



PIEDMONT
ENVIRONMENTAL
A S S O C I A T E S , P . A .

October 10, 2024

Project # 5792

Applied Resource Management
Attn: Mr. Walter Giese
257 Transfer Station Rd.
Hampstead, NC 28443

RE: Soil Report for Detailed Evaluation, PINS 06129109, 06126017, 06126001, total of 185.2 acres on Weddington Road Union County.

Dear Mr. Giese,

Request: You requested that we map these tracts in detail, except for 15 acres on the south side of Weddington Rd. The map is intended to be used for guidance during the planning stages of a proposed residential development. The soil areas were delineated by septic system types, including conventional systems, low-profile chamber systems, and drip irrigation systems.

Evaluation: The evaluation took place on October 2nd and 3rd, 2024. Six hundred ninety-seven hand-auger borings, landscape, vegetative patterns, and surface colors were evaluated. The evaluation was conducted under the direction of LSS James Beeson. Delineations were mapped, and soil characterizations were stored using global positioning systems in concert with base maps provided by your office.

Findings: A PDF digital map, digital shape files, and an AutoCAD file have been emailed to you, showing the areas usable for the system types mentioned above. Typically, we recommend that you attempt to minimize the use of the drip irrigation areas for primary systems during the planning stages. These systems are normally three times the cost of a conventional system and require an operator. The area required in the drip irrigation limits for a primary or repair system would be approximately 1,000 square feet per bedroom, which meets all setbacks listed in Attachment I. Please remember that the dwellings require an initial system and a repair area. Often the drip irrigation areas are used to fulfill the repair area requirement since the repair area is not initially installed.

The Low-Profile Chamber type areas will require approximately 1,250 square feet per bedroom, which meets the setbacks listed in Attachment I for either the initial or repair systems. Conventional areas can utilize chamber technology or panel block technology to reduce the footprint of the required area. We still recommend that you allocate 1,000 square feet per bedroom for each primary or repair system.

These area projections are a crude way to allocate areas needed for systems. A more accurate way is to flag the proposed trenches in the field. The length of the trench is governed by the number of bedrooms, the system type, and the soil's long-term acceptance rate. We can mix and match system types and do further work once the lot lines are designated.

Off-site systems require the same amount of area, but if systems from different houses are combined, the separation setbacks are eliminated. This technique is commonly referred to as “ganged” systems. I would recommend limiting ganged systems to less than 3,000 gallons per day, which is a threshold that triggers the requirement for additional hydrology assessments.

Recommendations: The maps produced are on state plane coordinates and can be used to calculate areas within lots or designated drain fields. Remember that further work can be done if homes with more bedrooms are desired, or site planes impact the proposed system areas. System areas cannot be graded under any circumstance! Areas designated for septic systems and any associated setbacks should be fenced during all construction phases of this project.

Disclaimer: This report discusses the general location of potentially usable soils for on-site wastewater disposal and the soil and site limitations on the property at the time of the evaluation. Piedmont Environmental Associates, PA (“Piedmont”) provides professional consulting specializing in 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 employed by local and state agencies that govern these laws and rules. Due to this fact, Piedmont cannot guarantee 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 that anyone considering a financial commitment on any piece of property be completely aware of all permit requirements on that property before purchasing and obtaining those permits before a final financial commitment. We are pleased to be of service in this matter. If you have further questions, please call (336)215-8820. This map and report may not be reproduced or shared in any way without the express written permission of Piedmont Environmental Associates, PA. This map and report may not be reproduced or shared in any way without the express written permission of Piedmont Environmental Associates, PA.

Sincerely,



James L. Beeson
NC Licensed Soil Scientist # 1114
Piedmont Environmental Associates, P.A.

Attachment I

TABLE IX: Minimum setbacks from all wastewater systems to site features **Setback (Feet)**

Site Features	
Any transient or non-transient non-community water supply well, community well, shared water supply well, well that complies with 15A NCAC 18A .1700, or water supply spring	100
A private drinking water well or upslope spring serving a single-family dwelling unit	50
Any other well or source not listed in this table, excluding monitoring wells	50
Surface waters classified WS-I, from ordinary high-water mark	100
Waters classified SA, from mean high-water mark	100
Any Class I or Class II reservoir, from normal water level	100
Lake or pond, from normal water level	50
Any other stream, non-water supply spring, or other surface waters, from the ordinary high-water mark	50
Tidal influenced waters, such as marshes and coastal waters, from mean high-water mark	50
Permanent stormwater retention basin, from normal water level	50
Any water line, unless the requirements of Paragraph (i) have been met	10
Closed loop geothermal wells	15
Building foundation and deck supports	5
Patio, porch, stoop, lighting fixtures, or signage, including supporting structures such as posts or pilings	1
Any basement, cellar, or in-ground swimming pool	15
Buried storage tank or basin, except stormwater	10
Above ground swimming pool and appurtenances that require a building permit	5
Top of slope of embankment or cuts of two feet or more vertical height with a slope greater than 50 percent	15
Top of slope of embankment or cuts of two feet or more vertical height with a slope greater than 33 percent and less than or equal to 50 percent.	15
If the site has suitable soil depth that extends for a minimum horizontal distance of 15 feet from the edge of the dispersal field, no minimum setback is required.	
Top of slope of embankment or cuts of two feet or more vertical height with a slope less than 33 percent	0
Groundwater lowering system, as measured on the ground surface from the edge of the feature	25
Downslope interceptor drains and surface water diversions with a vertical cut of more than two feet, as measured on the ground surface from the edge of the feature	15
Upslope and side slope interceptor drain and surface water diversions with a vertical cut of more than two feet, as measured on the ground surface from the edge of the feature	10
A stormwater collection system as defined in 15A NCAC 02H .1002(48), excluding gutter drains that connect to a stormwater collection system, with a vertical cut of more than two feet as measured from the center of the collection system	10
Bio-retention area, injection well, infiltration system, or dry pond	25
Any other dispersal field, except designated dispersal field repair area for project site	20
Any property line	10
Burial plot or graveyard boundary	10
Above ground storage tank from dripline or foundation pad, whichever is more limiting	5
Utility transmission and distribution line poles and towers, including guy wires, unless a greater setback is required by the utility company	5
Utility transformer, ground-surface mounted	5
Underground utilities	5

Note: Systems over 3000 GPD or an individual nitrification fields with a capacity of 1500 GPD or more have more restrictive setback requirements, see .0601 for specifics.



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 ASSOCIATES, P.A.

Detailed Soil Map Weddington Rd

216 S. Swing Rd. Suite 1
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 piedmontsoil.com

Job# 5792
 Date: October 10 2024
 Client: Applied Resource Management
 County: Union

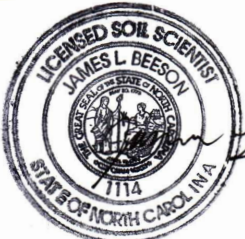
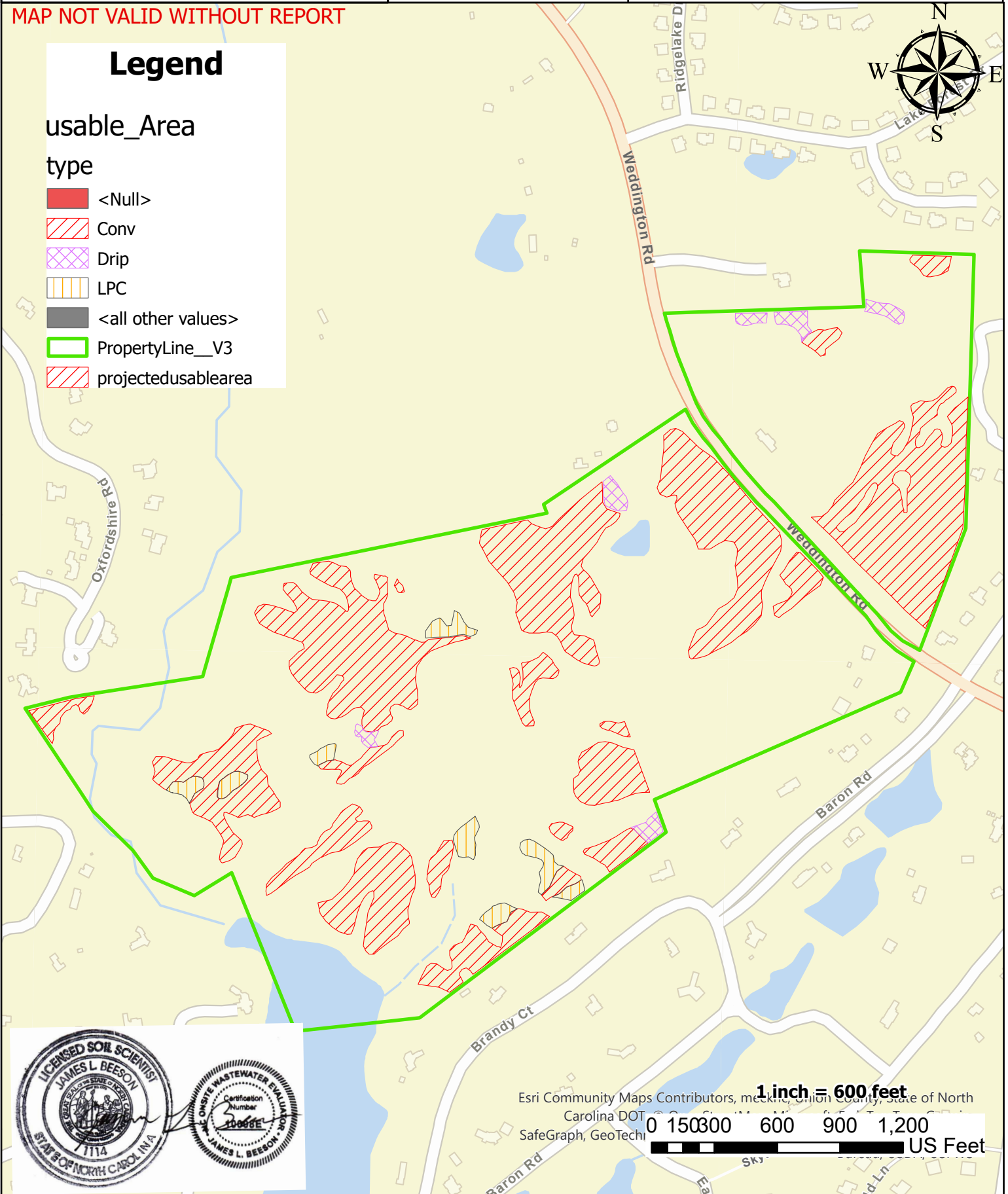
MAP NOT VALID WITHOUT REPORT

Legend

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-  Conv
-  Drip
-  LPC
-  <all other values>
-  PropertyLine_V3
-  projectedusablearea



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1 inch = 600 feet

