

**Report of Results of
Soil Evaluation**

prepared for

NICHOLAS LIBERTELLA

on a

0.4± Acre Parcel

at

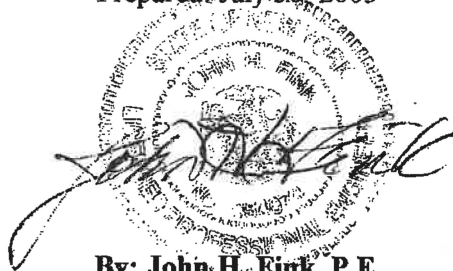
Lake Muskoday

situate off
Town Highway No. 8
(Trout Brook Road)
Town of Fremont
Sullivan County New York

Property References:

Current Owners - Albert Closs
Land Records Liber 2580, Page 419
Tax Map: Section 5, Block 3, Lot 4

Prepared: July 30, 2005



**By: John H. Fink, P.E.
Civil Engineer
8843 Route 97
Callicoon, New York**

Soil Evaluation Report

This report summarizes the findings of a soil evaluation that was conducted on the subject lot on July 14th, 2005 for the purpose of determining its suitability for construction of an on-site sewage disposal system to service a single family dwelling.

The 0.4± acre property is located in the RR-1, Residential Recreation, Zoning District. It was created prior to the enactment of a zoning ordinance by the Town of Fremont and does not conform to the Zoning Regulations that have subsequently been adopted by the Town. Therefore, any improvements must now be made in accord with the provisions of Article 5 of the current Town Zoning Ordinance entitled, Supplementary Regulations Applicable To All Districts. These provisions are commonly known as the "Grandfather" provisions.

The lot is vacant, but has been cleared and there is an existing driveway to Trout Brook Road.

It is a 4-sided polygon in shape with about 114 feet of frontage on Trout Brook Road, 85 feet of width along the rear property line and about 185 feet of depth on each of the side lines.

Topographically, the land slopes mildly to moderately upward from the road, although there is a sharp rise in grade at a short, but steep, bank about 25 feet in from the road.

The site evaluation consisted of excavating holes to determine the soil type(s) and then conducting percolation tests to determine its suitability for septic system construction. It also included locating wells and septic systems on adjoining parcels in order to establish a location for an absorption field consistent with separation distance requirements for waste disposal set by New York State Department of Health regulations.

The testing was done in the rear, elevated, portion of the lot in an area deemed representative of a location that could be utilized for construction of an absorption field to service a proposed 2-bedroom cottage. For clarification, a sketch plan of the site is included herein depicting the locations of the test holes and the surrounding features.

Based on field classification by hand contact and visual observation, the soils in each of the two deep test holes were found to be identical and are described as follows:

TEST HOLE NO. 1.....41 inches deep

<u>Soil Interval</u>	<u>Soil Type</u>
0 - 6 inches.....	Dark Brown-Black Topsoil; over
6 - 41 inches.....	Brown Silty Sand w/some +4-inch cobblestone
at 41 inches.....	Grey Sandstone Bedrock

No evidence of groundwater was seen.

TEST HOLE NO. 2.....39 inches deep

<u>Soil Interval</u>	<u>Soil Type</u>
0 - 6 inches.....	Dark Brown-Black Topsoil; over
6 - 39 inches.....	Brown Silty Sand w/some +4-inch cobblestone
at 39 inches.....	Grey Sandstone Bedrock

No evidence of groundwater was seen.

Root penetration was observed in the upper 30 inches of each test hole. The presence of roots is an indicator that the soil structure is porous in nature and should exhibit some measure of internal drainage.

After conducting a repeated series of percolation tests in each of two shallower holes dug near the deep excavations, the soil percolation stabilized at the following rates:

<u>Perc. Hole No.</u>	<u>Hole Depth</u>	<u>Percolation Rate</u>
1	24 inches	14 Minutes per Inch
2	18 inches	10 Minutes per Inch

The applicable regulations for on-site sewage disposal system construction in New York State are detailed in *Appendix 75-A, Wastewater Treatment Standards - Individual Household Systems*. These regulations establish the minimum acceptable standards for individual waste disposal systems and have been incorporated in the Building Code adopted by the Town of Fremont.

Two of the key criteria stipulated in these regulations are that:

- (1) The soil percolation rate must be slower than 1 minute per inch, but faster than 60 minutes per inch; and
- (2) There must be at least 4 feet of useable soil above groundwater, bedrock, clay, hardpan or any other impermeable subsurface boundary layers.

The basic, conventional, sewage disposal system considered for homes on rural area lots such as this is one consisting of a septic tank followed by a series of in-ground trenches.

This system provides secondary sewage treatment and is the most common of the types approved by the New York State Dept. of Health to service individual residential lots that are not connected to central sewage collection and treatment works.

A variation of the basic system is the shallow trench system. It is an economical option for sites such as this where there is at least 2 feet, but less than the required 4 feet, of suitable, permeable soil. Construction of the absorption field portion of a shallow trench system requires placement of additional permeable soil above the existing soil to create the minimum 4 foot depth of acceptable soil stipulated in the *Appendix 75-A Regulations*.

The major components of each of these common systems consist of :

- (a) a septic tank, to provide settling of the raw sewage; followed by
- (b) a series of shallow, 2 - foot wide, subsurface absorption trenches to dispose of the settled septic tank effluent into the surrounding soil by infiltration and percolation; and to provide purification through natural, biological, decomposition processes.

Based on the testing performed, it is concluded that in the area on the lot that was evaluated, the percolation rate of the native soil is satisfactory with respect to the applicable *Appendix 75-A* regulations to support installation of a septic system.

However, due to the presence of bedrock at a depth of 39 inches, an additional 12 inches of permeable soil must be placed in the proposed absorption field area to provide the overall minimum 4-foot soil depth required by the referenced New York State Health Department regulations.

Additionally, since the land slope rises from the proposed cottage location to the intended absorption field area, it will be necessary to install a pump chamber in the system to lift the septic tank waste to the higher ground.

NOTE: TP (□) Indicates Deep Test Excavation
PH (●) Indicates Percolation Test Hole

SOIL TEST LOCATION PLAN
0.4± Acre Lot
Trout Brook Road
Lake Muskoday
Town of Fremont
Sullivan County New York
Scale: 1" = 30'
July 2005

