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**ENVIRONMENTAL**  
ASSOCIATES, P.A.

December 1, 2023

Project #4939

Rutherglen Holdings LLC  
Attn. Patrick Parekh  
213 Slate Blue Place  
Cary, NC 27519

RE: Detailed Soil/Site Evaluation on Property Located at 739 Hatley Road, Chatham County, PIN: 17357 (Approx. 88 of 130 acres)

Mr. Parekh,

This report details the findings of a detailed site and soil evaluation performed on the tract referenced above. The evaluation was conducted at the client's written request to determine the site's suitability for the installation of sub-surface wastewater disposal systems to serve domestic strength wastewater. This evaluation was for residential wastewater applications. Any other type of use may require additional testing and/or stricter setbacks. This report does not address systems receiving more than 3,000 gallons per day of flow.

The evaluation was conducted by Chris Murray, North Carolina Licensed Soil Scientist in November, 2023. The evaluation was conducted during moist soil conditions with the use of a hand-auger to determine soil suitability for on-site sewage disposal systems in accordance with 15A NCAC 18A .1900 "Laws and Rules for Sewage Treatment and Disposal Systems". Characteristics that affect the suitability of sub-surface systems include soil depth to expansive clay, seasonal high-water table, rock, and unusable saprolite. Topography and slope also affect the suitability of an area for septic systems. The evaluation of these components was conducted on the site.

Findings are conveyed by showing areas on the enclosed map that are usable for different system types. Areas that are suitable for low profile chamber, at-grade conventional and conventional depth wastewater systems (permitted privately or through the local health department) are hatched in orange. These areas have usable topography and a minimum slope-corrected soil depth of at least 20 inches. Areas that are suitable for subsurface drip wastewater systems (permitted privately or through the local health department) are hatched in purple. These areas have usable topography and a minimum slope-corrected soil depth of at least 13 inches. Areas that are suitable for surface drip wastewater systems (permitted through the NC Division of Environmental Quality, NC DEQ) are hatched in cyan. These areas have usable topography and a minimum slope-corrected soil depth of at least 12 inches or less. All hatched areas are generated using gps

technology in the field and are not survey located. The areas are labeled with approximate square footage.

Once the soils map is complete the size of area required for a septic system can be estimated.

Single family residences utilizing subsurface septic systems are sized according to the number of bedrooms in the proposed dwelling. Systems are not sized based on the number of bathrooms in the dwelling. Each bedroom in the proposed dwelling is calculated to generate a daily flow of 120 gallons. A four-bedroom dwelling would have a daily calculated flow of 480 gallons. The daily flow is divided by the loading rate based on the soil texture. This site has a clay texture so would have an estimated long-term acceptance rate (LTAR) of 0.25 gallons per square foot of trench bottom per day (or 0.15 GPD/Ft<sup>2</sup> for drip systems). The minimum required area or square footage on the ground for the primary septic system and the repair area with this LTAR for the conventional hatched areas would be approximately 10,000 – 12,000 square feet. These areas must meet all setbacks from property lines, wells, water lines and structures as well as any other easement imposed by any other entity. All lots will require an application and evaluation by the county health department on an individual basis.

Single family residences utilizing surface drip septic systems are sized based off of in-situ saturated hydraulic conductivity (Ksat) testing and water budget calculations submitted to NC DEQ. The area required for these types of systems is variable, but typically ranges from 10,000 – 25,000 square feet.

This report discusses the general location of potentially usable soils for on-site wastewater disposal and the soil and site limitations on the property that exists at the time of the evaluation. Piedmont Environmental Associates, PA (“Piedmont”) provides professional consulting specializing in the practice of soil science and wastewater management. Piedmont is therefore hired for its professional opinion regarding these matters. Laws and rules governing wastewater treatment and disposal are forever evolving and subject to the interpretation and opinion of individuals which are employed by local and state agencies that govern these laws and rules. Due to this fact, Piedmont cannot guarantee in any way that any area located in the field, shown on a sketch, or discussed with the client will be permitted by any of these agencies. It is for this reason that **Piedmont strongly recommends to anyone considering a financial commitment on any piece of property be completely aware of all permit requirements on that property before purchase and obtain those permits prior to a final financial commitment.**

We are pleased to be of service in this matter. If you have any further questions, please feel free to call (336)662-5487. This report documentation may not be reproduced or shared in any way without the express written permission of Piedmont Environmental Associates, PA.

Sincerely,



G. Christopher Murray  
NC Licensed Soil Scientist # 1284  
Piedmont Environmental Associates, P.A.



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Soil and Site Map - 739 Hatley Rd.

216 S. Swing Rd. Suite 1  
Greensboro, NC 27409  
piedmontsoil.com

Job# 4939  
Date: Nov. 30, 2023  
Client: Rutherglen Holdings LLC.  
County: Chatham

MAP NOT VALID WITHOUT REPORT



1 inch = 400 feet

**Legend**

- Subject Parcel
- Low Profile Chamber/Conventional Soils
- Sub-Surface Drip Soils
- Surface Drip Soils (NC DEQ)
- Existing Well (50' Buffer Shown)

