the best soil texture, depth to water table, slope and frontage on contour for the siting of 3 independent performance based mound type disposal areas that do not conflict with one another. This area is so much better than any other area on the overall Lot 1, 2 and 3 property and since it is the only complying area on the property it must be used.

The basis of design for each lot is as follows:

Lot 1

1. a wastewater flow of 420 gallons per day (gpd) or 56.1 ft^3/day,
2. a slope of 9% or 0.09 feet/foot
3. a hydraulic conductivity of 20 feet/day for loam textured soils with strong to moderate blocky structure,
4. a depth to seasonal water table of 12" which will allow a maximum of 6" or 0.5' of mounding,
5. using Darcy's Law, where 56.1 = (20)(0.09)(0.5)(l), the length (l) of the required mound application area is 62.33' which rounds off to 63' which results in,
6. a required performance based mound application area 7' X 63' in size which exceeds the required 420 ft^2 with 2.5' of mound sand beneath it.

Lot 2

1. a wastewater flow of 420 gpd or 56.1 ft^3 /day,
2. a slope of 7% or 0.07 feet/foot,
3. a hydraulic conductivity of 20 feet/day for loam textured soil with strong to moderate blocky structure,
4. a depth to seasonal water table of 12" which will allow a maximum or 6" or 15' of mounding,

5. using Darcy's Law, where 56.1 =(20)(0.07)(0.5)(l), the length (l) of the mound replacement area is 80.1' which rounds off to 81', which results in,

6. a required performance based mound application area 5.2' X 81' in size which exceeds the required 420 ft² with 2.5' of mound sand beneath it.

Lot 3

1. a wastewater flow of 280 gpd or 37.4 ft²/day,

2. a slope of 7% or 0.07 feet/foot,

3. a hydraulic conductivity of 20 feet/day for moderate to strong blocky structure,

4. a shallow water table depth of 12" which will allow a maximum of 6" or 0.5' of mounding,

5. using Darcy's Law where 37.4 = (20)(0.07)(0.5)(l), the length (l) of the required mound application area is 53.4 which rounds off to 54', which results in,

6. a required performance based mound application area 5.2' X 54' in size which exceeds the required 280 ft² with 2.5' of mound sand.

The Lot 1, 2 and 3 proposed replacement mound disposal systems are completely shown along with proper easements on Plan Sheet 1. The mounds and their distribution systems are described in the pressure distribution and mound dimension details work sheet presented in Attachment Packet 1. The head vs capacity pump specifications are described, and a pump capable of meeting each specification is also provided on Plan Sheet 2.

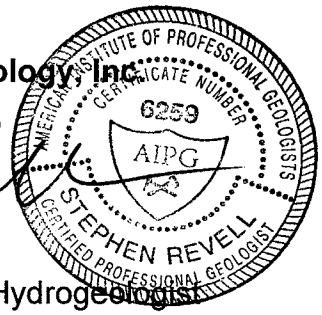
Water is provided to the residences on Lots 1, 2 and 3 from the shared spring shown on Figure 1. The source and associated systems are pre-existing and suitable for continued use. When and if the owners of Lot 1, 2 or 3 decide to replace their connection to the shared spring source, a well site (and existing unused well for Lot 2) has been shown which will meet the replacement well exemption described in Chapter 1 Section 1-304 (a)(22) of the Environmental Protection Rules. Although Act 145 notification is not required, their well isolation zones are properly shown. When needed, the recommended water system details are presented on Plan Sheet 3.

Regarding the Act 145 notification requirement, the certification, the list of affected properties and the notification letters are presented in Attachment Packet 2. The entire permit and submittal has been sent to each affected party.

The Lussiers and I believe their application is complete with the signed application, a $750.00 application fee payable to the Town of Charlotte, two copies of all design related plans and figures and one copy of this letter and the attachments. We look forward to your concurrence and issuance of the requested permit which is required for the subdivision approval.

If you have any questions, please do not hesitate to contact me at 802-453-4384.

Very truly yours,
Lincoln Applied Geology, Inc.



Stephen Revell, CPG
LCD178 and Senior Hydrogeologist

SR/kg

Enclosures

Cc: Renald and Agnes Lussier
Act 145 Parties

Lincoln Applied Geology, Inc.
Environmental Consultants
163 Revell Drive • Lincoln, VT 05443 • (802) 453-4384 • FAX (802) 453-5399

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)
Lussier	Renald & Agnes

3 Mailing Address Line 1	4 Mailing Address Line 2
78 Carpenter Road	

5 Town/City	6 State/Province	7 Country	8 Zip/Postal Code
Charlotte	VT	United States	05445

9 Email Address	10 Telephone

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)		
Revell	Stephen		
3 Designer License#	4 Company Name		
00178	Lincoln Applied Geology		
5 Mailing Address Line 1	6 Mailing Address Line 2		
163 Revell Drive			
7 Town/City	8 State/Province	9 Country	10 Zip/Postal Code
Lincoln	Vermont	United States	05443
11 Email Address			12 Telephone
srevell@lagvt.com			(802) 453-4384

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	00014-0078	Charlotte	78,200 and 250 Carpenter 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 49.33869 °

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

W (-) 73.19157 °

Part IV Project Information

Section A - General Project Information & Questions

1 Project Name (if applicable)
Lussier 3 Lot Subdivision

2 Total Acreage of Property
9.52

3 Business Name (if applicable)

4 Detailed Project Description
Subdivision of an improved property with 3 single family residences served by individual disposal systems and an off-site shared spring type water supply. Replacement disposal systems and wells are proposed.

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: 07-12-2010

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	130	22
X	Charlotte	29	82

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	Three Lot Site Plan	09-30-2010	
X	2	Wastewater Systems Details	09-30-10	
X	3	Water System Details	09-30-10	

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
1	9.52	Single Family Residential

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	1	Residential	01-01-1982	Local	(•) Yes ( ) No
X	2	Residential	Pre-1969	Local	(•) Yes ( ) No
X	3	Residential	Pre-1969	Local	(•) 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
1	5.12	Residential

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	1	§1-304(A)(1)	☐	3 bedroom residential

Add Another Building

Remove This Lot

1 Lot#	2 Lot Size (acres)	3 Proposed Use of the Lot
2	3.38	

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	2	§1-304(A)(1)	☐	3 bedroom residence

Add Another Building

Remove This Lot

1 Lot#	2 Lot Size (acres)	3 Proposed Use of the Lot
3	1.02	

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	3	§1-304(A)(1)	☐	3 bedroom residence

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)
Lussier Shared Spring	Lussier
3 Water Source Type	**4 Type of Change to Supply**
Non-Public Shallow Well/Spring	No Change

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	1	1	No Change	420	0	420	Rule-based
X	2	2	No Change	420	0	420	Rule-based
X	3	3	No Change	280	0	280	Rule-based
				6	7	8	
				1,120	0	1,120	

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)
Lot 1 Replacement Well	
3 Water Source Type	**4 Type of Change to Supply**
Non-Public Drilled Bedrock Well	Replacement Supply Designation

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	1	1	No Change	420	0	420	Rule-based

Add Another Lot/Building Served by this Supply

6	7	8
420	0	420

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)
Lot 2 Replacement Well	
3 Water Source Type	**4 Type of Change to Supply**
Non-Public Drilled Bedrock Well	Replacement Supply Designation

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	2	2	No Change	420	0	420	Rule-based

Add Another Lot/Building Served by this Supply

6	7	8
420	0	420

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)
Lot 3 Replacement Well	
3 Water Source Type	**4 Type of Change to Supply**
Non-Public Drilled Bedrock Well	Replacement Supply Designation

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	3	3	No Change	280	0	280	Rule-based

Add Another Lot/Building Served by this Supply

6	7	8
280	0	280

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.

		Design Flows (Gallons Per Day)		
	(a) Water Supply Name/Identifier	(b) Existing	(c) Increase	(d) Total
X	Lussier Shared Spring	1,120		1,120
		2	3	4
		1,120		1,120

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)
Lot 1 Primary System	
3 Wastewater Disposal System Type	**4 Type of Change to System**
Mound	No Change

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	1	1	No Change	420	0	0	420	Rule-based
	6	7	8	9				
	420	0	0	420				

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

Prescriptive

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

1 Wastewater Disposal System Name/Identifier	2 Wastewater Disposal System Owner (if not Applicant)
Lot 1 Replacement	
3 Wastewater Disposal System Type	**4 Type of Change to System**
Mound	Replacement Area Designation

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	1	1	No Change	420	0	0	420	Rule-based

Add Another Lot/Building Served by this System

6	7	8	9
420	0	0	420

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

1 Wastewater Disposal System Name/Identifier	2 Wastewater Disposal System Owner (if not Applicant)
Lot 2 Primary System	
3 Wastewater Disposal System Type	**4 Type of Change to System**
In-ground	No Change

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	2	2	No Change	420	0	0	420	Rule-based
	6	7	8	9				
	420	0	0	420				

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

Prescriptive

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

1 Wastewater Disposal System Name/Identifier	2 Wastewater Disposal System Owner (if not Applicant)
Lot 2 Replacement System	
3 Wastewater Disposal System Type	**4 Type of Change to System**
Mound	Replacement Area Designation

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	2	2	No Change	420	0	0	420	Rule-based
	6	7	8	9				
	420	0	0	420				

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

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

1 Wastewater Disposal System Name/Identifier	2 Wastewater Disposal System Owner (if not Applicant)
Lot 3 Primary System	
3 Wastewater Disposal System Type	**4 Type of Change to System**
Mound	No Change

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	3	3	No Change	280	0	0	280	Rule-based

Add Another Lot/Building Served by this System

6	7	8	9
280	0	0	280

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

Prescriptive

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

1 Wastewater Disposal System Name/Identifier	2 Wastewater Disposal System Owner (if not Applicant)
Lot 3 Replacement System	
3 Wastewater Disposal System Type	**4 Type of Change to System**
Mound	Replacement Area Designation

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	3	3	No Change	280	0	0	280	Rule-based
			6	280	0	0	280	

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

Prescriptive

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.

		Design Flows (Gallons Per Day)			
	(a) Wastewater Disposal System Name/Identifier	(b) Existing	(c) Increase	(d) Infiltration	(e) Total
X	Lot 1 Primary System	420	0	0	420
X	Lot 2 Primary System	420	0	0	420
X	Lot 3 Primary System	280	0	0	280
		2	3	4	5
		1,120	0	0	1,120

Add Another Wastewater System

Part VII Application Fees

1 Fee Amount $750.00

2 Fee Calculation Details

Replacement Disposal Area and Well for 3 Lots

3 Lots X $250/lot = $750.00

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.

- ☒ Water Supply Designer
- ☒ Wastewater Disposal System Designer

1 Designer 1 Name	2 Designer 1 Signature	3 Signature Date
Stephen Revell		10/4/10

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?

Schedule an appointment with the designer

"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	Renald Lussier		
X	Agnes Lussier		

Add Applicant Signature Block

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Environmental Consultants

Lussier Property
Soil Profile Descriptions
7/2/2010, 7/12/2010, and 9/24/2010
By Stephen Revell, LCBD 178

Test Pit 1 (TP-1)

0-16"	Brown fine sandy loam, loose, stony fine blocky structure, well drained.
16-22"	Orange-brown to yellow-brown fine sandy loam, loose to friable, strong fine blocky structure, mottled.
22-40"	Brown-gray clay loam, firm, weak blocky to platy structure, mottled, no water or ledge to depth.

Test Pit 2 (TP-2)

0-10"	Brown silt loam to clay loam, friable, moderate blocky structure, mottled at 8".
10-24"	Brown to red-brown clay, weak blocky, mottled, no water or ledge to depth.

Test Pit 3 (TP-3)

0-12"	Brown silt loam, friable, strong fine blocky structure, mottled at 8-10".
12-24"	Brown to red-brown clay, weak blocky, mottled, no water or ledge to depth.

Test Pit 4 (TP-4)

0-12"	Brown silt loam, friable, strong fine blocky structure, mottled at 8".
12-24"	Brown to red-brown clay, weak blocky, mottled, no water or ledge to depth.

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Test Pit 5 (TP-5)

0-12"	Brown silt loam, friable, strong fine blocky structure, mottled at 8".
12-24"	Brown to red-brown clay, weak blocky, mottled, no water or ledge to depth.

Test Pit 6 (TP-6)

0-12"	Brown silt loam, friable, strong fine blocky structure, mottled at 8".
12-24"	Brown to red-brown clay, weak blocky, mottled, no water or ledge to depth.

Test Pit 7 (TP-7)

0-10"	Brown silt loam, friable, strong fine blocky structure, mottled at 8".
10-24"	Brown to red-brown clay, weak blocky, mottled, no water or ledge to depth.

Test Pit 8 (TP-8)

0-14"	Brown loam to silt loam, friable, strong fine blocky structure, mottled at 12".
14-20"	Brown clay loam, friable to firm, weak blocky structure, mottled.
20-36"	Tan fine sandy loam to loam, moderate blocky structure, mottled, no water or ledge to depth.

Test Pit 9 (TP-9)

0-12"	Brown loam to silt loam, friable, strong fine blocky structure, well drained.
12-22"	Brown clay loam, friable to firm, weak blocky structure, mottled.
22-40"	Tan fine sandy loam to loam, friable, moderate blocky structure, mottled, no water or ledge to depth.

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Test Pit 10 (TP-10)

0-14"	Brown loam to fine sandy loam, loose to friable, strong to moderate blocky structure, well drained.
14-24"	Brown clay loam, friable to firm, weak blocky structure, mottled.
24-42"	Tan loam to fine sandy loam, friable, moderate blocky structure, mottled, no water or ledge to depth.

Test Pit 11 (TP-11)

0-16"	Brown loam to silt loam, friable, strong fine blocky structure, mottled at 12".
16-26"	Brown silt loam to clay loam, friable to firm, moderate blocky structure, mottled.
26-48"	Brown-gray clay loam to clay, firm, weak blocky to platy structure, mottled.

Test Pit 12 (TP-12)

0-14"	Brown loam, friable, strong block structure, well drained.
14-20"	Brown silt loam to clay loam, friable to firm, moderate to weak blocky structure, mottled.
20-38"	Tan loam to fine sandy loam, friable, moderate blocky structure, mottled, no water or ledge to depth.

Test Pit 13 (TP-13)

0-12"	Brown loam, friable, strong block structure, well drained.
12-22"	Brown silt loam to clay loam, friable to firm, moderate to weak blocky structure, mottled.
22-40"	Tan loam to fine sandy loam, friable, moderate blocky structure, mottled, no water or ledge to depth.

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Test Pit 14 (TP-14)

0-14"	Brown loam to fine sandy loam, loose to friable, strong to moderate blocky structure, mottled at 12".
14-24"	Brown clay loam, friable to firm, weak blocky structure, mottled.
24-42"	Tan loam to fine sandy loam, friable, moderate blocky structure, mottled, no water or ledge to depth.

Test Pit 15 (TP-15)

0-13"	Brown loam to fine sandy loam, loose to friable, strong to moderate blocky structure, well drained.
13-24"	Brown clay loam, friable to firm, weak blocky structure, mottled.
24-42"	Tan loam to fine sandy loam, friable, moderate blocky structure, mottled, no water or ledge to depth.

Test Pit 16 (TP-16)

0-12"	Brown loam to fine sandy loam, loose to friable, strong to moderate blocky structure, well drained.
12-26"	Brown clay loam, friable to firm, weak blocky structure, mottled.
26-36"	Tan loam to fine sandy loam, friable, moderate blocky structure, mottled, no water or ledge to depth.

Test Pit 17 (TP-17)

0-12"	Brown loam to fine sandy loam, loose to friable, strong to moderate blocky structure, well drained.
12-24"	Brown clay loam, friable to firm, weak blocky structure, mottled.
24-36"	Tan loam to fine sandy loam, friable, moderate blocky structure, mottled, no water or ledge to depth.

Auger Hole – 1 (AH-1)

0-12"	Brown loam, friable, strong block structure, well drained.
12-20"	Brown silt loam to clay loam, friable to firm, moderate to weak blocky structure, mottled.
20-36"	Tan loam to fine sandy loam, friable, moderate blocky structure, mottled, no water or ledge to depth.

Auger Hole – 2 (AH-2)

0-13"	Brown loam to fine sandy loam, loose to friable, strong to moderate blocky structure, mottled at 12".
13-19"	Brown clay loam, friable to firm, weak blocky structure, mottled.
19-36"	Tan loam to fine sandy loam, friable, moderate blocky structure, mottled, no water or ledge to depth.

Auger Hole – 3 (AH-3)

0-12"	Brown loam to fine sandy loam, loose to friable, strong to moderate blocky structure, well drained.
12-22"	Brown clay loam, friable to firm, weak blocky structure, mottled.
22-36"	Tan loam to fine sandy loam, friable, moderate blocky structure, mottled, no water or ledge to depth.

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Lussier Property
Percolation Test Results
Lot 1-3 Replacement Areas
All tests were performed on July 2, 2010 at a depth of 6" - 12"

PT-1	Drop Time (min)	Total Drop Time (min)	Total Drop (inches)	Drop Rate (min/inch)
	7.4	7.4	1	7.4
	9.4	16.8	2	8.4
	13.3	30.0	3	10.0
	17.6	47.6	4	11.9
	18.7	66.3	5	13.3
	19.6	85.9	6	14.3
	20.4	106.2	7	15.2
	---	**1440.0**	---	**25.6**

PT-2	Drop Time (min)	Total Drop Time (min)	Total Drop (inches)	Drop Rate (min/inch)
	6.3	6.3	1	6.3
	10.3	16.6	2	8.3
	12.6	29.1	3	9.7
	15.3	44.5	4	11.1
	16.3	60.8	5	12.2
	17.1	77.9	6	13.0
	17.8	95.7	7	13.7
	---	**1440.0**	---	**22.9**

PT-3	Drop Time (min)	Total Drop Time (min)	Total Drop (inches)	Drop Rate (min/inch)
	9.2	9.2	1	9.2
	12.7	21.9	2	10.9
	18.3	40.2	3	13.4
	22.4	62.5	4	15.6
	25.5	88.0	5	17.6
	26.8	114.9	6	19.1
	27.9	142.8	7	20.4
	---	**1440.0**	---	**33.7**

*NOTE:
Drop time includes fill time for each of the seven runs.

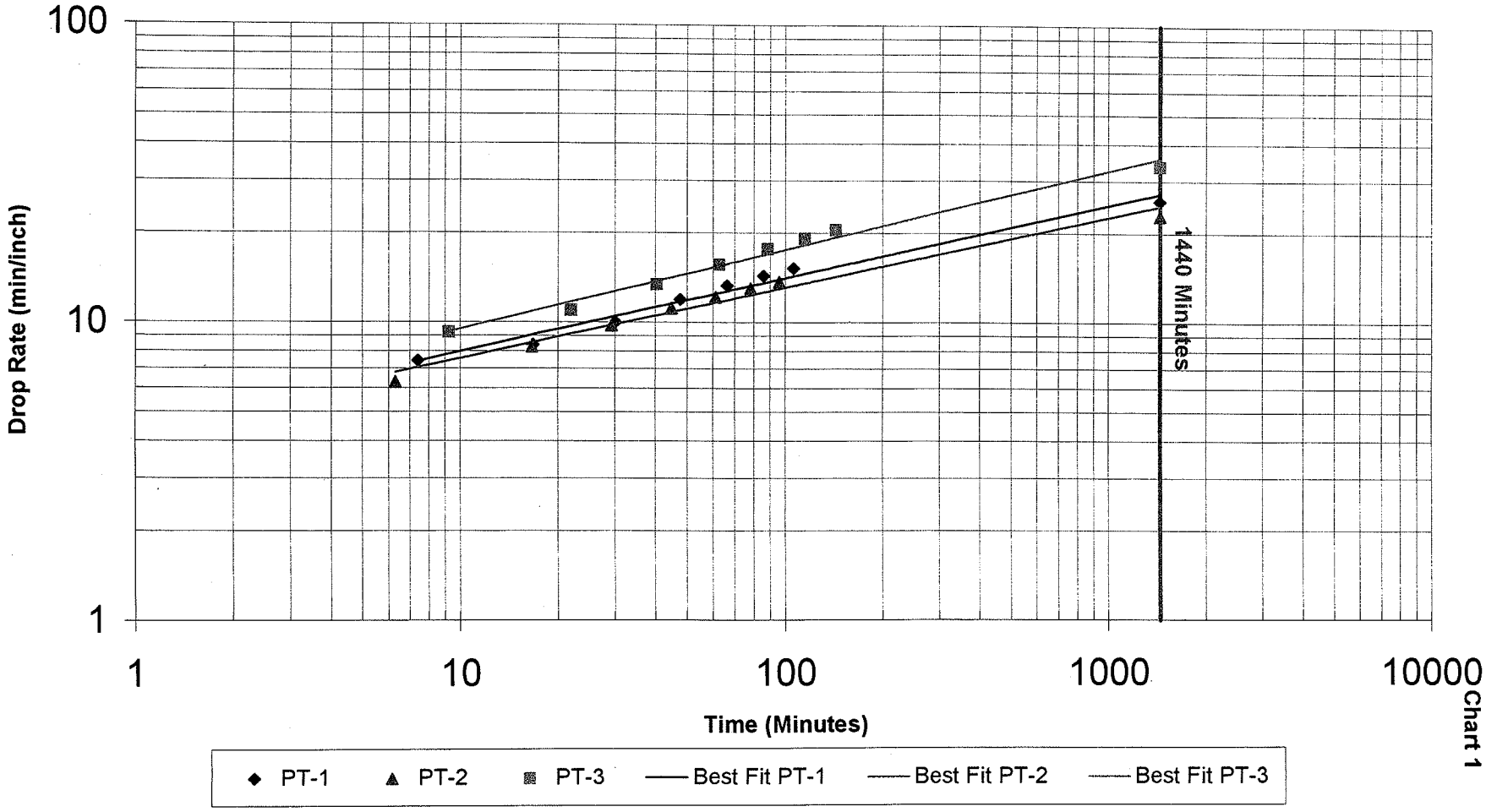
Table 1

Lussier Property

Percolation Test Results

Lot 1-3 Replacement Areas

All tests were performed on July 2, 2010 at a depth of 6" - 12"



PRESSURE DISTRIBUTION & MOUND DIMENSION DETAILS

CLIENT'S NAME: Lussier Lot 1 Replacement
DATE: 10/4/2010 PERFORMED BY: S. Revell LAG Project #: 10044

Design Flow Rate	420	GPD
Width of Distribution Stone Bed/Trench	7	FEET
Length of Distribution Stone Bed/Trench	63	FEET
Thickness of Sand Beneath Distribution Stone Bed/Trench	2.5	FEET
Thickness of Stone Beneath Laterals	6	INCHES
Soil Cover Thickness at Edge of Level Area	12	INCHES
Front Slope of Finished Mound	33	PERCENT
Side and Rear Slope of Finished Mound	33	PERCENT
Percolation Rate	25	MPI
Natural Ground Slope	9	PERCENT
Thickness of Sand on Upper Side of Level Area	3.16	FEET
Thickness of Sand on Lower Side of Level Area	3.97	FEET
Width of Level Area	9	FEET
Length of Level Area	65	FEET
Area of Distribution Stone Bed/Trench	441	SQUARE FT
Volume of Stone Required	10	CUBIC YARDS
Proposed Basal Area	1672	SQUARE FEET
Volume of Mound Sand Required	354.7	CUBIC YARDS
Number of Laterals	4	
Length of Each Lateral	30	FEET
Number of Orifices in the Manifold	0	
Number of Orifices in Each Lateral	8	
Distance Between Manifold and First Orifice	2	FEET
Distance Between Orifices (on center)	4	FEET
Distribution Area per Orifice	13.78	SQ. FT.
Design Pressure Head	5	FEET
Diameter of Orifices (enter as fraction)	0.188	INCHES
Elevation From Pump Intake to Laterals (0 if siphon)	15	FEET
Diameter of Force Main	2	INCHES
Length of Force Main	330	FEET
Length of Manifold to Lateral	1.5	FEET
Diameter of Manifold Pipe	1.5	INCH
Diameter of Lateral Pipe	1.5	INCH
Friction Loss in Force Main	5.92	FEET
Friction Loss in Manifold	0.03	FEET
Friction Loss in Section 1	0.01	FEET
Friction Loss in Entire Lateral	0.05	FEET
Discharge Rate at First Orifice	0.93	GPM
Discharge Rate at Last Orifice	0.92	GPM
Percent Difference in Flow Rate First to Last Orifice	0.41	PERCENT
Total Dynamic Head Loss	26.152	FEET
Total Distribution System Flow	26.87	GPM
Volume of Distribution System	11.02	GALLONS
Pump Capacity 26.87 GPM vs	26.152	FEET OF HEAD
Volume per Dose	105	GALLONS
On/Off Float Swing (1,000 gal. Tank)	3.5	INCHES

PRESSURE DISTRIBUTION & MOUND DIMENSION DETAILS

CLIENT'S NAME: Lussier Lot 1 Replacement
DATE: 10/4/2010 PERFORMED BY: S. Revell LAG Project #: 10044

DIMENSIONS OF MOUND SYSTEM

Dimensions of Mound Sand

7.5 feet from level area to uphill sand toe

10.6 ft corner of level area to upper toe corner

9 ft wide level area

9.6 ft to side toe from upper edge of level area

7 ft wide stone bed/trench
63 ft long stone bed/trench

12.0 ft to side toe from lower edge of level area

65 ft long level area

23.4 ft corner of level area to lower toe corner

16.5 feet from level area to downhill sand toe

Dimensions of Final Cover

9.9 feet from level area to uphill toe

14.0 ft corner of level area to upper fill toe

12.6 ft to side toe from upper edge of level area

9 ft wide level area

65 ft long level area

15.1 ft to side toe from lower edge of level area

29.3 ft corner of level area to lower fill toe

20.7 feet from level area to downhill toe

PLOW AREA LAYOUT MEASUREMENTS

Center of Bed/Trench to Downslope Toe	58.9 feet
End of Level Area @ Midpoint to Downslope Toe	32.6 feet
Center of Bed/Trench to Upslope Toe	44.8 feet
End of Level Area @ Midpoint to Upslope Toe	17.5 feet

PRESSURE DISTRIBUTION & MOUND DIMENSION DETAILS

CLIENT'S NAME: Lussier Lot 2 Replacement
DATE: 9/29/2010 PERFORMED BY: S. Revell LAG Project #: 10044

Design Flow Rate	420	GPD
Width of Distribution Stone Bed/Trench	5.2	FEET
Length of Distribution Stone Bed/Trench	81	FEET
Thickness of Sand Beneath Distribution Stone Bed/Trench	2.5	FEET
Thickness of Stone Beneath Laterals	6	INCHES
Soil Cover Thickness at Edge of Level Area	12	INCHES
Front Slope of Finished Mound	33	PERCENT
Side and Rear Slope of Finished Mound	33	PERCENT
Percolation Rate	25	MPI
Natural Ground Slope	7	PERCENT
Thickness of Sand on Upper Side of Level Area	3.18	FEET
Thickness of Sand on Lower Side of Level Area	3.68	FEET
Width of Level Area	7.2	FEET
Length of Level Area	83	FEET
Area of Distribution Stone Bed/Trench	421	SQUARE FT
Volume of Stone Required	10	CUBIC YARDS
Proposed Basal Area	1812	SQUARE FEET
Volume of Mound Sand Required	344.1	CUBIC YARDS
Number of Laterals	2	
Length of Each Lateral	38	FEET
Number of Orifices in the Manifold	0	
Number of Orifices in Each Lateral	10	
Distance Between Manifold and First Orifice	2	FEET
Distance Between Orifices (on center)	4	FEET
Distribution Area per Orifice	21.06	SQ. FT.
Design Pressure Head	5	FEET
Diameter of Orifices (enter as fraction)	0.188	INCHES
Elevation From Pump Intake to Laterals (0 if siphon)	13	FEET
Diameter of Force Main	2	INCHES
Length of Force Main	680	FEET
Length of Manifold to Lateral	0	FEET
Diameter of Manifold Pipe	1.5	INCH
Diameter of Lateral Pipe	1.5	INCH
Friction Loss in Force Main	4.77	FEET
Friction Loss in Manifold	0.00	FEET
Friction Loss in Section 1	0.01	FEET
Friction Loss in Entire Lateral	0.10	FEET
Discharge Rate at First Orifice	0.93	GPM
Discharge Rate at Last Orifice	0.92	GPM
Percent Difference in Flow Rate First to Last Orifice	0.85	PERCENT
Total Dynamic Head Loss	22.963	FEET
Total Distribution System Flow	17.60	GPM
Volume of Distribution System	6.98	GALLONS
Pump Capacity 17.60 GPM vs	22.963	FEET OF HEAD
Volume per Dose	105	GALLONS
On/Off Float Swing (1,000 gal. Tank)	3.5	INCHES

PRESSURE DISTRIBUTION & MOUND DIMENSION DETAILS

CLIENT'S NAME: Lussier Lot 2 Replacement
DATE: 9/29/2010 PERFORMED BY: S. Revell LAG Project #: 10044

DIMENSIONS OF MOUND SYSTEM

Dimensions of Mound Sand

8.0 feet from level area to uphill sand toe

11.2 ft corner of level area to upper toe corner

7.2 ft wide level area

9.6 ft to side toe from upper edge of level area

5.2 ft wide stone bed/trench
81 ft long stone bed/trench

11.2 ft to side toe from lower edge of level area

83 ft long level area

20.0 ft corner of level area to lower toe corner

14.2 feet from level area to downhill sand toe

Dimensions of Final Cover

10.5 feet from level area to uphill toe

14.8 ft corner of level area to upper fill toe

12.7 ft to side toe from upper edge of level area

7.2 ft wide level area

83 ft long level area

14.2 ft to side toe from lower edge of level area

25.5 ft corner of level area to lower fill toe

18.0 feet from level area to downhill toe

PLOW AREA LAYOUT MEASUREMENTS

Center of Bed/Trench to Downslope Toe	63.3 feet
End of Level Area @ Midpoint to Downslope Toe	28.1 feet
Center of Bed/Trench to Upslope Toe	53.8 feet
End of Level Area @ Midpoint to Upslope Toe	17.5 feet

PRESSURE DISTRIBUTION & MOUND DIMENSION DETAILS

CLIENT'S NAME: Lussier Lot 3 Replacement
DATE: 9/29/2010 PERFORMED BY: S. Revell LAG Project #: 10044

Design Flow Rate	280	GPD
Width of Distribution Stone Bed/Trench	5.2	FEET
Length of Distribution Stone Bed/Trench	54	FEET
Thickness of Sand Beneath Distribution Stone Bed/Trench	2.5	FEET
Thickness of Stone Beneath Laterals	6	INCHES
Soil Cover Thickness at Edge of Level Area	12	INCHES
Front Slope of Finished Mound	33	PERCENT
Side and Rear Slope of Finished Mound	33	PERCENT
Percolation Rate	25	MPI
Natural Ground Slope	7	PERCENT
Thickness of Sand on Upper Side of Level Area	3.18	FEET
Thickness of Sand on Lower Side of Level Area	3.68	FEET
Width of Level Area	7.2	FEET
Length of Level Area	56	FEET
Area of Distribution Stone Bed/Trench	281	SQUARE FT
Volume of Stone Required	7	CUBIC YARDS
Proposed Basal Area	1208	SQUARE FEET
Volume of Mound Sand Required	259.0	CUBIC YARDS
Number of Laterals	2	
Length of Each Lateral	25.5	FEET
Number of Orifices in the Manifold	0	
Number of Orifices in Each Lateral	9	
Distance Between Manifold and First Orifice	1.5	FEET
Distance Between Orifices (on center)	3	FEET
Distribution Area per Orifice	15.60	SQ. FT.
Design Pressure Head	5	FEET
Diameter of Orifices (enter as fraction)	0.188	INCHES
Elevation From Pump Intake to Laterals (0 if siphon)	27	FEET
Diameter of Force Main	2	INCHES
Length of Force Main	520	FEET
Length of Manifold to Lateral	0	FEET
Diameter of Manifold Pipe	1.5	INCH
Diameter of Lateral Pipe	1.5	INCH
Friction Loss in Force Main	2.95	FEET
Friction Loss in Manifold	0.00	FEET
Friction Loss in Section 1	0.01	FEET
Friction Loss in Entire Lateral	0.05	FEET
Discharge Rate at First Orifice	0.93	GPM
Discharge Rate at Last Orifice	0.92	GPM
Percent Difference in Flow Rate First to Last Orifice	0.45	PERCENT
Total Dynamic Head Loss	35.060	FEET
Total Distribution System Flow	15.75	GPM
Volume of Distribution System	4.68	GALLONS
Pump Capacity 15.75 GPM vs	35.060	FEET OF HEAD
Volume per Dose	70	GALLONS
On/Off Float Swing (1,000 gal. Tank)	2.3	INCHES

PRESSURE DISTRIBUTION & MOUND DIMENSION DETAILS

CLIENT'S NAME: Lussier Lot 3 Replacement
DATE: 9/29/2010 PERFORMED BY: S. Revell LAG Project #: 10044

DIMENSIONS OF MOUND SYSTEM

Dimensions of Mound Sand

8.0 feet from level area to uphill sand toe

11.2 ft corner of level area to upper toe corner

7.2 ft wide level area

9.6 ft to side toe from upper edge of level area

5.2 ft wide stone bed/trench
54 ft long stone bed/trench

11.2 ft to side toe from lower edge of level area

56 ft long level area

20.0 ft corner of level area to lower toe corner

14.2 feet from level area to downhill sand toe

Dimensions of Final Cover

10.5 feet from level area to uphill toe

14.8 ft corner of level area to upper fill toe

12.7 ft to side toe from upper edge of level area

7.2 ft wide level area

56 ft long level area

14.2 ft to side toe from lower edge of level area

25.5 ft corner of level area to lower fill toe

18.0 feet from level area to downhill toe

PLOW AREA LAYOUT MEASUREMENTS

Center of Bed/Trench to Downslope Toe	50.8 feet
End of Level Area @ Midpoint to Downslope Toe	28.1 feet
Center of Bed/Trench to Upslope Toe	40.9 feet
End of Level Area @ Midpoint to Upslope Toe	17.5 feet

GOULDS PUMPS

Submersible Effluent Pump

MODEL 3885

WE Series

PROSURANCE AVAILABLE FOR RESIDENTIAL APPLICATIONS.

APPLICATIONS

Specifically designed for the following uses:

- Homes
- Farms
- Trailer courts
- Motels
- Schools
- Hospitals
- Industry
- Effluent systems

SPECIFICATIONS

Pump

- Solids handling capabilities: ¾" maximum.
- Discharge size: 2" NPT.
- Capacities: up to 140 GPM.
- Total heads: up to 128 feet TDH.
- Temperature: 104°F (40°C) continuous 140°F (60°C) intermittent.
- See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

FEATURES

■ **Impeller:** Cast iron, semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.

■ **Casing:** Cast iron volute type for maximum efficiency. 2" NPT discharge.

■ **Mechanical Seal: SILICON CARBIDE VS. SILICON CARBIDE** sealing faces. Stainless steel metal parts, BUNA-N elastomers.

■ **Shaft:** Corrosion-resistant, stainless steel. Threaded design. Locknut on all models to guard against component damage on accidental reverse rotation.

■ **Fasteners:** 300 series stainless steel.

■ Capable of running dry without damage to components.

■ Designed for continuous operation when fully submerged.

MOTORS

■ Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.

■ Class B insulation on ⅓-1½ HP models.
■ Class F insulation on 2 HP models.

Single phase (60 Hz):

- Capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.
- SJTOW or STOW severe duty oil and water resistant power cords.
- ⅓ and ½ HP models have NEMA three prong grounding plugs.
- ¾ HP and larger units have bare lead cord ends.

Three phase (60 Hz):

- Class 10 overload protection must be provided in separately ordered starter unit.
- STOW power cords all have bare lead cord ends.

■ **Designed for Continuous Operation:** Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.

■ **Bearings:** Upper and lower heavy duty ball bearing construction.

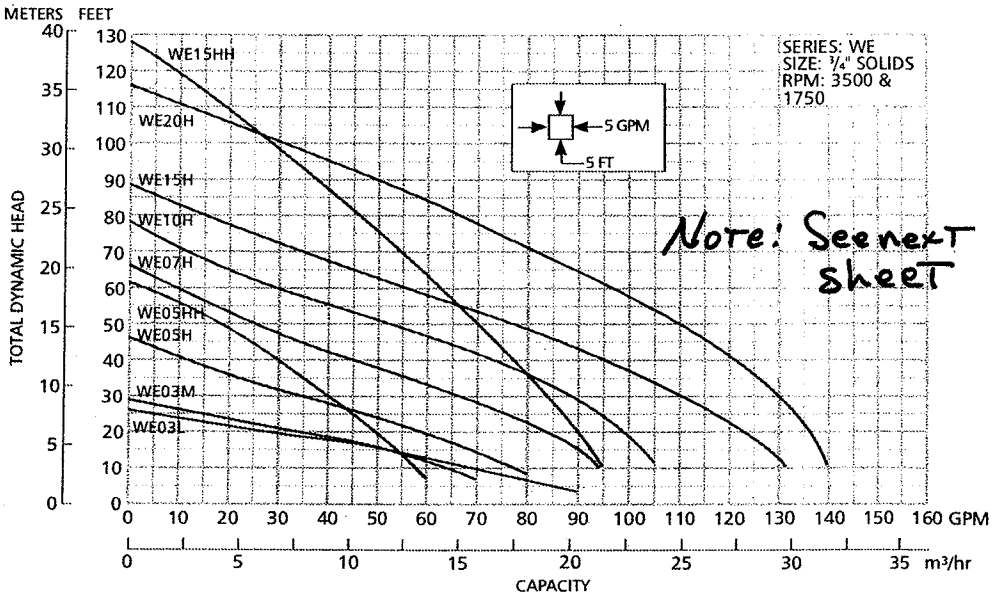
■ **Power Cable:** Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.

■ **O-ring:** Assures positive sealing against contaminants and oil leakage.

AGENCY LISTINGS

C SP US — Tested to UL 778 and CSA 22.2 108 Standards By Canadian Standards Association File #LR38549

Goulds Pumps is ISO 9001 Registered.



Goulds Pumps

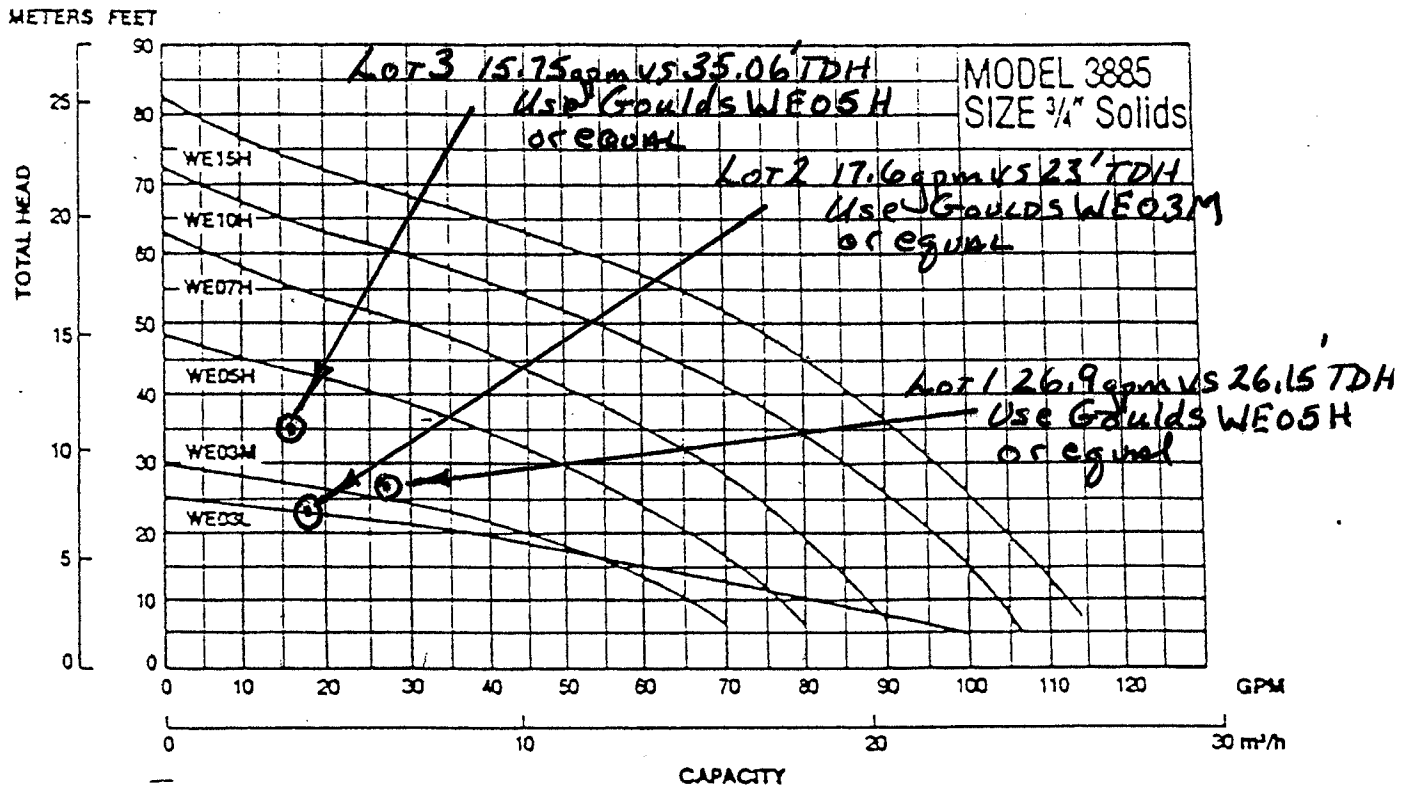
ITT Industries

Effective July, 2003
B3885

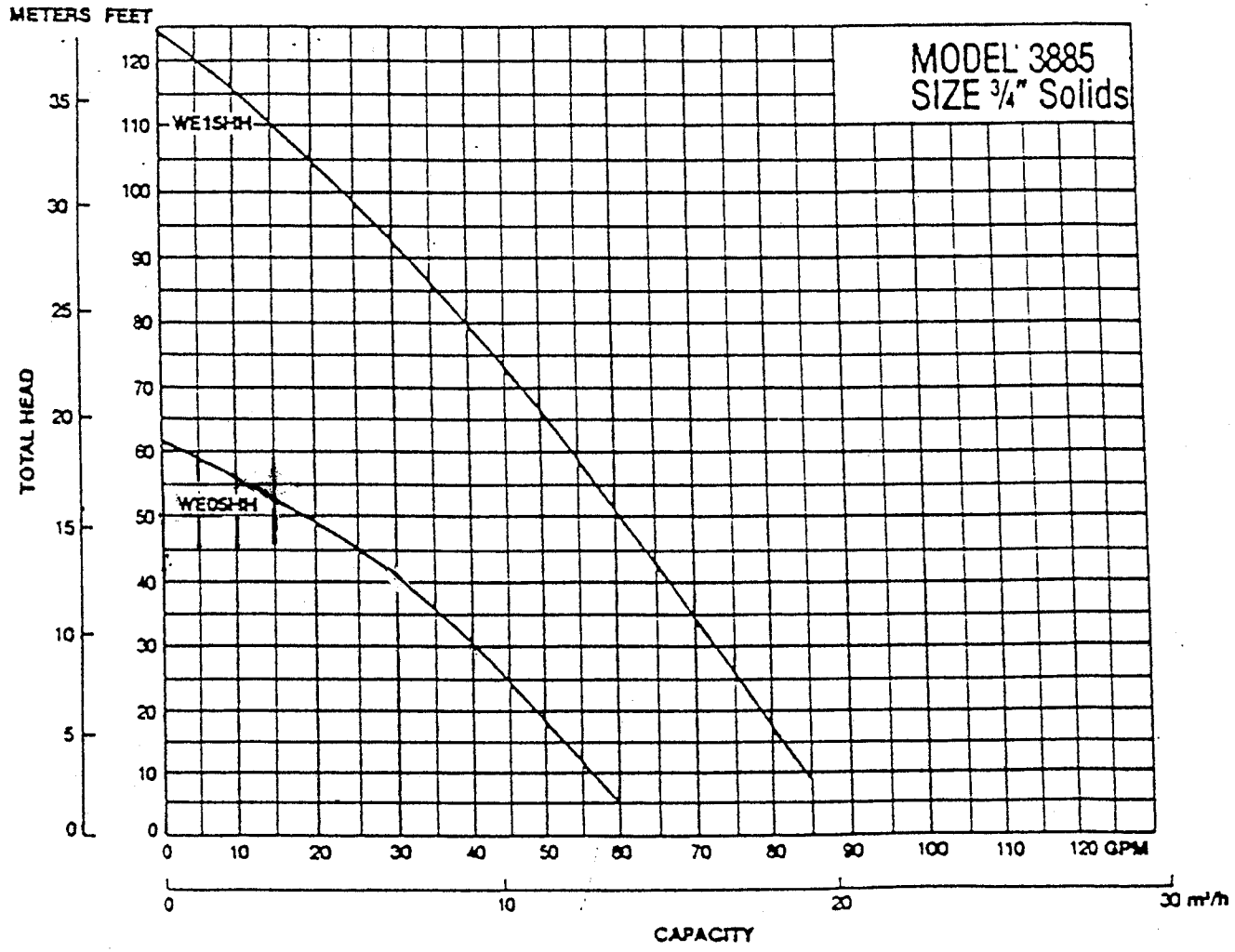
Performance

Curves

Pumps



GOULDS PUMPS, INC.
SENECA FALLS, NEW YORK 13148



First Revision Issued 6-18-2010

Certification Statement for use in compliance with Act 145 of the 2010 Legislative Session

One of the two following certification statements shall be included with any application for a Wastewater System and Potable Water Supply Permit that is filed on or after June 2, 2010

Note: When the property subject to the permit application is owned by more than one person, only one of the landowners must sign the certification statement even though all landowners must sign the permit application itself.

When there are affected property owners, the applicant shall use this statement:

I hereby certify that the attached list of names and addresses includes all those whose property may be affected by the proposed water and wastewater systems, and their associated isolation distances and zones, and that all those listed have been sent a copy of the application and any associated plans.

Signature _____

Name (Printed) Ronald & Agnes Lussier

Date of this certification _____

Note: It will be helpful for future property transfer work if the physical address of the property or property tax ID number is included with the certification.

When there are no affected landowners, the applicant shall use this statement:

I hereby certify that notification is not required either because there is an exemption or there are no landowners who may be affected by the proposed water and wastewater systems.

Signature _____

Name (Printed)_____

Date of this certification _____

Lussier Subdivision
Act 145
Affected Parties List

1. Louise S. Plant
   1801 Spear Street
   Charlotte, VT. 05445

2. Lucia S. Plante
   1807 Spear Street
   Charlotte, VT. 05445

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Lincoln Applied Geology, Inc.
Environmental Consultants
163 Revell Drive • Lincoln, VT 05443 • (802) 453-4384 • FAX (802) 453-5399

LINCOLN
APPLIED GEOLOGY, INC.
Environmental Consultants

October 4, 2010

Louise S. Plant
1801 Spear Street
Charlotte, VT. 05445

RE: Renald and Agnes Lussier 78, 200, and 250 Carpenter Road, Charlotte, VT. – Act 145 Notification

Dear Louise S. Plant:

I am currently preparing an application for a State of Vermont Wastewater System and Potable Water Supply Permit on behalf of your neighbors Renald and Agnes Lussier. The permit application requests approval to subdivide and put each of the 3 residences on their own lot. Each lot is required to have a replacement disposal area, and the disposal areas are located near your property on the corner of Spear Street and Carpenter Road.

Recent changes to State statute (Act 145) require me to notify you that isolation distances related to the proposed replacement disposal areas extend onto your property. These isolation distances would only limit your ability to place a well in this area of your property in the future. The statute change does not create any right other than notification.

I have enclosed a copy of the permit application, the associated plans and any associated documents. The plans show the isolation zones around the proposed wastewater system. If you have any questions, please contact me at 802-453-4384.

Very truly yours,

Stephen Revell CPG
Licensed Class B Designer 178 and Principal Hydrogeologist

SR/kg
Enclosure

F:\CLIENTS\2010\10044\Lussier Subdivision Affected Parties List.doc

LINCOLN
APPLIED GEOLOGY, INC.
Environmental Consultants

October 4, 2010

Lucia S. Plante
1807 Spear Street
Charlotte, VT. 05445

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