

PRELIMINARY SOIL AND SITE EVALUATION

Rowan County Parcel: 301 011
US 601 Highway North
Salisbury, NC 28147

Prepared For:

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INTRODUCTION & SITE DESCRIPTION

This Soil and Site Evaluation was performed on a portion of a 160.8-acre tract located on US Highway 601 North, Salisbury, North Carolina (Rowan County Parcel: 301 011). The project study area consisted of a proposed subdivision of the property into 9 individual lots.

Thompson Environmental Consulting, Inc. (TEC) was retained to determine whether the soils were suitable for onsite subsurface wastewater treatment and disposal. The property was evaluated in accordance with North Carolina statutes for waste disposal (“Laws and Rules for Sewage Treatment and Disposal Systems”, amended April 1, 2017).

INVESTIGATION METHODOLOGY & SITE PHYSICAL CHARACTERISTICS

Soil borings and deep pits were evaluated, and soil color was determined with a Munsell Soil Color Chart. Observations of the landscape (slope, drainage patterns, etc.) as well as soil properties (depth, texture, structure, seasonal wetness, restrictive horizons, etc.) were recorded.

The project study is primarily in active agricultural production with undisturbed areas being vegetated with a mixed deciduous forest.

FINDINGS

Field surveys were conducted on March 21 (borings) and April 6 (pits), 2023. Thirty-eight soil borings (Lots 3-9) and 10 deep pits were advanced (Lots 1 and 2) within the project study area and their locations noted in the attached Figure 1.

Provisionally Suitable for Conventional Type Systems. Borings and Pits that are Provisionally Suitable for Conventional Systems may include Gravel, Accepted, Alternative, Shallow-Placed, and Prefabricated Permeable Block Panel Systems and are denoted in the attached Figure as green points within green-hatched polygons. While the particulars and costs between the system types can vary considerably, these are generally the preferred system types. This soil appeared adequate to support a long-term acceptance rate (LTAR) of 0.2 to 0.25 GPD/sq-ft.

Provisionally Suitable for Subsurface Drip Systems. Subsurface Drip systems require a minimum of 13” of suitable soil. Soil with a restriction less than 17” will require the septic system to include a pretreatment unit that treats the wastewater to Treatment Standards II. Subsurface Drip systems are substantially more costly to install than Conventional Type and Low-Profile Chamber Systems. LTARs often need to be confirmed via in-situ hydraulic conductivity measurements, but these are expected to support an LTAR of 0.10 GPD/sq-ft. These borings are depicted in the attached Figure as yellow points.

Unsuitable. Borings and pits classified as Unsuitable for Subsurface Drip systems had a restrictive horizon with 12” of the ground surface and are depicted in the attached Figure as red points.

DISCUSSION

The soils and saprolite (saprolite was evaluated on Lots 1 and 2) located within the green-hatched polygons in the attached Figure are “Provisionally Suitable” for Accepted Systems or Saprolite Systems with “conventional-type” drainfield products. It is estimated that 8,000 to 10,500 square feet of suitable soil area would need to be allocated and left completely available for the installation and required repair area for an Accepted System or Saprolite System installation serving a 4-bedroom single-family residence.

Areas that were noted as being suitable for Subsurface Drip Dispersal Systems do not appear to be needed for this project.

CONCLUSION

The findings presented herein represent TEC’s professional opinion based on our Soil and Site Evaluation and knowledge of the current laws and rules governing on-site wastewater systems in North Carolina. Soils naturally change across a landscape and contain many inclusions. As such, attempts to quantify them are not always precise and exact. Due to this inherent variability of soils and the subjectivity when determining limiting factors, there is no guarantee that a regulating authority will agree with the findings of this report.

