

Barnard & Gervais, LLC

Land Surveyors - Licensed Designers - Environmental Consultants
www.barnardandgervais.com

October 3, 2016

Town of Charlotte
Planning and Zoning Department
Attn: Joe Rheume
159 Ferry Road
Charlotte, Vermont 05445

Subject: Jeffrey and Linda Hanson, 2644 Guinea Road, Charlotte, Vermont (WW-138-1602) – Replacement Wastewater System Completion Letter

Dear Joe:

I am writing to inform you that the replacement mound wastewater disposal system has been completed for the Jeffrey and Linda Hanson 4.3 +/- acre residential parcel located at 2644 Guinea Road in Charlotte, Vermont. The Town of Charlotte approved (WW-138-1602) replacement mound wastewater system was staked out by Barnard & Gervais, LLC (B&G) on July 14 2016, and was installed by Omega Electric Excavating in September 2016. Based on the required inspections, the replacement mound wastewater system that will serve the 4-bedroom single-family residence was installed in reasonable conformance with the design drawings dated November 18, 2015.

During construction of the replacement mound wastewater system, inspections of the new 1,000 gallon concrete septic tank with approved effluent filter, the new 1,000 gallon concrete pump station, plowed layer beneath the mound sand, the placement of the State of Vermont approved mound sand, mound system absorption bed, the distribution piping network and final grading was performed between September 7 and 28, 2016.

Results of the required inspections show the proper preparation of the ground surface prior to placing the mound sand, the proper placement of the State of Vermont approved mound sand (see **Attachment A** - mound sand sieve analysis) and system stone, and the proper installation of the new 1,000 gallon concrete pump station and a new 1,000 gallon concrete septic tank with approved effluent filter. The final grading inspection that was performed on September 28th showed the replacement mound wastewater disposal system has been properly covered, graded, seeded and mulched. The inspections also show the upslope curtain drain that will lower the ground water table beneath the replacement mound and divert surface water away from the wastewater disposal system area was properly installed at the location shown on the design drawings dated November 18, 2015.

A flow test of the mound system's piping distribution network was performed on September 14, 2016. Results of the mound system flow test showed that the squirt height was approximately 6.5 feet and the difference in flow (i.e. squirt height) was less than 10% between any of the orifices. In order to reduce the squirt height and decrease the runtime of the effluent pump, the orifice size was increased from 7/32" to 1/4" diameter.

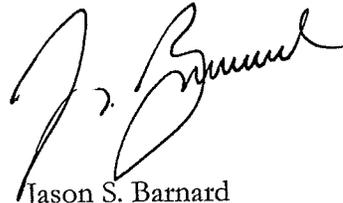
Starksboro: 4400 VT Route 17, Starksboro, VT 05487 Phone (802) 453-2597
Enosburg Falls: 167 Main Street Suite 10, Enosburg Falls, VT 05450 Phone (802) 933-5168

Based on my inspections during the construction of the replacement mound-type wastewater disposal system and the successful completion of all performance tests, "I hereby certify that, in the exercise of my reasonable professional judgment, the installation-related information submitted is true and correct and the wastewater system was installed in accordance with the permitted design and all permit conditions, were inspected, were properly tested, and have successfully met those performance tests".

As a note to the homeowner, it is recommended the septic tank and pump station be pumped out at least prior to every three (3) years. Additionally, the effluent filter should be accessed and rinsed back into the septic tank at least once (1) a year.

Should you have any questions or comments regarding the installation information discussed above, please feel free to call me at (802) 453-2597.

Regards,



Jason S. Barnard
Licensed Designer #430-B

C: Jeffrey and Linda Hanson

Attachment A

Mound Sand Sieve Analysis

Sieve Analysis Test Report

Material Tested Mound System Sand

Sample Identification P-1 Test No. 1

Retained					Passing					
Required Limits	Cummulative Percent	Cummulative Weight	Percent	Weight	Screen Size	Weight	Percent	Cummulative Weight	Cummulative Percent	Required Limits
					3/8		99.9			85-100
			6.3	23.9	4		93.6			
			23.4	88.9	8		70.2			
			28.4	107.9	30		41.8			
			5.9	22.6	40		35.9			30-50
			24.9	94.7	100		11			
			8.5	32.5	200		2.5			0-5
			2.5	9.4	Pan					

379.9

Time: 1000

Date: 7-21-16

Certified By: DAW

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 Hinesburg, Vermont 05461
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