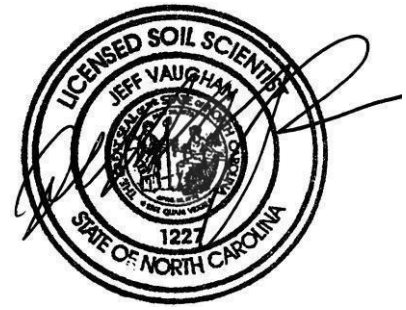




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Soil Suitability for Domestic Sewage Treatment and Disposal Systems

Boatman Ct.
Macon, NC 27551
Warren County PIN: 2989957702

Prepared For: Liberty Land Group, Client

Prepared By: Jeff Vaughan, Ph.D., L.S.S.
Senior Agronomist/Soil Scientist
Brent Purdum, Associate Soil Scientist

Report Date: July 19, 2023



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Soil Suitability for Domestic Sewage Treatment and Disposal Systems
Boatman Ct. Macon, NC 27551 (PIN: 2989957702)

PREPARED FOR: Liberty Land Group, Client

PREPARED BY: Jeff Vaughan
Brent Purdum

DATE: July 19, 2023

Soil suitability for domestic sewage treatment and disposal systems was evaluated on July 12, 2023, for property located at Boatman Ct. in Macon, NC, Brent Purdum, of Agri-Waste Technology, Inc. (AWT) conducted the soil evaluation. The detailed soil evaluation of the land area will follow. Property reference maps are in Attachment 1. A review of the soil and landscape characteristics that dictate soil suitability for domestic sewage treatment and disposal systems can be found in Attachment 2.

The property evaluated is approximately 0.5 acres and is completely wooded. (Attachment 1).

Soil Suitability for Domestic Sewage Treatment and Disposal Systems

The aerial map in Attachment 1 details the approximate property boundaries, soil boring locations, soil types, and soil areas for septic systems. Numerous soil borings were advanced on the property (Attachment 1). Since the property is 0.5 acres, a septic system layout or site plan may be required. However, this evaluation was merely a preliminary review to determine what potential this land might have for domestic sewage treatment and disposal systems. Therefore, specific types of septic systems, exact locations of future drainfields and repair areas, plus buffers from property lines (current and potential future lot lines), building foundations, wells, etc. are not fully considered. These things will need to be more fully considered as the plans develop for the potential future of this site. It is possible that additional soil evaluations will be required once lot layouts are considered and developed for this property so that septic system types and the location of a septic drainfield can be more fully and appropriately considered.

One area (see map in Attachment 3) evaluated on the property exhibited soil characteristics and soil depths (24" or greater) that are provisionally suitable for conventional trench or drip septic systems.

Typical profile descriptions of the provisionally suitable soil for this property are in Attachment 4. One distinct soil profile was observed in the soil borings on the property: a reddish yellow subsoil with parent material.

The provisionally suitable soil borings had the following characteristics. No restrictive horizons were found in any provisionally soil borings within 24" of the soil surface. Soil texture was provisionally suitable and was estimated to be sandy loam near the soil surface (A horizons) and clay in the subsoil (B horizons). Soil structure was provisionally suitable and was estimated to be granular near the soil surface (A horizons) and subangular blocky in the subsoil (B horizons). Clay mineralogy was provisionally suitable with very friable to firm moist soil consistence and non-sticky to sticky and non-plastic to plastic wet soil consistence.

The predominantly mapped soil type on this property is a Pacolet sandy loam. The Warren County Soil Survey indicates that moderate limitations exist for septic systems installed in these soil types (Attachment 5).

The land area required for a shallow conventional septic system is calculated based on the size of the proposed home and the Long-Term Acceptance Rate (LTAR) of the soil. The LTAR range for the provisionally suitable soils on this property is 0.1 – 0.4 GPD/ft² for shallow conventional septic systems based on the most restrictive soil texture in the subsoil. The LTAR suggested by AWT is 0.3 GPD/ft², but the final LTAR for specific septic system types and septic drainfield locations will be set by the Warren County Health Department. The detailed computations are in Attachment 6. Typically, the area required for a septic system is 3,000 – 5,000 ft² (initial and repair) per bedroom.

Conclusions

Based on the results of this evaluation, the installation of conventional septic systems seems very probable on this property in the areas designated on the map in Attachment 1.

We appreciate the opportunity to assist you in this matter. Please contact us with any questions, concerns, or comments.

ATTACHMENT 1: Property Reference Map

An aerial photograph of a dense forest. The image is overlaid with several lines: a thick red line forming a large, irregular boundary, and several thinner yellow lines that appear to be smaller sub-boundaries or paths. The forest is mostly green, with some darker, bare tree trunks visible. In the center of the image, the text '14B 82' is written in a bold, red, sans-serif font. The overall appearance is that of a land management or survey map overlaid on a natural landscape.

14B 82

**ATTACHMENT 2: Review of Rules Pertaining to Domestic
Sewage Treatment and Disposal Systems**

Five categories of soil and landscape characteristics are evaluated to determine soil suitability for domestic sewage treatment and disposal systems and include: topography and landscape position, soil morphological characteristics, soil wetness conditions, soil depth, and restrictive horizons. The soil and landscape characteristics found in a particular location dictate the type(s) of domestic sewage treatment and disposal system that can be used on a parcel of land. The detailed rules can be found in Section .1900 – Sewage Treatment and Disposal Systems, but a general review of the five categories and other relevant rules can be found in the sections below.

.1940 TOPOGRAPHY AND LANDSCAPE POSITION

Uniform slopes less than 15 percent are considered suitable, uniform slopes between 15 and 30 percent are considered provisionally suitable, and slopes greater than 30 percent are considered unsuitable for domestic sewage treatment and disposal systems. Complex slope patterns and slopes dissected by gullies and ravines are considered unsuitable for domestic sewage treatment and disposal systems. Depressions and wetlands are also considered unsuitable for domestic sewage treatment and disposal systems.

.1941 SOIL MORPHOLOGICAL CHARACTERISTICS

Sandy and coarse loamy textured soils (sand, loamy sand, sandy loam, and loam) are considered suitable for domestic sewage treatment and disposal systems. Fine loamy and clayey textured soils (silt, silt loam, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay) are considered provisionally suitable for domestic sewage treatment and disposal systems.

Crumb, granular, and single-grained soil structures are considered suitable for domestic sewage treatment and disposal systems. Blocky soil structures are considered provisionally suitable for domestic sewage treatment and disposal systems. Platy, prismatic, and massive soil structures are considered unsuitable for domestic sewage treatment and disposal systems.

Slightly expansive clay mineralogy is considered suitable for domestic sewage treatment and disposal systems. Slightly expansive clay minerals exhibit loose, very friable, friable, or firm moist soil consistence. Expansive clay mineralogy is considered unsuitable for domestic sewage treatment and disposal systems. Expansive clay minerals exhibit very firm or extremely firm moist soil consistence. Organic soils are considered unsuitable for domestic sewage treatment and disposal systems.

.1942 SOIL WETNESS CONDITIONS

Soil wetness conditions are caused by seasonal high water table, perched water table, tidal water, seasonally saturated soils, or lateral water movement. Soil wetness conditions are indicated by soil colors, either in mottles or mass, with a chroma of 2 or less according to the Munsell color charts. Soil wetness conditions detected 48 inches in depth or deeper are considered suitable for domestic sewage treatment and disposal systems. Soil wetness conditions detected between 36 to 48 inches in depth are considered provisionally suitable for domestic sewage treatment and disposal systems. Soil wetness conditions detected 36 inches in depth or shallower are considered unsuitable for domestic sewage treatment and disposal systems.

.1943 SOIL DEPTH

Soil depths to rock, parent material, or saprolite greater than 48 inches are considered suitable for domestic sewage treatment and disposal systems. Soil depths to rock, parent material, or saprolite between 36 and 48 inches are considered provisionally suitable for domestic sewage treatment and disposal systems. Soil depths to rock, parent material, or saprolite less than 36 inches are considered unsuitable for domestic sewage treatment and disposal systems. Saprolite has a massive, rock-controlled structure, and retains the mineral arrangement of its parent rock in at least 50 percent of its volume. Saprolite only forms from metamorphic and igneous rock parent materials and is typically referred to as “rotten rock”.

.1944 RESTRICTIVE HORIZONS

Restrictive horizons are capable of perching ground water or sewage effluent and are strongly compacted or cemented. Restrictive horizons resist soil excavation or augering. Soils with restrictive horizons three inches or more in thickness at depths greater than 48 inches are considered suitable for domestic sewage treatment and disposal systems. Soils with restrictive horizons three inches or more in thickness at depths between 36 and 48 inches are considered provisionally suitable for domestic sewage treatment and disposal systems. Soils with restrictive horizons three inches or more in thickness at depths less than 36 inches are considered unsuitable for domestic sewage treatment and disposal systems.

.1950 LOCATION OF SANITARY SEWAGE SYSTEMS

WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES NOTICE

No area for domestic sewage treatment and disposal system installation (or repair in Wake County) may be disturbed by clearing, excavation, filling, vehicle or equipment traffic, or storage of building materials.

.1947 DETERMINATION OF OVERALL SITE SUITABILITY

.1948 SITE CLASSIFICATION

All of the criteria for the five categories above are to be determined and classified as suitable, provisionally suitable, or suitable according to the respective rules described above. If all criteria are classified the same, that overall site classification will prevail. If there is a variation in the classification of several criteria, the most limiting classification will be used to determine the overall site classification.

A suitable classification generally indicates soil and landscape conditions favorable for the operation of a domestic sewage treatment and disposal system or slight limitations that can be readily overcome by proper design and installation. A provisionally suitable classification indicates soil and/or landscape conditions have moderate limitations for the operation of a domestic sewage treatment and disposal system, but modifications and careful planning, design, and installation can result in satisfactory system function. An unsuitable classification indicates severe soil and/or landscape limitations for the operation of a domestic sewage treatment and disposal system.

SUMMARY

Suitable/provisionally suitable landscapes and soils to a depth of 36 inches can, in general, be used for conventional gravity driven septic systems. Suitable/provisionally suitable landscapes

and soils to a depth of 24 –36 inches can, in general, be used for alternative septic systems such as shallow conventional and low pressure pipe systems, among others. All alternative systems for provisionally suitable landscapes and soils must be proposed to and approved by the Durham County Health Department. Any landscapes or soils classified as unsuitable may be reclassified as provisionally suitable by the Durham County Health Department after a site investigation by department personnel.

**ATTACHMENT 3: Property Map Detailing Soil Suitability
for Septic Systems and Soil Types**



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Preliminary Soil Evaluation

Liberty Land Group
Warren Co., NC
PIN: 2989957702

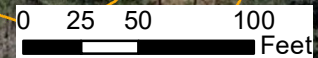
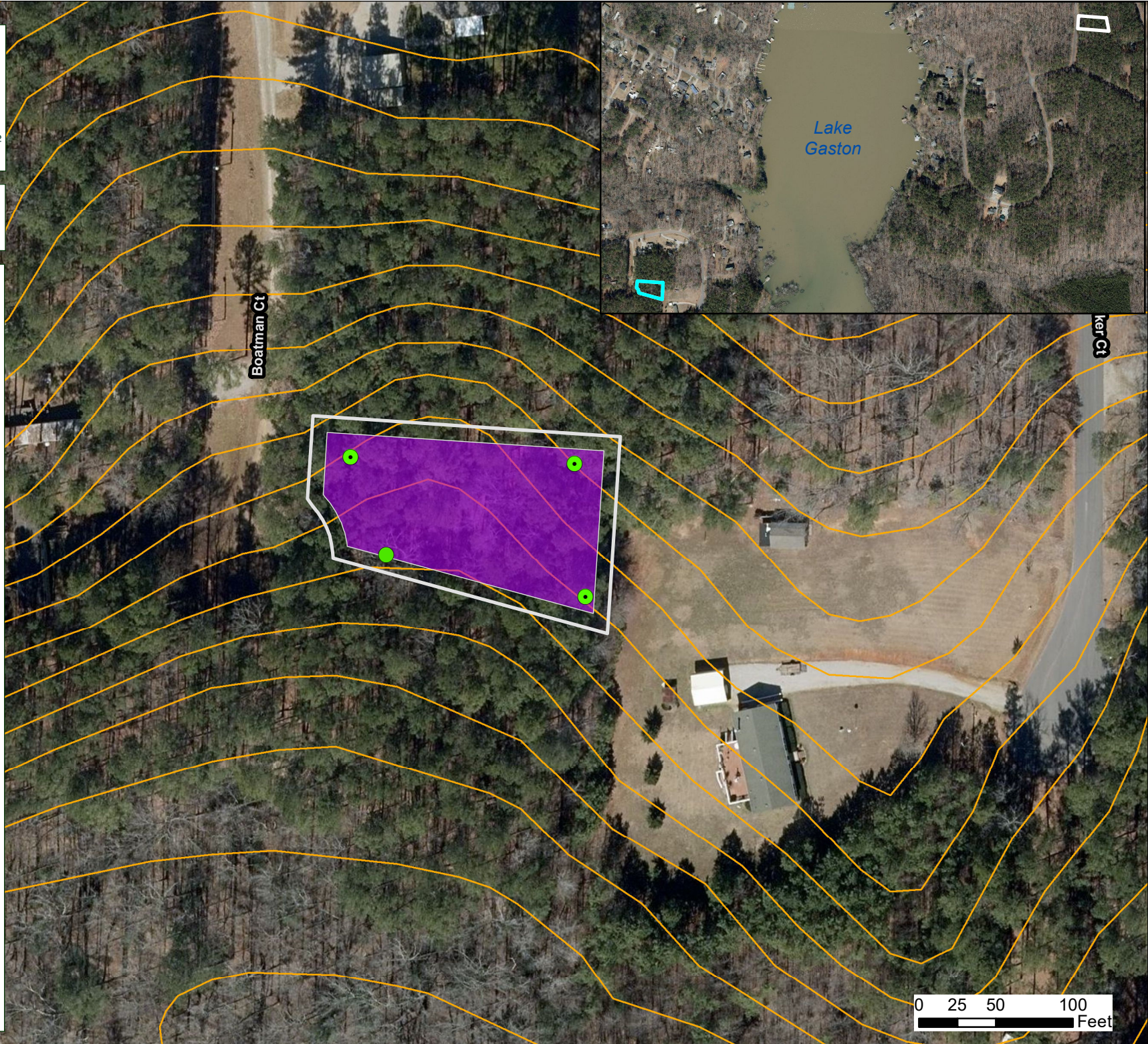


Area for Septic:
~15,428 sq.ft.

Soil Types:
CeB: Cecil sandy loam
PhC: Pacolet sandy loam

- Parcel
 - Parcel Buffer 10 ft.
 - 2 ft. Contour
 - Suitable Area
- Soil Boring Depth (in.)**
- 24-29"
 - 30-35"
 - 36"+

Drawn By: William Shoeyink
Reviewed By: Brent Purdum
Date: 7/14/2023



Surface water and/or bad topo areas have not been officially evaluated for stream ID according to local regulatory requirements. This map is intended for preliminary purposes only and not to be used as a plat/survey or can it be assumed all streams are identified on this property.



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Preliminary Soil Evaluation

Liberty Land Group
Warren Co., NC
PIN: 2989957702

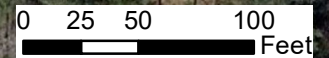
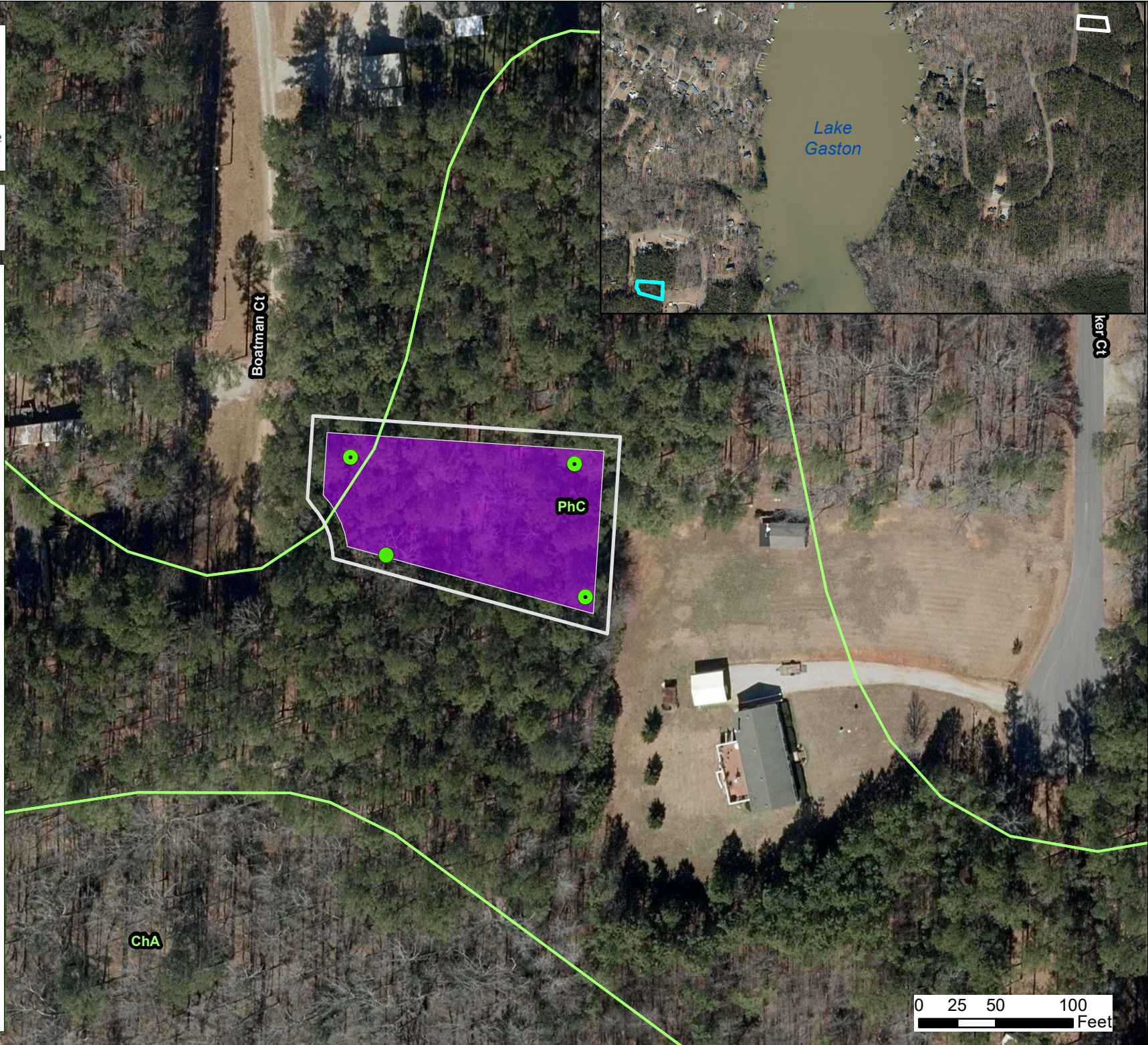


Area for Septic:
~15,428 sq.ft.

Soil Types:
CeB: Cecil sandy loam
PhC: Pacolet sandy loam

-  Parcel
 -  Parcel Buffer 10 ft.
 -  Soil Type
 -  Suitable Area
- Soil Boring Depth (in.)**
-  24-29"
 -  30-35"
 -  36"+

Drawn By: William Shoeyink
Reviewed By: Brent Purdum
Date: 7/14/2023



Surface water and/or bad topo areas have not been officially evaluated for stream ID according to local regulatory requirements. This map is intended for preliminary purposes only and not to be used as a plat/survey or can it be assumed all streams are identified on this property.

**ATTACHMENT 4: Typical Profile Descriptions of
Provisionally Suitable Soil**

Property ID#: 2989957702
 Property Recorded: _____
 County: Warren

**SOIL/SITE EVALUATION
 FOR
 ON-SITE WASTEWATER SYSTEM**

Applicant: Liberty Land Group Owner: _____ Agent: _____ Phone: _____
 Address: 6060 N Central Expressway, Suite 500, Dallas, TX 75206 Date Evaluated: July 12, 2023
 _____ Proposed Facility: Residential
 _____ Property Size: 0.5 acres evaluated

Location Site: Boatman Ct. Macon, NC 27551
 Water Supply: On Site Well ___ Comm. Well ___ Public ___ Other X Evaluation Method: Auger Boring X Pit_Cut _____

TYPICAL PROFILE

Horizon/ Depth (IN)	Matrix	Mottles	Mottle Abundance / Contrast	(a)(1) Texture	(a)(2) Structure	(a)(3) Minerology	Consistence Wet	Consistence Moist
A 0-4"	7.5YR 5/4	5YR 5/8	1,f, d	SL	GR	NEXP	NS, NP	Vfr
Bt1 4-26"	2.5YR 4/6	None	None	CL	SBK	SEXP	SS, SP	Fr
Bt2 26-36+"	2.5YR 4/6	7.5YR 7/8	2, P, f	C	SBK	SEXP	S, P	Fr

.1940 Landscape Pos/Slope %	- Suitable, <15%	Profile LTAR	- 0.4 – 0.1 GPD/ft ²
.1942 Wetness Condition	- Suitable	System Type	- Provisionally suitable for shallow conventional systems due to texture, structure, and depth.
.1943/.1956 Saprolite	- Suitable		
.1944 Restrictive Horizon	- Suitable		
.1948 Profile Classification	- Provisionally suitable		

Comments: _____

EVALUATED BY: Brent Purdum

COMMENTS: _____

LEGEND OF ABBREVIATIONS FOR SITE EVALUATION FORM

<u>LANDSCAPE POSITION</u>	<u>TEXTURE GROUP</u>	<u>TEXTURE CLASS</u>	<u>.1955 LTAR</u> (gal/day/sqft)
CC - Concave Slope	I	S - Sand	1.2 - .08
CV - Convex Slope		LS - Loamy Sand	
DS - Debris Slump	II	SL - Sandy Loam	0.8 - 0.6
D - Depression		L - Loam	
DW - Drainage Way	III	SCL - Sandy Clay Loam	0.6 - 0.3
FP - Flood Plain		CL - Clay Loam	
FS - Foot Slope		SiL - Silt Loam	
H - Head Slope		Si - Silt	
I - Interflueve		SiCL - Silt Clay Loam	
L - Linear Slope	IV	SC - Sandy Clay	0.4 - 0.1
N - Nose Slope		C - Clay	
P - Pocosin		SiC - Silty Clay	
R - Ridge		O - Organic	
S - Shoulder			
T - Terrace			
<u>STRUCTURE</u>	<u>MOIST CONSISTENCE</u>	<u>MOTTLES</u>	<u>WET CONSISTENCE</u>
G - Single Grain	Vfr - Very Friable	1 - Few	NS - Non Sticky
M - Massive	Fr - Friable	2 - Common	SS - Slightly Sticky
CR - Crumb	Fi - Firm	3 - Many	S - Sticky
GR - Granular	Vfi - Very Firm	F - Faint	VS - Very Sticky
SBK - Subgranular Blocky	Efi - Extremely Firm	D - Distinct	NP - Non Plastic
ABK - Angular Blocky		P - Prominent	SP - Slightly Plastic
PL - Platy		f - Fine	P - Plastic
PR - Prismatic		m - Medium	VP - Very Plastic
		c - Coarse	

ATTACHMENT 5: Soil Survey Information

Warren County, North Carolina

PhC—Pacolet sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2ndn4

Elevation: 200 to 1,400 feet

Mean annual precipitation: 37 to 60 inches

Mean annual air temperature: 59 to 66 degrees F

Frost-free period: 200 to 240 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Pacolet and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pacolet

Setting

Landform: Hillslopes on ridges

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Saprolite derived from granite and gneiss and/or schist

Typical profile

Ap - 0 to 5 inches: sandy loam

E - 5 to 8 inches: sandy loam

Bt - 8 to 29 inches: clay

BC - 29 to 38 inches: sandy clay loam

C - 38 to 80 inches: sandy loam

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B

Ecological site: F136XY820GA - Acidic upland forest, moist
Hydric soil rating: No

Data Source Information

Soil Survey Area: Warren County, North Carolina
Survey Area Data: Version 20, Sep 12, 2022

**ATTACHMENT 6: Septic System Area Computation
Spreadsheets**

Conventional Septic System Area Computation

Created by: JV
Created on: 6/20/2001
Updated on: 8/16/2022

Client Name: *Liberty Land Group*
Number Bedrooms: 3
Design Flow (gal/day): 360 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)
LTAR (gal/day/ft²): 0.25
Trench Bottom Area (ft²): 1440 (Design flow/LTAR)
Trench Width (ft): 3
On-center distance between trenches (ft): 9
Trench Bottom Length (ft): 480

Minimum Field Area Required (ft²): 4320 (Trench Bottom Length*Trench on-center distance)
Minimum Field Area Required (Innovative) (ft²): 3240 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 10800 (Minimum field area*2.5)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 8100 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 12960 (Minimum field area*3)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 9720 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

Client Name: *Liberty Land Group*
Number Bedrooms: 3
Design Flow (gal/day): 360 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)
LTAR (gal/day/ft²): 0.3
Trench Bottom Area (ft²): 1200 (Design flow/LTAR)
Trench Width (ft): 3
On-center distance between trenches (ft): 9
Trench Bottom Length (ft): 400

Minimum Field Area Required (ft²): 3600 (Trench Bottom Length*Trench on-center distance)
Minimum Field Area Required (Innovative) (ft²): 2700 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 9000 (Minimum field area*2.5)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 6750 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 10800 (Minimum field area*3)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 8100 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

Client Name: *Liberty Land Group*
Number Bedrooms: 3
Design Flow (gal/day): 360 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)
LTAR (gal/day/ft²): 0.35
Trench Bottom Area (ft²): 1028.571 (Design flow/LTAR)
Trench Width (ft): 3
On-center distance between trenches (ft): 9
Trench Bottom Length (ft): 342.8571

Minimum Field Area Required (ft²): 3085.714 (Trench Bottom Length*Trench on-center distance)
Minimum Field Area Required (Innovative) (ft²): 2314.286 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 7714.286 (Minimum field area*2.5)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 5785.714 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 9257.143 (Minimum field area*3)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 6942.857 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

Conventional Septic System Area Computation

Created by: JV
Created on: 6/20/2001
Updated on: 8/16/2022

Client Name: *Liberty Land Group*
Number Bedrooms: 4
Design Flow (gal/day): 480 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)
LTAR (gal/day/ft²): 0.25
Trench Bottom Area (ft²): 1920 (Design flow/LTAR)
Trench Width (ft): 3
On-center distance between trenches (ft): 9
Trench Bottom Length (ft): 640

Minimum Field Area Required (ft²): 5760 (Trench Bottom Length*Trench on-center distance)
Minimum Field Area Required (Innovative) (ft²): 4320 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 14400 (Minimum field area*2.5)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 10800 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 17280 (Minimum field area*3)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 12960 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

Client Name: *Liberty Land Group*
Number Bedrooms: 4
Design Flow (gal/day): 480 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)
LTAR (gal/day/ft²): 0.3
Trench Bottom Area (ft²): 1600 (Design flow/LTAR)
Trench Width (ft): 3
On-center distance between trenches (ft): 9
Trench Bottom Length (ft): 533.3333

Minimum Field Area Required (ft²): 4800 (Trench Bottom Length*Trench on-center distance)
Minimum Field Area Required (Innovative) (ft²): 3600 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 12000 (Minimum field area*2.5)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 9000 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 14400 (Minimum field area*3)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 10800 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

Client Name: *Liberty Land Group*
Number Bedrooms: 4
Design Flow (gal/day): 480 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)
LTAR (gal/day/ft²): 0.35
Trench Bottom Area (ft²): 1371.429 (Design flow/LTAR)
Trench Width (ft): 3
On-center distance between trenches (ft): 9
Trench Bottom Length (ft): 457.1429

Minimum Field Area Required (ft²): 4114.286 (Trench Bottom Length*Trench on-center distance)
Minimum Field Area Required (Innovative) (ft²): 3085.714 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 10285.71 (Minimum field area*2.5)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 7714.286 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 12342.86 (Minimum field area*3)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 9257.143 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

Conventional Septic System Area Computation

Created by: JV
Created on: 6/20/2001
Updated on: Liberty Land Group

Client Name: *Liberty Land Group*
Number Bedrooms: 5
Design Flow (gal/day): 600 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)
LTAR (gal/day/ft²): 0.25
Trench Bottom Area (ft²): 2400 (Design flow/LTAR)
Trench Width (ft): 3
On-center distance between trenches (ft): 9
Trench Bottom Length (ft): 800

Minimum Field Area Required (ft²): 7200 (Trench Bottom Length*Trench on-center distance)
Minimum Field Area Required (Innovative) (ft²): 5400 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 18000 (Minimum field area*2.5)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 13500 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 21600 (Minimum field area*3)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 16200 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

Client Name: *Liberty Land Group*
Number Bedrooms: 5
Design Flow (gal/day): 600 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)
LTAR (gal/day/ft²): 0.3
Trench Bottom Area (ft²): 2000 (Design flow/LTAR)
Trench Width (ft): 3
On-center distance between trenches (ft): 9
Trench Bottom Length (ft): 666.6667

Minimum Field Area Required (ft²): 6000 (Trench Bottom Length*Trench on-center distance)
Minimum Field Area Required (Innovative) (ft²): 4500 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 15000 (Minimum field area*2.5)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 11250 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 18000 (Minimum field area*3)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 13500 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.

Client Name: *Liberty Land Group*
Number Bedrooms: 5
Design Flow (gal/day): 600 (120 gal/day/bedroom, minimum 240 gal/day/dwelling)
LTAR (gal/day/ft²): 0.35
Trench Bottom Area (ft²): 1714.286 (Design flow/LTAR)
Trench Width (ft): 3
On-center distance between trenches (ft): 9
Trench Bottom Length (ft): 571.4286

Minimum Field Area Required (ft²): 5142.857 (Trench Bottom Length*Trench on-center distance)
Minimum Field Area Required (Innovative) (ft²): 3857.143 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 12857.14 (Minimum field area*2.5)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 9642.857 (25% reduction from above)
Total Field Area Required (ft²)⁽¹⁾: 15428.57 (Minimum field area*3)
Total Field Area Required (Innovative) (ft²)⁽¹⁾: 11571.43 (25% reduction from above)

(1) Provides for reserve area and soil irregularity, 2.5 to 3 is multiplier.