Jason Barnard
Consulting, LLC
4400 VT Route 17
Starksboro, VT 05487
(802) 453-2597 (Phone)

April 8, 2011

Town of Charlotte
Planning and Zoning Department
Attn: Tom Mansfield
159 Ferry Road
Charlotte, Vermont 05445

Subject: Scott and Kendra Bowen, 1971 Spear Street, Charlotte, VT (WW-4-2771) – 18.7+/- Acre Parcel Primary Wastewater System Completion Letter

Dear Tom:

I am writing to inform you that the primary mound wastewater disposal system has been successfully completed for the Scott and Kendra Bowen 18.7+/- acre parcel located at 1971 Spear Street in Charlotte, Vermont. The State of Vermont approved (WW-4-2771) primary mound wastewater disposal system was staked out by me on October 12, 2010, and was installed by Jim Martin Excavating between November 10 and 29, 2010. Based on my inspections, the primary mound wastewater system that will serve the four (4) bedroom single-family residence was installed in reasonable conformance with my design drawings dated December 13, 2006. It is important to note the location of the mound wastewater disposal system was moved approximately twenty five (25) to thirty (30) feet down slope from the originally permitted location. In order to prove the native soils were consistent an additional soil boring (SB-4) was installed and the soil boring log is included with this completion letter. The revised mound system location and the soil boring are shown on **Record Drawing No. 1.**

During construction of the primary mound wastewater system, inspections of the existing 1,000-gallon concrete septic tank, 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 system covering was performed between November 10 and November 29, 2010. Before the existing 1,000 gallon concrete septic tank was retrofitted with a new Polylok PL-122 effluent filter, the existing septic tank was inspected by Martin Excavating personnel and the tank was noted in good condition with no signs of leakage.

Results of my inspections clearly show the proper preparation of the ground surface prior to placing the mound sand, the proper placement of the approved mound sand (see **Attachment A** - mound sand sieve analysis) and system stone, and the proper installation of the required effluent filter in the existing 1,000 gallon concrete septic tank. My inspections also show the new 1,000 gallon concrete pump station was properly installed. The system

covering inspection that was performed on November 29th showed the primary mound wastewater disposal system has been properly covered and to ensure stabilization over the winter months the system was mulched. Due to the time of year the system was installed (i.e. late fall), the mound was not covered with topsoil and grass seed was not applied. The contractor will be returning this spring when the ground conditions allow for covering the mound with topsoil, performing finish grading and also seeding and mulching the system and disturbed areas. My inspections also show that the curtain drain that will lower the ground water table beneath the mound system and divert surface water away from the disposal system area was properly installed upslope of the mound system.

A flow test of the mound system's piping distribution network was performed on November 16, 2010. Results of the flow test show the squirt height was 6.5 feet high and the difference in flow (i.e. squirt height) was less than 10% between any of the distribution system orifices.

Based on my inspections during the construction of the primary mound 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 potable water supply and wastewater systems were installed in accordance with the record drawings and such record drawings are in compliance with applicable rules, were filed with the Secretary, are in accordance with all other permit conditions, were inspected, were properly tested, and have successfully met those performance tests".

As a note to the homeowner, in order to ensure longevity of the system the septic tank and pump station should be pumped out every three (3) years. Additionally, to ensure proper working order of the system, the effluent filter should be accessed and rinsed back into the septic tank once 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: Scott and Kendra Bowen

SOIL BORING LOG

Client: Scott and Kendra Bowen Project: Wastewater System Design

Location: 1971 Spear Street, Charlotte Logged By: Jason Barnard, Licensed Designer #430-B

Date: October 12, 2010 Time: 1:00 p.m. Weather Conditions: 50^0 Partly Sunny

Method of Excavation: Hand Auger

Topography: 10-12% Slope Vegetation: Open Meadow

Soil Boring #	Depth (inches)	Color	Texture	Consistency & Structure	Mottles	Comments
SB-4	0-8"	Brown	Very fine sandy loam topsoil	Friable	No	
	8-12"	Brown	Very fine sandy loam	Friable	No	
	12-36"	Brown to gray	Fine sandy glacial till	Friable	Fine, faint, few mottles at 13".	No groundwater or bedrock to 36". Seasonal high water table (SHWT) estimated at 13".

Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
(802) 878-4450
Engineers - Planners - Surveyors

SOIL SIEVE ANALYSIS RESULTS

PROJECT: J&M Sand Pit
LOCATION/STA: Collected by Others
SAMPLE#: 1
DESC. OF SOIL: sand
TESTED BY/DATE: JLC 4-27-10
REF. MATERIAL SPEC : EPR (a) Mound Sand

PROJECT#:
SOURCE: Sand Pit
DEPTH OF SAMPLE: NA
COLLECTED BY/DATE: Kevin Murdough
CHKD BY: ABR

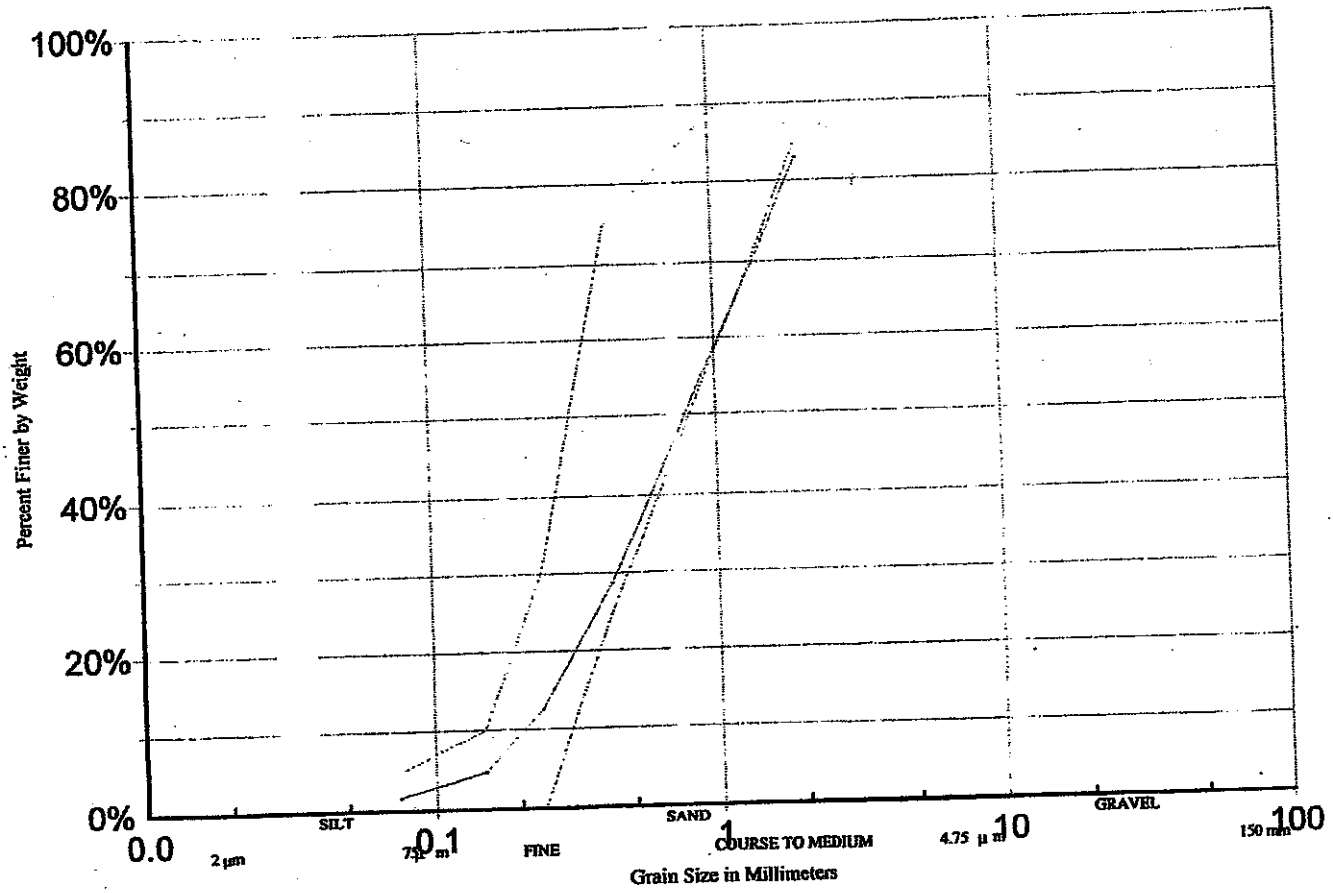
SIEVE #	% FINER	REQ'D SPEC % FINER
#10	83.0%	85-100
#40	28.7%	25-75
#60	12.6%	0-30
#100	4.8%	0-10
#200	1.7%	0-5

☑ SUBSTANTIALLY IN ACCORDANCE WITH SPECS

☐ DOES NOT MEET SPECS.

Remarks:

U.S. Standard Sieves



Reviewed By:
1. _____ LAB TESTER (FILE ORIGINAL IN LAB BOOK)
2. _____ PROJECT ENGINEER (FILE RESULTS IN CONSTRUCTION BOOK)
3. TJG PROJECT PRINCIPAL (COPY FOR PI
4. _____ CONSTRUCTION ENGINEER

P:\1994\94-060 SOILS (DO NOT REMOVE)\SIEVE Mound Sand (a) 4-27-10.qpw 04/27/10 1:25:35 PM

J & M Sand, Inc.
40 Pioneer Street
Essex Junction, VT 05452
Cell # 238-2208

Martin Excavating
Customer Name (Supplier/Trucker)

532 Block House Point Rd
Street

No. Hero, VT 05474
Town

Deliver to: Name/Project
Spear St.
Street

Charlotte, VT
Town

Engineer

Street

Town

Milton Sand Pit – 802-893-0603
150 Sanderson Road
Milton, VT 05468
Phone (802) 893-0603

Date 11/11/10

Sand Analysis

This report of sand gradation has been performed by J & M Sand, Inc. using 8' brass sieves and an electric sieve shaker. The 200 sieve has been washed and dried for this reading.

Disclaimer: Although we have performed and submitted this test to you, the customer, it remains your responsibility to obtain your own test from a qualified engineer or a certified testing laboratory.

* Amended Section I-517 C (1) of Vermont's ANR Environmental Protection Rules Dated January 1, 2005.

Sieve	Percent Finer (Passing)	* Required Percent Finer (Passing) (1) – Spec.	(3) - Spec
10	88%	85 – 100	85 – 100
40	48%	25 - 75	30 - 50
~~60~~		~~0 - 30~~	
~~100~~		~~0 - 10~~	
200	1%	0 - 5	0 - 10

J & M Sand, Inc.
Submitted By: [signature]