

# *Site Suitability for Domestic Sewage Treatment and Disposal Systems*

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Bill Compton Rd  
Lot 1  
Blanch, NC  
Caswell County  
PIN#: 0109.00.00.0002.0000

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Prepared for: Pete Reese and Cassandra Gettelman, ReelVest  
Properties

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## SYNOPSIS

This report shows the findings of a *preliminary* soil and site evaluation of the referenced parcel in Caswell County, NC. The report shows that there several areas of suitable soils found on the property. The soil and site conditions were suitable for the installation of an in-ground conventional system. This report is intended to assist the permitting authority pursuant to citing onsite wastewater systems. All applicable setbacks must be maintained.

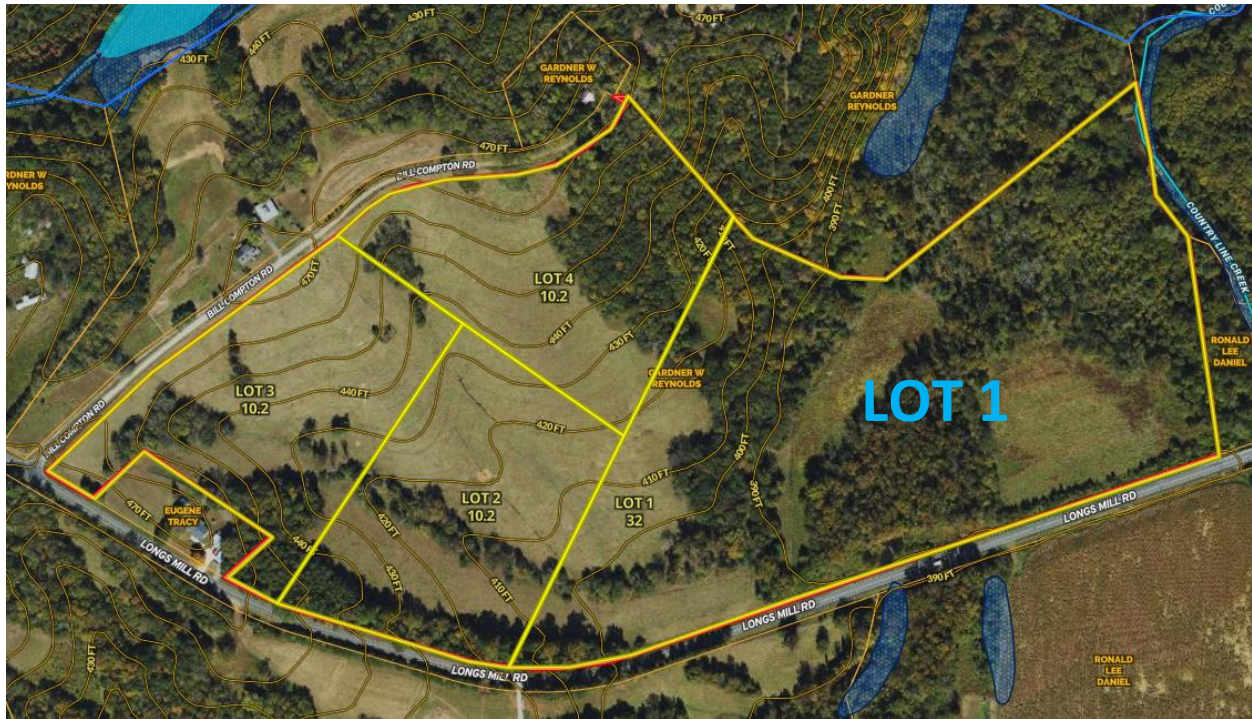


Figure 1. Property Location

**Pete and Cassandra**, this is a summary of my findings:

Severson Soil Consulting, PLLC (SSC) conducted a preliminary onsite wastewater soil feasibility study on the above referenced parcel to determine the area of soils, suitable for a subsurface onsite wastewater disposal system. The soil and site evaluation were performed by using a hand auger boring during moist soil conditions based on the recommended criteria found in the “Laws and Rules for Sewage Treatment and Disposal Systems”, 15NCAC 18E. From this evaluation, SSC sketched an area suitable for the installation of a septic system. All dimensions, locations are approximate.

### Site Description

The 32-acre lot lay in the Piedmont physiographic province. Three soils mapped on the property were the Tomlin (TmC2), Bannister and Kinkora complex (BaB), and Codorus (CsA) soils (Figure 2). The Tomlin soils are typically suitable for conventional septic systems. The Bannister, Kinkora, and Codorus soils formed in floodplain sediments typically flood and are unsuitable for onsite septic system use to do lack of depth to water table.



Figure 2. Soil map of the of the subject property (SoilWeb).



### Soil Borings and Observations

Over 17 soil borings and observations were advanced on the lot (figure 3). There were several landforms on this lot: the end of a long nose slope on the uplands, minor terraces, and floodplains of Country Line Creek. Their depths of suitable soils categorized the borings. The red dots had suitable soils to 30" (in ground conventional septic system) and were the Tomlin soils. The brown dots represented Tomlin soils that were 24 inches to a limiting feature. The black dots were the Kinkora and Codorus floodplain soils with a seasonal water table at or near the soil surface (unsuitable for any system).

The recommended loading rate (LTAR) Tomlin soils are 0.3 gallons per day per square foot (GPD/ft<sup>2</sup>).



Figure 3. Soil boring and suitable area locations as located by the onX Hunt application.

## Required Area

The required linear footage of trench product is calculated by dividing the flow rate for a four bedroom dwelling (4-BR= 480 gpd) by the long-term acceptance rate, LTAR (0.3 GPD/ft<sup>2</sup>). Then dividing that by 3 feet (for a 3-foot wide trench) and finally multiplying by 0.75 to account for a 25% reduction in linear footage for an accepted status product.

$$480 \text{ gpd} / 0.3 \text{ gpd/ft}^2 = 1,600 \text{ ft}^2 / 3\text{ft wide trench} \times 0.75 = 400 \text{ linear feet of trench product}$$

Assuming a potential configuration of 4- 100-foot lines, the minimum area needed for the primary drainfield would be 3,900 ft<sup>2</sup>. The minimum total area required would then be 7,800 ft<sup>2</sup> including primary and a 100% repair area. Accounting for trees and other unforeseen factors in the field would increase the minimum size needed by 20 percent to 9,360 ft<sup>2</sup>

## Usable Areas

The useable area of soils for a conventional septic system was located at the end of a long nose slope. The red outline in figure 4 below is a 0.85-acre (37,026 ft<sup>2</sup>) contiguous area that surrounds an existing parcel. This is 3.7 times the area needed for a septic system and repair for a potential 4-BR dwelling. All property line setbacks (10 feet minimum) should be maintained from the suitable area.



Figure 4. Usable area for a conventional septic system.

## Permitting

Prior to the issuance of a septic permit, the lot will require a soil and site evaluation by the Caswell County Health Department or other permitting authority. The specific trench product type and final soil loading rate will be determined by their assessment. The areas for proposed drainfields shall not be impacted by home sites, pools, garages, nor be mechanically altered from the natural lay of the land. Regulatory setbacks to property lines, roads, wells, etc. are to be maintained.

Exact locations of future drainfields, repair areas, buffer from property lines (current and future), building foundations, pools, decks, and well locations are not addressed in this report. Those items should be fully considered as the plans develop for the potential future use of the site. Depending on the position of the house location, house size, property lines and setbacks that may encroach on available usable space, this lot may require a septic system utilizing a pump.

Due to the subjective nature of the permitting process, zoning, variability of naturally occurring soil, and unforeseen circumstances, SSC cannot guarantee that areas delineated as suitable for on-site wastewater disposal systems will be permitted, as the permits are issued by the local governing agency or permitting authority. However, the areas of suitable soil have 3.7 times the minimum needed space for a conventional system and repair depending on the final loading rate. This report may be used to assist the local permitting agency to issue a septic permit.

Thank you for your business. Please do not hesitate to ask for more information regarding this report.

Sincerely,

*Erik D. Severson*



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