

Site Suitability for Domestic Sewage Treatment and Disposal Systems

Agora Lane
Louisburg, NC
Franklin County
Parcel ID#: 040042

Prepared for: Alan Loughlin

Prepared by: Erik Severson, Severson Soil Consulting, PLLC

Report Date: 4/14/2022

SYNOPSIS

This report shows the findings of a preliminary soil and site evaluation of the referenced parcel in Franklin County, NC. The soil evaluation found that there were provisionally suitable soils found south of the creek. The soil conditions suitable for an in-ground conventional system. This report is intended to assist the permitting authority pursuant to citing onsite wastewater systems.

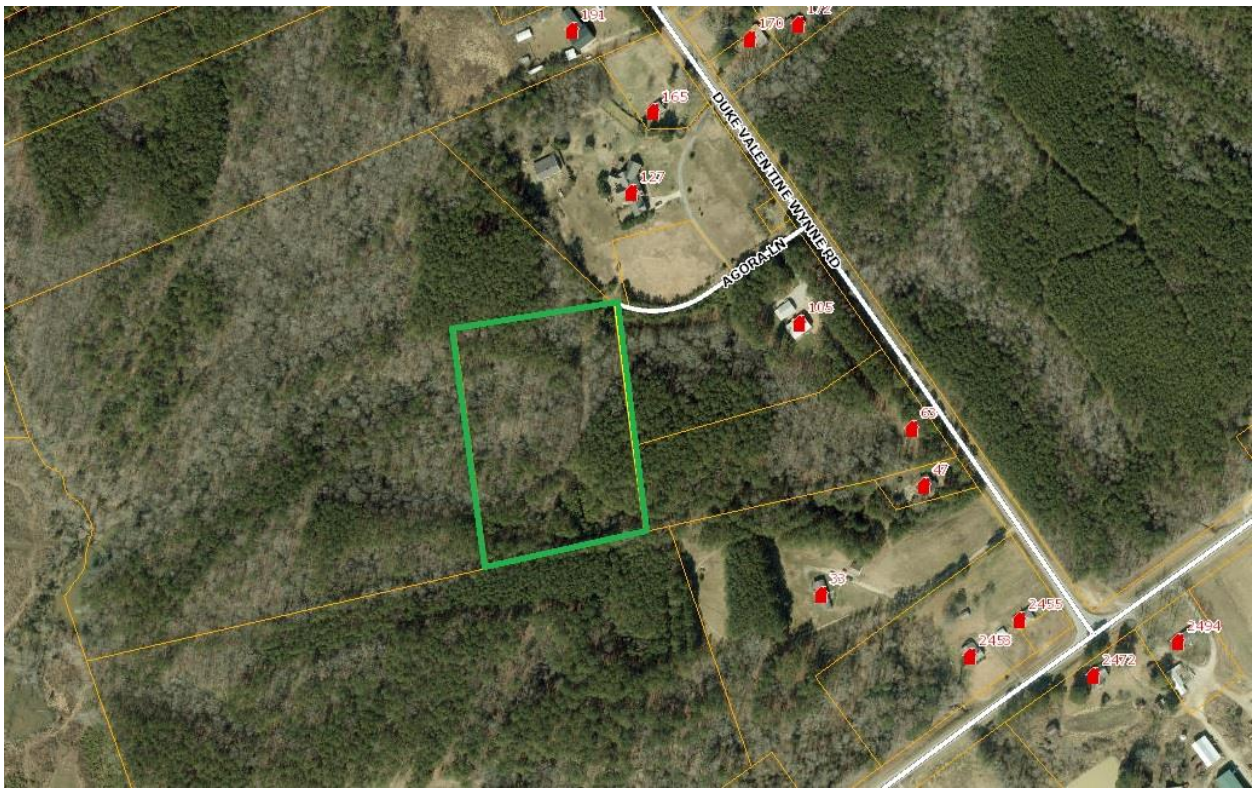


Figure 1. Property Location (Franklin County, NC GIS)

To: Alan Loughlin

Re: Soil Feasibility for parcel:

Agora Lane

Parcel ID# 040042

Alan, 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 18A. 1900. From this evaluation, SSC sketched an area suitable for the installation of a septic system. All dimensions, locations are approximate.

Site Description

The 6-acre tract off Agora Lane in Wilson (figure 1) was northwest of Louisburg, NC near the intersection of HWY 561 and Duke Valentine Wynne road. A small creek was on the north end of the property. The site lay in the Piedmont physiographic province. The NRCS soil map (figure 2) shows several soil mapping units on the property: PaC2 (Pacolet), and WeB (Wedowee). These soils are generally suitable for conventional septic systems.



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

Soil Borings

Over 14 soil borings were advanced on the parcel (figure 3). Their depths of suitable soils categorized the borings. The red dots were suitable soils to 30" (in ground conventional), the brown dots are suitable soils from 20–24" (shallow placed or at-grade conventional; the black dots were unsuitable for any in ground septic system type; and the blue dots represented a drainage feature. The red dots were the Pacolet and Wedowee soils, the brown dots were a local colluvial capping soil with a pronounced sandy loam E horizon over clayey Bt layers. The recommended loading rate (LTAR) the red and brown dot soils are 0.3 gallons per day per square foot (GPD/ft²).



Figure 3. Soil boring locations within the lot as located by the onX Hunt application.

Usable Area

An area south of the creek contained soils that were provisionally suitable for the installation of a conventional septic system. The area was located primarily on a gently sloping (5%) sideslope with Wedowee and Pacolet (30 inches plus of soil depth).



Figure 4. Usable area on the parcel.

The required linear footage of trench product is calculated by dividing the flow rate (4-BR= 480 gpd) by the LTAR (0.3), 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.

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

Assuming a potential configuration of 3- 135-foot lines, the area needed for the primary drainfield would be 2,835 ft². The total area required would then be 5,670 ft² including primary and a 100% repair area. This usable area evaluated was approximately 0.46 acres, or 20,037 ft². The area shown in figure 4 is 3.5 times the needed area for a primary and reserve drainfield to service a 4- bedroom dwelling.

Permitting

Prior to the issuance of a septic permit, the lot will require a soil and site evaluation by the Franklin 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 3.5 times the 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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