



NC Board for Licensing of Soil Scientists
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March 10, 2016

Ms. Nancy Deal
Branch Head, Onsite Water Protection
NC DHHS, Division of Public Health
Environmental Health Section
On-Site Water Protection Branch
1642 Mail Service Center
Raleigh, NC 27699-1642

RE: Proposed revisions to the .1900 Septic system rules

Dear Ms. Deal:

I am writing in regards to the proposed revisions to the NC Septic System rules and the concerns you have expressed regarding the role of Licensed Soil Scientists and Professional Geologists in the septic system permitting process.

Based on careful consideration of NCGS chapter 89F, the North Carolina Soil Scientist Licensing Act ("Licensing Act"), which established the practice of soil science as a profession in NC, and of the regular practice of soil science and geology as reflected in prepared reports, it is the finding of the North Carolina Board for Licensing of Soil Scientists (NCBLSS) that any investigation involving detailed description and delineation of soil horizons and their properties, especially pedogenic characteristics such as structure, presence or absence of argillic, plinthic, sodic etc characteristics, the presence of limiting horizons such as fragipans, and the determination of seasonal high water table, is the sole province of soil scientists. No other profession has expertise in identifying these detailed features, which are crucial to the function and design of septic systems based on NC rules.

Furthermore, any determination relating to pedogenic characteristics such as soil horizonation, is the sole province of soil scientists. For example, determination of soil depth and measurement of saturated hydraulic conductivity ("Ksats") in specific pedogenic horizons, such as a Bt or BC horizon, would fall solely within the practice of soil science.

In 89F-3, Definitions, the Licensing Act defines soil as "consisting of soil material, saprolite, weathered materials, and soil rock interface" and defines soil science as including "soil characterization, classification, and mapping, and the physical, chemical, hydrologic, mineralogical, biological, and microbiological analysis of soil per se, and to its assessment,

analysis, modeling, testing, evaluation, and use for the benefit of mankind when specifically required to complete the investigation and evaluation of interactions between water, soil, nutrients, plants, and other living organisms described in subdivision (5) of this section.” Based on these definitions, the practice of soil science extends through the unconsolidated parent material to bedrock. It includes both the vadose zone and unconfined aquifer. Geologists also practice in this zone, which is referred to in soil science as “parent material” and in geology as “regolith”. Both soil scientists and geologists study and model the movement of water in this zone and would be qualified to provide determinations regarding lateral flow and groundwater mounding within this material.

Therefore, it is the finding of the NCBLSS that the following sections of the proposed rules fall within the practice of soil science as defined in NCGS 89F:

1938 (d) and (e)

1939 (a) through (e) (All of these require assessment of pedogenic characteristics and detailed assessment of soil horizons and parent material and should be performed by LSS only except when performed by the LHD.)

1940

1941 (Detailed description of soil morphology--LSS only except when done by LHD.)

1941 (a)(3)(C) (Where collection of sample requires determination of soil horizons, this should be done by LSS only.)

1942 (b)(1) (Determination of soil wetness condition (SWC) based on soil colors--LSS only except when done by the LHD.)

1942 (c)

1942 (d) through (g)

1943 (LSS only except when done by LHD)

1944 (Restrictive horizons as applied in this paragraph are pedogenic. LSS only except when done by LDH)

1945 (b) (Available space: since based on soil evaluation, LSS only except when done by LDH).

1947 (Based on criteria in rules 1940 through 1945—see determinations above)

1948 (a), (c), and (d)

1971, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984 (These are specifications for individual system types, which include some element that falls within practice of soil science, typically echoing an element of site evaluation listed in 1940 through 1945)

It is the finding of the NCBLSS that preparation of the following reports and special site evaluations as required by rule fall within the practice of Soil Science:

1938 (e)

1942 (h)

1948 (d)

1970 (all special site evaluations required pursuant to 1938 (e))

1971 (Preparation of plans and specifications for drainage systems, except those aspects of design which require engineering, such as pump design)

1973 (7) (Preparation of plans for soil stabilization for shallow systems on slope >30%.)

1975 (a)(2)

1975 (c)(1), (c)(2),
1975 (d)(1), (d)(3) and (d)(11)
1977 (b)
1985
1985 (c) (Soil and site evaluation report, LSS only)

Please note that the reports required by .1986 (Engineered Option Permit) are not included in this list solely because they are not included in the proposed revision available to the board at this time. In addition, if subsequent revisions to the 1900 rules result in a significant rearrangement, please let this board know so that we can provide a revised finding on the rules and required reports that fall within the practice of soil science.

It is the recommendation of the NCBLSS that the format used in the Non-discharge rules, “In a letter dated xx/xx/xxxx the North Carolina Board for Licensing Soil Scientists indicated that the preparation of soil reports as described in this section falls within the practice of soil science”.

If you have any questions regarding this letter, please do not hesitate to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Constance M. Adams".

Constance M. Adams, Chairman
NCBLSS

Cc: Trish Angoli, DHHS