MID - ATLANTIC SOIL SCIENTISTS

August 6, 2009

Mr. Skipper Crow

Subject: Pre-Planning Soil Evaluation
John Wood Tract
Pleasant Grove Church Rd
Nash County, NC

Dear Mr. Crow,

You requested that I perform a preliminary soil evaluation and to determine if suitable soil exists in three general areas of the tract for a septic system for 4 bedroom homes. You specifically asked me to examine the front area and back area of the tract. This report provides you with the results of my soil evaluation.

The soils were evaluated in accordance with the State rules for onsite wastewater systems (15A NCAC 18A 1900 Laws and Rules for Sewage Treatment and Disposal Systems). Hand auger borings were advanced to evaluate soil properties such as texture, structure, and consistence, depth to seasonal water table or saprolite or rock.

The soils I found in the requested areas are considered to be suitable for shallow conventional septic systems. They have clayey textured subsoils that are plastic and sticky, blocky structure, and are at least 24 inches deep to wetness or saprolite. They have yellowish red matrix colors in some borings and brownish yellow colors in some borings. These soils will have an estimated loading rate of 0.25-0.3 gallons per square foot of trench bottom area per day.

The design flow for a 4 bedroom house is 480 gallons per day. Based on this flow and loading rate of 0.25, the septic area will require approximately 5000 square feet including the repair area.

The soil map (USDA Soil Survey) is attached. This map shows several soils on the tract that includes Georgeville (GeB and GeC); Norfolk, Georgeville, Faceville Complex (NrB); and Rains (Ra).

The NrB soil unit is a complex of soils that would have only moderate limitations for septic systems. But I would expect little areas of Norfolk to actually be in this soil complex. I found no Norfolk soil in any borings performed at the site. Faceville would also be suitable for septic systems.

The Georgeville soils are suitable for septic systems. I found these soils at the site in small areas, but most of the Georgeville soil would probably correspond to Nason-like

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soils due to their more shallow depth than Georgeville. Nason would require shallow trench depths.

There may be some Rains-like soils on the site in broad flats or near streams, but I did not observe them. I did find a small area near the road frontage that had evidence on some surface washing (movement of leaf litter) in a broad head drain position. But these soils are not Rains (a coastal plain soil with seasonal water table within 18 inches of the surface). Much of this area can be used for at-grade conventional trenches with upslope grassed surface diversions to divert surface water away from the septic system. Only the actual bottom of the drain (an area of about 50 feet wide) would be unsuitable.

Of course, areas that have been gullied or eroded from past activities may exist on the property. These areas would not be suitable for septic systems. In addition, a few areas may be present in head drains or near streams that can not be permitted for septic systems.

This tract has a moderate to high potential from a soils standpoint for subdivision development for lots of at least 40,000 square feet. Smaller lots could possibly be permitted if public water is available and individual wells are not required for individual lots.

I appreciate the opportunity to work with you on this project. Please contact me if you have questions or need additional information.

Cordially,

Fred D. Smith
Licensed Soil Scientist