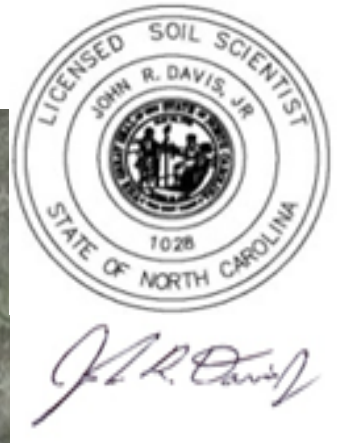


Soil Study for Septic System Suitability
January, 2026
John R. Davis, Jr. LSS
104 Santee Drive Parcel 019997
Franklin County, NC



50 ft



The soil area shown in "Orange" is **Suitable** or Usable for shallow narrow gravelless trenches such as the Large Diameter Pipe, Low Pressure Pipe or drip systems due to the steeper slopes and shallow soil depths. The soil is silty loam topsoil over silty clay loam subsoil. A three bedroom house septic system generally requires about 8,000 square feet of usable soil and a two bedroom about 5,000 square feet. There is approximately 6,800 square feet of usable soil on this lot. Due to the location of the usable soil, a house site may encroach on this usable soil area and may require some detailed house and septic layout work for permitting. Because this lot was created prior to 1983, a complete 100 percent repair area is not required so this may help on permitting. A house located as close to the road as possible will allow for a septic field in the backyard area. This lot will be a challenge to permit and will require careful house placement and septic system design but it does have some suitable soil for septic systems. Please note that the more alternative septic systems for steeper slopes are more expensive than the standard conventional systems.



Soil Horizons, LLC
PO Box 1063
Youngsville, North Carolina 27596

DATE January, 2026

TO Client, Brian Puebla

FROM John R. Davis, Jr. LSS, REHS

RE Summary/Explanation of the Preliminary Soil Study
 104 Santee Drive Franklin County, NC

The purpose of the soil study commonly called “perc test” that was conducted on your property was to determine if the site and soil are **suitable** or **usable** for on-site subsurface septic systems. To make this determination, a licensed soil scientist with more than 30 years of experience made a site visit to walk over the property and observe the landforms such as ridges, side slopes, drains, gullies, ruts etc. and advance hand auger borings into the soil. The auger borings were advanced to approximately 3 feet below the surface to mainly observe the soil layers, texture, structure, color, clay mineralogy, restrictive horizons and soil wetness conditions based on the current regulations governing subsurface septic systems in North Carolina. The attached soil map indicates that the soil area shown in "Orange" is **Suitable** or Usable for shallow narrow gravelless trenches such as the Large Diameter Pipe, Low Pressure Pipe or drip systems due to the steeper slopes and shallow soil depths. The soil is silty loam topsoil over silty clay loam subsoil. A three bedroom house septic system generally requires about 8,000 square feet of usable soil and a two bedroom about 5,000 square feet. There is approximately 6,800 square feet of usable soil on this lot. Due to the location of the usable soil, a house site may encroach on this usable soil area and may require some detailed house and septic layout work for permitting. Because this lot was created prior to 1983, a complete 100 percent repair area is not required so

this may help on permitting. A house located as close to the road as possible will allow for a septic field in the backyard area. This lot will be a challenge to permit and will require careful house placement and septic system design but it does have some suitable soil for septic systems. Please note that the more alternative septic systems for steeper slopes are more expensive than the standard conventional systems.

Based on landform observations and hand auger borings, area(s) of **suitable** or **usable** soil, if found, are usually shown on Aerial GIS maps. The soil area(s) indicate the depth of **usable** soil in inches from the surface and the approximate area of the **usable** soil in square feet. The type of septic field that is appropriate for the **usable** soil area is also indicated on the map. The approximate area required for a complete septic field is based on the proposed use such as a 3 or 4 bedroom single family house. The required soil area is based on the soil type and prescribed daily design flow from the facility. For a house, the daily design flow is 120 gallons per bedroom, so the more bedrooms a house has the larger the septic field is required. North Carolina septic system regulations require a backup or replacement (repair) septic field so the soil area must be large enough for two fields, an active and a backup or replacement field. Once a **suitable** soil area is identified with adequate available space, the client may use the report to make purchase decisions, apply for a permit from the local health department or private engineer. Septic system permits require detailed site plans with size and location of the house or building, number of bedrooms or employees for daily design flow determination, proposed drive, water supply well etc. For the simpler, single family house site plans, the local permitting agency or local health department can site a septic system and issue permits that are valid for five years. Sites with more complicated buildings, limited **usable** soil areas, or complex slopes may require an engineer or other designer to create plans for pump septic systems or alternative septic systems with more advanced technology to address soil and site limitations and submit for permitting.

If the preliminary soil study does **not** find any **suitable** soil or limited **usable** soil areas then the client may not wish to pursue purchase of the property. This situation is generally simply expressed as the soil or site “not perking”. Also, a client may not wish to move forward with alternative complex septic designs due the comparative cost to design, permit and install these more advanced septic systems. The preliminary soil study is the first step in determining if and how to develop the property for a particular use. The value in the study is in the findings of the soil scientist’s description of the soil characteristics and quantification of available soil area. This information will greatly aid a regulator in conducting a regulatory assessment and permitting a site. On larger tracts of land with limited **usable** soil areas, the preliminary soil map will direct the regulator to the best soil area to be reviewed and evaluated. Soil assessments or studies are critical on marginal sites for the designer, engineer, architect etc. to create the most effective and economical design as possible for the client. Many times a more detailed soil study is required for a designer to maximize a limited soil area on a site. Soil studies that are entirely **unsuitable** will not require any additional tasks beyond the preliminary soil study and that task is adequate enough to inform to the client, (buyer, seller, builder, developer, etc.) to not pursue development or adjust their offer to purchase accordingly.

If you have any questions about this topic, please give me a call to discuss.