

Triangle Soil Consulting, PLLC
5207 Lakefront Drive
Bullock NC 27507
info@trianglesoil.com
(252) 933-5764

Project # 24-007

5/6/2024

Shaunda R. Cooper

Shaundacooper2@gmail.com

RE: Preliminary Lot Evaluation in Vance County located off Spring Valley Road (PIN 0201 02013)

Dear Shaunda R. Cooper:

The following Preliminary Lot Evaluation technical report is submitted to assist in the development of the 5-acre tract of land located off Spring Valley Road (PIN 0201 02013) in Vance County, North Carolina.

Triangle Soil Consulting, PLLC conducted the preliminary lot evaluation on May 5th, 2024, to attempt to delineate an area of potentially suitable soils for subsurface on-site wastewater systems that would support a single-family, residential dwelling. The property was traversed and soil borings were conducted with hand augers in suitable topographic areas. The topography and vegetation communities were considered to postulate any possible consistent soil patterns. The soil was evaluated for the following morphological characteristics: soil texture, soil structure, soil depth, depth and thickness of any restrictive horizon(s), soil wetness conditions, soil mineralogy, topography, and landscape position. With these factors considered the areas evaluated were judged based on the "North Carolina Laws and Rules for Wastewater Treatment and Dispersal Systems (15A NCAC 18E)".

The above referenced parcel is located in the Piedmont physiographic region of North Carolina and located in the Carolina Slate Belt geologic region of Vance County. The soils that have formed on the section of the parcel evaluated by Triangle Soil Consulting are similar to the Iredell soil series. The Iredell soil series is generally **unsuitable** for subsurface wastewater systems. That is, the morphology of the soils contain characteristics that would not support subsurface septic systems such as clay textured subsoils that are considered expansive and the presence of redoximorphic features, indicative of a soil wetness condition.

Typical Septic Systems in the Piedmont of NC:

The most common septic systems used in the North Carolina Piedmont are listed with the corresponding minimum usable soil depth required and any trench length reduction if allowed noted in parentheses: conventional (30"), shallow conventional systems (24" with soil cap), chamber systems (24" with soil cap and 25% drain field reduction), polystyrene systems (24" with soil cap and 25% drain field reduction), horizontal panel block systems (requires at least 26" of usable soil and allows 50% drain field reduction), low pressure pipe (24"), low profile chamber (20"), and anaerobic drip irrigation (18"). A pump can be used to deliver effluent to the usable soil area if gravity flow

cannot be achieved. Also, a pump is needed on any system with over 750' of drain field. The percent reduction means the amount of drain field trench length reduction allowed for that product as compared to conventional trenches. Certain models of chamber systems and polystyrene bundle systems are considered accepted trench products. Accepted trench products can be substituted in lieu of conventional gravel trenches and receive the 25% drain field reduction.

Septic System Location & Setbacks:

The location of a septic system shall comply with the setback requirements of 15A NCAC 18E .0601 LOCATION OF WASTEWATER SYSTEMS.

Findings:

The property is currently undeveloped, but does have an overhead powerline crossing the northeast corner of the property. Two potential surface water features were identified on the southern/eastern portions of the property that have the potential of meeting the criteria of intermittent streams, denoted by the dashed blue line. The evaluation was made to assess suitability for septic drainfields. The areas denoted with a "Blue Circle" were found to have unsuitable soils and the gray areas labeled "UNS" indicate areas of unsuitable topography. Unsuitable topography characteristics can include gullies, rock outcroppings, streams and other surface waters, flood plains, drainage ways, designated wetlands, headslopes, steep slopes (> 30 %), setbacks, old roadbeds, and available space. Unsuitable soils characteristics can include shallow soil depths to saprolite or parent material, the occurrence of soil wetness conditions, the occurrence of expansive clay mineralogy, the occurrence of unsuitable soil structure and the occurrence of restrictive horizons and organic soils.

The unsuitable upland soils on this tract were most like the Iredell soil series. A "blue circle" indicates a GPS located soil boring locations on the soil map that indicate that are unsuitable. Two soil borings had depths that were potentially suitable for an aerobic pretreatment drip system (identified with a "blue/red circle"), but there was not sufficient available space of potentially suitable soil to support a septic system. The area evaluated was found to be unsuitable due to:

1. .0502 Topography and Landscape Position
2. .0503 Soil Morphology – Expansive Clay Mineralogy
3. .0504 Soil Wetness Conditions – presence of chroma 2 mottles
4. .0508 Available Space

Conclusions:

The tract has **limited** potential for further development utilizing a septic system on this property. Using the current septic system technology, **this property would be considered unsuitable for septic systems** and is only buildable if access to adjacent areas or properties with usable soils was available or access to municipal sewer is allowed.

In North Carolina, three primary options for septic system permitting exist. 1.) Traditional Local Health Department Permitting, 2.) Hybrid SL 2023-90 (a2) Permitting, and 3.) Fully Private Permit Options by either a professional engineer (EOP) or Authorized Onsite Wastewater Evaluator

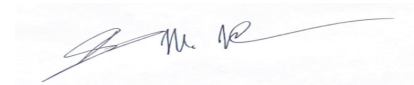
(AOWE). In the traditional option, the local county health department can evaluate and permit any site. NC Session Law 2023-90 now allows a “hybrid” version of the traditional permit. In this version, a NC Licensed Soil Scientist can evaluate a lot and submit soil information on each lot to the Health Department in lieu of the Health Department evaluation. If the soil scientist is also an Authorized Onsite Wastewater Evaluator (AOWE), then the soil scientist can prepare the design elements for a Construction Authorization. **This report does not meet the requirements for permitting under NC Session Law 2023-90, commonly referred to an “A2” permit.**

In the traditional permitting model, the local county health department in the form of an Improvement Permit grants site approval. A Construction Authorization for a Wastewater System is issued once building floor plans are reviewed and the Improvement Permit is issued. The county issues an Operation Permit after the system has been installed to meet the specifications of the Authorization to Construct. Septic layouts and system design can be performed as needed. The private permitting options are the Engineer Option Permit (EOP) and Authorized Onsite Wastewater Evaluator (AOWE). A NC Licensed Engineer, a NC Licensed Soil Scientist, NC Authorized Evaluator, and a NC Registered Septic Installer can evaluate, design, and install a septic system without Health Department involvement other than record keeping. **This report does not meet the requirements for private permitting under the Engineer Option Permit or Authorized Onsite Wastewater Evaluator permitting options.**

A preliminary evaluation is done as part of the due diligence process where the level of detail for an Improvement Permit is not desired. A preliminary is often done to determine if there are usable soils on property before purchasing. This preliminary evaluation was conducted using accepted soil science and environmental health practices. This does not guarantee that the local health department will agree with these findings since soil/site evaluations are an interpretation of the state regulations, but all current sampling methods, technologies, and practices were used. The soil map and report are provided to you as part of this evaluation. Please be aware of any local codes, setbacks, ordinances, and existing easements along with any permitting requirements before making a financial commitment on a property. Please feel free to contact me if you have any further questions.

Sincerely,

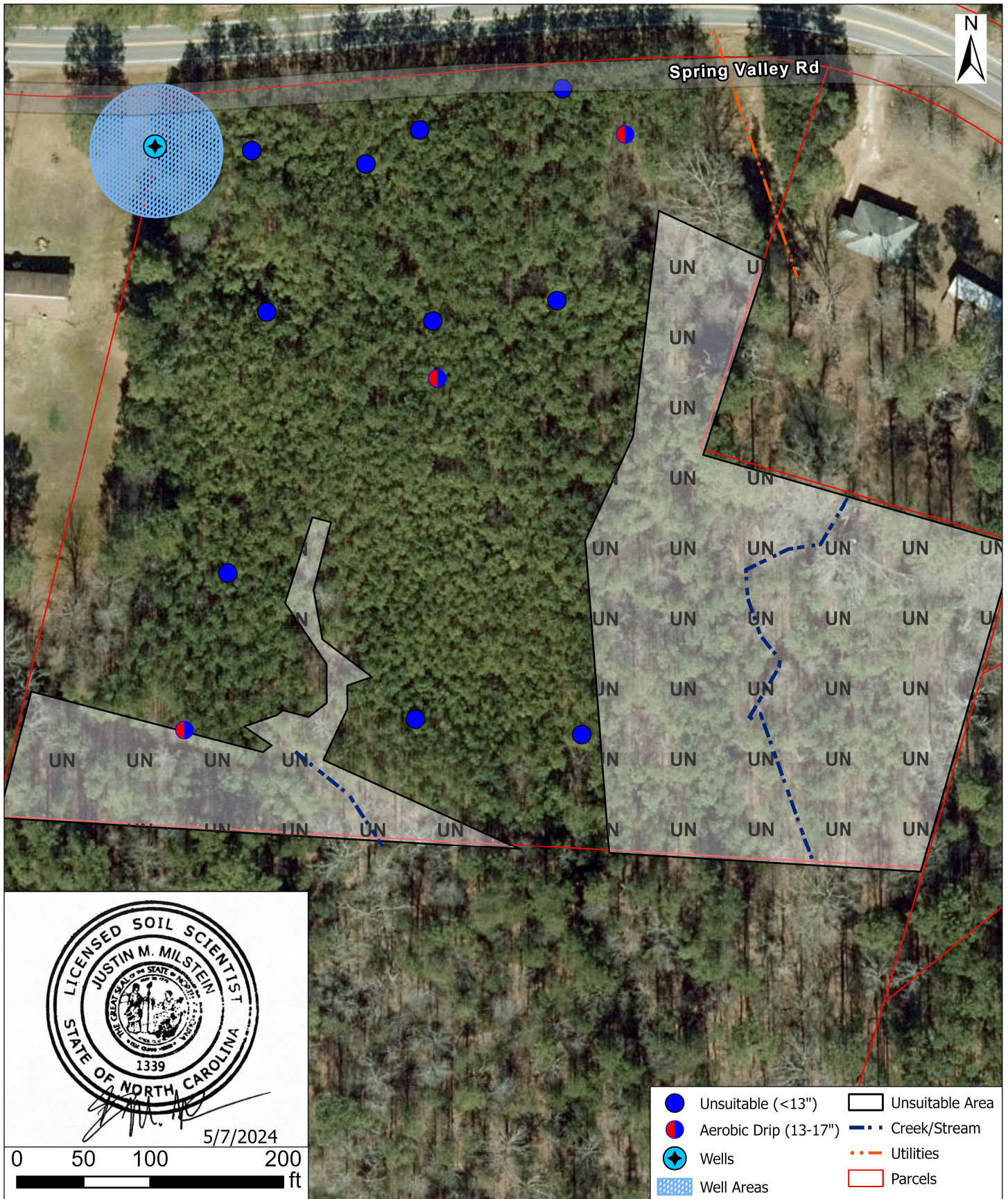
Triangle Soil Consulting, PLLC



Justin M. Milstein, LSS, REHS
Owner & Soil Scientist

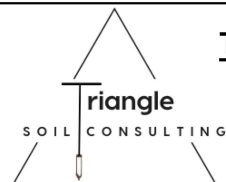


Encl.: Preliminary Lot Evaluation Map



5/7/2024

0 50 100 200 ft



Triangle Soil Consulting, PLLC

5207 Lakefront Drive, Bullock, NC 27507

Phone: (252) 933-5764

Website: www.trianglesoil.com

Email: info@trianglesoil.com

Site Information

Lot: N/A

Draw Date: 5/7/2024

Project Name: Spring Valley Road

Project #: 24-007

County: Vance

State: NC

Scale: 1" = 100'

Revision:

Job Description:

Drawn By: JMM

Preliminary Lot Evaluation