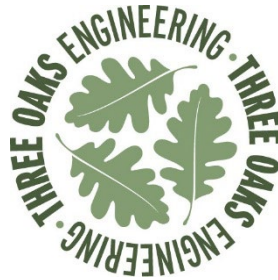


RECONNAISSANCE SOIL & SITE EVALUATION

3230 Southall Road
Wake County, NC
Three Oaks Job # 22-7152

Prepared For:

Prepared By:



324 Blackwell Street, Suite 1200
Durham, NC 27701
(919) 732-1300

December 14, 2022

A handwritten signature in black ink that reads "Evan Morgan".

Evan T. Morgan



INTRODUCTION & SITE DESCRIPTION

A Reconnaissance Soil & Site Evaluation was performed on the approximately 1.00-acre tract located at 3230 Southall Road in Wake County, NC (PIN: 1735230516). Three Oaks Engineering (Three Oaks) was retained to evaluate the soil and site conditions to determine areas suitable for on-site subsurface wastewater system for a single-family residence. The property was evaluated in accordance with North Carolina statutes for waste disposal (“Laws and Rules for Sewage Treatment and Disposal Systems”, amended December 6, 2018).

The parcel is partially wooded. A three-bedroom single-family residence with a design daily flow of 360 gallons per day (GPD) is assumed for this report.

INVESTIGATION METHODOLOGY

The field survey was conducted on December 6, 2022, by Evan T. Morgan, LSS and Ethan T. Wood. Soil borings were advanced with hand-augers and soil color determined using a Munsell Soil Color Chart. Observations of the landscape as well as soil properties (depth, texture, structure, soil wetness, restrictive horizons, etc.) were recorded. Soil borings were described per the USDA-NRCS, *Field Book for Describing and Sampling Soils, Version 3.0*. Soil borings and site features were located using a hand-held GPS with sub-meter accuracy. Soil borings in the wooded area were flagged with blue flagging.

FINDINGS

Four (4) soil borings were advanced, and their locations noted on Figure 1. Detailed soil boring descriptions are attached.

Provisionally Suitable for Conventional Type Systems. Profiles rated as Provisionally Suitable for Conventional Type Systems may include accepted, innovative, shallow-conventional, and prefabricated permeable block panel systems. These are generally the most desirable systems to install. These soils appeared adequate to potentially support a long-term acceptance rate (LTAR) of 0.225 to 0.275 GPD/sq-ft.

Provisionally Suitable for Low-Profile Chamber Systems. Profiles rated as Provisionally Suitable for Low-Profile Chamber Systems are only approved for the Infiltrator Quick4 Plus Equalizer 36 Low Profile Chamber. This is similar to a Conventional Type system but is not eligible for a drainfield size reduction and often require a soil cap and are therefore more expensive and take up more room.

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.

Unsuitable. Soil borings rated as Unsuitable were due to a limiting horizon occurring within 12 inches of the ground surface.

DISCUSSION

The parcel was dominated by soil rated as Provisionally Suitable for Conventional Type Systems and encompasses approximately 35,000 sq-ft. Approximately 8,000 to 10,000 sq-ft would be needed to support the initial system for a 360 GPD system utilizing a LTAR of 0.25 GPD/sq-ft.

It is likely that a 6-inch soil cover will need to be brought in over the drainfield.

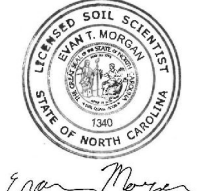
CONCLUSIONS

The findings presented herein represent Three Oaks' professional opinion based on our Reconnaissance Soil and Site Evaluation and knowledge of the current laws and rules governing on-site wastewater systems in North Carolina. Sufficient area of Provisionally Suitable soil was identified for a Conventional Type System.

This Reconnaissance Soil and Site Evaluation is for general information purposes only. The data collected will not fully meet the standards of the Engineered Option Permit (EOP) process. Should an EOP pursuit be desired, Three Oaks can provide an additional scope and fee for the required soil investigation and evaluation. This evaluation is for the exclusive use of the client. Written consent of Three Oaks will be required for the use or reliance of this evaluation and its findings.

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. Any concurrence with the findings of this report will be made by Wake County at the time of Improvement Permit application.



 	Reconnaissance Soil & Site Evaluation 3230 Southall Road Wake County, North Carolina	Date: December 2022	Figure 1
		Scale: 0 10 20 Feet	
		Job No.: 22-7152	
		Drawn By: ETM	Checked By: MGW

Soil Evaluation Form

Three Oaks Engineering
324 Blackwell Street, Suite 1200
Durham, NC 27701
919.732.1300

Southall Rd

Sheet 1 of 1
Job: 22-7152
County: Wake
Date: 12/6/22

Soil Borings

	1	2	3	4						
Landscape Position	TS	LS	LS	LS						
Slope (%)	1	1	1	1						
Horizon 1 Depth	0-12	0-8	0-7	0-8						
Texture	SL	SL	SL	SL						
Consistence	FR	FR	FR	FR						
Structure	GR	GR	GR	GR						
Clay Mineralogy	N	N	N	N						
Horizon 2 Depth	12-24	8-24	7-24	8-24						
Texture	SC	SC	SC	SC						
Consistence	FI	FI	FI	FI						
Structure	SBh	SBh	SBh	SBh						
Clay Mineralogy	S	S	S	S						
Horizon 3 Depth	24-30	24-28		22-28						
Texture	SCL	SCL		CC						
Consistence	FR	FR		FI						
Structure	SBh	M		SBh						
Clay Mineralogy	S	S		S						
Horizon 4 Depth	30-34			28-30						
Texture	SCL			SCL						
Consistence	FR			FI						
Structure	M			M						
Clay Mineralogy	S			S						
Horizon 5 Depth										
Texture										
Consistence										
Structure										
Clay Mineralogy										
Soil Wetness										
Restrictive Horizon										
Saprolite	30	24		28						
Other										
CLASSIFICATION	PS	PS	PS	PS						
LTAR (gpd/ft ²)	0.275	0.25	0.275	0.25						

Comments:

Evaluated by :

Exxon W.