Erik D. Severson, Ph.D., LSS
2714 Blaydon Dr. Raleigh, NC 27606
919-623-6175 seversonsoil@gmail.com

SEVERSON SOIL CONSULTING, PLLC

Site Suitability for Domestic Sewage Treatment and Disposal Systems

790 Campbell Road
Vanceboro, NC 28586
Craven County
Parcel ID# 1056003 & 1056005

Prepared for: Pete Reese, ReelVest

Prepared by: Erik Severson, Severson Soil Consulting, PLLC

Report Date: 12/7/2022

SYNOPSIS

This report shows the findings of a preliminary soil and site evaluation of the referenced parcels in Craven County, NC. Two separate areas on the southern lot 1056005 were found to support the potential installation of a conventional septic system. There were no soils found to support any type of in ground septic system for the northern lot, 1056003

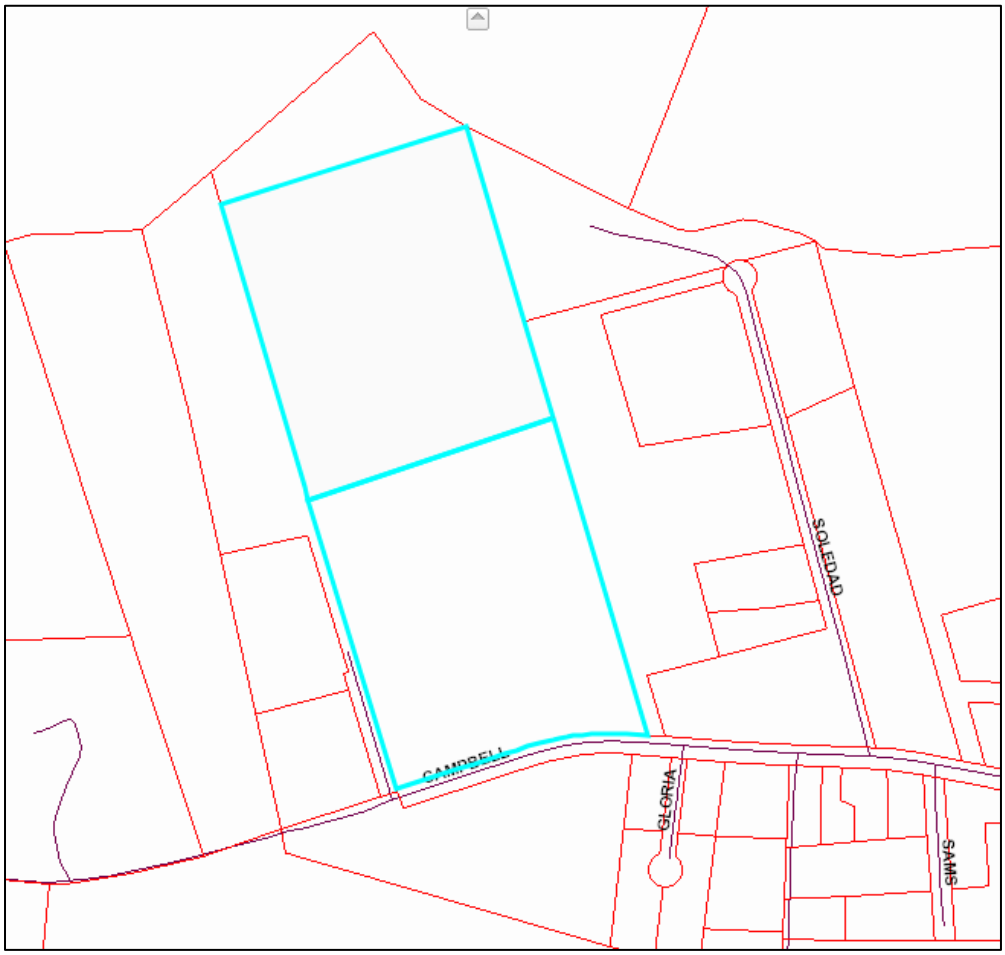

Figure 1. Property Location (Craven County, NC GIS)

To: Pete Reese

Re: Soil Feasibility for parcel: 790 Campbell Road
Parcel ID# 1056003/1056005

Pete, 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 15.28-acre tract north of Campbell Road in Vanceboro (figure 1) lay in the lower Coastal Plain sub-province with parent materials weathering from sandy river terrace sediments. The property contained three ridges that was slightly elevated from the lower portions of the property. These ridges were oriented from east to west. The NRCS soil map showed several soils mapping units on the subject property: TaB, indicating Tarboro soils on 0 to 6 percent slopes; Se, indicating Seabrook soils; and Ap, indicating Arapahoe soils (figure 2). The Tarboro soils are deep, sandy, and excessively well drained. The Seabrook soils typically have a seasonal high water table (SHWT) at 24". The Arapahoe soils have a SHWT at the surface; thus rendering them unsuitable for any septic system.

There were a series of elevated ridges and low areas as one progresses north along a main forestry path (figure 2). Other smaller paths were used to canvas the properties.

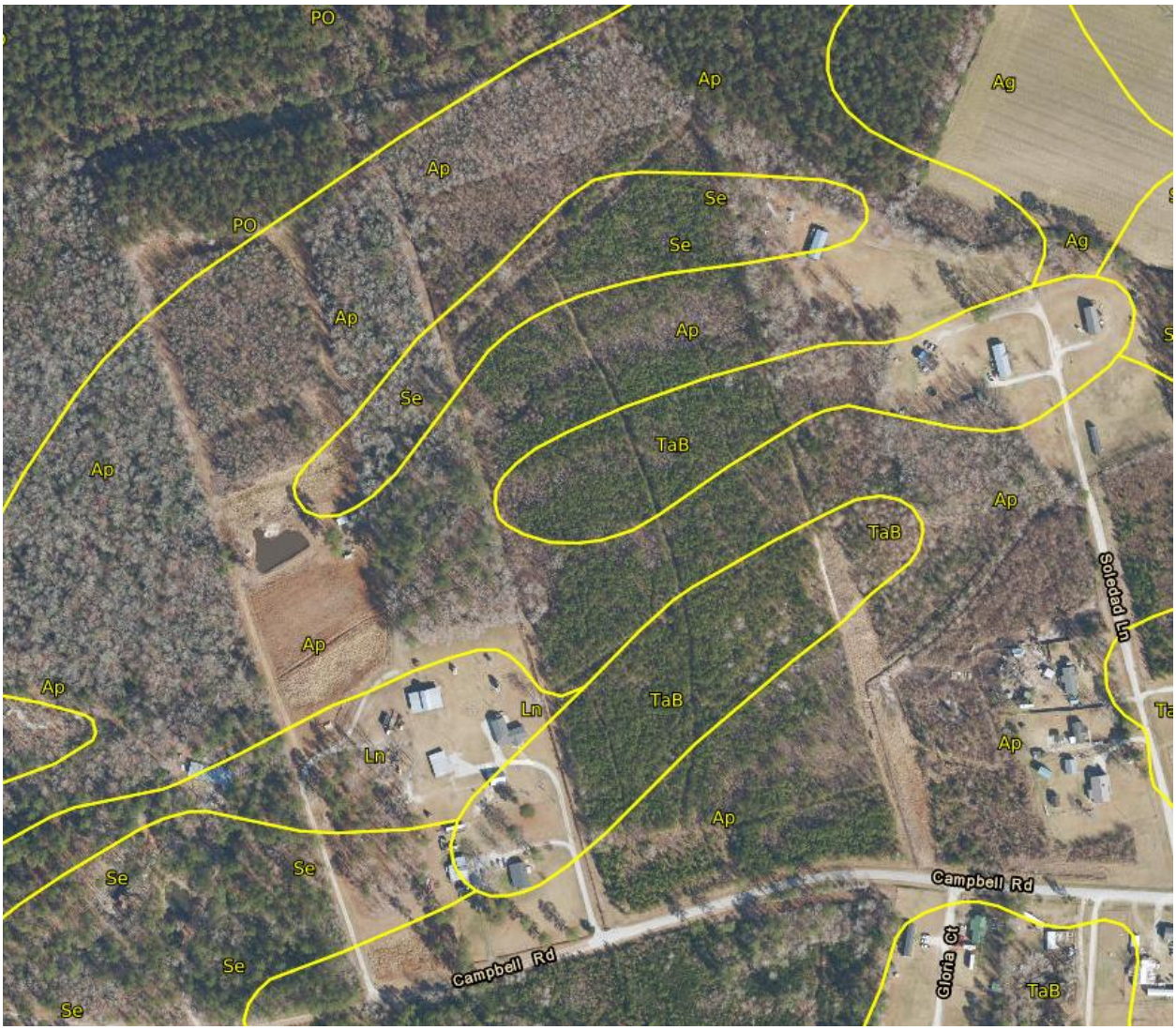

Figure 2. Soil map of the of the subject properties (Web Soil Survey).

SSC evaluated the most likely places to find soils that would support the installation of a septic system.

Soil Borings

Over 27 soil borings were advanced on the parcel as seen in figure 3. Their depths to suitable soils categorized the soils. The red dots are suitable soils to 30-36" (conventional); the brown dots are suitable soils from 20-24" (shallow placed conventional); the yellow dots contain suitable soils to 18-19" (anaerobic drip); and black dots, which represented soils that were unsuitable for any in ground septic system type. The red dots were the Tarboro soils; the brown dots were the Seabrook soils and the yellow and black were the Arapahoe soils. The recommended loading rate (LTAR) for the Tarboro soils are 0.8 gallons per day per square foot per each separate area.

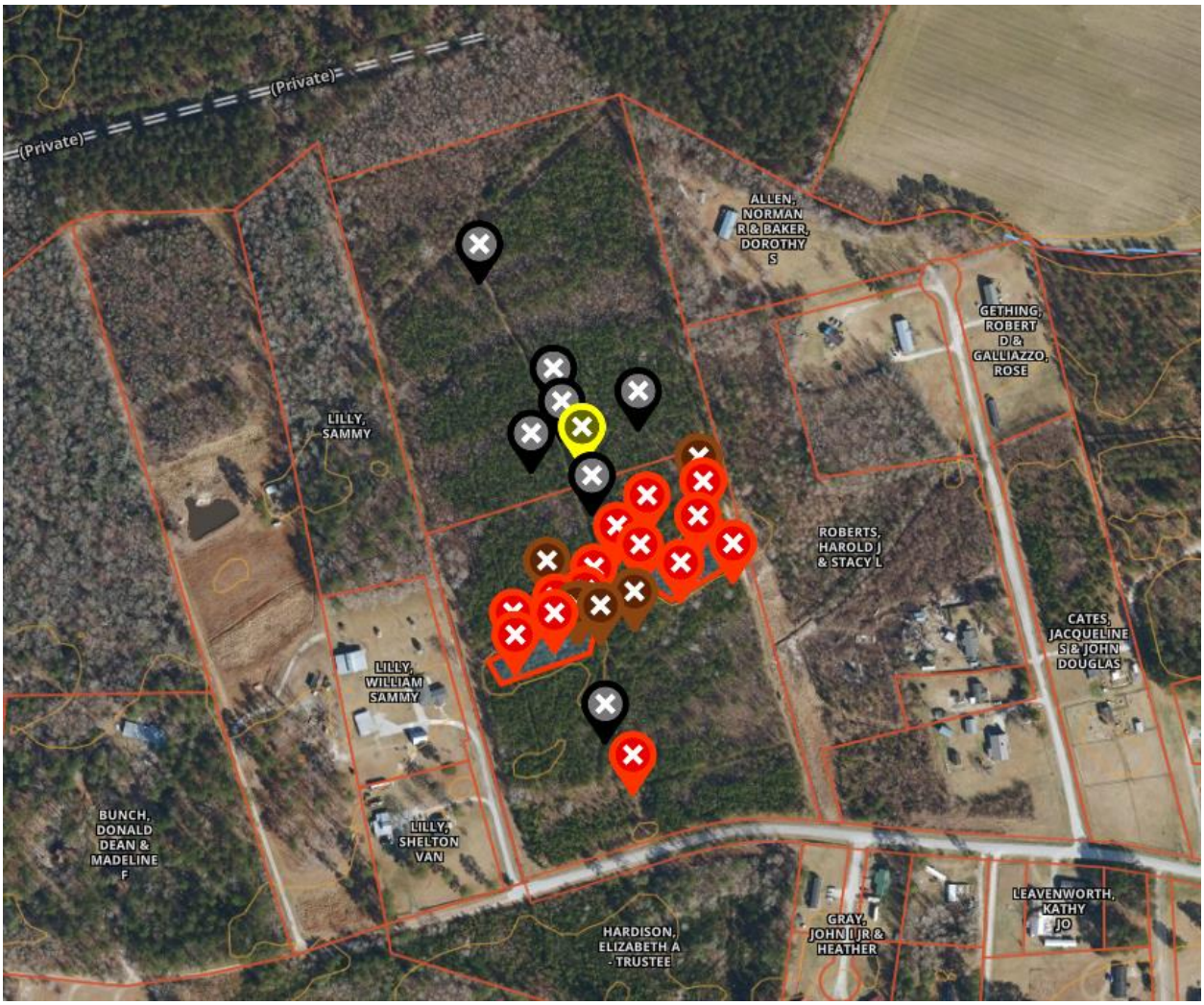

Figure 3. Soil boring locations within the lot as located by the onX Hunt application.

There were no soils found to support any type of in ground septic system for the northern lot, 1056003. The following information will apply only to the southern lot- 1056005.

Usable Area

Two separate areas on the southern lot 1056005 were found to support the potential installation of a conventional septic system (on the highest elevations on the ridge). They are divided into the left and right areas. The minimum area needed for a septic system and repair area for a three-bedroom house using a 0.8 gpd ft2 loading rate is 1,350 ft2. Adding a safety factor of 20% to account for trees, etc., the area needed is 1,620 ft2.

Left Area

An area in the middle left of the lot contained soils that would support the installation of a conventional septic system. This was located primarily on the Tarboro Soils on a gently elevated ridgetop. This usable area evaluated was 0.25 acres, or 10,890 ft2 (figure 6).

Figure 4. Soil boring locations within the left area of the southern lot (onX Hunt application).

Right Area

An area in the middle right of the lot contained soils that would support the installation of a conventional septic system. This was located primarily on the Tarboro Soils on a gently elevated ridgetop. This usable area evaluated was 1.02 acres, or 44,431 ft2 (figure 5).

Figure 5. Soil boring locations within the left area of the southern lot (onX Hunt application).

Permitting

Prior to the issuance of a septic permit, the lot will require a soil and site evaluation by the Craven County Health Department. 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. However, the areas of suitable soil have 6-27 times the needed space for a conventional system and repair depending on the final loading rate. There is potential space for multiple systems on this property. 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

Erik D. Severson, Ph-D., LSS
North Carolina Licensed Soil Scientist #1275