

AGENDA
RULES REVIEW COMMISSION
Thursday, October 18, 2018 10:00 A.M.
Hope Church Rd., Raleigh, NC 27609

III. Follow-up matters

- G. Commission for Public Health – 15A NCAC 18A .1934, 1935, .1937, .1938, .1939, .1940, .1941, .1942, .1943, .1944, .1945, .1946, .1947, .1948, .1949, .1950, .1951, .1952, .1953, .1954, .1955, .1956, .1957, .1958, .1959, .1960, .1961, .1962, .1964, .1965, .1966, .1967, .1968, .1969, .1970, .1971; 18E .0101, .0102, .0103, .0104, .0105, .0201, .0202, .0203, .0204, .0205, .0206, .0207, .0301, .0302, .0303, .0304, .0305, .0401, .0402, .0403, .0501, .0502, .0503, .0504, .0505, .0506, .0507, .0509, .0510, .0601, .0602, .0701, .0702, .0703, .0801, .0802, .0803, .0804, .0805, .0901, .0902, .0903, .0904, .0905, .0906, .0907, .0908, .0909, .0910, .0911, .1001, .1002, .1101, .1102, .1103, .1104, .1105, .1106, .1201, .1202, .1203, .1204, .1205, .1206, .1302, .1303, .1304, .1305, .1306, .1307, .1401, .1402, .1403, .1404, .1405, .1406, .1501, .1502, .1503, .1504, .1505, .1601, .1602, .1603, .1701, .1702, .1703, .1704, .1705, .1706, .1707, .1709, .1710, .1711, .1712, .1713 (May)

1 15A NCAC 18A .1934 - .1935 are repealed with changes as published in 32:21 NCR 2171-2272 as follows:

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3 **15A NCAC 18A .1934 SCOPE**

4 **15A NCAC 18A .1935 DEFINITIONS**

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6 *History Note: Authority G.S. 130A-335(e) and (f);*

7 *Eff. July 1, 1982;*

8 *Amended Eff. July 1, 1995; December 1, 1990; January 1, 1990; August 1, 1988; April 1, 1985;*

9 *Temporary Amendment Eff. June 24, 2003;*

10 *Amended Eff. June 1, 2006; May 1, 2004;*

11 *Repealed Eff. December 1, 2018*

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1 15A NCAC 18A .1937 - .1962 are repealed with changes as published in 32:21 NCR 2171-2272 as follows:

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3 **15A NCAC 18A .1937 PERMITS**

4 **15A NCAC 18A .1938 RESPONSIBILITIES**

5 **15A NCAC 18A .1939 SITE EVALUATION**

6 **15A NCAC 18A .1940 TOPOGRAPHY AND LANDSCAPE POSITION**

7 **15A NCAC 18A .1941 SOIL CHARACTERISTICS (MORPHOLOGY)**

8 **15A NCAC 18A .1942 SOIL WETNESS CONDITIONS**

9 **15A NCAC 18A .1943 SOIL DEPTH**

10 **15A NCAC 18A .1944 RESTRICTIVE HORIZONS**

11 **15A NCAC 18A .1945 AVAILABLE SPACE**

12 **15A NCAC 18A .1946 OTHER APPLICABLE FACTORS**

13 **15A NCAC 18A .1947 DETERMINATION OF OVERALL SITE SUITABILITY**

14 **15A NCAC 18A .1948 SITE CLASSIFICATION**

15 **15A NCAC 18A .1949 SEWAGE FLOW RATES FOR DESIGN UNITS**

16 **15A NCAC 18A .1950 LOCATION OF SANITARY SEWAGE SYSTEMS**

17 **15A NCAC 18A .1951 APPLICABILITY OF RULES**

18 **15A NCAC 18A .1952 SEPTIC TANK, EFFLUENT FILTER, DOSING TANK AND LIFT STATION
19 DESIGN**

20 **15A NCAC 18A .1953 PREFABRICATED SEPTIC TANKS AND PUMP TANKS**

21 **15A NCAC 18A .1954 MINIMUM STANDARDS FOR PRECAST REINFORCED CONCRETE TANKS**

22 **15A NCAC 18A .1955 DESIGN INSTALLATION CRITERIA FOR CONVENTIONAL SEWAGE
23 SYSTEMS**

24 **15A NCAC 18A .1957 CRITERIA FOR DESIGN OF ALTERNATIVE SEWAGE SYSTEMS**

25 **15A NCAC 18A .1958 NON-GROUND ABSORPTION SEWAGE TREATMENT SYSTEMS**

26 **15A NCAC 18A .1959 PRIVY CONSTRUCTION**

27 **15A NCAC 18A .1960 MAINTENANCE OF PRIVIES**

28 **15A NCAC 18A .1961 MAINTENANCE OF SEWAGE SYSTEMS**

29 **15A NCAC 18A .1962 APPLICABILITY**

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31 *History Note: Authority 89C; 89E; 89F; 90A; 130A-335(e), (f), (f1); 130A-342;*

32 *Eff. July 1, 1982;*

33 *Amended Eff. July 1, 1995; April 1, 1993; February 1, 1992; August 1, 1991;*

34 *Filed as a Temporary Amendment Eff. July 3, 1991, for a period of 180 days to expire on December
35 30, 1991;*

36 *Amended Eff. May 1, 1991; December 1, 1990; October 1, 1990;*

1 *Filed as a Temporary Amendment Eff. June 30, 1990, for a period of 180 days to expire on*
2 *December 27, 1990;*

3 *Amended Eff. January 1, 1990; August 1, 1988; February 1, 1987; April 1, 1985; January 1, 1984;*
4 *October 1, 1983; October 1, 1982; July 1, 1983; January 1, 1983;*

5 *Temporary Amendment Eff. January 20, 1997;*

6 *Amended Eff. August 1, 1998;*

7 *Temporary Amendment Eff. January 1, 1999;*

8 *Amended Eff. August 1, 2000; November 1, 1999;*

9 *Temporary Amendment Eff. June 24, 2003; April 17, 2002;*

10 *Amended Eff. August 1, 2007; June 1, 2006; May 1, 2004.*

11 *Repealed Eff. December 1, 2018*

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1 15A NCAC 18A .1964 - .1968 are repealed with changes as published in 32:21 NCR 2171-2272 as follows:

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3 **15A NCAC 18A .1964 INTERPRETATION AND TECHNICAL ASSISTANCE**

4 **15A NCAC 18A .1965 APPEALS PROCEDURE**

5 **15A NCAC 18A .1966 SEVERABILITY**

6 **15A NCAC 18A .1967 INJUNCTIONS**

7 **15A NCAC 18A .1968 PENALTIES**

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9 *History Note: Authority G.S. 130A-335(e);*

10 *Eff. July 1, 1982;*

11 *Amended Eff. January 1, 1990; February 1, 1987; January 1, 1985.*

12 *Repealed Eff. December 1, 2018*

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1 15A NCAC 18A .1969 is repealed with changes as published in 32:21 NCR 2171-2272 as follows:

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3 **15A NCAC 18A .1969 APPROVAL AND PERMITTING OF ON-SITE SUBSURFACE WASTEWATER**
4 **SYSTEMS, TECHNOLOGIES, COMPONENTS, OR DEVICES**

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6 *History Note: Authority G.S. 130A-335(e),(f); 130A-343;*

7 *Eff. April 1, 1993;*

8 *Temporary Amendment Eff. June 24, 2003; February 1, 2003;*

9 *Amended Eff. June 1, 2006; February 1, 2005; May 1, 2004.*

10 *Repealed Eff. December 1, 2018*

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1 15A NCAC 18A .1970 is repealed with changes as published in 32:21 NCR 2171-2272 as follows:

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3 **15A NCAC 18A .1970 ADVANCED WASTEWATER PRETREATMENT SYSTEM**

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5 *History Note: Authority G.S. 130A-334; 130A-335; 130A-336; 130A-337; 130A-340; 130A-342; 130A-343;*

6 *Eff. June 1, 2006;*

7 *Amended Eff. October 1, 2011;*

8 *Repealed Eff. December 1, 2018*

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1 15A NCAC 18A .1971 is repealed with changes as published in 32:21 NCR 2171-2272 as follows:

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3 **15A NCAC 18A .1971 ENGINEERED OPTION PERMIT**

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5 *History Note: Authority G.S. 130A-335; 130A-336.1;*

6 *Temporary Adoption Eff. July 1, 2016;*

7 *Eff. April 1, 2017;*

8 *Repealed Eff. December 1, 2018*

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1 15A NCAC 18E .0101 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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3 **15A NCAC 18E .0101 SCOPE**

4 The rules contained in this Subchapter shall govern wastewater treatment and dispersal from wastewater systems, as
5 defined in G.S. 130A-334(15), serving single or multiple-family residences, places of business, or places of public
6 assembly. The wastewater system shall be designed to ~~not discharge effluent~~ prevent the discharge of effluent to the
7 land surface, surface waters, or ~~directly to into~~ groundwater groundwater, except as allowed when used in
8 conjunction with a an RCW system. system as set forth in Rule .1002 of this Subchapter.

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10 *History Note: Authority G.S. 130A-333; 130A-334(15); 130A-335(a), (b), and (e).*

11 *Eff. December 1, 2018*

12

1 15A NCAC 18E .0102 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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3 **15A NCAC 18E .0102 APPLICABILITY**

4 (a) The provisions Rules of this Subchapter shall not apply to wastewater systems in use prior to July 1, 1977,
5 unless the DDF or wastewater strength changes or DDF increases.

6 (b) Prior to any increase [change] [of flow] in DDF or wastewater strength for an existing facility. If an existing
7 facility's wastewater strength changes or DDF increases, the owner shall submit an application in accordance with
8 Rule .0202 of this Subchapter. ~~The owner shall submit this application to the LHD prior to any change of flow or~~
9 ~~wastewater strength.~~

10 (c) Notwithstanding Paragraph (a) of this Rule, all wastewater systems shall comply with Section .1300 of this
11 Subchapter. Subchapter, except for the wastewater systems that meet the requirements of Paragraph (a) of this Rule.

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13 *History Note: Authority G.S. 130A-335(e).*

14 *Eff. December 1, 2018*

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1 15A NCAC 18E .0103 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .0103 INCORPORATION BY REFERENCE

For this Subchapter, the following rules, standards, and other materials are hereby incorporated by reference, including any subsequent amendments and editions. Table I lists the agency, document title, contact information, and terms for access to referenced documents.

Table I: Rules, standards, and other materials incorporated by reference

United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS)	
Soil Survey Laboratory Information Manual, Soil Survey Investigations Report No. 45	Available at no charge at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/ref/
Kellogg Soil Survey Laboratory Methods Manual, Soil Survey Investigation Report No. 42	Available at no charge at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/ref/
Field Book for Describing and Sampling Soils	Available at no charge at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/ref/copy or U. S. Government Publishing Office, P. O. Box 979050, St. Louis, MO, 63197-9000
Guide to Soil Texture by Feel, Journal of Agronomic Education	Available at no charge at: http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/edu/?cid=nrcs142p2_054311
National Engineering Handbook, Part 624 (Drainage), Chapter 10 (Water Table Control); Part 630 (Hydrology), Chapter 18; Part 650 (Engineering Field Handbook), Chapter 14 (Water Management, Drainage)	Available at no charge at: http://www.nrcs.usda.gov/wps/portal/nrcs/detail/mi/technical/engineering
National Electrical Manufacturers Association 1300 North 17 th Street, Suite 900, Arlington, VA 22209 www.nema.org	
Standard 250 – Enclosures for Electrical Equipment	One hundred twenty four dollars (\$124.00)
U. S. Environmental Protection Agency (EPA) U. S. EPA/NSCEP P. O. Box 42419, Cincinnati, OH 45242-0419	
Method 9080 – Cation Exchange Capacity	Available at no charge at:

of Soils	https://www.epa.gov/hw-sw846/sw-846-test-method-9080-cation-exchange-capacity-soils-ammonium-acetate
ASTM International 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19438-2959 http://www.astm.org	
C564 – Standard Specifications for Rubber Gaskets for Cast Iron Soil Pipe and Fittings	Forty one dollars (\$41.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
C890 – Standard Practice for Minimum Structural Design Loading for Monolithic or Sectional Precast Concrete Water and Wastewater Structures	Forty five dollars (\$45.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
C923 – Standard Specifications for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals	Forty one dollars (\$41.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
C990 – Standard Specifications for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants	Forty dollars (\$40.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
C1644 – Standard Specification for Resilient Connectors Between Reinforced Concrete On-Site Wastewater Tanks and Pipes	Forty five dollars (\$45.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
D448 – Standard Classification for Sizes of Aggregate for Road and Bridge Construction	Thirty nine dollars (\$39.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
D1784 – Standard Specification for Rigid Poly (Vinyl Chloride)(PVC) <u>Chloride</u> (PVC) Compounds and Chlorinated Poly (Vinyl Chloride)(CPVC) <u>Chloride</u> (CPVC) Compounds	Thirty nine (\$39.00) dollars each plus six dollars and seventy five cents (\$6.75) shipping and handling
D1785 – Standard Specifications for Poly (Vinyl Chloride)(PVC) <u>Chloride</u>)(PVC) Plastic Pipe, Schedules 40, 80, and 120	Fifty dollars (\$50.00) plus six dollars and seventy five cents (\$6.75) shipping and handling
D2241 – Standard Specification for Poly (Vinyl— Chloride)(PVC) <u>Chloride</u>)(PVC) Pressure-Rated Pipe (SDR Series)	Forty four dollars (\$44.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling

D2466 – Standard Specification for Poly (Vinyl Chloride)(PVC) <u>Chloride</u> (PVC) Plastic Pipe Fittings, Schedule 40	Forty four (\$44.00) dollars each plus six dollars and seventy five cents (\$6.75) shipping and handling
D2564 – Standard Specification for Solvent Cements for Poly (Vinyl Chloride)(PVC) <u>Chloride</u> (PVC) Plastic Piping Systems	Forty four dollars (\$44.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
D2729 – Standard Specification for Poly (Vinyl Chloride)(PVC) <u>Chloride</u> (PVC) Sewer Pipe and Fittings	Forty five dollars (\$45.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
D2774 – Standard Practice for Underground Installation of Thermoplastic Pressure Piping	Forty four dollars (\$44.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
D3034 – Standard Specification for Type PSM Poly (Vinyl Chloride)(PVC) <u>Chloride</u> (PVC) Sewer Pipe and Fittings	Fifty dollars (\$50.00) each plus six dollars and seventyfive cents (\$6.75) shipping and handling
D6913 – Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis	Sixty five dollars (\$65.00) each plus six <u>thirteen</u> dollars and seventy <u>thirty</u> five cents (\$6.75) (<u>\$13.35</u>) shipping and handling
D7928 – Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis	Sixty five dollars (\$65.00) each plus six <u>thirteen</u> dollars and seventy <u>thirty</u> five cents (\$6.75) (<u>\$13.35</u>) shipping and handling
F667 – Standard Specification for 3 through 24 in. Corrugated Polyethylene Pipe and Fittings	Forty five dollars (\$45.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
F810 – Standard Specification for <u>Smoothwall Polyethylene (PE) Pipe for Use in Drainage and Waste Disposal Absorption Fields</u>	<u>Forty one dollars (\$41.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling</u>
North Carolina Administrative Code	
15A NCAC 01O – Environmental Health	Available at no charge at: http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%20001%20-%20departmental%20rules/subchapter%20o/subchapter%20o%20rules.html
15A NCAC 02C – Well Construction	Available at no charge at:

Standards	http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20c/subchapter%20c%20rules.pdf
15A NCAC 02H – Procedures for Permits: Approvals	Available at no charge at: http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20h/15a%20ncac%2002h%20.0101.pdf
15A NCAC 02L – Groundwater Classification and Standards	Available at no charge at: http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/subchapter%20l%20rules.pdf
15A NCAC 02T – Waste Not Discharged to Surface Waters	Available at no charge at: http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/subchapter%20t%20rules.pdf
15A NCAC 02U – Reclaimed Water	Available at no charge at: http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/subchapter%20u%20rules.pdf
15A NCAC 08G – Authority: Organization: Structure: Definitions	Available at no charge at: http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2008%20-%20water%20pollution%20control%20system%20operators%20certification%20commission/subchapter%20g/subchapter%20g%20rules.pdf
15A NCAC 13B – Solid Waste Management	Available at no charge at: http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2013%20-%20solid%20waste%20management/subchapter%20b/subchapter%20b%20rules.pdf
15A NCAC 18A – Water Supplies	Available at no charge at: http://reports.oah.state.nc.us/ncac/title%2015a%20-

	%20environmental%20quality/chapter%2018%20-%20environmental%20health/subchapter%20c/subchapter%20c%20rules.pdf
<p style="text-align: center;">NSF International PO Box 130140, Ann Arbor, MI 48105 http://www.nsf.org/</p>	
Standard 40 – Residential Onsite Wastewater Systems	One hundred five dollars (\$105.00) each plus shipping and handling
Standard 41 – Non-Liquid Saturated Treatment Systems	One hundred five dollars (\$105.00) each plus shipping and handling
Standard 46 – Evaluation of Components and Devised Used in Wastewater Treatment Systems	One hundred five dollars (\$105.00) each plus shipping and handling
Standard 245 – Wastewater Treatment Systems – Nitrogen Reduction	One hundred five dollars (\$105.00) each plus shipping and handling
Standard 350 – Onsite Residential and Commercial Water Reuse Treatment	One hundred five dollars (\$105.00) each plus shipping and handling
<p style="text-align: center;">International Association of Plumbing and Mechanical Officials (IAPMO) 4755 E Philadelphia St, Ontario, CA 91761 http://www.iapmo.org/Pages/IAPMOgroup.aspx</p>	
IAPMO/ANSI Z1000 – Prefabricated Septic Tanks	One hundred dollars (\$100.00) each
<p style="text-align: center;">Canadian Standards Association 178 Rexdale Blvd, Toronto, ON Canada M9W 1R3 http://www.csagroup.org/</p>	
B66 – Design, material, and manufacturing requirements for prefabricated septic tanks and sewage holding tanks	One hundred eighty dollars (\$180.00) each plus eighteen dollars (\$18.00) shipping and handling
<p style="text-align: center;">2012 North Carolina Plumbing Code</p>	
	Available at no charge at: https://codes.iccsafe.org/public/getpdf/2012_NC_Plumbing.pdf https://codes.iccsafe.org/public/collections/nc
<p style="text-align: center;">2015 North Carolina Building Code</p>	
	Available at no charge at: https://codes.iccsafe.org/public/getpdf/2015_NC_ExistingBldg.pdf https://codes.iccsafe.org/public/collections/nc
<p style="text-align: center;">North Carolina Food Code Manual</p>	

	Available at no charge at: http://ehs.ncpublichealth.com/faf/docs/foodprot/NC-FoodCodeManual-2009-FINAL.pdf
U.S. Government Publishing Office 732 North Capitol St, NW, Washington, DC 20401-0001 https://bookstore.gpo.gov/	
40 CFR 136	Sixty seven dollars (\$67.00) each
American Association of State and Highway Transportation Officials (AASHTO) 444 North Capital Street, NW, Suite 249, Washington, DC 20001 https://www.transportation.org/	
Standard Specifications for Highway Bridges (AASHTO H5 and H10)	Three hundred eighty dollars (\$380.00) each plus shipping and handling
Forestry Suppliers, Inc PO Box 8397 Jackson, MS 39284-8397 https://www.forestry-suppliers.com/	
Munsell® Soil Color Book	One hundred ninety five dollars (\$195.00) each plus shipping and handling
National Technical Information Service 5301 Shawnee Rd Alexandria, VA 22312 https://www.ntis.gov/	
DRAINMOD User's Guide	Available at no charge at: https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB96112438.xhtml

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2 *History Note: Authority G.S. 130A-335(e).*
3 *Eff. December 1, 2018*
4

1 15A NCAC 18E .0104 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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3 **15A NCAC 18E .0104 ABBREVIATIONS**

4 As used in this Subchapter, the following abbreviations refer to:

- 5 (1) ABS: Acrylonitrile-Butadiene-Styrene;
- 6 (2) ACEC: Apparent Cation Exchange Capacity;
- 7 (3) ANSI: American National Standards Institute;
- 8 (4) ASTM: American Society for Testing and Materials;
- 9 (5) ATO: Authorization to Operate;
- 10 (6) BOD₅: Five Day Biochemical Oxygen Demand;
- 11 (7) CA: Construction Authorization;
- 12 (8) CBOD: Carbonaceous Biochemical Oxygen Demand;
- 13 (9) CFR: Code of Federal Regulations;
- 14 (10) CSA: Canadian Standards Association;
- 15 (11) DDF: Design Daily Flow; ~~DEQ: Department of Environmental Quality;~~
- 16 (12) DEQ: Department of Environmental Quality;
- 17 (13) ~~DO: Dissolved Oxygen;~~ DIP: Ductile Iron Pipe;
- 18 (14) ~~DIP: Ductile Iron Pipe;~~ DO: Dissolved Oxygen;
- 19 (15) DOT: Department of Transportation;
- 20 (16) DSE: Domestic Strength Effluent;
- 21 (17) EOP: ~~Engineer~~ Engineered Option Permit;
- 22 (18) FOG: Fats, Oil, and Grease;
- 23 (19) gpd: Gallons per Day;
- 24 (20) HSE: High Strength Effluent;
- 25 (21) IAPMO: International Association of Plumbing and Mechanical Officials
- 26 ~~(21)~~(22) IP: Improvement Permit;
- 27 ~~(22)~~(23) IPWW: Industrial Process Wastewater;
- 28 ~~(23)~~(24) LC: Limiting Condition;
- 29 ~~(24)~~(25) LDP: Large Diameter Pipe;
- 30 ~~(25)~~(26) LG: Licensed Geologist;
- 31 ~~(26)~~(27) LHD: Local Health Department;
- 32 ~~(27)~~(28) LPP: Low Pressure Pipe;
- 33 ~~(28)~~(29) LSS: Licensed Soil Scientist;
- 34 ~~(29)~~(30) LTAR: Long Term Acceptance Rate;
- 35 ~~(30)~~(31) mg/L: Milligrams/Liter;
- 36 ~~(31)~~(32) NEMA: National Electrical Manufacturers Association;
- 37 ~~(32)~~(33) NH₃: Total Ammonia Nitrogen;

- 1 ~~(33)~~(34) NOI: Notice of Intent to Construct;
- 2 ~~(34)~~(35) NOV: Notice of Violation;
- 3 ~~(35)~~(36) NSF: NSF International;
- 4 ~~(36)~~(37) OP: Operation Permit;
- 5 ~~(37)~~(38) PE: Professional Engineer;
- 6 ~~(38)~~(39) PIA: Provisional, Innovative, and Accepted;
- 7 ~~(39)~~(40) PPBPS: Prefabricated Permeable Block Panel System;
- 8 ~~(40)~~(41) psi: Pounds per ~~square inch~~; Square Inch;
- 9 ~~(41)~~(42) PVC: ~~Poly-Vinyl~~ Polyvinyl Chloride;
- 10 ~~(42)~~(43) RCW: Reclaimed Water;
- 11 ~~(43)~~(44) RV: Recreational Vehicle;
- 12 ~~(44)~~(45) RWTS: Residential Wastewater Treatment Systems;
- 13 ~~(45)~~(46) SDR: Standard Dimension Ratio;
- 14 ~~(46)~~(47) SPI: Standard Precipitation Index;
- 15 ~~(48)~~ STEP: Septic Tank Effluent Pump;
- 16 ~~(47)~~(49) SWC: Soil Wetness Condition;
- 17 ~~(48)~~(50) TKN: Total Kjeldahl Nitrogen;
- 18 ~~(49)~~(51) TL: Trench Length;
- 19 ~~(50)~~(52) TN: Total Nitrogen;
- 20 ~~(51)~~(53) TSS: Total Suspended Solids;
- 21 ~~(52)~~(54) TW: Trench Width;
- 22 ~~(53)~~(55) USDA-NRCS: United States Department of Agriculture – Natural Resources Conservation
- 23 Service;
- 24 ~~(54)~~(56) VIP: Visual Inspection Protocol; and
- 25 ~~(55)~~(57) WS: Water Supply Class.

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27 *History Note: Authority G.S. 130A-335(e).*

28 *Eff. December 1, 2018*

29

1 15A NCAC 18E .0105 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0105 DEFINITIONS**

4 The following definitions shall apply throughout this Subchapter: In addition to the definitions set forth in G.S.
5 130A-334, the following shall apply to the Rules in this Subchapter:

- 6 (1) "Aggregate" means naturally occurring inorganic ~~material (crushed material of a specific size or~~
7 ~~grade. An example of aggregate is clean, washed gravel or crushed stone which is graded or sized~~
8 ~~in accordance with size numbers 4, 5, or 6 of ASTM D446, rock or gravel) or other State approved~~
9 ~~media of a specific size or grade.~~
- 10 (2) "Apparent Cation Exchange Capacity" means the sum of exchangeable bases plus total soil acidity
11 at a pH of 7.0. ACEC is expressed in milliequivalents per 100 grams of soil (meq/100g of soil) or
12 centimoles per kilogram of soil (cmols/kg of soil). The ~~apparent~~ soil ACEC is calculated by
13 determining the ACEC using the neutral normal ammonium acetate method, pH of 7.0 neutral
14 normal, and then dividing by the percent clay as determined by particle size distribution (pipette
15 method) and then multiplying by 100, as described in USDA-NRCS Soil Survey Laboratory
16 Information Manual, Soil Survey Investigations Report No. 45 and Kellogg Soil Survey
17 Laboratory Methods Manual, Soil Survey Investigation Report No. ~~42~~, 42, page 229, or EPA
18 Method 9080.
- 19 (3) "Approved" means that which the State or LHD has determined is in accordance with this
20 Subchapter and G.S. 130A, Article 11.
- 21 (4) "Artificial drainage" means any man-made structure or device designed to overcome a SWC or
22 intercept lateral flowing ground or surface water. Artificial drainage systems include ~~the~~
23 ~~following:~~ groundwater lowering ~~system, systems,~~ interceptor ~~drain, drains,~~ and surface water
24 ~~diversion, diversions.~~
- 25 (5) "Authorized ~~agent of the LHD" referred to as authorized agent, agent"~~ means a person who has
26 been authorized by the State in accordance with G.S. ~~130A, Article 4~~ 130A-4 and 15A NCAC
27 01O .0100 to permit wastewater systems.
- 28 (6) "Authorized designer" means a service provider authorized by the manufacturer who creates plans
29 for the installation, expansion, or repair of a proprietary wastewater system.
- 30 (7) "Bed" means an excavation with a width greater than three feet containing dispersal media and
31 one or more laterals.
- 32 (8) "Bedroom" means any room defined as a sleeping room in the North Carolina Building Code.
- 33 (9) "Building drain" means the lowest piping of a drainage system that receives the discharge from
34 waste pipes inside the design unit and extends to 10 ft beyond the walls of the building [~~ce~~ or
35 five feet for a building with a [foundation] foundation and conveys the ~~drainage sewage~~ to a
36 building sewer.

- 1 (10) "Building sewer" means the part of a drainage system that extends from the end of the building
2 drain and conveys the discharge to a wastewater system.
- 3 (11) "Certified Inspector" means a person authorized to inspect a wastewater system ~~at the time of sale~~
4 ~~of a facility~~ in accordance with G.S. 90A, Article 5, and applicable rules of the North Carolina On-
5 Site Wastewater Contractors and Inspectors Certification Board.
- 6 (12) "Collection sewer" means gravity flow pipelines, force mains, effluent supply lines, manholes, lift
7 stations and all applicable appliances, appurtenances, appurtenances used for ~~conducting~~
8 conveying wastes from the ~~sanitary~~ building drain or building sewer to and within a wastewater
9 system. A collection system is a collection sewer. ~~The State has authority for the permitting of~~
10 ~~collection sewers when two or more design units have a common collection sewer and the~~
11 ~~wastewater system is permitted under this Subchapter.~~
- 12 (13) "Complete data set" means analytical results for all required influent and effluent constituents ~~(as~~
13 as specified in the effluent ~~standard)~~ standard for a specific site on a specific date. A data set may
14 include other constituents specified in an RWTS or PIA Approval, permit, or other document.
- 15 (14) ~~"Component" means a part of a wastewater [system, as defined in G.S. 130A-334(15).] system.~~
16 The component [could] may be any part of the wastewater system, such as a collection sewer,
17 pretreatment, dispersal field, etc.
- 18 (14)(15) "Composite sample" means commingled individual samples collected from the same point at
19 different times. Samples may be of equal volume or may be proportional to the flow at time of
20 sampling.
- 21 (15)(16) "Demand dosing" means a configuration in which a specific volume of effluent is delivered to a
22 component based upon patterns of wastewater generation from the source and ~~dosing activation~~
23 ~~elevation~~ [float] liquid level detection device settings.
- 24 (16)(17) "Design daily flow" means the unadjusted quantity of wastewater a facility is projected to produce
25 in a 24-hour period upon which wastewater system sizing and design are based as determined in
26 Section .0400 of this Subchapter.
- 27 (17)(18) "Design unit" means a discrete connection such as an individual dwelling unit, place of business,
28 or place of public assembly on which wastewater DDF ~~are~~ is based. Multiple design units ~~can~~ may
29 comprise a facility.
- 30 (18)(19) "Dispersal field" means physical location where final treatment and dispersal of effluent occurs in
31 the soil.
- 32 (19)(20) "Dispersal media" means the media used to provide void space through which effluent flows and
33 is may be stored prior to infiltration (e.g., washed gravel or crushed stone, products referenced in
34 Section .0900 of this Subchapter, products approved pursuant to Section .1700 of this Subchapter,
35 etc.).

- 1 (21) "Dispersal system" means the dispersal field and associated components that distribute effluent to
2 and within the dispersal field. This includes a pump, pump tank, pressure manifold, distribution
3 box, drip box, lateral, dispersal media, etc.
- 4 ~~(20)~~(22) "Dose volume" means an amount of effluent delivered during a dosing event as determined by the
5 activation ~~[float]~~ liquid level detection device levels settings in a [demand dosing system or by a
6 timer in a time] dosing system.
- 7 ~~(21)~~(23) "Dwelling unit" means any room or group of rooms located within a structure and forming a
8 single, habitable unit with facilities which are used or intended to be used for living, sleeping,
9 bathing, toilet usage, cooking, and eating.
- 10 ~~(22)~~(24) "Effluent" means the liquid discharge from a pretreatment process, component, or [system] as
11 defined in G.S. 130A-334(7b): system.
- 12 ~~(23)~~(25) "Facility" means one or more design units located on a single or multiple lot(s) or tract(s) of land
13 and served by a wastewater system comprised of one or more ~~ground absorption~~ wastewater
14 systems.
- 15 ~~(24)~~(26) "Finished grade" means the final elevation of the land over the wastewater system after
16 installation.
- 17 ~~(25)~~(27) "Flood pool elevation" means the maximum water surface elevation of a reservoir, equal to the
18 elevation of the spillway.
- 19 ~~(26)~~(28) "Flow equalization" means a system configuration that includes sufficient storage capacity to
20 allow for uniform flow to a subsequent component despite variable flow from the source.
- 21 ~~(27)~~(29) "Full kitchen" means the appliances meet the requirements of North Carolina Food Code, Chapters
22 4-1 and 4-2. ~~The wastewater system for a facility with a full kitchen shall include a grease trap, the~~
23 ~~dispersal field LTAR shall not exceed the mean for the applicable soil group, and no dispersal~~
24 ~~field reduction in size.~~
- 25 ~~(28)~~(30) "Grab sample" means a discrete sample collected at a specific time and location.
- 26 ~~(29)~~(31) "Grease tank" means the tank located outside the facility that is used to reduce the amount of
27 grease being discharged to a wastewater system.
- 28 ~~(30)~~(32) "Grease trap" means a device used inside the ~~facility, generally under the sink,~~ facility, facility to
29 reduce the amount of grease being discharged to a wastewater system.
- 30 ~~(31)~~(33) "Gravity distribution" means gravity delivery flow of effluent to and within each lateral.
- 31 ~~(32)~~(34) "Groundwater lowering system" means a type of artificial drainage system designed to lower the
32 water table by gravity or or, in conjunction with a pump pump, to maintain the vertical separation
33 distance beneath a dispersal field.
- 34 ~~(33)~~(35) "Horizon" means a layer of soil, ~~approximately~~ parallel to the surface that has distinct physical,
35 chemical, and biological properties or characteristics such as color, structure, texture, consistence,
36 kinds and number of organisms present, degree of acidity or alkalinity, ete, etc., resulting from soil
37 forming processes.

- 1 (34)(36) "Infiltrative surface" means the designated interface where effluent moves from dispersal media or
2 a distribution device into treatment media, naturally occurring soil, or fill.
- 3 (35)(37) "Influent" means the sewage discharged to ~~pretreatment as defined in G.S. 130A 334(7b). a~~
4 pretreatment component.
- 5 (36)(38) "Installer" means a person authorized to construct, install, or repair a wastewater system in
6 accordance with G.S. 90A, Article 5 and applicable rules of the North Carolina On-Site
7 Wastewater Contractors and Inspectors Certification Board.
- 8 (37)(39) "Interceptor drain" means a type of artificial drainage designed to intercept and divert lateral
9 moving groundwater or perched water away from the dispersal field or other system component to
10 an effective outlet. ~~An interceptor drain can also be a foundation drain.~~
- 11 (38)(40) "Invert" means the lowest elevation of the internal cross-section of a pipe, fitting, or component.
- 12 (39)(41) "Jurisdictional wetland" means ~~land established as a wetland by DEQ or the US Army Corp of~~
13 Engineers under Section 404 of the Federal Clean Water Act. an area subject to the regulatory
14 jurisdiction of the U.S. Army Corps of Engineers or DEQ.
- 15 (40)(42) "Ksat" or saturated hydraulic conductivity, means the ~~value~~ rate of water flow (~~flux~~) through a unit
16 cross sectional area of soil under saturated conditions. In-situ Ksat is measured in the field using
17 clean water. Results of in-situ Ksat are used to simulate movement of effluent through the soil and
18 may be used to field verify LTAR.
- 19 (41)(43) "Lateral water movement" means the movement of subsurface water ~~down~~ downslope ~~gradient~~
20 often associated with a less permeable horizon. Lateral water movement can be observed in a bore
21 hole, excavation, or monitoring well on sloping sites.
- 22 (42)(44) "Lateral" means any pipe, tubing, or other device used to convey and distribute effluent in a
23 dispersal field.
- 24 (43)(45) "Limiting condition" means soil conditions (morphology, depth, restrictive horizon, soil wetness,
25 or organic matter content) or site features (topography, slope, landscape position, or available
26 space) that ~~restrict~~ determine ~~[the depth of the suitable soil conditions and site features and]~~
27 wastewater system design ~~options.~~ ~~options or prohibit permitting a wastewater system.~~
- 28 (44)(46) "Lithochromic feature" means soil mottle or matrix associated with variations of color due to
29 weathering of parent materials.
- 30 (45)(47) "Long Term Acceptance ~~Rate,~~" ~~referred to as LTAR, Rate~~" means the rate of effluent absorption
31 by the soil, ~~fill,~~ existing fill, or saporlite in a wastewater system after long-term use. The LTAR, in
32 units of gallons per day per square foot (gpd/ft²), is assigned based upon soil textural class,
33 structure, consistence, depth, percent coarse rock, landscape position, topography, and system
34 type, and is used to determine the dispersal field sizing requirements, in accordance with
35 applicable rules of this Subchapter.
- 36 (46)(48) "Local health ~~department,~~" ~~referred to as LHD, department~~" means any county, district, or other
37 health department authorized to be organized under the General Statutes of North Carolina.

1 ~~(47)~~(49) "Management Entity" means the person, entity, company, or firm designated by the owner of the
2 wastewater system who has primary responsibility for the operation of a wastewater system in
3 accordance with this Subchapter, G.S. 90A, Article 3, and applicable rules of the Water Pollution
4 Control System Operators Certification Commission. The Management Entity ~~can~~ **may** be the
5 owner, a public Management Entity, a certified operator, a management company, or an entity that
6 employs certified operators. The Management Entity is or employs the operator in responsible
7 charge for the wastewater system.

8 ~~(48)~~(50) "Mass loading" means the total mass of one or more organic or inorganic effluent constituents
9 delivered to the wastewater system over a specified period. It is computed by multiplying the total
10 volume of flow during the specified period by the flow-weighted average constituent
11 concentration in the same period. Units of measurement are pounds per day.

12 ~~(49)~~(51) "Matrix" means a volume of soil equivalent to 50 percent or greater of the total volume of a
13 horizon.

14 ~~(50)~~(52) "Mean high-water mark" or normal high-water mark, means, for coastal waters having six inches
15 or more lunar tidal influence, the average height of the high-water over a 19-year period as may be
16 ascertained from National Ocean Survey, U.S. Army Corps of Engineers tide stations data, or as
17 otherwise determined under the provisions of the Coastal Area Management Act. The ~~most~~
18 **stringent highest** high-water mark **as reported by the three agencies** shall be applied.

19 ~~(51)~~(53) "Media" means a solid material that can be described by shape, dimensions, surface area, void
20 space, and application.

21 (54) "Media filter" means a device that uses materials designed to treat effluent by reducing BOD₅ and
22 removing TSS in an unsaturated environment. Biological treatment is facilitated via microbial
23 growth on the surface of the **treatment media**.

24 ~~(52)~~(55) "Mottle" means subordinate color of a differing Munsell color system notation in a soil horizon.

25 ~~(53)~~(56) "Naturally occurring soil" means soil formed in place due to natural formation processes ~~and being~~
26 **that is** unaltered by filling, removal, or other artificial modification other than tillage.

27 ~~(54)~~(57) "NEMA 4X" means an enclosure for an electrical control panel or junction box that meets
28 standards for protection of equipment due to the ingress of water (including rain and hose-directed
29 water) and an additional level of protection against corrosion, as set forth in NEMA Standard 250.

30 ~~(55)~~(58) "NSF-40 systems" means individual ~~residential wastewater treatment systems (RWTS)~~ RWTS that
31 are approved and listed in accordance with the standards adopted by NSF International for Class I
32 residential wastewater treatment systems under NSF-ANSI Standard 40 and approved for use in
33 accordance with G.S. 130A-342 and the rules of this Subchapter.

34 ~~(56)~~(59) "Non-ground absorption system" means a system for waste treatment designed not to discharge to
35 the soil, land surface, or surface waters, including approved vault privies, incinerating toilets,
36 mechanical toilets, composting toilets, chemical toilets, and recycling systems.

1 (57)(60) "Off-site system" means a wastewater system where any system component is located on property
2 other than the lot where the facility is located on. located.

3 (58)(61) "Organic soils" means those organic mucks and peats consisting of more than 20 percent organic
4 matter, by dry weight, and greater than or equal to 18 inches or greater in thickness.

5 (59)(62) "Owner" means owner or owner's representative who is a person holding legal title to the facility,
6 wastewater system, or property or his or her representative. who holds power of attorney to act on
7 the owner's behalf. The owner shall own or control the wastewater system. The owner's
8 representative is a person who holds power of attorney to act on an owner's behalf or an agent
9 designated by letter or contract to act on the owner's behalf.

10 (60)(63) "Parallel distribution" means the distribution of effluent that proportionally loads multiple sections
11 of a dispersal field at one time.

12 (61)(64) "Parent material" means the mineral and organic matter that is in its present position through
13 deposition by water, wind, gravity or by decomposition of rock. rock and has not gone through the
14 soil forming process.

15 (62)(65) "Ped" means a unit of soil structure, such as blocky, granular, prismatic, or platy formed by natural
16 processes, in contrast to a clod, which is formed artificially. a compact, coherent, mass of soil
17 produced by digging, plowing, or other human land manipulation.

18 (63)(66) "Perched water table" means a zone of saturation held above the main groundwater body by a
19 slowly permeable [slowly] less permeable layer, impermeable rock, or sediment, which may or
20 may not exhibit redoximorphic features.

21 (64)(67) "Person" means any individual, firm, association, organization, partnership, business trust,
22 corporation, company, or unit of local government.

23 (65)(68) "Pressure dispersal" means an approved a system utilizing an effluent pump or siphon to distribute
24 effluent uniformly to the infiltrative surface in the dispersal field through a pressurized pipe
25 network.

26 (66)(69) "Pressure dosed gravity distribution" means pressure delivery of effluent to a manifold,
27 distribution box, or other splitter with subsequent gravity distribution within one or more laterals
28 to the infiltrative surface.

29 (67)(70) "Public management entity" means a city (G.S. 160A, Article 16), county (G.S. 153A, Article 15),
30 interlocal contract (G.S. 153A, Article 16), joint management agency (G.S. 160A, Articles 461
31 and 462), county service district (G.S. 153A, Article 16), county water and sewer district (G.S.
32 162A, Article 6), sanitary district (G.S. 130A, Article 2), water and sewer authority (G.S. 162A,
33 Article 1), metropolitan water district (G.S. 162A, Article 4), metropolitan sewerage district (G.S.
34 162A, Article 5), public utility [G.S. 62-3(23)], county or district health department (G.S. 130A,
35 Article 2), or other public entity legally authorized to operate and maintain wastewater systems.

1 ~~(68)~~(71) "Raw sewage lift stations" means a dosing system that is designed to move untreated sewage from
2 a lower elevation to a higher elevation. Raw sewage lift stations are ~~generally~~ installed prior to any
3 wastewater treatment.

4 ~~(69)~~(72) "RCW systems" means advanced pretreatment systems ~~which are approved in accordance with by~~
5 ~~the State in accordance with Section .1700 of this Subchapter and to meet~~ RCW effluent standards
6 in Rule .1002 of this Subchapter.

7 ~~(70)~~(73) "Redoximorphic features" means a color pattern of a horizon due to a loss (depletion) or gain
8 (concentration) of pigment compared to the matrix color, formed by oxidation and reduction of
9 iron (Fe) coupled with its removal, translocation, or accrual, or a soil matrix color controlled by
10 the presence of Fe⁺². Redox depletions are a type of redoximorphic feature.

11 ~~(71)~~(74) "Repair area" means an area that has been classified suitable consistent with the rules in this
12 Subchapter. ~~Subchapter and that is reserved~~ Subchapter and that is reserved for the extension,
13 alteration, wastewater system relocation, or replacement of part or all of the initial wastewater
14 system. The repair area shall be available to be used in the event of a malfunction or if a
15 wastewater system is partially or totally destroyed.

16 ~~(72)~~(75) "Residential Wastewater Treatment Systems," ~~referred to as RWTS, Systems~~ means approved
17 individual advanced pretreatment systems ~~which that~~ are covered under standards of NSF
18 International, in accordance with G.S. 130A-342 and applicable rules in this Subchapter.

19 ~~(73)~~(76) "Restrictive horizon" means a soil horizon that is capable of perching groundwater or ~~effluent and~~
20 ~~that is brittle [an] and strongly compacted or strongly cemented with iron, aluminum, silica,~~
21 ~~organic matter, or other compounds. Restrictive horizons may occur as fragipans, iron pans, or~~
22 ~~organic pans, and are recognized by their resistance in excavation or in using a soil auger. effluent.~~
23 Restrictive horizons may occur as:

- 24 (a) — physical root restrictions due to high bulk density;
- 25 (b) — strong pedogenic cementation or induration, physically root restrictive;
- 26 (c) — plinthite; or
- 27 (d) — fragipan characteristics.

28 ~~The horizon suffixes d, m, and x from the USDA NRCS Field Book for Describing and Sampling~~
29 ~~Soils can be used to describe restrictive horizons. Restrictive horizons are recognized by their~~
30 ~~resistance in excavation or in using a soil auger.~~

31 ~~(74)~~(77) "Rock" means the body of consolidated or partially consolidated material composed of minerals at
32 or below the land surface. Rock includes bedrock and partially weathered rock that is hard and
33 cannot be dug with hand tools. The upper boundary of rock is saprolite, soil, or the land surface.

34 ~~(75)~~(78) "Saprolite" means the body of porous material formed in place by weathering of rock that has a
35 massive, rock-controlled structure and retains the fabric (arrangement of minerals) of its parent
36 rock in a minimum of 50 percent of its volume. Saprolite can be dug with hand tools. The lower
37 limit of saprolite is rock and its upper limit is soil or the land surface.

1 ~~(76)~~ "Settling tank" means a septic tank designed to be used in conjunction with a RWTS. A settling
2 tank is not required to meet the design requirements of a septic tank.

3 ~~(77)~~(79) "Septic tank" means a structurally sound, water-tight, covered receptacle designed for primary
4 treatment of wastewater **and that is** constructed to:

- 5 (a) receive the discharge of wastewater from a building;
- 6 (b) separate settleable and floating solids from the liquid;
- 7 (c) digest organic matter by anaerobic bacterial action;
- 8 (d) store digested solids through a period of detention; and
- 9 (e) allow effluent to discharge for additional treatment and final dispersal.

10 (80) "Septic tank effluent pump" means a collection system that uses a septic tank to separate solids
11 and incorporates a pump vault, pump, and associated devices to convey effluent under pressure to
12 a subsequent component.

13 ~~(78)~~(81) "Sequential distribution" means the distribution method in which effluent is loaded into one trench
14 and fills it to a predetermined level before passing through a drop box or ~~stepdown~~ relief device to
15 the succeeding trench at a lower elevation. All trenches are fed from the same side.

16 ~~(79)~~(82) "Setback" means the minimum horizontal separation distance between the wastewater system and
17 features listed in Section .0600 of this Subchapter.

18 (83) "Settling tank" means a septic tank designed to be used in conjunction with a RWTS. A settling
19 tank is not required to meet the design requirements of a septic tank.

20 ~~(80)~~(84) "Serial distribution" means the distribution method in which effluent is loaded into one trench and
21 fills it to a predetermined level before passing through a pipe to the succeeding trench at a lower
22 elevation.

23 **(85) "Site" means the area in which the wastewater system is to be located, including the repair area.**

24 ~~(81)~~**(85)**~~(86)~~ "Soil" means the naturally occurring body of unconsolidated mineral and organic
25 materials on the land surface. Soil is composed of sand-, silt-, and clay-sized particles that are
26 mixed with varying amounts of larger fragments and some organic material. Soil contains less
27 than 50 percent of its volume as rock, saprolite, or coarse-earth fraction (mineral particles greater
28 than 2.0 millimeters). The upper limit of the soil is the land surface, and its lower limit is rock,
29 saprolite, or other parent materials.

30 ~~(82)~~**(86)**~~(87)~~ "Soil consistence" means the degree and kind of cohesion and adhesion that a soil
31 exhibits.

32 ~~(83)~~**(87)**~~(88)~~ "Soil series" means an official series name established by USDA-NRCS.

33 ~~(84)~~**(88)**~~(89)~~ "Soil structure" means the arrangement of primary soil particles into compound particles,
34 peds, or clusters that are separated by natural planes of weakness from adjoining ~~aggregates~~ units.

35 ~~(85)~~**(89)**~~(90)~~ "Soil textural classes" means soil classification based upon size distribution of mineral
36 particles in the fine-earth fraction less than two millimeters in diameter. The fine-earth fraction

1 includes sand (2.0 - 0.05 mm in size), silt (less than 0.05 mm or greater than 0.002 mm in size),
2 and clay (less than 0.002 mm in size) particles.

3 (86)(90)(91) "State" means the Department of Health and Human Services, Division of Public Health,
4 Environmental Health Section, On-Site Water Protection Branch. The mailing address for the
5 State is as follows: 1642 Mail Service Center, Raleigh, NC 27699-1642.

6 (87)(91)(92) "Stream" means a body of concentrated flowing water in a natural low area or natural or
7 manmade channel on the land surface. This includes ephemeral, intermittent, and perennial
8 streams as defined by DEQ, as well as streams which have been modified by channeling, culvert
9 installation, or relocation.

10 (88)(92)(93) "Structurally sound" means a tank that is able to withstand a uniform live loading of 150
11 pounds per square foot in addition to all loads to which an underground tank is normally
12 subjected, such as dead weight of the material and soil cover, active soil pressure on tank walls,
13 and the uplifting force of groundwater.

14 (89)(93) ~~"Suitable" means classification of a specific site evaluation parameter or the site. A site is
15 classified suitable for a wastewater system when all site evaluation parameters are suitable or can
16 be reclassified as suitable based upon site modifications.~~

17 (90)(94) "Surface water diversion" means a natural or constructed drainage feature used to divert surface
18 water, collect ~~runoff~~ runoff, and direct it to an effective outlet. Surface water diversions include
19 waterways, berms, swales, and ditches. Surface water diversions are a type of artificial drainage.

20 (91) ~~"Swales" mean natural or constructed elongated, sloped depressional drainage features used to
21 collect runoff and direct the flow to an effective outlet to prevent surface water convergence
22 downslope. Swales can be used in conjunction with a berm.~~

23 (92)(95) "TS-I systems" means advanced pretreatment systems ~~which are approved in accordance with by~~
24 ~~the State in accordance with Section .1700 of this Subchapter [and] that meet~~ TS-I effluent
25 standards in Table XXIV of Rule ~~.1201~~ .1201(a) of this Subchapter.

26 (93)(96) "TS-II systems" means advanced pretreatment systems ~~which are approved in accordance with by~~
27 ~~the State in accordance with Section .1700 of this Subchapter [and] that meet~~ TS-II effluent
28 standards in Table XXIV of Rule ~~.1201~~ .1201(a) of this Subchapter.

29 (94)(97) "Telemetry" means the ability to contact by phone, email, or another electronic medium. The
30 telemetry unit shall continue alarm notifications to ~~must contact~~ the designated party ~~on a~~
31 ~~continuous basis~~ until the alarm condition is remedied or the telemetry unit is physically turned
32 off.

33 (95)(98) "Third-party" means a person or entity engaged in testing or evaluation that may be compensated
34 for their work product that is independent of the parties for whom testing or evaluation is
35 performed and does not otherwise benefit regardless of the outcome. The third-party person or
36 entity has knowledge of the subject area based upon relevant training and experience.

1 (96)(99) "Timed dosing" means a configuration in which a specific volume of effluent is delivered to a
2 component based upon a prescribed interval, regardless of facility water use variation over time.

3 (97)(100) "Treatment media" means the ~~non- or slowly degradable~~ [slowly degradable] media used for
4 physical, chemical, and biological treatment in a wastewater treatment component.

5 (98)(101) "Trench" means an excavation with a width less than or equal to three feet containing
6 dispersal media and one or more laterals.

7 (99)(102) "Unstable slopes" means areas showing indications of mass downslope ~~movement.~~ movement
8 such as debris flows, landslides, and rock falls.

9 (100)(~~103~~) "~~Unsuitable" means classification of a specific site evaluation parameter or the site. A site is~~
10 ~~classified unsuitable for a wastewater system when any one site evaluation parameter is~~
11 ~~unsuitable.~~

12 (101)(~~104~~)(103) "Vertical ~~separation distance" separation" means the vertical measurement from depth~~
13 ~~beneath the dispersal field infiltrative surface to a LC or SWC.~~ LC.

14 (102)(~~105~~)(104) "Warming kitchen" means a kitchen ~~which that~~ does not meet the requirements of North
15 Carolina Food Code, Chapters 4-1 and 4-2.

16 (105) "Water main standards" means design criteria for pipe and pipe joints and associated installation
17 procedures used in potable water systems and that have been approved by North Carolina DEQ
18 Public Water Supply Section in accordance with 15A NCAC 18C.

19
20 *History Note: Authority G.S. 130A-335(e) and (f).*
21 *Eff. December 1, 2018*
22

1 15A NCAC 18E .0201 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0201 GENERAL**

4 ~~(a) Any person owning or controlling a facility containing water using fixtures connected to a water supply source shall discharge all wastewater directly to an approved wastewater system for that specific use. All wastewater in any facility containing water-using fixtures connected to a water supply source shall be discharged to a wastewater system approved by the Department in accordance with the Rules of this Subchapter.~~

8 ~~(b) Wastewater system permits issued in accordance with the rules of this Subchapter shall follow a three tier process. Upon receipt of an application in accordance with Rule .0202 of this Section which includes a site plan or plat, the LHD shall perform a soil and site evaluation to determine if the site is suitable or unsuitable in accordance with Section .0500 of this Subchapter. If the site is classified suitable, the LHD shall issue an IP in accordance with Rule .0203 of this Section which states that a specific trench type can be installed in a specific location on the site, based on the proposed facility listed in the application. The LHD shall issue a CA in accordance with Rule .0204 of this Section that includes the design details for the wastewater system. After the CA has been issued, the building permit can be issued in accordance with G.S. 130A-338. The LHD shall inspect the wastewater system upon installation and confirm that it meets all the permit requirements. The LHD shall then issue an OP in accordance with Rule .0205 of this Section, allowing the wastewater system to be placed in into use and the facility occupied in accordance with G.S. 130A-339. In order for a wastewater system to be approved:~~

- 19 ~~(1) the owner shall submit an application in accordance with Rule .0202 of this Section;~~
- 20 ~~(2) an IP shall be issued in accordance with Rule .0203 of this Section;~~
- 21 ~~(3) a CA shall be issued in accordance with Rule .0204 of this Section; and~~
- 22 ~~(4) the authorized agent shall inspect the installation and issue an OP in accordance with Rule .0205 of this Section.~~

24 ~~(c) Upon issuance of the CA, the owner may obtain a permit for electrical, plumbing, heating, air conditioning, or other construction in accordance with G.S. 130A-338.~~

26 ~~(e) If required in G.S. 89C, 89E, or 89F, a PE, LSS, or LG shall perform the soil and site evaluation, geologic or hydrogeologic evaluation, or prepare a wastewater system design.~~

28 ~~[(d) Upon receipt of an application in accordance with Rule .0202 of this Section for an existing system approval the LHD shall determine compliance in accordance with Rule .0206 of this Section.]~~

30 ~~[(d)(e)] An Notwithstanding Paragraph (b) of this Rule, an owner may also choose to have a wastewater system permitted by a PE have a wastewater system approved under the EOP provisions of G.S. 130A-336.1 and in accordance with Rule .0207 of this Section.~~

33 ~~(e) All documentation related to a wastewater system shall be maintained by the LHD in the county where the permit is issued, and the property taxes are paid.~~

36 *History Note:* Authority G.S. 130A-335, ~~130A-335, 130A-336, 130A-337, and 130A-338.~~ 130A-335; 130A-336;
37 130A-337; 130A-338.

1
2

Eff. December 1, 2018

1 15A NCAC 18E .0202 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0202 APPLICATION**

4 (a) An application for an IP, CA, and existing system authorization shall be submitted to the ~~LHD~~ LHD, and
5 approved in accordance with these Rules, for each site prior to the construction, location, or relocation of a
6 residence, place of business, or place of public assembly. ~~An application for a CA shall be submitted to the LHD for~~
7 ~~the repair of a wastewater system.~~

8 (b) Prior to the repair of a wastewater system, an application for a CA shall be submitted to the LHD.

9 ~~(b)(c)~~ A ~~complete~~ pending application for an IP, CA, or existing system authorization for which the LHD is waiting
10 for action by the owner shall expire 12 months from the date of application.

11 ~~(e)(d)~~ When an IP, CA, or existing system authorization expires or is ~~revoked~~ revoked, or an application for an IP
12 or CA expires ~~expires,~~ a new application shall be required.

13 ~~(d)(c)~~ The application for an IP shall contain the following ~~information at a minimum:~~ information:

- 14 (1) owner's name, mailing address, and phone number;
- 15 (2) type of permit requested:
 - 16 (A) new;
 - 17 (B) change of use;
 - 18 (C) expansion or increase in DDF; or
 - 19 (D) wastewater system relocation;
- 20 (3) site plan or plat indicating the locations of the following:
 - 21 (A) existing and proposed facilities, structures, appurtenances, and wastewater systems;
 - 22 (B) proposed wastewater system showing setbacks to property line(s) or other fixed reference
 - 23 point(s);
 - 24 (C) existing and proposed vehicular traffic areas;
 - 25 (D) existing and proposed water supplies, wells, springs, and water lines; and
 - 26 (E) surface water, drainage features, and all existing and proposed artificial drainage, as
 - 27 applicable;
- 28 (4) location, parcel identification ~~number or number,~~ other property identification, 911 address (if
- 29 known), acreage, and general directions to the property;
- 30 (5) description of existing and proposed facilities and wastewater systems;
- 31 (6) information needed to determine DDF and effluent strength of the facility(s) ~~served~~ served,
- 32 including number and function of individual design units, number of bedrooms and occupants per
- 33 bedroom, or number of occupants;
- 34 (7) whether wastewater other than ~~domestic sewage~~ DSE will be ~~generated:~~ generated;
- 35 (8) notification if the property includes, or is subject to, any of the ~~following, as applicable:~~ following:
 - 36 (A) previously identified jurisdictional wetlands;

- 1 (B) existing or proposed easements, rights-of-way, encroachments, or other areas subject to
2 legal restrictions; or
3 (C) approval by other public agencies, such as the Coastal Area Management Act, U.S. Army
4 Corp of Engineers, etc.; and
5 (9) signature of owner.

6 ~~(e)~~(f) The application for a CA shall contain:

- 7 (1) the information required in Paragraph ~~(d)~~(e) of this Rule. A site plan or plat shall not be required
8 with the application to repair a permitted wastewater system when the repairs will be
9 accomplished on property owned and controlled by the owner and for which property lines are
10 identifiable in the field;
11 (2) identification of the proposed use of a grinder ~~pump~~, pump or sewage pump; and
12 (3) the location and type of the proposed wastewater system specified by the owner.

13 ~~(f)~~(g) The application for an existing system authorization shall contain:

- 14 (1) the owner's name, mailing address, and phone number;
15 (2) a site plan or plat indicating the locations of the existing and proposed facilities, existing
16 wastewater systems and repair areas, existing and proposed water supplies, easements, rights-of-
17 way, encroachments, artificial drainage, and all appurtenances;
18 (3) location, parcel identification number, other property identification, 911 address (if known),
19 acreage, and directions to the property; ~~and~~
20 (4) for reconnections, information needed to determine DDF of the facility ~~served~~ served, including
21 number and function of individual design units, number of bedrooms and occupants per bedroom,
22 or number of ~~occupants~~, occupants; and
23 (5) signature of owner.

24 ~~(g)~~(h) ~~The application shall state that submittal~~ Submittal of a signed application ~~constitutes~~ shall constitute right of
25 entry to the property by an authorized agent.

26
27 *History Note: Authority G.S. 130A-335; 130A-336; 130A-337; 130A-338.*

28 *Eff. December 1, 2018*
29

1 15A NCAC 18E .0203 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0203 IMPROVEMENT PERMIT**

4 (a) Upon receipt of a complete application for an IP, an authorized agent shall evaluate the site to determine
5 whether the site is suitable or unsuitable for the installation of a wastewater system in accordance with Section .0500
6 of this Subchapter. If the site is classified suitable, a an IP shall be issued in accordance with this Subchapter. The
7 authorized agent shall prepare dated, written documentation of the soil and site conditions required to be evaluated
8 in Section .0500 of this Subchapter.

9 (b) When the site is classified suitable an authorized agent shall issue an IP for the site that includes the items
10 contained in G.S. 130A-336(a)(1) through (6) and the following information:

- 11 (1) DDF, number of bedrooms, maximum number of occupants or people served, and wastewater
12 strength in accordance with Section .0400 of this Subchapter;
- 13 (2) required effluent quality standard - DSE, HSE, NSF-40, TS-I, TS-II, or RCW in accordance with
14 Table III of Rule .0402, .0402(a), Rule .1002, or Table XXIV of Rule ~~.1201~~ .1201(a) of this
15 Subchapter;
- 16 (3) all applicable setbacks and requirements in accordance with Section .0600 of this Subchapter;
- 17 (4) location and description of the facility, structures, vehicular traffic areas, and other proposed
18 improvements;
- 19 (5) location(s) of existing and proposed public or private water supplies, including private drinking
20 water wells and springs and associated water lines;
- 21 (6) a site plan or plat as defined in G.S. 130A-334 showing the existing and proposed property lines
22 with dimensions, the location of the facility and appurtenances, the site for the proposed
23 wastewater system and repair area, and the location of water supplies and surface water;
- 24 (7) the proposed initial wastewater system and repair system types, including LTARs for each system;
- 25 (8) easements, rights-of-way, or encroachments agreements, as applicable; and
- 26 (9) permit conditions, such as site-specific site modifications, installation requirements, maintenance
27 of the groundwater lowering system, etc.

28 (c) When the site is classified unsuitable, a signed, written report shall be provided to the owner describing the
29 unsuitable site characteristics and citing the applicable rule(s). If modifications or alternatives are available to
30 support site reclassification, reclassification to suitable this information shall be included in the report.

31 (d) The period of validity for the permit in accordance with G.S. 130A-335(f) shall be stated on the IP.

32 (e) The IP shall be transferable subject to the conditions set forth in G.S. 130A-336(a).

33 (f) An IP shall be suspended or revoked if:

- 34 (1) the information submitted in the application is found to be incomplete, false, incorrect, or altered;
35 or incorrect;
- 36 (2) the site is altered and the permitted system cannot be installed or operated as permitted;
- 37 (3) conditions of the IP or the rules of this Subchapter cannot be met;

1 (4) a new IP is issued for the same design unit on the same property; or

2 (5) an NOI is issued for the same design unit on the same property.

3 (g) An IP shall be applicable to both initial and repair dispersal field areas identified and approved on the IP and
4 only a CA shall be issued if wastewater system repairs are necessary.

5

6 *History Note: Authority G.S. 130A-335; 130A-336.*

7 *Eff. December 1, 2018*

8

1 15A NCAC 18E .0204 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0204 CONSTRUCTION AUTHORIZATION**

4 (a) The owner shall obtain a CA after an IP has been issued and prior to the construction, location, or relocation of a
5 facility facility, or the construction or repair of a wastewater system. A CA can also be issued at the same time as the
6 IP.

7 (b) Conditions of an IP shall be completed prior to the issuance of a CA. A CA shall be issued by an authorized
8 agent for wastewater system installation when it is found that the IP conditions and rules of this Subchapter are met.

9 (c) A CA may be issued at the same time as the IP if no conditions on the IP are required to be completed prior to
10 CA issuance.

11 (e)(d) The CA shall specify the following:

- 12 (1) all information required in Rule .0203(b) of this Section;
- 13 (2) the initial wastewater system type and layout, location of all initial wastewater system
14 components, and design details and specifications for the following, as applicable;
 - 15 (A) tanks;
 - 16 (B) collection sewers;
 - 17 (C) pump requirements;
 - 18 (D) advanced pretreatment;
 - 19 (E) distribution devices; and
 - 20 (F) trench widths, lengths, and depth on the downslope side of the trench;
- 21 (3) the nature of the Management Entity required and the minimum operation and maintenance
22 requirements in accordance with Section .1300 of this Subchapter; and
- 23 (4) permit conditions, such as site-specific installation requirements, maintenance of the groundwater
24 lowering system, etc.

25 (d)(e) A CA shall be issued for each ~~ground absorption~~ wastewater system serving a facility. Separate CAs may be
26 issued for individual components. A building permit shall not be issued for a design unit until CAs for all
27 components of the ~~ground absorption~~ wastewater system serving that design unit have been issued.

28 (e)(f) Prior to the issuance of a CA for a system where all or part of the system will be under common or joint
29 control, a draft multi-party agreement between the developer and an incorporated owners' association shall be
30 submitted to the and its conditions approved by the LHD. LHD for approval. The draft multi-party agreement shall
31 include and address the following, as applicable:

- 32 (1) ownership;
- 33 (2) transfer of ownership;
- 34 (3) maintenance;
- 35 (4) operation;
- 36 (5) wastewater system repairs; and

1 (6) designation of fiscal responsibility for the continued satisfactory performance of the wastewater
2 system and repair or replacement of collection, treatment, dispersal, and other components.

3 ~~(f)~~(g) Systems or components under common or joint control include the following:

- 4 (1) wastewater system serving a condominium or other multiple-ownership development; or
- 5 (2) off-site systems serving two or more facilities where any components are under common or joint
6 ownership or control.

7 ~~(e)~~(h) The CA shall be valid for a period equal to the period of validity of the IP and stated on the permit.

8 ~~(h)~~(i) The CA shall be transferable subject to the conditions set forth in G.S. 130A-336(a).

9 ~~(i)~~(j) A CA shall be suspended or revoked if:

- 10 (1) the information submitted in the application is found to be incomplete, false, ~~incorrect, or altered;~~
11 or incorrect;
- 12 (2) the site is altered and the permitted system cannot be installed or operated as permitted;
- 13 (3) conditions of the CA or the rules of this Subchapter cannot be met;
- 14 (4) a new CA is issued for the same design unit on the same property; or
- 15 (5) a NOI is issued for the same design unit on the same property.

16

17 *History Note: Authority G.S. 130A-335; 130A-336; 130A-338.*

18 *Eff. December 1, 2018*

19

1 15A NCAC 18E .0205 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0205 OPERATION PERMIT**

4 (a) The owner shall obtain an OP after the wastewater system has been installed or repaired and the authorized
5 agent has inspected the ~~system~~ system. The inspection shall occur prior to the system being ~~covered~~ covered. The
6 authorized agent shall determine ~~and determined~~ that the system has been installed in accordance with this
7 Subchapter and any conditions of the IP, IP and CA. ~~The OP shall be issued prior to the wastewater system being~~
8 ~~placed into operation.~~

9 ~~(b) If the wastewater system has been permitted in accordance with G.S. 130A-336.1 and Rule .0207 of the Section,~~
10 ~~an ATO shall be issued by the authorized agent.~~

11 (b) During the wastewater system inspection, the authorized agent shall notify the installer of items that do not meet
12 the rules of this Subchapter and conditions described in the IP and CA. Corrections shall be made to bring the
13 system into compliance with this Subchapter by the installer. If corrections cannot be made, an authorized agent
14 shall not issue an OP and the system shall not be placed into use. The authorized agent making the determination
15 shall prepare a written report referencing deficiencies in the system installation, citing the applicable rule(s) and IP
16 and CA conditions, and include a letter of Intent to Suspend or Revoke the IP and CA or the CA. A copy of the
17 report shall be provided to the owner and the installer.

18 ~~[(c)(b)]~~ The OP shall include:

- 19 (1) the initial system and designated repair system type in accordance with Table XXXI of Rule ~~.1301~~
20 .1301(b) of this Subchapter and the unique code assigned under Rule.1713(10) of this Subchapter;
- 21 (2) facility description including number of bedrooms and ~~occupants per bedroom, maximum~~
22 occupancy, maximum number of occupants or people served, DDF, and wastewater strength;
- 23 (3) a site plan or plat as defined in G.S. 130A-334 showing the existing and proposed property lines
24 with dimensions, the location of the facility and appurtenances, the site for the ~~proposed~~
25 wastewater system and repair area including location and dimensions, and the location of water
26 supplies and surface water;
- 27 (4) dispersal field design including trench or bed length, width, depth, and location;
- 28 (5) the tank(s) location, capacity, and ID numbers;
- 29 (6) groundwater monitoring well locations, sampling frequency, and characteristics sampled, as
30 applicable;
- 31 (7) conditions for system performance, operation, monitoring, influent and effluent sampling
32 requirements, and reporting, including the requirement for a contract with a Management Entity,
33 as applicable; and
- 34 (8) approved engineered plans, specifications, and record drawings if required in Rule ~~.0303(b)~~
35 .0303(g) of this Subchapter.

1 ~~[(d)(e)]~~ Prior to the issuance of an OP for a system requiring a multi-party agreement, the multi-party agreement
2 shall be executed between the developer and an incorporated owners' association and filed with the local register of
3 deeds.

4 ~~[(c)(4)]~~ When a wastewater system is required to be designed by an authorized designer or PE, ~~the PE or authorized~~
5 ~~designer shall provide a written statement to the owner and authorized agent specifying that construction is complete~~
6 ~~and in accordance with approved plans, specifications, and modifications. the information in Rule .0303(f)~~
7 ~~-.0303(g)] of this Subchapter shall be provided to the authorized agent~~ The written statement shall be provided prior
8 to issuance of the OP.

9 ~~(f)(e)]~~ ~~When an authorized agent determines that the system installation does not meet the rules of this Subchapter~~
10 ~~and conditions described in the IP and CA, corrections shall be made to bring the system into compliance with this~~
11 ~~Subchapter. If corrections cannot be made, an authorized agent shall not issue an OP and the system shall not be~~
12 ~~placed into use. The authorized agent making the determination shall prepare a written report referencing~~
13 ~~deficiencies in the system installation, citing the applicable rule(s) and IP and CA conditions, and include a letter of~~
14 ~~Intent to Suspend or Revoke the IP and CA or the CA. A copy of the report shall be provided to the owner and the~~
15 ~~installer.~~

16 ~~(g)(f)]~~ An OP shall be valid and remain in effect for a system provided:

- 17 (1) wastewater strength and DDF remain unchanged;
- 18 (2) the system is operated and maintained in accordance with this Subchapter;
- 19 (3) no malfunction is found as defined in Rule .1303(a)(1) and (2) of this Subchapter;
- 20 (4) the system has not been abandoned in accordance with Rule .1307 of this Subchapter;
- 21 (5) the system complies with the condition(s) of the OP; and
- 22 (6) OP has not expired or been revoked.

23 ~~(h)(g)]~~ For a Type V or VI system as specified in Table XXXI of Rule ~~.1301~~ .1301(b) of this Subchapter, the OP
24 shall expire five years after being issued.

25 ~~(i)(h)]~~ An authorized agent may modify, suspend, or revoke the OP or seek other remedies under G.S. 130A, Article
26 2, if it is determined that the system is not being operated and maintained ~~as specified~~ in accordance with this
27 Subchapter and all conditions imposed by the OP.

28 ~~(j)(i)]~~ When an OP expires in accordance with Paragraph ~~(h)~~ (g) of this Rule a new application shall be required
29 prior to issuance of a new OP to confirm that the previously approved facility has not changed and that the system
30 remains in compliance with permit conditions.

31 ~~(k)(j)]~~ When an OP is revoked due to facility non-compliance, such as additional wastewater flow or increased
32 wastewater strength, a new application shall be required prior to evaluation for a new IP, CA, and OP.

33 ~~(l)(k)]~~ An OP shall be revoked prior to an ATO being issued for the same design unit on the same property.

34 ~~(m)(l)]~~ ~~All documentation related to a wastewater system shall be maintained in the county where the permit is~~
35 ~~issued.~~

36
37 *History Note: Authority G.S. 130A-335; 130A-337; 130A-338.*

1
2

Eff. December 1, 2018

1 15A NCAC 18E .0206 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0206 EXISTING SYSTEM APPROVALS FOR RECONNECTIONS AND PROPERTY**
4 **ADDITIONS**

5 (a) Approval by an authorized agent shall be issued prior to any of the following:

- 6 (1) a facility being reconnected to an existing system; or
7 (2) other site modifications as described in Paragraph (c) of this Rule.

8 (b) Approvals for reconnecting a facility shall be issued upon determination of the following:

- 9 (1) the site complies with its OP or ~~Rule .0102 of this Subchapter;~~ ~~[Subchapter]~~ the wastewater
10 system was in use prior to July 1, 1977; ~~[as applicable];~~
11 (2) there is no evidence or documentation of a current or past uncorrected malfunction of the system
12 as described in Rule .1303(a)(1) and (2) of this Subchapter;
13 (3) the DDF and wastewater strength for the proposed facility do not exceed that of the existing
14 system;
15 (4) the facility meets ~~required the setbacks;~~ setbacks in Section .0600 of this Subchapter; and
16 (5) the existing system is being operated and maintained as specified in G.S. 130A, Article 11, this
17 Subchapter, and permit conditions.

18 (c) Prior to construction, relocation of a structure, the expansion of an existing facility's footprint, or other site
19 modifications that require the issuance of a building permit, but which that do not increase ~~design flow~~ DDF or
20 ~~change~~ wastewater strength and require the issuance of a building permit, strength, an authorization shall be issued
21 upon determination of the compliance of the proposed structure with setback requirements in Section .0600 of this
22 Subchapter.

23 (d) For authorizations issued in accordance with this Rule the authorized agent shall provide written documentation
24 to the owner that describes the site modification, system use, ~~design flow,~~ DDF, wastewater strength, number of
25 bedrooms, number of ~~occupants~~ occupants, and includes a site plan showing the location, dimensions, and setbacks
26 of existing and proposed structures to the existing system and repair area.

27
28 *History Note: Authority G.S. 130A-335; 130A-337(c) and (d).*

29 *Eff. December 1, 2018*

1 15A NCAC 18E .0207 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0207 ENGINEER OPTION PERMIT**

4 (a) An owner choosing to use an EOP for wastewater systems in accordance with G.S. 130A-336.1 shall employ the
5 services of a PE to prepare signed and sealed drawings, specifications, plans, and reports for the design,
6 construction, operation, and maintenance of the wastewater system.

7 (b) Prior to the submittal of an NOI for an EOP system as required by G.S. 130A-336.1(b), an LSS shall conduct
8 soil and site evaluations and, as applicable, an LG shall evaluate geologic and hydrogeologic conditions. These
9 evaluations shall be in accordance with the rules of this Subchapter.

10 (c) The NOI for an EOP System shall be submitted by the owner or a PE, authorized as the legal representative of
11 the owner, to the LHD in the county where the facility is located. The NOI shall be submitted on the common form
12 provided by the State. The common form is available by accessing the State's website at
13 <http://ehs.ncpublichealth.com/rules.htm#oswprules>. It shall include all the information specified in G.S. 130A-
14 336.1(b) and the following:

15 (1) the LSS's, LG's, and installer's name, license number, address, e-mail address, and telephone
16 number;

17 (2) information required in Rule .0202 of this Section for IP and CA applications;

18 (3) identification and location on the site plan of existing or proposed potable water supplies,
19 geothermal heating and cooling wells, and groundwater monitoring wells for the proposed site.
20 The PE shall reference any existing permit issued for a private drinking water well, public water
21 ~~system,~~ system as defined in G.S. 130A-313(10), or a wastewater system on both the subject and
22 adjoining properties to provide documentation of compliance with setback requirements in Section
23 .0600 of this Subchapter; and

24 (4) proof of insurance for the PE, LSS, LG, and installer, as applicable.

25 (d) The PE design shall incorporate findings and recommendations on soil and site conditions, limitations, site
26 modifications, and geologic and hydrogeologic conditions specified by the LSS or LG, as applicable, and in
27 accordance with G.S. ~~130A-336.1(k)(1).~~ 130A-336.1(b)(8). When the PE chooses to employ pretreatment
28 technologies not approved in this State, the engineering report shall specify the proposed technology and the
29 associated siting, installation, operation, maintenance, and monitoring requirements, including written ~~manufacturers~~
30 manufacturer's endorsement of the proposed use. The PE shall allow for the use of Accepted Systems in accordance
31 with G.S. 130A-336.1(e)(5).

32 (e) No building permit for construction, location, or relocation shall be issued until after a decision of completeness
33 of the NOI is made by the LHD, or the LHD fails to act within 15 business days.

34 (f) If the owner chooses to increase the DDF or change the wastewater strength discharging to the wastewater
35 system prior to construction, a new NOI shall be submitted to the LHD. The owner shall request in writing that the
36 PE invalidate the prior NOI with a signed and sealed letter sent to the owner and LHD.

1 (g) Construction of the wastewater system shall not commence until the system design plans and specifications have
2 been provided to the installer and the signed and dated statement by the installer is provided to the owner. The
3 owner shall be responsible for preventing modifications or alterations of the site for the wastewater system and the
4 system repair area ~~before, during during, and after~~ any construction activities for the ~~facility~~ facility. This includes
5 before ~~or~~ and after construction of the wastewater system, unless approved by the PE, LSS, or LG, as applicable.

6 (h) Prior to providing written confirmation for the ATO, the PE shall submit the following to the LHD:

- 7 (1) documentation that all reporting requirements identified in G.S. 130A-336.1(l) have been met;
- 8 (2) information set forth in Rule .0301(d) of this Subchapter;
- 9 (3) system start-up documentation, including applicable baseline operating parameters for all
10 components;
- 11 (4) documentation by the owner that all necessary legal agreements, including easements,
12 encroachments, multi-party agreements, and other documents have been prepared, executed, and
13 recorded in accordance with Rule .0301(b) and (c) of this Subchapter; and
- 14 (5) record drawings.

15 The LHD shall use the common form for written confirmation.

16 (i) The owner of the wastewater system approved in accordance with the EOP shall be responsible for maintaining
17 the wastewater system in accordance with the written operation and management program required in G.S. 130A-
18 336.1(i)(1) and Section .1300 of this Subchapter.

19 (j) For repair of a malfunctioning EOP system, this Rule shall be followed in conjunction with Rule .1306 of this
20 Subchapter. The Management Entity shall notify the LHD within 48 hours of the system malfunction.

21 (k) The owner of an EOP system who wishes to change the use of the facility shall contact the PE, LSS, LG, and
22 installer, as applicable, to determine whether the current system would continue to meet ~~the requirements~~ of the
23 rules of this ~~Section~~ Subchapter for the proposed change of use. The PE, LSS, LG, or installer shall determine what,
24 if any, modifications shall be necessary for the wastewater system to continue to meet ~~the requirements~~ of the rules
25 of this ~~Section~~ Subchapter following the proposed change of use. A NOI reflecting the change of use and any
26 required modifications to the system shall be submitted to the LHD. ~~LHD and follow the EOP permitting process.~~
27 The permitting process in accordance with this Rule shall be followed.

28 (l) The LHD is responsible for the following activities related to the EOP system: With regard to the EOP system,
29 the LHD shall:

- 30 (1) file all EOP documentation consistent with current permit filing procedures at the LHD;
- 31 (2) ~~[revocation of]~~ revoke an OP for a wastewater system prior to issuing written confirmation of an
32 ATO [being issued] for the same design unit on the same property, if applicable;
- 33 ~~(2)(3)~~ submit a copy to the State of the NOI common form and written confirmation of ATO;
- 34 ~~(3)(4)~~ participate in a post-construction conference in accordance with G.S. 130A-336.1(j);
- 35 ~~(4)(5)~~ review the performance and operation reports submitted and perform on-site compliance
36 inspections of the wastewater system in accordance with Rule .1305(c) and Table XXXI of Rule
37 ~~.1304 .1301(b)~~ of this Subchapter;

- 1 ~~(5)~~(6) investigate complaints regarding EOP systems;
2 ~~(6)~~(7) issue a NOV for systems determined to be malfunctioning in accordance with Rule .1303(a)(1)
3 and (2) of this Subchapter. The LHD shall direct the owner to contact the PE, LSS, LG, and
4 installer, as applicable, for determination of the reason of the malfunction and development of a
5 NOI for repairs; and
6 ~~(7)~~(8) require an owner receiving a NOV to pump and haul sewage in accordance with Rule .1306 of this
7 Subchapter.

8 (m) The Owner may contract with ~~another~~ different licensed ~~professional~~ professionals than those originally
9 identified on the initial NOI to complete an EOP project. A revised NOI shall be submitted to the LHD.

10 (n) Nothing in this Rule shall be construed as allowing any licensed professional to provide services for which he or
11 she has neither the educational background, expertise, or license to perform, or is beyond his or her scope of work as
12 provided for in accordance with G.S. 130A-336.1 and the applicable statues for their respective professions.

13
14 *History Note:* *Authority G.S. 130A-335; 130A-336.1.*
15 *Eff. December 1, 2018*
16

1 15A NCAC 18E .0301 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0301 OWNERS**

4 (a) The owner of a wastewater system shall:

- 5 (1) apply in accordance with Section .0200 of this Subchapter;
- 6 (2) comply with the laws, this Subchapter, G.S. 130A, Article 11, the Rules of this Subchapter, and
7 permit conditions regarding wastewater system location, including repair area;
- 8 (3) identify property lines and fixed reference points in the field prior to the LHD site evaluation;
- 9 (4) make the site accessible for the site evaluation described in Rule .0501 of this Subchapter;
- 10 (5) field stake or otherwise mark the proposed facility location and all associated appurtenances (such
11 as vehicular traffic areas, garage, swimming pool, shed, entryways, decks, etc.);
- 12 (6) ~~excavate~~ provide for pits with adequate excavated steps or a ramp in the pit that allow for ingress
13 and egress when necessary for a soil and site evaluation at the site as determined by the LHD or
14 the State in accordance with Rule .0501 of this Subchapter, as applicable; Subchapter;
- 15 (7) provide for system operation, maintenance, monitoring, and reporting, including access for system
16 maintenance;
- 17 (8) maintain artificial drainage systems, as applicable;
- 18 (9) prevent encroachment on the initial wastewater system and repair area by utilities, structures,
19 vehicular traffic areas, etc.;
- 20 (10) provide necessary records of title documentation supporting an exemption from the minimum
21 setback requirements in Rule .0601(a) of this Subchapter to the LHD LHD; when seeking an
22 exemption for a lot or tract of land from the minimum setback requirements in Rule .0601(a) of
23 this Subchapter, as applicable;
- 24 (11) establish and maintain appropriate site-specific vegetation over the dispersal field and repair area;
25 and
- 26 (12) repair a malfunctioning system as necessary in accordance with this Subchapter.

27 (b) The entire initial wastewater system and repair area shall be on property owned or controlled by the wastewater
28 system owner. An easement or encroachment agreement shall be required for the permitting of any of the following
29 wastewater system installations:

- 30 (1) the wastewater system is located in a common area with other wastewater systems;
- 31 (2) the wastewater system is located in an area with multiple or third-party ownership or control;
- 32 (3) the wastewater system is proposed to be in an off-site area; or
- 33 (4) the wastewater system and the facility are located on different lots or tracts of land and cross a
34 property line or right-of-way.

35 (c) Necessary Any necessary easements, rights-of-way, or encroachment agreements, as applicable, agreements
36 shall be obtained prior to the issuance of a CA. The Terms of the easement, right-of-way, or encroachment

1 agreement shall ~~provide that the easement, right of way, or encroachment agreement meets meet~~ the following
2 ~~criteria: conditions:~~

- 3 (1) ~~be~~ appurtenant to ~~specifically~~ described ~~property, property and runs run~~ with the ~~land, and is not~~
4 ~~affected by change of ownership or control; land;~~
- 5 (2) ~~valid for as long as the wastewater system is required for the facility that it is designed to serve;~~
6 ~~not be affected by change of ownership or control;~~
- 7 (3) ~~describes and specifies the uses being granted and shall include a ingress, egress, and regress,~~
8 ~~system installation, operation, maintenance, monitoring, repairs, and any other activity required to~~
9 ~~remain in compliance with this Subchapter including that the easement, right of way, or~~
10 ~~encroachment remain free of structures, landscaping, or any other activities that would interfere~~
11 ~~with the use of the easement or encroachment for its intended purpose; remain valid for as long as~~
12 ~~the wastewater system is required for the facility that it is designed to serve;~~
- 13 (4) ~~specified in a deed by metes and bounds description, the area or site required for the wastewater~~
14 ~~system and repair area, including collection sewers, tanks or raw sewage lift stations, distribution~~
15 ~~devices, and dispersal fields; and include a description of the uses being granted and shall include~~
16 ~~ingress, egress, and regress, system installation, operation, maintenance, monitoring, and repairs~~
17 ~~and any other activity required to remain in compliance with this Subchapter, including that the~~
18 ~~easement, right-of-way, or encroachment remain free of structures, landscaping, or any other~~
19 ~~activities that would interfere with the use of the easement or encroachment for its intended~~
20 ~~purpose;~~
- 21 (5) ~~shall be recorded with the register of deeds in the county (or counties) where the system and~~
22 ~~facility are located; specify in a deed by metes and bounds description the area or site required for~~
23 ~~the wastewater system and repair area, including collections sewers, tanks, raw sewage lift~~
24 ~~stations, distribution devices and dispersal fields; and~~
- 25 (6) ~~be recorded with the register of deeds in the county where the system and facility are located.~~

26 (d) Prior to OP issuance for a system required to be designed by an authorized designer or PE, the owner shall
27 submit to the LHD a statement signed by the authorized designer or PE specifying that the system has been installed
28 in accordance with the permitted design. For systems designed by a PE, the statement shall be affixed with the PE
29 seal.

31 *History Note:* Authority G.S. 130A-335.
32 Eff. December 1, 2018

1 15A NCAC 18E .0302 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0302 LOCAL HEALTH DEPARTMENT AND STATE**

4 (a) The permitting of a wastewater system shall be the responsibility of agents authorized by the State in accordance
5 with G.S. 130A, Article 4 and 15A NCAC 01O .0100, and registered with the North Carolina State Board of
6 Environmental Health Specialist Examiners, as required in G.S. 90A, Article 4, unless the permit is issued in
7 accordance with G.S. 130A-336.1 and Rule .0207 of this Subchapter.

8 (b) When the wastewater system crosses county lines or the facility is in one county and the wastewater system is in
9 another county, the LHD in the county that assesses property taxes on the facility shall implement the requirements
10 of this Subchapter.

11 (c) The State shall review and approve the wastewater system, as defined in G.S. 130A-334(15), including design,
12 layout, plans, and specifications for all wastewater ~~systems,~~ systems which that serve a facility with a ~~cumulative~~
13 cumulative DDF greater than 3,000 gpd, as determined in Section .0400 of this Subchapter. The State shall also
14 review and approve plans and specifications for the following:

- 15 (1) IPWW systems required by this Section to be designed by a PE unless the wastewater has been
16 determined to not be IPWW in accordance with Rule ~~.0303(b)(18)~~ .0303(b)(17) of this Section;
- 17 (2) advanced pretreatment or drip dispersal systems not previously approved by the State; and
- 18 (3) any other system so specified by the authorized agent.

19 (d) State review is shall not be required when the ~~cumulative~~ cumulative DDF for the facility is greater than 3,000
20 gpd as determined in Section .0400 of this Subchapter ~~and all the following are met:~~ and:

- 21 (1) ~~the wastewater system is made up of an individual wastewater system [which] that serves an~~
22 ~~individual dwelling unit or several individual wastewater systems, each serving an individual~~
23 ~~dwelling unit; or~~
- 24 (2) ~~the wastewater system meets the following criteria:~~
 - 25 (A) ~~the individual wastewater system(s) serving serves~~ individual design units with a DDF
26 ~~less than or equal to 1,500 gpd;~~
 - 27 (B) ~~the initial and repair dispersal fields for each individual wastewater system(s) are is,~~ at a
28 ~~minimum minimum,~~ 20 feet from any other individual wastewater system;
 - 29 (C) ~~the total DDF for all dispersal fields is less than or equal to 1,500 gpd per acre based on~~
30 ~~the portion of the land containing the dispersal fields; and~~
 - 31 (D) ~~the wastewater is not HSE as identified in Section .0400 of this Subchapter.~~

- 32 (1) ~~individual ground absorption system(s) serving individual design units with a DDF less than or~~
33 ~~equal to 1,500 gpd;~~
- 34 (2) ~~initial and repair dispersal fields for each individual ground absorption system(s) are at a~~
35 ~~minimum 20 feet from any other individual wastewater system;~~
- 36 (3) ~~total DDF for all ground absorption system(s) on a lot or tract of land is less than or equal to 1,500~~
37 ~~gpd per acre.~~

1 (e) State review ~~is shall~~ not ~~be~~ required when a PE calculates the proposed DDF to be less than or equal to 3,000
2 gpd based on engineering design utilizing low-flow fixtures and low-flow technologies in accordance with Rule
3 .0403(e) of this Subchapter. ~~In accordance with Pursuant to~~ S.L. 2013-413, ~~s.34 s.34, as revised by and~~ S.L. 2014-
4 120, ~~s.53 s.53~~, neither the State nor any LHD shall be liable for a system approved or permitted in accordance with
5 this Paragraph.

6 (f) For systems that require State review and approval, an IP shall not be issued by the LHD until the site plan or
7 plat and system layout, including details for any proposed site modifications, are approved by the State. A CA shall
8 not be issued by the LHD until plans and specifications, submitted in accordance with Rule .0304 of this Section, are
9 approved by the ~~State.~~ State in accordance with these Rules and engineering practices.

10 (g) The State shall provide technical assistance to the LHD as ~~may be~~ needed for interpretation of this Subchapter,
11 in accordance with the recognized principles and practices of soil science, geology, engineering, and public health.

12

13 *History Note: Authority G.S. 130A-335.*

14 *Eff. December 1, 2018*

15

1 15A NCAC 18E .0303 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0303 LICENSED OR CERTIFIED PROFESSIONALS**

4 (a) ~~Plans and specifications for the use of a groundwater lowering system to meet the vertical separation to a SWC shall be prepared by a licensed professional if required in G.S. 89C, 89E, or 89F. Prior to the issuance of an IP or CA, the plans and specifications shall be reviewed and approved by the authorized agent. A PE, in accordance with G.S. 89C, may propose an alternative design that shall include documentation that shows that the proposed system design will meet DSE in Table III of Rule .0402(a) of this Subchapter. The alternative design shall be reviewed by the State.~~

10 (b) Any wastewater system ~~which that~~ meets one or more of the following conditions shall be designed by a PE if required in G.S. 89C ~~and plans and specifications shall comply with Rule .0304 of this Section:~~ 89C:

- 12 (1) the system has a DDF greater than 3,000 gpd, as determined in Section .0400 of this Subchapter, except where the system is limited to an individual wastewater system serving an individual dwelling unit or multiple individual wastewater systems, each serving an individual dwelling unit;
- 15 (2) the system requires advanced pretreatment or drip dispersal ~~other than~~ and is not a system approved under Sections .1500, .1600, or .1700 of this Subchapter;
- 17 (3) pressure dispersal systems that require pumping more than 500 feet horizontally or more than 50 feet of net elevation head;
- 19 (4) pressure dosed gravity distribution systems that require pumping more than 1,000 feet horizontally or more than 100 feet of net elevation head;
- 21 (5) dosing systems or force mains that have one or more intermediate high points greater than five feet;
- 23 (6) the system requires pumping downhill to a pressure dosed gravity or pressure dispersal field where the volume of the supply line that could drain to the dispersal field between doses exceeds 25 percent of the required dose volume;
- 26 (7) pressure dispersal systems with a DDF greater than 600 gpd serving a single design unit;
- 27 (8) pressure dispersal ~~and pressure dosed gravity distribution~~ systems where there is more than 15 percent variation in line length. The 15 percent variation shall be measured by comparing the longest line length to the shortest line length in any dispersal field;
- 29 (9) two or more septic tanks or advanced pretreatment units, each serving a separate design unit, and served by a common dosing tank;
- 32 (10) a STEP system with ~~the system includes~~ a pressure sewer or other pressure sewer system receiving effluent from two or more pump tanks;
- 34 (11) an adjusted DDF is proposed based on the use of low-flow fixtures or low-flow technologies in accordance with Rule .0403(e) of this Subchapter;
- 36 (12) the system requires use of sewage pumps prior to the septic tank or other pretreatment system, except for systems governed by the North Carolina Plumbing Code or which consist of grinder

- 1 pumps and associated pump basins that are approved and listed in accordance with standards
2 adopted by NSF International;
- 3 (13) an individual system ~~is~~ required ~~by the rules of this Subchapter~~ to use more than one pump or
4 siphon in a single pump ~~tank; tank. Examples include dual pumps as set for in Rule .1101(b) of~~
5 ~~this Subchapter:~~
- 6 (14) the system includes a collection sewer prior to the septic tank or other pretreatment system serving
7 two or more design units, except for systems governed by the North Carolina Plumbing Code;
- 8 (15) the wastewater system includes structures ~~which that~~ have not been pre-engineered;
- 9 ~~(16) any tank with a capacity greater than 4,000 gallons, rated for traffic load, installed deeper than 36~~
10 ~~inches below finished grade, or built in place;~~
- 11 ~~(17)(16)~~ the proposed pump model is not listed by ~~a third party electrical testing and listing agency, such as~~
12 ~~Underwriter Laboratories or an equivalent third party electrical testing and listing agency;~~
13 ~~Laboratories:~~
- 14 ~~(18)(17)~~ the system is designed for the collection, treatment, and dispersal of IPWW, except under the
15 following circumstances:
- 16 (A) the State has determined that the wastewater generated by the proposed facility has a
17 pollutant strength ~~which that~~ is lower than or equal to ~~domestic wastewater DSE~~ and does
18 not require specialized treatment or ~~management; management. This determination shall~~
19 ~~be made based on a review of the wastewater generating process, wastewater~~
20 ~~characteristic data, and material safety data sheets, as compared to DSE;~~ or
- 21 (B) the State has ~~pre-approved~~ ~~approved~~ a ~~predesigned~~ treatment system or process and
22 management method proposed by the facility owner ~~which that shall generate generates~~
23 effluent with a pollutant strength which is lower than or equal to ~~domestic wastewater;~~
24 ~~DSE; DSE. This approval shall be based on a review of documentation provided in~~
25 ~~conjunction with prior project specific review or a PIA approval. This approval shall be~~
26 ~~based on data from other facilities, management practices, and other information~~
27 ~~provided by the owner:~~
- 28 ~~(19)(18)~~ the wastewater system is designed for RCW;
- 29 ~~(20)(19)~~ any wastewater system designed by a licensed professional that has been determined to be within
30 the practice of engineering in accordance with G.S. 89C-3(6) by the North Carolina Board of
31 Examiners for Engineers and Surveyors;
- 32 ~~(21)(20)~~ any wastewater system approved in accordance with Sections .1500, .1600, and .1700 of this
33 Subchapter that requires in the RWTS or PIA Approval that the system be designed by a PE;
- 34 ~~(22)(21)~~ any system or system component where the rules of this Subchapter provide for an engineer to
35 propose alternative materials, capacity determination, or performance requirements; and
- 36 ~~(23)(22)~~ any other system so specified by the ~~LHD. LHD, based on wastewater system complexity and~~
37 ~~LHD's experience with the proposed system type.~~

1 (c) Plans and specifications for the use of a groundwater lowering system to meet the vertical separation to a SWC
2 shall be prepared by a licensed professional if required in G.S. 89C, 89E, or 89F. Prior to the issuance of an IP or
3 CA, the plans and specifications shall be reviewed and approved by the authorized agent if the plans and
4 specifications meet the requirements of Rules .0504 and .0910 of this Subchapter and accepted engineering
5 practices.

6 ~~[(c) Any tank with a capacity greater than 4,000 gallons, rated for traffic load, installed deeper than 36 inches below~~
7 ~~finished grade, or built in place shall be designed by a PE.]~~

8 ~~(e)~~(d) An installer shall construct, install, or repair wastewater systems as required by G.S. 90A, Article 5. The
9 installer shall be responsible for the following:

- 10 (1) certification at the required level according to the system design specifications as required by G.S.
11 90A-72;
- 12 (2) notification to the LHD upon completion of the system installation ~~or~~ and each stage requiring
13 inspection as conditioned on a CA;
- 14 (3) participation in a preconstruction conference when specified in the CA or by the RWTS or PIA
15 Approval;
- 16 (4) participation during the inspection of the wastewater system by the authorized agent;
- 17 (5) participation during the post-construction conference and all other requirements when the
18 wastewater system is permitted in accordance with Rule .0207 of this Subchapter; and
- 19 (6) final cover of the system after LHD approval. The wastewater system shall be in the same
20 condition when covered as when approved.

21 ~~(d)~~(e) The Management Entity, or its employees, shall hold a valid and current certificate or certifications as
22 required for the system from the Water Pollution Control Systems Operators Certification ~~Commission,~~
23 Commission. Nothing and nothing in this Subchapter shall preclude any requirements for system Management
24 Entities in accordance with G.S. 90A, Article 3.

25 ~~(e)~~(f) Nothing in this Rule shall be construed as allowing any licensed professional to provide services for which he
26 or she has neither the educational background, expertise, or license to perform, or is beyond his or her scope of work
27 and the applicable statutes for their respective professions.

28 ~~(f)~~(g) The PE or authorized designer shall provide a written statement to the owner specifying that construction is
29 complete and in accordance with approved plans, specifications, and modifications. This statement is shall be based
30 on periodic observations of construction and a final inspection for design compliance. Record drawings shall be
31 provided to the owner and LHD when any change has been made to the wastewater system installation from the
32 approved plans.

33
34 *History Note: Authority G.S. 89C; 89E; 89F; 90A; 130A-335.*
35 *Eff. December 1, 2018*
36

1 15A NCAC 18E .0304 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0304 SUBMITTAL REQUIREMENTS FOR PLANS, SPECIFICATIONS, AND**
4 **REPORTS PREPARED BY LICENSED PROFESSIONALS FOR SYSTEMS OVER 3,000 GALLONS/DAY**

5 ~~(a)~~ All wastewater systems with a DDF greater than 3,000 gpd shall be designed by a PE, with site evaluation by an
6 LSS, and LG, as applicable, in accordance with G.S. 89C, 89E, and 89F. The wastewater system ~~Plans plans, and~~
7 specifications ~~specifications, and reports~~ required to be prepared by an LSS or PE, if required in G.S. 89C or 89E, or
8 other North Carolina licensed professional shall contain the information necessary for construction of the
9 wastewater ~~system, system~~ in accordance with this Subchapter, ~~Subchapter,~~ ~~Plans and specifications~~ and shall
10 include the information in Paragraphs (b) through (e) of this Rule, ~~Rule~~ and any other information, ~~information~~
11 determined to be applicable by the LHD or the State, such as the impact of projected wastewater constituents on the
12 trench and receiving soil. Plans, specifications, and reports shall include the following information:

13 (1) Applicant information and DDF determination:

14 (A) the seal, signature, and the date on all plans, specifications, and reports prepared by the
15 PE, LSS, and any other licensed or registered professionals who contributed to the plans,
16 specifications, or reports;

17 (B) name, address, and phone number for the owner and all licensed professionals who have
18 prepared plans, specifications, and reports for the wastewater system; and

19 (C) DDF and projected wastewater strength based on the application submitted to the LHD
20 that includes calculations and the basis for the proposed DDF and wastewater strength.

21 (2) Special Site Evaluation in accordance with Rule .0510 of this Subchapter, including soil and site
22 evaluation, hydraulic and hydrologic assessment reports, and site plans:

23 (A) soil and site evaluation report, written by the LSS, on the field evaluation of the soil
24 conditions and site features within the proposed initial and repair dispersal field areas
25 including the following:

26 (i) vertical soil profile descriptions for pits and soil borings in accordance with
27 Section .0500 of this Subchapter;

28 (ii) recommended LTAR, system type, trench width, length, depth on downslope
29 side of trench for proposed initial and repair dispersal field areas with
30 justification;

31 (iii) soil and site-based criteria for dispersal field design and site modifications;

32 (iv) for sites originally classified unsuitable, written documentation indicating that
33 the proposed system can be expected to function in accordance with Rule
34 .0509(c) of this Subchapter; and

35 (v) recommended effluent standard for proposed initial and repair dispersal field
36 areas with justification; and

37 (B) hydraulic assessment reports on site-specific field information that shall include:

- 1 (i) in-situ Ksat measurements at the proposed infiltrative surface elevation where
2 possible and at each distinct horizon within and beneath the treatment zone to a
3 depth of 48 inches below the ground surface or to a depth referenced in an
4 associated hydraulic assessment, such as groundwater mounding analysis or
5 lateral flow analysis;
- 6 (ii) logs from deep borings identifying restrictive layers, changes in texture and
7 density, and aquifer boundaries;
- 8 (iii) groundwater mounding for level sites or lateral flow analysis for sloping sites in
9 accordance with Rule .0510(e) of this Subchapter, as applicable; and
- 10 (iv) contaminant transport analysis showing projected compliance with groundwater
11 standards at property lines or at the required setback from water supply sources
12 within the property, as applicable;
- 13 (3) Site plan prepared by the PE based on a boundary survey prepared by a registered land surveyor
14 with the following information:
- 15 (A) site topography, proposed site modifications, location of existing and proposed site
16 features listed in Rule .0601 of this Subchapter, proposed facility location, location of
17 proposed initial and repair dispersal field areas and types, and location of LSS soil pits,
18 hand auger borings, deep borings, and in-situ Kats tests, as applicable;
- 19 (B) existing and proposed public wells or water supply sources on the property or within 500
20 feet of any proposed initial and repair dispersal field areas;
- 21 (C) existing and proposed private wells or water supply sources within 200 feet of existing or
22 proposed system component locations;
- 23 (D) other existing and proposed wells, existing and proposed water lines (including fire
24 protection, irrigation, etc.) within the property boundaries and within 10 feet of any
25 projected system component;
- 26 (E) surface waters with water quality classification, jurisdictional wetlands, and existing and
27 proposed stormwater management drainage features and groundwater drainage systems;
- 28 (F) topographic map with two-foot contour intervals (or spot elevations when there is less
29 than a two-foot elevation difference across the site) identifying areas evaluated for initial
30 and repair dispersal field areas, proposed location of trenches, and pits and soil borings
31 labeled to facilitate field identification;
- 32 (G) location of tanks and advanced pretreatment components, including means of access for
33 pumping and maintenance; and
- 34 (H) any site modifications and site and slope stabilization plans.
- 35 (4) System components design, installation, operation, and maintenance information:
- 36 (A) collection systems and sewers;

- 1 (i) plan and profile drawings, including location, pipe diameter, invert and ground
2 surface elevations of manholes and cleanouts;
3 (ii) proximity to utilities and site features listed in Rule .0601 of this Subchapter;
4 (iii) drawings of service connections, manholes, cleanouts, valves and other
5 appurtenances, aerial crossings, road crossings, water lines, stormwater
6 management drainage features, streams, or ditches; and
7 (iv) installation and testing procedures and pass or fail criteria;

8 (B) tank information:

- 9 (i) plan and profile drawings of all tanks, including tank dimensions and all
10 elevations;
11 (ii) access riser, manhole, chamber interconnection, effluent filter, and inlet and
12 outlet details;
13 (iii) construction details for built-in-place tanks, including dimensions,
14 reinforcement details and calculations, and construction methods;
15 (iv) identification number for State approved tanks;
16 (v) installation criteria and water tightness testing procedures with pass or fail
17 criteria; and
18 (vi) anti-buoyancy calculations and provisions;

19 (C) pump stations, including raw sewage lift stations and pump tanks:

- 20 (i) information required in Subparagraph (4)(B) of this Rule;
21 (ii) specifications for pumps, discharge piping, pump removal system, and all
22 related appurtenances;
23 (iii) dosing system total dynamic head calculations, pump specifications, pump
24 curves and expected operating conditions (dosing, flushing, etc.);
25 (iv) control panel, floats and settings, high-water alarm components, location, and
26 operational description under normal and high-water conditions;
27 (v) emergency storage capacity calculations, timer control settings, and provisions
28 for stand-by power; and
29 (vi) lighting, ventilation, if applicable, wash-down water supply with back siphon
30 protection and protective fencing;

31 (D) advanced pretreatment systems:

- 32 (i) information required in Subparagraphs (4)(B) and (C) of this Rule;
33 (ii) drawings and details showing all advanced pretreatment units and appurtenances
34 (pumps, valves, vents, removal systems, floats, etc.), piping (size and type),
35 disinfection unit, blowers if needed, location of control panels, height of control
36 panels, etc; and

1 (iii) documentation from the manufacturer supporting the proposed design and use of
2 the advanced pretreatment system to achieve specified effluent standards if not
3 otherwise approved by the State in accordance with Section .1700 of this
4 Subchapter;

5 (E) dispersal field plans and specifications with design and construction details:

6 (i) final field layout, including ground elevations based on field measurements at a
7 maximum of two-foot intervals (or spot elevations when there is less than a two-
8 foot elevation difference across the site);

9 (ii) trench plan and profile drawings, including cross sectional details, length,
10 spacing, connection details, cleanouts, etc., and invert elevations for each lateral;

11 (iii) manifolds, supply lines, pipe sizes, cleanouts and interconnection details and
12 invert elevations;

13 (iv) flow distribution device design;

14 (v) artificial drainage system locations, elevations, discharge points, and design
15 details, as applicable;

16 (vi) site preparation procedures;

17 (vii) construction phasing and wastewater system testing; and

18 (viii) final landscaping and compliance with erosion control requirements, such as site
19 stabilization procedures and drainage;

20 (F) materials specification for all materials to be used, methods of construction, means for
21 assuring the quality and integrity of the finished product; and

22 (G) operation and maintenance procedures for the Management Entity, inspection schedules,
23 and maintenance specifications for mechanical components and dispersal field vegetative
24 cover; and

25 (5) any other information determined to be applicable by the LHD or the State, such as the impact of
26 projected wastewater constituents on the trench and receiving soil.

27 (b) Applicant information and DDF determination:

28 (1) the seal, signature, and the date on all plans, specifications, and reports prepared by the PE, LSS,
29 and any other licensed or registered professionals who contributed to the plans, specifications, or
30 reports;

31 (2) name, address, and phone number for owner and all licensed professionals; and

32 (3) DDF and projected wastewater strength based on the application submitted to the LHD that
33 includes calculations and the basis for the proposed DDF and wastewater strength.

34 (c) Special Site Evaluation including soil and site evaluation, hydraulic and hydrologic assessment reports, and site
35 plans;

1 (1) soil and site evaluation report, written by the LSS, on the field evaluation of the soil conditions
2 and site features within the proposed initial and repair dispersal field areas including the
3 following:

4 (A) vertical soil profile descriptions for pits and soil borings in accordance with Section .0500
5 of this Subchapter;

6 (B) recommended LTAR, system type, trench width, length, depth on downslope side of
7 trench for proposed initial and repair dispersal field areas with justification;

8 (C) soil and site based criteria for dispersal field design and site modifications;

9 (D) for sites originally classified unsuitable, written documentation indicating that the
10 proposed system can be expected to function in accordance with Rule .0509(f) of this
11 Subchapter; and

12 (E) recommended effluent standard for proposed initial and repair dispersal field areas with
13 justification; and

14 (2) hydraulic assessment reports on site specific field information which shall include, as applicable:

15 (A) in situ Ksat measurements at the proposed infiltrative surface elevation where possible
16 and at every [each] distinct horizon within and beneath the treatment zone to a depth of
17 48 inches below the ground surface or to a depth references [referenced] in an associated
18 hydraulic assessment, such as groundwater mounding analysis or lateral flow analysis;

19 (B) logs from deep borings identifying restrictive layers, changes in texture and density, and
20 aquifer boundaries;

21 (C) groundwater mounding (level sites) or lateral flow analysis (sloping sites) in accordance
22 with Rule .0510(d) [.0510(c)] of this Subchapter; [Subchapter, as applicable; and]

23 (D) contaminant transport analysis showing projected compliance with groundwater
24 standards at property lines or at the required setback from water supply sources within the
25 property; [property, as applicable;] and

26 (E) in situ Ksat measurements and groundwater mounding or lateral flow analysis are not
27 required for dispersal fields (including sub fields or zones) with a DDF less than or equal
28 to 1,500 gpd that are in separate lateral flow windows or are shown to not be
29 hydraulically connected;

30 (d) site [Site] plan prepared by the PE based on a boundary survey prepared by a registered land surveyor with the
31 following information:

32 (1) site topography, proposed site modifications, location of existing and proposed site features listed
33 in Rule .0601 of this Subchapter, proposed facility location, location of proposed initial and repair
34 dispersal field areas and types, and location of LSS soil pits, hand auger borings, deep borings,
35 and in situ Kats tests, as applicable;

36 (2) existing and proposed public wells or water supply sources on the property or within 500 feet of
37 any proposed initial and repair dispersal field areas;

- (3) existing and proposed private wells or water supply sources within 200 feet of existing or proposed system component locations;
 - (4) other existing and proposed wells, existing and proposed water lines (including fire protection, irrigation, etc.) within the property boundaries and within 10 feet of any projected system component;
 - (5) surface waters with water quality classification, jurisdictional wetlands, and existing and proposed stormwater management drainage features and groundwater drainage systems;
 - (6) topographic map with two foot contour intervals (or spot elevations when there is less than a two-foot elevation difference across the site) identifying areas evaluated for initial and repair dispersal field areas, proposed location of trenches, and pits and soil borings labeled to facilitate field identification;
 - (7) location of tanks and advanced pretreatment components, including means of access for pumping and maintenance; and
 - (8) any site modifications and site and slope stabilization plans.
- (e) System components design, installation, operation, and maintenance information:
- (1) collection systems and sewers:
 - (A) plan and profile drawings, including location, pipe diameter, invert and ground surface elevations of manholes and cleanouts;
 - (B) proximity to utilities and site features listed in Rule .0601 of this Subchapter;
 - (C) drawings of service connections, manholes, cleanouts, valves and other appurtenances, aerial crossings, road crossings, water lines, stormwater management drainage features, streams, or ditches; and
 - (D) installation and testing procedures and pass or fail criteria; and
 - (2) tank information:
 - (A) plan and profile drawings of all tanks, including tank dimensions and all elevations;
 - (B) access riser, manhole, chamber interconnection, effluent filter, and inlet and outlet details;
 - (C) construction details for built in place tanks, including dimensions, reinforcement details and calculations, and construction methods;
 - (D) identification number for State approved tanks;
 - (E) installation criteria and water tightness testing procedures with pass or fail criteria; and
 - (F) anti buoyancy calculations and provisions; and
 - (3) pump stations, including raw sewage lift stations and pump tanks:
 - (A) information required in Subparagraph (e)(2) of this Rule;
 - (B) specifications for pumps, discharge piping, pump removal system, and all related appurtenances;

- 1 (C) [dosing] system total dynamic head calculations, pump specifications, pump curves and
2 expected operating conditions (dosing, flushing, etc.);
- 3 (D) control panel, float switches [floats] and settings, and high water alarm components,
4 location, and operational description under normal and high water conditions;
- 5 (E) — emergency storage capacity calculations, timer control settings, and provisions for stand-
6 by power; and
- 7 (F) — lighting, ventilation, if applicable, wash down water supply with back siphon protection
8 and protective fencing; and
- 9 (4) — advanced pretreatment systems:
- 10 (A) — information required in Subparagraphs (e)(2) and (3) of this Rule;
- 11 (B) — drawings and details showing all advanced pretreatment units and appurtenances (pumps,
12 valves, vents, removal systems, floats, etc.), piping (size and type), disinfection unit,
13 blowers if needed, location of control panels, height of control panels, etc.; and
- 14 (C) — documentation from the manufacturer supporting the proposed design and use of the
15 advanced pretreatment system to achieve specified effluent standards if not otherwise
16 approved by the State in accordance with Section .1700 of this Subchapter; and
- 17 (5) — dispersal field plans and specifications with design and construction details:
- 18 (A) — final field layout, including ground elevations based on field measurements at a
19 maximum of two foot intervals (or spot elevations when there is less than a two foot
20 elevation difference across the site);
- 21 (B) — trench plan and profile drawings, including cross sectional details, length, spacing,
22 connection, [connection details,] clean-out, [cleanouts,] etc., and invert elevations for
23 each lateral;
- 24 (C) — manifolds, supply lines, pipe sizes, cleanouts and interconnection details and invert
25 elevations;
- 26 (D) — flow distribution device design;
- 27 (E) — artificial drainage system locations, elevations, discharge points [points,] and design
28 details; [details, as applicable];
- 29 (F) — site preparation procedures;
- 30 (G) — construction [phasing] and [wastewater] system testing phasing; [testing,] and
- 31 (H) — final landscaping and compliance with erosion control requirements; and
- 32 (6) — materials specification for all materials to be used, methods of construction, means for assuring the
33 quality and integrity of the finished product; and
- 34 (7) — operation and maintenance procedures for the Management Entity, inspection schedules, and
35 maintenance specifications for mechanical components and dispersal field vegetative cover.
- 36

37 *History Note: Authority G.S. 130A-335.*

1
2

Eff. December 1, 2018

1 15A NCAC 18E .0305 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0305 SUBMITTAL REQUIREMENTS FOR PLANS, SPECIFICATIONS, AND**
4 **REPORTS PREPARED BY LICENSED PROFESSIONALS FOR SYSTEMS LESS THAN OR EQUAL TO**
5 **3,000 GALLONS/DAY**

6 Plans, specifications, and reports for wastewater ~~Wastewater~~ systems with a DDF less than or equal to 3,000 gpd
7 that are required to be prepared by an LSS or PE, ~~if required in G.S. 89C or 89E, or other North Carolina licensed~~
8 ~~professional shall include the following information in the plans and specifications: if required in G.S. 89C or 89E,~~
9 shall include the information required by the following:

- 10 (1) Rule ~~.0304(b)~~ .0304(1) of this Section;
- 11 (2) ~~Rules .0304(e)(1) through (e)(2)~~ Rule ~~[.0304(e)]~~ .0304(2) of this Section for Special Site
12 Evaluations and submittals prepared under Rule .0510 of this Subchapter; and
- 13 (3) Rule ~~.0304(e)~~ .0304(4)(D) of this Section for advanced pretreatment and IPWW.

14

15 *History Note:* Authority G.S. 130A-335.

16 Eff. December 1, 2018

17

1 15A NCAC 18E .0401 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0401 DESIGN DAILY FLOW**

4 (a) The minimum DDF for dwelling units shall be based on:

- 5 (1) 175 gpd for a one bedroom dwelling unit with no more than two ~~occupants~~, occupants and 400
- 6 square feet of living space or less; or
- 7 (2) 120 gpd per bedroom with a minimum of 240 gpd per dwelling unit or 60 gpd per person when
- 8 occupancy exceeds two persons per bedroom, whichever is greater.

9 (b) ~~Table II shall be used to determine DDF for facilities other than dwelling units.~~ DDF for facilities other than
 10 dwelling units shall be in accordance with Table II as follows:

11

TABLE II. Design daily flow for Facilities

Facility type	Design daily flow
Commercial	
<u>Airport, railroad stations, bus, and ferry terminals, etc.</u>	<u>5 gal/traveler, food preparation not included</u>
<u>Barber shops</u>	<u>50 gal/chair</u>
<u>Bars, cocktail lounges</u>	<u>20 gal/seat, food preparation not included</u>
<u>Beauty shops, style shops, hair salons</u>	<u>125 gal/chair</u>
<u>Bed and breakfast homes and inns</u>	<u>Dwelling unit DDF based on Paragraph (a) of this Rule plus</u> <u>120 gal/rented room which includes the following:</u> <u>Meals served to overnight guests</u> <u>Laundry for linens</u> <u>150 gal/room with cooking facilities in individual rooms</u>
<u>Event Centers</u>	<u>5 gal/person with toilets and hand sinks up to 4 hours;</u> <u>10 gal/person with toilets and hand sinks up to 8 hours;</u> <u>15 gal/person with toilets and hand sinks greater than 8</u> <u>hours;</u> <u>Add 5 gal/person with full kitchen</u>
<u>Markets open less than four days/week, such as a flea market or farmers market</u>	<u>30 gal/stall or vendor, food preparation not included</u>
<u>Marinas with no holding tank discharge included</u>	<u>30 gal/boat slip, with bathhouse</u> <u>10 gal/boat slip, wet slips (slips on dock)</u> <u>5 gal/boat slip, dry storage (warehouse)</u>
<u>Motels/hotels</u>	<u>120 gal/room includes the following:</u> <u>No cooking facilities in individual rooms other than a</u> <u>microwave or other similar devices</u> <u>No food service or limited food service establishment</u>

	<u>Laundry for linens</u> <u>150 gal/room with cooking facilities in individual rooms</u>
<u>Offices and factories with no IPWW included</u>	<u>12 gal/employee/< 8 hr shift</u> <u>Add 2 gal/employee/hour for more than 8 hr shift</u> <u>Add 10 gal/employee for showers</u>
<u>Stores, shopping centers, and malls</u>	<u>100 gal/1,000 ft² of retail sales area, food preparation not included</u>
<u>Warehouse (not retails sales warehouses)</u>	<u>100 gal/loading bay, or</u> <u>12 gal/employee/< 8 hr shift</u> <u>Add 2 gal/employee/hr for more than 8 hr shift</u>
<u>Storage warehouse including self-storage facilities and does not include caretaker residence</u>	<u>12 gal/employee/< 8 hr shift</u> <u>Add 2 gal/employee/hr for more than 8 hr shift</u>
<u>Alcoholic beverage tasting areas with no process wastewater included</u>	<u>200 gal/1,000 ft² of tasting area floor space, food preparation not included</u>
<u>Camps/Campgrounds</u>	
<u>Summer camps (overnight stay)*</u>	<u>60 gal/person, applied as follows:</u> <u>15 gal/person/food preparation</u> <u>20 gal/person/toilet facilities</u> <u>10 gal/person/bathing facilities</u> <u>15 gal/person/laundry facilities</u>
<u>Day camps (not inclusive of swimming area bathhouse)*</u>	<u>20 gal/person; and</u> <u>5 gal/meal served with multi use service; or</u> <u>3 gal/meal served with single-service articles</u>
<u>Temporary Labor Camp or Migrant Housing Camp (overnight stay)*</u>	<u>60 gal/person, applied as follows:</u> <u>15 gal/person/food preparation</u> <u>20 gal/person/toilet facilities</u> <u>10 gal/person/bathing facilities</u> <u>15 gal/person/laundry facilities</u>
<u>Travel trailer/RV in an RV park*</u>	<u>100 gal/space</u>
<u>Recreational Park Trailer (Park Model 400 ft² or less) in an RV park*</u>	<u>150 gal/space</u>
<u>Bathhouse for campsites and RV park sites with no water and sewer hook ups (maximum of four people per campsite)</u>	<u>70 gal/campsite</u>
<u>Food preparation facilities</u>	
<u>Food Establishments with multiuse articles*</u>	<u>25 gal/seat or 25 gal/15 ft² of floor space open 6 hrs/day or less</u>

	40 gal/seat or 40 gal/15 ft ² of floor space open 6 to 16 hrs/day Add 4 gpd/seat for every additional hour open beyond 16 hours
Food Establishments with single service articles*	20 gal/seat or 20 gal/15 ft ² of floor space open 6 hrs/day or less 30 gal/seat or 30 gal/15 ft ² of floor space open 6 to 16 hrs/day Add 3 gpd/seat for every additional hour open beyond 16 hours
Food stand with up to eight seats, mobile food units, and commissary kitchens*	50 gal/100 ft ² of food stand, food unit, or food prep floor space; and 12 gal/employee/< 8 hr shift Add 2 gal/employee/hr for more than 8 hr shift
Other food service facilities*	5 gal/meal served with multiuse articles 3 gal/meal served with single service articles
Meat markets/fish markets with no process wastewater included*	50 gal/100 ft ² of floor space and 12 gal/employee/< 8 hr shift Add 2 gal/employee/hr for more than 8 hr shift
Health care and other care institutions	
Hospitals*	300 gal/bed
Rest homes, assisted living homes, and nursing homes*	150 gal/bed with laundry 75 gal/bed without laundry Add 60 gal/resident employee with laundry
Day care facilities	15 gal/person open ≤ 12 hr shift without laundry Add 1 gal/person/hr open for more than 12 hrs per day Add 5 gal/person with full kitchen
Group homes, drug rehabilitation, mental health, and other care institutions	75 gal/person with laundry
Orphanages	60 gal/student or resident employee with laundry
Public access restrooms	
Convenience store, service station, truck stop*	250 gal/toilet or urinal meeting the following: Open less than 16 hours/day Food preparation not included Retail space not included
	325 gal/toilet or urinal meeting the following: Open 16 to 24 hours/day

	<u>Food preparation not included</u> <u>Retail space not included</u>
<u>Highway rest areas and visitor centers*</u>	<u>325 gal/toilet or urinal; or</u> <u>10 gal/parking space, whichever is greater</u>
<u>Recreational facilities</u>	
<u>Bowling center</u>	<u>50 gal/lane, food preparation not included</u>
<u>Community center, gym∞</u>	<u>5 gal/person plus 12 gal/employee/< 8 hr shift</u> <u>Add 2 gal/employee/hr for more than 8 hr shift; or</u> <u>50 gal/100 ft², whichever is larger</u>
<u>Country club/golf course</u>	<u>10 gal/person</u> <u>12 gal/employee/< 8 hr shift</u> <u>Add 2 gal/employee/hr for more than 8 hr shift</u> <u>3 gal/person for convenience stations</u> <u>Food preparation not included</u>
<u>Fairground</u>	<u>250 gal/toilet or urinal</u>
<u>Fitness center, spas, karate, dance, exercise∞</u>	<u>50 gal/100 ft² of floor space used by clientele, food preparation not included</u>
<u>Recreational park, State park, county park, and other similar facilities with no sports facilities</u>	<u>10 gal/parking space</u>
<u>Outdoor sports facilities, mini golf, batting cages, driving ranges, motocross, athletic park, ball fields, stadium, and other similar facilities</u>	<u>250 gal/toilet or urinal; or 5 gal/seat; or 10 gal/parking space, whichever is greater</u> <u>food preparation not included</u>
<u>Auditorium, theater, amphitheater, drive-in theater</u>	<u>2 gal/seat; or</u> <u>10 gal/parking space, whichever is greater</u> <u>Food preparation not included</u>
<u>Swimming pools and bathhouses</u>	<u>5 gal/person domestic waste only, bathing load of pool as alternative method of sizing</u>
<u>Sports facilities courts or other similar facilities</u>	<u>250 gal/toilet or urinal; or 50 gal/court, whichever is greater</u>
<u>Institutions</u>	
<u>Church or other religious institution*</u>	<u>2 gal/seat sanctuary only</u> <u>3 gal/seat with warming kitchen in same structure as sanctuary</u> <u>5 gal/seat with full kitchen in same structure as sanctuary</u>
<u>Public or private assembly halls used for recreation, regularly scheduled meetings, events, or amusement* (for churches, flow shall be in addition to sanctuary structure flow)</u>	<u>2 gal/person with toilets and hand sinks;</u> <u>3 gal/person with addition of a warming kitchen;</u> <u>5 gal/person with full kitchen</u>

Schools	
Day schools*	6 gal/student with no cafeteria or gymnasium 9 gal/student with cafeteria only 12 gal/student with cafeteria and gymnasium
After school program	5 gal/student in addition to flow for regular school day
Boarding schools	60 gal/student and resident employee with laundry

* Facility has potential to general HSE.

∞ Designer shall use the maximum building occupancy assigned by the local fire marshal in determining DDF unless another method for determining DDF is proposed, including the justification for not using the maximum building occupancy.

(c) The minimum DDF from any facility other than a dwelling unit shall be 100 gpd. For facilities with multiple design units, the minimum DDF shall be 100 gpd per design unit. The DDF of the facility is shall be the sum of all design unit flows.

(d) ~~Design of DDF determination for~~ wastewater systems ~~for~~ with facilities not identified in this Rule shall be determined using available water use data, capacity of water-using fixtures, occupancy or operation patterns, and other measured data from the facility itself or a comparable facility.

(e) ~~Unless otherwise noted in Table II, the DDF for laundry facilities is not included.~~ Where laundry is not specified for a facility in Table II, but is proposed to be provided, the DDF shall be adjusted to account for the proposed usage and machine water capacity. Applicant [Owner] The owner shall provide cut-sheets for laundry machines proposed for use in facilities.

(f) HVAC unit or ice machine condensate, gutter or sump pump discharge, water treatment system back flush lines, or similar incidental flows shall not discharge to the wastewater system, unless a PE designs the wastewater system for these flows.

(g) Unless otherwise noted in Table II, the DDF per unit includes employees.

(h) Food service facilities and other facilities that are projected to generate wastewater with constituent levels greater than domestic strength, DSE, as defined in Rule .0402 of this Section, are identified in Table II with a single asterisk (*). (*) as HSE. Any facility which that has a food service component that contributes 50 percent or more of the DDF shall be considered to generate HSE. Determination of wastewater strength is shall be based on projected or measured levels of one or more of the following: BOD, TSS, FOG, or TN. Table III of Rule [.0402] .0402(a) on this Section identifies the constituent limits for DSE. ~~Excess concentrations of other constituents may result in a HSE classification on a site specific basis.~~

(i) ~~Wastewater with constituents other than those listed in Table III of Rule .0402(a) of this Section may be classified as IPWW as defined in G.S. 130A-334(2a) on a site specific basis.~~

(+)(j) A request for an adjusted DDF shall be made in accordance with Rule .0403 of this Section.

TABLE II. Design daily flow for Facilities

Facility type	Design daily flow
Commercial	
Airport, railroad stations, bus, and ferry terminals, etc.	5 gal/traveler, food preparation not included
Barber shops	50 gal/chair
Bars, cocktail lounges	20 gal/seat, food preparation not included
Beauty shops, style shops, hair salons	125 gal/chair
Bed and breakfast homes and inns	Dwelling unit DDF based on Paragraph (a) of this Rule plus 120 gal/rented room which includes the following: Meals served to overnight guests Laundry for linens 150 gal/room with cooking facilities in individual rooms
Event Centers	5 gal/person with toilets and hand sinks up to 4 hours; 10 gal/person with toilets and hand sinks up to 8 hours; 15 gal/person with toilets and hand sinks greater than 8 hours; Add 5 gal/person with full kitchen
Markets open less than four days/week, such as a flea market or farmers market	30 gal/stall or vendor, food preparation not included
Marinas with no holding tank discharge included	30 gal/boat slip, with bathhouse 10 gal/boat slip, wet slips (slips on dock) 5 gal/boat slip, dry storage (warehouse)
Motels/hotels	120 gal/room includes the following: No cooking facilities in individual rooms other than a microwave or other similar devices No food service or limited food service establishment Laundry for linens 150 gal/room with cooking facilities in individual rooms
Offices and factories with no IPWW included	12 gal/employee/≤ 8 hr shift Add 2 gal/employee/hour for more than 8 hr shift Add 10 gal/employee for showers
Stores, shopping centers, and malls	100 gal/1,000 ft ² of retail sales area, food preparation not included
Warehouse (not retail sales warehouses)	100 gal/loading bay, or 12 gal/employee/≤ 8 hr shift Add 2 gal/employee/hr for more than 8 hr shift
Storage warehouse including self storage facilities	12 gal/employee/≤ 8 hr shift

and does not include caretaker residence	Add 2 gal/employee/hr for more than 8 hr shift
Alcoholic beverage tasting areas with no process wastewater included	200 gal/1,000 ft² of tasting area floor space, food preparation not included
Camps/Campgrounds	
Summer camps (overnight stay)*	60 gal/person, applied as follows: 15 gal/person/food preparation 20 gal/person/toilet facilities 10 gal/person/bathing facilities 15 gal/person/laundry facilities
Day camps (not inclusive of swimming area bathhouse)*	20 gal/person; and 5 gal/meal served with multi use service; or 3 gal/meal served with single service articles
Temporary Labor Camp or Migrant Housing Camp (overnight stay)*	60 gal/person, applied as follows: 15 gal/person/food preparation 20 gal/person/toilet facilities 10 gal/person/bathing facilities 15 gal/person/laundry facilities
Travel trailer/RV in an RV park*	100 gal/space
Recreational Park Trailer (Park Model 400 ft ² or less) in an RV park*	150 gal/space
Bathhouse for campsites and RV park sites with no water and sewer hook ups (maximum of four people per campsite)	70 gal/campsite
Food preparation facilities	
Food Establishments with multiuse articles*	25 gal/seat or 25 gal/15 ft ² of floor space open 6 hrs/day or less 40 gal/seat or 40 gal/15 ft ² of floor space open 6 to 16 hrs/day Add 4 gpd/seat for every additional hour open beyond 16 hours
Food Establishments with single service articles*	20 gal/seat or 20 gal/15 ft ² of floor space open 6 hrs/day or less 30 gal/seat or 30 gal/15 ft ² of floor space open 6 to 16 hrs/day Add 3 gpd/seat for every additional hour open beyond 16 hours
Food stand with up to eight seats, mobile food units,	50 gal/100 ft ² of food stand, food unit, or food prep floor

and commissary kitchens*	space; and 12 gal/employee/≤ 8 hr shift Add 2 gal/employee/hr for more than 8 hr shift
Other food service facilities*	5 gal/meal served with multiuse articles 3 gal/meal served with single service articles
Meat markets/fish markets with no process wastewater included*	50 gal/100 ft ² of floor space and 12 gal/employee/≤ 8 hr shift Add 2 gal/employee/hr for more than 8 hr shift
Health care and other care institutions	
Hospitals*	300 gal/bed
Rest homes, assisted living homes, and nursing homes*	150 gal/bed with laundry 75 gal/bed without laundry Add 60 gal/resident employee with laundry
Day care facilities	15 gal/person open ≤ 12 hr shift without laundry Add 1 gal/person/hr open for more than 12 hrs per day Add 5 gal/person with full kitchen
Group homes, drug rehabilitation, mental health, and other care institutions	75 gal/person with laundry
Orphanages	60 gal/student or resident employee with laundry
Public access restrooms	
Convenience store, service station, truck stop*	250 gal/toilet or urinal meeting the following: Open less than 16 hours/day Food preparation not included Retail space not included
	325 gal/toilet or urinal meeting the following: Open 16 to 24 hours/day Food preparation not included Retail space not included
Highway rest areas and visitor centers*	325 gal/toilet or urinal; or 10 gal/parking space, whichever is greater
Recreational facilities	
Bowling center	50 gal/lane, food preparation not included
Community center, gym ^o	5 gal/person plus 12 gal/employee/≤ 8 hr shift Add 2 gal/employee/hr for more than 8 hr shift; or 50 gal/100 ft ² , whichever is larger
Country club/golf course	10 gal/person 12 gal/employee/≤ 8 hr shift

	Add 2 gal/employee/hr for more than 8 hr shift 3 gal/person for convenience stations Food preparation not included
Fairground	250 gal/toilet or urinal
Fitness center, spas, karate, dance, exercise [∞]	50 gal/100 ft ² of floor space used by clientele, food preparation not included
Recreational park, State park, county park, and other similar facilities with no sports facilities	10 gal/parking space
Outdoor sports facilities, mini golf, batting cages, driving ranges, motocross, athletic park, ball fields, stadium, and other similar facilities	250 gal/toilet or urinal; or 5 gal/seat; or 10 gal/parking space, whichever is greater food preparation not included
Auditorium, theater, amphitheater, drive in theater	2 gal/seat; or 10 gal/parking space, whichever is greater Food preparation not included
Swimming pools and bathhouses	5 gal/person domestic waste only, bathing load of pool as alternative method of sizing
Sports facilities courts or other similar facilities	250 gal/toilet or urinal; or 50 gal/court, whichever is greater
Institutions	
Church or other religious institution*	2 gal/seat sanctuary only 3 gal/seat with warming kitchen in same structure as sanctuary 5 gal/seat with full kitchen in same structure as sanctuary
Public or private assembly halls used for recreation, regularly scheduled meetings, events, or amusement [∞] * (for churches, flow should be in addition to sanctuary structure flow)	2 gal/person with toilets and hand sinks; 3 gal/person with addition of a warming kitchen; 5 gal/person with full kitchen
Schools	
Day schools*	6 gal/student with no cafeteria or gymnasium 9 gal/student with cafeteria only 12 gal/student with cafeteria and gymnasium
After school program	5 gal/student in addition to flow for regular school day
Boarding schools	60 gal/student and resident employee with laundry

1 * Facility has potential to general HSE.

2 [∞]Designer shall use the maximum building occupancy assigned by the local fire marshal in determining DDF unless
3 another method for determining DDF is proposed, including the justification for not using the maximum building
4 occupancy.

5

1 *History Note: Authority G.S. 130A-335(e).*
2 *Eff. December 1, 2018*
3

1 15A NCAC 18E .0402 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0402 SEPTIC TANK EFFLUENT CHARACTERISTICS**

4 (a) Septic tank effluent standards for DSE ~~are listed in Table III.~~ shall be as set forth in Table III of this Paragraph.
5 Effluent that exceeds these standards for any constituent ~~is shall be~~ considered HSE. When measured, effluent
6 characteristics shall be based on at least two effluent samples collected during normal or above-normal operating
7 periods. A normal period is when the occupancy, operation, or use of the facility is average when compared to the
8 occupancy, operation, or use over a time frame of a minimum of one year. The samples ~~should shall~~ be taken from
9 the existing or a comparable facility on non-consecutive days of operation. A comparable facility is based on
10 documentation showing that the hours of operation, floor plan, water use practices, water-using fixtures, etc., are
11 similar to the facility listed in the application. The samples should be analyzed for a minimum of BOD₅, TSS, TN,
12 and FOG.
13

14 **Table III.** Septic tank effluent standards for DSE

Constituent	DSE (maximum) mg/L
BOD	≤ 350
TSS	≤ 100
TN*	≤ 100
FOG	≤ 30

15 *TN is the sum of TKN, nitrate nitrogen, and nitrite nitrogen

16
17 (b) ~~Facilities Designs for facilities~~ that generate HSE or propose an adjusted ~~design daily flow~~ DDF in accordance
18 with Rule .0403 shall ~~have to~~ address the issue of wastewater strength in accordance with either Subparagraph (b)(1)
19 or (b)(2) of this Rule. one of the following:

- 20 (1) Wastewater systems that meet one of the following criteria shall utilize advanced ~~pretreatment~~
21 pretreatment, designed in accordance with Rule .1201(b) of this Subchapter, to produce DSE or
22 better prior to dispersal:
- 23 (A) DDF greater than ~~or equal to~~ 1,500 gpd and HSE;
 - 24 (B) any proposed flow reduction in accordance with Rule .0403 of this Section where the
25 DDF is greater than ~~or equal to~~ 1,500 gpd; or
 - 26 (C) any proposed flow reduction in accordance with Rule .0403 of this Section with projected
27 or measured effluent characteristics that exceed ~~domestic strength~~ DSE as identified set
28 forth in Table III of this Rule. Rule; or
- 29 (2) A licensed professional, if required in in accordance with G.S. 89C, 89E, or 89F, may justify not
30 using advanced pretreatment by providing the following, as applicable:

1 (A) the system design is determined based upon a mass loading adjusted LTAR calculated
2 using site-specific projected or measured BOD₅ and TSS values. The adjusted LTAR
3 calculations shall be done as follows:
4

$$5 \quad \text{MLAF} = \frac{300}{(\text{BOD}_5 + \text{TSS})} \text{ or one, whichever is } \text{greater}$$

6 ~~smaller~~

$$7 \quad \text{ALTAR} = \text{MLAF} \times \text{LTAR}$$

8 ~~If MLAF is greater than or equal to one, ALTAR = LTAR~~

$$9 \quad \text{MLAF} = \frac{300}{(\text{BOD}_5 + \text{TSS})}$$

10
11 Where MLAF = mass loading LTAR adjustment factor
12 ~~ALTAR = adjusted LTAR~~
13 BOD₅ = measured or projected
14 TSS = measured or projected
15 LTAR = LTAR assigned by the authorized agent for DSE in
16 accordance with this ~~Section~~ Subchapter
17 ~~ALTAR = adjusted LTAR~~
18

19 (B) site-specific nitrogen migration analysis when projected or measured effluent total
20 nitrogen levels are greater than 100 mg/L. Analysis shall demonstrate that the nitrate-
21 nitrogen concentration at the property line will not exceed 10 mg/L; and

22 (C) additional pretreatment to reduce FOG to less than or equal to 30 mg/L, including
23 justification for the proposed pretreatment method.

24 (c) The requirements of Paragraph (b) ~~do~~ shall not apply if the effluent for a specific facility identified in Rule
25 .0401 of this Section as having HSE has been measured in accordance with Paragraph (a) of this Rule and shown to
26 be DSE.

27
28 *History Note: Authority G.S. 130A-335(e).*

29 *Eff. December 1, 2018*
30

1 15A NCAC 18E .0403 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0403 ADJUSTMENTS TO DESIGN DAILY FLOW**

4 (a) The authorized agent ~~and or~~ the State ~~may shall~~ approve ~~a proposed an~~ adjusted DDF relative to the values in
5 Table II ~~of Rule .0401(a) of this Section~~ for new or existing ~~facilities. facilities in accordance with this Rule.~~ The
6 water use information provided to support the proposed adjusted DDF shall meet the requirements of Paragraphs (b)
7 or (c) of this Rule and may be provided by the owner, ~~applicant,~~ designer, or PE. All adjustments to DDF shall meet
8 the requirements of Paragraph (d) of this Rule.

9 (b) Adjustments to DDF based on documented data from the facility or a comparable ~~facility facility, as described~~
10 ~~in Rule .0402(a) of this Section,~~ shall meet the following criteria:

11 (1) the submitted data shall consist of a minimum of 12 consecutive monthly total water consumption
12 readings, and 30 consecutive daily water consumption readings taken during a projected normal or
13 above normal wastewater flow ~~month; [month;] month.~~ A normal or above normal month is when
14 ~~the average flow equals or exceeds the mean of the 12 consecutive monthly total water~~
15 ~~consumption readings. The following calculations shall be done with the submitted data:~~

16 (A) a hydraulic peaking factor shall be ~~[derived] calculated~~ by dividing the highest monthly
17 flow of the 12 monthly readings by the sum of the 30 consecutive daily water
18 consumption readings. The hydraulic peaking factor shall not be less than one; and

19 (B) the adjusted DDF shall be ~~[determined] calculated~~ by multiplying the numerical average
20 of the greatest 10 percent of the daily readings by the hydraulic peaking factor; or

21 (2) a hydraulic peaking factor shall be derived by dividing the highest monthly flow of the 12 monthly
22 readings by the sum of the 30 consecutive daily water consumption readings. The hydraulic
23 peaking factor shall not be less than one;

24 (3) the adjusted DDF shall be determined by multiplying the numerical average of the greatest 10
25 percent of the daily readings by the hydraulic peaking factor; and

26 (4)(2) ~~an alternative method of determining~~ the adjusted DDF ~~shall be calculated by multiplying is to~~
27 ~~multiply~~ the highest of the 12 monthly readings by 1.5 and then ~~divide dividing~~ by the number of
28 days in the month.

29 (c) Adjustments to DDF based on ~~the~~ proposed use of extreme water-conserving ~~fixtures fixtures,~~ ~~which use less~~
30 ~~water that the fixtures required by the North Carolina Plumbing Code,~~ shall be based upon the capacity of fixtures
31 and documentation of the amount of flow reduction to be expected from their use in the proposed facility. Cut sheets
32 of the proposed fixtures shall be ~~provided, provided to the LHD and the State, as applicable.~~

33 (d) The proposed adjusted DDF ~~calculations shall account for projected increased constituent concentrations~~ due to
34 ~~their the~~ reduction in water use. Calculations shall be provided to verify that the ~~conditions set forth criteria~~ in Rule
35 ~~.0402(b) Rules .0402 and .1201 of this Section Subchapter~~ are met.

1 (e) ~~In accordance with~~ Pursuant to S.L. 2013-413, s.34 ~~s.34, as revised by and~~ S.L. 2014-120, s.53, a PE ~~can may~~
2 propose an adjusted DDF for new or existing dwelling units or facilities identified in Table II ~~of Rule .0402(a) of~~
3 ~~this Section~~ in accordance with the following:

- 4 (1) DDF less than those listed in Rule .0401 of this Section ~~[that and]~~ are achieved through
5 engineering design ~~which that~~ utilizes low-flow fixtures and low-flow technologies;
- 6 (2) comparison of flow from proposed fixtures and technologies to flow from conventional fixtures
7 and technologies;
- 8 (3) the signed and sealed proposal shall account for the site-specific impact on the wastewater system
9 based on projected increased constituent concentrations resulting from reduction in water use in
10 accordance with Rule .0402(b) of this Section;
- 11 (4) inspection of the existing wastewater system and verification that the system meets the ~~current~~
12 ~~rules Rules of this Subchapter~~ and can accept the increase in constituent ~~loading; loading, as~~
13 ~~applicable;~~
- 14 (5) proposed adjusted DDF for wastewater systems determined to be less than 3,000 gpd shall not
15 require State review in accordance with Rule .0302(e) of this Subchapter unless requested by the
16 LHD; and
- 17 (6) neither the State nor any LHD shall be liable for any damages caused by a system approved or
18 permitted in accordance with this Paragraph.

19 (f) A PE ~~can may~~ propose, and the State ~~shall~~ approve an adjusted DDF for a facility made up of individual
20 dwelling units ~~in accordance with this Rule~~ when the following criteria are met:

- 21 (1) DDF calculated in accordance with this Section is greater than 3,000 gpd;
- 22 (2) adjusted DDF is based on information in Paragraphs (b) or (c) of this Rule; and
- 23 (3) increase in wastewater strength is accounted for in accordance with Paragraph (d) of this Rule.

24 (g) Adjusted DDF based upon use of water-conserving fixtures shall apply only to design capacity requirements of
25 the dosing system and dispersal fields. The DDF ~~from set forth in~~ Rule .0401 of ~~the~~ ~~this Section~~ ~~Table II~~ shall be
26 used to determine minimum tank and advanced pretreatment component capacities.

27
28 *History Note: Authority G.S. 130A-335(e).*

29 *Eff. December 1, 2018*

30

1 15A NCAC 18E .0501 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0501 SITE EVALUATION**

4 (a) Upon receipt of an application, an authorized agent shall investigate each proposed site in accordance with this
5 Section to determine whether the site is suitable or unsuitable for the installation of a wastewater system. The field
6 investigation shall include the evaluation of the following soil and site features with written field descriptions
7 including:

- 8 (1) topography, slope, and landscape position;
- 9 (2) soil morphology:
 - 10 (A) depth of horizons;
 - 11 (B) texture;
 - 12 (C) structure;
 - 13 (D) consistence;
 - 14 (E) color; and
 - 15 (F) organic soils, as applicable;
- 16 (3) SWC;
- 17 (4) soil depth;
- 18 (5) restrictive horizons;
- 19 (6) the suitability for each profile description;
- 20 (7) LTAR; and
- 21 (8) available space.

22 (b) Soil profiles shall be evaluated at the site by borings, pits, or other means of excavation, and described to reflect
23 variations in soil and site characteristics across both initial and repair areas.

24 (c) Soil profiles shall be evaluated and described to the following minimum depths:

- 25 (1) 48 inches from the ground surface; or
- 26 (2) to an unsuitable soil condition determined in accordance with this Section.

27 (d) Owners may be required to provide pits when necessary for evaluation of the site as determined by the
28 authorized ~~agent.~~ agent, such as for evaluation of saprolite or soil structure.

29 (e) ~~Site evaluations shall be completed in accordance with this Section.~~ Based on the evaluation of the soil and site
30 features soil conditions and site features listed in Paragraph (a) of this Rule, each soil profile shall be classified
31 suitable (S) or ~~unsuitable (U).~~ unsuitable. The authorized agent shall specify the overall site classification and
32 suitability in accordance with Rule .0509 of this Section.

33 ~~(f) The authorized agent shall specify the overall site classification and suitability in accordance with Rule .0509 of~~
34 this Section.

35 ~~(g)(f)~~ The authorized agent shall specify the LTAR in accordance with Section .0900 of this Subchapter for sites
36 classified suitable in accordance with Rule .0509 of this Section.

1 ~~(h)~~(g) A LC or SWC initially classified unsuitable may be reclassified suitable if the requirements of Rule .0509(b),
2 ~~(e), .0509(b) or (c)~~ (d) or (e) [(d), (e), or (f)] of this Section are met.

3

4 *History Note: Authority G.S. 130A-335(e).*

5 *Eff. December 1, 2018*

6

1 15A NCAC 18E .0502 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0502 TOPOGRAPHY AND LANDSCAPE POSITION**

4 (a) Uniform stable slopes less than or equal to 65 percent shall be considered suitable with respect to topography.

5 (b) The following shall be unsuitable with respect to topography: Unstable slopes shall be considered unsuitable
6 with respect to topography:

7 (1) slopes greater than 65 percent; and

8 (2) areas subject to surface water convergence. The site shall be considered suitable when the surface
9 water can be diverted from the site with berms or other surface water diversion devices;

10 (c) The following shall be unsuitable with respect to landscape position: Slopes greater than 65 percent shall be
11 considered unsuitable with respect to topography.

12 (1) depressions, except when with site modifications in accordance with Rule .0910 of this
13 Subchapter, the site complies with the requirements of this Section;

14 (2) a jurisdictional wetland as determined by the U.S. Army Corps of Engineers or DEQ, unless the
15 proposed use is approved in writing by the U.S. Army Corps of Engineers or DEQ; and

16 (3) complex slope patterns, such as areas affected by erosion which have rills or evidence of drainage,
17 and slopes dissected by gullies that prohibit the design, installation, maintenance, monitoring, or
18 repair of the wastewater system.

19 ~~(d) Areas subject to surface water convergence may be considered unsuitable with respect to topography, unless the~~
20 ~~surface water can be diverted from the site.~~

21 ~~(e) Slope Complex slope patterns and slopes dissected by gullies that prohibit the design, installation, maintenance,~~
22 ~~monitoring, or repair of the wastewater system shall be considered unsuitable with respect to topography.~~

23 ~~(f) Depressions shall be considered unsuitable with respect to landscape position except when, with site~~
24 ~~modifications, the site complies with the requirements of this Section and is approved by an authorized agent.~~

25 ~~(g) A jurisdictional wetland as determined by the U.S. Army Corps of Engineers or DEQ shall be considered~~
26 ~~unsuitable with respect to landscape position, unless the proposed use is approved in writing by the U.S. Army~~
27 ~~Corps of Engineers or DEQ.~~

28 ~~(h)(d)~~ For all sites, except where a drip dispersal system is proposed, additional required soil depth (slope
29 correction) shall be calculated using the following formula to determine site suitability for soil depth in accordance
30 with Rule .0505 of this Section:

31 SD = MSD + (TW x S)

32 Where SD = soil depth required with slope correction (inches)

33 MSD = minimum soil depth (inches)

34 TW = ~~actual~~ proposed trench width (inches)

35 S = percent slope (in decimal form)

36
37 *History Note: Authority G.S. 130A-335(e).*

1
2

Eff. December 1, 2018

1 15A NCAC 18E .0503 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0503 SOIL MORPHOLOGY**

4 The soil morphology shall be evaluated by an authorized agent in accordance with the following:

- 5 (1) Texture – The texture of each soil horizon in a profile shall be classified into ~~four general groups~~
6 ~~and~~ 12 soil textural classes based upon the relative proportions of sand, silt, and clay sized mineral
7 particles. The soil textural class shall be determined in the field by hand texturing samples of each
8 soil horizon in the soil profile in accordance with the criteria in Guide to Soil Texture by Feel,
9 Journal of Agronomic Education, USDA, NRCS. Table IV identifies the Soil Groups that are shall
10 be suitable with respect to texture.

11
12 **Table IV.** Soil Groups that are suitable with respect to texture

Soil Group	USDA Soil Textural Class	
I	Sands	Sand
		Loamy Sand
II	Coarse Loams	Sandy Loam
		Loam
III	Fine Loams	Silt
		Silt Loam
		Sandy Clay Loam
		Clay Loam
		Silty Clay Loam
IV	Clays	Sandy Clay
		Silty Clay
		Clay

13
14 The owner, LHD, or the State may substitute laboratory testing of the soil textural class for field
15 testing. Laboratory testing of the soil textural class may be substituted for field testing when the
16 laboratory testing is conducted in accordance with ASTM D6913 and D7928. When laboratory
17 testing of soil texture is proposed, the LHD shall be notified a minimum of 48 hours before
18 samples are to be taken by the licensed professional if required by G.S. 89C, 89E, or 89F. The
19 authorized agent and the licensed professional shall be present when the samples are collected.
20 Samples shall be representative of the soil horizon being evaluated for texture. Split samples shall
21 be made available to the LHD when requested. The licensed professional shall document chain of
22 custody and seal, sign, and date the first page of the report.

- 23 (2) Structure – Soil structure shall be determined in the field for each soil horizon in the soil profile
24 and shall be classified and suitability determined in accordance with Table V. If an authorized

agent determines that the soil structure cannot be determined from auger borings, pits shall be required.

Table V. Soil structure and associated suitability classification

Structure	Size (diameter)	Classification
Granular	N/A	suitable
Blocky	≤ 1 inches (2.5 cm)	suitable
	> 1 inches (2.5 cm)	unsuitable
Platy	N/A	unsuitable
Prismatic	≤ 2 inches (5 cm)	suitable
	> 2 inches (5 cm)	unsuitable
Absence of structure: Single Grain	N/A	suitable
Absence of Structure: Massive (no structural peds)	N/A	unsuitable

- (3) Clay Mineralogy – Clay mineralogy shall be determined in the field by evaluation of moist and wet soil consistence in accordance with the USDA-NRCS Field Book for Describing and Sampling Soils. The clay mineralogy shall be classified and suitability determined in accordance with Table VI.

Table VI. Clay mineralogy (consistence) field method results, associated mineralogy, and suitability classification

Consistence	Mineralogy	Classification
Moist		
Loose, very friable	Slightly expansive	suitable
Friable, firm	Slightly expansive	suitable
Very firm or extremely firm	Expansive	unsuitable*
Wet		
Nonsticky, slightly sticky Nonplastic, slightly plastic	Slightly expansive	suitable
Moderately sticky Moderately plastic	Slightly expansive	suitable
Very sticky or very plastic	Expansive	unsuitable*

*If either the moist consistence or wet consistence is unsuitable then clay mineralogy is classified unsuitable.

(a) Laboratory testing of ACEC may be substituted for field testing to determine clay mineralogy. The laboratory testing shall be conducted in accordance with USDA-NRCS Soil Survey Laboratory Information Manual, Soil Survey Investigations Report No. 45, and Kellogg Soil Survey Laboratory Methods Manual, Soil Survey Investigation Report No. 42, page 229, or EPA Method 9080. Table VII shall be used to determine the clay mineralogy suitability when laboratory testing is used. When using laboratory testing to determine clay mineralogy, the clay content of the soil must be greater than 35 percent and the organic matter component must be less than 0.5 percent.

Table VII. Clay mineralogy laboratory method results, mineralogy, and associated suitability classification

ACEC (cmol/kg)	Mineralogy	Classification
≤ 16.3	Slightly expansive	suitable
> 16.3	Expansive	unsuitable

(b) When laboratory testing of clay mineralogy is proposed, the LHD shall be notified a minimum of 48 hours before samples are to be taken by the licensed ~~professional~~ professional, if required by G.S. 89C, 89E, or 89F. The authorized agent and the licensed professional shall be present when the samples are collected. Samples shall be representative of the soil horizon being evaluated for clay mineralogy. Split samples shall be made available to the LHD when requested. The licensed professional shall document chain of custody and seal, sign, and date the first page of the report.

(4) Organic Soils - Organic soils shall be considered unsuitable.

*History Note: Authority G.S. 130A-335(e).
Eff. December 1, 2018*

1 15A NCAC 18E .0504 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0504 SOIL WETNESS CONDITIONS**

4 (a) ~~SWC~~ SWC, such as those caused by a seasonal high-water table, a perched water table, tidal water, seasonally
5 saturated soil, or by lateral water ~~movement~~ movement, shall be determined by field observations of soil wetness
6 indicators, indicators as follows: and may be further characterized by well monitoring, computer modeling, or a
7 combination of monitoring and modeling as required by this Rule. ~~All sites shall be evaluated by an authorized agent~~
8 ~~for soil wetness indicators.~~

9 ~~(b) Soil Wetness Indicators:~~

10 (1) ~~A SWC shall be determined by~~ the presence of colors with a value 4 or more and a ~~of~~ chroma 2 or
11 less ~~(Munsell using the Munsell Soil Color Book System)~~ at greater than or equal to two percent of
12 soil volume as redox depletions or as the ~~in mottles or~~ matrix of a horizon. Colors of chroma 2 or
13 less that are lithochromic features shall not be considered indicative of a SWC; or

14 (2) ~~A SWC shall be determined by~~ the observation or indication of saturated soils, a perched water
15 table, or lateral water movement flowing into a bore hole, monitoring well, or open excavation above
16 a less permeable horizon, that may occur without the presence of colors with a value 4 or more or
17 chroma 2 or less at greater than or equal to two percent of soil volume as redox depletions or as the
18 matrix of a horizon. ~~of free flowing water from saturated soils into open bore holes where the soils~~
19 ~~lack redoximorphic features indicative of soil wetness. Free flowing water may reflect either lateral~~
20 ~~flow of perched water or other oxyaquic conditions. [Artificial drainage may be proposed in~~
21 ~~accordance with Rule .0509(d) of this Section to overcome a SWC resulting from lateral water~~
22 ~~movement due to saturated soils, a perched water table, or other oxyaquic conditions. Artificial~~
23 ~~drainage shall be designed and installed in accordance with Rule .0910 of this Subchapter.]~~

24 (3) The shallowest depth to SWC determined by Subparagraph (b)(1) or (b)(2) of this Rule in this
25 Paragraph shall take precedence. ~~be used.~~

26 ~~(e)(b) Site Suitability as to SWC:~~ Initial site suitability ~~of the site~~ as to SWC shall be determined based upon the by
27 field observations of Soil Wetness Indicators ~~soil wetness indicators~~ in accordance with Paragraph ~~(b) (a)~~ (b) (a) of this Rule.
28 Sites where the SWC is less than ~~48~~ 12 inches below the naturally occurring soil ~~surface~~ surface, or less than 18 inches
29 if more than six inches of Group I soils are present, shall be considered unsuitable with respect to SWC. ~~A SWC~~
30 ~~determined by Subparagraph (b)(1) or (b)(2) of this Rule may also be determined by alternative procedures for SWC~~
31 ~~determination in accordance with Paragraph of this Rule or reclassified in accordance with Rule .0509 of this~~
32 ~~Subchapter.~~

33 ~~(d)(c) Monitoring or modeling procedures as set forth in this Rule may be used to reclassify the site as suitable with~~
34 ~~respect to SWC.~~ Alternative Procedures for SWC Determination: ~~The owner may submit documentation that the~~
35 ~~SWC and resultant site classification be reclassified by monitoring, computer modeling, or a combination of~~
36 ~~monitoring and modeling, in accordance with Direct Monitoring Procedure, Monitoring and Modeling Procedure, or~~
37 ~~Modeling Procedure Paragraphs (e), (f), (g), or (h) of this Rule. This determination shall take precedence over the~~

1 observations made in accordance with Soil Wetness Indicators in Paragraph (b) of this Rule. Determination by one of
2 these Monitoring or Modeling procedures shall also be required when:

3 (1) the Owner proposes to use a wastewater system requiring a greater depth to a SWC than the depth
4 observed by Soil Wetness Indicators in accordance with Paragraph (b) of this Rule; or

5 (2) the Owner proposes to use sites with Group III or IV soil within 36 inches of the naturally occurring
6 soil surface and where artificial drainage systems are existing or are proposed or on such sites when
7 fill is proposed to be used in conjunction with artificial drainage systems. Final determination of
8 SWC for these sites shall be made in accordance with the Modeling Procedures in Paragraphs (g)
9 and (h) of this Rule.

10 (d) Monitoring or modeling procedures as set forth in this Rule shall be required when the owner proposes to use a
11 wastewater system requiring a greater depth to a SWC than the depth observed by soil wetness indicators in accordance
12 with Paragraph (a) of this Rule.

13 (e) Modeling procedures as set forth in this Rule shall be required when the owner proposes to use sites with Group
14 III or IV soils within 36 inches of the naturally occurring soil surface with artificial drainage, or on sites when fill is
15 proposed to be used in conjunction with an artificial drainage system.

16 (f) Monitoring or modeling procedures may include the following:

17 (1) direct monitoring procedure as set forth in Paragraph (g) of this Rule;

18 (2) modeling procedure as set forth in (h) of this Rule;

19 (3) monitoring and modeling procedure as set forth in Paragraph (i) of this Rule; or

20 (4) other modeling procedures as set forth in Paragraph (j) of this Rule.

21 (e) Direct Monitoring Procedure: SWC may be determined by observation of the water surface in wells during
22 periods of high water elevations utilizing the following monitoring procedures and interpretation method:

23 (1) The owner shall notify the LHD of the intent to monitor water surface elevations by submitting a
24 proposal prepared by a licensed professional, if required in G.S. 89C, 89E, or 89F, that includes a
25 site plan, well and soil profile at each monitoring location, and a monitoring plan no later than 30
26 days prior to the start of the monitoring period. SWC and rainfall monitoring [(including all forms
27 of precipitation)] shall be conducted by the licensed professional or owner. The owner shall submit
28 the name(s) of the licensed professional(s) performing any monitoring on their behalf to the LHD.

29 (2) The site plan shall show proposed sites for wastewater systems, the longitude and latitude of the
30 site, location of monitoring wells, and all drainage features that may influence the SWC, and specify
31 any proposed fill and drainage modifications.

32 (3) The monitoring plan shall indicate the proposed number, installation depth, screening depth, soil
33 and well profile, materials, and installation procedures for each monitoring well, and proposed
34 method of analysis. A minimum of three water level monitoring wells shall be installed for water
35 surface observation at each site. Sites handling systems with a DDF greater than 600 gpd shall have
36 one additional well per 600 gpd increment.

- 1 (4) The authorized agent shall be given the opportunity to conduct a site visit and verify the
2 appropriateness of the proposed plan. Well locations shall include portions of the initial and repair
3 dispersal field areas containing the most limiting soil/site conditions. Prior to installation of the wells
4 the authorized agent shall approve the plan. If the plan is denied a signed, written report shall be
5 provided to the owner describing the reasons for denial and the specific changes necessary for
6 approval of the monitoring plan.
- 7 (5) Wells shall extend a minimum of five feet below the naturally occurring soil surface, or existing
8 ground surface for fill installed prior to July 1, 1977 meeting the requirements for consideration of
9 a site with existing fill in accordance with G.S. 130A 341 and the rules of this Subchapter. However,
10 a well or wells which extend(s) down only 40 inches from the ground surface may be used if a
11 continuous record of the water table is provided for a minimum of half of the monitoring period.
12 One or more shallower wells may be required on sites where shallow lateral water movement or
13 perched SWC is anticipated.
- 14 (6) Water elevation in the monitoring wells shall be recorded daily from January 1 to April 30, taken at
15 the same time during the day (plus or minus three hours). A rain (precipitation) gauge is required
16 within two miles of the site. Daily rainfall shall be recorded beginning no later than December 1
17 through April 30 (the end of the well monitoring period).
- 18 (7) Interpretation Method for Direct Monitoring Procedure: The following method of determining depth
19 to SWC from water surface observations in wells shall be used when the 120-day cumulative rainfall
20 for the monitoring period ending on April 15 equals or exceeds the site's long term (historic) rainfall
21 for this same period with a 30 percent recurrence frequency (wetter than the ninth driest year of 30,
22 on average). The State Climate Office of North Carolina online interface may be used to determine
23 the recurrence frequency of the 120-day April 15 cumulative rainfall for the monitored site. The
24 State Climate Office compares their estimate of its value to recurrence frequency projections they
25 make using a hybrid approach, which includes the most recent three decades of normalized historic
26 rainfall data from established weather stations, adjusted using standardized procedures so that these
27 estimates are on an approximate five kilometer grid that covers the area. This comparison is
28 available by the Climate Office as the 120-day April 15 SPI. At the end of the monitoring period,
29 the owner's licensed professional can ascertain this SPI from the State Climate Office's website:
30 <http://climate.ncsu.edu/drought/map> by clicking on the map pixel that most closely corresponds
31 with the monitored site's [location. The licensed professional will need to adjust the URL
32 coordinates to ascertain results that are specific to the site's] latitude and longitude. The State will
33 provide assistance in obtaining this information. The State may also identify alternative resources
34 to derive the monitoring period rainfall recurrence frequency for monitored sites if newer resources
35 become available that provide results with equal or better accuracy as relayed by the State Climate
36 Office in the future. The SWC shall be determined as the highest level that is continuously saturated

1 for the number of consecutive days during the January through April well monitoring period shown
2 in Table VIII.

3
4 **TABLE VIII. Rainfall SPI and exceedance probability during monitoring season related to number of consecutive**
5 **days of continuous saturation**

SPI and Recurrence Frequency Range 120-Day Cumulative on April 15 Rainfall	Number of Consecutive Days of Continuous Saturation for Soil Wetness Condition
SPI 0.543 to 0 (30% to 49.9% duration)	3 days or 72 hours
SPI 0 to 0.545 (50% to 69.9% duration)	6 days or 144 hours
SPI 0.546 to 0.864 (70% to 79.9% duration)	9 days or 216 hours
SPI \geq 0.865 (80% to 100% duration)	14 days or 336 hours

6
7 (8) If monitoring well data is collected during monitoring periods that span multiple years, the year
8 which yields the highest (shallowest) SWC shall be applicable. [apply.]

9 (g) The direct monitoring procedure involves determining the SWC by observation of water surface elevations in
10 wells during periods of high-water in accordance with the following:

11 (1) no later than 30 days prior to the start of the monitoring period, the owner shall notify the LHD of
12 the intent to monitor water surface elevations by submitting a proposal prepared by a licensed
13 professional, if required in G.S. 89C, 89E, or 89F, that includes a site plan, well and soil profile at
14 each monitoring site, and a monitoring plan as follows:

15 (A) the site plan shall include the proposed sites for wastewater systems, the longitude and
16 latitude of the site, the location of monitoring wells, and all drainage features that may
17 influence the SWC. The site plan shall also specify any proposed fill and drainage
18 modifications; and

19 (B) the monitoring plan shall include the proposed number, installation depth, screening depth,
20 soil and well profile, materials, and installation procedures for each monitoring well. A
21 minimum of three water level monitoring wells shall be installed for water surface
22 observation at each site. Sites handling systems with a DDF greater than 600 gpd shall
23 have one additional well per 600 gpd increment. Well locations shall include portions of
24 the initial and repair dispersal field areas containing the most limiting soil and site
25 conditions;

26 (2) prior to installation of the monitoring wells, the authorized agent shall approve the plan. Plan
27 approval shall be based upon a site visit and compliance with this Rule. If the plan is denied, a
28 signed, written report shall be provided to the owner that describes the reasons for denial and the
29 changes necessary for approval of the plan;

(3) wells shall extend a minimum of five feet below the naturally occurring soil surface, or existing ground surface for existing fill determined in accordance with Rule .0909(d) of this Subchapter, except that wells that extend down only 40 inches from the ground surface may be used if a continuous record of the water table is provided for a minimum of half of the monitoring period. One or more shallower wells may be required on sites where shallow lateral water movement or a perched SWC is anticipated based on the site investigation;

(4) the water elevation in the monitoring wells shall be recorded daily from January 1 to April 30, taken at the same time during the day, plus or minus three hours. Rain gauges shall be located within two miles of the site; and

(5) the owner's licensed professional shall determine the 120-day SPI for April 15 from the State Climate Office's website: <http://climate.ncsu.edu/drought/map> by clicking on the map pixel that most closely corresponds with the monitored site's location. This shall be done when the 120-day cumulative rainfall for the monitoring period ending on April 15 equals or exceeds the site's historic rainfall for the same period with a 30 percent recurrence frequency, based on data obtained from the State Climate Office of North Carolina at <http://climate.ncsu.edu/drought/map> for the monitored site. The licensed professional shall adjust the URL coordinates to ascertain results that are specific to the site's latitude and longitude. The State will provide assistance in obtaining this information.

(6) The SWC shall be determined at the shallowest level that is continuously saturated for the number of consecutive days during the January through April well monitoring period shown in Table VII as follows:

TABLE VIII. Rainfall SPI and exceedance probability during monitoring season related to number of consecutive days of continuous saturation

SPI and recurrence frequency range 120-day cumulative on April 15 rainfall	Number of consecutive days of continuous saturation for SWC
SPI -0.543 to 0 (30% to 49.9% duration)	3 days or 72 hours
SPI 0 to 0.545 (50% to 69.9% duration)	6 days or 144 hours
SPI 0.546 to 0.864 (70% to 79.9% duration)	9 days or 216 hours
SPI ≥ 0.865 (80% to 100% duration)	14 days or 336 hours

(7) If monitoring well data is collected during monitoring periods that span multiple years, the year that yields the shallowest SWC shall apply.

(f) ~~Monitoring and Modeling Procedure: A combination of monitoring and modeling may be used to determine a SWC utilizing the following monitoring procedures and interpretation method. This procedure may also be followed to re-evaluate a SWC that has previously been determined by the Direct Monitoring Procedure in accordance with Paragraph (e) of this Rule. When this procedure is used, the results shall take precedence over the results from the Direct Monitoring Procedure.~~

1 (1) The procedures described for the Direct Monitoring Procedure in Subparagraphs (e)(1) through
2 (e)(6) of this Rule shall be used to monitor water surface elevation and precipitation for determining
3 SWC by a combination of direct observation and modeling, except that the [The] rainfall gauge and
4 each monitoring well shall use a recording device and a data file (DRAINMOD compatible) shall
5 be submitted with the report to the LHD (devices shall record at a minimum rainfall hourly and
6 well water level daily).

7 (2) The groundwater simulation model DRAINMOD shall be used to predict daily water levels over a
8 30 year historic time period after the model is calibrated using the water surface and rainfall
9 observations made on site during the monitoring period. The SWC shall be determined as the
10 highest level predicted by the model to be saturated for a 14 day continuous period between January
11 1 and April 30 with a recurrence frequency of 30 percent (an, average of nine years in 30).

12 (A) Weather input files, required to run the DRAINMOD, shall be developed from hourly or
13 daily rainfall gauge data taken within two miles of the site and from daily temperature and
14 hourly or daily rainfall data collected over a minimum 30 year period from the closest
15 available National Weather Service, State Climate Office of North Carolina, or equivalent,
16 measuring station to the site. DRAINMOD weather data files on file with the State shall
17 be made available upon request to the owner or owner's licensed professionals. Daily
18 maximum and minimum temperature data for the January 1 through April 30 monitoring
19 period, plus for a minimum of 30 days prior to this period, shall be obtained from the closest
20 available weather station.

21 (B) Soil and site inputs for DRAINMOD, including a soils data file closest to the soil series
22 identified, depths of soil horizons, in situ Ksat of each horizon, depth and spacing of
23 drainage features and depression storage, shall be selected in accordance with procedures
24 outlined in the DRAINMOD Users Guide, and guidance is also available in Reports 333
25 and 342 of the University of North Carolina Water Resources Research Institute.
26 DRAINMOD soil data files on file with the State shall be made available upon request to
27 the owner or owner's licensed professionals.

28 (C) Inputs shall be based upon site specific soil profile descriptions. Soil and site input factors
29 shall be adjusted during the model calibration process to achieve the best possible fit as
30 indicated by least squares analysis of the daily observations over the whole monitoring
31 period (mean absolute deviation between measured and predicted values no greater than
32 six inches), and to achieve the best possible match between the highest water table depth
33 during the monitoring period (measured vs predicted) that is saturated for 14 consecutive
34 days.

35 (D) For sites intended to receive over 1,500 gpd, the SWC determination using DRAINMOD
36 shall take into consideration the impact of wastewater application on the projected water
37 table surface.

1 ~~(E) The groundwater simulation analysis shall be prepared and submitted to the LHD by~~
2 ~~individuals qualified to use DRAINMOD by training and experience and who are licensed~~
3 ~~in North Carolina if required in G.S. 89C, 89E, or 89F. The LHD or owner may request a~~
4 ~~technical review by the State prior to approval of the SWC determination.~~

5 (h) The modeling procedure may be used to determine SWC by using DRAINMOD, a groundwater simulation model,
6 to predict daily water levels over a minimum 30-year period using site-specific input parameters as outlined in the
7 DRAINMOD User's Guide. The SWC shall be determined as the shallowest level predicted by DRAINMOD to be
8 saturated for a 14-day continuous period between January 1 and April 30 with a recurrence frequency of 30 percent,
9 an average of a minimum of nine years in 30, and in accordance with the following:

10 (1) weather input files shall consist of hourly rainfall and daily temperature data collected over the entire
11 period of record but for a minimum of a 30-year period from a measuring station site, such as the
12 National Weather Service or State Climate Office of North Carolina. The measuring station used
13 shall be the station located closest to the owner's site;

14 (2) soil and site inputs for DRAINMOD shall include the following:

15 (A) soil input file with the soil moisture characteristic curve and data for the soil profile that is
16 closest to the described soil profile that is present on the site;

17 (B) soil horizon depths determined on site;

18 (C) site measured or proposed drain depth and spacing, and drain outlet elevation;

19 (D) in-situ Ksat measurements for a minimum of three representative locations on the site and
20 at each location for the three most representative soil horizons within five feet of the
21 surface. In-situ Ksat measurements shall be for one representative soil horizon at or above
22 redoximorphic depletion features and two representative soil horizons at and below
23 redoximorphic concentration features at each location on the site;

24 (E) all other model parameters based upon the DRAINMOD User's Guide; and

25 (F) a sensitivity analysis shall be conducted for the following model parameters: soil input files
26 for a minimum of two other most closely related soil profiles; in-situ Ksat of each horizon;
27 drain depth and spacing; and surface storage and depth of surface flow inputs.

28 The sensitivity analysis shall be used to evaluate the range of soil and site characteristics for
29 choosing input parameters related to the soil profiles, Ksat input values based upon the range of in-
30 situ Ksat values measured on the site, and inputs for surface and subsurface drainage features based
31 upon the range of possible elevations and distances that occur or may occur after installation of
32 improvements. The sensitivity analysis shall establish which parameters are most critical for
33 determination of the depth to SWC. Conservative values for the most critical parameters shall be
34 used in applying the model to the site;

35 (3) for sites designed to receive over 600 gpd, the SWC determination using DRAINMOD shall take
36 into consideration the impact of wastewater application on the projected water table surface; and

1 (4) The groundwater simulation analysis shall be prepared and submitted to the LHD by licensed
2 professionals, if required in G.S. 89C, 89E, or 89F, qualified to use DRAINMOD by training and
3 experience. The LHD shall submit the groundwater simulation analysis to the State for technical
4 review prior to approval of the SWC determination.

5 (g) Modeling Procedure: A SWC may be determined by application of DRAINMOD to predict daily water levels
6 over a minimum 30 year historic time period after all site specific input parameters have been obtained, as outlined
7 in the DRAINMOD Users Guide. This modeling procedure shall be used when a groundwater lowering system is
8 proposed for a site with Group III or IV soils within 36 inches of the naturally occurring soil surface. This procedure
9 shall also be used to evaluate sites with Group III or IV soils within 36 inches of the naturally occurring soil surface,
10 where the SWC was initially determined using a procedure described in Paragraphs (e) or (f) of this Rule and where
11 artificial drainage systems are proposed or when fill is proposed to be used in conjunction with artificial drainage
12 systems. The SWC shall be determined as the highest level predicted by the model to be saturated for a 14 day
13 continuous period between January 1 and April 30 with a recurrence frequency of 30 percent (an average of a minimum
14 of nine years in 30).

15 (1) Weather input files, required to run DRAINMOD, shall consist of hourly rainfall and daily
16 temperature data collected over the entire period of record but for a minimum of a 30 year period
17 from the closest available National Weather Service, State Climate Office of North Carolina, or
18 equivalent, measuring station to the site. DRAINMOD weather data files on file with the State shall
19 be made available upon request to the owner or owner's licensed professionals. [professionals.]

20 (2) Soil and site inputs for DRAINMOD, including a soils data file closest to the soil series identified,
21 depths of soil horizons, in situ Ksat of each horizon, depth and spacing of proposed drainage features
22 and surface storage and drainage parameters, shall be selected in accordance with procedures
23 outlined in the DRAINMOD User's Guide. DRAINMOD soils data files on file with the State shall
24 be made available upon request to the owner or owner's consultants. Inputs shall include:

25 (A) Soil input file with the soil moisture characteristic curve and data for the soil profile that is
26 closest to the described soil profile that is present on the site;

27 (B) Soil horizon depths determined on site;

28 (C) Site measured or proposed drain depth and spacing, and drain outlet elevation;

29 (D) In situ Ksat measurements for a minimum of three representative locations on the site and
30 at each location for the three most representative soil horizons within five feet of the
31 surface. In situ Ksat measurements shall be for one representative soil horizon at or above
32 redoximorphic depletion features and two representative soil horizons at and below
33 redoximorphic concentration features at each location on the site;

34 (E) All other model parameters based upon the DRAINMOD User's Guide, or other accepted
35 values consistent with the simulation model; and

36 (F) A sensitivity analysis shall be conducted for the following model parameters: soil input
37 files for a minimum of two other most closely related soil profiles; in situ Ksat of each

1 horizon; drain depth and spacing; and surface storage and depth of surface flow inputs. The
2 sensitivity analysis shall be used to evaluate the range of soil and site characteristics for
3 choosing input parameters related to the soil profiles, Ksat input values based upon the
4 range of in situ Ksat values measured on the site, and inputs for surface and subsurface
5 drainage features based upon the range of possible elevations and distances that occur or
6 may occur after installation of improvements. The sensitivity analysis shall establish which
7 parameters are most critical for determination of the depth to SWC. Conservative values
8 for the most critical parameters shall be used in applying the model to the site.

9 (3) For sites designed to receive over 600 gpd, the SWC determination using DRAINMOD shall take
10 into consideration the impact of wastewater application on the projected water table surface.

11 (4) The groundwater simulation analysis shall be prepared and submitted to the LHD by individuals
12 [licensed professionals, if required in G.S. 89C, 89E, or 89F,] qualified to use DRAINMOD by
13 training and experience and who are licensed in North Carolina if required in G.S. 89C, 89E, or 89F.
14 [experience.] The LHD shall submit the groundwater simulation analysis to the State for technical
15 review prior to approval of the SWC determination.

16 (i) The monitoring and modeling procedure is a combination of the direct monitoring procedure and the modeling
17 procedure. The SWC shall be determined as the shallowest level predicted by DRAINMOD to be saturated for a 14-
18 day continuous period between January 1 and April 30 with a recurrence frequency of 30 percent, an average of a
19 minimum of nine years in 30, and in accordance with the following:

20 (1) the procedures set forth in Paragraph (g) shall be used to monitor water surface elevation and
21 precipitation. The rain gauge required by Subparagraph (g)(4) shall use a recording device and a
22 data file that is DRAINMOD compatible. The rain gauge shall record rainfall hourly or daily and
23 well water levels daily. The data file shall be submitted with the report to the LHD;

24 (2) DRAINMOD shall be used to predict daily water levels. The DRAINMOD modeling shall be in
25 accordance with the following:

26 (A) weather input files shall be developed from daily temperature and hourly or daily rainfall
27 data collected over a minimum 30-year period from a measuring station, such as the
28 National Weather Service or State Climate Office of North Carolina. The measuring
29 station used shall be the station located closest to the site. Daily maximum and minimum
30 temperature data for the December 1 through April 30 monitoring period shall be obtained
31 from the closest available weather station;

32 (B) soil and site inputs for DRAINMOD, including a soils data file closest to the soil series
33 identified, depths of soil horizons, in-situ Ksat of each horizon, depth and spacing of
34 drainage features, and depression storage shall be selected in accordance with procedures
35 outlined in the DRAINMOD User's Guide;

36 (C) inputs shall be based upon site-specific soil profile descriptions. Soil and site input factors
37 shall be adjusted during the model calibration process to achieve the best possible fit as

1 indicated by the least squares analysis of the daily observations over the whole monitoring
2 period and to achieve the best possible match between the shallowest water table depth
3 during the monitoring period, measured vs. predicted. The mean absolute deviation
4 between measured and predicted values shall be no greater than six inches;

5 (D) for sites intended to receive greater than 1,500 gpd, the SWC determination using
6 DRAINMOD shall take into consideration the impact of wastewater application on the
7 projected water table surface; and

8 (E) the DRAINMOD analysis shall be prepared and submitted to the LHD by licensed
9 professionals, if required in G.S. 89C, 89E, or 89F, qualified to use DRAINMOD by
10 training and experience. The LHD or owner may request a technical review by the State
11 prior to approval of the SWC determination.

12 The monitoring and modeling procedure may also be used to re-evaluate a SWC that was previously
13 evaluated by the direct monitoring procedure.

14 (h) ~~Other modeling procedures may be used to determine the SWC and to predict daily water levels over a minimum
15 of a 30 year historic time period. Documentation shall be provided showing that the proposed model and prediction
16 are at least as accurate as the prediction from DRAINMOD, [DRAINMOD.] The DRAINMOD prediction shall be
17 calculated in accordance with Paragraph (g) of this Rule. Documentation to support the basis for applying another
18 modeling procedure shall be provided in accordance with Rule .0509(f) of this Section and shall be reviewed and
19 approved for use on a site specific basis by the State.~~

20 (j) Modeling procedures other than those set forth in this Rule may be used to determine SWC upon approval by the
21 State. Other modeling procedures shall be approved if the following requirements are met:

22 (1) the modeling procedures use daily water levels or weather records over a 30-year period to predict
23 future daily water levels;

24 (2) the proposed model and prediction are shown to be as accurate as the prediction from DRAINMOD,
25 calculated in accordance with Paragraph (h) of this Rule; and

26 (3) documentation is provided in accordance with Rule .0509(c) of this Section.

27 ~~(i)(k)~~ A report of the investigations made for the ~~Direct Monitoring Procedure, direct monitoring procedure, modeling
28 procedure, or Monitoring and Modeling Procedure monitoring and modeling procedure or Modeling Procedure~~ in
29 accordance with Paragraphs ~~(e), (f), or (g)~~ (g), (h), or (i) of this Rule shall be prepared prior to approval of the SWC
30 determination. ~~Reports prepared by a licensed professional shall bear the professional seal of the person(s) whom
31 conducted the investigation.~~ A request for technical review of the report by the State shall include digital copies of
32 monitoring ~~data data, and digital copies of~~ model inputs, output data, and graphic results, as applicable.

34 *History Note: Authority G.S. 130A-335(e).*

35 *Eff. December 1, 2018*

1 15A NCAC 18E .0505 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0505 SOIL DEPTH TO ROCK, SAPROLITE, OR PARENT MATERIAL**

4 **(a) The soil depth shall be measured from the naturally occurring soil surface to rock, saprolite, or parent material.**

5 ~~(a)~~(b) Soil ~~depths~~ depth to saprolite, rock, or parent material greater than or equal to 18 inches ~~or greater~~ shall be **considered** suitable.

7 (b) Soil ~~depths~~ depth to unsuitable saprolite, rock, or parent material less than 18 inches shall be **considered** unsuitable.

9 ~~(c) The soil depth shall be measured from the naturally occurring soil surface to rock, saprolite, or parent material.~~

10

11 *History Note: Authority G.S. 130A-335(e).*

12 *Eff. December 1, 2018*

13

1 15A NCAC 18E .0506 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0506 SAPROLITE**

4 (a) Sites classified unsuitable due to depth to saprolite or other LC may be reclassified suitable in accordance with
5 this Rule.

6 (b) Sites with saprolite shall be classified as suitable if an investigation of the site using pits at locations approved
7 by the authorized agent confirms that the following conditions are met:

8 (1) a 24-inch minimum vertical separation ~~distance~~ shall be maintained in saprolite from the
9 infiltrative surface to an unsuitable LC, unless any of the vertical separation consists of suitable
10 soils horizons, in which case, the 24-inch separation may be calculated based on one-inch of
11 suitable soils being equivalent to two inches of saprolite; LC. If any of the vertical separation
12 consists of suitable soil, soil horizons, then the 24 inch separation may be reduced. The minimum
13 vertical separation shall be calculated based on one inch of suitable soil is equivalent to two inches
14 of saprolite; and

15 (2) the following physical properties and characteristics shall be present in the 24 inches (or less if
16 combined with soil) of saprolite below the proposed infiltrative surface:

17 (A) the saprolite texture as determined in the field by hand texturing samples of each horizon,
18 shall be sand, loamy sand, sandy loam, loam, or silt loam;

19 (B) the clay mineralogy shall be suitable in accordance with Rule .0503(3) of this Section;

20 (C) greater than 2/3 of the saprolite by volume shall have a moist consistence of loose, very
21 friable, friable, or firm;

22 (D) the saprolite wet consistence shall be nonsticky or slightly sticky and nonplastic or
23 slightly plastic;

24 (E) the saprolite shall be in an undisturbed, naturally occurring state;

25 (F) the saprolite shall have no open and continuous joints, quartz veins, or fractures relic of
26 parent rock; and

27 (G) ~~lab~~ laboratory determinations may be used to supplement field determinations. Split
28 samples shall be made available to the ~~LHD when requested.~~ LHD.

29 (e) Saprolite that does not meet all of the criteria in Paragraph (b) of this Rule shall be considered unsuitable.

30
31 *History Note: Authority G.S. 130A-335(e).*

32 *Eff. December 1, 2018*

1 15A NCAC 18E .0507 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0507 RESTRICTIVE HORIZONS**

4 (a) Soils in which restrictive horizons are three inches or more in thickness and at depths greater than or equal to 18
5 inches below the naturally occurring soil surface shall be ~~considered~~ suitable.

6 ~~(a)(b)~~ Soils in which restrictive horizons are three inches or more in thickness located at depths less than 18 inches
7 below the naturally occurring soil surface shall be ~~considered~~ unsuitable.

8 ~~(b) Soils in which restrictive horizons are three inches or more in thickness and at depths greater than 18 inches~~
9 ~~below the naturally occurring soil surface shall be considered suitable.~~

10

11 *History Note: Authority G.S. 130A-335(e).*

12 *Eff. December 1, 2018*

13

1 15A NCAC 18E .0509 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0509 SITE SUITABILITY AND CLASSIFICATION**

4 (a) ~~The most~~ limiting condition [LC] determined in Rules .0502 through .0508 of this Section shall be used to
5 determine the overall site classification as suitable or unsuitable. The overall site shall be classified suitable if there
6 is sufficient soil and area for a wastewater system that complies with the minimum vertical separation distance to a
7 LC or SWC consistent with this Subchapter. A determination that any parameter evaluated in accordance with
8 Rules .0502 through .0508 of this Section is unsuitable shall result in an overall classification of unsuitable.

9 (b) Sites classified as unsuitable may be reclassified as suitable as follows:

- 10 (1) when site modifications are made that meet the requirements in Sections .0900 or .1200 of this
11 Subchapter for the minimum vertical separation to the SWC;
12 (2) if installation of an interceptor drain will intercept and divert lateral water to prevent saturation of
13 the wastewater system;
14 (3) with the use of advanced pretreatment based on the modified siting and sizing criteria in Section
15 .1200 of this Subchapter; or
16 (4) with the use of a wastewater system identified or approved in Sections .0900 or .1700 of this
17 Subchapter

18 ~~(b) Sites classified unsuitable due to SWC may be reclassified suitable when site modifications are made that meet~~
19 ~~the requirements in Sections .0900 or .1200 of this Subchapter for the minimum vertical separation distance to the~~
20 ~~water table.~~

21 ~~(c) Sites classified unsuitable due to SWC because of the presence of lateral water movement may be reclassified~~
22 ~~suitable if installation of an interceptor drain will intercept and direct [divert] lateral water to prevent saturation of~~
23 ~~the wastewater system.~~

24 ~~(d) Sites classified unsuitable may be reclassified suitable with the use of advanced pretreatment based on the~~
25 ~~modified siting and sizing criteria in Section .1200 of this Subchapter.~~

26 ~~(e) Sites classified unsuitable may be reclassified suitable with the use of a wastewater system identified or~~
27 ~~approved in Sections .0900, .1500, [.0900] or .1700 of this Subchapter.~~

28 ~~(c)~~ For sites that are classified as unsuitable in accordance with this Rule, a Special Site Evaluation in accordance
29 with Rule .0510 of this Section may be ~~provided,~~ provided. A The Special Site Evaluation in accordance with Rule
30 .0510 of this Section shall be provided [submitted] to the authorized agent [that demonstrates] [and demonstrate]
31 [that the proposed wastewater system can be expected to overcome the unsuitable site conditions and function in
32 accordance with this Subchapter.] The written documentation shall be prepared and submitted to the LHD by a
33 licensed professional if required in G.S. 89C, 89E, or 89F. The proposed wastewater system and artificial drainage
34 system, if applicable, shall be designed, installed, operated, and maintained in accordance with this Subchapter. The
35 State shall review a Special Site Evaluation if requested by the LHD.

36 ~~(g)~~(d) An IP shall not be issued for a site which is classified unsuitable.

1 *History Note: Authority G.S. 130A-335(e).*
2 *Eff. December 1, 2018*
3

1 15A NCAC 18E .0510 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0510 SPECIAL SITE EVALUATIONS**

4 (a) A Special Site Evaluation shall demonstrate that the proposed use of the site with a specific wastewater system
5 design and configuration will not result in effluent discharge to the ground surface or contravention of groundwater
6 and surface water standards, adversely affect ground and surface water quality, Special Site Evaluations shall be
7 performed by a licensed professional if required in G.S. 89C, 89E, or 89F.

8 (b) The owner may submit a Special Site Evaluation for a site classified as unsuitable as set forth in Rule .0509(c)
9 of this Section to an authorized agent. The Special Site Evaluation shall demonstrate that the proposed wastewater
10 system can be expected to overcome the unsuitable site conditions and function in accordance with this Subchapter.

11 (c) Any site for a wastewater system that is proposed with one or more of the following shall require a Special Site
12 Evaluation by a licensed professional if required in G.S. [89C, 89E,] 89F or 89E: Evaluation:

- 13 (1) proposal submitted in accordance with Rule .0504(i) .0504(e) of this Section;
- 14 (2) proposal submitted in accordance with Rule .0509(f) .0509(c) of this Section;
- 15 (3) ~~advanced pretreatment is required for any of the following:~~
- 16 (A) ~~vertical separation distance to a LC or SWC is proposed to be reduced. The vertical~~
17 ~~separation distance to rock or tidal water shall not be reduced to less than 12 inches;~~
- 18 (B) ~~less than 18 inches of naturally occurring soil to an unsuitable soil condition, excluding~~
19 ~~SWC;~~
- 20 (C) ~~increased LTAR is proposed for a site with Group III or IV soils within three feet of the~~
21 ~~infiltrative surface;~~
- 22 (D) ~~increased LTAR is proposed for a site with Group II or III soils which requires a~~
23 ~~groundwater lowering system;~~
- 24 (E) ~~proposed use of a groundwater lowering system to meet vertical separation distance~~
25 ~~requirements to a SWC;~~
- 26 (F) ~~bed systems located directly beneath the advanced pretreatment unit on a site with~~
27 ~~uniform slope exceeding two percent except in Group I soils with a SWC greater than 36~~
28 ~~inches;~~
- 29 (G) ~~bed systems with a DDF greater than 1,500 gpd; or~~
- 30 (H) ~~increased LTAR is proposed on a site with a DDF greater than 1,500 gpd;~~
- 31 (4)(3) sand lined trench systems when the texture of the receiving permeable horizon is sandy loam or
32 loam and the DDF is greater than 600 ~~gpd;~~ 600 gpd, or when the texture of the receiving
33 permeable horizon is silt loam;
- 34 (5)(4) DSE drip dispersal systems meeting the following soil and site conditions:
- 35 (A) depth from the naturally occurring soil surface to any ~~unsuitable soil condition~~ LC is
36 greater than or equal to 18 inches and the LTAR is proposed to exceed 0.5 gpd/ft² for
37 Group I, 0.35 gpd/ft² for Group II, or 0.2 gpd/ft² for Group III soils;

- 1 (B) depth from the naturally occurring soil surface to any SWC is less than 18 inches and the
2 LTAR is proposed to exceed 0.5 gpd/ft² for Group I, 0.3 gpd/ft² for Group II, or 0.15
3 gpd/ft² for Group III soils;
- 4 (C) Group IV soils are encountered within 18 inches of the naturally occurring soil surface or
5 within 12 inches of the infiltrative surface, whichever is deeper, and the LTAR is
6 proposed to exceed 0.05 gpd/ft²;
- 7 (D) Group IV soils are encountered within 18 inches of the naturally occurring soil surface
8 and depth from the naturally occurring soil surface to any ~~unsuitable soil condition~~ LC is
9 less than 24 inches;
- 10 (E) Group IV soils are encountered within 18 inches of the naturally occurring soil surface
11 and driplines are installed in new fill material;
- 12 (F) groundwater lowering system is used to meet soil depth and vertical separation ~~distance~~
13 requirements to a SWC;
- 14 (G) proposed LTAR exceeds that assigned by the LHD; or
- 15 (H) DDF ~~exceeds~~ is greater than 1,500 gpd;
- 16 (5) advanced pretreatment systems [is required for any of the following:] meeting the following soil
17 and site conditions:
- 18 (A) vertical separation to a LC is proposed to be reduced. The vertical separation to rock or
19 tidal water shall not be reduced to less than 12 inches;
- 20 (B) less than 18 inches of naturally occurring soil to a LC, excluding SWC;
- 21 (C) increased LTAR is proposed for a site with Group III or IV soils within three feet of the
22 infiltrative surface;
- 23 (D) increased LTAR is proposed for a site with Group II or III soils [which] that requires a
24 groundwater lowering system;
- 25 (E) proposed use of a groundwater lowering system to meet vertical separation requirements
26 to a SWC;
- 27 (F) bed systems located directly beneath the advanced pretreatment unit on a site with
28 uniform slope exceeding two percent except in Group I soils with a SWC greater than 36
29 inches;
- 30 (G) bed systems with a DDF greater than 1,500 gpd; or
- 31 (H) increased LTAR is proposed on a site with a DDF greater than 1,500 gpd;
- 32 (6) drip dispersal systems are used, and Group IV soils are within 18 inches of the naturally occurring
33 soil surface or within 12 inches of the infiltrative surface, whichever is deeper, and the LTAR is
34 proposed to exceed 0.1 gpd/ft² for NSF-40, 0.12 gpd/ft² for TS-I, or 0.15 gpd/ft² for TS-II;
- 35 (7) NSF-40 and drip dispersal systems when the LTAR is proposed to exceed 0.8 gpd/ft² for Group I
36 soils, 0.5 gpd/ft² for Group II soils, 0.25 gpd/ft² for Group III soils, or 0.1 gpd/ft² for Group IV
37 soils;

- 1 (8) TS-I and drip dispersal systems which meet the following criteria:
- 2 (A) site has less than 18 inches of naturally occurring soil to any unsuitable LC or SWC; LC;
- 3 (B) Group III soils are present and a groundwater lowering system is used to meet the vertical
- 4 separation distance requirements to a SWC;
- 5 (C) Group IV soils are encountered within 18 inches of the naturally occurring soil surface,
- 6 the LTAR is proposed to exceed 0.05 gpd/ft², and the system is proposed to be installed
- 7 in new fill; or
- 8 (D) LTAR is proposed to exceed 1.0 gpd/ft² for Group I soils, 0.6 gpd/ft² for Group II soils,
- 9 0.3 gpd/ft² for Group III soils, or 0.12 gpd/ft² for Group IV soils;
- 10 (9) TS-II and drip dispersal systems which meet the following criteria:
- 11 (A) Subparagraphs (8)(A), (B), or (C) of this Rule; or
- 12 (B) LTAR is proposed to exceed 1.2 gpd/ft² for Group I soils, 0.7 gpd/ft² for Group II soils,
- 13 0.4 gpd/ft² for Group III soils, or 0.15 gpd/ft² for Group IV soils;
- 14 (10) site-specific nitrogen migration analysis is required to verify that the ~~nitrate~~ nitrate-nitrogen
- 15 concentration at the property line will not exceed groundwater standards;
- 16 (11) LHD or State determines that the combination of soil conditions, site topography and landscape
- 17 position, DDF, system layout and/or proposed stormwater appurtenances will potentially result in
- 18 hydraulic overload; or
- 19 (12) DDF greater than 3,000 gpd, unless the requirements of Rule .0302(d) of this Subchapter are met.
- 20 ~~(b) If the adjusted DDF is less than or equal to 3,000 gpd, a Special Site Evaluation is not required.~~
- 21 ~~(c)~~ (d) The Special Site Evaluation shall include hydrologic or hydraulic testing, as applicable, and analysis, in
- 22 accordance with Rule ~~.0304(e)(2)~~ .0304(2)(B) of this Subchapter.
- 23 ~~(d)~~ (e) (c) For sites serving wastewater systems with a DDF greater than 3,000 gpd, gpd and dispersal fields
- 24 designed for greater than 1,500 gpd, the Special Site Evaluation shall include sufficient site-specific data to predict
- 25 the height of the water table mound that will develop beneath the field (level sites) and the rate of lateral and vertical
- 26 flow away from the trenches (sloping sites); ~~sites~~, unless the conditions in [Rule .0304(e)(2)(E)] Paragraph (f) of
- 27 this [Subchapter] Rule are met. The data submitted may include deep soil borings to an impermeable layer or to a
- 28 depth to support the hydrologic testing and modeling, permeability, ~~and~~ in-situ Ksat measurements, water level
- 29 readings, and other information determined to be necessary by the LHD or the ~~State~~ State, such as the impact of
- 30 projected wastewater constituents on the trench and receiving soil. The site shall be considered unsuitable if the data
- 31 indicate any of the following:
- 32 (1) the groundwater mound ~~which that~~ will develop beneath the site cannot be maintained two feet or
- 33 more below the bottom of the trenches;
- 34 (2) effluent is likely to become exposed on the ground surface; or
- 35 (3) contaminant transport analysis indicates that groundwater standards established in accordance with
- 36 15A NCAC 02L are determined or projected to be violated at the property line.

1 ~~(e)~~(f) For wastewater systems with a DDF greater than 3,000 gpd and dispersal fields designed for less than or
2 equal to 1,500 gpd, in-situ Ksat measurements and groundwater mounding or lateral flow analysis ~~are shall~~ not be
3 required if a Special Site Evaluation demonstrates that the dispersal fields are in separate lateral flow windows or are
4 shown to be not be hydraulically connected.

5 (g) The State shall review the Special Site Evaluation if requested by the LHD or if required in accordance with
6 Rule .0302(c) of this Subchapter.

7

8 *History Note: Authority G.S. 89E; 89F; 130A-335(a1), (e) and (f).*

9 *Eff. December 1, 2018*

10

1 15A NCAC 18E .0801 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0801 SEPTIC TANK CAPACITY REQUIREMENTS**

4 (a) Minimum liquid capacities for septic tanks shall be in accordance with the following:

- 5 (1) The minimum capacity of any septic tank shall be 1,000 ~~gallons.~~ gallons unless otherwise
6 provided for in this Rule.
7 (2) The minimum capacity of any septic tank serving an individual dwelling unit with five bedrooms
8 or less shall be sized ~~determined on as set forth in~~ determined on as set forth in Table XIII.
9

10 **TABLE XIII.** Minimum septic tank liquid capacity for dwelling units

Number of bedrooms	Minimum liquid capacity (gallons)
4 or less	1,000
5	1,250

- 11
12 (3) Septic tanks for dwelling units greater than five bedrooms, multiple dwelling units, places of
13 business, or places of public assembly shall be sized in accordance with Table XIV. ~~Individual~~
14 ~~wastewater systems serving dwelling units with more than five bedrooms or more than one design~~
15 ~~unit shall have a minimum septic tank capacity of 1,500 gallons.~~
16 (4) The minimum septic tank capacity serving two or more dwelling units shall be 1,500 gallons.
17 ~~(4) Septic tanks for PIA and RWTS Systems shall be sized in accordance with the RWTS or PIA~~
18 ~~Approval.~~
19

20 **TABLE XIV.** Septic tank capacity for facilities not listed in Table XIII

Design daily flow (gpd) (Q)	Minimum septic tank liquid capacity (V) calculation (gallons)
$Q \leq 600$	$V = 2Q$
$600 < Q < 1,500$	$V = 1.17Q + 500$
$1,500 \leq Q \leq 4,500$	$V = 0.75Q + 1,125$
$Q > 4,500$	$V = Q$

21
22 (4)(5) Septic tanks for [PIA and] RWTS and PIA Systems shall be sized in accordance with the RWTS
23 or PIA Approval. Approval, pursuant to Sections .1500 and .1700 of this Subchapter.

24 (b) The minimum liquid capacity requirements of Paragraph (a) of this Rule shall be met by use of a single two
25 compartment tank or by two tanks installed in series. The tanks in series may be constructed with or without a baffle

1 wall. For two tanks installed in series, one of the tanks or tank compartments shall contain a minimum of two thirds
2 of the total required liquid capacity. Each tank shall have a minimum liquid capacity of 1,000 gallons.

3 (c) When a grinder pump or sewage lift pump is installed prior to the septic tank, the required septic tank liquid
4 capacity as set forth in this Rule shall be doubled, doubled, and meet the following: [the] The minimum liquid
5 capacity may be met by installing two or more septic tanks in series, each tank containing two compartments. The
6 minimum liquid capacity of each tank shall be 1,000 gallons.

7 (1) ~~minimum liquid capacity may be met by installing two or more septic tanks in series, each tank~~
8 ~~containing two compartments; and~~

9 (2) ~~each tank shall have a minimum liquid capacity of 1,000 gallons.~~

10 (d) The State shall review other septic tanks designed to receive wastewater from grinder pumps or sewage lift
11 pumps if designed by a PE. The design shall demonstrate that the PE to ensure that effluent discharged from the
12 septic tank meets DSE in accordance with as set forth in Table III of Rule ~~.0402~~ .0402(a) of this Subchapter.

13 (e) A State approved An effluent filter approved in accordance with Rule .1404 of this Subchapter shall be in the
14 outlet of the final compartment of the septic tank. ~~When two or more tanks are used in series in accordance with~~
15 ~~Paragraphs (b) or (c) of this Rule, the following conditions shall be met:~~

16 (1) ~~approved effluent filter shall be in the compartment immediately prior to discharge; and~~

17 (2) ~~the outlet of the initial tank shall consist of an outlet sanitary tee extending down 25 to 50 percent~~
18 ~~of the liquid depth.~~

19 (f) When two or more tanks are used in series in accordance with Paragraphs (b) or (c) of this Rule, the following
20 conditions shall be met:

21 (1) approved effluent filter shall be in the outlet of the final compartment; and

22 (2) the outlet of the initial tank shall consist of an outlet sanitary tee extending down 25 to 50 percent
23 of the liquid depth.

24
25 *History Note: Authority G.S. 130A-334; 130A-335(e), (f), and (f1).*

26 *Eff. December 1, 2018*

27

1 15A NCAC 18E .0802 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0802 PUMP TANK CAPACITY REQUIREMENTS**

4 (a) The minimum pump tank liquid capacity shall be greater than or equal to the required septic tank liquid
5 ~~capacity.~~ capacity as set forth in Rule .0801 of this Section.

6 ~~(b) [A pump tank liquid capacity that is less than the capacity specified in Paragraph (a) may be proposed.] The~~
7 ~~[volume of the] following criteria [shall be added together to calculate the] may be used to propose a pump tank~~
8 ~~liquid capacity that is less than the liquid capacity specified in Paragraph (a) of this Rule: [capacity:]~~

- 9 (1) ~~_____ pump submergence or as recommended by the pump manufacturer;~~
10 (2) ~~_____ minimum dose volume in accordance with Rule .1101(d) of this Subchapter; [and]~~
11 (3) ~~_____ flow equalization storage, if applicable; and~~
12 (4) ~~(3) emergency storage capacity in accordance with Paragraph (e) [(d)] of this Rule.~~

13 ~~(b) For a flow equalization system, the minimum pump tank capacity shall be based upon the sum of the volumes of~~
14 ~~the parameters below:~~

- 15 (1) ~~_____ volume is sufficient to ensure pump submergence or as recommended by the pump manufacturer;~~
16 (2) ~~_____ minimum dose volume in accordance with Rule .1101(d) of this Subchapter;~~
17 (3) ~~_____ flow equalization storage; and~~
18 (4) ~~_____ emergency storage capacity in accordance with Paragraph (e) of this Rule.~~

19 ~~(c) An alternate minimum pump tank liquid capacity may be proposed by the authorized designer or PE to the LHD~~
20 ~~based upon the sum of the volumes of the parameters below:~~

- 21 (1) ~~_____ volume is sufficient to ensure pump submergence or as recommended by the pump manufacturer;~~
22 (2) ~~_____ minimum dose volume in accordance with Rule .1101(d) of this Subchapter;~~
23 (3) ~~_____ flow equalization storage, if applicable; and~~
24 (4) ~~_____ emergency storage capacity in accordance with Paragraph (e) of this Rule.~~

25 ~~[(c) The volume of the following criteria shall be added together to calculate the minimum pump tank liquid~~
26 ~~capacity for flow equalization:~~

- 27 (1) ~~_____ pump submergence or as recommended by the pump manufacturer;~~
28 (2) ~~_____ minimum dose volume in accordance with Rule .1101(d) of this Subchapter;~~
29 (3) ~~_____ flow equalization storage; and~~
30 (4) ~~_____ emergency storage capacity in accordance with Paragraph (d) of this Rule.]~~

31 ~~(d) A PE may propose an alternative design to the LHD to calculate the minimum pump tank liquid capacity~~
32 ~~required. The alternative method shall provide documentation of pump submergence, dose volume capacity,~~
33 ~~emergency storage capacity, and flow equalization storage, as applicable. The LHD shall approve the alternative~~
34 ~~design upon a showing that all required storage capacity is accounted for in the wastewater system without reducing~~
35 ~~the required septic tank or grease tank capacities specified in Rules .0801 and .0803 of this Section.~~

36 ~~(e) [(d)] (c)~~ The pump tank emergency storage capacity requirement shall be determined based on the following
37 criteria and Table XV:

- 1 (1) type of facility served;
- 2 (2) classification of surface waters **which that** would be impacted by a pump tank failure; and
- 3 (3) availability of standby power devices and emergency maintenance personnel.
- 4
- 5

TABLE XV. Pump tank emergency storage capacity requirements

Facility Type	Surface Water Classification of Watershed	Standby Power and Emergency Maintenance Personnel Provisions	Emergency Storage Capacity Period Requirement
Residential systems and other systems in full time use	WS-I, WS-II, WS-III, SA, SB, and B waters	No standby power	24 hours
		Manually activated standby power and telemetry contacting a 24-hour maintenance service	12 hours
		Automatically activated standby power and telemetry contacting a 24-hour maintenance service	4 hours
	All other surface waters <u>or no surface waters</u>	No standby power	12 hours
		Manually activated standby power and telemetry contacting a 24-hour maintenance service	8 hours
		Automatically activated standby power and telemetry contacting a 24-hour maintenance service	4 hours
Non-residential systems not in full-time use and all other systems	All surface waters	No standby power	12 hours
		Manually activated standby power and telemetry contacting a 24-hour maintenance service	8 hours
		Automatically activated standby power and telemetry contacting a 24-hour maintenance service	4 hours

6

7 ~~(d)~~**(e)** A PE may propose an alternate method to Paragraph (b) of this Rule to calculate the minimum pump tank
 8 liquid capacity required. The emergency storage capacity requirement in Paragraph (c) ~~(d)~~ of this Rule may also be
 9 calculated to include the volume of freeboard space in the following: previous tankage, the pump tank above the
 10 high water alarm activation level, and the available freeboard space in the collection system below the lowest
 11 ground elevation between the pump tank and the lowest connected building drain invert.

12 ~~(e)~~**(f)** Telemetry shall be demonstrated to be operational to the authorized agent and the Management Entity during
 13 the final inspection of the wastewater system by the authorized agent prior to issuance of the operation permit. OP.

1
2
3
4

History Note: Authority G.S. 130A-335(e), (f), and (f1).
Eff. December 1, 2018

1 15A NCAC 18E .0803 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0803 GREASE TANK CAPACITY REQUIREMENTS**

4 (a) Grease tanks or grease tanks used with grease traps shall be required at for food preparation facilities, food
5 processing facilities, and meat markets, markets; churches with commercial kitchen equipment, [a full kitchen,
6 institutions, and places of public assembly with a that include a full kitchen, kitchen; and other facilities [with a full
7 kitchen;] or where the accumulation of FOG may cause premature failure of a wastewater system. other facilities
8 expected to generate FOG levels that are higher than DSE as defined in Table III of Rule .0402(a) of this
9 Subchapter. The grease tank shall be plumbed to receive all wastes associated with food handling, preparation, and
10 cleanup. No toilet wastes shall be discharged to a grease tank.

11 (b) The minimum grease tank liquid capacity of any grease tank shall be 1,000 gallons with two compartments. or
12 as calculated by one of the following, whichever is greater:

13 (1) five gallons per meal served per day;

14 (2) equal to the required septic tank liquid capacity calculated in accordance with Rule .0801 of this
15 Section ; or

16 (3) equal to the capacity as determined in accordance with the following:

17
$$\text{GLC} = \text{D} \times \text{GL} \times \text{ST} \times \text{HR} / 2 \times \text{LF}$$

18 Where GLC = grease tank liquid capacity (gallons)

19 D = number of seats in dining area

20 GL = gallons of wastewater per meal (1.5 single-use; 2.5 multi-use)

21 ST = storage capacity factor (2.5)

22 HR = number of hours open

23 LF = loading factor

24 (1.25 if along an interstate highway;

25 1.0 if along US Highway or recreational areas;

26 0.8 if along other roads)

27 (c) When the required minimum grease tank capacity for a facility is less than or equal to 1,500 gallons, the grease
28 tank may be a single tank with two compartments and a minimum 2:1 length to width ratio.

29 (d) When the required minimum grease tank capacity for a facility is greater than 1,500 gallons, the grease tank
30 shall have a minimum 4:1 length to width ratio and four compartments. This requirement can be met by two or more
31 tanks in series. Each tank shall have a minimum liquid capacity of 1,000 gallons and a minimum 2:1 length to width
32 ratio.

33 (e) The minimum grease tank liquid capacity shall be calculated by one of the following:

34 (1) five gallons per meal served per day;

35 (2) equal to the required septic tank liquid capacity; or

36 (3) equal to the capacity as determined in accordance with the following, whichever is greater:

37
$$\text{LC [GLC]} = \text{D} \times \text{GL} \times \text{ST} \times \text{HR} / 2 \times \text{LF}$$

Where ~~LC~~ [GLC] = grease tank liquid capacity (gallons)
D = number of seats in dining area
GL = gallons of wastewater per meal (1.5 single use; 2.5 multi use)
ST = storage capacity factor (2.5)
HR = number of hours open
LF = loading factor
(1.25 if along an interstate highway;
1.0 if along US Highway or recreational areas;
0.8 if along other roads)

~~(f)(c)~~ An approved A grease rated effluent filter approved in accordance with Rule .1404 of this Subchapter shall be in the final compartment of the grease tank. When two or more grease tanks are used in series in accordance with Paragraph (d) of this Rule, the following conditions shall be met:

- ~~(1) approved grease rated effluent filter shall be in the compartment immediately prior to discharge;~~
and
- ~~(2) the outlet of the initial tank shall consist of a sanitary tee extending down 40 to 60 percent of the liquid depth.~~

(f) When two or more grease tanks are used in series in accordance with Paragraph (d) of this Rule, the following conditions shall be met:

- (1) approved grease rated effluent filter shall be in the final compartment; and
- (2) the outlet of the initial tank shall consist of a sanitary tee extending down 40 to 60 percent of the liquid depth.

~~(g) The grease tank liquid capacity requirements set forth in this Rule may be reduced by up to 50 percent when used in conjunction with a grease trap traps are used located inside the facility. The system shall be designed by a PE, if required by G.S. 89(e), 89C, and approved by the State. State when review of documentation provided by the PE and manufacturer demonstrate that the grease trap is projected to reduce FOG concentration by at least 50 percent. The PE shall provide documentation that the grease trap is projected to reduce the FOG concentration by 50 percent.~~

(h) Grease traps and grease tanks shall be maintained by a septage management firm permitted in accordance with G.S. 130A-291.1 and the contents disposed of in accordance with 15A NCAC 13B .0800.

*History Note: Authority G.S. 130A-335(e), (f), and (f1).
Eff. December 1, 2018*

1 15A NCAC 18E .0804 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0804 SIPHON TANK CAPACITY REQUIREMENTS**

4 Siphon tanks shall be sized to provide the minimum dose requirements of Rule .1101(d) of this Subchapter, plus
5 three inches of freeboard above the siphon trip level.

6

7 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

8 *Eff. December 1, 2018*

9

1 15A NCAC 18E .0805 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0805 TANK LEAK TESTING AND INSTALLATION REQUIREMENTS**

4 (a) All tanks installed under the following conditions shall be leak tested at the site:

- 5 (1) when a SWC is present within five feet of the elevation of the top of a mid-seam pump tank;
- 6 (2) with advanced pretreatment when required in the RWTS or PIA Approval;
- 7 (3) when required in the approved plans and specifications for a wastewater system designed by a PE;
- 8 (4) when the tank is constructed in place; or
- 9 (5) as required by the authorized agent based upon site or system specific conditions, such as
- 10 ~~misaligned seams~~ seams, or exposed reinforcement, reinforcement, or damage observed that may
- 11 have occurred during transport or installation.

12 (b) Tanks unable to pass a leak test or be repaired to pass a leak test shall be removed from the site and the imprint

13 described in Rule ~~.1402(d)(16)~~ .1402(d)(15) ~~and~~ or (e)(8) of this Subchapter marked over.

14 (c) The tank outlet pipe shall be inserted through the outlet pipe ~~penetration,~~ penetration boot, creating a watertight

15 joint, and extending a minimum of two feet beyond the tank outlet.

16 (d) The tank outlet pipe shall be placed on undisturbed soil or bedded in accordance with Rule .0703(b) of this

17 Subchapter to prevent differential settling of the pipe. The pipe shall be level for a minimum of two feet after exiting

18 the tank.

19 (e) The bottom of the tank shall be installed level in undisturbed or compacted soil, or bedded using sand, gravel,

20 stone, or other ~~approved equivalent material,~~ aggregate. When rock or other protruding ~~obstacles~~ obstructions are

21 encountered, the bottom of the tank excavation shall be backfilled with sand, gravel, stone, or other approved

22 equivalent material to three inches above the rock or ~~obstacle,~~ obstruction.

23 (f) The tank excavation shall be separated from the dispersal system by at least two feet of undisturbed soil. Piping

24 from the tank to the next component shall be placed on undisturbed soil, compacted soil, or bedded using sand,

25 gravel, stone, or other [approved equivalent material.] aggregate.

26 (g) Effluent filters and risers shall be installed in accordance with the design and construction criteria of Rule

27 .1402(b) and (c) of this Subchapter.

28 ~~(h)~~ (h) Any system serving a facility with a DDF greater than 3,000 gpd shall have access manholes installed on the

29 tank and extending that extend at a minimum to finished grade. The access manholes shall be designed and

30 maintained to prevent surface water inflow and sized to allow access for routine inspections, operation, and

31 maintenance.

32
33 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

34 *Eff. December 1, 2018*

1 15A NCAC 18E .1401 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .1401 PLANS FOR PREFABRICATED TANKS**

4 (a) All ~~tanks, risers, effluent filters, or~~ and pipe penetrations tanks proposed for use in a wastewater system shall
5 be approved by the ~~State. State when the tank design, construction, and materials meet the criteria set forth in Rules~~
6 .1402 and .1403 of this Section. ~~All tanks, risers, effluent filters, and pipe penetrations approved by the State shall~~
7 ~~maintain the materials, design, and construction specified in the approved plans and shall comply with all rules of~~
8 ~~this Section.~~

9 (b) ~~The tank manufacturer shall submit three~~ Three separate sets of plans and specifications for the initial design of
10 each ~~tank or appurtenance (tank approval, riser approval, effluent filter approval, or pipe penetration approval)~~ tank
11 to the State for approval. including subsequent changes or modifications shall be submitted to and approved by the
12 State prior to being offered for sale or use in North Carolina.

13 (c) Plans and specifications for tanks with a total liquid capacity less than or equal to 4,000 gallons shall ~~show the~~
14 design in detail, including include the following:

- 15 (1) all pertinent tank dimensions in inches, including:
 - 16 (A) top, bottom, and sidewall thickness and variations;
 - 17 (B) minimum and maximum dimensions on tanks with tapered or ribbed walls;
 - 18 (C) baffle wall minimum and maximum thickness and variations;
 - 19 (D) location and dimension of all openings in baffle wall for gas and liquid movement; and
 - 20 (E) dimensions of all compartments;
- 21 (2) material type and strength, including reinforcement material and location, as applicable, specified
22 by the manufacturer;
- 23 (3) liquid depth and operating capacity in gallons;
- 24 (4) pipe penetration boot locations and ~~State approved~~ pipe penetration ~~boot;~~ boots approved in
25 accordance with Rule .1404 of this Section;
- 26 (5) methods and material for sealing sections and forming water tight joints in tanks with multiple
27 sections;
- 28 (6) detailed drawings showing access openings, tank lids, access manhole risers, and other proposed
29 appurtenances to the tank; and
- 30 (7) tank manufacturer and PE requirements for installation, including ~~bedding and bedding,~~
31 ~~recommend methods for~~ additional sealing, sealing methods, as applicable. ~~[applicable,]~~ and leak
32 testing procedures.

33 (d) Plans and specifications for tanks with a total liquid capacity greater than 4,000 gallons and all tanks designed
34 for traffic loads shall be designed by a PE in accordance with ASTM C890. Plans shall show the design in detail,
35 design, including all the information listed in Paragraph ~~(d)~~ (c) of this Rule and engineering calculations showing
36 the minimum and maximum soil cover, water table, and traffic load the tank is designed to support.

1 (e) Plans for prefabricated tanks other than those approved for general use and issued an identification number
2 under this Section shall be considered for tank approval on ~~an individual~~ a case-by-case basis based on the
3 information provided by the tank manufacturer or designer to the State. The information shall indicate the tank shall
4 perform in accordance with Rules .1402 and .1403 of this Section. ~~the same manner and to the same standard as~~
5 ~~those designed in accordance with the rules of this Section.~~

6 (f) The State or LHD may inspect approved tanks at the place of manufacture, the inventoried sites of the
7 distributors, or at the installation of the tank in a wastewater ~~system,~~ system for compliance with the approved plans
8 and specifications.

9 (g) Tanks found to be out of compliance shall be brought back into compliance by the tank manufacturer or the
10 installer as directed by the State or LHD. Tanks that are not or cannot brought into compliance shall not be used in a
11 wastewater system. The ~~imprint detailed~~ imprints identified in Rule .1402 [~~.1402(d)(10)~~] .1402(d)(15) or (e)(8) of
12 this Section shall be permanently marked over by the authorized agent.

13 (h) All tanks approved by the State shall maintain the materials, design, and construction specified in the approved
14 plans and shall comply with all rules of this Section. Any subsequent changes or modifications shall be approved by
15 the State in accordance with this Rule.

16
17 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

18 *Eff. December 1, 2018*

1 15A NCAC 18E .1402 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .1402 TANK DESIGN AND CONSTRUCTION**

4 (a) Tanks shall be watertight, structurally sound, and not subject to ~~excessive~~ corrosion or decay.

5 (b) Septic tanks and grease tanks shall have ~~State approved~~ effluent filters and access ~~devices.~~ devices approved in
6 accordance with Rule .1404 of this Section. An effluent filter and support case shall be installed level in the outlet
7 end of the septic tank or grease tank and shall meet the following criteria:

- 8 (1) solvent welded to a minimum of three-inch PVC Schedule 40 outlet pipe;
- 9 (2) installed in accordance with filter manufacturer's specifications and effluent filter approval; and
- 10 (3) accessible and removable without entering the septic tank or grease tank.

11 (c) Septic tanks installed where the access openings on the top of the tank ~~will be~~ are deeper than six inches below
12 finished grade shall have an access riser over each compartment with cover, extending to within six inches of the
13 finished grade. The opening shall be adequate to accommodate the removal of the septic tank lid. When the top of
14 the septic tank or access riser is below the finished grade, the location of the tank shall be ~~visibly marked~~ visible at
15 finished grade. Risers shall be installed in accordance with the rules of this Subchapter, the manufacturer's
16 specifications, and a product specific approval.

17 (d) Septic tanks shall meet the following minimum design standards:

- 18 (1) a minimum liquid depth of 36 inches;
- 19 (2) a minimum of nine inches freeboard, measured as the air space between the top of the liquid and
20 the bottom of the tank top. Venting of the tank shall be provided to prevent the buildup of gases;
- 21 (3) the approved septic tank capacity shall be determined as the liquid volume below the outlet invert
22 to the bottom of the tank;
- 23 (4) the length of the tank shall be a minimum of twice as long as the width, as measured by the
24 longest axis and widest axis based on the internal tank dimensions;
- 25 (5) there shall be three inlet openings in the tank, one on the tank end and one on each sidewall of the
26 inlet end of the tank;
- 27 (6) outlet openings shall have a cast or manufactured penetration point and include resilient, a
28 watertight, sealed, non-corrodible, and flexible connective sleeve. A flexible connective sleeve
29 shall be able to bend without breaking. The connective sleeve shall meet ASTM C1644 for
30 precast concrete tanks or ASTM C1644, C923, or C564 for thermoplastic or glass-fiber-reinforced
31 polyester tanks and be approved by the State; State if it meets the requirements of this
32 Subparagraph and Rule .1404 of this Section;
- 33 (7) inlet penetrations shall be greater than or equal to four inches in diameter and outlet penetrations
34 shall be greater than or equal to three inches in diameter;
- 35 (8) there shall be no ~~pipe penetration points or openings~~ shall be permitted below the septic tank
36 operating liquid level;

1 (9) the outlet shall be through an approved effluent filter approved in accordance with Rule .1404 of
2 this Section, and secured in place in an effluent filter support case. The effluent filter case inlet
3 shall extend down to between 25 and 50 percent of the liquid depth measured from the top of the
4 liquid level; level. Other methods of supporting the effluent filter case and for making pipe
5 penetrations shall be approved by the State on a case-by-case basis upon a showing that the
6 performance is identical to those designed in accordance with this Rule;

7 (10) the invert of the outlet shall be a minimum of two inches lower in elevation than the invert of the
8 inlet;

9 ~~(11) other methods of supporting the effluent filter case and for making pipe penetrations shall meet all
10 the requirements of this Rule and shall be reviewed on a case-by-case basis by the State;~~

11 ~~(12)~~(11) all septic tanks shall be designed with a partition so that the tank contains two compartments. The
12 following conditions shall be met:

13 (A) the partition shall be located at a point (not less than two-thirds or more than three-fourths
14 the length of the tank from the inlet end;

15 (B) the partition shall be designed, manufactured, installed, and maintained to remain in
16 position when subjected to a liquid capacity in one ~~compartment~~; compartment that
17 corresponds with the lowermost elevation of the water passage slot or holes;

18 (C) the partition shall be designed to create a gas passage, not less than the area of the inlet
19 pipe, and the passage shall not extend lower than seven inches from the bottom side of
20 the tank top;

21 (D) the top and bottom sections of the partition shall be designed to create a water passage
22 slot four inches high for the full interior width of the tank;

23 (E) a minimum of two four or five-inch openings, or one four or five-inch opening per 30
24 horizontal linear inches of baffle wall, whichever is greater, may be designed into the
25 partition instead of the four-inch slot;

26 (F) the entire liquid passage in the partition wall shall be located between 25 and 50 percent
27 of the liquid depth of the tank, as measured from the top of the liquid level; and

28 ~~(G) there shall be no other openings in the partition wall below the water passage slot or
29 openings; and~~

30 ~~(H)~~(G) other methods for designing partition shall be approved by the State on a case-by-case
31 basis upon a showing that the performance is identical to those designed in accordance
32 with this ~~Paragraph shall be considered for approval by the State on an individual basis;~~
33 Rule;

34 ~~(13)~~(12) access openings shall be provided in the top of the tank, located over each compartment, and
35 having have a minimum nominal opening of 15 inches by 15 inches or 17 inches in diameter. The
36 opening shall allow for maintenance and removal of internal devices of the septic tank;

37 ~~(14)~~(13) access risers and covers shall be designed and maintained to prevent surface water infiltration;

1 ~~(15)~~(14) tank lids and riser covers shall be locked, ~~secured,~~ secured with fasteners, or weigh a minimum of
2 40 pounds, but no more than 80 pounds; and

3 ~~(16)~~(15) all septic tanks shall bear an imprint identifying the manufacturer, the septic tank serial number
4 assigned to the manufacturer's plans and specifications approved by the State, and the liquid or
5 working capacity of the tanks. The imprint shall be located to the right of the blockout made for
6 the outlet pipe on the top or end of outlet end of the tank.

7 (e) Pump tanks shall meet the design requirements of Paragraph (d) of this Rule with the following modifications:

8 (1) a watertight access riser with removable cover shall be located over the pump. The access riser
9 shall extend to a minimum of six inches above finished grade, and be designed and maintained to
10 prevent surface water infiltration;

11 (2) the access opening over the pump shall have a ~~nominal clear~~ minimum opening of 24 inches in
12 diameter or other equidimensional opening;

13 (3) ~~larger or multiple access risers shall be provided~~ when two or more pumps are ~~required;~~ required
14 in accordance with Rule .1101(b) of this Subchapter the access openings shall be sized to allow for
15 pump removal, operation, and maintenance;

16 (4) tanks may be designed with a single compartment. If a partition is provided, the partition shall be
17 designed to contain a minimum of two four-inch diameter circular openings, or equivalent, located
18 no more than 12 inches above the tank bottom;

19 (5) there shall be no requirement as to tank length, width, or shape, provided the tank satisfies all
20 other requirements of this Section;

21 (6) the invert of the inlet openings shall be located within 12 inches of the tank top. No freeboard shall
22 be required in the pump tank;

23 (7) tanks shall be vented if located more than 50 feet from the facility, and accessible for routine
24 maintenance;

25 (8) all pump tanks shall bear an imprint identifying the manufacturer, the pump tank serial number
26 assigned to the ~~manufacturer~~ manufacturer's plans and specifications by the State, and the liquid
27 or working capacity of the tank. The imprint shall be located to the left of the blockout made for
28 the outlet pipe on the top or end of outlet end of the tank; and

29 (9) the pump tank working capacity shall be the entire internal tank volume.

30 (f) Grease tanks shall be septic tanks approved in accordance with Paragraph (d) of this Rule with the following
31 modifications:

32 (1) the liquid passage between chambers shall be located between 40 and 60 percent of the operating
33 liquid depth measured from the top of the liquid level. The liquid passage between chambers may
34 be made using a sanitary tee extending down between 40 and 60 percent of the liquid depth
35 measured from the top of the liquid level;

- 1 (2) when sanitary tees are used as the liquid passage through an interior compartment partition, an
2 access opening and riser to grade over the tees shall be provided for servicing and routine
3 ~~maintenance.~~ maintenance;
- 4 (3) when two or more tanks are ~~used,~~ used in series a sanitary tee shall be provided in the outlet end of
5 each interconnected tank extending down between 40 and 60 percent of the liquid depth;
- 6 (4) the final chamber shall contain an effluent filter and case extending down between 40 and 60
7 percent of the liquid depth. The effluent filter shall be approved by the State for use in grease
8 tanks. The grease rated effluent filter shall be sized for the DDF and have opening openings of
9 1/32-inch or less; and
- 10 (5) access risers shall extend to finished grade and be capped with cast iron manhole rings and covers.
11 Lockable aluminum hatches may be substituted for cast iron manhole rings and covers in non-
12 traffic areas. Aluminum hatches or manhole rings and covers shall be designed and maintained to
13 prevent surface water infiltration. Locks shall be the responsibility of the person owning or
14 controlling the system.

15 (g) Siphon tanks shall meet the design requirements of Paragraph (e) of this Rule with the following modifications:
16 and shall:

- 17 (1) be designed in accordance with the minimum dose and construction requirements of this Rule;
18 Rule and Rule .0804 of this Section;
- 19 (2) provide three inches of freeboard;
- 20 (3) locate the inlet pipe shall be three inches above the siphon trip level; and
- 21 (4) tanks shall have a watertight access opening over each siphon with a nominal clear an opening of
22 24 inches, extending to finished grade, and designed to prevent surface water inflow.

23
24 *History Note:* Authority G.S. 130A-335(e), (f), and ~~(f1).~~ (f1); 130A-335.1.
25 Eff. December 1, 2018

1 15A NCAC 18E .1403 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .1403 TANK MATERIAL REQUIREMENTS**

4 (a) Tanks designed to hold sewage shall be structurally sound and constructed with materials capable of resisting
5 corrosion from sewage and sewage gases, and the active and passive loads on tank ~~walls.~~ walls, such as concrete,
6 thermoplastic, and glass-fiber-reinforced polyester.

7 (b) Reinforced precast concrete tanks shall meet the following minimum material and construction requirements:

8 (1) the ends and sides of the tank shall have a minimum thickness of two and one-half inches. The top
9 and bottom of the tanks shall be a minimum of three inches thick;

10 (2) the top, bottom, end and sides of the concrete tank and tank lid shall be reinforced by using a
11 minimum reinforcing of six-inch by six-inch No. 10 gage welded steel reinforcing wire.
12 Reinforcement shall be placed to maximize the structural integrity of the tank;

13 (3) alternative reinforcement designs may be used when shown to be equal to or greater than the
14 reinforcement design in Subparagraph (2) of this Paragraph;

15 (4) when the concrete tank, tank lid, riser, or riser cover are subjected to vehicular traffic, the tank
16 shall be designed by a PE to handle the traffic load in accordance with ASTM C890;

17 (5) any tank installed deeper than three feet shall be designed by a PE for the proposed tank burial
18 depth. The tank design shall be submitted to the State for ~~review and tank approval;~~ review. The
19 design shall be approved when documentation is provided to show that the proposed tank design
20 can withstand all active and passive loads on the tank, including the additional soil weight from a
21 deeper burial depth.

22 (6) the concrete shall achieve a minimum 28-day compressive strength of 3,500 psi. The concrete
23 shall meet the compressive strength of 3,500 psi prior to removal of the tank from the place of
24 manufacture. It shall be the responsibility of the manufacturer to certify that this condition has
25 been met prior to shipment. A tank ~~may be~~ shall be subject to testing to ascertain the strength of
26 the concrete prior to its being approved for installation. Testing shall be performed using a
27 ~~properly~~-calibrated Schmidt Rebound Hammer or approved equal;

28 (7) tanks manufactured in multiple sections shall be joined and sealed at the joint by using butyl
29 rubber or other pliable sealant meeting ASTM C990 or other material that has been approved by
30 the State when documentation has been provided to show that the material meets all performance
31 requirements of ASTM C990. Documentation shall also be provided to show that the material is
32 waterproof, corrosion resistant, and approved for use with concrete tanks; waterproof and
33 corrosion resistant; and

34 (8) tank lids and riser covers shall have a durable handle made of ~~rot-resistant~~ corrosion-resistant
35 materials and capable of pull capacity sufficient for the weight of the lid or cover.

36 (c) Thermoplastic tanks shall either be IAPMO/ANSI Z1000 or CSA B66 certified and enrolled in a third-party
37 quality assurance and quality control program, which includes material testing and unannounced annual audits.

- 1 (d) Glass-fiber-reinforced polyester tanks shall meet the following requirements:
- 2 (1) top, bottom, ends, and sides of the tank shall have a minimum thickness of 1/5-inches. The baffle
- 3 wall shall be a minimum of 3/16-inch thick;
- 4 (2) material and laminate requirements specified in ~~IAPMO/ANSI~~ IAPMO/ANSI Z1000 for glass-
- 5 fiber-reinforced polyester tanks; and
- 6 (3) enrolled in a third-party quality assurance and quality control program, which include material
- 7 testing and unannounced annual audits.
- 8 (e) Cast or manufactured in place tanks shall be designed by a PE, if required by G.S. 89C, and approved by the
- 9 State. State when the tank design, construction, and materials meet the criteria set forth in this Rule and Rule .1402
- 10 of this Section.

11

12 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

13 *Eff. December 1, 2018*

14

1 15A NCAC 18E .1404 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .1404 PLANS AND SPECIFICATIONS FOR RISERS, EFFLUENT FILTERS, AND**
4 **PIPE ~~PENETRATIONS~~ PENETRATION BOOTS**

5 (a) All risers, effluent filters, and pipe penetration boots proposed for use in a wastewater system shall be approved
6 by the State prior to being offered for sale or use in North Carolina. All risers, effluent filters, and pipe penetration
7 boots approved by the State shall maintain the materials, design, and construction specified in the approved plans
8 and shall comply with all rules of this Section.

9 (b) Three separate sets of plans and specifications for the initial design of each riser, effluent filter, or pipe
10 penetration boot shall be submitted to the State. Plans for risers, effluent filters, and pipe penetration boots shall be
11 approved by the State and an approval letter issued when the design is found to comply with this Section. All
12 changes or modifications to risers, effluent filters, or pipe penetration boots shall be approved by the State pursuant
13 to this Rule.

14 ~~(a)(c)~~ Risers and riser lids shall be able to withstand a uniform live loading of 150 pounds per square foot in
15 addition to all loads to which a riser is normally subjected, such as dead weight of the material and soil cover and
16 active soil pressure on riser walls.

17 ~~(b)(d)~~ Riser plans and specifications submitted for review and approval shall show the design of the riser in detail,
18 including: and include the following information:

- 19 (1) manufacturer's name, address, phone, and fax numbers;
- 20 (2) physical dimensions of the riser and riser cover, such as wall thickness, internal diameter,
21 proposed casting or installation details and methods, and pipe penetrations;
- 22 (3) material type and strength including reinforcement material and location as required;
- 23 (4) documentation from a third party showing that the riser ~~can meet~~ meets the load ~~required~~
24 requirements specified in Paragraph ~~(a)(c)~~ of this ~~Rule shall be provided by a third party;~~ Rule;
- 25 (5) plans for septic tank ~~risers, risers of~~ a secondary lid, concrete plug, or other ~~State approved~~ safety
26 device ~~to that shall~~ be provided inside the riser for additional security and to prevent accidental
27 entry;
- 28 (6) plans for pump tank ~~risers, risers of~~ primary and secondary safety mechanisms that shall be
29 ~~provided.~~ provided with the riser. The primary safety mechanism shall be a locking riser lid, ring
30 and lock, or other ~~State approved~~ riser lid locking mechanism. The secondary safety mechanism
31 shall be a secondary lid, concrete plug, or other ~~State approved~~ safety device to be provided inside
32 the pump tank riser; and
- 33 (7) specifications for application, installation, operation, and maintenance for both new and retrofit
34 applications for single and multiple riser sections.

35 ~~(e)(c)~~ Effluent filter plans and specifications submitted for review and approval shall show the design of the effluent
36 filter in detail, including: and include the following information:

- 37 (1) manufacturer's name, address, phone, and fax numbers;

- 1 (2) documentation and a written certification that the effluent filter is designed, constructed, and
- 2 performs in compliance with G.S. 130A-335.1(a);
- 3 (3) capacity and wastewater strength for all models of proposed filters to be approved; and
- 4 (4) specifications for application, installation, operation, and maintenance.

5 ~~(d)~~(f) Pipe penetration **boot** plans and specifications submitted for review and approval shall show the design of the
6 pipe penetration **boot** ~~in detail, including; and include the following information:~~

- 7 (1) manufacturer's name, address, phone and fax numbers;
- 8 (2) design specifications and materials used in the manufacture of pipe penetration **boot** components;
- 9 (3) applicable testing results from third-party verification showing pull and flexibility testing;
- 10 (4) testing for watertight seal around piping including any component or device included to ensure the
11 seal, such as non-corrodible adjustable bands;
- 12 (5) documentation that the pipe penetration **boot** meets the requirements of ASTM C1644 for precast
13 concrete tanks or ASTM C1644, C923, or C564 for thermoplastic or glass-fiber-reinforced
14 polyester tanks; and
- 15 (6) specifications for application, installation, operation, and maintenance.

16 ~~(e) Plans for risers, effluent filters, and pipe penetrations shall be reviewed and approved by the State and assigned
17 an Identification Number [an approval letter issued] when the design is found to comply with this Section.~~

18 ~~(f)(g) Plans for prefabricated risers, effluent filters, and pipe penetrations penetration boots, other than those
19 approved for general use and issued an approval letter pre-approved under this Rule Rule, shall be considered for
20 approval on a case-by-case basis, based on the information provided by the manufacturer or designer to the State.
21 The information shall indicate the riser, effluent filter, or pipe penetration boot shall perform to the same standard as
22 those designed in accordance with the provisions of this Section. shall be approved if it is determined that it meets
23 the requirements of this Rule, based on information provided by the manufacturer to the State.~~

24
25 *History Note: Authority G.S. 130A-335(e), (f), and (f1); 130A-335.1.*

26 *Eff. December 1, 2018*

27

1 15A NCAC 18E .1405 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .1405 RISERS, EFFLUENT FILTERS, AND PIPE PENETRATION BOOTS**

4 **APPROVAL RENEWAL**

5 ~~(c) The State may re-issue a riser, effluent filter, or pipe penetration approval for a new five year period when the~~
6 ~~manufacturer's re-approval request provided in accordance with Paragraph (b) of this Rule shows continued product~~
7 ~~compliance. All riser, effluent filter, and pipe penetration approvals shall expire on December 31 of each year.~~
8 ~~Riser, effluent filter, and pipe penetration manufacturers who wish to continue product approval shall submit~~
9 ~~annually a proprietary product renewal form provided by the State. State no later than November 30 of each year.~~
10 ~~The renewal form shall include the following updated information: company's name, address, contact information,~~
11 ~~contact name, model number(s) approved, and a notarized statement that the product(s) has not changed from the~~
12 ~~previous year.~~

13 (a) All riser, effluent filter, and pipe penetration **boots** approvals shall expire on December 31 of each year. Riser,
14 effluent filter, and pipe penetration **boot** manufacturers who wish to continue product approval shall submit annually
15 a proprietary product renewal form provided by the State. State no later than November 30 of each year. [The
16 renewal form shall include the following updated information: company's name, address, contact information,
17 contact name, model number(s) approved, and a notarized statement that the product(s) has not changed from the
18 previous year.]

19 (b) The renewal form shall include the following updated information:

20 (1) company's name, address, contact information, and contact name;

21 (2) model number(s) approved; and

22 (3) a notarized statement that the product has not changed from the previous year without prior
23 approval.

24 ~~(b)~~(c) The Department shall notify the manufacturer of the pending [PIA] riser, effluent filter, and pipe
25 penetration **boot** Approval expiration in writing no later than September 30 of each year. The notification shall
26 include ~~[provide the manufacturer with]~~ information on describing how to request ~~[renewal.]~~ riser, effluent filter,
27 and pipe penetration **boot** renewal.

28 ~~(c)~~(d) The riser, effluent filter, and pipe penetration **boot** approval shall be deemed to be renewed upon receipt of
29 a completed renewal form in accordance with this Rule.

30
31 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

32 *Eff. December 1, 2018*

1 15A NCAC 18E .1406 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1406 MODIFICATION, SUSPENSION, AND REVOCATION OF APPROVALS**

4 The State shall modify, suspend, or revoke the approval for tanks, risers, effluent filters, or pipe penetrations
5 penetration boots upon a finding that:

6 (1) approval is determined to be based on false, incomplete, or misleading ~~information or the tank or~~
7 ~~tank components have been subsequently altered;~~ information;

8 (2) ~~the product has been altered;~~

9 (2) ~~experience with the product or component results in altered conclusions about system~~
10 ~~performance, reliability, safety, or design;~~

11 (3) ~~the product or component~~ fails to perform in compliance with performance standards established
12 for the ~~product or component;~~ [product; product in accordance with Rule .1404 of this Section; or

13 (4) ~~the product~~ product, component, or the applicant fails to meet conditions of its approval or comply
14 with [G.S. 130A, Article 11, Rule .1405 of this Section, this Subchapter, or conditions of the
15 approval.] [applicable laws and rules.]

16

17 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

18 *Eff. December 1, 2018*

19

1 15A NCAC 18E .1501 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1501 GENERAL**

4 (a) RWTS that comply with NSF International Standard 40 for Class I residential wastewater treatment systems
5 shall be designed, constructed, and installed in accordance with this Section to serve facilities with a DDF less than
6 or equal to 1,500 gpd.

7 (b) RWTS shall only be used with ~~domestic strength wastewater.~~ DSE.

8 (c) RWTS shall bear one of the following to certify that the product is in accordance with NSF Standard 40:

9 (1) the NSF mark and the NSF listed model number; or

10 (2) the certification mark and listed model number of a third-party certification program accredited by
11 ANSI to certify RWTS in accordance with NSF Standard 40.

12 (d) For approval of an RWTS as a ~~Provisional or Innovative~~ PIA System, a manufacturer shall apply in accordance
13 with Section .1700 of this Subchapter.

14

15 *History Note: Authority G.S. 130A-342.*

16 *Eff. December 1, 2018*

17

1 15A NCAC 18E .1502 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1502 APPLICATION**

4 An application shall be submitted for RWTS approval in writing to the State and shall include the following:

5 (1) manufacturer's name, address, phone number, plant location(s), and contact information for
6 distributors;

7 (2) verification of NSF Standard 40 Class I system approval and listing by NSF International or other
8 ANSI-accredited third-party certification program;

9 (3) manufacturer's identifying name or logo, listed model number(s) and treatment capacity in gpd to
10 be imprinted on unit;

11 (4) three **legible** copies of plans and specifications, including information required to evaluate any
12 tanks as required in accordance with Rule .1401 of this Subchapter; and

13 (5) fee payment as required by G.S. 130A-343(k)(6), by corporate check, money order or cashier's
14 check made payable to: North Carolina On-Site Water Protection Account or North Carolina
15 OSWW System Account, and mailed to the State.

16

17 *History Note: Authority G.S. 130A-342.*

18 *Eff. December 1, 2018*

19

1 15A NCAC 18E .1503 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .1503 DESIGN AND CONSTRUCTION STANDARDS**

4 RWTS shall meet the following design and construction standards:

- 5 (1) No blockouts or openings shall be permitted below the liquid level of the RWTS.
- 6 (2) RWTS shall be watertight, corrosion resistant structures, with all components requiring
7 maintenance accessible to the Management Entity. Access openings shall be provided in the
8 RWTS top. Access shall be provided for:
- 9 (a) cleaning or rodding out the inlet pipe;
- 10 (b) cleaning or clearing the air or gas passage space above any partition;
- 11 (c) pumping of each compartment required to be pumped;
- 12 (d) sampling the effluent; and
- 13 (e) repairing ~~any system components or and~~ maintaining any system ~~components requiring~~
14 ~~repair or maintenance components.~~
- 15 (3) Tanks used in RWTS designed to hold sewage or effluent shall comply with all tank requirements
16 in accordance with Section .1400 of this Subchapter.
- 17 (4) RWTS shall bear an imprint identifying the manufacturer, the RWTS serial number assigned to
18 the manufacturer's model approved by the State, and the liquid or working capacity of the unit.
19 The imprint shall be located on the outlet end of the tank within 24 inches of the top of the tank.
- 20 (5) The design, construction, and operation of RWTS shall prevent bypass of wastewater.
- 21 (6) The manufacturer shall demonstrate ensure that the system can be sampled in compliance with 40
22 CFR 136 and shall specify the recommended method for effluent sampling.
- 23 (7) Control panels provided by the manufacturer shall comply with the requirements for control
24 panels in accordance with Rule .1103 of this Subchapter.
- 25 (8) The RWTS shall have an alarm device or devices to warn the user or Management Entity of a unit
26 malfunction or a high-water condition in accordance with Rule .1103 of this Subchapter.
- 27 (9) The control panel shall include a method to automatically measure and record daily wastewater
28 flow dispersed to the dispersal field in accordance with Rule .1702(a)(2)(I) of this Subchapter.
- 29 (10) The blower location shall be shown on the plans and detail proposed corrosion-resistant blower
30 enclosures, if applicable.
- 31 (11) A settling tank shall be required prior to or as an integral part of the design of the RWTS. The
32 liquid capacity of the settling tank shall be a minimum of half of the DDF of the RWTS, or as
33 otherwise specified by the manufacturer, whichever is larger. The settling tank may either be an
34 integral chamber of the RWTS tank, ~~an approved prefabricated septic tank, a septic tank approved~~
35 ~~in accordance with Section .1400 of this Subchapter,~~ or another tank specially designed for a
36 specific an individual system and approved by the State as a part of the plans for the RWTS.

- 1 *History Note: Authority G.S. 130A-342.*
- 2 *Eff. December 1, 2018*
- 3

1 15A NCAC 18E .1504 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1504 SAMPLING REQUIREMENTS FOR RESIDENTIAL WASTEWATER**

4 **TREATMENT SYSTEMS**

5 Effluent from an approved RWTS shall be grab or 24-hour composite sampled annually for all effluent standards
6 listed in Table XXIV of Rule ~~1201~~ **.1201(a)** of this Subchapter for NSF-40 systems, unless adjusted sampling
7 requirements have been requested and granted in accordance with Rules .1302 and .1709 of this Subchapter.

8

9 *History Note: Authority G.S. 130A-342.*

10 *Eff. December 1, 2018*

11

1 15A NCAC 18E .1505 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .1505 RESIDENTIAL WASTEWATER TREATMENT SYSTEM APPROVAL**
4 **RENEWAL**

5 (a) All RWTS Approvals shall expire on December 31 of each year. RWTS manufacturers who wish to continue
6 product approval shall submit annually a proprietary product renewal form provided by the ~~State~~. State no later than
7 November 30 of each year. ~~[The renewal form includes the following updated information: company's name,~~
8 ~~address, contact information, contact name, model number(s) approved, and a notarized statement that the product(s)~~
9 ~~has not changed from the previous year. The renewal request shall include verification of the manufacturer's~~
10 ~~continued certification and listing by a nationally recognized certification body, including compliance with NSF~~
11 ~~Standard 40.]~~

12 (b) The renewal form shall include the following updated information:

13 (1) company's name, address, contact information, and contact name;

14 (2) model number(s) approved;

15 (3) a notarized statement that the product has not changed from the previous year without prior
16 approval; and

17 (4) verification of the manufacturer's continued certification and listing by a nationally recognized
18 certification body, including compliance with NSF Standard 40.

19 ~~(b)(c)~~ The Department shall notify the manufacturer of the pending RWTS Approval expiration in writing no later
20 than September 30 of each year. The notification shall include ~~[provide the manufacturer with]~~ information
21 ~~[describing]~~ on how to request ~~renewal.~~ RWTS Approval renewal.

22 ~~(c)(d)~~ The RWTS approval shall be deemed renewed upon receipt of the completed renewal form and verification
23 of certification in accordance with this Rule.

24 ~~(b)(d)(c)~~ The State may suspend or revoke a system approval upon a finding that the system fails to perform in
25 compliance with established effluent ~~standards.~~ standards in Table XXIV of Rule .1201(a) of this Subchapter or as
26 provided for in Rule .1708(b) of this Subchapter.

27
28 *History Note: Authority G.S. 130A-342.*

29 *Eff. December 1, 2018*

1 15A NCAC 18E .1601 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .1601 GENERAL**

4 (a) Drip dispersal systems for DDF less than or equal to 3,000 gpd shall be configured as a package and approved as
5 a ~~Provisional, Innovative, or Accepted~~ PIA System in accordance with Section .1700 of this Subchapter.

6 (b) The integrated system package shall be provided from a single source manufacturer or system integrator,
7 comprised of catalogued standardized design components that have been coordinated and tested by the manufacturer
8 or integrator. Components shall include:

- 9 (1) dispersal field pump(s) and floats;
10 (2) headworks assemblies;
11 (3) dispersal field piping network, drip tubing, and appurtenances; and
12 (4) system controls that provide for automatic filter cleaning, timed field dosing, field flushing, alarm
13 notification, and recording of system operation.

14 (c) All components shall be integrated and designed to work together for the operation of the drip dispersal system.
15 The system manufacturer or integrator shall provide system design information including:

- 16 (1) head loss charts, tables, or formulas for various drip tubing lateral lengths during a dosing and
17 flushing cycle;
18 (2) minimum and maximum zone size and design;
19 (3) design plans and specifications for all components;
20 (4) installation specifications; and
21 (5) operation and maintenance manuals.

22 (d) The system manufacturer shall provide support to train and authorize designers, installers, Management Entities,
23 regulators, and users.

24 (e) Drip dispersal system performance, siting, sizing, installation, operation, monitoring, maintenance and reporting
25 requirements shall comply with Rules .0908, .1204, and Section .1300 of this Subchapter, as applicable, and this
26 Section.

27 (f) Drip dispersal systems that are not pre-engineered packages approved in accordance with Section .1700 of this
28 Subchapter shall be designed on a project specific basis by a PE. The drip dispersal system design shall comply with
29 Rules .0908, .1204, Section .1300 of this Subchapter, as applicable, and this Section, as applicable. Section.

30 (g) Drip dispersal systems for DDF greater than 3,000 gpd shall comply with the design and performance
31 requirements of this Section and shall be designed on a project specific basis by a PE. The system design shall be
32 reviewed and approved by the State in accordance with Rule .0302 of this Subchapter, unless the system is permitted
33 in accordance with Rule .0207 of this Subchapter.

34
35 *History Note: Authority G.S. 130A-343.*

36 *Eff. December 1, 2018*

1 15A NCAC 18E .1602 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .1602 DESIGN AND CONSTRUCTION STANDARDS**

4 (a) Drip dispersal systems shall be preceded by pretreatment designed to meet one of the following effluent
5 standards: DSE, NSF-40, TS-I, TS-II, or RCW as specified in Table III of Rule ~~.0402~~, .0402(a), Rule .1002, ~~and or~~
6 Table XXIV of Rule ~~.1201~~, .1201(a) of this ~~Subchapter~~. ~~Subchapter~~. as applicable.

7 (b) The drip dispersal system pump tank shall meet the following conditions:

- 8 (1) have a separate pump tank sized in accordance with Rule .0802 of this Subchapter; or
9 (2) have a pump tank or compartment that is part of an advanced pretreatment system approved in
10 accordance with Section .1700 of this Subchapter. Pump tank operating levels shall not result in
11 effluent backing up into a part of any pretreatment component designed for free gravity flow
12 drainage. All pump submergence, dose volume, flow equalization, and emergency storage
13 capacity requirements for the dosing system shall be met without interfering in the performance of
14 the pretreatment components.

15 (c) Pumps shall meet the following conditions:

- 16 (1) have sufficient capacity to accommodate projected flow and total dynamic head conditions;
17 (2) ~~delivery of deliver~~ 10 15 to 60 psi of pressure during dosing events;
18 (3) provide minimum flow and pressure as required to backwash or forward flush headworks filter;
19 (4) manufacturer requirements shall be followed to protect the pump intake from solids materials that
20 may accumulate in the pump tank and for pump cooling during operation;
21 (5) maintain maintenance of velocities of two feet per second at the distal end of each drip lateral line
22 during automatic field flushing for DSE; and
23 (6) ~~maintenance of~~ maintain velocities of one-foot per second at the distal end of each drip lateral line
24 during automatic field flushing for advanced pretreatment effluent. Valving shall be provided to
25 achieve flushing velocities of two feet per second at the distal end of each dripline with manual
26 flushing.

27 (d) Headworks assemblies shall contain filtration, totalizing flow meter, ~~mechanism~~ provisions for filter cleaning,
28 and field flushing valves. Zone and isolation valves may be located in the headworks assembly or in the drip
29 dispersal field. The headworks assemblies shall meet the following conditions:

- 30 (1) filters shall remove particles greater than 115 microns at the peak ~~DDF~~, operating flow rate,
31 ~~typically~~ during network forward flushing. Filter number and size shall operate during both dosing
32 and flushing conditions at a pump operating flow rate within the filter manufacturer's specified
33 acceptable operating range;
34 (2) filters for drip dispersal systems receiving DSE shall be configured with two independently
35 backwashed disk filters;
36 (3) for drip dispersal systems receiving advanced pretreatment effluent, single or multiple screens or
37 disc filters may be used, designed to be cleaned by either backwashing or forward washing;

- 1 (4) filter cleaning and field flushing residuals shall be returned to the head of the ~~pretreatment unit,~~
2 septic ~~tank, tank~~ or settling tank prior to being returned to the pretreatment unit;
- 3 (5) a totalizing flow meter shall be used to record total flow through the system. The meter shall also
4 be used to monitor pump operating flow rates during dosing and flushing events; and
- 5 (6) the headworks and associated components shall be in a separate enclosure that is freeze protected,
6 UV and corrosion resistant, and accessible for routine operation, maintenance, monitoring and
7 servicing. Design shall facilitate access to all internal components.
- 8 (e) The drip dispersal field shall consist of one or more separately dosed zones comprised of a supply and return
9 manifold, manifold to lateral connections, laterals containing drip tubing with emitters, blank sections of tubing, and
10 associated field appurtenances. Drip emitter and associated field appurtenances design shall meet the following:
- 11 (1) drip emitters shall be designed and demonstrated to uniformly distribute wastewater effluent at a
12 pre-determined rate when operated in accordance with manufacturer's specified pressure range for
13 emitter operation. Emitter design coefficient of variation (Cv) shall be five percent or less.
14 Emitters shall be designed to be self-cleaning and to resist root intrusion. Hydraulic design of a
15 drip dispersal zone shall be based upon achieving no more than a 10 percent variation in flow from
16 any emitter over the entire zone, regardless of emitter elevation or position along the lateral
17 including any effluent redistribution due to drainback;
- 18 (2) drip emitters shall be pressure compensating unless the manufacturer and designer provide
19 documentation and calculations that a maximum 10 percent flow variance allowance can
20 otherwise be achieved with non-pressure compensating emitters in a PIA Approval or on a project-
21 specific basis. Drip tubing shall be marked to identify the emitter type and flow rate;
- 22 (3) drip emitters shall be ~~uniformly~~ spaced ~~at uniform intervals~~ along the tubing on 24-inch centers or
23 less, and drip tubing with emitters shall be spaced an average of 24 inches on centers or less, in
24 accordance with the proposed system design. Spacing shall be chosen as needed to ensure a
25 sufficient number and density of emitters are present to achieve uniform distribution and
26 instantaneous emitter loading rates that do not exceed the hydraulic capacity of the receiving
27 infiltrative surfaces;
- 28 (4) connections between supply and return manifolds, and between runs or drip lateral sections
29 installed at varying elevations or locations shall be made with solvent welded solid Schedule 40
30 PVC or flexible PVC;
- 31 (5) blanking sections of tubing without drip emitters ~~may shall~~ be used where unfavorable site
32 ~~conditions~~ ~~conditions, such as rocks, trees, or roots,~~ are encountered along a drip run. Blanking
33 tubing shall be ~~differently colored~~ ~~a different color from the drip tubing~~ or marked tubing of the
34 same material, ~~specifications~~ ~~specification,~~ and diameter as the connecting dripline, or flexible
35 PVC;
- 36 (6) ~~the~~ manufacturer shall specify methods for drainback prevention; and
- 37 (7) field appurtenances shall include the following:

- 1 (A) air or vacuum relief valve at the highest elevation of each zone;
- 2 (B) cleanout at both ends of the supply and return manifolds;
- 3 (C) pressure monitoring fittings at the zone inlet and outlet points;
- 4 (D) pressure regulating valve where needed;
- 5 (E) for two or more zones: solenoid valves for each zone in the headworks or at the field,
- 6 with an isolation valve on the supply line side; and a check valve with an isolation valve
- 7 for each zone between the return manifold and the common return line; and
- 8 (F) valves, vents, cleanouts, and pressure monitoring fittings shall be provided with
- 9 protective vaults or boxes that are decay resistant, ultraviolet rated, and accessible to the
- 10 Management Entity from the ground surface.

11 (f) An integrated controller shall be provided to manage the multifunction processes of drip dispersal systems and
12 meet the following conditions:

- 13 (1) enable each drip dispersal field or zone to be time-dosed at regular equal intervals throughout the
- 14 day, at a projected average flow and to accommodate the DDF. The controller shall allow for
- 15 adjustable and variable dose volumes between or among zones;
- 16 (2) adjust pump dosing and resting cycles to meet system design and varying the projected range of
- 17 operating conditions;
- 18 (3) provide a minimum dose volume per zone that is a minimum of five times the liquid capacity of
- 19 the drip laterals or so that 80 percent of each dose is delivered when the minimum pressure in the
- 20 field network is 10 psi;
- 21 (4) provide for automatic cleaning of headworks filter(s) at designer and manufacturer-specified
- 22 frequency and duration;
- 23 (5) provide for routine automatic forward flushing of the drip laterals (field flushing) with filtered
- 24 effluent, at designer and manufacturer-specified frequency and duration. Automatic forward
- 25 flushing frequency and duration shall be adjustable;
- 26 (6) provide for monitoring of monitor pump cycles and run times;
- 27 (7) include telemetry, in accordance with Rule .1103(c) of this Subchapter, shall be provided for
- 28 systems with a DDF greater than 1,500 gpd or as required in conjunction with an advanced
- 29 pretreatment system ~~shall include telemetry in accordance with Rule .1103(c) of this Subchapter;~~
- 30 system;
- 31 (8) for systems with a DDF greater than 3,000 gpd the controller shall monitor flow volume to each
- 32 zone and provide a flow variance indication when flow is plus or minus 20 percent of design. The
- 33 telemetry system and alarm shall include an automatically rechargeable battery back-up power
- 34 supply or be otherwise designed to be functional during power outages;
- 35 (9) for multi-zone systems, the system controller shall provide for a zone to be rested or taken out of
- 36 service manually. The controller shall have the capability to bypass the zones that have been taken
- 37 out of service and dose the next available zone with the normal dosing sequence continuing; and

1 (10) controls and floats in the pump tank are to be configured to ensure the minimum dose is available
2 prior to initiating a dosing cycle to the dispersal field or zone and to ~~provide~~ ensure that a full dose
3 is delivered.

4 (g) Alternatives to the design criteria in this Rule may be proposed by the manufacturer during the PIA approval
5 process or by a PE on a project-specific basis. These alternatives shall be reviewed and approved by the State on a
6 case-by-case ~~basis.~~ basis when documentation is provided that the system will meet the performance standards of
7 this Section.

8
9 *History Note: Authority G.S. 130A-343.*
10 *Eff. December 1, 2018*

11

1 15A NCAC 18E .1603 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .1603 DRIP DISPERSAL SYSTEM TESTING**

4 (a) The drip dispersal system field testing shall include the following items and any other requirements included by
5 the system designer:

- 6 (1) all leaks in the pipe network or from emitters exhibiting excessive emission rates, as evidenced by
7 wet spots during dosing cycles comparable to normal operating conditions, shall be repaired; and
8 (2) after the system is pressurized, dosing and flushing flow rates and pressures for each zone shall be
9 measured and confirmed to be in accordance with the drip system design parameters as follows:
10 (A) dosing pressure shall be measured at the lowest point in the supply manifold and highest
11 point in the return manifold;
12 (B) minimum and maximum emitter pressure shall be verified to be within emitter design
13 parameters;
14 (C) flushing pressures shall be measured at the ends of each supply and return manifold
15 within each zone;
16 (D) dosing and flushing flow rates shall be measured with the flow meter after the system is
17 pressurized; and
18 (E) all dosing and flushing flow rates and pressures shall be recorded.

19 (b) All mechanical components, pumps, pump cycling, filters, valves, vents, flushing, high-water alarm, and
20 telemetry systems shall be demonstrated to be operable and in accordance with their design. design during the
21 inspection by the LHD.

22
23 *History Note: Authority G.S. 130A-343.*

24 *Eff. December 1, 2018*



STATE OF NORTH CAROLINA
OFFICE OF ADMINISTRATIVE HEARINGS

Mailing address:
6714 Mail Service Center
Raleigh, NC 27699-6700

Street address:
1711 New Hope Church Rd
Raleigh, NC 27609-6285

September 26, 2018

Chris Hoke, Rulemaking Coordinator
Commission for Public Health
Sent via email only to: chris.hoke@dhhs.nc.gov

Re: Extension of the Period of Review for Rules 15A NCAC 18A .1934, .1935, .1937, .1938, .1939, .1940, .1941, .1942, .1943, .1944, .1945, .1946, .1947, .1948, .1949, .1950, .1951, .1952, .1953, .1954, .1955, .1956, .1957, .1958, .1959, .1960, .1961, .1962, .1964, .1965, .1966, .1967, .1968, .1969, .1970, .1971; 18E .0101, .0102, .0103, .0104, .0105, .0201, .0202, .0203, .0204, .0205, .0206, .0207, .0301, .0302, .0303, .0304, .0305, .0401, .0402, .0403, .0501, .0502, .0503, .0504, .0505, .0506, .0507, .0509, .0510, .0601, .0602, .0701, .0702, .0703, .0801, .0802, .0803, .0804, .0805, .0901, .0902, .0903, .0904, .0905, .0906, .0907, .0908, .0909, .0910, .0911, .1001, .1002, .1101, .1102, .1103, .1104, .1105, .1106, .1201, .1202, .1203, .1204, .1205, .1206, .1302, .1303, .1304, .1305, .1306, .1307, .1401, .1402, .1403, .1404, .1405, .1406, .1501, .1502, .1503, .1504, .1505, .1601, .1602, .1603, .1701, .1702, .1703, .1704, .1705, .1706, .1707, .1709, .0710, .0711, .0712, .0713

Dear Mr. Hoke:

At its meeting last week, the Rules Review Commission extended the period of review for the above-captioned rules in accordance with G.S. 150B-21.10. They did so in response to a request from the agency to extend the period in order to allow the agency to address requested technical changes.

Pursuant to G.S. 150B-21.13, when the Commission extends the period of review, it is required to approve or object to rules or call a public hearing on the same within 70 days.

Should you have any questions regarding the Commission's actions, please let me know.

Sincerely,

Amber May
Commission Counsel

Administration
919/431-3000
fax: 919/431-3100

Rules Division
919/431-3000
fax: 919/431-3104

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Assistants
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Division
919/431-3036
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REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: All Rules

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Throughout these Rules, you have said something along the lines of “a licensed professional, if required in G.S. 89C, 89E, or 89F.” I assume that you have used this language as a way of making it clear that you are not intending to expand the scope of practice of the individual licensees?

Also, throughout these Rules there are many instances of necessary approvals. The way that I read these rules, some of them do not appear to be a true approval requirement in the sense that a designer has to get an individual approval on each product he or she is using. In these instances, do you actually mean that each individual product must be approved each time or do you simply mean that it must meet the standards set forth in your rules (or maybe has been approved under Section .1700)? Alternatively, some of these instances do appear to be a true approval requirement. If it is a true approval, please be sure that the standards, factors, and criteria that will be used in making this determination is set forth somewhere in rule or statute. I have tried to point these out in the individual rules.

The same statement applies to anywhere that you’ve used “may” that at the discretion of you all or the LHD. Please make sure that the criteria that will be used in making this determination is set forth somewhere.

Please note that any suggestion made in these technical change requests are only suggestion and are intended to provide some clarity to both my questions and your rule. You are in no way required to use any suggestions. Please feel free to use it if you find it to be more clear, but note that it is NOT my intent to change any substantive requirements. If you do choose to use any suggestion, please review to ensure it is accurate and feel free to make any changes you deem necessary. Please note that the formatting is not correct in the suggestions – in some instances, I have used highlighting to show what I’ve changed.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel

Date submitted to agency: September 6, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18A .1934 -.1971 Repeals

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

The range contained on the Submission for Permanent Rule form includes at least one Rule that has already been repealed. Also, not all rules proposed for repeal have the same original effective date, and therefore, cannot be combined. Please correct the range on your form.

Please revise your repeals in accordance with 26 NCAC 02C .0406(b). 1934-1935 can be combined, 1937-1968 can be combined, 1969, 1979, and .1971 should all be separate.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Repeal of Consecutive Rules for Publication in the NCAC

1 15A NCAC 18A .1934 - .1971 are repealed as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18A .1934 SCOPE**

4 *History Note: Authority G.S. 130A-335(e);*
5 *Eff. July 1, 1982;*
6 *Amended Eff. December 1, 1990.*
7 *Repealed Eff. October 1, 2018*

8

9 **15A NCAC 18A .1935 DEFINITIONS**

10 *History Note: Authority G.S. 130A-335(e) and (f);*
11 *Eff. July 1, 1982;*
12 *Amended Eff. July 1, 1995; January 1, 1990; August 1, 1988; April 1, 1985;*
13 *Temporary Amendment Eff. June 24, 2003;*
14 *Amended Eff. June 1, 2006; May 1, 2004.*
15 *Repealed Eff. October 1, 2018*

16

17 **15A NCAC 18A .1936 REQUIREMENTS FOR SEWAGE TREATMENT AND DISPOSAL**

18 *History Note: Authority G.S. 130A-335(e);*
19 *Eff. July 1, 1982;*
20 *Repealed Eff. January 1, 1990.*
21 *Repealed Eff. October 1, 2018*

22

23 **15A NCAC 18A .1937 PERMITS**

24 *History Note: Authority G.S. 130A-335(e),(f);*
25 *Eff. July 1, 1982;*
26 *Amended Eff. August 1, 1991; January 1, 1990; January 1, 1984;*
27 *Temporary Amendment Eff. January 20, 1997;*
28 *Amended Eff. August 1, 1998.*
29 *Repealed Eff. October 1, 2018*

30

31 **15A NCAC 18A .1938 RESPONSIBILITIES**

32 *History Note: Authority G.S. 89C; 89E; 89F; 90A; 130A-335(e),(f);*
33 *Eff. July 1, 1982;*
34 *Amended Eff. January 1, 1990; April 1, 1985;*
35 *Temporary Amendment Eff. January 20, 1997;*
36 *Amended Eff. November 1, 1999; August 1, 1998.*
37 *Repealed Eff. October 1, 2018*

Permanent Repeal of Consecutive Rules for Publication in the NCAC

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15A NCAC 18A .1939 SITE EVALUATION

*History Note: Authority G.S. 130A-335(e);
Eff. July 1, 1982;
Amended Eff. January 1, 1990.
Repealed Eff. October 1, 2018*

15A NCAC 18A .1940 TOPOGRAPHY AND LANDSCAPE POSITION

*History Note: Authority G.S. 130A-335(e);
Eff. July 1, 1982;
Amended Eff. January 1, 1990.
Repealed Eff. October 1, 2018*

15A NCAC 18A .1941 SOIL CHARACTERISTICS (MORPHOLOGY)

*History Note: Authority G.S. 130A-335(e);
Eff. July 1, 1982;
Amended Eff. January 1, 1990.
Repealed Eff. October 1, 2018*

15A NCAC 18A .1942 SOIL WETNESS CONDITIONS

*History Note: Authority G.S. 130A-335(e);
Eff. July 1, 1982;
Amended Eff. January 1, 1990;
Temporary Amendment Eff. June 24, 2003; April 17, 2002;
Amended Eff. May 1, 2004.
Repealed Eff. October 1, 2018*

15A NCAC 18A .1943 SOIL DEPTH

*History Note: Authority G.S. 130A-335(e);
Eff. July 1, 1982;
Amended Eff. August 1, 1988.
Repealed Eff. October 1, 2018*

15A NCAC 18A .1944 RESTRICTIVE HORIZONS

*History Note: Authority G.S. 130A-335(e);
Eff. July 1, 1982;
Amended Eff. January 1, 1990; October 1, 1983.*

Permanent Repeal of Consecutive Rules for Publication in the NCAC

1 Repealed Eff. October 1, 2018

2
3 **15A NCAC 18A .1945 AVAILABLE SPACE**

4 *History Note:* Authority G.S. 130A-335(e) and (f);
5 Eff. July 1, 1982;
6 Amended Eff. February 1, 1992; July 1, 1983; January 1, 1983.
7 Repealed Eff. October 1, 2018

8
9 **15A NCAC 18A .1946 OTHER APPLICABLE FACTORS**

10 *History Note:* Authority G.S. 130A-335(e);
11 Eff. July 1, 1982;
12 Amended Eff. January 1, 1990.
13 Repealed Eff. October 1, 2018

14
15 **15A NCAC 18A .1947 DETERMINATION OF OVERALL SITE SUITABILITY**

16 *History Note:* Authority G.S. 130A-335(e);
17 Eff. July 1, 1982;
18 Amended Eff. January 1, 1990.
19 Repealed Eff. October 1, 2018

20
21 **15A NCAC 18A .1948 SITE CLASSIFICATION**

22 *History Note:* Authority G.S. 130A-335(e);
23 Eff. July 1, 1982;
24 Amended Eff. April 1, 1993; January 1, 1990.
25 Repealed Eff. October 1, 2018

26
27 **15A NCAC 18A .1949 SEWAGE FLOW RATES FOR DESIGN UNITS**

28 *History Note:* Authority G.S. 130A-335(e);
29 Eff. July 1, 1982;
30 Amended Eff. January 1, 1990; January 1, 1984.
31 Repealed Eff. October 1, 2018

32
33 **15A NCAC 18A .1950 LOCATION OF SANITARY SEWAGE SYSTEMS**

34 *History Note:* Authority G.S. 130A-335(e) and (f);
35 Eff. July 1, 1982;
36 Amended Eff. January 1, 1990; October 1, 1982.
37 Repealed Eff. October 1, 2018

Permanent Repeal of Consecutive Rules for Publication in the NCAC

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15A NCAC 18A .1951 APPLICABILITY OF RULES

History Note: Authority G.S. 130A-335(e);
Eff. July 1, 1982;
Amended Eff. January 1, 1990.
Repealed Eff. October 1, 2018

15A NCAC 18A .1952 SEPTIC TANK, EFFLUENT FILTER, DOSING TANK AND LIFT STATION DESIGN

History Note: Authority G.S. 130A-335 (e)(f)(f1)[2nd];
Eff. July 1, 1982;
Amended Eff. August 1, 1991; January 1, 1990;
Temporary Amendment Eff. January 1, 1999;
Amended Eff. August 1, 2000.
Repealed Eff. October 1, 2018

15A NCAC 18A .1953 PREFABRICATED SEPTIC TANKS AND PUMP TANKS

History Note: Authority G.S. 130A-335 (e)(f)(f1)[2nd];
Eff. July 1, 1982;
Amended Eff. January 1, 1990;
Temporary Amendment Eff. January 1, 1999;
Amended Eff. August 1, 2000.
Repealed Eff. October 1, 2018

15A NCAC 18A .1954 MINIMUM STANDARDS FOR PRECAST REINFORCED CONCRETE TANKS

History Note: Authority G.S. 130A-335 (e)(f)(f1)[2nd];
Eff. July 1, 1982;
Amended Eff. August 1, 1991; January 1, 1990;
Temporary Amendment Eff. January 1, 1999;
Amended Eff. August 1, 2000.
Repealed Eff. October 1, 2018

15A NCAC 18A .1955 DESIGN INSTALLATION CRITERIA FOR CONVENTIONAL SEWAGE SYSTEMS

History Note: Authority G.S. 130A-335 (e)(f)(f1)[2nd];
Eff. July 1, 1982;
Amended Eff. August 1, 1991; January 1, 1990; August 1, 1988; February 1, 1987;
Temporary Amendment Eff. January 1, 1999;
Amended Eff. August 1, 2000.

Permanent Repeal of Consecutive Rules for Publication in the NCAC

1 Repealed Eff. October 1, 2018

2
3 **15A NCAC 18A .1956 MODIFICATIONS TO SEPTIC TANK SYSTEMS**

4 *History Note:* Authority G.S. 130A-335(e) and (f);

5 Eff. July 1, 1982;

6 Amended Eff. August 1, 2007; November 1, 1999; July 1, 1995; April 1, 1993; January 1, 1990; August 1,
7 1988.

8 Repealed Eff. October 1, 2018

9
10 **15A NCAC 18A .1957 CRITERIA FOR DESIGN OF ALTERNATIVE SEWAGE SYSTEMS**

11 *History Note:* Authority G.S. 130A-335(e),(f); 130A-342;

12 Eff. July 1, 1982;

13 Amended Eff. June 1, 2006; April 1, 1993; May 1, 1991; December 1, 1990; January 1, 1990.

14 Repealed Eff. October 1, 2018

15
16 **15A NCAC 18A .1958 NON-GROUND ABSORPTION SEWAGE TREATMENT SYSTEMS**

17 *History Note:* Authority G.S. 89C; 89E; 89F; 90A; 130A-335;

18 Eff. July 1, 1982;

19 Amended Eff. August 1, 1991; January 1, 1990;

20 Temporary Amendment Eff. January 20, 1997;

21 Amended Eff. August 1, 1998.

22 Repealed Eff. October 1, 2018

23
24 **15A NCAC 18A .1959 PRIVY CONSTRUCTION**

25 *History Note:* Authority G.S. 130A-335(e);

26 Eff. July 1, 1982;

27 Amended Eff. December 1, 1990.

28 Repealed Eff. October 1, 2018

29
30 **15A NCAC 18A .1960 MAINTENANCE OF PRIVIES**

31 *History Note:* Authority G.S. 130A-335(e) and (f);

32 Eff. July 1, 1982;

33 Amended Eff. January 1, 1990.

34 Repealed Eff. October 1, 2018

35
36 **15A NCAC 18A .1961 MAINTENANCE OF SEWAGE SYSTEMS**

Permanent Repeal of Consecutive Rules for Publication in the NCAC

1 *History Note:* *Filed as a Temporary Amendment Eff. July 3, 1991, for a period of 180 days to expire on December 30,*
2 *1991;*
3 *Filed as a Temporary Amendment Eff. June 30, 1990, for a period of 180 days to expire on December 27,*
4 *1990;*
5 *Authority G.S. 130A-335(e),(f);*
6 *Eff. July 1, 1982;*
7 *Amended Eff. August 1, 1991; October 1, 1990; January 1, 1990; August 1, 1988;*
8 *Temporary Amendment Eff. January 20, 1997;*
9 *Amended Eff. August 1, 1998.*
10 *Repealed Eff. October 1, 2018*

11

12 **15A NCAC 18A .1962 APPLICABILITY**

13 *History Note:* *Authority G.S. 130A-335(e);*
14 *Eff. July 1, 1982;*
15 *Amended Eff. August 1, 1991; December 1, 1990.*
16 *Repealed Eff. October 1, 2018*

17

18 **15A NCAC 18A .1964 INTERPRETATION AND TECHNICAL ASSISTANCE**

19 *History Note:* *Authority G.S. 130A-335(e);*
20 *Eff. July 1, 1982;*
21 *Amended Eff. January 1, 1990.*
22 *Repealed Eff. October 1, 2018*

23

24 **15A NCAC 18A .1965 APPEALS PROCEDURE**

25 *History Note:* *Authority G.S. 130A-335(e);*
26 *Eff. July 1, 1982;*
27 *Amended Eff. February 1, 1987.*
28 *Repealed Eff. October 1, 2018*

29

30 **15A NCAC 18A .1966 SEVERABILITY**

31 *History Note:* *Authority G.S. 130A-335(e);*
32 *Eff. July 1, 1982.*
33 *Repealed Eff. October 1, 2018*

34

35 **15A NCAC 18A .1967 INJUNCTIONS**

36 *History Note:* *Authority G.S. 130A-335(e);*
37 *Eff. July 1, 1982;*

Permanent Repeal of Consecutive Rules for Publication in the NCAC

1 *Amended Eff. January 1, 1985.*

2 *Repealed Eff. October 1, 2018*

3

4 **15A NCAC 18A .1968 PENALTIES**

5 *History Note: Authority G.S. 130A-335(e);*

6 *Eff. July 1, 1982;*

7 *Amended Eff. January 1, 1985.*

8 *Repealed Eff. October 1, 2018*

9

10 **15A NCAC 18A .1969 APPROVAL AND PERMITTING OF ON-SITE SUBSURFACE WASTEWATER**
11 **SYSTEMS, TECHNOLOGIES, COMPONENTS, OR DEVICES**

12 *History Note: Authority G.S. 130A-335(e),(f); 130A-343;*

13 *Eff. April 1, 1993;*

14 *Temporary Amendment Eff. June 24, 2003; February 1, 2003;*

15 *Amended Eff. June 1, 2006; February 1, 2005; May 1, 2004.*

16 *Repealed Eff. October 1, 2018*

17

18 **15A NCAC 18A .1970 ADVANCED WASTEWATER PRETREATMENT SYSTEM**

19 *History Note: Authority G.S. 130A-334; 130A-335; 130A-336; 130A-337; 130A-340; 130A-342; 130A-343;*

20 *Eff. June 1, 2006;*

21 *Amended Eff. October 1, 2011.*

22 *Repealed Eff. October 1, 2018*

23

24 **15A NCAC 18A .1971 ENGINEERED OPTION PERMIT**

25 *History Note: Authority G.S. 130A-335; 130A-336.1;*

26 *Temporary Adoption Eff. July 1, 2016;*

27 *Eff. April 1, 2017.*

28 *Repealed Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0101

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

On line 7, please delete or define "directly"

Please add a comma after "groundwater"

When would discharge be allowed? Is it always allowed when used in conjunction with an RCW system or are there particular circumstances? Is there a cross-reference available?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0101 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0101 SCOPE**

4 The rules contained in this Subchapter shall govern wastewater treatment and dispersal from wastewater systems, as defined
5 in G.S. 130A-334(15), serving single or multiple-family residences, places of business, or places of public assembly. The
6 wastewater system shall be designed to ~~not discharge effluent~~ prevent the discharge of effluent to the land surface, surface
7 waters, or directly to groundwater except as allowed when used in conjunction with ~~a~~ an RCW system.

8

9 *History Note: Authority G.S. 130A-333; 130A-334(15); 130A-335(a), (b), and (e).*

10 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0102

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), by provisions of this Subchapter, do you mean the "Rules of this Subchapter"? Please revise.

In (a), what is required if the strength changes or the DDF increases? Are they then required to complete an application as set forth in (b) and adhere to the Rules of this Subchapter?

Are "DDF" in Paragraph (a) and "wastewater strength" in Paragraph (b) getting to the same issue? If so, please use consistent language.

Is (b) applicable always or is the intent for this Rule intended to be applicable to those systems that were in place prior to July 1, 1977 and who experience a change or increase?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0102 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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3 **15A NCAC 18E .0102 APPLICABILITY**

4 (a) The provisions of this Subchapter shall not apply to wastewater systems in use prior to July 1, 1977, unless the
5 wastewater strength changes or DDF increases.

6 (b) Prior to any change of flow or wastewater strength for an existing facility, ~~If an existing facility's wastewater strength~~
7 ~~changes or DDF increases,~~ the owner shall submit an application in accordance with Rule .0202 of this Subchapter. ~~The~~
8 ~~owner shall submit this application to the LHD prior to any change of flow or wastewater strength.~~

9 (c) Notwithstanding Paragraph (a) of this Rule, all wastewater systems shall comply with Section .1300 of this Subchapter.
10 ~~Subchapter, except for the wastewater systems that meet the requirements of Paragraph (a) of this Rule.~~

11

12 *History Note: Authority G.S. 130A-335(e).*

13 *Eff. October 1, 2018*

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0103 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0103 INCORPORATION BY REFERENCE**

4 For this Subchapter, the following rules, standards, and other materials are hereby incorporated by reference, including any
5 subsequent amendments and editions. Table I lists the agency, document title, contact information, and terms for access to
6 referenced documents.

7

8 **Table I:** Rules, standards, and other materials incorporated by reference

United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS)	
Soil Survey Laboratory Information Manual, Soil Survey Investigations Report No. 45	Available at no charge at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/ref/
Kellogg Soil Survey Laboratory Methods Manual, Soil Survey Investigation Report No. 42	Available at no charge at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/ref/
Field Book for Describing and Sampling Soils	Available at no charge at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/ref/copy or U. S. Government Publishing Office, P. O. Box 979050, St. Louis, MO, 63197-9000
Guide to Soil Texture by Feel, Journal of Agronomic Education	Available at no charge at: http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/edu/?cid=nrcs1422_054311
National Engineering Handbook, Part 624 (Drainage), Chapter 10 (Water Table Control); Part 630 (Hydrology), Chapter 18; Part 650 (Engineering Field Handbook), Chapter 14 (Water Management, Drainage)	Available at no charge at: http://www.nrcs.usda.gov/wps/portal/nrcs/detail/mi/technical/engineering
National Electrical Manufacturers Association 1300 North 17 th Street, Suite 900, Arlington, VA 22209 www.nema.org	
Standard 250 – Enclosures for Electrical Equipment	One hundred twenty four dollars (\$124.00)
U. S. Environmental Protection Agency (EPA) U. S. EPA/NSCEP P. O. Box 42419, Cincinnati, OH 45242-0419	
Method 9080 – Cation Exchange Capacity of Soils	Available at no charge at: https://www.epa.gov/hw-sw846/sw-846-test-method-9080-cation-

	exchange-capacity-soils-ammonium-acetate
<p style="text-align: center;">ASTM International 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19438-2959 http://www.astm.org</p>	
C564 – Standard Specifications for Rubber Gaskets for Cast Iron Soil Pipe and Fittings	Forty one dollars (\$41.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
C890 – Standard Practice for Minimum Structural Design Loading for Monolithic or Sectional Precast Concrete Water and Wastewater Structures	Forty five dollars (\$45.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
C923 – Standard Specifications for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals	Forty one dollars (\$41.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
C990 – Standard Specifications for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants	Forty dollars (\$40.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
C1644 – Standard Specification for Resilient Connectors Between Reinforced Concrete On-Site Wastewater Tanks and Pipes	Forty five dollars (\$45.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
D448 – Standard Classification for Sizes of Aggregate for Road and Bridge Construction	Thirty nine dollars (\$39.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
D1784 – Standard Specification for Rigid Poly (Vinyl Chloride)(PVC) <u>Chloride</u> (PVC) Compounds and Chlorinated Poly (Vinyl Chloride)(CPVC) <u>Chloride</u> (CPVC) Compounds	Thirty nine (\$39.00) dollars each plus six dollars and seventy five cents (\$6.75) shipping and handling
D1785 – Standard Specifications for Poly (Vinyl Chloride)(PVC) <u>Chloride</u>)(PVC) Plastic Pipe, Schedules 40, 80, and 120	Fifty dollars (\$50.00) plus six dollars and seventy five cents (\$6.75) shipping and handling
D2241 – Standard Specification for Poly (Vinyl— Chloride)(PVC) <u>Chloride</u>)(PVC) Pressure-Rated Pipe (SDR Series)	Forty four dollars (\$44.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
D2466 – Standard Specification for Poly (Vinyl Chloride)(PVC) <u>Chloride</u> (PVC) Plastic Pipe Fittings, Schedule 40	Forty four (\$44.00) dollars each plus six dollars and seventy five cents (\$6.75) shipping and handling

D2564 – Standard Specification for Solvent Cements for Poly (Vinyl Chloride)(PVC) Chloride) (PVC) Plastic Piping Systems	Forty four dollars (\$44.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
D2729 – Standard Specification for Poly (Vinyl Chloride)(PVC) Chloride) (PVC) Sewer Pipe and Fittings	Forty five dollars (\$45.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
D2774 – Standard Practice for Underground Installation of Thermoplastic Pressure Piping	Forty four dollars (\$44.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
D3034 – Standard Specification for Type PSM Poly (Vinyl Chloride)(PVC) Chloride) (PVC) Sewer Pipe and Fittings	Fifty dollars (\$50.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
D6913 – Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis	Sixty five dollars (\$65.00) each plus six <u>thirteen</u> dollars and seventy <u>thirty</u> five cents (\$6.75) (<u>\$13.35</u>) shipping and handling
D7928 – Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis	Sixty five dollars (\$65.00) each plus six <u>thirteen</u> dollars and seventy <u>thirty</u> five cents (\$6.75) (<u>\$13.35</u>) shipping and handling
F667 – Standard Specification for 3 through 24 in. Corrugated Polyethylene Pipe and Fittings	Forty five dollars (\$45.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
F810 – Standard Specification for Smoothwall Polyethylene (PE) Pipe for Use in Drainage and Waste Disposal Absorption Fields	Forty one dollars (\$41.00) each plus six dollars and seventy five cents (\$6.75) shipping and handling
North Carolina Administrative Code	
15A NCAC 01O – Environmental Health	Available at no charge at: http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2001%20-%20departmental%20rules/subchapter%20o/subchapter%20o%20rules.html
15A NCAC 02C – Well Construction Standards	Available at no charge at: http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20c/subchapter%20c%20rules.pdf

15A NCAC 02H – Procedures for Permits: Approvals	Available at no charge at: http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20h/15a%20ncac%2002h%20.0101.pdf
15A NCAC 02L – Groundwater Classification and Standards	Available at no charge at: http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/subchapter%20l%20rules.pdf
15A NCAC 02T – Waste Not Discharged to Surface Waters	Available at no charge at: http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/subchapter%20t%20rules.pdf
15A NCAC 02U – Reclaimed Water	Available at no charge at: http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20u/subchapter%20u%20rules.pdf
15A NCAC 08G – Authority: Organization: Structure: Definitions	Available at no charge at: http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2008%20-%20water%20pollution%20control%20system%20operators%20certification%20commission/subchapter%20g/subchapter%20g%20rules.pdf
15A NCAC 13B – Solid Waste Management	Available at no charge at: http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2013%20-%20solid%20waste%20management/subchapter%20b/subchapter%20b%20rules.pdf
NSF International PO Box 130140, Ann Arbor, MI 48105 http://www.nsf.org/	
Standard 40 – Residential Onsite Wastewater Systems	One hundred five dollars (\$105.00) each plus shipping and handling
Standard 41 – Non-Liquid Saturated	One hundred five dollars (\$105.00) each plus shipping and handling

<u>Treatment Systems</u>	
<u>Standard 46 – Evaluation of Components and Devised Used in Wastewater Treatment Systems</u>	<u>One hundred five dollars (\$105.00) each plus shipping and handling</u>
<u>Standard 245 – Wastewater Treatment Systems – Nitrogen Reduction</u>	<u>One hundred five dollars (\$105.00) each plus shipping and handling</u>
<u>Standard 350 – Onsite Residential and Commercial Water Reuse Treatment</u>	<u>One hundred five dollars (\$105.00) each plus shipping and handling</u>
International Association of Plumbing and Mechanical Officials (IAPMO) 4755 E Philadelphia St, Ontario, CA 91761 http://www.iapmo.org/Pages/IAPMOgroup.aspx	
IAPMO/ANSI Z1000 – Prefabricated Septic Tanks	One hundred dollars (\$100.00) each
Canadian Standards Association 178 Rexdale Blvd, Toronto, ON Canada M9W 1R3 http://www.csagroup.org/	
B66 – Design, material, and manufacturing requirements for prefabricated septic tanks and sewage holding tanks	One hundred eighty dollars (\$180.00) each plus eighteen dollars (\$18.00) shipping and handling
2012 North Carolina Plumbing Code	
	Available at no charge at: https://codes.iccsafe.org/public/getpdf/2012_NC_Plumbing.pdf https://codes.iccsafe.org/public/collections/nc
2015 North Carolina Building Code	
	Available at no charge at: https://codes.iccsafe.org/public/getpdf/2015_NC_ExistingBldg.pdf https://codes.iccsafe.org/public/collections/nc
North Carolina Food Code Manual	
	Available at no charge at: http://ehs.ncpublichealth.com/faf/docs/foodprot/NC-FoodCodeManual-2009-FINAL.pdf
U.S. Government Publishing Office 732 North Capitol St, NW, Washington, DC 20401-0001 https://bookstore.gpo.gov/	
40 CFR 136	Sixty seven dollars (\$67.00) each
American Association of State and Highway Transportation Officials (AASHTO)	

<p>444 North Capital Street, NW, Suite 249, Washington, DC 20001</p> <p>https://www.transportation.org/</p>	
<p>Standard Specifications for Highway Bridges (AASHTO H5 and H10)</p>	<p>Three hundred eighty dollars (\$380.00) each plus shipping and handling</p>

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History Note: Authority G.S. 130A-335(e).
Eff. October 1, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0104

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

DEQ is listed on line 15 and 16. Please delete it on line 15.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0104 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0104 ABBREVIATIONS**

4 As used in this Subchapter, the following abbreviations refer to:

- 5 (1) ABS: Acrylonitrile-Butadiene-Styrene;
- 6 (2) ACEC: Apparent Cation Exchange Capacity;
- 7 (3) ANSI: American National Standards Institute;
- 8 (4) ASTM: American Society for Testing and Materials;
- 9 (5) ATO: Authorization to Operate;
- 10 (6) BOD₅: Five Day Biochemical Oxygen Demand;
- 11 (7) CA: Construction Authorization;
- 12 (8) CBOD: Carbonaceous Biochemical Oxygen Demand;
- 13 (9) CFR: Code of Federal Regulations;
- 14 (10) CSA: Canadian Standards Association;
- 15 (11) DDF: Design Daily Flow; DEQ: Department of Environmental Quality;
- 16 (12) DEQ: Department of Environmental Quality;
- 17 (13) ~~DO: Dissolved Oxygen;~~ DIP: Ductile Iron Pipe;
- 18 (14) ~~DIP: Ductile Iron Pipe;~~ DO: Dissolved Oxygen;
- 19 (15) DOT: Department of Transportation;
- 20 (16) DSE: Domestic Strength Effluent;
- 21 (17) EOP: ~~Engineer~~ Engineered Option Permit;
- 22 (18) FOG: Fats, Oil, and Grease;
- 23 (19) gpd: Gallons per Day;
- 24 (20) HSE: High Strength Effluent;
- 25 (21) IAPMO: International Association of Plumbing and Mechanical Officials
- 26 ~~(21)(22)~~ IP: Improvement Permit;
- 27 ~~(22)(23)~~ IPWW: Industrial Process Wastewater;
- 28 ~~(23)(24)~~ LC: Limiting Condition;
- 29 ~~(24)(25)~~ LDP: Large Diameter Pipe;
- 30 ~~(25)(26)~~ LG: Licensed Geologist;
- 31 ~~(26)(27)~~ LHD: Local Health Department;
- 32 ~~(27)(28)~~ LPP: Low Pressure Pipe;
- 33 ~~(28)(29)~~ LSS: Licensed Soil Scientist;
- 34 ~~(29)(30)~~ LTAR: Long Term Acceptance Rate;
- 35 ~~(30)(31)~~ mg/L: Milligrams/Liter;
- 36 ~~(31)(32)~~ NEMA: National Electrical Manufacturers Association;
- 37 ~~(32)(33)~~ NH₃: Total Ammonia Nitrogen;

- 1 ~~(33)~~(34) NOI: Notice of Intent to Construct;
- 2 ~~(34)~~(35) NOV: Notice of Violation;
- 3 ~~(35)~~(36) NSF: NSF International;
- 4 ~~(36)~~(37) OP: Operation Permit;
- 5 ~~(37)~~(38) PE: Professional Engineer;
- 6 ~~(38)~~(39) PIA: Provisional, Innovative, and Accepted;
- 7 ~~(39)~~(40) PPBPS: Prefabricated Permeable Block Panel System;
- 8 ~~(40)~~(41) psi: Pounds per ~~square inch~~; Square Inch;
- 9 ~~(41)~~(42) PVC: ~~Poly-Vinyl~~ Polyvinyl Chloride;
- 10 ~~(42)~~(43) RCW: Reclaimed Water;
- 11 ~~(43)~~(44) RV: Recreational Vehicle;
- 12 ~~(44)~~(45) RWTS: Residential Wastewater Treatment Systems;
- 13 ~~(45)~~(46) SDR: Standard Dimension Ratio;
- 14 ~~(46)~~(47) SPI: Standard Precipitation Index;
- 15 ~~(47)~~(48) STEP: Septic Tank Effluent Pump;
- 16 ~~(47)~~(49) SWC: Soil Wetness Condition;
- 17 ~~(48)~~(50) TKN: Total Kjeldahl Nitrogen;
- 18 ~~(49)~~(51) TL: Trench Length;
- 19 ~~(50)~~(52) TN: Total Nitrogen;
- 20 ~~(51)~~(53) TSS: Total Suspended Solids;
- 21 ~~(52)~~(54) TW: Trench Width;
- 22 ~~(53)~~(55) USDA-NRCS: United States Department of Agriculture – Natural Resources Conservation Service;
- 23 ~~(54)~~(56) VIP: Visual Inspection Protocol; and
- 24 ~~(55)~~(57) WS: Water Supply Class.

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26 *History Note: Authority G.S. 130A-335(e).*

27 *Eff. October 1, 2018*

28

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0105

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Do you want to say something like, "In addition to the definitions set forth in 130A-334, the following shall apply to the Rules in this Subchapter"?

In Item (1), please consider saying "inorganic material, such as crushed rock or gravel," rather than (crushed rock or gravel). Also, what is meant by "State approved media"? Are the approval process and criteria for approval set forth elsewhere in rule or statute? I understand that "approved" is defined, but I want to be sure that the specific information for this is somewhere.

In Item (4), delete "the following"

In Item (5), is it accurate to define "authorized agent of the LHD"? Are there any instances that the authorized agent would not be the LHD? I see there are places in your Rules that you just say "authorized agent" (as opposed to authorized agent of the LHD." I would suggest deleting "of the LHD." Please be consistent where you can.

In Item (9), please consider deleting the parenthesis around "or five feet for a building with a foundation"

In Item (12), delete "applicable" and remove the comma after "appurtenances"

In Item (12), is the language on page 2, lines 2-3 (The State has authority... under this Subchapter) necessary? This authority comes from the General Assembly and your Statutes, not your Rule.

In Item (13), please consider deleting the parenthesis around "as specified in the effluent standard)

In Item (14), please change "could" to "may"

In Item (14), please consider deleting "as defined in G.S. 130A-334(15)"

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

In Item (18), please change “can” to “may”

In Item (24), please consider deleting “as defined in G.S. 130A-334(7b).”

In Item (25), what is meant by “a wastewater system comprised of one or more wastewater systems”? Is this language correct?

In Item (31), please delete “being” in “grease being discharged”

In Item (32), please delete the comma after facility and delete “being” in “grease being discharged”

In Item (34), please put commas before and after “in conjunction with a pump”

In Item (37), please consider deleting “as defined in G.S. 130A-334(7b)”

In Item (45), would it be appropriate to delete “and” in between “soil conditions” and “site features”?

In Item (49), line 18, please change “can” to “may”

In Item (49), line 20, should “responsible charge” be “charge responsible”?

In Item (52), what is meant by “the most stringent”? As compared to what? Is this language used by the Survey, Engineers, or the Act?

In Item (56), please change “and being” to “that is”

In Item (59), are the process and approval criteria for these set forth somewhere in rule or statute?

In Item (60), please delete “on” at the end of “located”

In Item (62), please don’t define a definition with that same word. Also, is “The owner shall own or control the wastewater system” necessary”? Please consider revising as follows:

“Owner” means ~~owner or owner’s representative who is~~ a person holding legal title to the facility, wastewater system, or property or his or her representative, who holds power of attorney to act on the owner’s behalf. The owner shall own or control the wastewater system. The owner’s representative is a person who holds power of attorney to act on an owner’s behalf or an agent designated by letter or contract to act on the owner’s behalf.

Item (64) reads as if it is missing a word. Please review and revise.

In Item (65), would it be appropriate to also define “clod”?

In Item (66), please delete or define “slowly” It this an industry term?

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

In Item (72), please change “State and meet” to “State that meet.” Also, are the approval process and criteria set forth somewhere in your rules or statute?

In Item (74), please change “Subchapter and is” to “Subchapter that is”

In Item (75), line 18, please change “which” to “that”

In Item (76), please delete or define “strongly”

In Item (79) please change “and constructed to” to “that is constructed to”

In Item (93), please don’t define “suitable” with “suitable.” What does it actually mean to be suitable? Does it mean that it meets certain requirements? Can you provide a definition for suitable like you have for “structurally sound”?

In (95) and (96), please change “and meet” to “that meet.” Also, are the approval process and criteria set forth somewhere in your rules or statute?

In Item (100), please delete or define “slowly” It this an industry term?

In Item (103), please don’t define “unsuitable” with “unsuitable.” Please see my comment about “suitable”

In Item (105), please change “which” to “that”

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0105 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0105 DEFINITIONS**

4 The following definitions shall apply throughout this Subchapter:

5 (1) "Aggregate" means naturally occurring inorganic material (crushed rock or gravel) or other State approved
6 media of a specific size or grade.

7 (2) "Apparent Cation Exchange Capacity" means the sum of exchangeable bases plus total soil acidity at a pH
8 of 7.0. ACEC is expressed in milliequivalents per 100 grams of soil (meq/100g of soil) or centimoles per
9 kilogram of soil (cmols/kg of soil). The ~~apparent~~ soil ACEC is calculated by determining the ACEC using
10 the neutral normal ammonium acetate method, pH of 7.0 neutral normal, and then dividing by the percent
11 clay as determined by particle size distribution (pipette method) and then multiplying by 100, as described
12 in USDA-NRCS Soil Survey Laboratory Information Manual, Soil Survey Investigations Report No. 45
13 and Kellogg Soil Survey Laboratory Methods Manual, Soil Survey Investigation Report No. ~~42-~~ 42, page
14 229, or EPA Method 9080.

15 (3) "Approved" means that which the State or LHD has determined is in accordance with this Subchapter and
16 G.S. 130A, Article 11.

17 (4) "Artificial drainage" means any man-made structure or device designed to overcome a SWC or intercept
18 lateral flowing ground or surface water. Artificial drainage systems include the following: groundwater
19 lowering system, interceptor drain, and surface water diversion.

20 (5) "Authorized agent of the LHD" referred to as authorized agent, means a person who has been authorized by
21 the State in accordance with G.S. 130A, Article 4 and 15A NCAC 01O .0100 to permit wastewater
22 systems.

23 (6) "Authorized designer" means a service provider authorized by the manufacturer who creates plans for the
24 installation, expansion, or repair of a proprietary wastewater system.

25 (7) "Bed" means an excavation with a width greater than three feet containing dispersal media and one or more
26 laterals.

27 (8) "Bedroom" means any room defined as a sleeping room in the North Carolina Building Code.

28 (9) "Building drain" means the lowest piping of a drainage system that receives the discharge from waste pipes
29 inside the design unit and extends to 10 ft beyond the walls of the building (or five feet for a building with
30 a foundation) and conveys the ~~drainage~~ sewage to a building sewer.

31 (10) "Building sewer" means the part of a drainage system that extends from the end of the building drain and
32 conveys the discharge to a wastewater system.

33 (11) "Certified Inspector" means a person authorized to inspect a wastewater system ~~at the time of sale of a~~
34 ~~facility~~ in accordance with G.S. 90A, Article 5, and applicable rules of the North Carolina On-Site
35 Wastewater Contractors and Inspectors Certification Board.

36 (12) "Collection sewer" means gravity flow pipelines, force mains, effluent supply lines, manholes, lift stations
37 and all applicable ~~appliances,~~ appurtenances, used for ~~conducting~~ conveying wastes from the ~~sanitary~~

1 building drain or building sewer to and within a wastewater system. A collection system is a collection
2 sewer. The State has authority for the permitting of collection sewers when two or more design units have a
3 common collection sewer and the wastewater system is permitted under this Subchapter.

4 (13) "Complete data set" means analytical results for all required influent and effluent constituents (as specified
5 in the effluent standard) for a specific site on a specific date. A data set may include other constituents
6 specified in an RWTS or PIA Approval, permit, or other document.

7 ~~(14)~~ "Component" means a part of a wastewater system, as defined in G.S. 130A-334(15). The component
8 could be any part of the wastewater system, such as a collection sewer, pretreatment, dispersal field, etc.

9 ~~(14)(15)~~ "Composite sample" means commingled individual samples collected from the same point at different
10 times. Samples may be of equal volume or may be proportional to the flow at time of sampling.

11 ~~(15)(16)~~ "Demand dosing" means a configuration in which a specific volume of effluent is delivered to a component
12 based upon patterns of wastewater generation from the source and ~~dosing activation elevation float~~
13 settings.

14 ~~(16)(17)~~ "Design daily flow" means the unadjusted quantity of wastewater a facility is projected to produce in a 24-
15 hour period upon which wastewater system sizing and design are based as determined in Section .0400 of
16 this Subchapter.

17 ~~(17)(18)~~ "Design unit" means a discrete connection such as an individual dwelling unit, place of business, or place
18 of public assembly on which wastewater DDF ~~are~~ is based. Multiple design units can comprise a facility.

19 ~~(18)(19)~~ "Dispersal field" means physical location where final treatment and dispersal of effluent occurs in the soil.

20 ~~(19)(20)~~ "Dispersal media" means the media used to provide void space through which effluent flows and is may be
21 stored prior to infiltration (e.g., washed gravel or crushed stone, products referenced in Section .0900 of
22 this Subchapter, products approved pursuant to Section .1700 of this Subchapter, etc.).

23 ~~(21)~~ "Dispersal system" means the dispersal field and associated components that distribute effluent to and
24 within the dispersal field. This includes a pump, pump tank, pressure manifold, distribution box, drip box,
25 lateral, dispersal media, etc.

26 ~~(20)(22)~~ "Dose volume" means an amount of effluent delivered during a dosing event as determined by the
27 activation float levels in a ~~demand dosing system or by a timer in a time~~ dosing system.

28 ~~(21)(23)~~ "Dwelling unit" means any room or group of rooms located within a structure and forming a single,
29 habitable unit with facilities which are used or intended to be used for living, sleeping, bathing, toilet
30 usage, cooking, and eating.

31 ~~(22)(24)~~ "Effluent" means the liquid discharge from a pretreatment process, component, or system as defined in G.S.
32 130A-334(7b).

33 ~~(23)(25)~~ "Facility" means one or more design units located on a single or multiple lot(s) or tract(s) of land and
34 served by a wastewater system comprised of one or more ~~ground absorption~~ wastewater systems.

35 ~~(24)(26)~~ "Finished grade" means the final elevation of the land over the wastewater system after installation.

36 ~~(25)(27)~~ "Flood pool elevation" means the maximum water surface elevation of a reservoir, equal to the elevation of
37 the spillway.

1 ~~(26)~~(28) "Flow equalization" means a system configuration that includes sufficient storage capacity to allow for
2 uniform flow to a subsequent component despite variable flow from the source.

3 ~~(27)~~(29) "Full kitchen" means the appliances meet the requirements of North Carolina Food Code, Chapters 4-1 and
4 4-2. ~~The wastewater system for a facility with a full kitchen shall include a grease trap, the dispersal field~~
5 ~~LTAR shall not exceed the mean for the applicable soil group, and no dispersal field reduction in size.~~

6 ~~(28)~~(30) "Grab sample" means a discrete sample collected at a specific time and location.

7 ~~(29)~~(31) "Grease tank" means the tank located outside the facility that is used to reduce the amount of grease being
8 discharged to a wastewater system.

9 ~~(30)~~(32) "Grease trap" means a device used inside the ~~facility, generally under the sink,~~ facility, to reduce the
10 amount of grease being discharged to a wastewater system.

11 ~~(31)~~(33) "Gravity distribution" means gravity delivery of effluent to and within each lateral.

12 ~~(32)~~(34) "Groundwater lowering system" means a type of artificial drainage system designed to lower the water
13 table by gravity or in conjunction with a pump to maintain the vertical separation ~~distance~~ beneath a
14 dispersal field.

15 ~~(33)~~(35) "Horizon" means a layer of soil, ~~approximately~~ parallel to the surface that has distinct physical, chemical,
16 and biological properties or characteristics such as color, structure, texture, consistence, kinds and number
17 of organisms present, degree of acidity or alkalinity, etc, resulting from soil forming processes.

18 ~~(34)~~(36) "Infiltrative surface" means the designated interface where effluent moves from dispersal media or a
19 distribution device into treatment media, naturally occurring soil, or fill.

20 ~~(35)~~(37) "Influent" means the sewage discharged to pretreatment as defined in G.S. 130A-334(7b).

21 ~~(36)~~(38) "Installer" means a person authorized to construct, install, or repair a wastewater system in accordance with
22 G.S. 90A, Article 5 and applicable rules of the North Carolina On-Site Wastewater Contractors and
23 Inspectors Certification Board.

24 ~~(37)~~(39) "Interceptor drain" means a type of artificial drainage designed to intercept and divert lateral moving
25 groundwater or perched water away from the dispersal field or other system component to an effective
26 outlet. ~~An interceptor drain can also be a foundation drain.~~

27 ~~(38)~~(40) "Invert" means the lowest elevation of the internal cross-section of a pipe, fitting, or component.

28 ~~(39)~~(41) "Jurisdictional wetland" means ~~land established as a wetland by DEQ or the US Army Corp of Engineers~~
29 ~~under Section 404 of the Federal Clean Water Act.~~ an area subject to the regulatory jurisdiction of the U.S.
30 Army Corps of Engineers or DEQ.

31 ~~(40)~~(42) "Ksat" or saturated hydraulic conductivity, means the ~~value~~ rate of water flow (~~flux~~) through a unit cross
32 sectional area of soil under saturated conditions. In-situ Ksat is measured in the field using clean water.
33 Results of in-situ Ksat are used to simulate movement of effluent through the soil and may be used to field
34 verify LTAR.

35 ~~(41)~~(43) "Lateral water movement" means the movement of subsurface water ~~down~~ downslope ~~gradient~~ often
36 associated with a less permeable horizon. Lateral water movement can be observed in a bore hole,
37 excavation, or monitoring well on sloping sites.

- 1 ~~(42)~~(44) "Lateral" means any pipe, tubing, or other device used to convey and distribute effluent in a dispersal field.
- 2 ~~(43)~~(45) "Limiting condition" means soil conditions (morphology, depth, restrictive horizon, soil wetness, or
3 organic matter content) or site features (topography, slope, landscape position, or available space) that
4 ~~restrict~~ determine the depth of the suitable soil conditions and site features and design options. ~~options or~~
5 ~~prohibit permitting a wastewater system.~~
- 6 (44)(46) "Lithochromic feature" means soil mottle or matrix associated with variations of color due to weathering of
7 parent materials.
- 8 ~~(45)~~(47) "Long Term Acceptance ~~Rate,~~" ~~referred to as LTAR, Rate~~" means the rate of effluent absorption by the
9 soil, ~~fill,~~ existing fill, or saprolite in a wastewater system after long-term use. The LTAR, in units of
10 gallons per day per square foot (gpd/ft²), is assigned based upon soil textural class, structure, consistence,
11 depth, percent coarse rock, landscape position, topography, and system type, and is used to determine the
12 dispersal field sizing requirements, in accordance with applicable rules of this Subchapter.
- 13 ~~(46)~~(48) "Local health ~~department,~~" ~~referred to as LHD, department~~" means any county, district, or other health
14 department authorized to be organized under the General Statutes of North Carolina.
- 15 ~~(47)~~(49) "Management Entity" means the person, entity, company, or firm designated by the owner of the
16 wastewater system who has primary responsibility for the operation of a wastewater system in accordance
17 with this Subchapter, G.S. 90A, Article 3, and applicable rules of the Water Pollution Control System
18 Operators Certification Commission. The Management Entity can be the owner, a public Management
19 Entity, a certified operator, a management company, or an entity that employs certified operators. The
20 Management Entity is or employs the operator in responsible charge for the wastewater system.
- 21 ~~(48)~~(50) "Mass loading" means the total mass of one or more organic or inorganic effluent constituents delivered to
22 the wastewater system over a specified period. It is computed by multiplying the total volume of flow
23 during the specified period by the flow-weighted average constituent concentration in the same period.
24 Units of measurement are pounds per day.
- 25 ~~(49)~~(51) "Matrix" means a volume of soil equivalent to 50 percent or greater of the total volume of a horizon.
- 26 ~~(50)~~(52) "Mean high-water mark" or normal high-water mark, means, for coastal waters having six inches or more
27 lunar tidal influence, the average height of the high-water over a 19-year period as may be ascertained from
28 National Ocean Survey, U.S. Army Corps of Engineers tide stations data, or as otherwise determined under
29 the provisions of the Coastal Area Management Act. The most stringent high-water mark shall be applied.
- 30 ~~(51)~~(53) "Media" means a solid material that can be described by shape, dimensions, surface area, void space, and
31 application.
- 32 (54) "Media filter" means a device that uses materials designed to treat effluent by reducing BOD₅ and
33 removing TSS in an unsaturated environment. Biological treatment is facilitated via microbial growth on
34 the surface of the media.
- 35 ~~(52)~~(55) "Mottle" means subordinate color of a differing Munsell color system notation in a soil horizon.
- 36 ~~(53)~~(56) "Naturally occurring soil" means soil formed in place due to natural formation processes and being
37 unaltered by filling, removal, or other artificial modification other than tillage.

1 ~~(54)~~(57) "NEMA 4X" means an enclosure for an electrical control panel or junction box that meets standards for
2 protection of equipment due to the ingress of water (including rain and hose-directed water) and an
3 additional level of protection against corrosion, as set forth in NEMA Standard 250.

4 ~~(55)~~(58) "NSF-40 systems" means individual ~~residential wastewater treatment systems (RWTS)~~ RWTS that are
5 approved and listed in accordance with the standards adopted by NSF International for Class I residential
6 wastewater treatment systems under NSF-ANSI Standard 40 and approved for use in accordance with G.S.
7 130A-342 and the rules of this Subchapter.

8 ~~(56)~~(59) "Non-ground absorption system" means a system for waste treatment designed not to discharge to the soil,
9 land surface, or surface waters, including approved vault privies, incinerating toilets, mechanical toilets,
10 composting toilets, chemical toilets, and recycling systems.

11 ~~(57)~~(60) "Off-site system" means a wastewater system where any system component is located on property other
12 than the lot the facility is located on.

13 ~~(58)~~(61) "Organic soils" means those organic mucks and peats consisting of more than 20 percent organic matter, by
14 dry weight, and greater than or equal to 18 inches ~~or greater~~ in thickness.

15 ~~(59)~~(62) "Owner" means owner or owner's representative who is a person holding legal title to the facility,
16 wastewater system, or property or who holds power of attorney to act on the owner's behalf. The owner
17 shall own or control the wastewater system. The owner's representative is an agent designated by letter or
18 contract to act on the owner's behalf.

19 ~~(60)~~(63) "Parallel distribution" means the distribution of effluent that proportionally loads multiple sections of a
20 dispersal field at one time.

21 ~~(61)~~(64) "Parent material" means the mineral and organic matter that is in its present position through deposition by
22 water, wind, gravity or by decomposition of rock. ~~rock and has not gone through the soil forming process.~~

23 ~~(62)~~(65) "Ped" means a unit of soil structure, such as blocky, granular, prismatic, or platy formed by natural
24 processes, in contrast to a clod, which is formed artificially.

25 ~~(63)~~(66) "Perched water table" means a zone of saturation held above the main groundwater body by a ~~slowly~~
26 ~~permeable~~ slowly permeable layer, impermeable rock, or sediment, which may or may not exhibit
27 redoximorphic features.

28 ~~(64)~~(67) "Person" means any individual, firm, association, organization, partnership, business trust, corporation,
29 company, or unit of local government.

30 ~~(65)~~(68) "Pressure dispersal" means ~~an approved~~ a system utilizing an effluent pump or siphon to distribute effluent
31 uniformly to the infiltrative surface in the dispersal field through a pressurized pipe network.

32 ~~(66)~~(69) "Pressure dosed gravity distribution" means pressure delivery of effluent to a manifold, distribution box, or
33 other splitter with subsequent gravity distribution within one or more laterals to the infiltrative surface.

34 ~~(67)~~(70) "Public management entity" means a city (G.S. 160A, Article 16), county (G.S. 153A, Article 15),
35 interlocal contract (G.S. 153A, Article 16), joint management agency (G.S. 160A, Articles 461 and 462),
36 county service district (G.S. 153A, Article 16), county water and sewer district (G.S. 162A, Article 6),
37 sanitary district (G.S. 130A, Article 2), water and sewer authority (G.S. 162A, Article 1), metropolitan

1 water district (G.S. 162A, Article 4), metropolitan sewerage district (G.S. 162A, Article 5), public utility
2 [G.S. 62-3(23)], county or district health department (G.S. 130A, Article 2), or other public entity legally
3 authorized to operate and maintain wastewater systems.

4 ~~(68)~~(71) "Raw sewage lift stations" means a dosing system that is designed to move untreated sewage from a lower
5 elevation to a higher elevation. Raw sewage lift stations are generally installed prior to any wastewater
6 treatment.

7 ~~(69)~~(72) "RCW systems" means advanced pretreatment systems ~~which are approved in accordance with~~ by the State
8 and meet RCW effluent standards in Rule .1002 of this Subchapter.

9 ~~(70)~~(73) "Redoximorphic features" means a color pattern of a horizon due to a loss (depletion) or gain
10 (concentration) of pigment compared to the matrix color, formed by oxidation and reduction of iron (Fe)
11 coupled with its removal, translocation, or accrual, or a soil matrix color controlled by the presence of Fe⁺².
12 Redox depletions are a type of redoximorphic feature.

13 ~~(71)~~(74) "Repair area" means an area that has been classified suitable consistent with the rules in this ~~Subchapter.~~
14 Subchapter and is reserved ~~The repair area is reserved~~ for the extension, alteration, wastewater system
15 relocation, or replacement of part or all of the initial wastewater system. The repair area shall be available
16 to be used in the event of a malfunction or if a wastewater system is partially or totally destroyed.

17 ~~(72)~~(75) "Residential Wastewater Treatment Systems," ~~referred to as RWTS, Systems~~ means approved individual
18 advanced pretreatment systems which are covered under standards of NSF International, in accordance
19 with G.S. 130A-342 and applicable rules in this Subchapter.

20 ~~(73)~~(76) "Restrictive horizon" means a soil horizon that is capable of perching groundwater or effluent and that is
21 brittle an strongly compacted or strongly cemented with iron, aluminum, silica, organic matter, or other
22 compounds. Restrictive horizons may occur as fragipans, iron pans, or organic pans, and are recognized by
23 their resistance in excavation or in using a soil auger. ~~effluent. Restrictive horizons may occur as:~~

- 24 (a) — ~~physical root restrictions due to high bulk density;~~
25 (b) — ~~strong pedogenic cementation or induration, physically root restrictive;~~
26 (c) — ~~plinthite; or~~
27 (d) — ~~fragipan characteristics.~~

28 ~~The horizon suffixes d, m, and x from the USDA-NRCS Field Book for Describing and Sampling Soils can~~
29 ~~be used to describe restrictive horizons. Restrictive horizons are recognized by their resistance in~~
30 ~~excavation or in using a soil auger.~~

31 ~~(74)~~(77) "Rock" means the body of consolidated or partially consolidated material composed of minerals at or
32 below the land surface. Rock includes bedrock and partially weathered rock that is hard and cannot be dug
33 with hand tools. The upper boundary of rock is saprolite, soil, or the land surface.

34 ~~(75)~~(78) "Saprolite" means the body of porous material formed in place by weathering of rock that has a massive,
35 rock-controlled structure and retains the fabric (arrangement of minerals) of its parent rock in a minimum
36 of 50 percent of its volume. Saprolite can be dug with hand tools. The lower limit of saprolite is rock and
37 its upper limit is soil or the land surface.

1 ~~(76)~~ "Settling tank" means a septic tank designed to be used in conjunction with a RWTS. A settling tank is not
2 required to meet the design requirements of a septic tank.

3 ~~(77)~~(79) "Septic tank" means a structurally sound, water-tight, covered receptacle designed for primary treatment of
4 wastewater and constructed to:

- 5 (a) receive the discharge of wastewater from a building;
- 6 (b) separate settleable and floating solids from the liquid;
- 7 (c) digest organic matter by anaerobic bacterial action;
- 8 (d) store digested solids through a period of detention; and
- 9 (e) allow effluent to discharge for additional treatment and final dispersal.

10 (80) "Septic tank effluent pump" means a collection system that uses a septic tank to separate solids and
11 incorporates a pump vault, pump, and associated devices to convey effluent under pressure to a subsequent
12 component.

13 ~~(78)~~(81) "Sequential distribution" means the distribution method in which effluent is loaded into one trench and fills
14 it to a predetermined level before passing through a drop box or ~~stepdown~~ relief device to the succeeding
15 trench at a lower elevation. All trenches are fed from the same side.

16 ~~(79)~~(82) "Setback" means the minimum horizontal separation distance between the wastewater system and features
17 listed in Section .0600 of this Subchapter.

18 (83) "Settling tank" means a septic tank designed to be used in conjunction with a RWTS. A settling tank is not
19 required to meet the design requirements of a septic tank.

20 ~~(80)~~(84) "Serial distribution" means the distribution method in which effluent is loaded into one trench and fills it to
21 a predetermined level before passing through a pipe to the succeeding trench at a lower elevation.

22 ~~(81)~~(85) "Soil" means the naturally occurring body of unconsolidated mineral and organic materials on the land
23 surface. Soil is composed of sand-, silt-, and clay-sized particles that are mixed with varying amounts of
24 larger fragments and some organic material. Soil contains less than 50 percent of its volume as rock,
25 saprolite, or coarse-earth fraction (mineral particles greater than 2.0 millimeters). The upper limit of the soil
26 is the land surface, and its lower limit is rock, saprolite, or other parent materials.

27 ~~(82)~~(86) "Soil consistence" means the degree and kind of cohesion and adhesion that a soil exhibits.

28 ~~(83)~~(87) "Soil series" means an official series name established by USDA-NRCS.

29 ~~(84)~~(88) "Soil structure" means the arrangement of primary soil particles into compound particles, pedes, or clusters
30 that are separated by natural planes of weakness from adjoining ~~aggregates~~ units.

31 ~~(85)~~(89) "Soil textural classes" means soil classification based upon size distribution of mineral particles in the
32 fine-earth fraction less than two millimeters in diameter. The fine-earth fraction includes sand (2.0 - 0.05
33 mm in size), silt (less than 0.05 mm or greater than 0.002 mm in size), and clay (less than 0.002 mm in
34 size) particles.

35 ~~(86)~~(90) "State" means the Department of Health and Human Services, Division of Public Health, Environmental
36 Health Section, On-Site Water Protection Branch. The mailing address for the State is as follows: 1642
37 Mail Service Center, Raleigh, NC 27699-1642.

1 ~~(87)~~(91) "Stream" means a body of concentrated flowing water in a natural low area or natural or manmade channel
2 on the land surface. This includes ephemeral, intermittent, and perennial streams as defined by DEQ, as
3 well as streams which have been modified by channeling, culvert installation, or relocation.

4 ~~(88)~~(92) "Structurally sound" means a tank that is able to withstand a uniform live loading of 150 pounds per square
5 foot in addition to all loads to which an underground tank is normally subjected, such as dead weight of the
6 material and soil cover, active soil pressure on tank walls, and the uplifting force of groundwater.

7 ~~(89)~~(93) "Suitable" means classification of a specific site evaluation parameter or the site. A site is classified
8 suitable for a wastewater system when all site evaluation parameters are suitable or can be reclassified as
9 suitable based upon site modifications.

10 ~~(90)~~(94) "Surface water diversion" means a natural or constructed drainage feature used to divert surface water,
11 collect ~~runoff~~ runoff, and direct it to an effective outlet. Surface water diversions include waterways,
12 berms, swales, and ditches. Surface water diversions are a type of artificial drainage.

13 ~~(91)~~ "Swales" ~~mean natural or constructed elongated, sloped depressional drainage features used to collect~~
14 ~~runoff and direct the flow to an effective outlet to prevent surface water convergence downslope. Swales~~
15 ~~can be used in conjunction with a berm.~~

16 ~~(92)~~(95) "TS-I systems" means advanced pretreatment systems ~~which are approved in accordance with~~ by the State
17 and meet TS-I effluent standards in Table XXIV of Rule .1201 of this Subchapter.

18 ~~(93)~~(96) "TS-II systems" means advanced pretreatment systems ~~which are approved in accordance with~~ by the State
19 and meet TS-II effluent standards in Table XXIV of Rule .1201 of this Subchapter.

20 ~~(94)~~(97) "Telemetry" means the ability to contact by phone, email, or another electronic medium. The telemetry unit
21 shall continue alarm notifications to ~~must contact~~ the designated party ~~on a continuous basis~~ until the alarm
22 condition is remedied or the telemetry unit is physically turned off.

23 ~~(95)~~(98) "Third-party" means a person or entity engaged in testing or evaluation that may be compensated for their
24 work product that is independent of the parties for whom testing or evaluation is performed and does not
25 otherwise benefit regardless of the outcome. The third-party person or entity has knowledge of the subject
26 area based upon relevant training and experience.

27 ~~(96)~~(99) "Timed dosing" means a configuration in which a specific volume of effluent is delivered to a component
28 based upon a prescribed interval, regardless of facility water use variation over time.

29 ~~(97)~~(100) "Treatment media" means the non- or ~~slowly degradable~~ slowly degradable media used for
30 physical, chemical, and biological treatment in a wastewater treatment component.

31 ~~(98)~~(101) "Trench" means an excavation with a width less than or equal to three feet containing dispersal
32 media and one or more laterals.

33 ~~(99)~~(102) "Unstable slopes" means areas showing indications of mass downslope ~~movement.~~ movement
34 such as debris flows, landslides, and rock falls.

35 ~~(100)~~(103) "Unsuitable" means classification of a specific site evaluation parameter or the site. A site is
36 classified unsuitable for a wastewater system when any one site evaluation parameter is unsuitable.

1 ~~(101)~~(104) "Vertical ~~separation distance~~ separation" means the ~~vertical measurement from depth beneath~~ the
2 dispersal field infiltrative surface to a ~~LC or SWC~~ LC.

3 ~~(102)~~(105) "Warming kitchen" means a kitchen which does not meet the requirements of North Carolina
4 Food Code, Chapters 4-1 and 4-2.

5

6 *History Note:* *Authority G.S. 130A-335(e) and (f).*

7 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0201

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

By "any person owning or controlling a facility", do you mean "owner"? Since this is a defined term, would it be appropriate to use it here for purposes of consistency? I note that the statutes appear to use "owner" and "owner" is used elsewhere in this Rule.

In (a), please delete or define "directly", "approved", and "specific." Here, do you mean something like "All wastewater in any facility containing water-using fixtures connected to a water supply source shall be discharged to a wastewater system approved by the Department in accordance with the Rules of this Subchapter"? This included in the suggestion below.

In (b), is "a three-tier" process accurate? Paragraph (b) looks like it has more than 3 tiers or steps. I think you're getting to the requirements of the 3 permits, but there's a lot of other "stuff" in this Rule. What is the overall process? Please review and clarify and I think that this could be more clear. Since you have additional information in other rules, I think that you could probably simplify this Rule to provide the cross-references. Perhaps it would also be helpful to break this out into a list. A suggestion is below.

In (b), please add a comma in between "Subchapter" and "plat"

In (b), please consider deleting "which includes a site plan or plat" since these are already required in Rule .0202. Initially, this language confused me as to whether this was optional and whether the outcome would be different if a site plan or plat was submitted. After reading .0202, it appears to me that this is actually a requirement.

In (b), lines 10-11, please delete "which state that a specific trench type can be installed in... in the application." Wouldn't the cross-reference to .0203 provide this information? Also, what happens if the site is classified as unsuitable (I think this is also provided in .0203.)

Do CAs always come after IPs (in looking at .0204, I think no – this is addressed in © in my suggestion below)? Then after a CA, a building permit may be issued?

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

On line 12, what is meant by “After the CA has been issued, the building permit can be issued in accordance with G.S. 130A-338”? Do you mean something like “Prior to obtaining a permit for electrical, plumbing, heating, air conditions, or other construction, the owner shall obtain a IP and CA? Again, it’s not clear to me what the overall process is. A suggestion is below.

On line 13, what “permit requirements”? The requirements set forth in the CA?

Line 14, please delete “allowing the wastewater system to be placed into use and the facility occupied in accordance with G.S. 130A-339.” I don’t read 130A-339 to say this.

In (c), it appears to me that the requirements to have a PE, LSS, LG actually comes from Chapter 130A, Article 11 of the General Statutes, not the authorizing licensing statutes. Please review.

In (d), please add a comma in between “approval” and “the LHD”

In (e), for purposes of clarity, please consider adding something such as “notwithstanding Paragraph (b) of this Rule,…” I have included this in my suggestion above.

Please add all pertinent authority to your History Note, including 130A-336, 130A-337, 130A-338

A suggestion to address some of my concerns is as follows.

~~(a) Any person owning or controlling a facility containing water-using fixtures connected to a water supply source shall discharge all wastewater directly to an approved wastewater system for that specific use.~~

(a) All wastewater in any facility containing water-using fixtures connected to a water supply source shall be discharged to a wastewater system approved by the Department in accordance with the Rules of this Subchapter

~~(b) Wastewater system permits issued in accordance with the rules of this Subchapter shall: shall follow a three-tier process. Upon receipt of an application in accordance with Rule .0202 of this Section which includes a site plan or plat, the LHD shall perform a soil and site evaluation to determine if the site is suitable or unsuitable in accordance with Section .0500 of this Subchapter. If the site is classified suitable, the LHD shall issue In order for a wastewater system to be approved:~~

(1) prior to the issuance of a permit for electrical, plumbing, heating, air conditioning, or other construction, the owner shall obtain the following:

(A) an IP in accordance with Rule .0203 of this Section; and Section which states that a specific trench type can be installed in a specific location on the site, based on the proposed facility listed in the application. The LHD shall issue

(B) a CA in accordance with Rule .0204 of this Section; Section that includes the design details for the wastewater system. After the CA has been issued, the building permit can be issued in accordance with G.S. 130A-338.

(2) upon approval of an IP and CA and completion of the work permitted, the owner may obtain permits for electrical, plumbing, heating, air conditioning, or other construction;

(3) the LHD shall inspect the wastewater system in accordance with 130A-337 and the Rules of this Subchapter; and

Amber May
Commission Counsel

Date submitted to agency: September 6, 2018

(4) the owner shall obtain an OP in accordance with Rule .0205 of this Section.

~~(A)The LHD shall inspect the wastewater system upon installation and confirm that it meets all the permit requirements. The LHD shall then issue an OP in accordance with Rule .0205 of this Section, allowing the wastewater system to be placed in into use and the facility occupied in accordance with G.S. 130A-339.~~

(c) Prior to a repair of a wastewater system, an owner shall obtain a CA in accordance with Rule .0204 of this Section. **This language is currently in Rule .0202.**

~~(d)(e) (f) An Notwithstanding Paragraph (b) of this Rule, an owner may also choose to have a wastewater system permitted by a PE have a wastewater system approved under the EOP provisions of G.S. 130A-336.1 and in accordance with Rule .0207 of this Section.~~

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0201 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0201 GENERAL**

4 (a) Any person owning or controlling a facility containing water-using fixtures connected to a water supply source shall
5 discharge all wastewater directly to an approved wastewater system for that specific use.

6 (b) Wastewater system permits issued in accordance with the rules of this Subchapter shall follow a three-tier process. Upon
7 receipt of an application in accordance with Rule .0202 of this Section which includes a site plan or plat, the LHD shall
8 ~~perform a soil and site evaluation to~~ determine if the site is suitable or unsuitable in accordance with Section .0500 of this
9 Subchapter. If the site is classified suitable, the LHD shall issue an IP in accordance with Rule .0203 of this Section which
10 states that a specific trench type can be installed in a specific location on the site, based on the proposed facility listed in the
11 application. The LHD shall issue a CA in accordance with Rule .0204 of this Section that includes the design details for the
12 wastewater system. After the CA has been issued, the building permit can be issued in accordance with G.S. 130A-338. The
13 LHD shall inspect the wastewater system upon installation and confirm that it meets all the permit requirements. The LHD
14 shall then issue an OP in accordance with Rule .0205 of this Section, allowing the wastewater system to be placed ~~in~~ into use
15 and the facility occupied in accordance with G.S. 130A-339.

16 (c) If required in G.S. 89C, 89E, or 89F, a PE, LSS, or LG shall perform the soil and site evaluation, geologic or
17 hydrogeologic evaluation, or prepare a wastewater system design.

18 (d) Upon receipt of an application in accordance with Rule .0202 of this Section for an existing system approval the LHD
19 shall determine compliance in accordance with Rule .0206 of this Section.

20 ~~(d)(c)~~ An owner may also choose to have a wastewater system permitted by a PE have a wastewater system approved under
21 the EOP provisions of G.S. 130A-336.1 and in accordance with Rule .0207 of this Section.

22

23 *History Note: Authority G.S. 130A-335.*

24 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0202

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), is the approval required prior to the commencement of the work, or must the application just be submitted?

Please consider making lines 5-6 its own Paragraph and say something like "Prior to the repair of a wastewater system, an application for a CA shall be submitted to the LHD." Also, is the approval required prior to the commencement of the work on the repair, or must the application just be submitted? If it is approval, would it make sense to put this requirement in Rule .0201 as you have the existing system approval information? Note that I have put this language in my example for Rule .0201

In (c), please add a comma after "...CA expires"

In (d), line 11, is "at a minimum" necessary? Is this at the discretion of the applicant or the Department?

In (d)(6), please add a comma in between "served" and "including"

In (d)(7), please begin this with "whether"

In (d)(8), is "as applicable" necessary here? It appears to be superfluous with "subject to."

In (f)(4), please add a comma in between "served" and "including"

What is the intent of (g)? Is this to say that authorized agents may inspect the property? If so, why not just say that?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0202 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0202 APPLICATION**

4 (a) An application for an IP, CA, and existing system authorization shall be submitted to the LHD for each site prior to the
5 construction, location, or relocation of a residence, place of business, or place of public assembly. An application for a CA
6 shall be submitted to the LHD for the repair of a wastewater system.

7 (b) A ~~complete~~ pending application for an IP, CA, or existing system authorization for which the LHD is waiting for action by
8 the owner shall expire 12 months from the date of application.

9 (c) When an IP, CA, or existing system authorization expires or is ~~revoked~~ revoked, or an application for an IP or CA expires
10 a new application shall be required.

11 (d) The application for an IP shall contain the following information at a minimum:

- 12 (1) owner's name, mailing address, and phone number;
- 13 (2) type of permit requested:
 - 14 (A) new;
 - 15 (B) change of use;
 - 16 (C) expansion or increase in DDF; or
 - 17 (D) wastewater system relocation;
- 18 (3) site plan or plat indicating the locations of the following:
 - 19 (A) existing and proposed facilities, structures, appurtenances, and wastewater systems;
 - 20 (B) proposed wastewater system showing setbacks to property line(s) or other fixed reference
 - 21 point(s);
 - 22 (C) existing and proposed vehicular traffic areas;
 - 23 (D) existing and proposed water supplies, wells, springs, and water lines; and
 - 24 (E) surface water, drainage features, and all existing and proposed artificial drainage, as applicable;
- 25 (4) location, parcel identification ~~number or number~~, other property identification, 911 address (if known),
- 26 acreage, and general directions to the property;
- 27 (5) description of existing and proposed facilities and wastewater systems;
- 28 (6) information needed to determine DDF and effluent strength of the facility(s) served including number and
- 29 function of individual design units, number of bedrooms and occupants per bedroom, or number of
- 30 occupants;
- 31 (7) wastewater other than ~~domestic sewage~~ DSE will be ~~generated~~ generated;
- 32 (8) notification if the property includes, or is subject to, any of the following, as applicable:
 - 33 (A) previously identified jurisdictional wetlands;
 - 34 (B) existing or proposed easements, rights-of-way, encroachments, or other areas subject to legal
 - 35 restrictions; or
 - 36 (C) approval by other public agencies, such as the Coastal Area Management Act, U.S. Army Corp of
 - 37 Engineers, etc.; and

- 1 (9) signature of owner.
- 2 (e) The application for a CA shall contain:
- 3 (1) the information required in Paragraph (d) of this Rule. A site plan or plat shall not be required with the
- 4 application to repair a permitted wastewater system when the repairs will be accomplished on property
- 5 owned and controlled by the owner and for which property lines are identifiable in the field;
- 6 (2) identification of the proposed use of a grinder ~~pump~~, pump or sewage pump; and
- 7 (3) the location and type of the proposed wastewater system specified by the owner.
- 8 (f) The application for an existing system authorization shall contain:
- 9 (1) the owner's name, mailing address, and phone number;
- 10 (2) a site plan or plat indicating the locations of the existing and proposed facilities, existing wastewater
- 11 systems and repair areas, existing and proposed water supplies, easements, rights-of-way, encroachments,
- 12 artificial drainage, and all appurtenances;
- 13 (3) location, parcel identification number, other property identification, 911 address (if known), acreage, and
- 14 directions to the property; ~~and~~
- 15 (4) for reconnections, information needed to determine DDF of the facility served including number and
- 16 function of individual design units, number of bedrooms and occupants per bedroom, or number of
- 17 ~~occupants.~~ occupants; and
- 18 (5) signature of owner.
- 19 (g) The application shall state that submittal of a signed application constitutes right of entry to the property by an authorized
- 20 agent.

21

22 *History Note: Authority G.S. 130A-335; 130A-336; 130A-337; 130A-338.*

23 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0203

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (b), do you think it would be helpful to say something like “an IP **for the facility site** that includes...” I make this suggestion only because I was initially confused whether there would be multiple IPs since there can be multiple CAs. I think that the answer is no, as I read the IP to go to the site as a whole and the CAs to go to the systems.*

In (c), what is meant by “if modifications or alternatives are available to support site reclassification”? Is the intent of this to get to modifications that could be made to make the site suitable?

In (d), just so I understand, these permits with plats would be “valid without expiration” and permits with site plans would be valid for five years? I understand the reference to the statute, rather than the specific language, but I want to be sure that I am correct.

In (f)(1), practically speaking, how is the information submitted in the application going to be altered? I assume that you don't mean if someone made a mistake and used whiteout on the form to “alter” the form, but I'm not sure what is intended here.

In (f)(3), how would it be determined that the conditions or rule cannot be met? Will further inspections by the LHD occur?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0203 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0203 IMPROVEMENT PERMIT**

4 (a) Upon receipt of a complete application for an IP, an authorized agent shall evaluate the site to determine whether the site
5 is suitable or unsuitable for the installation of a wastewater system in accordance with Section .0500 of this Subchapter. If the
6 site is classified suitable, ~~a~~ an IP shall be issued in accordance with this Subchapter. The authorized agent shall prepare dated,
7 written documentation of the soil and site conditions required to be evaluated in Section .0500 of this Subchapter.

8 (b) When the site is classified suitable an authorized agent shall issue an IP that includes the items contained in G.S. 130A-
9 336(a)(1) through (6) and the following information:

- 10 (1) DDF, number of bedrooms, maximum number of occupants or people served, and wastewater strength in
11 accordance with Section .0400 of this Subchapter;
- 12 (2) required effluent ~~quality~~ standard - DSE, HSE, NSF-40, TS-I, TS-II, or RCW in accordance with Table III
13 of Rule .0402, Rule .1002, or Table XXIV of Rule .1201 of this Subchapter;
- 14 (3) all applicable setbacks and requirements in accordance with Section .0600 of this Subchapter;
- 15 (4) location and description of the facility, structures, vehicular traffic areas, and other proposed
16 improvements;
- 17 (5) location(s) of existing and proposed public or private water supplies, including private drinking water wells
18 and springs and associated water lines;
- 19 (6) a site plan or plat as defined in G.S. 130A-334 showing the existing and proposed property lines with
20 dimensions, the location of the facility and appurtenances, the site for the proposed wastewater system and
21 repair area, and the location of water supplies and surface water;
- 22 (7) the proposed initial wastewater system and repair system types, including LTARs for each system;
- 23 (8) easements, rights-of-way, or encroachments agreements, as applicable; and
- 24 (9) permit conditions, such as site-specific site modifications, installation requirements, maintenance of the
25 groundwater lowering system, etc.

26 (c) When the site is classified unsuitable, a signed, written report shall be provided to the owner describing the unsuitable site
27 characteristics and citing the applicable rule(s). If modifications or alternatives are available to support site reclassification,
28 this information shall be included in the report.

29 (d) The period of validity for the permit in accordance with G.S. 130A-335(f) shall be stated on the IP.

30 (e) The IP shall be transferable subject to the conditions set forth in G.S. 130A-336(a).

31 (f) An IP shall be suspended or revoked if:

- 32 (1) the information submitted in the application is found to be incomplete, false, incorrect, or altered;
- 33 (2) the site is altered and the permitted system cannot be installed or operated as permitted;
- 34 (3) conditions of the IP or the rules of this Subchapter cannot be met;
- 35 (4) a new IP is issued for the same design unit on the same property; or
- 36 (5) an NOI is issued for the same design unit on the same property.

1 (g) An IP shall be applicable to both initial and repair dispersal field areas identified and approved on the IP and only a CA
2 shall be issued if wastewater system repairs are necessary.

3

4 *History Note: Authority G.S. 130A-335; 130A-336.*

5 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0204

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), please change "can" to "may"

(a) and (b) appear to conflict. How are the conditions of an IP to be satisfied prior to the issuance of a CA as required by (b) if a CA can be issued at the same time as an IP as allows in (a)? Please review and clarify.

In (e), is the requirement that the agreement itself be approved, or that the agreement be submitted for consideration in approving the permit. Please review and clarify.

In (i)(1), practically speaking, how is the information submitted in the application going to be altered? I assume that you don't mean if someone made a mistake and used whiteout on the form to "alter" the form, but I'm not sure what is intended here.

In (i)(3), how would it be determined that the conditions or rule cannot be met? Will further inspections by the LHD occur?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0204 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0204 CONSTRUCTION AUTHORIZATION**

4 (a) The owner shall obtain a CA after an IP has been issued and prior to the construction, location, or relocation of a ~~facility~~
5 facility, or the construction or repair of a wastewater system. A CA can also be issued at the same time as the IP.

6 (b) Conditions of an IP shall be completed prior to the issuance of a CA. A CA shall be issued by an authorized agent for
7 wastewater system installation when it is found that the IP conditions and rules of this Subchapter are met.

8 (c) The CA shall specify the following:

- 9 (1) all information required in Rule .0203(b) of this Section;
- 10 (2) the initial wastewater system type and layout, location of all initial wastewater system components, and
11 design details and specifications for the following, as applicable:
 - 12 (A) tanks;
 - 13 (B) collection sewers;
 - 14 (C) pump requirements;
 - 15 (D) advanced pretreatment;
 - 16 (E) distribution devices; and
 - 17 (F) trench widths, lengths, and depth on the downslope side of the trench;
- 18 (3) the nature of the Management Entity required and the minimum operation and maintenance requirements in
19 accordance with Section .1300 of this Subchapter; and
- 20 (4) permit conditions, such as site-specific installation requirements, maintenance of the groundwater lowering
21 system, etc.

22 (d) A CA shall be issued for each ~~ground absorption~~ wastewater system serving a facility. Separate CAs may be issued for
23 individual components. A building permit shall not be issued for a design unit until CAs for all components of the ~~ground~~
24 absorption wastewater system serving that design unit have been issued.

25 (e) Prior to the issuance of a CA for a system where all or part of the system will be under common or joint control, a draft
26 multi-party agreement between the developer and an incorporated owners' association shall be submitted to the LHD for
27 approval. The draft multi-party agreement shall include and address the following, as applicable:

- 28 (1) ownership;
- 29 (2) transfer of ownership;
- 30 (3) maintenance;
- 31 (4) operation;
- 32 (5) wastewater system repairs; and
- 33 (6) designation of fiscal responsibility for the continued satisfactory performance of the wastewater system and
34 repair or replacement of collection, treatment, dispersal, and other components.

35 (f) Systems or components under common or joint control include the following:

- 36 (1) wastewater system serving a condominium or other multiple-ownership development; or
- 37 (2) off-site systems serving two or more facilities where any components are under common or joint control.

- 1 (g) The CA shall be valid for a period equal to the period of validity of the IP and stated on the permit.
- 2 (h) The CA shall be transferable subject to the conditions set forth in G.S. 130A-336(a).
- 3 (i) A CA shall be suspended or revoked if:
- 4 (1) the information submitted in the application is found to be incomplete, false, incorrect, or altered;
- 5 (2) the site is altered and the permitted system cannot be installed or operated as permitted;
- 6 (3) conditions of the CA or the rules of this Subchapter cannot be met;
- 7 (4) a new CA is issued for the same design unit on the same property; or
- 8 (5) a NOI is issued for the same design unit on the same property.

9

10 *History Note: Authority G.S. 130A-335; 130A-336; 130A-338.*

11 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0205

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (b)(8), please verify the cross-reference to Rule .0303(g).

Is the intent of (d) to simply require that the statement be provided to the LHD prior to the issuance of the OP? If so, can you say that rather than provide the cross-reference?

In (e), I assume that the owner will be responsible for making the corrections? If so, how is the owner going to know what to correct? Is he or she going to receive notice of them before the LHD is going to prepare the report? Should the language regarding the issuance of the report go before the opportunity of the owner to correct the deficiencies?

In (h), line 8, delete "as specified"

In (l), who has the responsibility for maintenance of the documentation? The owner or the LHD?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0205 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0205 OPERATION PERMIT**

4 (a) The owner shall obtain an OP after the wastewater system has been installed or repaired and the authorized agent has
5 inspected the ~~system~~ system. The inspection shall occur prior to the system being covered. ~~The authorized agent~~
6 shall determine and determined that the system has been installed in accordance with this Subchapter and any conditions of
7 the ~~IP, IP and CA. The OP shall be issued prior to the wastewater system being placed into operation.~~

8 ~~(b) If the wastewater system has been permitted in accordance with G.S. 130A-336.1 and Rule .0207 of the Section, an ATO~~
9 ~~shall be issued by the authorized agent.~~

10 ~~(c)~~(b) The OP shall include:

- 11 (1) the initial system and designated repair system type in accordance with Table XXXI of Rule .1301 of this
12 Subchapter and the unique code assigned under Rule.1713(10) of this Subchapter;
- 13 (2) facility description including number of bedrooms and ~~occupants per bedroom~~, maximum occupancy,
14 maximum number of occupants or people served, DDF, and wastewater strength;
- 15 (3) a site plan or plat as defined in G.S. 130A-334 showing the existing and proposed property lines with
16 dimensions, the location of the facility and appurtenances, the site for the ~~proposed~~ wastewater system and
17 repair area including location and dimensions, and the location of water supplies and surface water;
- 18 (4) dispersal field design including trench or bed length, width, depth, and location;
- 19 (5) the tank(s) location, capacity, and ID numbers;
- 20 (6) groundwater monitoring well locations, sampling frequency, and characteristics sampled, as applicable;
- 21 (7) conditions for system performance, operation, monitoring, influent and effluent sampling requirements, and
22 reporting, including the requirement for a contract with a Management Entity, as applicable; and
- 23 (8) approved engineered plans, specifications, and record drawings if required in Rule ~~.0303(b)~~ .0303(g) of this
24 Subchapter.

25 ~~(d)~~(c) Prior to the issuance of an OP for a system requiring a multi-party agreement, the multi-party agreement shall be
26 executed between the developer and an incorporated owners' association and filed with the local register of deeds.

27 ~~(e)~~(d) When a wastewater system is required to be designed by an authorized designer or PE, the information in Rule ~~.0303(f)~~
28 .0303(g) of this Subchapter shall be provided to the authorized agent prior to issuance of the OP.

29 ~~(f)~~(e) When an authorized agent determines that the system installation does not meet the rules of this Subchapter and
30 conditions described in the IP and CA, corrections shall be made to bring the system into compliance with this Subchapter. If
31 corrections cannot be made, an authorized agent shall not issue an OP and the system shall not be placed into use. The
32 authorized agent making the determination shall prepare a written report referencing deficiencies in the system installation,
33 citing the applicable rule(s) and IP and CA conditions, and include a letter of Intent to Suspend or Revoke the IP and CA or
34 the CA. A copy of the report shall be provided to the owner and the installer.

35 ~~(g)~~(f) An OP shall be valid and remain in effect for a system provided:

- 36 (1) wastewater strength and DDF remain unchanged;
- 37 (2) the system is operated and maintained in accordance with this Subchapter;

- 1 (3) no malfunction is found as defined in Rule .1303(a)(1) and (2) of this Subchapter;
- 2 (4) the system has not been abandoned in accordance with Rule .1307 of this Subchapter;
- 3 (5) the system complies with the condition(s) of the OP; and
- 4 (6) OP has not expired or been revoked.
- 5 ~~(h)~~(g) For a Type V or VI system as specified in Table XXXI of Rule .1301 of this Subchapter, the OP shall expire five years
- 6 after being issued.
- 7 ~~(h)~~(h) An authorized agent may modify, suspend, or revoke the OP or seek other remedies under G.S. 130A, Article 2, if it is
- 8 determined that the system is not being operated and maintained as specified in accordance with this Subchapter and all
- 9 conditions imposed by the OP.
- 10 ~~(i)~~(i) When an OP expires in accordance with Paragraph ~~(h)~~ (g) of this Rule a new application shall be required prior to
- 11 issuance of a new OP to confirm that the previously approved facility has not changed and that the system remains in
- 12 compliance with permit conditions.
- 13 ~~(j)~~(j) When an OP is revoked due to facility non-compliance, such as additional wastewater flow or increased wastewater
- 14 strength, a new application shall be required prior to evaluation for a new IP, CA, and OP.
- 15 ~~(k)~~(k) An OP shall be revoked prior to an ATO being issued for the same design unit on the same property.
- 16 ~~(m)~~(l) All documentation related to a wastewater system shall be maintained in the county where the permit is issued.

17

18 *History Note: Authority G.S. 130A-335; 130A-337; 130A-338.*

19 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0206

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Is this Rule only applicable to manufactured home parks?

In (b)(1), I don't understand the cross-reference to Rule .0102. Please review and clarify.

In (b)(4), what are the required setbacks? Is there a cross-reference available? Is it Section .0600?

What is the overall intent of (c)?

In (c), what is meant by "expansion of an existing facility's footprint"?

In (c), line 17, please change "which" to "that"

Also in (c), line 17, by "change wastewater strength and require", do you mean "strength that requires"?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0206 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0206 EXISTING SYSTEM APPROVALS FOR RECONNECTIONS AND PROPERTY**
4 **ADDITIONS**

5 (a) Approval by an authorized agent shall be issued prior to any of the following:

- 6 (1) a facility being reconnected to an existing system; or
- 7 (2) other site modifications as described in Paragraph (c) of this Rule.

8 (b) Approvals for reconnecting a facility shall be issued upon determination of the following:

- 9 (1) the site complies with its OP or Rule .0102 of this ~~Subchapter~~, Subchapter, as applicable;
- 10 (2) there is no evidence or documentation of a current or past uncorrected malfunction of the system as
11 described in Rule .1303(a)(1) and (2) of this Subchapter;
- 12 (3) the DDF and wastewater strength for the proposed facility do not exceed that of the existing system;
- 13 (4) the facility meets required setbacks; and
- 14 (5) the existing system is being operated and maintained as specified in G.S. 130A, Article 11, this Subchapter,
15 and permit conditions.

16 (c) Prior to construction, relocation of a structure, the expansion of an existing facility's footprint, or other site modifications
17 which do not increase ~~design flow~~ DDF or change wastewater strength and require the issuance of a building permit, an
18 authorization shall be issued upon determination of the compliance of the proposed structure with setback requirements in
19 Section .0600 of this Subchapter.

20 (d) For authorizations issued in accordance with this Rule the authorized agent shall provide written documentation to the
21 owner that describes the site modification, system use, ~~design flow~~, DDF, wastewater strength, number of bedrooms, number
22 of ~~occupants~~ occupants, and includes a site plan showing the location, dimensions, and setbacks of existing and proposed
23 structures to the existing system and repair area.

24

25 *History Note: Authority G.S. 130A-335; 130A-337(c) and (d).*

26 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0207

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (b), I understand that “an LSS shall conduct soil side evaluations, and, as applicable, an LG shall evaluate geologic and hydrogeologic conditions” mirrors the language in 130A-336.1(e)(2); however, I don’t understand the use of “as applicable” here. When would it not be necessary?

In (c)(4), by “as applicable”, do you mean “as required by their licensing statutes and Rules”?

In (d), line 23, is “as applicable” necessary here? I don’t think it is.

In (d), what is meant by “the PE shall allow for the use of Accepted Systems in accordance with G.S. 130A-336.1(e)(5)”? Does this only come into play when the PE is using an unapproved system or always?

In (e), what is a “decision of completeness”? Do you mean “a letter of confirmation” as provided in 130A-336.1(m)? If so, please use consistent language. Also, when in the process are they supposed to get the building permit?

In (k), is “as applicable” necessary here? Would an owner not need all of these people at some point in the process?

In (k), line 20, what is to “follow the EOP permitting process”? It reads as the NOI, but I don’t think that is what is meant. Please review and clarify if needed.

In (l), please change “The LHD is responsible for the following activities related to the EOP system:” to something like “With regard to the EOP system, the LHD shall:” As written, the introduction doesn’t match the verbs in (l)(1) through (8).

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0207 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0207 ENGINEER OPTION PERMIT**

4 (a) An owner choosing to use an EOP for wastewater systems in accordance with G.S. 130A-336.1 shall employ the services
5 of a PE to prepare signed and sealed drawings, specifications, plans, and reports for the design, construction, operation, and
6 maintenance of the wastewater system.

7 (b) Prior to the submittal of an NOI for an EOP system as required by G.S. 130A-336.1(b), an LSS shall conduct soil and site
8 evaluations and, as applicable, an LG shall evaluate geologic and hydrogeologic conditions. These evaluations shall be in
9 accordance with the rules of this Subchapter.

10 (c) The NOI for an EOP System shall be submitted by the owner or a PE, authorized as the legal representative of the owner,
11 to the LHD in the county where the facility is located. The NOI shall be submitted on the common form provided by the State.
12 The common form is available by accessing the State's website at <http://ehs.ncpublichealth.com/rules.htm#oswprules>. It shall
13 include all the information specified in G.S. 130A-336.1(b) and the following:

- 14 (1) the LSS's, LG's, and installer's name, license number, address, e-mail address, and telephone number;
- 15 (2) information required in Rule .0202 of this Section for IP and CA applications;
- 16 (3) identification and location on the site plan of existing or proposed potable water supplies, geothermal
17 heating and cooling wells, and groundwater monitoring wells for the proposed site. The PE shall reference
18 any existing permit issued for a private drinking water well, public water ~~system~~, system as defined in G.S.
19 130A-313(10), or a wastewater system on both the subject and adjoining properties to provide
20 documentation of compliance with setback requirements in Section .0600 of this Subchapter; and
- 21 (4) proof of insurance for the PE, LSS, LG, and installer, as applicable.

22 (d) The PE design shall incorporate findings and recommendations on soil and site conditions, limitations, site modifications,
23 and geologic and hydrogeologic conditions specified by the LSS or LG, as applicable, and in accordance with G.S. 130A-
24 336.1(k)(1). When the PE chooses to employ pretreatment technologies not approved in this State, the engineering report shall
25 specify the proposed technology and the associated siting, installation, operation, maintenance, and monitoring requirements,
26 including written ~~manufacturers~~ manufacturer's endorsement of the proposed use. The PE shall allow for the use of Accepted
27 Systems in accordance with G.S. 130A-336.1(e)(5).

28 (e) No building permit for construction, location, or relocation shall be issued until after a decision of completeness of the
29 NOI is made by the LHD, or the LHD fails to act within 15 business days.

30 (f) If the owner chooses to increase the DDF or change the wastewater strength discharging to the wastewater system prior to
31 construction, a new NOI shall be submitted to the LHD. The owner shall request in writing that the PE invalidate the prior
32 NOI with a signed and sealed letter sent to the owner and LHD.

33 (g) Construction of the wastewater system shall not commence until the system design plans and specifications have been
34 provided to the installer and the signed and dated statement by the installer is provided to the owner. The owner shall be
35 responsible for preventing modifications or alterations of the site for the wastewater system and the system repair area before,
36 during ~~during~~, and after any construction activities for the ~~facility~~ facility. This includes ~~before or~~ and after construction of
37 the wastewater system, unless approved by the PE, LSS, or LG, as applicable.

1 (h) Prior to providing written confirmation for the ATO, the PE shall submit the following to the LHD:

- 2 (1) documentation that all reporting requirements identified in G.S. 130A-336.1(l) have been met;
- 3 (2) information set forth in Rule .0301(d) of this Subchapter;
- 4 (3) system start-up documentation, including applicable baseline operating parameters for all components;
- 5 (4) documentation by the owner that all necessary legal agreements, including easements, encroachments,
6 multi-party agreements, and other documents have been prepared, executed, and recorded in accordance
7 with Rule .0301(b) and (c) of this Subchapter; and
- 8 (5) record drawings.

9 The LHD shall use the common form for written confirmation.

10 (i) The owner of the wastewater system approved in accordance with the EOP shall be responsible for maintaining the
11 wastewater system in accordance with the written operation and management program required in G.S. 130A-336.1(i)(1) and
12 Section .1300 of this Subchapter.

13 (j) For repair of a malfunctioning EOP system, this Rule shall be followed in conjunction with Rule .1306 of this Subchapter.
14 The Management Entity shall notify the LHD within 48 hours of the system malfunction.

15 (k) The owner of an EOP system who wishes to change the use of the facility shall contact the PE, LSS, LG, and installer, as
16 applicable, to determine whether the current system would continue to meet ~~the requirements of~~ the rules of this ~~Section~~
17 Subchapter for the proposed change of use. The PE, LSS, LG, or installer shall determine what, if any, modifications shall be
18 necessary for the wastewater system to continue to meet ~~the requirements of~~ the rules of this ~~Section~~ Subchapter following the
19 proposed change of use. A NOI reflecting the change of use and any required modifications to the system shall be submitted
20 to the LHD and follow the EOP permitting process.

21 (l) The LHD is responsible for the following activities related to the EOP system:

- 22 (1) file all EOP documentation consistent with current permit filing procedures at the LHD;
- 23 ~~(2)~~ (2) ~~revocation of an OP for a wastewater system prior to an ATO being issued for the same design unit on the~~
24 ~~same property, if applicable;~~
- 25 ~~(2)~~(3) submit a copy to the State of the NOI common form and written confirmation of ATO;
- 26 ~~(3)~~(4) participate in a post-construction conference in accordance with G.S. 130A-336.1(j);
- 27 ~~(4)~~(5) review the performance and operation reports submitted and perform on-site compliance inspections of the
28 wastewater system in accordance with Rule .1305(c) and Table XXXI of Rule .1301 of this Subchapter;
- 29 ~~(5)~~(6) investigate complaints regarding EOP systems;
- 30 ~~(6)~~(7) issue a NOV for systems determined to be malfunctioning in accordance with Rule .1303(a)(1) and (2) of
31 this Subchapter. The LHD shall direct the owner to contact the PE, LSS, LG, and installer, as applicable,
32 for determination of the reason of the malfunction and development of a NOI for repairs; and
- 33 ~~(7)~~(8) require an owner receiving a NOV to pump and haul sewage in accordance with Rule .1306 of this
34 Subchapter.

35 (m) The Owner may contract with ~~another different~~ licensed ~~professional~~ professionals than those originally identified on the
36 initial NOI to complete an EOP project. A revised NOI shall be submitted to the LHD.

1 (n) Nothing in this Rule shall be construed as allowing any licensed professional to provide services for which he or she has
2 neither the educational background, expertise, or license to perform, or is beyond his or her scope of work as provided for in
3 accordance with G.S. 130A-336.1 and the applicable statues for their respective professions.

4

5 *History Note: Authority G.S. 130A-335; 130A-336.1.*

6 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0301

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), by "owner", do you mean "the owner of a wastewater system"?

In (a)(2), what is meant by "laws"? Do you mean "Article 11 of Chapter 130A of the General Statute and the Rules of this Subchapter"?

In (a)(6), please delete or define "adequate"

In (a)(6), please delete "as applicable" since you've already said "when necessary"

In (a)(10), what are the "necessary records of title"

In (a)(10), delete "as applicable" since you have already said "necessary"

In (a)(11), delete or define "appropriate"

In (b) seems to be missing a word. Perhaps add "when" after "installations" on line 26, then add "there is a" in (b)(1) and (2), change (3) to say something like "the wastewater system is proposed to be in an off-site area" and add "the" to (4).

In (c), please consider adding "any" at the beginning and delete "as applicable." Again, your use of "necessary" seems to make this language unnecessary.

In (c), "terms of the easement, right-of-way, or encroachment agreement shall provide that the easement, right-of-way, or encroachment agreement meets the following criteria" seems to have some extra, unnecessary language. Please review and clarify. Please also be sure that the introduction to the subparagraphs of (c) matches the language contained in (c)(1) through (5).

Please add "the" before in (c)(1), "the agreement is" before "valid" in (c)(2),

Please consider changing "describes and specifies the uses being granted and shall include ingress..." to "description of the uses being granted that includes ingress..."

Amber May

Commission Counsel

Date submitted to agency: September 6, 2018

In (d), what is “an authorized designer”?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0301 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0301 OWNERS**

4 (a) The owner shall:

- 5 (1) apply in accordance with Section .0200 of this Subchapter;
- 6 (2) comply with the laws, this Subchapter, and permit conditions regarding wastewater system location,
7 including repair area;
- 8 (3) identify property lines and fixed reference points in the field prior to the LHD site evaluation;
- 9 (4) make the site accessible for the site evaluation described in Rule .0501 of this Subchapter;
- 10 (5) field stake or otherwise mark the proposed facility location and all associated appurtenances (such as
11 vehicular traffic areas, garage, swimming pool, shed, entryways, decks, etc.);
- 12 (6) ~~excavate~~ provide for pits with adequate ingress and egress when necessary for a soil and site evaluation at
13 the site as determined by the LHD or the State in accordance with Rule .0501 of this Subchapter, as
14 applicable;
- 15 (7) provide for system operation, maintenance, monitoring, and reporting, including access for system
16 maintenance;
- 17 (8) maintain artificial drainage systems, as applicable;
- 18 (9) prevent encroachment on the initial wastewater system and repair area by utilities, structures, vehicular
19 traffic areas, etc.;
- 20 (10) provide necessary records of title to the LHD when seeking an exemption for a lot or tract of land from the
21 minimum setback requirements in Rule .0601(a) of this Subchapter, as applicable;
- 22 (11) establish and maintain appropriate vegetation over the dispersal field and repair area; and
- 23 (12) repair a malfunctioning system as necessary in accordance with this Subchapter.

24 (b) The entire initial wastewater system and repair area shall be on property owned or controlled by the wastewater system
25 owner. An easement or encroachment agreement shall be required for the permitting of the following wastewater system
26 installations:

- 27 (1) common area with other wastewater systems;
- 28 (2) area with multiple or third-party ownership or control;
- 29 (3) proposed off-site area; or
- 30 (4) system and the facility are located on different lots or tracts of land and cross a property line or right-of-
31 way.

32 (c) Necessary easements, rights-of-way, or encroachment agreements, as applicable, shall be obtained prior to the issuance of
33 a CA. Terms of the easement, right-of-way, or encroachment agreement shall provide that the easement, right-of-way, or
34 encroachment agreement meets the following criteria:

- 35 (1) appurtenant to described property, runs with the land, and is not affected by change of ownership or
36 control;
- 37 (2) valid for as long as the wastewater system is required for the facility that it is designed to serve;

- 1 (3) describes and specifies the uses being granted and shall include ingress, egress, and regress, system
2 installation, operation, maintenance, monitoring, repairs, and any other activity required to remain in
3 compliance with this Subchapter including that the easement, right-of-way, or encroachment remain free of
4 structures, landscaping, or any other activities that would interfere with the use of the easement or
5 encroachment for its intended purpose;
- 6 (4) specified in a deed by metes and bounds description, the area or site required for the wastewater system
7 and repair area, including collection sewers, tanks or raw sewage lift stations, distribution devices, and
8 dispersal fields; and
- 9 (5) shall be recorded with the register of deeds in the county (or counties) where the system and facility are
10 located.

11 (d) Prior to OP issuance for a system required to be designed by an authorized designer or PE, the owner shall submit to the
12 LHD a statement signed by the authorized designer or PE specifying that the system has been installed in accordance with the
13 permitted design. For systems designed by a PE, the statement shall be affixed with the PE seal.

14
15 *History Note: Authority G.S. 130A-335.*
16 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0302

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (c), please consider deleting "as defined in G.S. 130A-334(15)" since this is not the first time "wastewater system is used" and especially if you add language regarding 130A-334 in .0105.

In (c), line 11, please change "which serve" to "that serve"

In (d), please change "is not required" to "shall not be required"

In (d)(1), please change "system which" to "system that"

In (d)(2)(A), please add "the" at the beginning and change "serving" to "serves"

In (d)(2)(B), please add "the" at the beginning, change "are" to "is" and put commas before and after "at a minimum"

In (d)(2)(C), please add "the" at the beginning.

In (e), please change "is not required" to "shall not be required"

Are lines 1-2 of page 2 (In accordance with 2013-413... with this Paragraph) necessary? Also, I don't see that 2013-413, s. 34 nor 2014-120 speaks to liability. As such, this appears to be a legal conclusion for which you do not have the authority.

In (f), how will it be determined whether you will approve a system when required to be approved by the state? Do you mean in accordance with these Rules?

Is (g) necessary?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0302 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .0302 LOCAL HEALTH DEPARTMENT AND STATE

(a) The permitting of a wastewater system shall be the responsibility of agents authorized by the State in accordance with G.S. 130A, Article 4 and 15A NCAC 01O .0100, and registered with the North Carolina State Board of Environmental Health Specialist Examiners, as required in G.S. 90A, Article 4, unless the permit is issued in accordance with G.S. 130A-336.1 and Rule .0207 of this Subchapter.

(b) When the wastewater system crosses county lines or the facility is in one county and the wastewater system is in another county, the LHD in the county that assesses property taxes on the facility shall implement the requirements of this Subchapter.

(c) The State shall review and approve the wastewater system, as defined in G.S. 130A-334(15), including design, layout, plans, and specifications for all wastewater ~~systems,~~ systems which serve a facility with a ~~cummulative~~ cumulative DDF greater than 3,000 gpd, as determined in Section .0400 of this Subchapter. The State shall also review and approve plans and specifications for the following:

- (1) IPWW systems required by this Section to be designed by a PE unless the wastewater has been determined to not be IPWW in accordance with Rule ~~.0303(b)(18)~~ .0303(b)(17) of this Section;
- (2) advanced pretreatment or drip dispersal systems not previously approved by the State; and
- (3) any other system so specified by the authorized agent.

(d) State review is not required when the ~~cummulative~~ cumulative DDF for the facility is greater than 3,000 gpd as determined in Section .0400 of this Subchapter ~~and all the following are met:~~ and:

- (1) the wastewater system is made up of an individual wastewater system which serves an individual dwelling unit or several individual wastewater systems, each serving an individual dwelling unit; or
- (2) the wastewater system meets the following criteria:
 - (A) individual wastewater system(s) serving individual design units with a DDF less than or equal to 1,500 gpd;
 - (B) initial and repair dispersal fields for each individual wastewater system(s) are at a minimum 20 feet from any other individual wastewater system;
 - (C) total DDF for all dispersal fields is less than or equal to 1,500 gpd per acre based on the portion of the land containing the dispersal fields; and
 - (D) the wastewater is not HSE as identified in Section .0400 of this Subchapter.
- ~~(1) individual ground absorption system(s) serving individual design units with a DDF less than or equal to 1,500 gpd;~~
- ~~(2) initial and repair dispersal fields for each individual ground absorption system(s) are at a minimum 20 feet from any other individual wastewater system;~~
- ~~(3) total DDF for all ground absorption system(s) on a lot or tract of land is less than or equal to 1,500 gpd per acre.~~

(e) State review is not required when a PE calculates the proposed DDF to be less than or equal to 3,000 gpd based on engineering design utilizing low-flow fixtures and low-flow technologies in accordance with Rule .0403(e) of this Subchapter.

1 In accordance with S.L. 2013-413, s.34 and S.L. 2014-120, s.53 neither the State nor any LHD shall be liable for a system
2 approved or permitted in accordance with this Paragraph.

3 (f) For systems that require State review and approval, an IP shall not be issued by the LHD until the site plan or plat and
4 system layout, including details for any proposed site modifications, are approved by the State. A CA shall not be issued by
5 the LHD until plans and specifications, submitted in accordance with Rule .0304 of this Section, are approved by the State.

6 (g) The State shall provide technical assistance to the LHD as ~~may be~~ needed for interpretation of this Subchapter, in
7 accordance with the recognized principles and practices of soil science, geology, engineering, and public health.

8

9 *History Note: Authority G.S. 130A-335.*

10 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0303

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), how will it be determined whether the plans and specifications will be approved? Is there a cross-reference available that sets the standards?

In (b), please change "which" to "that" in "any wastewater system which meets"

In (b)(13), is there a more specific cross-reference available than "the rules of this Subchapter"?

In (b)(15), please change "which" to "that" in "which have not"

In (b)(16), what is meant by "an equivalent third party electrical testing and listing agency"? Please consider revising this to say "the proposed pump model is not listed by a third part electrical testing and listing agency, such as Underwriter Laboratories"

In (b)(17)(A) and (b), how will these determinations be made? What factors will be used? Is there a cross-reference available?

In (b)(22), is this left to the exclusive discretion of LHD under their Rules? If not, please provide some information as to how he or she will make this determination.

Would it be appropriate to include (c) as a subparagraph of (b)? Isn't this another type of system that will require a PE or is this specific to a tank? Also, how is this requirement different than that in .1401(d)? Are both provisions necessary?

In (g), page 3, line 8, please change "is" to "shall be"

In (g), who must the record drawings be provided to? The authorized agent or the owner?

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0303 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .0303 LICENSED OR CERTIFIED PROFESSIONALS

(a) Plans and specifications for the use of a groundwater lowering system to meet the vertical separation to a SWC shall be prepared by a licensed professional if required in G.S. 89C, 89E, or 89F. Prior to the issuance of an IP or CA, the plans and specifications shall be reviewed and approved by the authorized agent.

(b) Any wastewater system which meets one or more of the following conditions shall be designed by a PE if required in G.S. ~~89C and plans and specifications shall comply with Rule .0304 of this Section:~~ 89C:

- (1) the system has a DDF greater than 3,000 gpd, as determined in Section .0400 of this Subchapter, except where the system is limited to an individual wastewater system serving an individual dwelling unit or multiple individual wastewater systems, each serving an individual dwelling unit;
- (2) the system requires advanced pretreatment or drip dispersal ~~other than~~ and is not a system approved under Sections .1500, .1600, or .1700 of this Subchapter;
- (3) pressure dispersal systems that require pumping more than 500 feet horizontally or more than 50 feet of net elevation head;
- (4) pressure dosed gravity distribution systems that require pumping more than 1,000 feet horizontally or more than 100 feet of net elevation head;
- (5) dosing systems or force mains that have one or more intermediate high points greater than five feet;
- (6) the system requires pumping downhill to a pressure dosed gravity or pressure dispersal field where the volume of the supply line that could drain to the dispersal field between doses exceeds 25 percent of the required dose volume;
- (7) pressure dispersal systems with a DDF greater than 600 gpd serving a single design unit;
- (8) pressure dispersal and pressure dosed gravity distribution systems where there is more than 15 percent variation in line length. The 15 percent variation shall be measured by comparing the longest line length to the shortest line length in any dispersal field;
- (9) two or more septic tanks or advanced pretreatment units, each serving a separate design unit, and served by a common dosing tank;
- (10) a STEP system with the system includes a pressure sewer or other pressure sewer system receiving effluent from two or more pump tanks;
- (11) an adjusted DDF is proposed based on the use of low-flow fixtures or low-flow technologies in accordance with Rule .0403(e) of this Subchapter;
- (12) the system requires use of sewage pumps prior to the septic tank or other pretreatment system, except for systems governed by the North Carolina Plumbing Code or which consist of grinder pumps and associated pump basins that are approved and listed in accordance with standards adopted by NSF International;
- (13) an individual system required by the rules of this Subchapter to use more than one pump or siphon in a single pump tank;

1 (14) the system includes a collection sewer prior to the septic tank or other pretreatment system serving two or
2 more design units, except for systems governed by the North Carolina Plumbing Code;

3 (15) the wastewater system includes structures which have not been pre-engineered;

4 ~~(16) any tank with a capacity greater than 4,000 gallons, rated for traffic load, installed deeper than 36 inches~~
5 ~~below finished grade, or built in place;~~

6 ~~(17)~~(16) the proposed pump model is not listed by Underwriter Laboratories or an equivalent third party electrical
7 testing and listing agency;

8 ~~(18)~~(17) the system is designed for the collection, treatment, and dispersal of IPWW, except under the following
9 circumstances:

10 (A) the State has determined that the wastewater generated by the proposed facility has a pollutant
11 strength which is lower than or equal to ~~domestic wastewater~~ DSE and does not require
12 specialized treatment or management; or

13 (B) the State has pre-approved a predesigned treatment system or process and management method
14 proposed by the facility owner which shall generate effluent with a pollutant strength which is
15 lower than or equal to ~~domestic wastewater~~; DSE;

16 ~~(19)~~(18) the wastewater system is designed for RCW;

17 ~~(20)~~(19) any wastewater system designed by a licensed professional that has been determined to be within the
18 practice of engineering in accordance with G.S. 89C-3(6) by the North Carolina Board of Examiners for
19 Engineers and Surveyors;

20 ~~(21)~~(20) any wastewater system approved in accordance with Sections .1500, .1600, and .1700 of this Subchapter
21 that requires in the RWTS or PIA Approval that the system be designed by a PE;

22 ~~(22)~~(21) any system or system component where the rules of this Subchapter provide for an engineer to propose
23 alternative materials, capacity determination, or performance requirements; and

24 ~~(23)~~(22) any other system so specified by the LHD.

25 (c) Any tank with a capacity greater than 4,000 gallons, rated for traffic load, installed deeper than 36 inches below finished
26 grade, or built-in-place shall be designed by a PE.

27 ~~(d)~~(d) An installer shall construct, install, or repair wastewater systems as required by G.S. 90A, Article 5. The installer shall
28 be responsible for the following:

29 (1) certification at the required level according to the system design specifications as required by G.S. 90A-72;

30 (2) notification to the LHD upon completion of the system installation or each stage requiring inspection as
31 conditioned on a CA;

32 (3) participation in a preconstruction conference when specified in the CA or by the RWTS or PIA Approval;

33 (4) participation during the inspection of the wastewater system by the authorized agent;

34 (5) participation during the post-construction conference and all other requirements when the wastewater
35 system is permitted in accordance with Rule .0207 of this Subchapter; and

36 (6) final cover of the system after LHD approval. The wastewater system shall be in the same condition when
37 covered as when approved.

1 ~~(d)~~(e) The Management Entity, or its employees, shall hold a valid and current certificate or certifications as required for the
2 system from the Water Pollution Control Systems Operators Certification ~~Commission, Commission.~~ ~~Nothing and nothing~~ in
3 this Subchapter shall preclude any requirements for system Management Entities in accordance with G.S. 90A, Article 3.

4 ~~(e)~~(f) Nothing in this Rule shall be construed as allowing any licensed professional to provide services for which he or she
5 has neither the educational background, expertise, or license to perform, or is beyond his or her scope of work and the
6 applicable statutes for their respective professions.

7 ~~(f)~~(g) The PE or authorized designer shall provide a written statement to the owner specifying that construction is complete
8 and in accordance with approved plans, specifications, and modifications. This statement is based on periodic observations of
9 construction and a final inspection for design compliance. Record drawings shall be provided when any change has been
10 made to the wastewater system installation from the approved plans.

11

12 *History Note: Authority G.S. 89C; 89E; 89F; 90A; 130A-335.*

13 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0304

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

What is the overall intent of this Rule? Is it to say what is required for all wastewater systems with a DDF less than or equal to 3,000 gpd or is this only applicable to those systems that are required to be prepared by an LSS or PE? I just want to be sure that I understand what is going on here. If it's for all wastewater systems, do you need the language regarding the licensed professionals?

On line 6-7, by "that are required to be prepared by an LSS or PE, if required in G.S. 89C or 89E" do you mean "that are required to be prepared by an LSS or PE in accordance with G.S. 89C or 89F"? If so, what about a geologist licensed by 89E? Do they come in at this stage?

On line 7, what is meant by "or other NC licensed professional"? Do you mean someone such as a surveyor?

IN (a), please consider deleting "shall contain the information necessary for construction of the wastewater system in accordance with this Subchapter" I don't understand how this is different than the next sentence which says "Plans and Specifications shall include the information in Paragraphs (b) through (e) of this Rule..."

In (b)(2), please add "the" before "owner" Also, by "all licensed professionals", I assume you mean "all licensed professionals who have prepared plans, specifications, and reports for the wastewater system"?

(b), (c), (d), and (e) seem to be missing some language. I assume that these are to be included in the plans and specifications? I'm thinking that some different formatting might be helpful to clarify this.

(c)(1)(D), is this based upon the LSS's professional judgment?

In (c)(2)(A), I assume that your regulated public is familiar with when in-situ Ksat measurements will be possible?

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

In (c)(2), please change “which” to “that” in “which shall”

In (c)(2)(C), please consider changing “groundwater mounding (level sites) or lateral flow analysis (sloping sites) to “groundwater mounding for level sites or lateral flow analysis for sloping sites).

In (e)(5)(H), what are the erosion control requirements?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0304 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0304 SUBMITTAL REQUIREMENTS FOR PLANS, SPECIFICATIONS, AND REPORTS**
4 **PREPARED BY LICENSED PROFESSIONALS FOR SYSTEMS OVER 3,000 GALLONS/DAY**

5 (a) Plans and specifications required to be prepared by an LSS or PE, if required in G.S. 89C or 89E, or other North Carolina
6 licensed professional shall contain the information necessary for construction of the wastewater system in accordance with
7 this ~~Subchapter, Subchapter.~~ Plans and specifications ~~and~~ shall include the information in Paragraphs (b) through (e) of this
8 ~~Rule, Rule~~ and any other ~~information, information~~ determined to be applicable by the LHD or the State, such as the impact of
9 projected wastewater constituents on the trench and receiving soil.

10 (b) Applicant information and DDF determination:

- 11 (1) the seal, signature, and the date on all plans, specifications, and reports prepared by the PE, LSS, and any
12 other licensed or registered professionals who contributed to the plans, specifications, or reports;
13 (2) name, address, and phone number for owner and all licensed professionals; and
14 (3) DDF and projected wastewater strength based on the application submitted to the LHD that includes
15 calculations and the basis for the proposed DDF and wastewater strength.

16 (c) Special Site Evaluation including soil and site evaluation, hydraulic and hydrologic assessment reports, and site plans:

- 17 (1) soil and site evaluation report, written by the LSS, on the field evaluation of the soil conditions and site
18 features within the proposed initial and repair dispersal field areas including the following:
19 (A) vertical soil profile descriptions for pits and soil borings in accordance with Section .0500 of this
20 Subchapter;
21 (B) recommended LTAR, system type, trench width, length, depth on downslope side of trench for
22 proposed initial and repair dispersal field areas with justification;
23 (C) soil and site-based criteria for dispersal field design and site modifications;
24 (D) for sites originally classified unsuitable, written documentation indicating that the proposed
25 system can be expected to function in accordance with Rule .0509(f) of this Subchapter; and
26 (E) recommended effluent standard for proposed initial and repair dispersal field areas with
27 justification; and
28 (2) hydraulic assessment reports on site-specific field information which shall ~~include, as applicable:~~ include:
29 (A) in-situ Ksat measurements at the proposed infiltrative surface elevation where possible and at
30 ~~every each~~ distinct horizon within and beneath the treatment zone to a depth of 48 inches below
31 the ground surface or to a depth ~~references~~ referenced in an associated hydraulic assessment, such
32 as groundwater mounding analysis or lateral flow analysis;
33 (B) logs from deep borings identifying restrictive layers, changes in texture and density, and aquifer
34 boundaries;
35 (C) groundwater mounding (level sites) or lateral flow analysis (sloping sites) in accordance with
36 Rule ~~.0510(d)~~ .0510(c) of this ~~Subchapter, Subchapter,~~ as applicable; and

1 (D) contaminant transport analysis showing projected compliance with groundwater standards at
2 property lines or at the required setback from water supply sources within the ~~property;~~ property,
3 as applicable; ~~and~~

4 ~~(E) in situ Ksat measurements and groundwater mounding or lateral flow analysis are not required for~~
5 ~~dispersal fields (including sub fields or zones) with a DDF less than or equal to 1,500 gpd that are~~
6 ~~in separate lateral flow windows or are shown to not be hydraulically connected;~~

7 (d) ~~site~~ Site plan prepared by the PE based on a boundary survey prepared by a registered land surveyor with the following
8 information:

9 (1) site topography, proposed site modifications, location of existing and proposed site features listed in Rule
10 .0601 of this Subchapter, proposed facility location, location of proposed initial and repair dispersal field
11 areas and types, and location of LSS soil pits, hand auger borings, deep borings, and in-situ Kats tests, as
12 applicable;

13 (2) existing and proposed public wells or water supply sources on the property or within 500 feet of any
14 proposed initial and repair dispersal field areas;

15 (3) existing and proposed private wells or water supply sources within 200 feet of existing or proposed system
16 component locations;

17 (4) other existing and proposed wells, existing and proposed water lines (including fire protection, irrigation,
18 etc.) within the property boundaries and within 10 feet of any projected system component;

19 (5) surface waters with water quality classification, jurisdictional wetlands, and existing and proposed
20 stormwater management drainage features and groundwater drainage systems;

21 (6) topographic map with two-foot contour intervals (or spot elevations when there is less than a two-foot
22 elevation difference across the site) identifying areas evaluated for initial and repair dispersal field areas,
23 proposed location of trenches, and pits and soil borings labeled to facilitate field identification;

24 (7) location of tanks and advanced pretreatment components, including means of access for pumping and
25 maintenance; and

26 (8) any site modifications and site and slope stabilization plans.

27 (e) System components design, installation, operation, and maintenance information:

28 (1) collection systems and sewers:

29 (A) plan and profile drawings, including location, pipe diameter, invert and ground surface elevations
30 of manholes and cleanouts;

31 (B) proximity to utilities and site features listed in Rule .0601 of this Subchapter;

32 (C) drawings of service connections, manholes, cleanouts, valves and other appurtenances, aerial
33 crossings, road crossings, water lines, stormwater management drainage features, streams, or
34 ditches; and

35 (D) installation and testing procedures and pass or fail criteria; ~~and~~

36 (2) tank information:

37 (A) plan and profile drawings of all tanks, including tank dimensions and all elevations;

- 1 (B) access riser, manhole, chamber interconnection, effluent filter, and inlet and outlet details;
- 2 (C) construction details for built-in-place tanks, including dimensions, reinforcement details and
- 3 calculations, and construction methods;
- 4 (D) identification number for State approved tanks;
- 5 (E) installation criteria and water tightness testing procedures with pass or fail criteria; and
- 6 (F) anti-buoyancy calculations and provisions; ~~and~~
- 7 (3) pump stations, including raw sewage lift stations and pump tanks:
- 8 (A) information required in Subparagraph (e)(2) of this Rule;
- 9 (B) specifications for pumps, discharge piping, pump removal system, and all related appurtenances;
- 10 (C) dosing system total dynamic head calculations, pump specifications, pump curves and expected
- 11 operating conditions (dosing, flushing, etc.);
- 12 (D) control panel, ~~float switches~~ floats and settings, ~~and~~ high-water alarm components, location, and
- 13 operational description under normal and high-water conditions;
- 14 (E) emergency storage capacity calculations, timer control settings, and provisions for stand-by
- 15 power; and
- 16 (F) lighting, ventilation, if applicable, wash-down water supply with back siphon protection and
- 17 protective fencing; ~~and~~
- 18 (4) advanced pretreatment systems:
- 19 (A) information required in Subparagraphs (e)(2) and (3) of this Rule;
- 20 (B) drawings and details showing all advanced pretreatment units and appurtenances (pumps, valves,
- 21 vents, removal systems, floats, etc.), piping (size and type), disinfection unit, blowers if needed,
- 22 location of control panels, height of control panels, etc; and
- 23 (C) documentation from the manufacturer supporting the proposed design and use of the advanced
- 24 pretreatment system to achieve specified effluent standards if not otherwise approved by the State
- 25 in accordance with Section .1700 of this Subchapter; ~~and~~
- 26 (5) dispersal field plans and specifications with design and construction details:
- 27 (A) final field layout, including ground elevations based on field measurements at a maximum of two-
- 28 foot intervals (or spot elevations when there is less than a two-foot elevation difference across the
- 29 site);
- 30 (B) trench plan and profile drawings, including cross sectional details, length, spacing, ~~connection,~~
- 31 connection details, ~~clean-out,~~ cleanouts, etc., and invert elevations for each lateral;
- 32 (C) manifolds, supply lines, pipe sizes, cleanouts and interconnection details and invert elevations;
- 33 (D) flow distribution device design;
- 34 (E) artificial drainage system locations, elevations, discharge ~~points~~ points, and design ~~details;~~ details,
- 35 as applicable;
- 36 (F) site preparation procedures;
- 37 (G) construction phasing and wastewater system ~~testing~~ phasing; ~~testing;~~ and

- 1 (H) final landscaping and compliance with erosion control requirements; ~~and~~
2 (6) materials specification for all materials to be used, methods of construction, means for assuring the quality
3 and integrity of the finished product; and
4 (7) operation and maintenance procedures for the Management Entity, inspection schedules, and maintenance
5 specifications for mechanical components and dispersal field vegetative cover.
6

7 *History Note: Authority G.S. 130A-335.*
8 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0305

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

The title of this Rule references Reports, but the text of the Rule does not. Please review.

What is the overall intent of this Rule? Is it to say what is required for all wastewater systems with a DDF less than or equal to 3,000 gpd or is this only applicable to those systems that are required to be prepared by an LSS or PE? I just want to be sure that I understand what is going on here. If it's for all wastewater systems, do you need the language regarding the licensed professionals?

Also, is it the site plans and specifications that are required to be prepared by a LSS or PE or the system itself? I think you are intending to speak to the plans and specifications, but that is not clear in this Rule.

On line 6-7, by "that are required to be prepared by an LSS or PE, if required in G.S. 89C or 89E" do you mean "that are required to be prepared by an LSS or PE in accordance with G.S. or 89E"?

On line 7, what is meant by "or other NC licensed professional"? I don't see that 130A allows for anyone else. Please review and clarify.

The introduction to Items (1) through (3) seems to be missing something. Please see my suggestion below.

Please consider revising this Rule to read as follows:

Plans and specifications for wastewater Wastewater systems with a DDF less than or equal to 3,000 gpd that are required to be prepared by an LSS or PE, **in accordance with G.S. 89C or 89E, shall include the information required by the following:** ~~if required in G.S. 89C or 89E, or other North Carolina licensed professional shall include the following information in the plans and specifications:~~

- (1) Rule .0304(b) of this Section;

Amber May
Commission Counsel

Date submitted to agency: September 6, 2018

- (2) ~~Rules .0304(c)(1) through (c)(2)~~ Rule .0304(c) of this Section for Special Site Evaluations and submittals prepared under Rule .0510 of this Subchapter; and
- (3) Rule .0304(e) of this Section for advanced pretreatment and IPWW.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0305 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0305 SUBMITTAL REQUIREMENTS FOR PLANS, SPECIFICATIONS, AND REPORTS**
4 **PREPARED BY LICENSED PROFESSIONALS FOR SYSTEMS LESS THAN OR EQUAL TO 3,000**
5 **GALLONS/DAY**

6 Wastewater systems with a DDF less than or equal to 3,000 gpd that are required to be prepared by an LSS or PE, if required
7 in G.S. 89C or 89E, or other North Carolina licensed professional shall include the following information in the plans and
8 specifications:

- 9 (1) Rule .0304(b) of this Section;
- 10 (2) ~~Rules .0304(e)(1) through (e)(2)~~ Rule .0304(c) of this Section for Special Site Evaluations and submittals
11 prepared under Rule .0510 of this Subchapter; and
- 12 (3) Rule .0304(e) of this Section for advanced pretreatment and IPWW.

13
14 *History Note: Authority G.S. 130A-335.*
15 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0401

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (c), line 11, please change "is the sum" to "shall be the sum"

In (e), please change "is not included" to "shall not be included"

I'm not sure that I understand what is going on in (e). Why would an owner include a laundry facility if it is not required? Please review and clarify if needed.

In (e), please add "the" before owner.

In (h), line 23, please change "which" to "that"

In (h), line 24, please change "is based" to "shall be based on"

In (h), line 26, how will it be determined whether excess concentrations of other constituents will result in a HSE classification? Is additional information set forth elsewhere? Does this only apply to those facilities with an asterisk? Please review and clarify.

Also, what is considered to be "excess concentrations"? Does this mean higher than those concentrations set forth in .0402?

When would it be appropriate to request an adjusted DDF?

Would it make sense to move the table under Paragraph (b) (as you have with other tables at first mention of them in the Rules. I would suggest then revising (b) to say something like "DDF for facilities other than dwelling units shall be in accordance with Table II as follows:"

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0401 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .0401 DESIGN DAILY FLOW

- (a) The minimum DDF for dwelling units shall be based on:
 - (1) 175 gpd for a one bedroom dwelling unit with no more than two ~~occupants~~, occupants and 400 square feet of living space or less; or
 - (2) 120 gpd per bedroom with a minimum of 240 gpd per dwelling unit or 60 gpd per person when occupancy exceeds two persons per bedroom, whichever is greater.
- (b) Table II shall be used to determine DDF for facilities other than dwelling units.
- (c) The minimum DDF from any facility other than a dwelling unit shall be 100 gpd. For facilities with multiple design units, the minimum DDF shall be 100 gpd per design unit. The DDF of the facility is the sum of all design unit flows.
- (d) ~~Design of DDF determination for~~ wastewater systems ~~for~~ with facilities not identified in this Rule shall be determined using available water use data, capacity of water-using fixtures, occupancy or operation patterns, and other measured data from the facility itself or a comparable facility.
- (e) Unless otherwise noted in Table II, the DDF for laundry facilities is not included. Where laundry is not specified for a facility in Table II, but is proposed to be provided, the DDF shall be adjusted to account for the proposed usage and machine water capacity. ~~Applicant~~ Owner shall provide cut-sheets for laundry machines proposed for use in facilities.
- (f) HVAC unit or ice machine condensate, gutter or sump pump discharge, water treatment system back flush lines, or similar incidental flows shall not discharge to the wastewater system, unless a PE designs the wastewater system for these flows.
- (g) Unless otherwise noted in Table II, the DDF per unit includes employees.
- (h) Food service facilities and other facilities that are projected to generate wastewater with constituent levels greater than ~~domestic strength~~, DSE, as defined in Rule .0402 of this Section, are identified in Table II with a single asterisk (*). Any facility which has a food service component that contributes 50 percent or more of the DDF shall be considered to generate HSE. Determination of wastewater strength is based on projected or measured levels of one or more of the following: BOD, TSS, FOG, or TN. Table III of Rule .0402 on this Section identifies the constituent limits for DSE. Excess concentrations of other constituents may result in a HSE classification on a site-specific basis.
- (i) A request for an adjusted DDF shall be made in accordance with Rule .0403 of this Section.

TABLE II. Design daily flow for Facilities

Facility type	Design daily flow
Commercial	
Airport, railroad stations, bus, and ferry terminals, etc.	5 gal/traveler, food preparation not included
Barber shops	50 gal/chair
Bars, cocktail lounges [∞]	20 gal/seat, food preparation not included
Beauty shops, style shops, hair salons	125 gal/chair
Bed and breakfast homes and inns	Dwelling unit DDF based on Paragraph (a) of this Rule plus

	120 gal/rented room which includes the following: Meals served to overnight guests Laundry for linens 150 gal/room with cooking facilities in individual rooms
Event Center∞	5 gal/person with toilets and hand sinks up to 4 hours; 10 gal/person with toilets and hand sinks up to 8 hours; <u>15 gal/person with toilets and hand sinks greater than 8 hours;</u> Add 5 gal/person with full kitchen
Markets open less than four days/week, such as a flea market or farmers market	30 gal/stall or vendor, food preparation not included
Marinas with no holding tank discharge included	30 gal/boat slip, with bathhouse 10 gal/boat slip, wet slips (slips on dock) 5 gal/boat slip, dry storage (warehouse)
Motels/hotels	120 gal/room includes the following: No cooking facilities in individual rooms other than a microwave or other similar devices No food service or limited food service establishment Laundry for linens 150 gal/room with cooking facilities in individual rooms
Offices and factories with no IPWW included	12 gal/employee/≤ 8 hr shift Add 2 gal/employee/hour for more than 8 hr shift Add 10 gal/employee for showers
Stores, shopping centers, and malls	100 gal/1,000 ft ² of retail sales area, food preparation not included
Warehouse (not retails sales warehouses)	100 gal/loading bay, or 12 gal/employee/≤ 8 hr shift Add 2 gal/employee/hr for more than 8 hr shift
Storage warehouse including self-storage facilities and does not include caretaker residence	12 gal/employee/≤ 8 hr shift Add 2 gal/employee/hr for more than 8 hr shift
Alcoholic beverage tasting areas with no process wastewater included	200 gal/1,000 ft ² of tasting area floor space, food preparation not included
Camps/Campgrounds	
Summer camps (overnight stay)*	60 gal/person, applied as follows: 15 gal/person/food preparation 20 gal/person/toilet facilities 10 gal/person/bathing facilities

	15 gal/person/laundry facilities
Day camps (not inclusive of swimming area bathhouse)*	20 gal/person; and 5 gal/meal served with multi use service; or 3 gal/meal served with single-service articles
Temporary Labor Camp or Migrant Housing Camp (overnight stay)*	60 gal/person, applied as follows: 15 gal/person/food preparation 20 gal/person/toilet facilities 10 gal/person/bathing facilities 15 gal/person/laundry facilities
Travel trailer/RV in an RV park*	100 gal/space
Recreational Park Trailer (Park Model 400 ft ² or less) in an RV park*	150 gal/space
Bathhouse for campsites and RV park sites with no water and sewer hook ups (maximum of four people per campsite)	70 gal/campsite
Food preparation facilities	
Food Establishments with multiuse articles*	25 gal/seat or 25 gal/15 ft ² of floor space open 6 hrs/day or less 40 gal/seat or 40 gal/15 ft ² of floor space open 6 to 16 hrs/day Add 4 gpd/seat for every additional hour open beyond 16 hours
Food Establishments with single service articles*	20 gal/seat or 20 gal/15 ft ² of floor space open 6 hrs/day or less 30 gal/seat or 30 gal/15 ft ² of floor space open 6 to 16 hrs/day Add 3 gpd/seat for every additional hour open beyond 16 hours
Food stand with up to eight seats, mobile food units, and commissary kitchens*	50 gal/100 ft ² of food stand, food unit, or food prep floor space; and 12 gal/employee/≤ 8 hr shift Add 2 gal/employee/hr for more than 8 hr shift
Other food service facilities*	5 gal/meal served with multiuse articles 3 gal/meal served with single service articles
Meat markets/fish markets with no process wastewater included*	50 gal/100 ft ² of floor space and 12 gal/employee/≤ 8 hr shift Add 2 gal/employee/hr for more than 8 hr shift
Health care and other care institutions	
Hospitals*	300 gal/bed
Rest homes, assisted living homes, and nursing homes*	150 gal/bed with laundry 75 gal/bed without laundry Add 60 gal/resident employee with laundry

Day care facilities	15 gal/person open \leq 12 hr shift without laundry Add 1 gal/person/hr open for more than 12 hrs per day Add 5 gal/person with full kitchen
Group homes, drug rehabilitation, mental health, and other care institutions	75 gal/person with laundry
Orphanages	60 gal/student or resident employee with laundry
Public access restrooms	
Convenience store, service station, truck stop*	250 gal/toilet or urinal meeting the following: Open less than 16 hours/day Food preparation not included Retail space not included
	325 gal/toilet or urinal meeting the following: Open 16 to 24 hours/day Food preparation not included Retail space not included
Highway rest areas and visitor centers*	325 gal/toilet or urinal; or 10 gal/parking space, whichever is greater
Recreational facilities	
Bowling center	50 gal/lane, food preparation not included
Community center, gym ∞	5 gal/person plus 12 gal/employee/ \leq 8 hr shift Add 2 gal/employee/hr for more than 8 hr shift; or 50 gal/100 ft ² , whichever is larger
Country club/golf course	10 gal/person 12 gal/employee/ \leq 8 hr shift Add 2 gal/employee/hr for more than 8 hr shift 3 gal/person for convenience stations Food preparation not included
Fairground	250 gal/toilet or urinal
Fitness center, spas, karate, dance, exercise ∞	50 gal/100 ft ² of floor space used by clientele, food preparation not included
Recreational park, State park, county park, and other similar facilities with no sports facilities	10 gal/parking space
Outdoor sports facilities, mini golf, batting cages, driving ranges, motocross, athletic park, ball fields, stadium, and other similar facilities	250 gal/toilet or urinal; \neq 5 gal/seat; or 10 gal/parking space, whichever is greater food preparation not included
Auditorium, theater, amphitheater, drive-in theater	2 gal/seat; or

	10 gal/parking space, whichever is greater Food preparation not included
Swimming pools and bathhouses	5 gal/person domestic waste only, bathing load of pool as alternative method of sizing
Sports facilities courts or other similar facilities	250 gal/toilet or urinal; or 50 gal/court, whichever is greater
Institutions	
Church or other religious institution*	2 gal/seat sanctuary only 3 gal/seat with warming kitchen in same structure as sanctuary 5 gal/seat with full kitchen in same structure as sanctuary
Public or private assembly halls used for recreation, regularly scheduled meetings, events, or amusement∞* (for churches, flow should be in addition to sanctuary structure flow)	2 gal/person with toilets and hand sinks; 3 gal/person with addition of a warming kitchen; 5 gal/person with full kitchen
Schools	
Day schools*	6 gal/student with no cafeteria or gymnasium 9 gal/student with cafeteria only 12 gal/student with cafeteria and gymnasium
After school program	5 gal/student in addition to flow for regular school day
Boarding schools	60 gal/student and resident employee with laundry

1 * Facility has potential to general HSE.

2 ∞Designer shall use the maximum building occupancy assigned by the local fire marshal in determining DDF unless another
3 method for determining DDF is proposed, including the justification for not using the maximum building occupancy.

4

5 *History Note: Authority G.S. 130A-335(e).*

6 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0402

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), please consider revising the first sentence to say something like "Septic tank effluent standards for DSE shall be as set forth in Table III of this Paragraph." Then move the rest of the language after the table.

In (a), line 4, please change "any constituent is considered" to "any constituent shall be considered"

In (a), what is considered to be a "normal or above-normal operating period"? How is this to be determined. Please provide some additional "based on" language.

In (a), please change "should" to either "shall" or "may" (I think you mean shall.)

In (a), what is meant by "a comparable facility"?

In (b), please change "either Subparagraph (b)(1) or (b)(2) of this Rule" with "the following" in order to provide an introduction to (b)(1) and (2). Also, is this an "either/or" situation? I read this as saying that wastewater systems for facilities that generate HSE must use a pretreatment and if they don't, then (b)(2) is applicable. Please review and clarify. Also, what about systems that don't meet one of the criteria listed in (b)(1)? I assume this is set forth elsewhere?

In (b)(2), what is meant by "A licensed professional, if required by G.S. 89C, 89E, or 89F"? Does this mean "if allowed by"? I'm not sure that I understand the use of "required" with regard to an exception to the general practice.

In (c), please change "do not apply" to "shall not apply"

In (d), what is meant by "a comparable facility"?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0402 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0402 SEPTIC TANK EFFLUENT CHARACTERISTICS**

4 (a) Septic tank effluent standards for DSE are listed in Table III. Effluent that exceeds these standards for any constituent is
5 considered HSE. When measured, effluent characteristics shall be based on at least two effluent samples collected during
6 normal or above-normal operating periods. The samples should be taken from the existing or a comparable facility on non-
7 consecutive days of operation. The samples should be analyzed for a minimum of BOD₅, TSS, TN, and FOG.

8
9 **Table III.** Septic tank effluent standards for DSE

Constituent	DSE (maximum) mg/L
BOD	≤ 350
TSS	≤ 100
TN*	≤ 100
FOG	≤ 30

10 *TN is the sum of TKN, nitrate nitrogen, and nitrite nitrogen

11
12 (b) ~~Facilities~~ Designs for facilities that generate HSE or propose an adjusted ~~design daily flow~~ DDF in accordance with Rule
13 .0403 shall ~~have to~~ address the issue of wastewater strength in accordance with either Subparagraph (b)(1) or (b)(2) of this
14 Rule.

15 (1) Wastewater systems that meet one of the following criteria shall utilize advanced ~~pretreatment~~
16 pretreatment, designed in accordance with Rule .1201(b) of this Subchapter, to produce DSE or better prior
17 to dispersal:

- 18 (A) DDF greater than ~~or equal to~~ 1,500 gpd and HSE;
- 19 (B) any proposed flow reduction in accordance with Rule .0403 of this Section where the DDF is
20 greater than ~~or equal to~~ 1,500 gpd; or
- 21 (C) any proposed flow reduction in accordance with Rule .0403 of this Section with projected or
22 measured effluent characteristics that exceed ~~domestic strength~~ DSE as identified in Table III of
23 this Rule.

24 (2) A licensed professional, if required in G.S. 89C, 89E, or 89F, may justify not using advanced pretreatment
25 by providing the following, as applicable:

- 26 (A) the system design is determined based upon a mass loading adjusted LTAR calculated using site-
27 specific projected or measured BOD₅ and TSS values. The adjusted LTAR calculations shall be
28 done as follows:

29
30
$$\text{MLAF} = \frac{300}{(\text{BOD}_5 + \text{TSS})} \text{ or one, whichever is greater}$$

31
$$\text{ALTAR} = \text{MLAF} \times \text{LTAR}$$

1 ~~If MLAF is greater than or equal to one, ALTAR = LTAR~~

2 ~~MLAF = $\frac{300}{(BOD_5 + TSS)}$~~

- 3
- 4 Where MLAF = mass loading LTAR adjustment factor
- 5 ~~ALTAR = adjusted LTAR~~
- 6 BOD₅ = measured or projected
- 7 TSS = measured or projected
- 8 LTAR = LTAR assigned by the authorized agent for DSE in
- 9 accordance with this ~~Section~~ Subchapter
- 10 ALTAR = adjusted LTAR
- 11

- 12 (B) site-specific nitrogen migration analysis when projected or measured effluent total nitrogen levels
- 13 are greater than 100 mg/L. Analysis shall demonstrate that the nitrate-nitrogen concentration at
- 14 the property line will not exceed 10 mg/L; and
- 15 (C) additional pretreatment to reduce FOG to less than or equal to 30 mg/L, including justification for
- 16 the proposed pretreatment method.

17 (c) The requirements of Paragraph (b) do not apply if the effluent for a specific facility identified in Rule .0401 of this

18 Section as having HSE has been measured in accordance with Paragraph (a) of this Rule and shown to be DSE.

19

20 *History Note: Authority G.S. 130A-335(e).*

21 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0403

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Just so I understand what is going on here, when are the various paragraphs applicable? Are they always applicable to all existing and new facilities. I'm a bit confused here as (a) speaks specifically do new or existing facilities in Table II, but (e) speaks to new or existing dwelling unites OR facilities in Table II. I'm not sure where (b), (c), and (d) go. Are they with (a)?

In (a), do you mean the authorized agent or the State, as opposed to and?

In (a), how will it be determined whether a proposed adjusted DDF will be approved? By "The authorized agent and the State may approve a proposed adjusted DDF relative to the values in Table II", do you mean "A DDF relative to the values in Table II may be adjusted in accordance with this Rule" or "An authorized agent or the State shall approve adjusted DDF if proposed in accordance with this Rule? Please review and clarify.

Also, where is Table II? Please provide the cross-reference to the Rule.

In (b), what is meant by "comparable facility"

In (b)(1), how is a "normal or above normal month" to be determined? Please define "normal."

Please provide some sort of introduction at the end of (b)(1) to (b)(1)(A) and (B). Perhaps something like "as follows"?

In (b)(2), please delete "an alternative method of determining the adjusted DDF is" as this language is unnecessary with your use of "or" at the end of (b)(1). Then, please change (b)(2) to match the language of (b)(1)(B) and say something like "the adjusted DDF shall be determined by multiplying the highest of the 12 monthly readings by 1.5, then by dividing by the number of days in the month."

In (c), what is an "extreme water-conserving fixture"? Is this an industry term?

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

In (c), to whom and when must cut sheets be provided?

In (e), please change “can” to “may”

In (e), what is meant by “may propose”? Is there an approval standard attached to this or does this simply mean that the PE can include this in his or her plans?

In (e)(1), “that” makes more sense to me than “and”. Why the change? Also, please change “which” to “that” in “which utilizes.”

In (e)(4), what is meant by “current rules”? Do you mean “the Rules of this Subchapter”?

How does (e)(5) go with 2013-413, s.34(c)? That appears to say that all proposed DDF for wastewater systems that are calculated to be less than 3,000 shall not require state approval.

Please delete (e)(6), it appears to be a legal conclusion for which you have no authority.

In (f), please change “can” to “may” in “A PE can propose”, also, how will it be determined whether the state will approve this? Will it always so long as the requirements of this Rule are met? Please review and clarify.

In (g), please change “from” to “set forth in”

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0403 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .0403 ADJUSTMENTS TO DESIGN DAILY FLOW

(a) The authorized agent and the State may approve a proposed adjusted DDF relative to the values in Table II for new or existing facilities. The water use information provided to support the proposed adjusted DDF shall meet the requirements of Paragraphs (b) or (c) of this Rule and may be provided by the owner, ~~applicant~~, designer, or PE. All adjustments to DDF shall meet the requirements of Paragraph (d) of this Rule.

(b) Adjustments to DDF based on documented data from the facility or a comparable facility shall meet the following criteria:

(1) the submitted data shall consist of a minimum of 12 consecutive monthly total water consumption readings, and 30 consecutive daily water consumption readings taken during a projected normal or above normal wastewater flow ~~month;~~ month;

(A) a hydraulic peaking factor shall be derived by dividing the highest monthly flow of the 12 monthly readings by the sum of the 30 consecutive daily water consumption readings. The hydraulic peaking factor shall not be less than one; and

(B) the adjusted DDF shall be determined by multiplying the numerical average of the greatest 10 percent of the daily readings by the hydraulic peaking factor; or

~~(2) a hydraulic peaking factor shall be derived by dividing the highest monthly flow of the 12 monthly readings by the sum of the 30 consecutive daily water consumption readings. The hydraulic peaking factor shall not be less than one;~~

~~(3) the adjusted DDF shall be determined by multiplying the numerical average of the greatest 10 percent of the daily readings by the hydraulic peaking factor; and~~

~~(4)~~(2) an alternative method of determining the adjusted DDF is to multiply the highest of the 12 monthly readings by 1.5 and then divide by the number of days in the month.

(c) Adjustments to DDF based on proposed use of extreme water-conserving fixtures shall be based upon the capacity of fixtures and documentation of the amount of flow reduction to be expected from their use in the proposed facility. Cut sheets of the proposed fixtures shall be provided.

(d) The proposed adjusted DDF ~~calculations~~ shall account for projected increased constituent concentrations due to their the reduction in water use. Calculations shall be provided to verify that the ~~conditions set forth~~ criteria in Rule .0402(b) Rules .0402 and .1201 of this ~~Section~~ Subchapter are met.

(e) In accordance with S.L. 2013-413, s.34 and S.L. 2014-120, s.53, a PE can propose an adjusted DDF for new or existing dwelling units or facilities identified in Table II in accordance with the following:

- (1) DDF less than those listed in Rule .0401 of this Section ~~that~~ and are achieved through engineering design which utilizes low-flow fixtures and low-flow technologies;
- (2) comparison of flow from proposed fixtures and technologies to flow from conventional fixtures and technologies;

- 1 (3) the signed and sealed proposal shall account for the site-specific impact on the wastewater system based on
2 projected increased constituent concentrations resulting from reduction in water use in accordance with
3 Rule .0402(b) of this Section;
- 4 (4) inspection of the existing wastewater system and verification that the system meets the current rules and
5 can accept the increase in constituent ~~loading~~; loading, as applicable;
- 6 (5) proposed adjusted DDF for wastewater systems determined to be less than 3,000 gpd shall not require State
7 review in accordance with Rule .0302(e) of this Subchapter unless requested by the LHD; and
- 8 (6) neither the State nor any LHD shall be liable for any damages caused by a system approved or permitted in
9 accordance with this Paragraph.

10 (f) A PE can propose, and the State approve an adjusted DDF for a facility made up of individual dwelling units when the
11 following criteria are met:

- 12 (1) DDF calculated in accordance with this Section is greater than 3,000 gpd;
- 13 (2) adjusted DDF is based on information in Paragraphs (b) or (c) of this Rule; and
- 14 (3) increase in wastewater strength is accounted for in accordance with Paragraph (d) of this Rule.

15 (g) Adjusted DDF based upon use of water-conserving fixtures shall apply only to design capacity requirements of the dosing
16 system and dispersal fields. The DDF from Rule .0401 of the Section Table H shall be used to determine minimum tank and
17 advanced pretreatment component capacities.

18
19 *History Note: Authority G.S. 130A-335(e).*

20 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0501

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (d), what is the "authorized agent" to make this determination. Please either provide some factors or provide some examples as to when the owner may be required to provide pits. An all inclusive list is not necessary, but some additional information to provide some meaning would be helpful.

In (e), is "site evaluations shall be completed in accordance with this Section" necessary? It seems to restate Paragraph (a).

Also, would it be accurate to combine (e) and (f) and say something like "Based on the evaluation of the soil and site features listed in Paragraph (a) of this Rule, each soil profile shall be classified as suitable or unsuitable in accordance with Rule .0509 of this Section"?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0501 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .0501 SITE EVALUATION

(a) Upon receipt of an application, an authorized agent shall investigate each proposed site in accordance with this Section to determine whether the site is suitable or unsuitable for the installation of a wastewater system. The field investigation shall include the evaluation of the following soil and site features with written field descriptions including:

- (1) topography, slope, and landscape position;
- (2) soil morphology:
 - (A) depth of horizons;
 - (B) texture;
 - (C) structure;
 - (D) consistence;
 - (E) color; and
 - (F) organic soils, as applicable;
- (3) SWC;
- (4) soil depth;
- (5) restrictive horizons;
- (6) the suitability for each profile description;
- (7) LTAR; and
- (8) available space.

(b) Soil profiles shall be evaluated at the site by borings, pits, or other means of excavation, and described to reflect variations in soil and site characteristics across both initial and repair areas.

(c) Soil profiles shall be evaluated and described to the following minimum depths:

- (1) 48 inches from the ground surface; or
- (2) to an unsuitable soil condition determined in accordance with this Section.

(d) Owners may be required to provide pits when necessary for evaluation of the site as determined by the authorized agent.

(e) Site evaluations shall be completed in accordance with this Section. Based on the evaluation of the soil and site features listed in Paragraph (a) of this Rule, each soil profile shall be classified suitable (S) or ~~unsuitable (U)~~; unsuitable.

(f) The authorized agent shall specify the overall site classification and suitability in accordance with Rule .0509 of this Section.

(g) The authorized agent shall specify the LTAR in accordance with Section .0900 of this Subchapter for sites classified suitable in accordance with Rule .0509 of this Section.

(h) A LC ~~or SWC~~ initially classified unsuitable may be reclassified suitable if the requirements of Rule .0509(b), (c), ~~(d)~~ ~~or~~ (d), (e), or (f) of this Section are met.

*History Note: Authority G.S. 130A-335(e).
Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0502

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), (b), (c), (d), (e), (f), (g), please delete "considered"

In (d), do you mean "shall be unsuitable", rather than "may be considered unsuitable"? If you mean "may", please provide some additional information as to how this determination will be made.

In (e), what is considered to be a "complex slope pattern"?

In (f), what sort of "site modifications"? Is there a cross-reference available? IF not, please provide some examples.

In (f), what is meant by "approved by an authorized agent"? Is there additional information regarding the approval elsewhere? If not, how is the authorized agent to make this determination? Please provide some factors.

I would suggest revising this Rule to put all of the unsuitable conditions together and say something like the following:

(b) ~~Unstable slopes~~ The following shall be ~~considered~~ unsuitable with respect to ~~topography.~~ topography.

(c) ~~—(1) slopes~~ Slopes greater than 65 ~~percent; percent~~ shall be considered unsuitable with respect to topography.

(d) ~~—(2) areas~~ Areas subject to surface water ~~convergence; concergence~~ may be considered unsuitable with respect to topography, unless the surface water can be diverted from the ~~site; and site.~~

(e) ~~Slope~~ complex slope patterns and slopes dissected by gullies that prohibit the design, installation, maintenance, monitoring, or repair of the wastewater ~~system.~~ system shall be considered unsuitable with respect to topography.

(c) The following shall be unsuitable with respect to landscape position:

(f) ~~Depressions shall be considered unsuitable with respect to landscape position~~

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

- (1) Depressions, except when, with site modifications, the site complies with the requirements of this Section and is approved by an authorized agent, agent, and
- (g) (2) a A jurisdictional wetland as determined by the U.S. Army Corps of Engineers or DEQ, ~~DEQ shall be considered unsuitable with respect to landscape position,~~ unless the proposed use is approved in writing by the U.S. Army Corps of Engineers or DEQ.

If this does not work for you, could you at least combine (b) and (c) to have it mirror (a) so that it reads "Unstable slopes greater than 65 percent shall be unsuitable with respect to topography"?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0502 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0502 TOPOGRAPHY AND LANDSCAPE POSITION**

- 4 (a) Uniform stable slopes less than or equal to 65 percent shall be considered suitable with respect to topography.
- 5 (b) Unstable slopes shall be considered unsuitable with respect to topography.
- 6 (c) Slopes greater than 65 percent shall be considered unsuitable with respect to topography.
- 7 (d) Areas subject to surface water convergence may be considered unsuitable with respect to topography, unless the surface
- 8 water can be diverted from the site.
- 9 (e) ~~Slope~~ Complex slope patterns and slopes dissected by gullies that prohibit the design, installation, maintenance,
- 10 monitoring, or repair of the wastewater system shall be considered unsuitable with respect to topography.
- 11 (f) Depressions shall be considered unsuitable with respect to landscape position except when, with site modifications, the
- 12 site complies with the requirements of this Section and is approved by an authorized agent.
- 13 (g) A jurisdictional wetland as determined by the U.S. Army Corps of Engineers or DEQ shall be considered unsuitable with
- 14 respect to landscape position, unless the proposed use is approved in writing by the U.S. Army Corps of Engineers or DEQ.
- 15 (h) For all sites, except where a drip dispersal system is proposed, additional required soil depth (slope correction) shall be
- 16 calculated using the following formula to determine site suitability for soil depth in accordance with Rule .0505 of this
- 17 Section:

18
$$SD = MSD + (TW \times S)$$

19 Where SD = soil depth required with slope correction (inches)

20 MSD = minimum soil depth (inches)

21 TW = ~~actual~~ proposed trench width (inches)

22 S = percent slope (in decimal form)

23

24 *History Note: Authority G.S. 130A-335(e).*

25 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0503

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Just so I'm clear, on line 4, will there ever be a circumstance that a LSS will review soil morphology in accordance with this Rule or is this just applicable to authorized agents?

In Item (1), line 9, please change "are" to "shall be"

ON line 15, is it accurate to say "when laboratory testing of soil texture is proposed"? IT appears to me that it's a given so long as the testing is in accordance with ASTM D6913 and D7928. Also, why not track the language of (3)(a) and simply say "Laboratory testing of the soil texture class may be substituted for field testing when the laboratory testing is conducted in accordance with..."

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0503 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0503 SOIL MORPHOLOGY**

4 The soil morphology shall be evaluated by an authorized agent in accordance with the following:

- 5 (1) Texture – The texture of each soil horizon in a profile shall be classified into ~~four general groups and~~ 12
6 soil textural classes based upon the relative proportions of sand, silt, and clay sized mineral particles. The
7 soil textural class shall be determined in the field by hand texturing samples of each soil horizon in the soil
8 profile in accordance with the criteria in Guide to Soil Texture by Feel, Journal of Agronomic Education,
9 USDA, NRCS. Table IV identifies the Soil Groups that are suitable with respect to texture.

10

11 **Table IV.** Soil Groups that are suitable with respect to texture

Soil Group	USDA Soil Textural Class	
I	Sands	Sand
		Loamy Sand
II	Coarse Loams	Sandy Loam
		Loam
III	Fine Loams	Silt
		Silt Loam
		Sandy Clay Loam
		Clay Loam
		Silty Clay Loam
IV	Clays	Sandy Clay
		Silty Clay
		Clay

12

13 The owner, LHD, or the State may substitute laboratory testing of the soil textural class for field testing
14 when the laboratory testing is conducted in accordance with ASTM D6913 and D7928. When laboratory
15 testing of soil texture is proposed, the LHD shall be notified a minimum of 48 hours before samples are to
16 be taken by the licensed professional if required by G.S. 89C, 89E, or 89F. The authorized agent and the
17 licensed professional shall be present when the samples are collected. Samples shall be representative of
18 the soil horizon being evaluated for texture. Split samples shall be made available to the LHD when
19 requested. The licensed professional shall document chain of custody and seal, sign, and date the first page
20 of the report.

- 21 (2) Structure – Soil structure shall be determined in the field for each soil horizon in the soil profile and shall
22 be classified and suitability determined in accordance with Table V. If an authorized agent determines that
23 the soil structure cannot be determined from auger borings, pits shall be required.

24

1

Table V. Soil structure and associated suitability classification

Structure	Size (diameter)	Classification
Granular	N/A	suitable
Blocky	≤ 1 inches (2.5 cm)	suitable
	> 1 inches (2.5 cm)	unsuitable
Platy	N/A	unsuitable
Prismatic	≤ 2 inches (5 cm)	suitable
	> 2 inches (5 cm)	unsuitable
Absence of structure: Single Grain	N/A	suitable
Absence of Structure: Massive (no structural peds)	N/A	unsuitable

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3

- (3) Clay Mineralogy – Clay mineralogy shall be determined in the field by evaluation of moist and wet soil consistence in accordance with the USDA-NRCS Field Book for Describing and Sampling Soils. The clay mineralogy shall be classified and suitability determined in accordance with Table VI.

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Table VI. Clay mineralogy (consistence) field method results, associated mineralogy, and suitability classification

Consistence	Mineralogy	Classification
Moist		
Loose, very friable	Slightly expansive	suitable
Friable, firm	Slightly expansive	suitable
Very firm or extremely firm	Expansive	unsuitable*
Wet		
Nonsticky, slightly sticky Nonplastic, slightly plastic	Slightly expansive	suitable
Moderately sticky Moderately plastic	Slightly expansive	suitable
Very sticky or very plastic	Expansive	unsuitable*

8

*If either the moist consistence or wet consistence is unsuitable then clay mineralogy is classified unsuitable.

9

10

11

- (a) Laboratory testing of ACEC may be substituted for field testing to determine clay mineralogy. The laboratory testing shall be conducted in accordance with USDA-NRCS Soil Survey Laboratory Information Manual, Soil Survey Investigations Report No. 45, and Kellogg Soil

12

13

1 Survey Laboratory Methods Manual, Soil Survey Investigation Report No. 42, page 229, or EPA
2 Method 9080. Table VII shall be used to determine the clay mineralogy suitability when
3 laboratory testing is used. When using laboratory testing to determine clay mineralogy, the clay
4 content of the soil must be greater than 35 percent and the organic matter component must be less
5 than 0.5 percent.

6
7 **Table VII.** Clay mineralogy laboratory method results, mineralogy, and associated suitability classification

ACEC (cmol/kg)	Mineralogy	Classification
≤ 16.3	Slightly expansive	suitable
> 16.3	Expansive	unsuitable

8
9 (b) When laboratory testing of clay mineralogy is proposed, the LHD shall be notified a minimum of
10 48 hours before samples are to be taken by the licensed ~~professional~~. professional, if required by
11 G.S. 89C, 89E, or 89F. The authorized agent and the licensed professional shall be present when
12 the samples are collected. Samples shall be representative of the soil horizon being evaluated for
13 clay mineralogy. Split samples shall be made available to the LHD when requested. The licensed
14 professional shall document chain of custody and seal, sign, and date the first page of the report.

15 (4) Organic Soils - Organic soils shall be considered unsuitable.

16
17 *History Note:* Authority G.S. 130A-335(e).

18 Eff. October 1, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0504

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Overall, this Rule is rather bulky, which also makes it a bit hard to comprehend. Please review and simplify where you can. Also, there are a lot of parenthesis in this Rule, which I find make it harder to read. Please review and delete or put in the text of the Rule itself where you can. I think in some places, the language appears to be important to the mandate, but in others, it appears to simply be superfluous. There also appears to be some duplicative, unnecessary language. Please review.

In some places in this Rule, you've used "shallowest" in other places you have used "highest." Please be consistent.

Overall, when is each procedure to be used. I would suggest putting that at the beginning of the Paragraph regarding each individual procedure and then say what is required of the procedure.

In making the determinations of soil wetness, is there an incorporation available such as the Guide Soil Texture by Feel that you have referenced for soil morphology in .0503? You've referenced the Munsell Color System, but I have no idea what this is or where to find it. If it is appropriate to incorporate this by reference please do so in .0103. If it is not, please provide some additional information as to what this is, where it can be found, etc.

What is meant by "shall take precedence"? Does this mean that the shallowest depth after determining the SWC in accordance with either (b)(1) or (2) shall be used? If so, say that. As written, it is unclear whether this is a requirement or simply an option.

In (b)(2), what does artificial drainage have to do with determining the SWC? Is the intent here that artificial drainage could improve the conditions and change the determination? I just don't understand its placement here, unless it directly relates to the determination of SWC under (b)(2). Please review and clarify.

Please consider deleting the lead in language (i.e. "Site Suitability as to SWC:", "Alternative Procedures for SWC Determination:") as you have not done this elsewhere in

Amber May

Commission Counsel

Date submitted to agency: September 6, 2018

your Rules. I understand the need when you get into the different modeling procedures, but please be consistent where you can.

In (c), please delete “also” in “may also be”

In (c), please consider deleting “A SWC determined by Subparagraph (b)(1) or (b)(2) of this Rule may also be determined by alternative procedures for SWC determination in accordance with Paragraph (d) of this Rule” and add something like “as an alternative to the SWC determination set forth in Subparagraph (b)(1) or (b)(2), an owner may...” to (d).

In (c), is the reclassification regarding .0509 only applicable to the “initial suitability of the site” as referenced in this Paragraph? If so, I think it’s fine, if not, I would suggest making this its own Paragraph.

In (d), please add “as set forth in” before “Paragraphs”

In (d), line 34, what is meant by “This determination shall take precedence...” Does this simply mean that these results shall be used, if this testing is done? If so, say that.

In (d), please consider making “Determination by one of the monitoring or modeling procedures [set forth in this Rule] shall be required when:” its own paragraph. That way, you aren’t losing the different mandates (the alternative option versus the mandated requirement.)

In (e)(4), what is meant by “the authorized agent shall be given the opportunity to conduct a site visit and verify the appropriateness of the proposed plan”? Does this mean that the authorized agent shall conduct a site visit to ensure compliance with these Rules? If so, please say that.

Also, when are the visits to happen. I’m a bit confused, based on the language of (e)(4) in its entirety as it appears to have some information in there that does not belong (such as “Well locations shall include portions of the initial repair dispersal field areas containing the most...”) Should this language be pulled out and put elsewhere in this Paragraph?

In (e)(4), please change “soil/site” to “soil or site” or “soil and site”, whichever is meant.

In (e)(4), how will it be determined whether the plan will be approved

In (e)(4), line 27, delete “specific”

What is the overall intent of (e)(5), I don’t understand what the first sentence is actually requiring beyond “Wells shall extend a minimum of five feet below the naturally occurring soil surface or existing ground surface.” I don’t understand the intent of the rest of the sentence. Also, what is the significance of July 1, 1977? Is this date still needed? If so, what about after 1977? Does this go along with .0909(d)?

In (e)(5), please change “which” to “that” on line 31

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

In (e)(5), how will it be determined whether shallower wells will be required? DO you mean “shall” versus “may”? Also, what is meant by “anticipated”? Is this based on the “continuous record of the water table”?

In (e)(6), please change “is” to “shall be” in “is required”

In (e)(6), delete “(the end of the well monitoring period.)”

A lot of (e)(7) appears to be unnecessary. Please review and clarify the requirements on your regulated public. For example, are they required to use the online interface (if so, change “may” to “shall”), is all of the extra stuff about the state climate office necessary (lines 6-10), what is the actual method to be used and when it is required to be used. I got lost in the language and am not sure that I understand what is being required here.

In (e)(7), what is meant by “can ascertain” and “will need”? Please use “may” and “shall” when writing rules and say what is required.

In (e)(7), lines 14-17 also appear to be unnecessary as they do not appear to be providing a directive to your regulated public

In (f), by “the following monitoring procedures and interpretation method”, do you mean “the procedures set forth in this Paragraph”?

In (f), what is meant by “shall take precedence over the results from the Direct Monitoring Procedure”? Do you mean that these must be used instead of the results obtained under the Direct Monitoring Procedure?

In (f)(2), please provide some sort of introduction to parts (f)(2)(A) through (E).

In (f)(2)(A), what is meant by “closest available”? Closest available to what?

In (f)(2)(A), how is it to be determined what an equivalent measuring station is? Can you instead say something like “... over a minimum 30-year period from a measuring station site, such as the National Weather Service or State Climate Office of North Carolina.” This is also in (g)(1).

Have you incorporated Reports 333 and 342 by reference? Are they included in .0103? How about the Drainmod Users Guide? This is particularly an issue with the language in (g)(2).

In (h), what is meant by “predict daily water levels over a minimum of a 30-year historic time-period”? I’m reading “predict” to be in the future, but “historic” to be in the past. Is this known to your regulated public? Please review and clarify. This question applies elsewhere in this Rule.

In (h), I understand that the approval will occur on a case by case basis, but what criteria will be used in making this determination? If it’s found to be as accurate as DRAINMOD, will it be approved?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0504 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .0504 SOIL WETNESS CONDITIONS

(a) SWC caused by a seasonal high-water table, a perched water table, tidal water, seasonally saturated soil, or by lateral water movement shall be determined by field observations of soil wetness indicators, and may be further characterized by well monitoring, computer modeling, or a combination of monitoring and modeling as required by this Rule. ~~All sites shall be evaluated by an authorized agent for soil wetness indicators.~~

(b) Soil Wetness Indicators:

(1) A SWC shall be determined by the presence of colors with a value 4 or more and a of chroma 2 or less (Munsell Color System) at greater than or equal to two percent of soil volume as redox depletions or as the ~~in mottles or~~ matrix of a horizon. Colors of chroma 2 or less that are lithochromic features shall not be considered indicative of a SWC; or

(2) A SWC shall be determined by the observation or indication of saturated soils, a perched water table, or lateral water movement flowing into a bore hole, monitoring well, or open excavation above a less permeable horizon, that may occur without the presence of colors with a value 4 or more or chroma 2 or less at greater than or equal to two percent of soil volume as redox depletions or as the matrix of a horizon. ~~of free flowing water from saturated soils into open bore holes where the soils lack redoximorphic features indicative of soil wetness. Free flowing water may reflect either lateral flow of perched water or other oxyaquic conditions. Artificial drainage may be proposed in accordance with Rule .0509(d) of this Section to overcome a SWC resulting from lateral water movement due to saturated soils, a perched water table, or other oxyaquic conditions. Artificial drainage shall be designed and installed in accordance with Rule .0910 of this Subchapter.~~

(3) The shallowest depth to SWC determined by Subparagraph (b)(1) or (b)(2) of this Rule shall take precedence.

(c) Site Suitability as to SWC: Initial suitability of the site as to SWC shall be determined based upon the observations of Soil Wetness Indicators in accordance with Paragraph (b) of this Rule. Sites where the SWC is less than ~~48~~ 12 inches below the naturally occurring soil ~~surface~~ surface, or less than 18 inches if more than six inches of Group I soils are present, shall be considered unsuitable with respect to SWC. A SWC determined by Subparagraph (b)(1) or (b)(2) of this Rule may also be determined by alternative procedures for SWC determination in accordance with Paragraph (d) of this Rule or reclassified in accordance with Rule .0509 of this Subchapter.

(d) Alternative Procedures for SWC Determination: The owner may submit documentation that the SWC and resultant site classification be reclassified by monitoring, computer modeling, or a combination of monitoring and modeling, in accordance with Direct Monitoring Procedure, Monitoring and Modeling Procedure, or Modeling Procedure Paragraphs (e), (f), (g), or (h) of this Rule. This determination shall take precedence over the observations made in accordance with Soil Wetness Indicators in Paragraph (b) of this Rule. Determination by one of these Monitoring or Modeling procedures shall also be required when:

(1) the Owner proposes to use a wastewater system requiring a greater depth to a SWC than the depth observed by Soil Wetness Indicators in accordance with Paragraph (b) of this Rule; or

1 (2) the Owner proposes to use sites with Group III or IV soil within 36 inches of the naturally occurring soil
2 surface and where artificial drainage systems are existing or are proposed or on such sites when fill is
3 proposed to be used in conjunction with artificial drainage systems. Final determination of SWC for these
4 sites shall be made in accordance with the Modeling Procedures in Paragraphs (g) and (h) of this Rule.

5 (e) Direct Monitoring Procedure: SWC may be determined by observation of the water surface elevations in wells during
6 periods of high-water elevations utilizing the following monitoring procedures and interpretation method.

7 (1) The owner shall notify the LHD of the intent to monitor water surface elevations by submitting a proposal
8 prepared by a licensed professional, if required in G.S. 89C, 89E, or 89F, that includes a site plan, well and
9 soil profile at each monitoring location, and a monitoring plan no later than 30 days prior to the start of the
10 monitoring period. SWC and rainfall monitoring (including all forms of precipitation) shall be conducted
11 by the licensed professional or owner. The owner shall submit the name(s) of the licensed professional(s)
12 performing any monitoring on their behalf to the LHD.

13 (2) The site plan shall show proposed sites for wastewater systems, the longitude and latitude of the site,
14 location of monitoring wells, and all drainage features that may influence the SWC, and specify any
15 proposed fill and drainage modifications.

16 (3) The monitoring plan shall indicate the proposed number, installation depth, screening depth, soil and well
17 profile, materials, and installation procedures for each monitoring well, and proposed method of analysis.
18 A minimum of three water level monitoring wells shall be installed for water surface observation at each
19 site. Sites handling systems with a DDF greater than 600 gpd shall have one additional well per 600 gpd
20 increment.

21 (4) The authorized agent shall be given the opportunity to conduct a site visit and verify the appropriateness of
22 the proposed plan. Well locations shall include portions of the initial and repair dispersal field areas
23 containing the most limiting soil/site conditions. Prior to installation of the wells the authorized agent shall
24 approve the plan. If the plan is denied a signed, written report shall be provided to the owner describing the
25 reasons for denial and the specific changes necessary for approval of the monitoring plan.

26 (5) Wells shall extend a minimum of five feet below the naturally occurring soil surface, or existing ground
27 surface for fill installed prior to July 1, 1977 meeting the requirements for consideration of a site with
28 existing fill in accordance with G.S. 130A-341 and the rules of this Subchapter. However, a well or wells
29 which extend(s) down only 40 inches from the ground surface may be used if a continuous record of the
30 water table is provided for a minimum of half of the monitoring period. One or more shallower wells may
31 be required on sites where shallow lateral water movement or perched SWC is anticipated.

32 (6) Water elevation in the monitoring wells shall be recorded daily from January 1 to April 30, taken at the
33 same time during the day (plus or minus three hours). A rain (precipitation) gauge is required within two
34 miles of the site. Daily rainfall shall be recorded beginning no later than December 1 through April 30 (the
35 end of the well monitoring period).

36 (7) Interpretation Method for Direct Monitoring Procedure: The following method of determining depth to
37 SWC from water surface observations in wells shall be used when the 120-day cumulative rainfall for the

1 monitoring period ending on April 15 equals or exceeds the site's long-term (historic) rainfall for this same
 2 period with a 30 percent recurrence frequency (wetter than the ninth driest year of 30, on average). The
 3 State Climate Office of North Carolina online interface may be used to determine the recurrence frequency
 4 of the 120-day April 15 cumulative rainfall for the monitored site. The State Climate Office compares their
 5 estimate of its value to recurrence frequency projections they make using a hybrid approach, which
 6 includes the most recent three decades of normalized historic rainfall data from established weather
 7 stations, adjusted using standardized procedures so that these estimates are on an approximate five
 8 kilometer grid that covers the area. This comparison is available by the Climate Office as the 120-day April
 9 15 SPI. At the end of the monitoring period, the owner's licensed professional can ascertain this SPI from
 10 the State Climate Office's website: <http://climate.ncsu.edu/drought/map> by clicking on the map pixel that
 11 most closely corresponds with the monitored site's location. The licensed professional will need to adjust
 12 the URL coordinates to ascertain results that are specific to the site's latitude and longitude. The State will
 13 provide assistance in obtaining this information. The State may also identify alternative resources to derive
 14 the monitoring period rainfall recurrence frequency for monitored sites if newer resources become
 15 available that provide results with equal or better accuracy as relayed by the State Climate Office in the
 16 future. The SWC shall be determined as the highest level that is continuously saturated for the number of
 17 consecutive days during the January through April well monitoring period shown in Table VIII.

18
 19 **TABLE VIII.** Rainfall SPI and exceedance probability during monitoring season related to number of consecutive days
 20 of continuous saturation

SPI and Recurrence Frequency Range 120-Day Cumulative on April 15 Rainfall	Number of Consecutive Days of Continuous Saturation for Soil Wetness Condition
SPI -0.543 to 0 (30% to 49.9% duration)	3 days or 72 hours
SPI 0 to 0.545 (50% to 69.9% duration)	6 days or 144 hours
SPI 0.546 to 0.864 (70% to 79.9% duration)	9 days or 216 hours
SPI ≥ 0.865 (80% to 100% duration)	14 days or 336 hours

- 21
 22 (8) If monitoring well data is collected during monitoring periods that span multiple years, the year which
 23 yields the highest (shallowest) SWC shall ~~be applicable.~~ apply.
- 24 (f) Monitoring and Modeling Procedure: A combination of monitoring and modeling may be used to determine a SWC
 25 utilizing the following monitoring procedures and interpretation method. This procedure may also be followed to re-evaluate a
 26 SWC that has previously been determined by the Direct Monitoring Procedure in accordance with Paragraph (e) of this Rule.
 27 When this procedure is used, the results shall take precedence over the results from the Direct Monitoring Procedure.
- 28 (1) The procedures described for the Direct Monitoring Procedure in Subparagraphs (e)(1) through (e)(6)
 29 of this Rule shall be used to monitor water surface elevation and precipitation for determining SWC by a
 30 combination of direct observation and ~~modeling, modeling, except that the~~ The rainfall gauge and each

1 monitoring well shall use a recording device and a data file (DRAINMOD compatible) shall be submitted
2 with the report to the LHD (devices shall record at a minimum rainfall hourly or daily and well water level
3 daily).

4 (2) The groundwater simulation model DRAINMOD shall be used to predict daily water levels over a 30-year
5 historic time period after the model is calibrated using the water surface and rainfall observations made on-
6 site during the monitoring period. The SWC shall be determined as the highest level predicted by the model
7 to be saturated for a 14-day continuous period between January 1 and April 30 with a recurrence frequency
8 of 30 percent (an average of nine years in 30).

9 (A) Weather input files, required to run the DRAINMOD, shall be developed from hourly or daily
10 rainfall gauge data taken within two miles of the site and from daily temperature and hourly or
11 daily rainfall data collected over a minimum 30-year period from the closest available National
12 Weather Service, State Climate Office of North Carolina, or equivalent, measuring station to the
13 site. DRAINMOD weather data files on file with the State shall be made available upon request to
14 the owner or owner's licensed professionals. Daily maximum and minimum temperature data for
15 the January 1 through April 30 monitoring period, plus for a minimum of 30 days prior to this
16 period, shall be obtained from the closest available weather station.

17 (B) Soil and site inputs for DRAINMOD, including a soils data file closest to the soil series
18 identified, depths of soil horizons, in-situ Ksat of each horizon, depth and spacing of drainage
19 features and depression storage, shall be selected in accordance with procedures outlined in the
20 DRAINMOD Users Guide, and guidance is also available in Reports 333 and 342 of the
21 University of North Carolina Water Resources Research Institute. DRAINMOD soil data files on
22 file with the State shall be made available upon request to the owner or owner's licensed
23 professionals.

24 (C) Inputs shall be based upon site-specific soil profile descriptions. Soil and site input factors shall
25 be adjusted during the model calibration process to achieve the best possible fit as indicated by
26 least squares analysis of the daily observations over the whole monitoring period (mean absolute
27 deviation between measured and predicted values no greater than six inches), and to achieve the
28 best possible match between the highest water table depth during the monitoring period (measured
29 vs predicted) that is saturated for 14 consecutive days.

30 (D) For sites intended to receive ~~over~~ greater than 1,500 gpd, the SWC determination using
31 DRAINMOD shall take into consideration the impact of wastewater application on the projected
32 water table surface.

33 (E) The groundwater simulation analysis shall be prepared and submitted to the LHD by ~~individuals~~
34 licensed professionals, if required in G.S. 89C, 89E, or 89F, qualified to use DRAINMOD by
35 training and ~~experience and who are licensed in North Carolina if required in G.S. 89C, 89E, or~~
36 89F. experience. The LHD or owner may request a technical review by the State prior to approval
37 of the SWC determination.

1 (g) Modeling Procedure: A SWC may be determined by application of DRAINMOD to predict daily water levels over a
2 minimum 30-year historic time period after all site-specific input parameters have been obtained, as outlined in the
3 DRAINMOD Users Guide. This modeling procedure shall be used when a groundwater lowering system is proposed for a site
4 with Group III or IV soils within 36 inches of the naturally occurring soil surface. This procedure shall also be used to
5 evaluate sites with Group III or IV soils within 36 inches of the naturally occurring soil surface, where the SWC was initially
6 determined using a procedure described in Paragraphs (e) or (f) of this Rule and where artificial drainage systems are
7 proposed or when fill is proposed to be used in conjunction with artificial drainage systems. The SWC shall be determined as
8 the highest level predicted by the model to be saturated for a 14-day continuous period between January 1 and April 30 with a
9 recurrence frequency of 30 percent (an average of a minimum of nine years in 30).

10 (1) Weather input files, required to run DRAINMOD, shall consist of hourly rainfall and daily temperature
11 data collected over the entire period of record but for a minimum of a 30-year period from the closest
12 available National Weather Service, State Climate Office of North Carolina, or equivalent, measuring
13 station to the site. DRAINMOD weather data files on file with the State shall be made available upon
14 request to the owner or owner's licensed ~~professionals.~~ professionals.

15 (2) Soil and site inputs for DRAINMOD, including a soils data file closest to the soil series identified, depths
16 of soil horizons, in-situ Ksat of each horizon, depth and spacing of proposed drainage features and surface
17 storage and drainage parameters, shall be selected in accordance with procedures outlined in the
18 DRAINMOD User's Guide. DRAINMOD soils data files on file with the State shall be made available
19 upon request to the owner or owner's consultants. Inputs shall include:

20 (A) Soil input file with the soil moisture characteristic curve and data for the soil profile that is closest
21 to the described soil profile that is present on the site;

22 (B) Soil horizon depths determined on site;

23 (C) Site measured or proposed drain depth and spacing, and drain outlet elevation;

24 (D) In-situ Ksat measurements for a minimum of three representative locations on the site and at each
25 location for the three most representative soil horizons within five feet of the surface. In-situ Ksat
26 measurements shall be for one representative soil horizon at or above redoximorphic depletion
27 features and two representative soil horizons at and below redoximorphic concentration features
28 at each location on the site;

29 (E) All other model parameters based upon the DRAINMOD User's Guide, or other accepted values
30 consistent with the simulation model; and

31 (F) A sensitivity analysis shall be conducted for the following model parameters: soil input files for a
32 minimum of two other most closely related soil profiles; in-situ Ksat of each horizon; drain depth
33 and spacing; and surface storage and depth of surface flow inputs. The sensitivity analysis shall
34 be used to evaluate the range of soil and site characteristics for choosing input parameters related
35 to the soil profiles, Ksat input values based upon the range of in-situ Ksat values measured on the
36 site, and inputs for surface and subsurface drainage features based upon the range of possible
37 elevations and distances that occur or may occur after installation of improvements. The

1 sensitivity analysis shall establish which parameters are most critical for determination of the
2 depth to SWC. Conservative values for the most critical parameters shall be used in applying the
3 model to the site.

4 (3) For sites designed to receive over 600 gpd, the SWC determination using DRAINMOD shall take into
5 consideration the impact of wastewater application on the projected water table surface.

6 (4) The groundwater simulation analysis shall be prepared and submitted to the LHD by ~~individuals licensed~~
7 professionals, if required in G.S. 89C, 89E, or 89F, qualified to use DRAINMOD by training and
8 ~~experience and who are licensed in North Carolina if required in G.S. 89C, 89E, or 89F.~~ experience. The
9 LHD shall submit the groundwater simulation analysis to the State for technical review prior to approval of
10 the SWC determination.

11 (h) Other modeling procedures may be used to determine the SWC and to predict daily water levels over a 30-
12 year historic time period. Documentation shall be provided showing that the proposed model and prediction are at least as
13 accurate as the prediction from ~~DRAINMOD~~, DRAINMOD. The DRAINMOD prediction shall be calculated in accordance
14 with Paragraph (g) of this Rule. Documentation to support the basis for applying another modeling procedure shall be
15 provided in accordance with Rule .0509(f) of this Section and shall be reviewed and approved for use on a site-specific basis
16 by the State.

17 (i) A report of the investigations made for the Direct Monitoring Procedure, Monitoring and Modeling Procedure or
18 Modeling Procedure in accordance with Paragraphs (e), (f), or (g) of this Rule shall be prepared prior to approval of the SWC
19 determination. Reports prepared by a licensed professional shall bear the professional seal of the person(s) whom conducted
20 the investigation. A request for technical review of the report by the State shall include digital copies of monitoring data and
21 digital copies of model inputs, output data, and graphic results, as applicable.

22
23 *History Note: Authority G.S. 130A-335(e).*

24 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0505

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Please consider deleting "considered" in (a) and (b).

Please consider moving (c) first and making it Paragraph (a).

In (b), why has "unsuitable" been used before "sapolite"? I don't understand its use here.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0505 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0505 SOIL DEPTH ~~TO ROCK, SAPROLITE, OR PARENT MATERIAL~~**

4 (a) Soil ~~depths~~ depth to saprolite, rock, or parent material greater than or equal to 18 inches ~~or greater~~ shall be considered
5 suitable.

6 (b) Soil ~~depths~~ depth to unsuitable saprolite, rock, or parent material less than 18 inches shall be considered unsuitable.

7 (c) The soil depth shall be measured from the naturally occurring soil surface to rock, saprolite, or parent material.

8

9 *History Note: Authority G.S. 130A-335(e).*

10 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0506

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Are the pits referenced in (b) those that may be required in accordance with .0501(d)?

In (b), is "locations approved by the authorized agent" necessary"? If so, how are the locations to be approved?

In (b)(1), what is the "unsuitable LC"? I thought that this Rule came into play when the soil depth resulted in an unsuitable classification.

In (b)(1), how will it be determined whether the 24 inch separation will be reduced? Can it always be reduced if suitable soil horizons are present based on the calculation? If so, please consider saying something like "a 24-inch minimum separation shall be maintained in saprolite from the infiltrative surface to an unsuitable LC unless any of the vertical separation consists of suitable soil horizons. In which case, the 24-inch separation may be calculated based on one-inch suitable soils being equivalent to two inches of saprolite"

In (b)(1), please change "suitable soil is equivalent" to "suitable soil being equivalent"

In (b)(2), rather than "in the 24 inches (or less if combined with soil) of saprolite" can you say something like "in the saprolite" or "in the minimum saprolite required by subparagraph (b)(1) of this Rule"?

In (b)(2)(G), when will split samples be requested? Can you provide some examples as to when this may occur?

Is (c) necessary? I read this rule to provide an exception to the soil depth when it is found to be unsuitable in .0505. So, this seems to say the same thing, but in a different way.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0506 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0506 SAPROLITE**

4 (a) Sites classified unsuitable due to depth to saprolite may be reclassified suitable in accordance with this Rule.

5 (b) Sites with saprolite shall be classified as suitable if an investigation of the site using pits at locations approved by the
6 authorized agent confirms that the following conditions are met:

7 (1) a 24-inch minimum vertical separation ~~distance~~ shall be maintained in saprolite from the infiltrative surface
8 to an unsuitable LC. If any of the vertical separation consists of suitable soil, soil horizons, then the 24-inch
9 separation may be reduced. The minimum vertical separation shall be calculated based on one-inch of
10 suitable soil is equivalent to two inches of saprolite; and

11 (2) the following physical properties and characteristics shall be present in the 24 inches (or less if combined
12 with soil) of saprolite below the proposed infiltrative surface:

13 (A) the saprolite texture as determined in the field by hand texturing samples of each horizon, shall be
14 sand, loamy sand, sandy loam, loam, or silt loam;

15 (B) the clay mineralogy shall be suitable in accordance with Rule .0503(3) of this Section;

16 (C) greater than 2/3 of the saprolite by volume shall have a moist consistence of loose, very friable,
17 friable, or firm;

18 (D) the saprolite wet consistence shall be nonsticky or slightly sticky and nonplastic or slightly
19 plastic;

20 (E) the saprolite shall be in an undisturbed, naturally occurring state;

21 (F) the saprolite shall have no open and continuous joints, quartz veins, or fractures relic of parent
22 rock; and

23 (G) ~~lab~~ laboratory determinations may be used to supplement field determinations. Split samples shall
24 be made available to the LHD when requested.

25 (c) Saprolite that does not meet all ~~of~~ the criteria in Paragraph (b) of this Rule shall be considered unsuitable.

26

27 *History Note: Authority G.S. 130A-335(e).*

28 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0507

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Please delete "considered" in (a) and (b).

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0507 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0507 RESTRICTIVE HORIZONS**

4 (a) Soils in which restrictive horizons are three inches or more in thickness and at depths greater than or equal to 18 inches
5 below the naturally occurring soil surface shall be considered suitable.

6 ~~(a)(b)~~ Soils in which restrictive horizons are three inches or more in thickness located at depths less than 18 inches below the
7 naturally occurring soil surface shall be considered unsuitable.

8 ~~(b) Soils in which restrictive horizons are three inches or more in thickness and at depths greater than 18 inches below the~~
9 ~~naturally occurring soil surface shall be considered suitable.~~

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11 *History Note: Authority G.S. 130A-335(e).*

12 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0509

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Please consider combining (b) through (e) as subparagraphs of (b) with introductory language such as "Sites classified as unsuitable may be reclassified as suitable as follows:"

Please review (f) in light of .0510. It seems a lot of the information contained in this Paragraph is already covered by .0510. Please consider saying something like "The owner may provide a Special Site Evaluation for sites that are classified unsuitable to show that it can overcome the suitable site conditions and function in accordance with this Subchapter."

If you don't use this language, what is meant by "may" on line 17. At whose discretion is this? The owner? The LHD's?

In (f), is "The state shall review a Special Site Evaluation if requested by the LHD" necessary? Isn't this covered by statute?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0509 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .0509 SITE SUITABILITY AND CLASSIFICATION

- (a) The most ~~limiting condition~~ LC determined in Rules .0502 through .0508 of this Section shall be used to determine the overall site classification as suitable or unsuitable. The overall site shall be classified suitable if there is sufficient soil and area for a wastewater system that complies with the minimum vertical separation ~~distance~~ to a LC or ~~SWC~~ consistent with this Subchapter.
- (b) Sites classified unsuitable due to SWC may be reclassified suitable when site modifications are made that meet the requirements in Sections .0900 or .1200 of this Subchapter for the minimum vertical separation ~~distance~~ to the water table.
- (c) Sites classified unsuitable due to SWC because of the presence of lateral water movement may be reclassified suitable if installation of an interceptor drain will intercept and ~~direct~~ divert lateral water to prevent saturation of the wastewater system.
- (d) Sites classified unsuitable may be reclassified suitable with the use of advanced pretreatment based on the modified siting and sizing criteria in Section .1200 of this Subchapter.
- (e) Sites classified unsuitable may be reclassified suitable with the use of a wastewater system identified or approved in Sections ~~.0900, .1500, .0900~~ or .1700 of this Subchapter.
- (f) For sites that are classified as unsuitable in accordance with this Rule, a Special Site Evaluation in accordance with Rule .0510 of this Section may be provided. ~~A The Special Site Evaluation in accordance with Rule .0510 of this Section shall be provided submitted to the authorized agent that demonstrates and demonstrate that the proposed wastewater system can be expected to overcome the unsuitable site conditions and function in accordance with this Subchapter. The written documentation shall be prepared and submitted to the LHD by a licensed professional if required in G.S. 89C, 89E, or 89F. The proposed wastewater system and artificial drainage system, if applicable, shall be designed, installed, operated, and maintained in accordance with this Subchapter. The State shall review a Special Site Evaluation if requested by the LHD.~~
- (g) An IP shall not be issued for a site which is classified unsuitable.

*History Note: Authority G.S. 130A-335(e).
Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0510

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), please delete or define "adversely"

I don't understand (a)(5). Is this saying that a special site evaluation will be required with advanced pretreatment in any of the circumstances in (5)(A) through (H)? I think it is just the wording that is causing me some confusion because it is not consistent with the rest of the Rule. Should this be something like "Advanced pretreatment meeting the following site conditions:" Also, was this added as a result of public comment? Is this requirement already set forth elsewhere in these proposed rules or statute?

In (a)(5)(D), please change "which" to "that" in "which requires"

In (a)(5)(F), please delete or define "directly"

In (a)(6), please delete "are used,"

In (c), please add some additional information as to when additional information may be requested by the LHD or the State?

In (c)(1), please change "which" to "that" in "groundwater mound which"

In (d), line 25, please change "are not" to "shall not be" in "analysis are not required"

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0510 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0510 SPECIAL SITE EVALUATIONS**

4 (a) A Special Site Evaluation shall demonstrate that the proposed use of the site with a specific wastewater system design and
5 configuration will not result in effluent discharge to the ground surface or adversely affect ground and surface water quality.
6 Any site ~~for a wastewater system~~ that is proposed with one or more of the following shall require a Special Site Evaluation by
7 a licensed professional if required in G.S. ~~89C, 89F, 89F~~ or 89E:

- 8 (1) proposal submitted in accordance with Rule .0504(i) of this Section;
- 9 (2) proposal submitted in accordance with Rule .0509(f) of this Section;
- 10 ~~(3) advanced pretreatment is required for any of the following:~~
- 11 ~~(A) vertical separation distance to a LC or SWC is proposed to be reduced. The vertical separation~~
12 ~~distance to rock or tidal water shall not be reduced to less than 12 inches;~~
- 13 ~~(B) less than 18 inches of naturally occurring soil to an unsuitable soil condition, excluding SWC;~~
- 14 ~~(C) increased LTAR is proposed for a site with Group III or IV soils within three feet of the~~
15 ~~infiltrative surface;~~
- 16 ~~(D) increased LTAR is proposed for a site with Group II or III soils which requires a groundwater~~
17 ~~lowering system;~~
- 18 ~~(E) proposed use of a groundwater lowering system to meet vertical separation distance requirements~~
19 ~~to a SWC;~~
- 20 ~~(F) bed systems located directly beneath the advanced pretreatment unit on a site with uniform slope~~
21 ~~exceeding two percent except in Group I soils with a SWC greater than 36 inches;~~
- 22 ~~(G) bed systems with a DDF greater than 1,500 gpd; or~~
- 23 ~~(H) increased LTAR is proposed on a site with a DDF greater than 1,500 gpd;~~
- 24 ~~(4)(3)~~ sand lined trench systems when the texture of the receiving permeable horizon is sandy loam or loam and
25 the DDF is greater than 600 ~~gpd; 600 gpd~~, or when the texture of the receiving permeable horizon is silt
26 loam;
- 27 ~~(5)(4)~~ DSE drip dispersal systems meeting the following soil and site conditions:
- 28 (A) depth from the naturally occurring soil surface to any ~~unsuitable soil condition~~ LC is greater than
29 or equal to 18 inches and the LTAR is proposed to exceed 0.5 gpd/ft² for Group I, 0.35 gpd/ft² for
30 Group II, or 0.2 gpd/ft² for Group III soils;
- 31 (B) depth from the naturally occurring soil surface to any SWC is less than 18 inches and the LTAR
32 is proposed to exceed 0.5 gpd/ft² for Group I, 0.3 gpd/ft² for Group II, or 0.15 gpd/ft² for Group
33 III soils;
- 34 (C) Group IV soils are encountered within 18 inches of the naturally occurring soil surface or within
35 12 inches of the infiltrative surface, whichever is deeper, and the LTAR is proposed to exceed
36 0.05 gpd/ft²;

- 1 (D) Group IV soils are encountered within 18 inches of the naturally occurring soil surface and depth
 2 from the naturally occurring soil surface to any ~~unsuitable soil condition~~ LC is less than 24
 3 inches;
- 4 (E) Group IV soils are encountered within 18 inches of the naturally occurring soil surface and
 5 driplines are installed in new fill material;
- 6 (F) groundwater lowering system is used to meet soil depth and vertical separation ~~distance~~
 7 requirements to a SWC;
- 8 (G) proposed LTAR exceeds that assigned by the LHD; or
- 9 (H) DDF ~~exceeds~~ is greater than 1,500 gpd;
- 10 (5) advanced pretreatment is required for any of the following:
- 11 (A) vertical separation to a LC is proposed to be reduced. The vertical separation to rock or tidal
 12 water shall not be reduced to less than 12 inches;
- 13 (B) less than 18 inches of naturally occurring soil to a LC, excluding SWC;
- 14 (C) increased LTAR is proposed for a site with Group III or IV soils within three feet of the
 15 infiltrative surface;
- 16 (D) increased LTAR is proposed for a site with Group II or III soils which requires a groundwater
 17 lowering system;
- 18 (E) proposed use of a groundwater lowering system to meet vertical separation requirements to a
 19 SWC;
- 20 (F) bed systems located directly beneath the advanced pretreatment unit on a site with uniform slope
 21 exceeding two percent except in Group I soils with a SWC greater than 36 inches;
- 22 (G) bed systems with a DDF greater than 1,500 gpd; or
- 23 (H) increased LTAR is proposed on a site with a DDF greater than 1,500 gpd;
- 24 (6) drip dispersal systems are used, and Group IV soils are within 18 inches of the naturally occurring soil
 25 surface or within 12 inches of the infiltrative surface, whichever is deeper, and the LTAR is proposed to
 26 exceed 0.1 gpd/ft² for NSF-40, 0.12 gpd/ft² for TS-I, or 0.15 gpd/ft² for TS-II;
- 27 (7) NSF-40 and drip dispersal systems when the LTAR is proposed to exceed 0.8 gpd/ft² for Group I soils, 0.5
 28 gpd/ft² for Group II soils, 0.25 gpd/ft² for Group III soils, or 0.1 gpd/ft² for Group IV soils;
- 29 (8) TS-I and drip dispersal systems which meet the following criteria:
- 30 (A) site has less than 18 inches of naturally occurring soil to any unsuitable ~~LC or SWC~~; LC;
- 31 (B) Group III soils are present and a groundwater lowering system is used to meet the vertical
 32 separation ~~distance~~ requirements to a SWC;
- 33 (C) Group IV soils are encountered within 18 inches of the naturally occurring soil surface, the LTAR
 34 is proposed to exceed 0.05 gpd/ft², and the system is proposed to be installed in new fill; or
- 35 (D) LTAR is proposed to exceed 1.0 gpd/ft² for Group I soils, 0.6 gpd/ft² for Group II soils, 0.3
 36 gpd/ft² for Group III soils, or 0.12 gpd/ft² for Group IV soils;
- 37 (9) TS-II and drip dispersal systems which meet the following criteria:

- 1 (A) Subparagraphs (8)(A), (B), or (C) of this Rule; or
2 (B) LTAR is proposed to exceed 1.2 gpd/ft² for Group I soils, 0.7 gpd/ft² for Group II soils, 0.4
3 gpd/ft² for Group III soils, or 0.15 gpd/ft² for Group IV soils;
4 (10) site-specific nitrogen migration analysis is required to verify that the ~~nitrate~~ nitrate-nitrogen concentration
5 at the property line will not exceed groundwater standards;
6 (11) LHD or State determines that the combination of soil conditions, site topography and landscape position,
7 DDF, system layout and/or proposed stormwater appurtenances will potentially result in hydraulic
8 overload; or
9 (12) DDF greater than 3,000 gpd, unless the requirements of Rule .0302(d) of this Subchapter are met.

10 ~~(b) If the adjusted DDF is less than or equal to 3,000 gpd, a Special Site Evaluation is not required.~~

11 ~~(e)(b)~~ The Special Site Evaluation shall include hydrologic or hydraulic testing, as applicable, and analysis, in accordance
12 with Rule .0304(c)(2) of this Subchapter.

13 ~~(d)(c)~~ For ~~sites serving wastewater~~ systems with a DDF greater than 3,000 ~~gpd~~, gpd and dispersal fields designed for greater
14 than 1,500 gpd, the Special Site Evaluation shall include sufficient site-specific data to predict the height of the water table
15 mound that will develop beneath the field (level sites) and the rate of lateral and vertical flow away from the trenches (sloping
16 ~~sites~~ sites), unless the conditions in Rule .0304(c)(2)(E) of this Subchapter are met. The data submitted may include deep
17 soil borings to an impermeable layer or to a depth to support the hydrologic testing and modeling, permeability, ~~and~~ in-situ
18 Ksat measurements, water level readings, and other information determined to be necessary by the LHD or the State. The site
19 shall be considered unsuitable if the data indicate any of the following:

- 20 (1) the groundwater mound which will develop beneath the site cannot be maintained two feet or more below
21 the bottom of the trenches;
22 (2) effluent is likely to become exposed on the ground surface; or
23 (3) contaminant transport analysis indicates that groundwater standards established in accordance with 15A
24 NCAC 02L are determined or projected to be violated at the property line.

25 (d) For wastewater systems with a DDF greater than 3,000 gpd and dispersal fields designed for less than or equal to 1,500
26 gpd, in-situ Ksat measurements and groundwater mounding or lateral flow analysis are not required if a Special Site
27 Evaluation demonstrates that the dispersal fields are in separate lateral flow windows or are shown to be not be hydraulically
28 connected.

29
30 *History Note: Authority G.S. 89E; 89F; 130A-335(a1), (e) and (f).*

31 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0601

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In the first row of the table, are these springs downslope springs? How does this row go with the second row (which speaks to upslope springs.)

*In the table on page 2, please change "drains which connect to a stormwater conveyance" to "drains **that** connect to a stormwater conveyance"*

What is the setback required for private drinking water wells or upslope springs? The table says that it is 50 feet, but then I read (b) to say that it is really 100 unless a variance is given. Overall (b) seems to conflict with itself and the table. Please review and clarify.

Given the first row of the table, is (c) necessary? They seem to say the same thing.

On Page 3, line 17, please correct the formatting of the deletion of the asterisk. It should be "~~features~~ features"*

*What is the overall intent of (i)? Is it to say that the setback is 10 feet, unless (i)(1) or (2) are met? If so, please consider revising to say something like "The minimum setback from water lines to collection sewers shall be 10 feet, **except as follows:** feet. **If a 10-foot setback is not maintained, the following criteria shall be met:**" As written, it's a bit unclear as to what the actual requirement is.*

Please add "the" at the beginning of (i)(1), (i)(2), (j)(2)(A), (j)(2)(B), (k)(2), (k)(3), (l)(2), and (l)(3).

What is the setback requirement (i)(1) occurs? I'm thinking there isn't one, but please verify.

In (j), should "collection sewers" be "collection sewer line"? Elsewhere in this Rule you have used "sewer line." Please be consistent where you can be.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

(j) seems to be missing something. Is there an underlying requirement that water lines and collection sewers not cross each other? If so, would it be accurate to say something like “Collection sewers and water lines shall not cross, except as follows: Crossings of collection sewers and a water line may occur with the following”

In (j)(1) you have said “passing”, in (j) and (j)(2), you have said “cross” and “crossing.” Please be consistent.

Please change “shall be” to “is” in (j)(2)(A) and (j)(2)(B).

In (i)(2), what is meant by “the collection sewer shall be located the maximum setback from the water line within the trench”? Is this going to be at the discretion of the installer to put it as far back as possible? I just want to be sure that I understand what’s going on here.

In (j)(2), do you mean “and” rather than “or” in “the sewer line or 18 inches clear vertical separation”? (j)(1) allows for the sewer line to pass under the water

In (j)(2)(B), please delete the “and” in between “ferrous materials” and “with joints”

In (j)(2)(B), I assume that your regulated public is familiar with what “ferrous materials” are?

In (j)(2)(B), (k)(2), and (l)(2), what are “water main standards”?

(k) seems to be missing something. Is there an underlying requirement that collection sewers not cross storm drains? If so, would it be appropriate to say something like “Collection sewers shall not cross storm drains, except as follows: collection sewers may cross a storm drain if: ?

In (k)(1), I assume that the vertical separation must be maintained between the collection sewer line and the storm drain?

(l) seems to be missing something. Is there an underlying requirement that collection sewers not cross under streams? If so, would it be appropriate to say something like “Collection sewers shall not cross under streams, except as follows: collection sewers may cross a storm drain if: ?

In (l)(1), I assume that your regulated public is familiar with what is meant by “stable cover”?

In (n), what is meant by “frequent flooding”? Is the language in the parenthesis intended to define “frequent flooding”? If so, what is meant by “areas inundated at a 10-year or less frequency”?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0601 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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8

15A NCAC 18E .0601 LOCATION OF WASTEWATER SYSTEMS

(a) Every wastewater system shall be located the minimum setbacks from the site features specified in Table IX. The setback shall be measured from the nearest wastewater system component sidewall or as otherwise specified in a system specific rule or PIA Approval.

TABLE IX. Minimum setbacks from all wastewater systems to site features

Site Features	Setback (feet)
Any public water system or private water supply source, including a private drinking water well or spring	100
<u>A private drinking water well or upslope spring serving a single-family dwelling and intended for domestic use</u>	<u>50</u>
Any other well or source not listed in this table, excluding monitoring wells	50
Surface waters classified Water Supply Class I (WS-I), WS-I, from mean high-water mark	100
Waters classified SA, from mean high-water mark	100
Any Class I or Class II reservoir, from normal pool elevation	100
Lake, pond, or stormwater retention pond, from flood pool elevation	50
Stormwater detention (temporary) pond	25
Any other coastal water, canal, marsh, stream, non-water supply spring, perennial waterbodies, intermittent or perennial streams, or other surface waters, from the mean high-water mark	50
Any water line, including fire protection and irrigation water lines	10
Geothermal aqueous closed loop wells	50
Geothermal direct expansion closed loop wells	50
Horizontal closed-loop geothermal system	15
Building foundation with artificial drainage	15
Building or other foundation without artificial drainage, including patio, deck, porch, stoop, lighting fixtures, or signage supporting columns, or posts	5
Any basement, cellar, or in-ground swimming pool	15
Buried storage tank or basin, except stormwater	15
Above ground swimming pool	5
Top of slope of embankment or cuts of two feet or more vertical	15

height	
Subsurface groundwater lowering system, ditch, or device, as measured on the ground surface from the edge of the feature	25
Surface water diversion, <u>except for an upslope swale or berm</u> , as measured on the ground surface from the edge of the diversion	15
<u>Interceptor drain – upslope</u>	<u>10</u>
<u>Interceptor drain – sideslope</u>	<u>15</u>
<u>Interceptor drain – downslope</u>	<u>25</u>
<u>Swale, Upslope swale or berm</u> , as measured on the ground surface from the edge of the swale	5
<u>Ephemeral stream</u>	<u>15</u>
Any stormwater conveyance (pipe or open channel) <u>channel</u>), <u>excluding gutter drains which connect to a stormwater conveyance or ephemeral stream</u>	15
Permanent stormwater retention basin or sediment detention basin	50
Bio-retention area, injection well, or infiltration gallery	25
Any other dispersal field, except designated dispersal field repair area for project site	20
Any property line	10
Burial plot or graveyard boundary	15
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	15
Utility transformer, ground-surface mounted	10

1
2 (b) Wastewater systems may be located closer than 100 feet from a private drinking water well or upslope spring for repairs,
3 space limitations, and other site-planning considerations. The wastewater system shall be located the maximum feasible
4 distance and never less than 50 feet from the private drinking water ~~well~~. well or upslope spring. The wastewater system may
5 be located closer than 100 feet ~~under the following conditions:~~ when a variance for a reduced separation has been issued for
6 the private drinking water well in accordance with Rule 15A NCAC 02C .0118.

- 7 (1) ~~the private drinking water well is on a lot serving a single family dwelling and intended for domestic use;~~
8 ~~or~~
9 (2) ~~a variance for a reduced separation has been issued for the private drinking water well in accordance with~~
10 ~~15A NCAC 02C .0118.~~

11 (c) Wastewater systems shall not be located closer than 100 feet to springs and uncased wells used as a source of drinking
12 water and located downslope from the dispersal field.

(d) Initial and repair dispersal field systems shall not be located under impervious surfaces or areas subject to vehicular traffic unless approved in accordance with G.S. 130A-343 and Section .1700 of this Subchapter.

(e) If effluent is conveyed under areas subject to vehicular traffic or areas subject to soil disturbance or compaction, one of the following shall be used:

- (1) DIP;
- (2) a minimum of Schedule 40 pipe (PVC, Polyethylene, or ABS) sleeved in DIP;
- (3) a minimum of Schedule 40 pipe (PVC, Polyethylene, or ABS) sleeved in DOT traffic rated culvert pipe;
- (4) a minimum of Schedule 40 pipe (PVC, Polyethylene, or ABS) with 30 inches of compacted cover provided over the crown of the pipe; or
- (5) other pipe materials may be proposed when designed, inspected, and certified by a PE and approved by the LHD.

(f) In addition to the requirements of Paragraph (a) of this Rule, wastewater systems with a proposed DDF greater than 3,000 gpd, as determined in Rule .0401 of this Subchapter, shall be located the minimum setbacks from the site features in Table X.

TABLE X. Minimum setbacks from wastewater systems greater than 3,000 gpd to site features*

Feature	Setback (feet)
Any Class I or II reservoir or any public water system source utilizing a shallow (under 50 feet) groundwater aquifer	500
Any other public water system source, unless a confined aquifer	200
Any private water supply source, unless a confined aquifer	100
Surface water classified WS- I, from mean high-water mark	200
Surface waters classified WS-II, WS-III, B, or SB, from mean high-water mark	100
Waters classified SA, from mean high-water mark	200
Any property line	25

*Increased setbacks for separate dispersal fields that are part of wastewater systems with a DDF greater than 3,000 gpd shall not apply to one or more field(s) that are designed for less than or equal to 1,500 gpd when a Special Site Evaluation in accordance with Rule .0510 of this Subchapter demonstrates that the wastewater system will comply with the performance requirements in Rule .0510(d) of this Subchapter.

(g) Wastewater systems with a DDF greater than 3,000 gpd that meets the requirements of Rule .0510(d) of this Subchapter may use the setbacks identified in Table IX of this Rule.

~~(g)(h) In addition to the requirements of Paragraph (a) of this Rule, collection~~ Collection sewers shall be located the minimum setbacks to site features shown in Table XI.

TABLE XI. Minimum setbacks from collection sewers to site features

Feature	Setback (feet)
Any public water system source, including wells, springs, and Class I or Class II reservoirs	100, unless the collection sewer is constructed of or sleeved in DIP with mechanical joints equivalent to water main standards, in which case the minimum setback may be reduced to 50 ft*
Any private water supply source, including wells and springs	50, unless the collection sewer is construction of or sleeved in DIP with mechanical joints equivalent to water main standards, in which case the minimum setback may be reduced to 25 ft*
Surface waters classified WS-I, WS-II, WS-III, B, SA, or SB, from flood pool elevation	50, unless the collection sewer is construction of or sleeved in DIP with mechanical joints equivalent to water main standards, in which case the minimum setback may be reduced to 10 ft*
Any other stream, canal, marsh , <u>marsh</u> , coastal water, lakes, <u>ponds</u> , and other impoundments, or other surface waters	10
Geothermal aqueous closed loop wells	25
Geothermal direct expansion closed loop wells	25
Horizontal closed loop geothermal wells	5
Any basement, cellar, or in-ground swimming pool	10
Top of slope of embankment or cuts of two feet or more vertical height	5
Surface water diversion, as measured on the ground surface from the edge of the diversion	5
Any stormwater conveyance (pipe or open channel) or ephemeral stream	10
Permanent stormwater retention basin or sediment detention basin	10
Bio-retention area, injection well, or infiltration gallery	5
Any other dispersal field except designated dispersal field repair area for project site	5
Any property line	5
Burial plot or graveyard boundary	5
Utility transmission and distribution line poles	5

and towers, including guy wires	
Utility transformer, ground-surface mounted	5

*Pipe materials other than DIP shall be acceptable when the materials conform to materials, testing methods, and acceptability standards meeting water main standards and when the line has been designed, installed, inspected, and certified by a PE and approved by the LHD.

~~(h)~~(i) The minimum setback from water lines to collection sewers shall be 10 feet. If a 10-foot setback is not maintained, the following criteria shall be met:

- (1) water line is laid in a separate trench with the elevation of the bottom of the water line 18 inches above the top of the collection sewer; or
- (2) water line is laid in the same trench as the collection sewer with the water line located on one side of the trench, on a bench of undisturbed earth and with the elevation of the bottom of the water line 18 inches above the top of the collection sewer. The collection sewer shall be located the maximum setback from the water line within the trench.

~~(i)~~(j) Crossings of collection sewers and a water line may occur with the following:

- (1) 18 inches clear vertical separation ~~distance~~ is maintained, with the sewer line passing under the water line; or
- (2) the water line crosses under the sewer line or 18 inches clear vertical separation ~~distance~~ is not maintained and the following criteria are met:
 - (A) collection sewer shall be constructed of DIP with joints equivalent to water main standards and extend 10 feet on each side of the point of crossing, with full sections of pipe centered at the point of crossing; and
 - (B) water line shall be constructed of ferrous materials and with joints equivalent to water main standards and extend a minimum of 10 feet on each side of the point of crossing, with full sections of pipe centered at the point of crossing.

~~(j)~~(k) Collection sewers may cross a storm drain if:

- (1) 12 inches clear vertical separation ~~distance~~ is maintained;
- (2) collection sewer is constructed of DIP with mechanical joints or restrained push-on joints equal to water main standards; or
- (3) collection sewer is encased in concrete or DIP for a minimum of five feet on either side of the crossing.

~~(k)~~(l) Collection sewers may cross ~~over a~~ under a stream if:

- (1) a minimum of 36 inches of stable cover is maintained;
- (2) sewer line is constructed of DIP with mechanical joints or restrained push-on joints equal to water main standards; or
- (3) sewer line is encased in concrete or DIP for a minimum of 10 feet on either side of the crossing and protected against the normal range of high and low water conditions, including the 100-year flood or wave action.

1 ~~(m)~~(m) Collection sewer aerial crossings shall be constructed of DIP with mechanical joints or restrained push-on ~~joints.~~ joints
2 equal to water main standards and freeze protected. Pipe shall be anchored for a minimum of 10 feet on either side of the
3 crossing.

4 ~~(n)~~(n) Septic tanks, pump tanks, grease tanks, raw sewage lift stations, wastewater treatment plants, sand filters, and other
5 advanced pretreatment systems shall not be located in areas subject to frequent flooding (areas inundated at a 10-year or less
6 frequency), unless designed and installed to be watertight and to remain operable during a 10-year storm. Mechanical or
7 electrical components of treatment systems shall be above the 100-year flood level or otherwise protected against a 100-year
8 flood.

9

10 *History Note: Authority G.S. 130A-334; 130A-335(e) and (f).*

11 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0602

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Overall, I'm having a difficult time following the requirements of this Rule. Please review to ensure that the dates are still needed here. I understand that these dates may have been helpful when .1951 was first put into effect, but are they still applicable?

In (a) and (a)(2), should "or cuts" be "and cuts"?

In (a)(1) can it be described in a recorded plat after July 1, 1977, or must the plat meet that date as well? Should the language be "On July 1, 1977, is described in a deed, contract, other instrument conveying fee title, or in a recorded plat"?

Please begin (a)(2) with "is of"

How are (a)(2) and (3) to be determined?

Just so I understand what is going on with (b), the authorized agent can require more, but he or she must at least require the minimum setbacks in Table XII? How are the maximum requirements to be determined?

In the intent of (c) and (d)? As written, I don't understand what is going on.

Is the intent of (c) to say "For wastewater systems installed in Group I soils on lots or tracts of land that meet the requirements set forth in Paragraph (a) of this Rule, the minimum setback shall be 10 feet? Would this make sense in Table XII?"

In (c), what are "group I soils"? Is this set forth elsewhere?

In (c), what is meant by "as far as possible"? How and by whom is this determined?

Is (d) saying that if the minimum setback of 25 feet (as set forth in Table IX) cannot be met, then the minimum setback shall instead be 10 feet? What is the significance of the 1982 date? Is this necessary?

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

What is the purpose of (e)? Is this language still necessary? How is your regulated public going to get "rules and regulations" in effect on June 30, 1977? Is this an attempt to incorporate rules that have not been promulgated as such in accordance with the APA?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0602 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0602 APPLICABILITY OF SETBACKS**

4 (a) The minimum setback requirements in Table IX of Rule .0601 of this Section for SA waters, basements, property lines, or
5 cuts of two feet or more vertical height, shall not apply to the installation of a single wastewater system serving a
6 single-family residence with a maximum DDF of 480 gpd on a lot or tract of land that meets the following requirements:

- 7 (1) on July 1, 1977, is described in a deed, contract, or other instrument conveying fee title or that is described
8 in a recorded plat;
- 9 (2) insufficient size to satisfy the minimum setback requirements in Table IX of Rule .0601 of this Section for
10 SA waters, basement, property lines, or cuts of two feet or more vertical height of this Section on July 1,
11 1977; and
- 12 (3) cannot be served by a community or public sewerage system on the date system construction is proposed to
13 begin.

14 (b) For those lots or tracts of land described in Paragraph (a) of this Rule, the maximum feasible setback as determined by an
15 authorized agent shall be required. The minimum setbacks in Table XII shall be required in all cases.

16

17 **TABLE XII.** Minimum setbacks from wastewater systems to specific site features on lots described in this Rule

Feature	Minimum setback (feet)
SA waters from mean high-water mark	50
Basement	8
Property line	5
Cuts of two feet or more vertical height	5

18

19 (c) For those lots or tracts of land that meet the requirements of Paragraph (a) of this Rule, and the wastewater system will be
20 installed in Group I soils, the wastewater system shall be located as far as possible, but not less than 10 feet from any other
21 wastewater system.

22 (d) For those lots or tract of land which, on July 1, 1982, are specifically described in a deed or recorded plat and the
23 minimum horizontal setbacks in Table IX of Rule .0601 of this Section for groundwater lowering systems cannot be met, the
24 maximum feasible horizontal distance as determined by the authorized agent shall be required. The minimum setback shall
25 not be less than 10 feet

26 (e) Any rules and regulations of the Commission for Public Health or any local board of health in effect on June 30, 1977,
27 which establish greater minimum ~~distance~~ setback requirements than those provided for in this Section, shall remain in effect
28 and shall apply to a lot or tract of land to which Table IX of Rule .0601 of this Section does not apply.

29

1 *History Note:* *Authority G.S. 130A-335(e).*
2 *Eff. October 1, 2018*
3

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0701

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a)(5), please check the cross-reference to .0601(e).

In (a)(6), when would they be subject to traffic-bearing loads? When they are under areas subject to vehicular traffic? If so, please consider saying that.

In (a)(7), line 18, please change "manholes are required..." to "manholes shall be required..."

In (a)(8), please change "Cleanouts are required..." to "Cleanouts shall be required..."

In (a)(9), when will collections sewers require additional ventilation provisions? Please provide some additional information. Also, what is meant by "ventilation provisions"? Do you mean "Air relief valves shall be provided for collection sewers as needed for force mains"? This may not make sense in your terms, but I'm thinking that "air relief valves..." is what is meant by "ventilation provisions" and "as needed for force mains" gives information regarding when they "may" be required. If that's the case, I think that a bit of rewording would make this more clear.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0701 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0701 COLLECTION SEWERS**

4 (a) Collection sewers shall be designed and constructed in accordance with the following criteria:

5 (1) Building drains and building sewers shall be in accordance with the North Carolina Plumbing Code and
6 approved by the local building inspector.

7 (2) Pipe material shall be specified to comply with the applicable ASTM standards based on pipe material.

8 (3) Gravity sewers shall be designed to maintain minimum scour velocities of two feet per second with the
9 pipe half full and one-foot per second at the peak projected instantaneous flow rate. Force mains shall be
10 sized to obtain a minimum two-foot per second scour velocity at the projected pump operating flow rate.

11 (4) Infiltration and exfiltration shall not exceed 100 gpd per inch diameter per mile of gravity sewer pipe or 20
12 gpd per inch diameter per mile of pressure pipe in force mains and supply lines.

13 (5) Three-foot minimum cover shall be provided for all collection sewers, except as provided for in Rule
14 .0601(e) of this Subchapter.

15 (6) Ferrous material pipe or other pipe designed and bedded for traffic-bearing loads shall be provided where
16 collection sewers are subject to traffic-bearing loads.

17 (7) Manholes shall be used for gravity collection sewers at any bends, junctions, and a maximum of every 425
18 feet along the sewer lines. Drop manholes are required where the inlet to outlet elevation difference
19 exceeds two and one half feet. Manhole lids shall be watertight if located below the 100-year flood
20 elevation, within 100 feet of any public water supply system source, or within 50 feet of any private water
21 system source or any surface waters classified WS-I, WS-II, WS-III, SA, SB, or B.

22 (8) Cleanouts may be used instead of manholes for four-inch and six-inch sewers serving one or two design
23 units, or as otherwise allowed by the North Carolina Plumbing Code. Cleanouts are required a maximum of
24 every 100 feet for four or six-inch sewers and at all junctions and bends which exceed 45 degrees, unless
25 otherwise allowed by the North Carolina Plumbing Code.

26 (9) Collection sewers may require additional ventilation provisions. Air relief valves shall be provided as
27 needed for force mains.

28 (b) STEP systems may be used as an alternative to gravity collection sewers.

29

30 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

31 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0702

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

(a) has inconsistent references to the tables in .0601. Please be consistent.

(a) Raw sewage lift stations permitted by the LHD shall meet all setbacks for wastewater systems in accordance with Table IX of Rule .0601(a) of this Subchapter. If the raw sewage lift station is a sealed, watertight chamber the setbacks requirements for collection sewers set forth in Table XI of in Rule .0601(g) .0601(h) of this Subchapter shall apply.

In (b)(3), what is meant by "an equivalent third-party electrical testing and listing agency"? How and who determines whether an agency is equivalent to Underwriter's laboratories?

In (b)(8), please consider deleting "other" and "also" since (b) says that all of these requirements have to be met. This language is superfluous. Please also consider changing "in accordance with" to "as set forth in"

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0702 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .0702 RAW SEWAGE LIFT STATIONS

(a) Raw sewage lift stations permitted by the LHD shall meet all setbacks for wastewater systems in accordance with Table IX of Rule .0601(a) .0601 of this Subchapter. If the raw sewage lift station is a sealed, watertight chamber the setbacks requirements for collection sewers in Rule ~~.0601(g)~~ .0601(h) of this Subchapter shall apply.

(b) Raw sewage lift stations shall meet the following design and construction standards:

- (1) sealed, watertight chamber shall be a prefabricated unit with a sealed top cover, and preformed inlet and outlet pipe openings connected with solvent welds, O-ring seals, rubber boots, stainless steel straps, or equivalent;
- (2) dual pumps shall be provided for stations serving two or more buildings or for a facility with more than six water closets;
- (3) pumps shall be listed by Underwriter's Laboratories or an equivalent third-party electrical testing and listing agency;
- (4) pumps shall be grinder pumps or solids-handling pumps capable of handling a minimum of three-inch spheres. If the raw sewage lift station serves no more than a single water closet, lavatory, and shower, two-inch solids handling pumps shall be acceptable;
- (5) minimum pump ~~operating flow rate~~ capacity shall be two and one half times the average daily flow;
- (6) raw sewage lift stations serving single buildings shall be designed for pump ~~run times~~ run times between three to 10 minutes at average daily flow;
- (7) pump station emergency storage capacity and total liquid capacity shall be determined in accordance with Rule .0802 of this Subchapter except for a sealed, watertight chamber serving an individual building, in which case a minimum storage capacity of eight hours shall be required; and
- (8) all other applicable requirements for pump tanks and dosing systems in accordance with Rule .0802 and Section .1100 of this Subchapter shall also apply to raw sewage lift stations.

*History Note: Authority G.S. 130A-335(e), (f), and (f1).
Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0703

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Since (b) sets forth acceptable alternatives and says specifically that these “may be substituted for Schedule 40”, I think that “or alternative pipe material as specified in this Rule” in (a) is both unnecessary and confusing. Please consider deleting this language and adding “or” in between polyethylene, and Schedule 40 ABS.

In (b)(1), please delete or define “smooth” Given “uniform grade”, do you need this language?

In (b)(5), just so I understand, how is “undisturbed soil” going to be placed in a dam? Wouldn't it be disturbed once moved to the dam?

In (d), who is to certify that the tubing complies with ASTM F667? Would it be sufficient to mirror language in (c) and say “conforming to ASTM F667”? This is also on line 22 with regard to ASTM D2729 or F810.

Is the language on lines 22-26 (“The corrugated tubing... adjacent corrugations”) summarizing the ASTM requirements? If so, there is no need to repeat this since you all have incorporated the ASTM requirements by reference.

In (d), line 27, what is meant by “approved by the State”? What is the process to get this approval? How will it be determined whether the pipe will be approved? I assume that it will be approved if it meets the requirements of this Section (or Rule), but that is not clear. Given Paragraph (f), is this language necessary?

In (d), line 27, by “satisfies the requirements of this Section”, do you mean “satisfies the requirements of this Rule”? This Section sets forth requirements for collection sewers and lift stations, this Rule appears to speak specifically to pipe. Please review.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel

Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0703 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .0703 PIPE MATERIALS**

4 (a) The gravity pipe between a septic tank, gravity distribution device, and the dispersal field shall be a minimum of three-
5 inch Schedule 40 PVC, Schedule 40 polyethylene, Schedule 40 ABS, or alternative pipe material as specified in this Rule.

6 (b) Three-inch or greater non-perforated polyethylene corrugated tubing, PVC SDR 21 and SDR 26 pressure rated at 160 psi
7 or greater and labeled as compliant with ASTM D2241, PVC SDR 35 gravity sewer pipe rated as compliant with ASTM
8 D3034, or alternative non-perforated pipe materials described in Paragraph (d) of this Rule, may be substituted for Schedule
9 40 between the distribution device and the dispersal field when the following minimum installation criteria are met:

- 10 (1) the pipe is placed on a compacted, smooth surface at a uniform grade, and with an excavation width of one-
11 foot;
- 12 (2) the pipe is placed in the middle of the excavation with three inches of clearance between the pipe and the
13 walls;
- 14 (3) a washed gravel or crushed stone envelope is placed in the excavation on both sides of the pipe and to a
15 point two inches above the top of the pipe;
- 16 (4) six inches of soil cover is placed and compacted over the stone or gravel envelope; and
- 17 (5) earthen dams consisting of two feet of undisturbed or compacted soil are placed at both ends of the
18 excavation separating the trench from the distribution device.

19 (c) All pipe joints from the septic tank to the dispersal field shall be watertight. Solvent cement-joints shall be made in a two-
20 step process with primer manufactured for thermoplastic piping systems and solvent cement conforming to ASTM D2564.

21 (d) Pipe used for gravity distribution laterals shall be corrugated plastic tubing certified as complying with ASTM F667 or
22 smooth-wall plastic pipe certified as complying with ASTM ~~D2729~~ D2729 or ASTM F810. The corrugated tubing or
23 smooth-wall pipe shall have three rows of holes, each hole between ½-inch and ¾-inch in diameter, and spaced longitudinally
24 approximately four inches on centers. The rows of holes may be equally spaced 120 degrees on centers around the pipe
25 periphery, or three rows may be located in the lower portion of the tubing, the outside rows being approximately on
26 120-degree centers. The holes may be located in the same corrugation or staggered in adjacent corrugations. Other types of
27 pipe may be used for laterals provided the pipe satisfies the requirements of this Section and is approved by the State.

28 (e) Pump discharge piping, including the force main to the next component in the wastewater system, shall be of Schedule 40
29 PVC or stronger material and pressure rated for water service at a minimum of 160 psi or two times the maximum operating
30 pressure, whichever is greater. The pipe shall meet ASTM D1784, ASTM D1785, and ASTM D2466.

31 (f) Alternative pipe materials may be proposed when designed and certified by a PE, including any installation and testing
32 procedures. Gravity pipe materials shall be shown to meet the requirements of Paragraphs (a), (b), and (c) of this Rule.
33 Alternative pressure rated pipe materials shall be constructed of PVC, polyethylene, or other pressure rated pipe and comply
34 with applicable ASTM standards for pipe material and methods of joining. The proposed pipe shall be installed per ASTM
35 D2774. Installation testing shall include a hydrostatic pressure test similar to pressure testing required for water mains for any
36 line exceeding 500 feet in length and shall comply with the requirements of Rule ~~.0701(4)~~ .0701(a)(4) of this Section.

- 1 *History Note:* *Authority G.S. 130A-335(e), (f), and (f1).*
- 2 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0801

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

(a)(1) appears to conflict with the table. I understand that you are trying to get to a catch all here, but I think that adding some language such as “unless otherwise provided in this Rule” would be helpful to clarify.

In (a)(2), line 7, please change “determined on” to “as set forth in”

What is the intent of (a)(3)? Is the minimum capacity 1500 or the capacity reached by using the calculation in the table? Is the intent here to say that the minimum requirement is either 1500 or the capacity reached by using the calculation in the table, whichever is greater? If so, please say that. Also, why is the language on lines 11-12 and 13 different? Is the intent of (a)(3) to get to the same units? If so, please be consistent in your language.

What is the intent of (a)(4)? What approval? Do you mean the permit issued for the RWTS?

In (c), by the “required septic tank liquid capacity”, do you mean “... capacity as set forth in this Rule”? If so, please say that.

*In (c), please consider revising as follows: When a grinder pump or sewage lift pump is installed prior to the septic tank, the required septic tank liquid capacity shall be **doubled, doubled, and** meet the following: **The minimum liquid capacity may be met by installing two or more septic tanks in series, each tank containing two compartments. The minimum liquid capacity of each tank shall be 1,000 gallons.***

In (d), will the State approve the filter if it meets the requirements in the table in Rule .0402? If so, please consider revising (d) to say something like the following:

*(d) The State shall review other septic tanks designed to receive wastewater from grinder pumps or sewage lift pumps if designed by a **PE to ensure that PE. The design shall demonstrate that the** effluent discharged from the septic tank meets DSE **in accordance with as set forth in** Table III of Rule .0402 of this Subchapter.*

Amber May

Commission Counsel

Date submitted to agency: September 6, 2018

In (e), is additional information regarding the approval of filters set forth elsewhere in rule or statute?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0801 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .0801 SEPTIC TANK CAPACITY REQUIREMENTS

(a) Minimum liquid capacities for septic tanks shall be in accordance with the following:

- (1) The minimum capacity of any septic tank shall be 1,000 gallons.
- (2) The minimum capacity of any septic tank serving an individual dwelling unit with five bedrooms or less shall be sized determined on Table XIII.

TABLE XIII. Minimum septic tank liquid capacity for dwelling units

Number of bedrooms	Minimum liquid capacity (gallons)
4 or less	1,000
5	1,250

- (3) Septic tanks for dwelling units greater than five bedrooms, multiple dwelling units, places of business, or places of public assembly shall be sized in accordance with Table XIV. Individual wastewater systems serving dwelling units with more than five bedrooms or more than one design unit shall have a minimum septic tank capacity of 1,500 gallons.
- ~~(4) Septic tanks for PIA and RWTS Systems shall be sized in accordance with the RWTS or PIA Approval.~~

TABLE XIV. Septic tank capacity for facilities not listed in Table XIII

Design daily flow (gpd) (Q)	Minimum septic tank liquid capacity (V) calculation (gallons)
$Q \leq 600$	$V = 2Q$
$600 < Q < 1,500$	$V = 1.17Q + 500$
$1,500 \leq Q \leq 4,500$	$V = 0.75Q + 1,125$
$Q > 4,500$	$V = Q$

- ~~(4) Septic tanks for PIA and RWTS Systems shall be sized in accordance with the RWTS or PIA Approval.~~
- (b) The minimum liquid capacity requirements of Paragraph (a) of this Rule shall be met by use of a single two compartment tank or by two tanks installed in series. The tanks in series may be constructed with or without a baffle wall. ~~For two tanks installed in series, one of the tanks or tank compartments shall contain a minimum of two thirds of the total required liquid capacity.~~ Each tank shall have a minimum liquid capacity of 1,000 gallons.
- (c) When a grinder pump or sewage lift pump is installed prior to the septic tank, the required septic tank liquid capacity shall be doubled, and ~~meet the following:~~ the minimum liquid capacity may be met by installing two or more septic tanks in series, each tank containing two compartments. The minimum liquid capacity of each tank shall be 1,000 gallons.

1 ~~(1) minimum liquid capacity may be met by installing two or more septic tanks in series, each tank containing~~
2 ~~two compartments; and~~

3 ~~(2) each tank shall have a minimum liquid capacity of 1,000 gallons.~~

4 (d) The State shall review other septic tanks designed to receive wastewater from grinder pumps or sewage lift pumps if
5 designed by a PE. The design shall demonstrate that the effluent discharged from the septic tank meets DSE in accordance
6 with Table III of Rule .0402 of this Subchapter.

7 (e) A State approved effluent filter shall be in the final compartment of the septic tank. ~~When two or more tanks are used in~~
8 ~~series in accordance with Paragraphs (b) or (c) of this Rule, the following conditions shall be met:~~

9 ~~(1) approved effluent filter shall be in the compartment immediately prior to discharge; and~~

10 ~~(2) the outlet of the initial tank shall consist of an outlet sanitary tee extending down 25 to 50 percent of the~~
11 ~~liquid depth.~~

12 (f) When two or more tanks are used in series in accordance with Paragraphs (b) or (c) of this Rule, the following conditions
13 shall be met:

14 (1) approved effluent filter shall be in the final compartment; and

15 (2) the outlet of the initial tank shall consist of an outlet sanitary tee extending down 25 to 50 percent of the
16 liquid depth.

17
18 *History Note: Authority G.S. 130A-334; 130A-335(e), (f), and (f1).*

19 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0802

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), please cross reference Rule .0801 and say "... the required septic tank liquid capacity as set forth in Rule .0801 of this Section."

In (b), by whom and to whom may the proposal be made? Also, how does this option go with the second sentence of (b)? Is the intent to say that if you get a different number by adding (b)(1) through (3), then that capacity can be used instead of the capacity set forth in .0801?

How does (c) go with the rest of the rule? Is the pump tank liquid capacity specific to flow equalization different than liquid tank capacity? Please review and clarify if needed.

In (d)(2), please change "which" to "that"

In (d), when would a PE want to do this? To whom would this be proposed? Must it be approved? If so, how will it be determined whether the alternate calculation is acceptable?

Would it be appropriate to make lines 3-6 regarding the alternative calculation of the emergency storage capacity its own Paragraph?

In (e), delete "the following:"

To whom shall telemetry be shown operational? THE LHD during their inspection?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0802 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0802 PUMP TANK CAPACITY REQUIREMENTS**

4 (a) The minimum pump tank liquid capacity shall be greater than or equal to the required septic tank liquid capacity.

5 (b) A pump tank liquid capacity that is less than the capacity specified in Paragraph (a) may be proposed. The volume of the
6 following criteria shall be added together to calculate the ~~may be used to propose a pump tank liquid capacity that is less than~~
7 ~~the liquid capacity specified in Paragraph (a) of this Rule:~~ capacity:

- 8 (1) pump submergence or as recommended by the pump manufacturer;
- 9 (2) minimum dose volume in accordance with Rule .1101(d) of this Subchapter; and
- 10 ~~(3) flow equalization storage, if applicable; and~~
- 11 ~~(4)(3) emergency storage capacity in accordance with Paragraph (e) (d) of this Rule.~~

12 (c) The volume of the following criteria shall be added together to calculate the minimum pump tank liquid capacity for flow
13 equalization:

- 14 (1) pump submergence or as recommended by the pump manufacturer;
- 15 (2) minimum dose volume in accordance with Rule .1101(d) of this Subchapter;
- 16 (3) flow equalization storage; and
- 17 (4) emergency storage capacity in accordance with Paragraph (d) of this Rule.

18 ~~(e)(d)~~ The pump tank emergency storage capacity requirement shall be determined based on the following criteria and Table
19 XV:

- 20 (1) type of facility served;
- 21 (2) classification of surface waters which would be impacted by a pump tank failure; and
- 22 (3) availability of standby power devices and emergency maintenance personnel.

23

24

TABLE XV. Pump tank emergency storage capacity requirements

Facility Type	Surface Water Classification of Watershed	Standby Power and Emergency Maintenance Personnel Provisions	Emergency Storage Capacity Period Requirement
Residential systems and other systems in full time use	WS-I, WS-II, WS-III, SA, SB, and B waters	No standby power	24 hours
		Manually activated standby power and telemetry contacting a 24-hour maintenance service	12 hours
		Automatically activated standby power and telemetry contacting a 24-hour maintenance service	4 hours
	All other surface waters	No standby power	12 hours
		Manually activated standby power and	8 hours

	<u>or no surface waters</u>	telemetry contacting a 24-hour maintenance service	
		Automatically activated standby power and telemetry contacting a 24-hour maintenance service	4 hours
Non-residential systems not in full-time use and all other systems	All surface waters	No standby power	12 hours
		Manually activated standby power and telemetry contacting a 24-hour maintenance service	8 hours
		Automatically activated standby power and telemetry contacting a 24-hour maintenance service	4 hours

1
2 ~~(d)~~(e) A PE may propose an alternate method to Paragraph (b) of this Rule to calculate the minimum pump tank liquid
3 capacity required. The emergency storage capacity requirement in Paragraph ~~(e)~~ (d) of this Rule may also be calculated to
4 include the volume of freeboard space in the following: previous tankage, the pump tank above the high-water alarm
5 activation level, and the available freeboard space in the collection system below the lowest ground elevation between the
6 pump tank and the lowest connected building drain invert.

7 ~~(e)~~(f) Telemetry shall be demonstrated to be operational ~~during the final inspection of the wastewater system by the~~
8 ~~authorized agent~~ prior to issuance of the operation permit.

9

10 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*
11 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0803

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

What is meant by “where the accumulation of FOG may cause premature failure of a wastewater system”? How is this determined?

What is the different between (b) and (e)? (b) says that the minimum is 1000 gallons, but (e) sets forth how the minimum is to be calculated. Is the intent here to say that the minimum is 1,000 unless the calculation in (e) sets forth a greater number? If so, please combine (b) and (e) and say that.

In (e), can an owner pick which calculation to use or is the calculation yielding the highest number required?

In (e)(2), please provide a cross-reference to .0801 for the required septic tank capacity.

In (f), what is meant by “approved grease rated effluent filter”? Approved by whom?

Please consider making the second sentence of (f) (“When two or more grease...”) its own Paragraph.

In (g), by “the grease tank liquid capacity may be reduced”, do you mean “the grease tank capacity requirement set forth in this Rule may be reduced”?

*What is the intent of (g)? I don’t understand – (a) already requires the use of grease traps, but (g) says that the capacity may be reduced “when grease traps are used” What is the difference in requirement that would warrant a reduction? Also, what is the process for approval and what factors will be used in making the determination as to whether to approve the system and how much the reduction will ultimately be (the Rule says **up to** 50%)?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel

Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0803 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .0803 GREASE TANK CAPACITY REQUIREMENTS

(a) Grease tanks or grease tanks used with grease traps shall be required at food preparation facilities, food processing facilities, meat markets, churches with ~~commercial kitchen equipment~~, a full kitchen, institutions, places of public assembly with a full kitchen, and other facilities with a full kitchen, or where the accumulation of FOG may cause premature failure of a wastewater system. The grease tank shall be plumbed to receive all wastes associated with food handling, preparation, and cleanup. No toilet wastes shall be discharged to a grease tank.

(b) The minimum liquid capacity of any grease tank shall be 1,000 gallons with two compartments.

(c) When the required minimum grease tank capacity for a facility is less than or equal to 1,500 gallons, the grease tank may be a single tank with two compartments and a minimum 2:1 length to width ratio.

(d) When the required minimum grease tank capacity for a facility is greater than 1,500 gallons, the grease tank shall have a minimum 4:1 length to width ratio and four compartments. This requirement can be met by two or more tanks in series. Each tank shall have a minimum liquid capacity of 1,000 gallons and a minimum 2:1 length to width ratio.

(e) The minimum grease tank liquid capacity shall be calculated by one of the following:

- (1) five gallons per meal served per day;
- (2) equal to the required septic tank liquid capacity; or
- (3) equal to the capacity as determined in accordance with the following, whichever is greater:

$$\text{GLC} = D \times GL \times ST \times HR/2 \times LF$$

Where GLC = grease tank liquid capacity (gallons)

- D = number of seats in dining area
- GL = gallons of wastewater per meal (1.5 single-use; 2.5 multi-use)
- ST = storage capacity factor (2.5)
- HR = number of hours open
- LF = loading factor
(1.25 if along an interstate highway;
1.0 if along US Highway or recreational areas;
0.8 if along other roads)

(f) An approved grease rated effluent filter shall be in the final compartment of the grease tank. When two or more grease tanks are used in series in accordance with Paragraph (d) of this Rule, the following conditions shall be met:

- (1) approved grease rated effluent filter shall be in the final compartment ~~immediately prior to discharge;~~ compartment; and
- (2) the outlet of the initial tank shall consist of a sanitary tee extending down 40 to 60 percent of the liquid depth.

1 (g) The grease tank liquid capacity may be reduced by up to 50 percent when grease traps are used inside the facility. The
2 system shall be designed by a PE, if required by G.S. ~~89(e)~~, 89C, and approved by the State. The PE shall provide
3 documentation that the grease trap is projected to reduce the FOG concentration by 50 percent.

4 (h) Grease traps and grease tanks shall be maintained by a septage management firm permitted in accordance with G.S.
5 130A-291.1 and the contents disposed of in accordance with 15A NCAC 13B .0800.

6

7 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

8 *Eff. October 1, 2018*

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0804 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0804 SIPHON TANK CAPACITY REQUIREMENTS**

4 Siphon tanks shall be sized to provide the minimum dose requirements of Rule .1101(d) of this Subchapter, plus three inches
5 of freeboard above the siphon trip level.

6

7 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

8 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0805

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (e) and (f), what is meant by "other approved equivalent material"? How and by whom will this determination be made?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0805 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0805 TANK LEAK TESTING AND INSTALLATION REQUIREMENTS**

4 (a) All tanks installed under the following conditions shall be leak tested at the site:

- 5 (1) when a SWC is present within five feet of the elevation of the top of a mid-seam pump tank;
- 6 (2) with advanced pretreatment when required in the RWTS or PIA Approval;
- 7 (3) when required in the approved plans and specifications for a wastewater system designed by a PE;
- 8 (4) when the tank is constructed in place; or
- 9 (5) as required by the authorized agent based upon site or system specific conditions, such as misaligned ~~seams~~
10 seams, or exposed reinforcement, reinforcement, or damage observed that may have occurred during
11 transport or installation.

12 (b) Tanks unable to pass a leak test or be repaired to pass a leak test shall be removed from the site and the imprint described
13 in Rule .1402(d)(16) ~~and~~ or (e)(8) of this Subchapter marked over.

14 (c) The tank outlet pipe shall be inserted through the outlet pipe penetration, creating a watertight joint, and extending a
15 minimum of two feet beyond the tank outlet.

16 (d) The tank outlet pipe shall be placed on undisturbed soil or bedded in accordance with Rule .0703(b) of this Subchapter to
17 prevent differential settling of the pipe. The pipe shall be level for a minimum of two feet after exiting the tank.

18 (e) The bottom of the tank shall be installed level in undisturbed or compacted soil, or bedded using sand, gravel, stone, or
19 other approved equivalent material. When rock or other protruding ~~obstacles~~ obstructions are encountered, the bottom of the
20 tank excavation shall be backfilled with sand, gravel, stone, or other approved equivalent material to three inches above rock
21 or ~~obstacle~~ obstruction.

22 (f) The tank excavation shall be separated from the dispersal system by at least two feet of undisturbed soil. Piping from the
23 tank to the next component shall be placed on undisturbed soil, compacted soil, or bedded using sand, gravel, stone, or other
24 approved equivalent material.

25 (g) Effluent filters and risers shall be installed in accordance with the design and construction criteria of Rule .1402(b) and
26 (c) of this Subchapter.

27 ~~(h)~~ (h) Any system serving a facility with a DDF greater than 3,000 gpd shall have access manholes that extend at a minimum
28 to finished grade. The access manholes shall be designed and maintained to prevent surface water inflow and sized to allow
29 access for routine inspections, operation, and maintenance.

30

31 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

32 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0901

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), please change "are" to "shall be" in "this Section are based"

Please begin Subparagraphs (d)(1) through (5) with lower case letters and end Sub Paragraphs (d)(1) through (4) with semi-colons. Please also add "and" or "or", whichever is correct, at the end of (d)(4).

In (g), by "equivalent" do you mean "similar tool"? I just want to be sure that I understand.

In (g)(3), delete "Subparagraph" before ~~(f)~~(2).

In (g)(6), how is the authorized agent to determine whether to approve the soil cover? Will approval occur so long as the soil cover meets the requirements of (g)(6)?

In (g)(7), what is meant by "other State-approved equivalent pipe"? Is there a list somewhere or will this be determined by you all on a case by case basis? If there is an approval, how will it be decided?

In (g)(8), what is meant by "sound construction"?

In (g)(9), what is meant by "the installer shall demonstrate"? Demonstrate to whom and when? Do you instead mean something like "the installer shall ensure"?

In (g)(10), how will it be determined whether a serial and sequential distribution will be approved? Will approval occur so long as it meets the requirements of (g)(10)?

In (g)(12), how is the installer to "demonstrate that the drop boxes perform as designed"? To whom and when Do you instead mean something like "the installer shall ensure"?

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0901 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0901 GENERAL DESIGN AND INSTALLATION CRITERIA FOR SUBSURFACE DISPERSAL**
 4 **SYSTEMS**

5 (a) Wastewater systems shall be used on sites classified suitable in accordance with Rule .0509 of this Subchapter. The sizing
 6 and siting criteria in this Section are based on soil receiving DSE. The site shall meet the following minimum criteria:

- 7 (1) 12 inches of naturally occurring soil between the infiltrative surface and any ~~LC or SWC~~; LC; and
 8 (2) 18 inches of separation between the infiltrative surface and any SWC if more than six inches of separation
 9 consists of Group I soils.

10 (b) If any part of the trench or bed media extends above the naturally occurring soil surface, the system shall be a fill system
 11 and must meet the requirements of Rule .0909 of this Section.

12 (c) The LTAR shall be determined in accordance with the following:

- 13 (1) Tables XVI and XVII shall be ~~used~~; used, as applicable;
 14 ~~(2)~~ (2) the LTAR shall be assigned based upon soil textural class or saprolite textural class, as applicable,
 15 structure, consistence, SWC, depth, percent coarse rock, landscape position, topography, and system type;
 16 ~~(2)(3)~~ (3) LTARs determined from Table XVI shall be based on the soil textural class of the most limiting, naturally
 17 occurring soil horizons ~~horizon within the trench and~~ to a depth of 12 inches below the infiltrative surface
 18 (18 inches to any SWC if more than six inches of the separation consists of Group I soils);
 19 ~~(3)(4)~~ (4) LTARs determined from Table XVII shall be based on the saprolite textural class of the most limiting,
 20 naturally occurring saprolite to a depth of 24 inches (or less if combined with ~~soil~~) soil in accordance with
 21 Rule .0506(b) of this Subchapter) below the infiltrative surface; and
 22 ~~(4)~~ (4) ~~the LTAR shall be assigned based upon soil textural class, structure, consistence, SWC, depth, percent~~
 23 ~~coarse rock, landscape position, topography, and system type; and~~
 24 (5) the LTAR shall not exceed the mean rate for the applicable Soil Group for effluent exceeding DSE as
 25 specified in Table III of Rule .0402 of this ~~Subchapter~~. Subchapter or for a facility with a full kitchen.
 26

27 **TABLE XVI.** LTAR for wastewater systems based on Soil Group and texture class

Soil Group	USDA Soil Textural Class		LTAR (gpd/ft ²)
I	Sands	Sand	0.8 – 1.2
		Loamy Sand	
II	Coarse Loams	Sandy Loam	0.6 – 0.8
		Loam	
III	Fine Loams	Sandy Clay Loam	0.3 – 0.6
		Silt Loam	
		Clay Loam	

		Silty Clay Loam	
		Silt	
IV	Clays	Sandy Clay	0.1 – 0.4
		Silty Clay	
		Clay	

1
2

TABLE XVII. LTAR for wastewater systems in saprolite based on Saprolite Group and texture class

Saprolite Group	Saprolite Textural Class		LTAR (gpd/ft ²)
I	Sands	Sand	0.6 – 0.8
		Loamy Sand	0.5 – 0.7
II	Loams	Sandy Loam	0.4 – 0.6
		Loam	0.2 – 0.4
III	Fine Loams	Silt Loam	0.1 – 0.2 0.3
		Sand Clay*	0.05 – 0.15
		Clay Loam*	

3 * Sandy clay loam saprolite can only be used with advanced pretreatment in accordance with Section .1200 of this
4 Subchapter.

5

6 (d) The minimum required infiltrative surface area and trench length shall be calculated in accordance with the following:

7 (1) The minimum required infiltrative surface area shall be ~~determined~~ calculated by dividing the DDF by the
8 LTAR.

9 (2) The minimum trench length shall be calculated by dividing the minimum required infiltrative surface area
10 by the equivalent trench width. ~~The authorized agent may approve trench widths between two and three~~
11 ~~feet.~~ The following equation shall be used to calculate the minimum trench length required:

12
$$TL = (DDF \div LTAR) \div ETW$$

13 Where TL = length of trench (feet)

14 DDF = design daily flow (gpd)

15 LTAR = in gpd/ft²

16 ETW = equivalent trench width (feet)

17 (3) The area occupied by step-downs, drop boxes, and supply lines shall not be ~~included~~ as part of the
18 minimum required infiltrative surface area.

19 (4) The total trench length required for trench products other than conventional gravel shall be as follows:

20 (A) for trench products identified in Section .0900 of this Subchapter, the minimum line length shall
21 be calculated in accordance with this Section; or

22 (B) for trench products approved under Section .1700 of this Subchapter, the minimum line length
23 shall be calculated in accordance with the PIA Approval.

1 (5) When HSE is proposed to be discharged to a dispersal field with no advanced ~~pretreatment~~, pretreatment or
2 has not been reclassified as DSE in accordance with Rule .0402(c) of this Subchapter, a licensed
3 professional, if required in G.S. 89C, 89E, or 89F, shall calculate the ~~mass loading on the soil~~ adjusted
4 LTAR in accordance with Rule .0402(b) of this Subchapter.

5 (e) ~~Any dispersal field where cover is required, Systems with less than 30 inches of suitable soil (or 36 inches in Group I~~
6 ~~soils) shall not be installed on slopes greater than 30 percent, percent and shall be installed in accordance with Paragraph (f)~~
7 ~~of this Rule and soil cover above the original grade shall be placed over the entire dispersal field and shall extend laterally~~
8 ~~five feet beyond the trenches, with the dispersal field crowned at one-half percent as measured from the centerline of the~~
9 ~~dispersal field.~~

10 (f) Soil cover above the original grade shall be placed over the entire dispersal field and shall extend laterally five feet
11 beyond the trenches. On level sites, the final grade of the dispersal field shall be crowned at one-half percent as measured
12 from the centerline of the dispersal field.

13 ~~(f)~~(g) Wastewater system installation shall be in accordance with the following criteria:

14 (1) an engineer's level, laser level, or equivalent shall be used for the following:

15 (A) staking (flagging) or marking on the ground surface the location of trenches on site before
16 installation begins;

17 (B) installation of the trenches; and

18 (C) verification of elevations, excavations, and installation of other system components;

19 (2) trenches shall be installed with 12 inches of naturally occurring suitable soil between the infiltrative surface
20 and any unsuitable ~~LC or SWC~~, LC. If the vertical separation between the infiltrative surface and any SWC
21 is less than 18 inches, and if more than six inches of the separation consists of Group I soils, pressure
22 dispersal system shall be required;

23 (3) the trenches shall follow the ground contour. Trenches may be installed level but off contour if an
24 authorized agent has determined that there is sufficient vertical separation ~~distance~~ to a LC ~~or SWC~~ along
25 the entire trench length in accordance with Subparagraph ~~(f)(2)~~ (g)(2) of this ~~Rule~~; Paragraph;

26 (4) the lateral shall be centered horizontally in the trench;

27 (5) final soil cover over the dispersal field shall be a minimum of six inches deep after settling. The finished
28 grade over the tanks and dispersal field shall be sloped to shed surface water. Surface water runoff,
29 including stormwater, gutter drains, or downspouts, shall be diverted away from the wastewater ~~system~~;
30 system. No depressions shall be allowed over the dispersal field area;

31 (6) the type and placement of soil cover shall be approved by the authorized agent. The cover material shall not
32 have ~~not~~ more than 10 percent by volume of fibrous organics, building rubble, rocks, or other debris and
33 shall be Soil Groups II or III;

34 (7) Schedule 40 PVC or other State-approved equivalent pipe may be used as needed to connect sections of
35 trench and overcome site limitations. The trench bottom area ~~of trench~~ where solid piping is installed shall
36 not be included as part of the minimum ~~area~~ required ~~for~~ infiltrative ~~surfaces~~; surface area;

- 1 (8) gravity effluent distribution components including distribution boxes, drop boxes, and flow diversion
2 devices shall be of sound construction, watertight, corrosion resistant, and meet the following criteria:
3 (A) separated by a minimum of two feet of undisturbed soil from the septic tank and trench(es);
4 (B) placed level on a solid foundation of undisturbed soil, pea gravel, or concrete to prevent
5 differential settling of the component; and
6 (C) backfilled by hand to minimize disturbance;
- 7 (9) when parallel distribution is used to distribute effluent to the trenches, the installer shall demonstrate that
8 the distribution devices perform as designed;
- 9 (10) serial and sequential distribution may be used when approved by the authorized agent. The step-down or
10 drop box in an individual trench shall be constructed to allow full utilization of the upstream trench prior to
11 overflowing to the next downslope trench through either a stepdown or drop box in accordance with
12 Subparagraphs ~~(f)(11)~~ (g)(11) and ~~(f)(12)~~ (g)(12) of this Rule;
- 13 (11) step-downs shall be constructed of a minimum of two feet of undisturbed soil, bedding material, or
14 concrete and the effluent shall be conveyed over the step-down through Schedule 40 PVC or other
15 equivalent State-approved pipe in accordance with Rule .0703 of this Subchapter. The installer shall
16 demonstrate that the step-downs perform as designed;
- 17 (12) drop boxes shall be separated from the trench by a minimum of two feet of undisturbed soil and constructed
18 so that the invert of the inlet supply pipe is a minimum of one-inch above the invert of the outlet supply
19 pipe which is connected to the next lower drop box. The installer shall demonstrate that the drop boxes
20 perform as designed; and
- 21 (13) trench products other than conventional gravel shall be installed as follows:
22 (A) for trench products identified in Section .0900, the trench products shall be installed in
23 accordance with this Section; or
24 (B) for trench products approved under Section .1700 of this Subchapter, the trench products shall be
25 installed in accordance with their PIA Approval.

26 ~~(g)(h)~~ Alternating dual dispersal fields shall only be used with DSE in Soil Groups III and IV. Alternating dual dispersal
27 fields shall be approved when designed and installed in accordance with Paragraph ~~(f)~~ (g) of this Rule and the following:

- 28 (1) both initial and repair dispersal fields shall be installed at the same time;
- 29 (2) initial and repair dispersal fields of the same system type are each sized at a minimum of 75 percent of the
30 total trench length required;
- 31 (3) the initial and repair dispersal fields shall be separated by an effluent flow diversion valve(s);
- 32 (4) diversion valve(s) shall be resistant to 500 pounds crushing strength and ~~resistant to corrosion;~~ corrosion
33 resistant;
- 34 (5) effluent flow diversion valves shall be installed below finished grade in a valve box and be accessible and
35 operable from the ground surface;
- 36 (6) trench products approved under Section .1700 of this Subchapter shall be installed in accordance with their
37 PIA Approval; and

1 (7) the maximum reduction in trench length is 25 ~~percent,~~ percent as compared to a conventional gravel
2 system, unless a greater percentage is ~~specifically~~ identified in a PIA Approval or this Subchapter.

3

4 *History Note:* *Authority G.S. 130A-335(e), (f), and (f1).*

5 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0902

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

What is the difference in a "conventional wastewater system" as used in .0902 and .0906 versus "wastewater system" used elsewhere? I assume that this Rule is specific to a "conventional wastewater system" as defined in 130A-343? If so, please add 130A-343 to your History Note and provide some additional information to show the difference, if possible.

In (a), please change "...consists, at a minimum, of an approved..." to "...shall consist of a septic tank and a gravity distribution dispersal field."

Is Rule .0901 in its entirety applicable to conventional wastewater systems? If so, why is there a need to cross-reference .0901 in (b) and (e)? Are there any differences between .0901 and this Rule (other than the additional requirements in (e))? IF not, please consider revising "Except as otherwise required in this Rule, the requirements of .0901 of this Section shall apply" to say something like "In addition to the requirements set forth in Rule .0901 of this Section, this Rule shall apply to conventional wastewater systems as defined in 130A-343"

I'm not sure what (b), (c), and (d) have to do with conventional wastewater systems. It looks like a bunch of random requirements thrown in. Are these specific to "conventional" wastewater systems? If so, please make that clear (a suggestion would be to address that in (a) as suggested above.

In (c), when would trench widths be approved? Is there any additional information that could be provided for purposes of clarity? Is the authorized agent to make this determination in accordance with the local rules? Does this go to (e)(3)? If so, would it be appropriate to say something like "Trenches shall be at least two feet, but no more than three feet"?

In (e)(1), what is meant by "or equivalent"?

In (e)(4), is "clean, washed gravel" an industry term? If not, please delete or define "clean, washed"

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0902 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0902 CONVENTIONAL WASTEWATER SYSTEMS**

4 (a) A conventional wastewater system consists, at a minimum, of an approved septic tank and a gravity distribution dispersal
5 field. Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply.

6 ~~(b) Conventional wastewater systems shall be used on sites that have been classified suitable in accordance with Rules .0509~~
7 ~~of this Subchapter. Sites classified suitable as to soil depth may utilize shallow placement of dispersal system~~

8 ~~(c)(b) The LTAR shall be determined in accordance with Rule .0901(c) of this Section. An equivalent trench width of three~~
9 ~~feet shall be used to determine trench length in accordance with Rule .0901(d) of this Section.~~

10 (c) The authorized agent may approve trench widths between two and three feet.

11 (d) The minimum required infiltrative surface and trench length shall be calculated in accordance with Rule .0901(d) of this
12 Section.

13 ~~(d)(e)~~ Conventional wastewater system installation shall be in accordance with Rule ~~.0901(e)~~ .0901(g) of this Section and the
14 following:

15 (1) trenches shall be constructed level in all directions with a plus or minus one-half inch tolerance from side-
16 to-side and the maximum fall ~~in a~~ in a single trench ~~bottom~~ not to exceed one-fourth inch in 10 feet as
17 determined by an engineer's level, laser level, or equivalent;

18 (2) trenches shall be located not less than three times the trench width on centers. The minimum spacing for
19 trenches is six feet on center;

20 (3) trench widths shall not exceed three feet and trench depth shall not exceed 36 inches on the downslope side
21 of the trench, except as approved by an authorized agent; ~~and~~

22 (4) aggregate used in trenches shall be clean, washed gravel or crushed stone and graded or sized in
23 accordance with size numbers 4, 5, or 6 of ASTM D448. The aggregate shall be distributed uniformly
24 across the infiltrative surface and over the pipe and placed 12 inches deep with a minimum of six inches
25 below the pipe and two inches over the ~~pipe.~~ pipe; and

26 (5) the laterals shall meet the requirements of Rule .0703(d) of this Subchapter.

27

28 *History Note: Authority G.S. 130A-335(e) and (f).*

29 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0903

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Please consider revising the first sentence in (a) (This Rule ... receiving DSE) to say something like "This Rule shall apply to bed systems receiving DSE."

Also in (a), what is a bed system? I don't have this concern with "conventional wastewater system" since it is defined in statute, but it's unclear to me what the difference is here. I assume that this may be used when the design options are limited on a site, but I think that could be more clear (if that's correct, please see my suggestion in (b)).

Please consider making the second sentence of (a) (Bed systems shall be limited to... Approval) its own Paragraph. I don't understand its placement here. Also, I assume additional information regarding this specific approval is set forth somewhere with regard to the PIA approval?

Is Rule .0901 in its entirety applicable to bed systems, with the exception of (c)? If so, please consider saying something like "The requirements of Rule .0901 of this Section shall apply to bed systems, except as set forth in Paragraph (c) of this Rule."

In (b), practically speaking, when would a bed system be used? Do you mean something like "When design options for a wastewater site are limited by topography or available space, an owner may install a bed system if the soil texture is Group I, II, or III" such that the discretion is with the owner, rather than you all or the LHD? As written, I have concerns with "may be permitted" as there is no additional information as to what will determine whether the permit will be issued.

In (c), since you've already said that the requirements of .0901 are applicable to bed systems, it seems unnecessary to say "The LTAR shall be determined in accordance with .0901(c) of this Section."

In (d), please consider revising to say "In to the requirements set forth in Rule .0901(d) of this Section, the following shall apply:"

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

In (d)(4), please correct the cross-reference from .0902(d)(4) to (e)(4).

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0903 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0903 BED SYSTEMS**

4 (a) This Rule provides for the permitting of bed systems receiving DSE. Bed systems shall be limited to 600 gpd DDF unless
5 ~~specifically~~ approved for a greater DDF in accordance with a PIA Approval. Except as otherwise required in this Rule, the
6 requirements of Rule .0901 of this Section shall apply.

7 (b) ~~The site has been classified suitable in accordance with Rule .0509 of this Subchapter.~~ Beds may be permitted on sites
8 that meet the following criteria:

- 9 (1) soil texture is Group I, II, or III; and
- 10 (2) design options for the site are limited by topography or available space.

11 (c) The LTAR shall be determined in accordance with Rule .0901(c) of this Section. The number of square feet of infiltrative
12 surface area required shall be increased by 50 percent over that required for a trench system as calculated in accordance with
13 Rule .0901(d) of this Section.

14 (d) Bed system installation shall be in accordance with Rule ~~.0901(f)~~ .0901(g) of this Section and the following:

- 15 (1) the bottom of the bed shall be excavated level, plus or minus one-half inch, in all directions;
- 16 (2) laterals shall be ~~a minimum of~~ one and one-half feet from the side of the bed;
- 17 (3) laterals shall be placed on three-foot centers;
- 18 (4) aggregate used shall comply with the lateral design criteria shall meet the requirements of Rule .0902(d)(3)
19 ~~and (4) .0902(d)(4) of this Section; Section for gravity and pressure dosed gravity distribution systems;~~
- 20 (5) products approved under Section .1700 of this Subchapter shall be installed in accordance with their PIA
21 Approval;
- 22 (6) the gravel surface shall be covered by an approved geo-textile fabric capable of preventing the downward
23 movement of soil particles while allowing the movement of liquids and gases; and
- 24 (7) when pressure dispersal is used, the lateral design criteria shall meet the minimum requirements of Rules
25 .0907(d) and (e) or .0908(c) and (e) of this Section or in accordance with a PIA Approval ~~when pressure~~
26 ~~dispersal is used.~~ Approval.

27

28 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*
29 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0904

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Please consider making "Except as otherwise provided in this Rule, the requirements of Rule .0901 of this Section shall apply" its own Paragraph and change it to say something like the suggestion in .0903 or "The requirements of Rule .0901 of this Section shall apply to large diameter pipe systems, except as follows:

- (1) the LTAR determined in accordance with .0901 (c) of this Section shall not exceed .08 gpd/ft²; and*
- (2) to calculate the minimum trench length...*

LDP pipe, wrap, and fittings do not appear to be addressed by .0901. So, I would suggest moving that after (d) and revise (d) to say something like, "In addition to the requirements set forth in .0901(g) of this Section, LDP system installations shall comply with the following:

In (c)(5), please add "of this Paragraph" after "Table XVIII"

As written (d)(1) is a bit confusing – please consider revising (d)(1) to say something like "trenches for eight-inch LDP trenches shall be a minimum of 10 inches and a maximum of 18 inches wide. Trenches for ten-inch LDP trenches shall be a minimum of 12 inches and a maximum of 24 inches wide;" or perhaps something like: minimum and maximum trench requirements for LDP shall be as follows:

(A) for eight-inch LDP, a minimum of 10 inches and a maximum of 18 inches wide; and

(B) for ten-inch LDP, a minimum of 12 inches and a maximum of 24 inches.

Please add "the" at the beginning of (d)(5).

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0904 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0904 LARGE DIAMETER PIPE SYSTEMS**

4 (a) ~~Large diameter pipe (LDP)~~ LDP systems consist of laterals composed of eight-inch inside diameter (10-inch outside
5 diameter) or 10-inch ~~(inside diameter)~~ inside diameter (12-inch outside diameter) corrugated, polyethylene tubing encased in a
6 nylon and polyester blend filter wrap that are installed in trenches in the dispersal field. LDP systems shall only be used with
7 DSE. Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply.

8 ~~(b) The site has been classified suitable in accordance with Rule .0509 of this Subchapter.~~

9 ~~(e)(b)~~ (b) The LTAR shall be determined in accordance with Rule .0901(c) of this Section except the LTAR shall not exceed 0.8
10 gpd/ft². To calculate the minimum trench length in accordance with Rule .0901(d) of this Section, an equivalent trench width
11 of two feet shall be used for eight-inch LDP and ~~an equivalent trench width of two and one-half feet shall be used for 10-inch~~
12 LDP.

13 ~~(d)(c)~~ (c) LDP pipe, filter wrap, and fittings shall meet the following criteria:

- 14 (1) pipe and fittings shall comply with the requirements of ASTM F667;
- 15 (2) the corrugated pipe shall have two rows of holes, each hole between three-eighths inch and one-half inch in
16 diameter, located 120 degrees apart along the bottom half of the pipe (each 60 degrees from the bottom
17 center line) and staggered so that one hole is present in the valley of each corrugation;
- 18 (3) pipe shall be marked with a visible top location indicator, 120 degrees away from each row of holes;
- 19 (4) corrugated pipe shall be covered with filter wrap at the factory;
- 20 (5) filter wrap shall be spun, bonded, or spunlaced nylon, polyester, or nylon/polyester blend filter wrap
21 meeting the minimum requirements in Table XVIII; and
- 22 (6) the LDP with filter wrap shall be ~~wrapped~~ encased in a black polyethylene sleeve ~~until immediately~~
23 installation in the trench to prevent physical damage and ultraviolet radiation deterioration of the filter
24 wrap.

25

26

Table XVIII. Minimum filter wrap requirements for LDP

Property	Value
Unit Weight	1.0 ounce per square yard
Sheet Grab Tensile Strength	Machine Direction: 23 pounds
Trapezoid Tear Strength	Machine Direction: 6.2 pounds Cross Direction: 5.1 pounds
Mullen Burst Strength	40 psi or 276 kilopascals
Frazier Air Permeability	500 cubic feet per minute per square foot at pressure differential of 0.5 inches of water

27

28 ~~(e)(d)~~ (d) LDP system installations shall be in accordance with Rule ~~.0901(f)~~ .0901(g) of this Section and the following:

- 1 (1) eight-inch LDP trenches shall be a minimum of 10 inches and a maximum of 18 inches wide. Ten-inch
2 LDP trenches shall be a minimum of 12 inches and a maximum of 24 inches wide;
- 3 (2) the infiltrative surface and pipe shall be level with a maximum fall of one inch in 100 feet;
- 4 (3) backfill material shall have no more than 10 percent by volume of fibrous organics, building rubble, rocks,
5 large clods, or other debris and shall be Soil Groups I, II, or III;
- 6 (4) the LDP shall be connected to the collection sewer or a stepdown pipe using an offset adapter to create a
7 mechanical joint; and
- 8 (5) minimum on center spacing for eight-inch LDP shall be five feet and 10-inch LDP shall be six feet.
9

10 *History Note: Authority G.S. 130A-335(e) and (f).*

11 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0905

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), please consider revising "Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply" as suggested in .0902, .0903 or .0904, whichever may be applicable.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0905 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0905 PREFABRICATED PERMEABLE BLOCK PANEL SYSTEMS**

4 (a) PPBPS utilize both horizontal and vertical air chambers in a 16-inch PPBPS and are constructed to promote downline and
5 horizontal distribution of effluent. PPBPS systems shall only be used with DSE. Except as otherwise required in this Rule, the
6 requirements of Rule .0901 of this Section shall apply.

7 ~~(b) The site has been classified suitable in accordance with Rule .0509 of this Subchapter.~~

8 ~~(c)~~(b) The LTAR shall be determined in accordance with Rule .0901(c) of this Section except that the LTAR shall not exceed
9 0.8 gpd/ft². An equivalent trench width of six feet shall be used to determine trench length in accordance with Rule .0901(d)
10 of this Section.

11 ~~(d)~~(c) PPBPS installation shall be in accordance with Rule ~~.0901(f)~~ .0901(g) of this Section, the following, and the
12 manufacturer's specifications:

- 13 (1) PPBPS trenches shall be located a minimum of eight feet on ~~center;~~ center or three times the trench width,
14 whichever is greater;
- 15 (2) trench sidewalls shall be raked in Group IV soils;
- 16 (3) pressure dosed gravity distribution or pressure dispersal shall be used when the individual trench lengths
17 are greater than 50 feet and less than or equal to ~~70 or whenever the DDF exceeds 480 gpd;~~ 70 feet; and
18 (4) pressure dispersal shall be used when the individual trench lengths are greater than 70 feet.

19

20 *History Note: Authority G.S. 130A-335(e) and (f).*

21 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0906

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), please change "and which" to "that." Please consider revising as follows:

*(a) Sand lined trench systems may be used on sites originally classified unsuitable due to SWC, soil morphology, restrictive horizon, or soil ~~depth, and which~~ **depth that** may be reclassified suitable in accordance with this Rule **when there is a DDF less than or equal to 1,500 gpd.** ~~Rule. Sand lined trenches can be used with a DDF less than or equal to 1,500 gpd DDF. gpd.~~*

Please consider breaking lines 6-7 ("Sand lined trench systems... of this Subchapter") into its own Paragraph.

In (a), please consider revising "Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply" as suggested in .0902, .0903, or .0904 whichever may be applicable here.

In (b), I think (b) needs some additional language to say when the criteria would apply.

Please add "the" before (b)(1), (2), and (3).

In (c)(2), what is meant by "suitable" in "suitable outlet"?

Please either change "The following conditions apply to the ground water lowering system" to "the groundwater lowering system shall" and delete "shall" in (c)(1) and (2); or add a noun to (c)(1) and (2). As written, it reads a bit awkwardly.

In (d), what is meant by "an equivalent trench width of three feet shall be used" Equivalent to what?

Please consider deleting "whichever is less" in (d)(2) and changing "shall be based on the following" to "shall be based on the lesser of the following:" As written, I'm afraid that the "whichever is less" could get lost.

In (f), please change "is required" to "shall be required"

Amber May

Commission Counsel

Date submitted to agency: September 6, 2018

Please add "the" before (f)(1) and (2).

In (g), does all of .0901 apply or just .0901(g) except as provided here? Are these additional requirements?

In (g)(2), please change "is five" to "shall be five"

In (g)(5), how is the LHD to determine whether laboratory verification will be necessary in the CA? IS this set forth elsewhere?

In (g)(5), please consider deleting "determined to be." Isn't the requirement that the material itself be clean, uncoated, etc.?

Please consider formatting (g)(9) as follows:

drip dispersal systems in sand lined trenches shall require multiple runs per trench of drip tubing with ~~emitters:~~ emitters as follows:

(i) a minimum of two runs within a trench between one and one half and two feet wide; and

(ii) a minimum of three runs within a trench between two and three feet wide.

The drip tubing shall be uniformly spaced across the trench with the tubing six inches from the trench sidewalls. Drip tubing shall be covered by a minimum of six inches of sand lined trench media meeting the requirements of Subparagraph (6) of this Paragraph. Drip dispersal systems shall comply with the requirements of Section .1600 of this Subchapter and this Rule;

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0906 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0906 SAND LINED TRENCH SYSTEMS**

4 (a) Sand lined trench systems may be used on sites originally classified unsuitable due to SWC, soil morphology, restrictive
5 horizon, or soil depth, and which may be reclassified suitable in accordance with this Rule. Sand lined trenches can be used
6 with a DDF less than or equal to 1,500 ~~gpd-DDF, gpd.~~ Sand lined trench systems with advanced pretreatment shall comply
7 with Rule ~~1207~~ .1205 of this Subchapter. Except as otherwise required in this Rule, the requirements of Rule .0901 of this
8 Section shall apply.

9 (b) The soil and site shall meet the following criteria:

- 10 (1) texture of the receiving permeable horizon is sand, loamy sand, sandy loam, loam, or silt loam;
- 11 (2) structure of the receiving permeable horizon is classified suitable;
- 12 (3) moist consistence of the receiving permeable horizon is loose, very friable, friable, or firm;
- 13 (4) if the receiving permeable horizon has zones of heavier textured materials, these zones are discontinuous
14 with an average thickness not exceeding 1/3 of the required thickness of the receiving permeable horizon;
- 15 (5) the naturally occurring receiving permeable horizon shall be less than or equal to 60 inches below the
16 naturally occurring soil surface. If the receiving permeable horizon is greater than 60 inches below the
17 naturally occurring soil surface, advanced pretreatment shall be used in accordance with Rule .1205 of this
18 Subchapter;
- 19 (6) artificial drainage shall be provided, as needed, to maintain the following minimum vertical separation
20 ~~distances~~ from the infiltrative surface to a SWC:
 - 21 (A) 18 inches with gravity or pressure dosed gravity distribution; or
 - 22 (B) 12 inches with pressure dispersal; and
- 23 (7) the minimum required thickness of the receiving permeable horizon shall be determined by the texture of
24 that horizon as follows:
 - 25 (A) sand or loamy sand texture requires a minimum thickness of one-foot;
 - 26 (B) sandy loam or loam texture requires a minimum thickness of two feet; or
 - 27 (C) silt loam texture requires a minimum thickness of three feet.

28 (c) If a groundwater lowering system is required to meet the minimum vertical separation ~~distance~~ in Paragraph (b)(6) of this
29 Rule to a SWC that is not related to lateral water movement, design plans and specifications shall be prepared by a licensed
30 professional if required in G.S. 89C, 89E, or 89F. The following conditions apply to the groundwater lowering system:

- 31 (1) shall extend into the receiving permeable horizon;
- 32 (2) shall have a suitable outlet. The outlet location and elevation must be shown on the artificial drainage
33 system plan with relative water level elevations and wastewater system site elevations labeled; and
- 34 (3) all groundwater lowering system components are integral to the wastewater system and subject to
35 ownership and control requirements of Rule .0301(b) and (c) of this Subchapter.

(d) The LTAR shall be determined in accordance with Table XIX for all DSE sand-lined trench systems. An equivalent trench width of three feet shall be used to determine trench length in accordance with Rule .0901(d) of this Section. The LTAR shall be based on one of the following:

- (1) LTAR set forth in Table XIX based on the most hydraulically limiting, naturally occurring soils overlying the permeable receiving horizon; or
- (2) 10 percent of the in-situ Ksat of the receiving permeable horizon, whichever is less.

~~(e) There shall be no reduction in trench length compared to a conventional wastewater system when Accepted or Innovative gravelless trench product is used.~~

TABLE XIX. LTAR for sand lined trench systems based on the most hydraulically limiting, naturally occurring soils overlying the permeable receiving horizon

Soil Group	Texture of Most Hydraulically Limiting Overlying Soil Horizon	Distribution Type	LTAR (gpd/ft ²)
I	Sands	Gravity or Pressure Dosed Gravity	0.7 - 0.9
		Pressure Dispersal	0.8 - 1.2
II	Coarse Loams	Gravity or Pressure Dosed Gravity	0.5 - 0.7
		Pressure Dispersal	0.6 - 0.8
III	Fine Loams	Gravity or Pressure Dosed Gravity	0.2 - 0.4
		Pressure Dispersal	0.3 – 0.6
IV	Clays	Gravity or Pressure Dosed Gravity	0.1 – 0.2
		Pressure Dispersal	0.15 – 0.3

~~(e) There shall be no reduction in trench length compared to a conventional wastewater system when Accepted or Innovative gravelless trench product is used.~~

(f) A Special Site Evaluation in accordance with Rule .0510 of this Subchapter is required for the following conditions to field verify the LTAR:

- (1) texture of the receiving permeable horizon is sandy loam or loam and the system DDF is greater than 600 gpd; or
- (2) texture of the receiving permeable horizon is silt loam.

(g) Sand lined trench dispersal field installation shall be in accordance with Rule ~~.0901(f)~~ .0901(g) of this Section and the following:

- (1) gravity trenches shall have a maximum width of three feet and a minimum width of one and a half feet;
- (2) trenches shall be located not less than three times the trench width on centers. The minimum spacing for trenches is five feet on centers;

- 1 ~~(3)~~ drip dispersal systems in sand lined trenches shall require multiple runs per trench of drip tubing with
2 emitters: a minimum of two runs within a trench between one and one half and two feet wide; and a
3 minimum of three runs within a trench between two and three feet wide. The drip tubing shall be uniformly
4 spaced across the trench with the tubing six inches from the trench sidewalls. Drip tubing shall be covered
5 by a minimum of six inches of sand lined trench media meeting the requirements of Subparagraph (6) of
6 this Paragraph. Drip dispersal systems shall comply with the requirements of Section .1600 of this
7 Subchapter and this Rule;
- 8 ~~(4)~~(3) the sand lined trenches shall be constructed to extend into the naturally occurring receiving permeable
9 horizon;
- 10 ~~(5)~~(4) the infiltrative surface shall be no deeper than 24 inches below finished grade. The top of the trench media
11 shall be at or below the naturally occurring soil surface. Drip tubing shall be installed a minimum of six
12 inches below the natural grade;
- 13 ~~(6)~~(5) ~~sand soil~~ used to line the trench shall be sand in texture. If required by the LHD in the CA, the installer
14 shall provide written laboratory verification of the media textural classification and quality prior to the sand
15 lined trench being installed. When laboratory analysis is required, the material shall be determined to be
16 clean, uncoated fine, medium, or coarse sand with a minimum of 90 percent in sizes ranging from 0.1 to 2.0
17 millimeters, with no more than one percent smaller than 0.074 millimeters (No. 200 Sieve);
- 18 ~~(7)~~(6) pressure dosed gravity distribution or pressure dispersal shall be used when the total dispersal field line
19 length exceeds 750 linear feet in a single system;
- 20 ~~(8)~~(7) pressure dispersal shall be used when the total dispersal field line length exceeds 1,200 linear feet in a
21 single system;
- 22 ~~(9)~~(8) ~~if~~ when pressure dispersal is used, the pressure dispersal network shall be designed in accordance with
23 Rules .0907(e) or .0908(e) of this Section, except that the trench width shall comply with this Paragraph.
24 The total line length shall be calculated based on infiltrative surface area;
- 25 (9) drip dispersal systems in sand lined trenches shall require multiple runs per trench of drip tubing with
26 emitters: a minimum of two runs within a trench between one and one half and two feet wide; and a
27 minimum of three runs within a trench between two and three feet wide. The drip tubing shall be uniformly
28 spaced across the trench with the tubing six inches from the trench sidewalls. Drip tubing shall be covered
29 by a minimum of six inches of sand lined trench media meeting the requirements of Subparagraph (6) of
30 this Paragraph. Drip dispersal systems shall comply with the requirements of Section .1600 of this
31 Subchapter and this Rule;
- 32 (10) finished grade shall provide for positive surface drainage away from all system components, with the
33 dispersal field crowned at 1/2 percent as measured from the centerline of the dispersal field. The finished
34 grade requirements shall be made a condition of the CA; and
- 35 (11) trench products approved under Section .1700 of this Subchapter shall be installed in accordance with PIA
36 Approval.

1 (h) Other sand lined trench systems may be approved on a site-specific basis in accordance with Rule .0509(f) of this
2 Subchapter.

3

4 *History Note: Authority G.S. 130A-335(e) and (f).*

5 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0907

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), please consider revising "Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply" as suggested in .0902, .0903 or .0904, whichever may be applicable.

Please consider making lines 6-7 their own Paragraph.

In (b)(1), is "as applicable" necessary here? Doesn't the table set forth categories, making this language superfluous?

It appears to me that the lower-case and semi-colons of (c)(1) and (2) were correct. If you did this.

In (d), does all of .0901 apply or just .0901(g) except as provided in (d)(1) through (15)? Are these additional requirements? Please see my comment above regarding the

In (d)(1), what is meant by "other approved media"?

In (d)(3), please change "is five" to "shall be five"

In (d)(4), what is meant by "approved gravel or other approved media"?

In (d)(5)(C), what is meant by "should face down"? Do you mean may or shall face down?

In (d)(6)(B), what is meant by "State-approved equivalent tubing"?

In (d)(7), please change "are" to "shall be" in "are required"

In (d)(7)(A), please change "are" to "shall be" in "are required"

In (d)(7)(D), please delete or define "uniformly"

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

In (d)(7)(D), what is meant by “unless otherwise approved by the State”?

In (d)(11)(B), please delete or define “directly”

In (d)(13), what is meant by “other approved access device”

In (e), what criteria will be used in making this determination?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0907 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .0907 LOW PRESSURE PIPE SYSTEMS

(a) LPP systems utilize a network of small diameter pipes with three to six-foot pressure head to distribute effluent across the entire dispersal field. Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply. Any subsurface dispersal system listed in this Section may incorporate LPP dispersal. LPP systems with advanced pretreatment shall comply with Rules .1202, .1203, .1205, ~~and or~~ .1206 of this Subchapter.

~~(b) The site has been classified suitable in accordance with Rule .0509 of this Subchapter.~~

~~(c)~~(b) The LTAR shall be determined as follows:

- (1) ~~Tables XX and XXI shall be used to determine the LTAR for LPP systems, as applicable;~~
- ~~(1)(2)~~ (2) the LTAR shall be based on the soil textural class of the most limiting, naturally occurring soil horizon ~~from the top of the trench~~ to a depth of 12 inches below the infiltrative surface;
- ~~(3)~~ (3) ~~LTARs determined from Table XXI and in accordance with Rule .0506 of this Subchapter; and~~
- ~~(2)~~ (2) ~~the LTAR shall be assigned based upon soil textural class, structure, consistence, depth, percent rock, landscape position, and topography;~~
- ~~(3)~~ (3) ~~Tables XX and XXI shall be used to determine the LTAR for LPP systems; and~~
- (4) the LTAR shall not exceed the mean rate for the applicable Soil Group for effluent exceeding DSE as specified in Table III of Rule .0402 of this Subchapter.

TABLE XX. LTAR for LPP systems based on Soil Group and texture class

Soil Group	USDA Soil Textural Class		LTAR (gpd/ft ²)
I	Sands	Sand	0.4 – 0.6
		Loamy Sand	
II	Coarse Loams	Sandy Loam	0.3 – 0.4
		Loam	
III	Fine Loams	Sandy Clay Loam	0.15 – 0.3
		Silt Loam	
		Clay Loam	
		Silty Clay Loam	
		Silt	
IV	Clays	Sandy Clay	0.05 – 0.2
		Silty Clay	
		Clay	

21
22

TABLE XXI. LTAR for LPP systems in saprolite based on Saprolite Group and texture class

Saprolite Group	Saprolite Textural Class		LTAR (gpd/ft ²)
I	Sands	Sand	0.3 – 0.4
		Loamy Sand	0.25 – 0.35
II	Loams	Sandy Loam	0.2 – 0.3
		Loam	0.1 – 0.2
		Silt Loam	0.05 – 0.1 <u>0.15</u>

1

2

(~~d~~)(c) The minimum required dispersal field area and trench length shall be calculated in accordance with the following:

3

(1) ~~the~~ The minimum required dispersal field area shall be ~~determined~~ calculated by dividing the DDF by the ~~LTAR; and~~ LTAR.

4

5

(2) ~~the~~ The minimum trench length shall be ~~determined~~ calculated by dividing the required dispersal field area by a lateral spacing of five feet. The following equation shall be used to calculate the minimum line length required.

6

7

$$TL = (DDF \div LTAR) \div LS$$

8

Where TL = length of trench (feet)

9

DDF = design daily flow (gpd)

10

LTAR = in gpd/ft²

11

LS = five feet

12

13

(3) When HSE is proposed to be discharged to ~~a~~ an LPP dispersal field with no advanced ~~pretreatment,~~ pretreatment or has not been reclassified as DSE in accordance with Rule .0402(c) of this Subchapter, a licensed professional, if required in G.S. 89C, 89E, or 89F, shall calculate the ~~mass loading on the soil~~ adjusted LTAR in accordance with Rule .0402(b) of this Subchapter.

14

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17

(~~e~~)(d) LPP system design and installation shall be in accordance with Rule ~~.0901(f)~~ .0901(g) of this Section and the following, unless otherwise allowed in a PIA Approval:

18

19

(1) the LPP distribution network shall be constructed of small diameter (one to two inches) pressure rated Schedule 40 PVC laterals placed in gravel that meets the requirements in Rule ~~.0902(d)(4)~~ .0902(e)(4) of this Section or other approved media filled trenches;

20

21

22

(2) the trench width shall be one to two feet;

23

24

(3) trenches shall be located not less than three times the trench width on center. The minimum spacing for trenches is five feet on center:

25

26

(4) trenches shall include a minimum of ~~nine~~ eight inches of approved gravel or other approved media, either from a PIA Approval or subsurface dispersal system listed in Section .0900 of this Subchapter. There shall be a minimum of five inches vertical separation ~~distance~~ from the lateral to the infiltrative surface;

27

28

(5) laterals, manifolds and LPP fields shall comply with the following design criteria:

- 1 (A) the maximum lateral length shall yield no more than a 10 percent difference in orifice delivery
2 rate between the first and last orifice along the lateral;
- 3 (B) ~~no more than 1/3 of the total number of holes shall be less than 5/32-inch, minimum orifice size~~
4 ~~shall be 5/32-inch for a minimum of 2/3 of the field lateral lines~~, with no orifices sized smaller
5 than 1/8-inch in any lateral line;
- 6 (C) all orifices shall face upwards, except for two orifices, 1/3 of the way from the beginning and end
7 of each lateral, which should face down; and
- 8 (D) maximum orifice spacing shall be as follows: Soil Group I - five feet; Soil Group II - six feet; Soil
9 Group III - eight feet; and Soil Group IV - 10 feet;
- 10 (6) the orifices shall be protected by the following:
- 11 (A) lateral sleeved within a three or four-inch perforated corrugated or smooth wall tubing meeting
12 the requirements of Rule .0703 of this Subchapter;
- 13 (B) State-approved equivalent tubing or pipe; or
- 14 (C) specially designed and approved orifice shields;
- 15 (7) the following additional design provisions are required for sloping sites:
- 16 (A) separately valved manifolds are required for all subfield segments where the elevation difference
17 between the highest and lowest laterals exceeds three feet;
- 18 (B) the orifice spacing, orifice size or both shall be adjusted to compensate for relative elevation
19 differences between laterals branching off a common supply manifold and to compensate for the
20 lines at the lowest elevation receiving more effluent at the beginning and end of a dosing cycle;
- 21 (C) the lateral network shall be designed to achieve a 10 to 30 percent higher steady state (pipe full)
22 flow rate into the upper lines, relative to the lower lines, depending on the amount of elevation
23 difference; and
- 24 (D) maximum elevation difference between the highest and lowest laterals in a field shall not exceed
25 10 feet unless the flow is uniformly divided using multiple pumps or split between subfield
26 ~~segments, such as with State approved automatically alternating valves, segments~~ without
27 requiring simultaneous adjustment of multiple pressure regulating valves in separate locations, or
28 as otherwise approved by the State;
- 29 (8) turn-ups shall be provided at the ends of each lateral, constructed of Schedule 40 PVC pipe or stronger
30 pressure-rated pipe, and shall terminate at the ground surface and be installed in a valve box or equivalent
31 that provides access for operation and maintenance;
- 32 (9) the supply manifold shall be constructed of solvent-welded pressure rated Schedule 40 PVC;
- 33 (10) the supply manifold shall be sized large enough based on the size and number of laterals served to prevent
34 more than a 20 percent variation in pressure head between the first and last laterals due to losses within the
35 manifold when feeding the manifold from a lower elevation;
- 36 (11) the supply manifold shall comply with the following design criteria:

- 1 (A) the ratio of the supply manifold inside cross-sectional area to the sum of the inside cross-sectional
2 areas of the laterals served shall exceed 0.7:1;
- 3 (B) the reduction between the manifold and connecting laterals shall be made directly off the
4 manifold using reducing tees or fittings; and
- 5 (C) cleanouts shall be installed at the distal ends of the supply manifold and shall be enclosed in valve
6 boxes accessible from the ground surface;
- 7 (12) pressure regulating valves shall be provided for pressure adjustment at the fields;
- 8 (13) valves shall be installed in a valve box or other approved access device and be accessible and operable
9 from the ground surface. Valves serving contiguous subfields shall be in a common valve box that
10 facilitates simultaneous adjustment of pressure head;
- 11 (14) the LPP dosing system shall comply with the following design criteria:
- 12 (A) the pump operating flow rate shall be based upon delivering three feet to six feet of residual
13 pressure head at the distal end of all lateral lines;
- 14 (B) the dose volume shall be between five and 10 times the liquid capacity of the lateral pipe dosed,
15 plus the liquid capacity of the portions of manifold and supply lines which drain between doses;
16 and
- 17 (C) when pumping downhill and the supply line volume exceeds 20 percent of the calculated dose
18 volume, special design considerations shall be followed to prevent more than 20 percent of the
19 dose volume from draining by gravity to the dispersal field between doses; and
- 20 (15) the trenches shall be covered to a minimum depth of four inches after settling.
- 21 ~~(c)~~ Drip dispersal systems used in LPP trenches and other LPP designs may be approved on a site-specific basis.

22

23 *History Note: Authority G.S. 130A-335(e) and (f).*

24 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0908

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), please consider revising "Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply" as suggested in .0902, .0903 or .0904, whichever may be applicable. Also, please consider making lines 6-7 its own paragraph.

In (b)(2)(B), please change "exists" to "shall exist" Also, by "the initial site requirements", do you mean the requirements set forth in this Subparagraph?

In (e)(3), by "may be allowed", do you mean "shall be allowed"? If not, how will this be determined?

In (e)(5), where is the requirement for six inches of cover? Should this read something like "there shall be six inches of cover that may be met by the addition..."?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0908 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .0908 DRIP DISPERSAL SYSTEMS

(a) This Rule provides for the permitting of drip dispersal systems receiving DSE. Drip dispersal systems shall comply with the provisions of Section .1600 of this Subchapter. Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply. Drip dispersal systems with advanced pretreatment shall comply with Rule .1204 of this Subchapter.

(b) Drip dispersal systems shall meet the following soil and site criteria:

(1) A minimum of 18 inches of naturally occurring suitable soil above a LC, 13 inches of naturally occurring suitable soil above a SWC, and the minimum vertical separation ~~distance~~ to any ~~unsuitable LC or SWC~~ shall be 12 inches. A groundwater lowering system may be used to meet the vertical separation to a SWC only when Group I or II soils with suitable structure are present within 36 inches of the naturally occurring soil surface.

(2) For new fill, the soil and site shall meet the following criteria:

- (A) Rule .0909(b) and (c) of this Section, except as otherwise specified in this Subparagraph;
- (B) no SWC exists within the first 12 inches below the naturally occurring soil surface. A groundwater lowering system ~~may be used to meet the vertical separation distance to a SWC only when Group I or II soils with suitable structure are present within 36 inches of the naturally occurring soil surface;~~ shall not be used to meet the initial site requirements for a new fill system; and
- (C) minimum vertical separation ~~distance~~ to any unsuitable soil horizon or rock shall be 18 inches and 12 inches for any SWC.

(3) For existing fill, the soil and site shall meet the following criteria:

- (A) Rule .0909(d) and (e) of this Section, except as otherwise specified in this Subparagraph; and
- (B) minimum vertical separation ~~distance~~ to any LC ~~or SWC~~ shall be 24 inches.

(c) Tables XXII and XXIII shall be used to determine the LTAR for all DSE drip dispersal systems:

- (1) Table XXII shall be used for systems utilizing soil. The LTAR shall be based on the most limiting, naturally occurring soil horizon within 18 inches of the naturally occurring soil surface or to a depth of 12 inches below the infiltrative surface, whichever is deeper;
- (2) Table XXIII shall be used for systems utilizing sapolite. The LTAR shall be based on the most limiting, naturally occurring sapolite to a depth of 24 inches below the infiltrative surface;
- (3) the LTAR for new fill systems shall not exceed 0.5 gpd/ft² for Group I, 0.3 for gpd/ft² Group II, 0.15 gpd/ft² for Group III or 0.05 gpd/ft² for Group IV soils, respectively;
- (4) sections of tubing without emitters (blank tubing) shall not count towards the minimum dripline length required; and
- (5) the DDF shall be divided by the LTAR, determined from Table XXII or XXIII, to determine the minimum dispersal field area required. The minimum dripline length shall be determined by dividing the required

1 area by the maximum line spacing of two feet. The designer may recommend additional linear footage as
 2 soil and site conditions allow. The following equations shall be used to calculate the minimum dispersal
 3 field area and dripline length required:

4 $MA = DDF \div LTAR$

5 $DL = MA \div LS$

6 Where MA = minimum dispersal field area (ft²)

7 DDF = design daily flow (gpd)

8 LTAR = in gpd/ft²

9 DL = dripline length (feet)

10 LS = two-foot line spacing

11
 12 **TABLE XXII.** LTAR for DSE drip dispersal systems based on Soil Group and texture class

Soil Group	USDA Soil Textural Class		LTAR (gpd/ft ²)
I	Sands	Sand	0.4 – 0.6
		Loamy Sand	
II	Coarse Loams	Sandy Loam	0.3 – 0.4
		Loam	
III	Fine Loams	Sandy Clay Loam	0.15 – 0.3
		Silt Loam	
		Clay Loam	
		Silty Clay Loam	
		Silt	
IV	Clays	Sandy Clay	0.05 – 0.2
		Silty Clay	
		Clay	

13
 14
 15 **TABLE XXIII.** LTAR for DSE drip dispersal systems based on Saprolite Group and texture class

Saprolite Group	Saprolite Textural Class	LTAR (gpd/ft ²)
I	Sand	0.3 – 0.4
	Loamy sand	0.25 – 0.35
II	Sandy loam	0.2 – 0.3
	Loam	0.1 – 0.2
	Silt Loam	0.05 – 0.1

16
 17 (d) A Special Site Evaluation shall be required in accordance with Rule .0510 of this Subchapter, as applicable.

18 (e) Drip dispersal installation shall be in accordance with the following criteria:

- 1 (1) dripline shall be installed in accordance with the approved design. The design shall specify installation
2 depth, installation equipment, blanking, drainback prevention, and any other site-specific design
3 requirements identified by the designer;
- 4 (2) dripline shall be installed a minimum of one-inch into naturally occurring soil, except when installed in a
5 fill system;
- 6 (3) driplines shall be installed level. A maximum variance of plus or minus two inches may be allowed within
7 any contiguous section of dripline containing drip emitters;
- 8 (4) a minimum of six inches of cover shall be maintained over the dripline:
- 9 (5) the requirement for six inches of cover may be met by the addition of up to six inches, after settling, of
10 suitable Group II or III soil over the drip field;
- 11 (6) drip dispersal fields shall be ~~graded~~ sloped to shed surface water;
- 12 (7) if cover material is required and the slope is greater than 30 percent, a slope stabilization plan must be
13 provided by a licensed ~~professional~~; professional if required in G.S. 89C, 89E, or 89F; and
- 14 (8) the drip dispersal system shall be field tested after installation in accordance with Rule .1603 of this
15 Subchapter.

16

17 *History Note: Authority G.S. 130A-335(e) and (f).*

18 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0909

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), please consider revising "Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply" as suggested in .0902, .0903 or .0904, whichever may be applicable.

In (c)(1), please change "which" to "that" in "which requires"

In (c)(5), what are the "landscaping requirements"?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0909 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .0909 FILL SYSTEMS

(a) A fill system (including new and existing fill) is a system in which all or part of the dispersal field media is installed in fill material. The system includes both the basal area of dispersal field and the toe slope in all directions.

(b) New fill systems may be installed on sites that meet the following requirements:

- (1) a minimum of the first 18 inches below the naturally occurring soil surface consist of suitable soil with the exception of ~~that~~ no SWC exists within the first 12 inches below the naturally occurring soil surface and a groundwater lowering system is not used to meet this requirement;
- (2) systems shall be installed only on sites with uniform slopes less than four percent;
- (3) stormwater diversions, subsurface interceptor drains, or swales shall be required as needed upslope of the system to divert surface runoff or lateral flow from passing over or into the system; and
- (4) the area of suitable soil shall be large enough to include the basal area of dispersal field and the toe slope in all directions.

(c) New fill system design and installation shall be in accordance with the following criteria:

- (1) ~~trenches shall be installed with a minimum of 24 inches separating the infiltrative surface and any LC, LC for gravity distribution and pressure dosed gravity distribution, except for SWC which requires 18 inches of separation. If pressure dispersal is used, the minimum separation distance shall be 18 inches with the exception of trenches shall be installed with a minimum of 18 inches separating between the infiltrative surface and any SWC LC and 12 inches to a SWC. This separation requirement may be met with the use of a groundwater lowering system only in Soil Groups I and II with suitable structure. If pressure dispersal is used, the minimum separation distance shall be 12 inches; structure;~~
trenches shall be installed with a minimum of 24 inches separating the infiltrative surface and any LC, LC for gravity distribution and pressure dosed gravity distribution, except for SWC which requires 18 inches of separation. If pressure dispersal is used, the minimum separation distance shall be 18 inches with the exception of trenches shall be installed with a minimum of 18 inches separating between the infiltrative surface and any SWC LC and 12 inches to a SWC. This separation requirement may be met with the use of a groundwater lowering system only in Soil Groups I and II with suitable structure. If pressure dispersal is used, the minimum separation distance shall be 12 inches; structure;
- (2) fill systems with a DDF greater than 480 gpd shall use pressure dispersal systems;
- (3) fill material soil texture shall be classified sand or loamy sand (Soil Group I) up to the top of the trenches. The final six inches of fill used to cover the system shall have a finer texture (such as Group II or III) for the establishment of a vegetative cover;
- (4) minimum cover shall be six inches ~~of settled soil;~~ after settling;
- (5) additional fill may be added to facilitate drainage and accommodate landscaping requirements at the site provided the infiltrative surface is less than 30 inches below the finished grade;
- (6) where fill material is added, the fill material and the existing soil shall be mixed to a depth of six inches below the interface. Vegetative cover or organic litter (O horizon) shall be removed before the additional fill material is incorporated;
- (7) the fill system shall be constructed as an elongated berm with the long axis parallel to the ground elevation contours of the slope;
- (8) the side slope of the fill system shall not exceed a rise to run ratio of 1:4. If the first 18 inches below the naturally occurring soil surface is Group I soil, the side slope of the fill shall not exceed a rise to run ratio of 1:3;

- 1 (9) the outside edge of the trench shall be located a minimum of five feet horizontally from the top of the side
- 2 slope;
- 3 (10) the fill system shall be shaped to shed surface water and shall be stabilized with a vegetative cover;
- 4 (11) trench products approved under Section .1700 of this Subchapter shall be installed in accordance with PIA
- 5 Approval; and
- 6 (12) the setback requirements shall be measured from the projected toe of the slope. If this setback cannot be
- 7 met, the setback requirements shall be measured five feet from the nearest edge of the trench if the
- 8 following conditions are met:
 - 9 (A) slope of the site does not exceed two percent;
 - 10 (B) the first 18 inches of soil beneath the naturally occurring soil surface shall consist of Group I
 - 11 soils; and
 - 12 (C) the lot or tract of land was recorded on or before December 31, 1989.

13 (d) An existing pre-July 1, 1977 fill site that does not meet the requirements of Paragraph (b) of this Rule may be utilized for
 14 a wastewater system if the following requirements are met:

- 15 (1) substantiating data are provided by the lot owner (if not readily available to the LHD) indicating that the
- 16 fill material was placed on the site prior to July 1, 1977;
- 17 (2) the fill material shall have sand or loamy sand (Group I) soil texture for a minimum depth of 24 inches
- 18 below the existing ground surface;
- 19 (3) the fill material shall have no more than 10 percent by volume of fibrous organics, building rubble, or other
- 20 debris, and shall not have discreet layers containing greater than 35 percent of shell fragments;
- 21 (4) if a minimum of 24 inches of Group I fill material is present, additional fill with soil texture classified
- 22 Group I may be added to meet the separation requirements of Subparagraph (e)(5) of this Rule;
- 23 (5) ~~SWC, as determined by Rule .0504 of this Subchapter,~~ SWC is 18 inches or greater below the ground
- 24 surface of the fill. This requirement shall be met without the use of a groundwater lowering system; and
- 25 (6) the area of suitable soil shall be large enough to include the basal area of dispersal field and the toe slopes
- 26 in all directions.

27 (e) Existing fill system design and installation shall be in accordance with Paragraph (c) of this Rule and the following
 28 criteria:

- 29 (1) the DDF shall not exceed 480 gpd;
- 30 (2) pressure dispersal shall be used. LPP systems shall meet the requirements of Rule .0907(c), (d), and (e) of
- 31 this Section. Drip dispersal systems shall meet the requirements of Rule .0908(c) and (e) of this Section;
- 32 (3) the LTAR shall not exceed 0.5 gpd/ft²;
- 33 (4) existing fill sites with 48 inches of Group I soils may use conventional trenches with a maximum LTAR of
- 34 1.0 gpd/ft² in lieu of a pressure dispersal system;
- 35 (5) the minimum vertical separation ~~distance~~ to any LC or ~~SWC~~ shall be 24 inches for pressure dispersal
- 36 systems and 48 inches for conventional systems. This vertical separation requirement may be met by
- 37 adding additional Group I soil, but shall not be met with the use of a groundwater lowering system;

1 (6) where additional Group I fill is to be added, the side slope of the fill shall not exceed a side slope ratio of
2 1:3; and

3 (7) trench products approved under Section .1700 of this Subchapter shall be installed in accordance with their
4 PIA Approval.

5 (f) The LTAR for new and existing fill systems shall be determined in accordance with Rule .0901(c) of this Section and the
6 following:

7 (1) the LTAR shall be based on the most limiting, naturally occurring soil horizon within 18 inches of the
8 ground surface or to a depth 12 inches below the infiltrative surface, whichever is deeper;

9 (2) the lowest LTAR for the applicable Soil Group shall be used for systems installed in accordance with this
10 Rule; and

11 (3) for sites with a minimum of 18 inches of Group I soils below the naturally occurring soil surface or to a
12 depth of 12 inches below the infiltrative surface, whichever is deeper, the LTAR shall not exceed 1.0
13 gpd/ft² for gravity or pressure dosed gravity distribution or 0.5 gpd/ft² for pressure dispersal systems.

14 (g) Other fill systems may be approved on a site-specific basis in accordance with a PIA Approval or Rule .0509(f) of this
15 Subchapter.

16

17 *History Note: Authority G.S. 130A-335(e) and (f).*

18 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0910

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), please change "which" to "that" in "as suitable which"

(b)(2) doesn't seem to go with (b). Please change "may be used on the following sites" to something like "may be used when the following criteria are met" Then add something like "the site has" at the beginning of (b)(1).

In (c)(1)(E), please delete "the following conditions:" and change your semi-colons to commas.

In (c)(2)(C), when shall the alarm contact a maintenance service?

In (c)(2)(E), what is meant by "except as required by this Rule, the requirements in Section .1100 of this Subchapter are applicable"? Do you mean except as otherwise provided in this Paragraph, the requirements of Section .1100 of this Subchapter shall apply to artificial draining systems using pumps?

I don't see (c)(1) and (2) as requiring information – I read them as actually setting forth requirements. What is the intent of here? I think this just needs a bit of different wording.

In (c)(3)(C), what is meant by "relevant elevations"?

In (c)(3)(F), please delete or define "adequate"? Here, do you mean "easements... lots shall be at least 20 feet plus the width of the groundwater lowering system"

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0910 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0910 ARTIFICIAL DRAINAGE SYSTEMS**

4 (a) Artificial drainage systems are a site modification and may be proposed to reclassify sites as suitable which were
5 originally classified unsuitable due to a SWC or lateral water movement. Artificial drainage systems include groundwater
6 lowering systems, interceptor drains, and surface water diversions.

7 (b) Artificial drainage systems may be used on the following sites:

- 8 (1) Group I or II soils with suitable structure and clay mineralogy; and
- 9 (2) the artificial drainage system shall be designed to maintain the required minimum vertical separation
10 ~~distance~~ to a SWC as specified in Rule ~~.0901(f)(2)~~ .0901(g)(2) of this Section.

11 (c) Plans and specifications for the use of a groundwater lowering system to meet the vertical separation to a SWC shall be
12 prepared by a licensed professional if required in G.S. 89C, 89E, or 89F in accordance with Rule .0303 of this Subchapter.

- 13 (1) Gravity groundwater lowering systems shall be designed in accordance with the following:
 - 14 (A) substantiating information, calculations and data shall be provided justifying the effectiveness of
15 the proposed drainage system design;
 - 16 (B) design and devices shall comply with accepted standards of practice as set forth in the USDA-
17 NRCS National Engineering Handbook, Part 624 - Drainage, Chapter 10 - Water Table Control,
18 and Part 650 - Engineering Field Handbook, Chapter 14 - Water Management, Drainage;
 - 19 (C) the effectiveness of groundwater lowering systems shall be determined by use of the Ellipse,
20 Hooghoudt, or equivalent drainage equations for sites with Group I or II soils. Justification for use
21 of a specific drainage equation shall be provided;
 - 22 (D) drainage equation input parameters shall be based upon field descriptions of soil profiles and in-
23 situ Ksat measurements. The drainage coefficient used in these equations shall be calculated from
24 the highest monthly rainfall value with a 30-percent exceedance probability from the closest
25 available National Weather Service or North Carolina State Climate Office station. A source of
26 these data is the WETS tables published on the Natural Resource Conservation Service ~~Website:~~
27 www.wcc.nrcs.usda.gov/climate/wedlands.html. Field Office Technical Guides available online
28 at: efotg.sc.egov.usda.gov/efotg_locator.aspx. This monthly value shall be divided by 14 to give
29 the drainage coefficient (inches per day). For systems ~~designed for over~~ with a DDF greater than
30 1,500 gpd, the projected contribution of wastewater application shall be added to the drainage
31 coefficient used in the equations;
 - 32 (E) DRAINMOD shall be used to determine the groundwater lowering system effectiveness at sites
33 with the following conditions: three or more effective soil layers; Group III or IV soils within 36
34 inches of the naturally occurring soil surface; or sites requiring a ~~pump drainage system;~~
35 groundwater lowering system using pumps; and
 - 36 (F) the modeling procedure set forth in Rule .0504(g) of this Subchapter shall be followed.
- 37 (2) Groundwater lowering systems using pumps shall be designed in accordance with the following:

- 1 (A) plan and profile detail drawings of pump tank, showing all dimensions, pumps, discharge piping,
2 floats, and float and alarm activation levels;
- 3 (B) calculations and supporting information shall be provided as the basis for sizing the pumps, dose
4 volume, emergency storage capacity, and overall tank capacity;
- 5 (C) the high-water alarm in the control panel shall automatically contact a 24-hour maintenance
6 service;
- 7 (D) information on discharge pipe line, line location, materials, and provisions for erosion control at
8 the discharge point;
- 9 (E) except as required in this Rule, the requirements in Section .1100 of this Subchapter are
10 applicable to artificial drainage systems using pumps; and
- 11 (F) dual alternating pumps shall be required when serving two or more design units. Each pump shall
12 be sized at a capacity of two and one half times the projected peak inflow rate to the pump tank.
- 13 (3) Plans and specifications for groundwater lowering systems shall include the following information in
14 addition to the information in Subparagraphs (c)(1) and (c)(2) of this Rule:
- 15 (A) location of existing and proposed drainage systems in relation to all facilities and wastewater
16 system components. Plans shall indicate flow direction, slope and drain outlet location;
- 17 (B) profile drawings showing drainage trench dimensions, depth, pipe size, aggregate envelop and
18 filter fabric detail, cover, and cleanout detail;
- 19 (C) all relevant elevations with reference to an established benchmark;
- 20 (D) specifications for all groundwater lowering system materials and installation procedures;
- 21 (E) the entire groundwater lowering system, including the outlet, shall be on property owned or
22 controlled by the person owning or controlling the system. Necessary legal agreements shall be
23 provided in accordance with Rule .0301(c) of this Subchapter; and
- 24 (F) easements for egress, ingress, and regress for maintenance of groundwater lowering systems
25 serving two or more lots shall have adequate width, in no case less than 20 feet plus the width of
26 the groundwater lowering system.
- 27 (d) Interceptor drains shall be used on sites where a SWC results from laterally flowing groundwater that can be ~~intercepted~~
28 ~~and~~ diverted away from the dispersal field.
- 29 (e) Other artificial drainage systems, including surface water diversions, shall comply with USDA-NRCS guidance
30 documents.

31
32 *History Note: Authority G.S. 130A-335(e) and (f).*

33 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0911

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Just so I understand what is a privy and when would it be appropriate to have or use one?

In (a), what is meant by "approved" in "an approved privy"?

In (a), line 4, please change "which" to "that" in "which affords"

In (a), please delete or define "reasonable"

In (a)(4), what is meant by "sufficient stability"? Sufficient stability for what?

In (a)(5), must it always be constructed of wood unless otherwise approved? If so, say that.

In (a)(5), what is meant by "other approved flooring materials"?

In (a)(5)(C), please change "is" to "shall be" in "sill size is four..."

In (a)(6), what is meant by "approved" in "approved screened PVC Schedule 40 pipe" or "approved equal"... Do you just meant that the pit shall be vented through a pipe that meets the requirements of these Rules?

In (b)(1), please delete or define "reasonable." Also, this language is duplicative of language on line 5. Please delete it here or there.

In (b)(1), please delete or define "bad" in "bad weather conditions"

In (b)(2), please delete or define "completely"

In (c)(1), please delete or define "clean" Do you mean something like "free of debris"?

In (c)(3), delete "always" Also, how is this to be done?

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Please add “the” at the beginning of (c)(5).

In (d), when will a new pit be required? When it caves in in accordance with this Rule?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .0911 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0911 PRIVIES**

4 (a) An approved privy shall consist of a pit, floor slab, and seat assembly housed in a building which affords privacy and
5 reasonable protection from the weather and shall meet the following criteria:

6 (1) the pit shall consist of an excavation with a minimum bottom surface area of three and one half feet square;

7 (2) the maximum depth of the pit shall not exceed 36 inches;

8 (3) the pit bottom shall not be located closer than 12 inches to a ~~LC or SWC~~; LC;

9 (4) the pit shall be curbed to prevent caving. In sandy or loose soil, the curb should extend the full depth of the
10 pit. In clay soils, partial curbing may be acceptable if sufficient stability can be provided;

11 (5) wood construction of the floor shall be acceptable. The floor shall be constructed of the following:

12 (A) rot resistant joists covered with tight tongue-and-groove rot resistant flooring;

13 (B) other approved flooring materials to provide strength, durability and prevent entrance of flies and
14 mosquitoes to the privy pit; and

15 (C) floors shall be anchored to the sills. The minimum sill size is four-inch by four-inch;

16 (6) the pit shall be vented through approved screened PVC Schedule 40 pipe or approved equal, six inches in
17 diameter, and extending above the roofline. The vent pipe shall be:

18 (A) located on a south side wall of the building;

19 (B) covered to prevent rainfall from entering, but still allow gases to escape;

20 (C) ~~not have~~ straight without any bends in the pipe; and

21 (D) ~~shall be~~ black colored pipe; and

22 (7) privies shall not be used for the disposal of water-carried sewage.

23 (b) Any person owning or controlling the property upon which a privy is located shall be responsible for the following
24 requirements:

25 (1) the privy building shall afford a reasonable degree of protection from bad weather conditions;

26 (2) when the pit becomes filled to within 18 inches of the top of the ground, the privy building shall be moved
27 to a new pit and the old pit completely covered with soil; and

28 (3) if the pit caves in, a new pit shall be provided.

29 (c) The person owning or controlling the system shall be responsible for the following requirements:

30 (1) the privy and grounds ~~immediately~~ adjacent shall be kept clean;

31 (2) a hinged seat cover and hinged door shall be provided and kept closed when the privy is not in use;

32 (3) flies shall always be excluded from the pit;

33 (4) garbage and trash shall be kept out of the pit; and

34 (5) privy building shall not be used ~~as a storage building.~~ for storage.

35 (d) When a new pit is required, a CA and OP shall be obtained.

36

37 *History Note: Authority G.S. 130A-335(e) and (f).*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1001

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Given 130A-335(h), is (b) necessary? Do you need this to provide notice to your regulated public?

In (c), what is an "alternative toilet"? Is it incinerating, composting, and mechanical toilets and vault privies? If so, please consider saying that in (a) (something like "alternative toilets include incinerating, composting...") If chemical and portable toilets are also considered alternative toilets, please include them in the definition.

In (c), delete "rest of the"

In (d), line 11, please change "requirement also applies to removal" to "this requirement shall also apply to the removal"

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1001 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1001 ALTERNATIVE TOILETS**

4 (a) Incinerating, composting, and mechanical toilets, and vault privies shall comply with the North Carolina Plumbing Code.

5 (b) Use of chemical or portable toilets are governed by G.S. 130A-335(h).

6 ~~(b)(c)~~ When an alternative toilet is used, the rest of the wastewater generated by any other plumbing fixture in the facility
7 shall be discharged to a wastewater system that is approved under this Subchapter.

8 (d) Residual removal from incinerating toilets, composting toilets, mechanical toilets, vault privies, chemical toilets, or
9 portable toilets shall be performed only by a person that holds a current NC Septage Management Firm permit in accordance
10 with Rule 15A NCAC 13B .0832(a)(1). All waste shall be taken to an approved disposal site per G.S. 130A-291.1(d). This
11 requirement also applies to removal of wastewater from a temporary domestic wastewater holding tank approved pursuant to
12 G.S. 130A-291.2.

13

14 *History Note: Authority G.S. 130A-335(e).*

15 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1002

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a)(2)(A), I assume "beneficial use component" is defined elsewhere in rule or statute?

In (b), by "wastewater system", do you mean "a RCW system"?

In (b), how will it be determined whether the system will be approved? So long as it complies with the Rules of this Subchapter?

Just so I understand what is going on with (c), is the intent that the siting and sizing requirements of Section .1200 must be used, unless an exception is provided in (c)(1) through (4)? If so, please revise (c) to say something like "... TS-II system except as follows:"

Please provide some sort of introductory language to (d)(1) through (4).

In (d), rather than "approved conjunctive uses include" say "Conjunctive uses may include..."

In (d)(4), please provide the factors or criteria that will be used in determining whether to waive the effluent TN standard.

In (e), what licensed professional?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1002 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1002 RECLAIMED WATER SYSTEMS**

4 (a) ~~A~~ An RCW system shall be one of the following:

5 (1) an alternate management option as identified in 15A NCAC 02U .0401(c) for use with a system permitted
6 in accordance with 15A NCAC 02U;

7 (2) a conjunctive wastewater ~~system~~ system, as defined in 15A NCAC 02U .0103(3), permitted under the rules
8 of this Subchapter that:

9 (A) incorporates a beneficial use component; and

10 (B) the beneficial use component is not necessary to meet the wastewater disposal needs of the
11 facility; ~~or~~

12 ~~(3) a conjunctive wastewater system permitted under the rules of this Subchapter when there is a non-~~
13 ~~conjunctive use wastewater system permitted and approved in accordance with 15A NCAC 02H or 15A~~
14 ~~NCAC 02T for the facility; or~~

15 ~~(3)(4)~~ (4) a wastewater system designed for the complete recycle or reuse of DSE.

16 (b) The wastewater system shall be designed to produce ~~an~~ effluent prior to discharge that complies with the effluent
17 standards for a Type I treatment process in accordance with 15A NCAC 02U .0301(b) ~~and~~ or a TS-II system in accordance
18 with Table XXIV of Rule .1201 of this Subchapter, whichever is more restrictive. The wastewater system shall be approved in
19 accordance with Section .1700 of this Subchapter or designed by a PE and approved by the State.

20 (c) When utilizing a TS-II system, ~~The~~ dispersal field and repair area shall comply with the siting and sizing requirements
21 of Section .1200 of this Subchapter for a TS-II system and the following criteria:

22 (1) ~~the LTAR increase and setback reductions for a TS-II system in Section .1200 of this Subchapter may be~~
23 ~~taken;~~ taken with either of the following:

24 (A) LTAR increase; or

25 (B) vertical separation reduction;

26 ~~(2) the depth to LC and vertical separation distance and setback reductions for a TS-II system in Section .1200~~
27 ~~of this Subchapter may be concurrently taken;~~

28 ~~(3)(2)~~ (2) for systems designed to meet a TN standard of 10 mg/L the following siting and sizing criteria may be
29 utilized:

30 (A) the property line setback may be reduced to five feet and the SA waters setback may be reduced
31 to 50 feet for wastewater systems with a DDF less than or equal to 3,000 gpd;

32 (B) the property line setback may be reduced to 10 feet, the SA waters setback may be reduced to 100
33 feet, and the other surface waters setback may be reduced to 50 feet for systems with a DDF
34 greater than 3,000 gpd; or

35 (C) the vertical separation to a SWC may be reduced to 12 inches for wastewater systems with a DDF
36 greater than 3,000 gpd that use pressure dispersal;

1 ~~(4)~~(3) the LTAR may be increased up to a factor of four compared to that assigned by the LHD for a system using
2 DSE in Group I soils with a wastewater system that uses pressure dispersal when the following site
3 conditions are met:

4 (A) 48 inches of Group I soils from the naturally occurring soil surface; and

5 (B) 30 inches to a SWC below the naturally occurring soil surface; ~~or~~ and

6 ~~(5)~~(4) requirements to comply with an effluent TN standard set forth in this paragraph may be waived when a
7 site-specific nitrogen migration analysis based on projected or measured effluent nitrogen levels
8 demonstrates that the nitrate-nitrogen concentration at the property line will not exceed 10 mg/L.

9 (d) Approved conjunctive uses include toilet and urinal flushing and landscape irrigation by drip dispersal. Wastewater from
10 a system designed for complete recycling of DSE shall be used only for flushing of toilets and urinals. RCW shall ~~be~~ not be
11 used for body contact or human consumption.

12 (1) Toilet and urinal flushing components shall be approved by the local building inspections department and
13 be in compliance with the North Carolina Plumbing Code, including pipe marking requirements and back-
14 siphon protection provisions for proximate potable water supplies.

15 (2) Siting, sizing, setbacks, and installation requirements of this Subchapter may be modified for the landscape
16 irrigation component if they comply with the requirements for conjunctive use irrigation systems in 15A
17 NCAC 02U, based upon information provided by the licensed professionals, if required in G.S. 89C, 89E,
18 or 89F.

19 (3) System design, operation, and management requirements shall comply with requirements for comparable
20 systems in 15A NCAC 02U, including provisions for continuous on-line monitoring and recording for
21 turbidity and a mechanism to prevent effluent utilization if the turbidity exceeds 10 ~~NTUs~~ or NTUs, if the
22 E. Coli or fecal coliform levels are not being ~~met~~ met, or the disinfection unit is not operable.

23 ~~(4)~~ Requirements to comply with an effluent TN standard may be waived on a project specific basis.

24 (e) All RCW systems approved in accordance with this rule shall be designed by a licensed professional and the plans
25 approved by the State prior to LHD permit issuance.

26 ~~(f) An RCW system may also be permitted in accordance with Rule .0207 of this Subchapter.~~

27
28 *History Note:* Authority G.S. 130A-335(e).

29 Eff. October 1, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1101

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Please add "the" at the beginning of (a)(1)

(a)(2) seems to be missing a word. Is the intent here when wastewater is discharging? Please review and clarify.

What is the difference between (a) and (b)? A single pump or siphon in (a) versus multiple in (b)?

In (b), should "and discharge" be "to discharge" or "and discharged"?

In (b), please change "for the following:" to "when:"

Add "the" before (b)(2).

I'm having a hard time following (d), but I think that it could be related to formatting. Would it be appropriate to separate this out a bit further, either into separate paragraphs or into Subparagraphs? Please review and clarify if needed.

In (d), please change "is equivalent" to "shall be equivalent"

In (e), what are the "wastewater system design criteria"?

In (f), since you refer to a test in the second sentence, please consider revising the first sentence to say "All dosing systems shall be tested using clear water prior to issuance of an OP." Also, is this to be done by the LHD during inspection? Again, please be consistent with your terms where possible.

In (f), what sort of documentation is necessary for this test? Is this just a report completed by the LHD?

In (f)(5), what is meant by "confirmed" in "confirmed delivery"? Please delete or define confirmed.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1101 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1101 GENERAL DOSING SYSTEM REQUIREMENTS**

4 (a) A pump or siphon shall be used to deliver effluent into laterals when:

- 5 (1) total lateral length exceeds 750 linear feet in a single system; or
- 6 (2) discharging to a pressure dosed gravity distribution or pressure dispersal system.

7 (b) Alternating pumps or siphons shall be used and discharge to separate dispersal fields for the following:

- 8 (1) DDF from a single system exceeds 3,000 gpd; or
- 9 (2) total length of trench exceeds 2,000 linear feet in a single system.

10 (c) If alternating pumps or siphons are not required in accordance with Paragraph (b) of this Rule, but used, then the
11 alternating pumps or siphons may discharge to a single dispersal field.

12 (d) The dose volume from pressure dosed gravity distribution systems shall be designed to fill the installed linear footage of
13 the laterals between 66 and 75 percent at each dosing event. The lateral capacity for LDP systems and trench products with a
14 PIA Approval is equivalent to the capacity of a four-inch corrugated pipe. Dose volumes for LPP systems shall be calculated
15 in accordance with Rule .0907(e)(14)(B) of this Subchapter. Dose volumes for drip dispersal systems shall be calculated in
16 accordance with Rule .1602(f)(3) of this Subchapter.

17 (e) The pump operating flow rate from a dosing system shall be designed to achieve scour velocity in the supply line ~~at a~~
18 ~~minimum~~ and to distribute effluent in accordance with the wastewater system design criteria.

19 (f) All dosing systems shall have their performance demonstrated using clean water prior to issuance of an OP. The test shall
20 include a demonstration and documentation of the following:

- 21 (1) pump or siphon operating flow rate;
- 22 (2) float control levels;
- 23 (3) high water alarm, including sound;
- 24 ~~(3)~~(4) operating pressure head, if applicable; and
- 25 ~~(4)~~(5) confirmed delivery of water to the dispersal field.

26

27 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

28 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1102

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a)(4), what is meant by “an equivalent third-party electrical testing and listing agency”? How and who determines whether an agency is equivalent to Underwriter’s laboratories? Please consider instead saying something like “a third-party electrical testing and listing agency, such as Underwriter’s Laboratories.”

Also in (a)(4), what is meant by “a PE may propose”? Is there an approval process for this? If so, how will it be determined whether a pump model will be acceptable?

In (b), please consider changing “anti-siphon holes (3/16-inch minimum)” to something like “anit-siphon holes of a 3/16 inch minimum shall be used...”

In (b), line 11, please add “holes” at the end of “the anti-siphon”

In (c), how will it be determined what “a similar disconnect device” will be? Please consider revising (b) to say something like “Each pump discharge line in a pump tank shall have a disconnect device, such as a pre-rated threaded union, flange, or camlock.”

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1102 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1102 PUMP DOSING**

4 (a) The effluent pump shall be:

- 5 (1) capable of handling a minimum of ½-inch solids or be a screened, high head pump designed for effluent;
- 6 (2) designed to meet the pump operating flow rate and total dynamic head of the effluent distribution system;
- 7 (3) removable without requiring entrance into the tank; and
- 8 (4) listed by Underwriter's Laboratory or an equivalent third-party electrical testing and listing agency. A PE
9 may propose a pump model not listed by a third-party electrical testing and listing agency.

10 (b) A vent or anti-siphon holes (3/16-inch minimum) shall be used to prevent air locking of the pump and siphoning from the
11 pump tank when pumping downhill. When a check valve is provided, the anti-siphon or vent shall be located between the
12 pump and the check valve. Additional venting may be required at the high point in the pump force main to prevent siphoning.

13 (c) Inside the pump tank, a pressure-rated threaded union, flange, camlock, or similar disconnect device shall be provided in
14 each pump discharge line.

15 (d) Check valves or other type valves shall prevent drainback from the dispersal field or supply line into the pump tank. A
16 system may be designed and approved for the supply line to drain back to the pump tank based on site specific considerations,
17 such as freeze protection.

18 (e) An isolation valve shall be provided on the field side of the disconnect device when pumping uphill.

19 (f) The pump discharge piping shall be accessible within the tank or riser from finished grade.

20 (g) Fittings and valves shall be of compatible non-corrodible material. Isolation valves and disconnects shall be located
21 within 18 inches of the top of the access riser opening.

22 (h) All submersible pumps shall be provided with a non-corrodible rope or chain attached to each pump enabling pump
23 removal from the ground surface without requiring dewatering or entrance into the tank.

24

25 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

26 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1103

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), please change "which use a pump" to "that use a pump"

In (a), how will it be determined whether a control panel is equivalent to NEMA 4X?

In (a), what is meant by "an equivalent third-party electrical testing and listing agency"? How and who determines whether an agency is equivalent to Underwriter's laboratories? Please consider instead saying something like "a third-party electrical testing and listing agency, such as Underwriter's Laboratories, shall list the control panel."

In (a)(2) please either delete "a" or "(s)"

In (a)(3), please change "which breaks" and "which controls" to "that breaks" and "that controls"

In (b), when would a system require multiple pumps? In accordance with your rules or the manufacturer's specifications? I want to be sure that your regulated public is familiar.

In (c), is "at a minimum" necessary? Please consider deleting this language.

In (d), please delete or define "direct" in "direct view." Please also delete or define "always"

In (e), please delete "to be" in "to be used"

In (e), please change "Under no conditions are electrical splices to be within conduit piping" to "Electrical splices shall not be within conduit piping."

In (f), what are "other suitable material or methods"? Please consider changing this to say "Materials or methods, such as wire grips or duct seal, shall be used to seal wire and wire conduit openings inside the pump tank and disconnect enclosure."

In (f), line 30, is "around" necessary?

Amber May

Commission Counsel

Date submitted to agency: September 6, 2018

In (g), is “independently” necessary? This language appears to be superfluous given the requirement that they be dosed by separate pumps.

In (g), please change “which shall” to “that shall”

In (g), please say how the approval will take place and what standards will be used to make that determination.

In (h), what is meant by “similar state approved devices”?

(h)(1) through (6) needs some sort of introductory language at the end of (h). It’s unclear to me how these go together. Are these the requirements of the float? If so, perhaps something like “and shall meet the following requirements:”

In (i)(3), is “and shall enable the audible alarm to be silenced by the system user” necessary given (i)(2)? IF so, would this language be more appropriate in (i)(2)?

In (i)(3), should “The alarm shall automatically reset after testing and when an alarm condition has cleared” be its own subparagraph? I think it should.

In (i)(5), how will it be determined whether something is NEMA 4x equivalent?

In (i)(6), please delete or define “always”

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1103 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1103 CONTROL PANELS**

4 (a) A control panel shall be provided for all systems which use a pump. The control panel enclosure shall be NEMA 4X or
5 equivalent. Underwriter's Laboratory or an equivalent third-party electrical testing and listing agency shall list the control
6 panel. The control panel shall include for each pump:

- 7 (1) an independent overload protection (if not integral with the pump motor);
- 8 (2) a circuit breaker(s);
- 9 (3) a motor contactor which breaks all the current to the pump or solid-state relay which controls current to the
10 pump;
- 11 (4) a hand-off automatic (H-O-A) switch or alternate method to enable manual or automatic pump operation
12 and for the pump to be deactivated manually;
- 13 (5) a pump run light;
- 14 (6) an elapsed time meter; and
- 15 (7) an event counter.

16 (b) An automatic pump sequencer shall be provided in systems requiring multiple pumps and shall remain operable whenever
17 any pump is inoperable.

18 (c) When telemetry is required in accordance with Sections .0800, .1500, .1600, and .1700 of this Subchapter, the control
19 panel shall be connected to an active phone line, wireless internet router, dedicated cellular line, or any other form of
20 telemetry that allows the Management Entity ~~to properly monitor system performance~~ to, at a minimum, be notified and
21 respond to alarm conditions. The telemetry shall remain active for the life of the wastewater system.

22 (d) The control panel bottom shall be mounted a minimum of 24 inches ~~and no more than 36 inches~~ above finished grade,
23 within 50 feet of and in direct view of the pump tank. The control panel shall always be accessible to the Management Entity
24 ~~and LHD.~~ Entity and LHD.

25 (e) When the control panel is located more than 10 feet from the pump tank access riser, and one or more electrical splices
26 are to be used, a NEMA 4X junction box shall be installed above grade on or adjacent to the pump tank access riser. Under
27 no conditions are electrical splices to be within the conduit piping.

28 (f) Wiring shall be conveyed to the control panel or outside junction box through waterproof, gasproof, and
29 corrosion-resistant conduits, with no splices or junction boxes inside the tank. Wire grips, duct seal, or other suitable material
30 or methods shall be used to seal around wire and wire conduit openings inside the pump tank and disconnect enclosure.

31 (g) Dual and multiple fields shall be independently dosed by separate pumps which shall automatically alternate or sequence.
32 The supply lines shall be "H" connected to permit manual alternation between fields dosed by each pump. "H" connection
33 valving shall be accessible from the ground surface, either from the pump tank access manhole or in a separate valve chamber
34 outside the pump tank. The State may approve other equivalent methods of dosing dual or multiple fields.

35 (h) Floats or similar State approved devices designed for detecting liquid levels in a pump tank shall be provided to control
36 pump cycles and trigger notification of alarm conditions;

- 37 (1) a minimum of 12 inches of effluent shall be maintained in the bottom of the pump tank;

- 1 (2) pump-off level shall be set to keep the pump submerged or in accordance with the manufacturer's written
- 2 specifications;
- 3 (3) a separate control float shall be provided to activate the high-water alarm;
- 4 (4) the high-water alarm float shall be set to activate within six inches of the pump-on level or higher, if
- 5 applicable, if providing design equalization capacity in a timed dosing system;
- 6 (5) the lag pump float switch, where provided, shall be located at or above the high-water alarm activation
- 7 level; and
- 8 (6) floats shall be supported utilizing durable, corrosion resistant material, and designed to be adjustable,
- 9 removable, and replaceable from the ground surface without requiring dewatering, entrance into the tank,
- 10 or pump removal.

11 (i) The pump tank shall have a high-water alarm that shall:

- 12 (1) be audible and visible to the system users and the Management Entity;
- 13 (2) have a silencer button or device that is located on the outside of the panel enclosure;
- 14 (3) provide for manual testing and shall enable the audible alarm to be silenced by the system user. The alarm
- 15 shall automatically reset after testing and when an alarm condition has cleared;
- 16 (4) remain operable whenever the pump is inoperable;
- 17 (5) have an enclosure that is watertight, corrosion resistant, and rated NEMA 4X or equivalent; and
- 18 (6) be mounted outside the facility and always accessible.

19 (j) For systems designed by a PE, the PE may propose other panel construction and location criteria that meet these panel

20 performance criteria, comply with local electrical codes, and are approved by the local electrical inspector.

21

22 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

23 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1104

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Please end Items (1) through (3) with periods and begin each sentence with a capital letter.

In Item (2), what is meant by "or equal"? Is this referring to an equal material? How and by whom will this determination be made?

In Item (3), what is meant by "or equivalent"? Is this referring to the enclosure or the alarm itself? Also, how and by whom will this determination be made?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1104 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1104 SIPHON DOSING**

4 Siphons and siphon tanks may be used when a minimum of two feet of elevation drop is maintained between the siphon outlet
5 invert and the inlet invert in the dispersal field distribution system. Siphons and siphon tanks shall meet the following criteria:

6 (1) slope and size of the siphon discharge line shall be sufficient to handle the peak siphon discharge by
7 gravity flow without the discharge line flowing full. Vents for the discharge lines shall be located outside
8 of the siphon tank and shall not serve as an overflow for the tank;

9 (2) all siphon parts shall be installed in accordance with the manufacturer's specifications. All materials shall
10 be corrosion-resistant, of cast iron, high-density plastic, fiberglass, stainless steel, or equal; and

11 (3) siphon tanks shall have a functioning trip counter and high-water alarm. The high-water alarm shall be
12 audible and visible by system users and weatherproof if installed outdoors in a NEMA 4X enclosure or
13 equivalent. The high-water alarm shall be set to activate within two inches of the siphon trip level.

14

15 *History Note:* Authority G.S. 130A-335(e), (f), and (f1).

16 Eff. October 1, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1105

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a)(2), I don't read .1101 to require dosing systems. I read to say that is required for a dosing system. Please review and clarify if needed.

In (a)(3), who is the "authorized designer"?

Would (b) be appropriate to include in (a) since it says when a timed dosing system would be required?

On line 12, please change "shall be" to "is"

In (d), is the decision to adjust the float setup at the discretion of the owner or is it at the discretion of the LHD such that an approval is necessary? Please review and clarify.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1105 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1105 TIMED DOSING**

4 (a) Timed dosing systems shall be used with the following:

- 5 (1) advanced pretreatment or dispersal systems, if required by the manufacturer;
- 6 (2) when a dosing system is required in accordance with Rule .1101 of this Section in conjunction with an
- 7 adjusted DDF granted in accordance with Rule .0403 of this Subchapter; or
- 8 (3) when specified by the authorized designer.

9 (b) Flow equalization systems designed under a PIA Approval shall incorporate timed dosing to control the maximum
10 amount of effluent that shall be delivered to the advanced pretreatment or dispersal field in a specific period.

11 (c) The timed dosing system shall be integrated with the pump tank control sensors to ensure that the minimum dose volume
12 calculated in accordance with Rule .1101(d) of this Section shall be present prior to the start of any scheduled dose event and
13 to provide that a full dose is delivered.

14 (d) The float setup for a timed dosing system may be adjusted from the criteria listed in Rule .1103(h) of this Section to
15 provide for equalization capacity in the system.

16

17 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

18 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1106

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a)(5), please delete "but are not limited to"

In (b), is "as applicable" necessary here? It does not appear to be.

In (b), please delete or define "sound construction"

In (b), please delete or define "excessive"

In (b), please delete or define "adequate"

In (b), how is it to be "demonstrated to perform as designed"? Will this occur during the inspection?

In (b), how is the authorized agent to determine whether to approve the box? Will this be under their own rules?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1106 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1106 PRESSURE DOSED GRAVITY DISTRIBUTION DEVICES**

4 (a) Pressure manifolds for pressure dosed gravity distribution shall meet the following minimum design and performance
5 requirements:

6 (1) uniform distribution of flow among individual laterals with a minimum of two feet of residual pressure
7 head;

8 (2) a pressure regulating valve incorporated in the supply line just prior to the pressure manifold to control
9 pressure to the manifold;

10 (3) a mechanism or device for measuring residual pressure head in the manifold;

11 (4) a mechanism to stop flow to individual laterals;

12 (5) a method to visually verify the flow to each individual lateral. Such methods may include but are not
13 limited to observation ports. ~~Observation~~ Observation ports may be located inside or outside of the
14 pressure manifold ~~box to verify flow to individual laterals; box;~~ and

15 (6) the pressure manifold and appurtenances shall be designed and installed to be accessible for inspection,
16 operation, maintenance, and monitoring.

17 (b) A distribution box or a drop box may be used to dissipate flow in a pressure dosed gravity dispersal system for parallel,
18 serial, or sequential distribution, as applicable. Such devices shall be of sound construction, watertight, not subject to
19 excessive corrosion, adequate capacity, demonstrated to perform as designed, and approved by the authorized agent.

20

21 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

22 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1201

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

To match the introductory language of (a), you need a verb in (a)(1) through (4). Perhaps something like "have" or "obtain" in (a)(1) and (2). Perhaps change "compliance" to "comply" in (a)(3) and (4).

In (b), how will it be determined whether the project or product will be approved? I understand that it's done on a case by case basis, but what factors will be used in making this determination?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1201 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1201 ADVANCED PRETREATMENT SYSTEM STANDARDS**

4 (a) Advanced pretreatment systems with a DDF less than or equal to 3,000 gpd shall meet the following conditions:

- 5 (1) RWTS or PIA Approval;
- 6 (2) design that meets the effluent standard specified in the OP and defined in Table XXIV prior to effluent
- 7 dispersal ~~of the effluent~~ to the soil;
- 8 (3) compliance with the siting and sizing requirements of this Section; and
- 9 (4) compliance with Rules .1302(e) and .1710 of this Subchapter.

10

11 **TABLE XXIV.** Effluent standards for advanced pretreatment systems

Constituent	Effluent Standards		
	NSF-40	TS-I	TS-II
CBOD	≤ 25 mg/L	≤ 15 mg/L	≤ 10 mg/L
TSS	≤ 30 mg/L	≤ 15 mg/L	≤ 10 mg/L
NH ₃		≤ 10 mg/L or 80% removal of NH ₃ if influent TKN exceeds 50 mg/L	≤ 10 mg/L
TN			≤ 30 mg/L
Fecal Coliform		≤ 10,000 colonies/100 mL	≤ 1,000 colonies/100 mL

12

13 (b) The effluent applied to advanced pretreatment systems shall not exceed DSE as specified in Table III of Rule .0402 of this

14 Subchapter, unless the system is designed to treat HSE and approved by the State on a product or project-specific basis.

15 (c) Wastewater systems with a DDF greater than 3,000 gpd, proposed to meet TS-II effluent standards shall meet a TN

16 standard of less than or equal to 20 mg/L.

17

18 *History Note:* Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.

19 Eff. October 1, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1202

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

What is the difference in .1202 and .1203? Is one applicable to APS with a DDF less than or equal to 1500 gallons/day and .1203 is applicable to APS with a DDR between 1500 and 3000? Since titles of rules can be changed without going through the rulemaking process, we read rule without titles. As such, please make it clear within the text of the body of the rule what they are applicable to.

In (a), what is meant by "except otherwise required in this Rule, the requirements of Rule .0901 of this Subchapter shall apply"? Are there duplicate, but competing requirements with .0901? I think that perhaps some different language here could help clarify this.

Also, please consider making "Unless otherwise required in this Rule, the requirements of .0901 of this Subchapter shall apply" its own Paragraph. It doesn't seem to go with the rest of the language in (a).

In (b), how will it be determined whether the modifications will be approved? I see this Rule as setting the minimum requirements for Advanced Pretreatment Systems, but what factors will be used in determining whether a modification will be allowed? Would it be helpful to move (b) to the end of this Rule and say how it will be determined whether approval for a modification would be granted?

Please provide some introduction to (d)(1) through (5) at the end of (d).

In (d)(2), please add commas before and after "if required in accordance with Rule .0510 of this Subchapter"

In (d)(3), please verify the cross-reference to .1204 regarding the assignment of the drip system. I don't see "assign" in .1204.

In (e)(1), is "as applicable" necessary?

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1202 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1202 SITING AND SIZING CRITERIA FOR ADVANCED PRETREATMENT SYSTEMS**
 4 **WITH A DESIGN DAILY FLOW LESS THAN OR EQUAL TO 1,500 GALLONS/DAY**

5 (a) The initial site evaluation shall be conducted and depth to LC ~~or SWC~~ determined in accordance with Section .0500 of
 6 this Subchapter. Except as otherwise required in this Rule, the requirements of Rule .0901 of this Subchapter shall apply.

7 (b) Only one of the following modifications to system siting and sizing criteria may be approved, unless otherwise identified
 8 in this Rule:

- 9 (1) reduction in depth to LC or of vertical separation ~~distance to LC or SWC~~; LC;
- 10 (2) LTAR increases; or
- 11 (3) setback reduction.

12 (c) The minimum required vertical separation ~~distance~~ to a LC ~~or SWC~~ in natural soil may be reduced with the use of
 13 advanced pretreatment in accordance with Table XXV. Table XXVI provides the minimum depths and vertical separation
 14 ~~distances~~ for new and existing fill. A Special Site Evaluation shall be submitted and approved in accordance with Rule .0510
 15 of this Subchapter when a reduction in vertical separation ~~distance~~ to a LC ~~or SWC~~ is proposed in accordance with this Rule.

16

17 **Table XXV. Minimum vertical separation ~~distance~~ to LC ~~or SWC~~ based on effluent standards**

Minimum vertical separation distance (inches) from infiltrative surface to LC or SWC					
Soil Group	Distribution Method	Effluent Standard**			
		DSE*	NSF-40	TS-I	TS-II
I	Gravity	18	12	12	12
	LPP	12	12	9	6
	Drip	12	12	9	6
II-IV	Gravity	12	12	9	9
	LPP	12	12	9	6
	Drip	12	12	9	6

18 *For comparison

19 **12-inch vertical separation shall always be maintained to rock or tidal water

20

21 **Table XXVI. Minimum depth to LC and vertical separation to SWC in new or existing fill based on effluent standard**

Minimum depth (inches) from naturally occurring soil surface to LC or SWC					
Type of Fill	Distribution Method	Effluent Standard			
		DSE* *	NSF-40	TS-I	TS-II
New Fill (≤1,500 gpd)	Gravity	18 to LC	18 to LC	14 to LC	14 to LC
		12 to SWC	12 to SWC	12 to SWC	12 to SWC
	LPP	18 to LC	18 to LC	12	12

(slope ≤ 4%)		12 to SWC	12 to SWC		
	Drip	18 to LC 12 to SWC	18 to LC 12 to SWC	12	12
Existing Fill (≤480 gpd)	Gravity	36 of Group I Fill/Soils			
	LPP	24 of Group I Fill/Soils			
	Drip	24 of Group I Fill/Soils			
Minimum vertical separation distance (inches) from infiltrative surface to LC* or SWC					
Type of Fill	Distribution Method	Effluent Standard			
		DSE**	NSF-40	TS-I	TS-II
New Fill (≤1,500 gpd) (slope ≤ 4%)	Gravity	24 to LC	18 to LC	18 to LC	18 to LC
		18 to SWC	18 to SWC	14 to SWC	14 to SWC
	LPP	18 to LC	18 to LC	12 to LC	12 to LC
		12 to SWC	12 to SWC	9 to SWC	9 to SWC
Drip	18 to LC	18 to LC	12 to LC	12 to LC	
	12 to SWC	12 to SWC	9 to SWC	9 to SWC	
Existing Fill (≤480 gpd)	Gravity	36	36	36	36
	LPP	18	18	12	12
	Drip	18	18	12	12

1 *Minimum depth after adjustment for slope correction

2 **For comparison

3
4 (d) The LTAR shall be based on the effluent standard and dispersal field type proposed.

5 (1) The LTAR may be increased by the following factors when compared to the rate assigned by the
6 authorized agent for a new system using DSE:

7 (A) up to 1.33 for NSF-40 effluent standards in soils which are Group I or II with suitable structure;

8 (B) up to 2.0 for TS-I or TS-II effluent standards when pressure dispersal is utilized; or

9 (C) up to 2.5 for TS-II effluent standards when all the following conditions are met: minimum of 36
10 inches of Group I soils from the naturally occurring soil surface; minimum depth to a SWC below
11 the naturally occurring soil surface is 24 inches; space shall be available for an equivalently sized
12 dispersal field repair area; and pressure dispersal shall be utilized.

13 (2) A Special Site Evaluation ~~as~~ if required in accordance with Rule .0510 of this Subchapter shall be
14 submitted and approved.

15 (3) The LTAR for an aerobic drip system shall be assigned in accordance with Rule .1204 of this Section.

- 1 (4) Trench dispersal products approved for a specific dispersal field reduction in area or trench length when
 2 receiving DSE in accordance with this Subchapter or a PIA Approval shall not be reduced by more than 50
 3 percent when any LTAR adjustments are taken in accordance with this Rule.
- 4 (5) The DDF shall not be increased by the addition of advanced pretreatment to an existing wastewater system.
- 5 (e) Advanced pretreatment systems shall meet the following setback requirements:
- 6 (1) minimum setback requirements of Section .0600 of this Subchapter, as applicable, shall be met, except as
 7 shown in Table XXVII of this Rule; and
- 8 (2) when any other siting or sizing modifications are applied (reduced depth to ~~LC or SWC~~, LC, vertical
 9 ~~separation distance~~ separation, or increased LTAR) for a TS-I or TS-II system in accordance with
 10 Paragraphs (c) and (d) of this Rule, no setback reductions shall be taken except those to artificial drainage
 11 systems described in Table XXVII.

12
 13 **Table XXVII:** Setbacks for wastewater systems meeting NSF-40, TS-1 or TS-II effluent standards

Feature (structure, water source, etc.)	Setback (feet) according to Effluent Standard			
	DSE*	NSF-40	TS-I	TS-II
Surface waters classified WS-I, from mean high-water mark	100	70	70	50
Waters classified SA, from mean high-water mark	100	70	70	50
Any Class I or Class II reservoir, from normal pool elevation	100	70	70	50
Any other coastal water, canal, marsh, stream, perennial waterbodies, streams, or other surface waters, from mean high-water mark	50	35	35	25
Lake or pond, from flood pool elevation	50	35	35	25
Subsurface groundwater lowering system, ditch, or device, as measured on the ground surface from the edge of the feature	25	25	20	15
Surface water diversion, as measured on the ground surface from the edge of the diversion	15	15	10	10
<u>Interceptor drain - upslope</u>	<u>10</u>	<u>10</u>	<u>7</u>	<u>7</u>
<u>Interceptor drain – sideslope</u>	<u>15</u>	<u>15</u>	<u>10</u>	<u>10</u>
<u>Interceptor drain – downslope</u>	<u>25</u>	<u>25</u>	<u>20</u>	<u>15</u>
Any stormwater conveyance (pipe or open channel) or ephemeral stream	15	15	10	10
Permanent stormwater retention basin or detention basin	50	50	35	25
Any other dispersal field except repair area <u>field, except designated dispersal field repair area for project site</u>	20	20	10	10

1 *For comparison

2

3 *History Note: Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.*

4 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1203

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

What is the difference in .1202 and .1203? Is one applicable to APS with a DDF less than or equal to 1500 gallons/day and .1203 is applicable to APS with a DDR between 1500 and 3000? Since titles of rules can be changed without going through the rulemaking process, we read rule without titles. As such, please make it clear within the text of the body of the rule what they are applicable to.

In (a), what is meant by "except otherwise required in this Rule, the requirements of Rule .0901 of this Subchapter shall apply"? Are there duplicate, but competing requirements with .0901? I think that perhaps some different language here could help clarify this.

Also, please consider making "Unless otherwise required in this Rule, the requirements of .0901 of this Subchapter shall apply" its own Paragraph. It doesn't seem to go with the rest of the language in (a).

Please provide some introduction to (b)(1) through (2) at the end of (b).

In (b)(2), please verify the cross-reference to .1204 regarding the assignment of the drip system. I don't see "assign" in .1204.

Please consider revising (b)(1)(B) to say "up to 2.5 for TS-II effluent standards when ~~there is a~~ all the following conditions are met: minimum of 48 inches of Group I soils from the naturally occurring soil ~~surface~~ surface; and minimum of 30 inches to a SWC below the naturally occurring soil surface.

Please consider revising (c)(4) to say: 25-foot setback shall be maintained to all property lines unless one ~~of the following criteria are met:~~ a site-specific nitrogen migration analysis for a TS-I system indicates that the nitrate-nitrogen concentration at the property line will not exceed 10 ~~mg/L;~~ mg/L or a TS-II system is used.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel

Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1203 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1203 SITING AND SIZING CRITERIA FOR ADVANCED PRETREATMENT SYSTEMS**
4 **WITH A DESIGN DAILY FLOW GREATER THAN 1,500 GALLONS/DAY AND LESS THAN OR EQUAL TO**
5 **3,000 GALLONS/DAY**

6 (a) No reductions in depth to ~~LC or SWC~~, LC, vertical separation ~~distance~~ or setback requirements shall be taken. Except as
7 otherwise required in this Rule, the requirements of Rule .0901 of this Subchapter shall apply.

8 (b) The LTAR shall be based on the effluent standard and dispersal field type proposed.

9 (1) The LTAR may be increased by the following factors when compared to the rate assigned by the
10 authorized agent for a new system using DSE:

11 (A) up to 2.0 for TS-I or TS-II effluent standards;

12 (B) up to 2.5 for TS-II effluent standards when all the following conditions are met: minimum of 48
13 inches of Group I soils from the naturally occurring soil surface; and minimum of 30 inches to a
14 SWC below the naturally occurring soil surface.

15 (2) The LTAR for an aerobic drip system shall be assigned in accordance with Rule .1204 of this Section.

16 (c) When the LTAR for a system is proposed to be increased in accordance with Paragraph (b) of this Rule, the following
17 conditions shall be met:

18 (1) a Special Site Evaluation required in accordance with Rule .0510 of this Subchapter shall be submitted and
19 approved;

20 (2) pressure dispersal shall be utilized;

21 (3) space shall be available for an equivalently sized dispersal field repair area; and

22 (4) 25-foot setback shall be maintained to all property lines unless one of the following criteria are met: site-
23 specific nitrogen migration analysis for a TS-I system indicates that the nitrate-nitrogen concentration at the
24 property line will not exceed 10 mg/L; or a TS-II system is used.

25 (d) Trench dispersal products approved for a specific dispersal field reduction in area or trench length when receiving DSE in
26 accordance with this Subchapter or a PIA Approval shall not be reduced by more than 50 percent as a result of increased
27 LTAR in accordance with this Rule.

28 (e) The DDF shall not be increased by the addition of advanced pretreatment to an existing wastewater system.

29

30 *History Note: Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.*

31 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1204

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Just to make sure that I understand, are (a) through (g) applicable to those systems using advanced pretreatment with a DDF less than or equal to 1,500 gpd, and (h) is applicable only to those with a DDF greater than 1,500 and less than or equal to 3,000 gpd?

In (a), do you mean drip dispersal systems “may” or “shall” use the siting and sizing criteria in this Rule?

In (a), please change “the following siting and sizing criteria” to “the siting and sizing criteria in this Rule”

In (a), what is meant by “except otherwise required in this Rule, the requirements of Rule .0901 of this Subchapter shall apply”? Are there duplicate, but competing requirements with .0901? I think that perhaps some different language here could help clarify this.

Please change “Section” to “Subchapter”

In (b)(1)(B), delete “as follows”, add “there shall be” before “a minimum of 18 inches”, and delete the semi-colon after SWC.

In (b)(2)(B), delete “as follows:”, add “there shall be” before “a minimum of 12 inches”, and change the semi-colon after “LC” to a comma.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1204 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1204 ADVANCED PRETREATMENT DRIP DISPERSAL SYSTEMS**

4 (a) Drip dispersal systems may utilize the following siting and sizing criteria when used with advanced pretreatment and a
5 DDF less than or equal to 1,500 gpd. Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section
6 shall apply.

7 (b) The soil and site characteristics shall meet the following criteria based on effluent standards:

8 (1) NSF-40 Systems

9 (A) a minimum of 18 inches of naturally occurring suitable soil above a LC and 13 inches of naturally
10 occurring suitable soil above a SWC, and the minimum vertical separation ~~distance~~ to any LC ~~or~~
11 ~~SWC~~ shall be 12 inches;

12 (B) for new fill, the requirements of Rules .0909(b) and (c) of this Subchapter shall be met, except as
13 follows: a minimum of 18 inches of naturally occurring suitable soil above a LC and a minimum
14 of 12 inches of naturally occurring suitable soil above a SWC; and the minimum vertical
15 separation ~~distance~~ shall be 18 inches to a LC and 12 inches to a SWC; or

16 (C) for existing fill, the requirements of Rules .0909(d) and (e) of this Subchapter shall be met, except
17 that the minimum vertical separation ~~distance~~ to any LC ~~or SWC~~ shall be 18 inches;

18 (2) TS-I Systems

19 (A) a minimum of 15 inches of naturally occurring suitable soil above a LC and a minimum of 13
20 inches of naturally occurring suitable soil above a SWC, and the minimum vertical separation
21 ~~distance~~ to any LC ~~or SWC~~ shall be nine inches;

22 (B) for new fill, the requirements of Rules .0909(b) and (c) of this Subchapter shall be met, except as
23 follows: a minimum of 12 inches of naturally occurring suitable soil above a ~~LC or SWC~~; LC; a
24 minimum of nine inches vertical separation ~~distance~~ to a SWC, and a minimum of 12 inches
25 vertical separation ~~distance~~ to a LC; or

26 (C) for existing fill, the requirements of Rules .0909(d) and (e) of this Subchapter shall be met, except
27 that the minimum vertical separation ~~distance~~ to any LC ~~or SWC~~ shall be 12 inches; and

28 (3) TS-II Systems

29 (A) a minimum of 13 inches of naturally occurring suitable soil above a LC ~~and SWC~~ and the
30 minimum vertical separation ~~distance~~ to any LC shall be six inches;

31 (B) for new fill, the requirements of Part (2)(B) of this Paragraph shall be met; or

32 (C) for existing fill, the requirements of Part (2)(C) of this Paragraph shall be met.

33 (c) Site modifications for advanced pretreatment drip dispersal systems shall meet the following criteria based on effluent
34 standards:

35 (1) NSF-40 Systems may utilize a groundwater lowering system to meet the vertical separation ~~distance~~
36 requirements to a SWC only when Group I or II soils with suitable structure are present within 36 inches of

- 1 the naturally occurring soil surface. The minimum vertical separation distance to the projected (drained)
 2 SWC shall be 12 inches. The addition of fill material shall not be used to meet this requirement; and
 3 (2) TS-I and TS-II Systems may utilize a groundwater lowering system to meet the vertical separation distance
 4 requirements to a SWC. The minimum vertical separation distance to the projected (drained) SWC shall be
 5 12 inches. The groundwater lowering system may be used with the following:
 6 (A) Group III soils are present at any depth above the invert elevation of the highest point of the
 7 artificial drainage system or within 36 inches of the naturally occurring soil surface, whichever is
 8 deeper; or
 9 (B) on new fill sites.
 10 (d) Table XXVIII shall be used to determine the LTAR for advanced pretreatment drip dispersal systems based on Soil
 11 Group. Limitations in adjustment allowances for NSF-40, TS-I, and TS-II systems are listed in Subparagraphs (d)(5), (d)(6),
 12 and (d)(7) of this Rule.

13
 14 **TABLE XXVIII. LTAR for advanced pretreatment drip dispersal systems based on Soil Group**

Soil Group	USDA Soil Textural Class		LTAR (gpd/ft ²)		
			NSF-40	TS-I	TS-II
I	Sands	Sand	0.6 – 1.0	0.8 – 1.2	0.8 – 1.5
		Loamy Sand			
II	Coarse Loams	Sandy Loam	0.4 – 0.6	0.5 – 0.8	0.6 – 0.8
		Loam			
III	Fine Loams	Sandy Clay Loam	0.15 – 0.4	0.2 – 0.6	0.2 – 0.6
		Silt Loam			
		Clay Loam			
		Silty Clay Loam			
		Silt			
IV	Clays	Sandy Clay	0.05 – 0.2	0.05 – 0.2	0.05 – 0.2
		Silty Clay			
		Clay			

- 15
 16 (1) The LTAR shall be based on the most limiting, naturally occurring soil horizon within 18 inches of the
 17 naturally occurring soil surface or to a depth of 12 inches below the infiltrative surface, ~~whichever is~~
 18 ~~greater.~~ surface.
 19 (2) The DDF shall be divided by the LTAR, determined from Table XXVIII or XXIX, to ~~determine~~ calculate
 20 the minimum dispersal field area required. The minimum dripline length shall be ~~determined~~ calculated by
 21 dividing the required area by the maximum line spacing of two feet. The following equations shall be used
 22 to calculate the minimum dispersal field area and dripline length required:

23
$$MA = DDF \div LTAR$$

1 DL = MA ÷ LS
 2 Where MA = minimum dispersal field area (ft²)
 3 DDF = design daily flow (gpd)
 4 LTAR = in gpd/ft²
 5 DL = dripline length (feet)
 6 LS = two-foot line spacing

- 7 (3) The minimum dripline length calculated in Subparagraph (d)(2) of this Rule shall not be less than 0.5 x
 8 DDF for Group I soils, 0.83 x DDF for Group II soils, 1.25 x DDF for Group III soils, or 3.33 x DDF for
 9 Group IV soils. The dripline spacing may be adjusted in accordance with Rule .1602(e)(3) of this
 10 Subchapter and the PIA Approval so that the minimum required dispersal field area calculated in
 11 Subparagraph (d)(2) of this Rule does not need to be increased.
- 12 (4) Sections of tubing without emitters (blank tubing) required to meet site-specific conditions shall not count
 13 towards the minimum length of dripline needed when laying out the system or when calculating the linear
 14 footage of dripline needed.
- 15 (5) LTAR adjustment limitations for NSF-40 Systems
- 16 (A) the LTAR for new fill shall not exceed 0.6 gpd/ft² for Group I soils, 0.4 gpd/ft² for Group II soils,
 17 0.15 gpd/ft² for Group III soils, or 0.05 gpd/ft² for Group IV soils; and
- 18 (B) the LTAR for existing fill shall not exceed 0.8 gpd/ft².
- 19 (6) LTAR adjustment limitations for TS-I Systems
- 20 (A) the LTAR for new fill shall not exceed 1.0 gpd/ft² for Group I soils, 0.5 gpd/ft² for Group II soils,
 21 0.2 gpd/ft² for Group III soils, or 0.07 gpd/ft² for Group IV soils;
- 22 (B) the LTAR for existing fill shall not exceed 1.0 gpd/ft²; and
- 23 (C) the LTAR for sites with less than 18 inches of naturally occurring soil to any unsuitable LC or
 24 SWC shall not exceed the lowest LTAR for Soil Groups I, II, and III, and 0.1 gpd/ft² for Group
 25 IV soils.
- 26 (7) LTAR adjustment limitations for TS-II Systems
- 27 (A) the LTAR for new fill shall not exceed 1.0 gpd/ft² for Group I soils, 0.6 gpd/ft² for Group II soils,
 28 0.2 gpd/ft² for Group III soils, or 0.07 gpd/ft² for Group IV soils;
- 29 (B) the LTAR for existing fill shall not exceed 1.0 gpd/ft²; and
- 30 (C) the LTAR for sites with less than 18 inches of naturally occurring soil to any unsuitable LC or
 31 SWC shall not exceed the lowest LTAR for Soil Groups I, II, and III, and 0.1 gpd/ft² for Group
 32 IV soils.
- 33 (8) Table XXIX shall be used in determining the LTAR for advanced pretreatment drip dispersal systems
 34 installed in sapolite. The LTAR shall be based on the hydraulic conductivity of the most limiting, naturally
 35 occurring sapolite to a depth of 24 inches below the infiltrative surface.

36
 37 **TABLE XXIX.** LTAR for advanced pretreatment drip dispersal systems based on Sapolite Group

Saprolite Group	Saprolite Textural Class	LTAR (area basis)(gpd/ft ²)	
		NSF-40	TS-I and TS-II
I	Sand	0.4 – 0.5	0.4 – 0.6
	Loamy sand	0.3 – 0.4	0.3 – 0.5
II	Sandy loam	0.25 – 0.35	0.25 – 0.4
	Loam	0.2 – 0.25	0.2 – 0.3
	Silt loam	0.05 – 0.1	0.05 – 0.15
III	Sandy clay loam	0.05 – 0.1	0.05 – 0.15

- 1
- 2 (e) A Special Site Evaluation shall be required in accordance with Rule .0510 of this Subchapter, as applicable.
- 3 (f) Setback reductions allowed in Table XXVII of Rule .1202 of this Section may be used with advanced pretreatment drip
- 4 dispersal systems when no reduction in the required minimum depth to a LC ~~or SWC~~ or vertical separation ~~distance~~ reduction
- 5 is proposed compared to the requirements for DSE in Table XXV or Table XXVI of Rule .1202 of this Section. A minimum
- 6 of 18 inches of naturally occurring soil to an unsuitable LC ~~or SWC~~ shall be required to take setback reductions. The
- 7 following LTAR limitations shall be applicable:
- 8 (1) for NSF-40 and TS-I systems, with the exception of the setback reductions to artificial drainage systems,
- 9 when reductions are taken in setbacks, the LTAR shall not exceed the lowest LTAR for Soil Groups I, II,
- 10 and III, and 0.1 gpd/ft² for Group IV soil;
- 11 (2) for TS-II Systems, with the exception of setback reductions to artificial drainage systems, when reductions
- 12 are taken in setbacks, the LTAR shall not exceed the mid-range LTAR for Soil Groups I, II, and III, and
- 13 0.1 gpd/ft² for Group IV soils; and
- 14 (3) for NSF-40, TS-I, and TS-II Systems, Table XXVIII may be used to determine the LTAR when no other
- 15 setback reductions are taken aside of those to artificial drainage systems.
- 16 (g) Drip dispersal installation shall be in accordance with Rule .0908(e) of this Subchapter.
- 17 (h) Drip dispersal systems with a DDF greater than 1,500 gpd and less than or equal to 3,000 gpd used with advanced
- 18 pretreatment may propose an adjusted LTAR if the following criteria are met:
- 19 (1) no reduction in the depth to a ~~LC or SWC~~, LC, vertical ~~separation distance~~, separation, or setback
- 20 reductions is proposed;
- 21 (2) proposed LTAR is supported by a Special Site Evaluation in accordance with Rule .0510 of this
- 22 Subchapter; and
- 23 (3) 25-foot setback shall be maintained to all property lines, unless one of the following criteria is met:
- 24 (A) site-specific nitrogen migration analysis for a TS-I system indicates that the ~~nitrogen~~ nitrate-
- 25 nitrogen concentration at the property line will not exceed 10 mg/L; or
- 26 (B) TS-II system is used.
- 27

28 *History Note: Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.*

29 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1205

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), rather than "Sand lined trench systems receiving TS-I or TS-II effluent may be proposed in accordance", say "Sand lined trench systems receiving TS-I or TS-II effluent shall meet the requirements of this Rule" or something like "This Rule shall apply to sand lined trench systems receiving TS-I or TS-II effluent."

In (a), what is meant by "except otherwise required in this Rule, the requirements of Rule .0901 of this Subchapter shall apply"? Are there duplicate, but competing requirements with .0901? I think that perhaps some different language here could help clarify this.

What is the overall intent of (b)? It seems to be missing some language.

In (c), please change "is proposed" to "is used" Also, what is the "required minimum vertical separation"

Please add "the" at the beginning of (c)(1) and (2).

In (c)(2), who has the discretion as to whether a SWC can be reduced? Is it the engineer, designer, or the installer or is it the Department? If it is the Department and an approval is necessary, please provide the factors as to how the decision will be made.

In (e), please change "is required" to "shall be required"

Please begin (e)(1) and (2) with "when the"

In (f), is it at the discretion of the designer, engineer, or installer (whomever is appropriate here)?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1205 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .1205 ADVANCED PRETREATMENT SAND LINED TRENCH SYSTEMS

(a) Sand lined trench systems receiving TS-I or TS-II effluent may be proposed in accordance with the requirements of this Rule. Except as otherwise required in this Rule, the requirements of Rule .0906 of this Section shall apply.

(b) The site meets the criteria in Rule .0906(b) of this Subchapter and the receiving permeable horizon may be deeper than 60 inches below the natural grade.

(c) If ~~artificial drainage~~ a groundwater lowering system is proposed to meet the required minimum vertical separation ~~distance~~ to a SWC ~~that is not related to lateral water movement~~, SWC, the following conditions shall apply:

- (1) site shall comply with the requirements of Rule .0906(c) of this Subchapter; and
- (2) vertical separation ~~distance~~ requirement to a SWC may be reduced to nine inches with pressure dosed gravity distribution or six inches with pressure dispersal.

(d) Table XXX shall be used to determine the LTAR for a sand-lined trench system and shall be based on the most limiting, naturally occurring soils overlying the permeable receiving layer. The LTAR shall be one of the following:

- (1) the rate set forth in Table XXX; or
- (2) 20 percent of the in-situ Ksat of the ~~most hydraulically limiting overlying soil~~ receiving permeable horizon or the rate set forth in Table XXX, whichever is less.

TABLE XXX. LTAR for advanced pretreatment sand lined systems based on texture of the most hydraulically limiting overlying soil horizon

Soil Group	Texture of Most Hydraulically Limiting Overlying Soil Horizon	LTAR (gpd/ft²) *
I	Sand	0.9 – 1.4
II	Coarse Loams	0.7 – 1.0
III	Fine Loams	0.4 – 0.8
IV	Clays	0.2 – 0.4

*There shall be no reduction in trench length compared to a conventional gravel trench when Accepted or Innovative gravelless trench product is used.

(e) A Special Site Evaluation in accordance with Rule .0510 of this Subchapter is required for the following conditions to field verify the LTAR:

- (1) texture of the receiving permeable horizon is sandy loam or loam, and the system DDF is greater than 600 gpd; or
- (2) texture of the receiving permeable horizon is silt loam.

(f) Setback reductions in accordance with Table XXVII of Rule .1202 of this Section may be applied with sand lined trench systems.

1 (g) Sand lined trench system installation shall be in accordance with Rule .0906(g) of this Subchapter and pressure dispersal
2 shall be required.

3

4 *History Note: Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.*

5 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1206

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), what is meant by “except otherwise required in this Rule, the requirements of Rule .0901 of this Subchapter shall apply”? Are there duplicate, but competing requirements with .0901? I think that perhaps some different language here could help clarify this.

In (b), by “may be approved”, do you mean “shall be approved”? Alternatively, by “bed systems... may be approved”, do you mean “Bed systems... shall meet the following requirements.” Please review and clarify.

In (a)(1)(A), delete “are met”

In (b)(1)(C), what is meant by “sites limited”?

In (b)(2) and (3), is the “may” at the discretion of the designer or installer (whomever is appropriate), or at the discretion of the LHD or State?

In (c), by “may be approved”, do you mean “shall be approved”?

Please add “there is” at the beginning of (c)(1)(A).

In (c)(2)(B), where is the table regarding the lowest LTAR for the applicable soil group. Please provide the cross-reference to this table.

In (c)(2)(D), is the discretion whether and how much to reduce the minimum bed size at the discretion of the installer or PE?

In (c)(2)(E), please change “shall not” on line 10 to “are”, “shall be” on line 11 to “is” and “shall be” on line 11 to “is.”

In (c)(2)(E), please delete or define “directly

In (c)(3), please delete “shall be required” on line 16 after “Subchapter”

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

In (c)(4), what is meant by “may be proposed”, do you mean simply that “Setback reductions as set forth in Table XXVII of Rule .1202 shall apply as follows:”?

In (c)(4)(D), please change “are” to “shall be” in “are allowed” and delete “No other setback reductions are allowed” as it appears to be superfluous.

In (c)(5)(A), please delete or define “directly”

In (c)(5)(B), please change “shall not be” on line 36 to “is”, change “shall be” on line 37 to “is”, “shall not have” on line 1 to “does not” and “shall be” on line 3 to “are” for purposes of consistency.

In (d)(1)(c), please change “shall be maintained” to “is maintained”

In (d)(2)(B), is the reduction and amount at the discretion of the installer or engineer?

In (d)(2)(C), please change “shall be” on lines 25 and 26 to “are” for purposes of consistency.

In (d)(5)(A), please delete or define “directly”

In (e), I assume that the proposal will be approved so long as it meets these requirements?

In (e)(3), please change “shall not” to “does not” for purposes of consistency with the rest of (e).

In (e)(4), what is meant by “uniformly”

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1206 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1206 ADVANCED PRETREATMENT BED SYSTEMS**

4 (a) Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply.

5 (b) Bed systems receiving NSF-40 effluent, or better, on sites with a DDF not to exceed 600 gpd may be approved when the
6 following requirements have been met:

7 (1) the soil and site shall meet the following criteria:

8 (A) the vertical separation ~~distance~~ requirements of Rule ~~.0901(f)(2)~~ .0901(g)(2) of this Subchapter
9 are met;

10 (B) soil texture is Group I, II or III; and

11 (C) sites limited by topography, available space, or other site constraints;

12 (2) Table XVI in Rule ~~.0901(e)~~ .0901 of this Subchapter is used to determine the LTAR for a bed system. On
13 sites where the soil texture is Group I or II, the LTAR may be increased by a factor of 1.125 with no further
14 reduction in bed size allowed;

15 (3) setback reductions allowed in Table XXVII of Rule .1202 of this Section may be used; and

16 (4) bed system installation shall be in accordance with Rule .0903(d) of this Subchapter.

17 (c) Bed systems receiving TS-I or TS-II effluent on sites with a DDF less than or equal to 1,500 gpd may be approved when
18 the following requirements have been met:

19 (1) The soil and site meet the following criteria:

20 (A) a minimum of 30 inches of suitable Group I or II soils below the naturally occurring soil surface
21 and no SWC within the first 36 inches below the naturally occurring soil surface or 36 inches of
22 Group I soils below the naturally occurring soil surface and no SWC exists within the first 12
23 inches below the naturally occurring soil surface;

24 (B) the requirement for 30 inches of Group I or II soils or 36 inches of Soil Group I in Part (c)(1)(A)
25 of this Rule may be reduced to 18 inches when a Special Site Evaluation in accordance with Rule
26 .0510 of this Subchapter is provided;

27 (C) sites shall have a uniform slope not exceeding two percent, unless a Special Site Evaluation
28 submitted and approved in accordance with Rule .0510 of this Subchapter is provided; and

29 (D) the bed system shall be considered to be a fill system if the infiltrative surface is installed less
30 than six inches below the naturally occurring soil surface. For bed systems in fill, the
31 requirements of Paragraph (e) of this Rule shall also be met.

32 (2) Table XVI in Rule ~~.0901(e)~~ .0901 of this Subchapter shall be used to determine the initial LTAR for a bed
33 system and shall be based on the most limiting, naturally occurring soil horizon within 36 inches of the
34 naturally occurring soil surface or to a depth of 12 inches below the bed bottom, whichever is deeper. The
35 minimum bed size shall be determined in accordance with the following:

36 (A) the minimum amount of bottom area square feet shall be determined by dividing the DDF by the
37 LTAR;

- 1 (B) when the bed is a fill system, the lowest LTAR for the applicable Soil Group shall be used. The
 2 LTAR shall not exceed 1.0 gpd/ft²;
- 3 (C) fill shall not be added to the naturally occurring soil surface in order to increase the LTAR of a
 4 bed system;
- 5 (D) the minimum bed size may be reduced by up to 25 percent when the system is designed to meet
 6 TS-I or TS-II effluent and is not installed in existing fill; and
- 7 (E) the minimum bed size may be reduced by up to 40 percent when the following criteria are met:
 8 the system is designed to meet TS-II effluent; Group I Soil is present in the first 36 inches of
 9 naturally occurring soil; no SWC exists within the first 30 inches below the naturally occurring
 10 soil surface or within 24 inches of the bed bottom; the bed or beds shall not be located directly
 11 beneath the advanced pretreatment components, and pressure dispersal is used; effluent shall be
 12 distributed to the beds by a pump and timer control system designed to distribute flow evenly over
 13 a 24-hour period; and there shall be 100 percent dispersal field repair area.
- 14 (3) A Special Site Evaluation shall be submitted and approved in accordance with Rule .0510 of this
 15 Subchapter shall be required when the vertical separation ~~distance~~ to a ~~limiting condition~~ LC is reduced
 16 and on sites with slopes greater than two percent.
- 17 (4) Setback reductions allowed in Table XXVII of Rule .1202 of this Section may be proposed in accordance
 18 with the following:
- 19 (A) the setbacks shall be measured from the nearest edge of the ~~gravel~~ bed;
- 20 (B) for bed systems using fill, the setbacks shall be measured from a point five feet from the nearest
 21 edge of the ~~gravel~~ bed sidewall, or from the projected toe of the slope that is required to meet the
 22 soil and site limitations, whichever is greater;
- 23 (C) the minimum separation between initial and repair dispersal field areas serving a single system
 24 and facility shall be two feet of naturally occurring soil. Ten feet of naturally occurring soils shall
 25 separate the initial and repair dispersal field areas serving separate facilities when these bed
 26 systems are on a common site or tract of land; and
- 27 (D) whenever the bed size is reduced in accordance with this Rule, only reduced setbacks to artificial
 28 drainage systems in accordance with Table XXVII of Rule .1202 of this Section are allowed. No
 29 other setback reductions are allowed.
- 30 (5) Bed system installation shall be in accordance with Rule .0903(d) of this Subchapter and the following:
- 31 (A) pressure dispersal shall be used whenever effluent is distributed to a bed not located directly
 32 beneath the advanced pretreatment component; and
- 33 (B) when new fill is required for the installation of a bed system, suitable Group I fill material shall be
 34 used to meet the vertical separation ~~distance~~ requirements from the bed bottom to an ~~unsuitable~~
 35 ~~limiting condition~~, a LC, when all of the following conditions are met: a groundwater lowering
 36 system shall not be used to meet the vertical separation ~~distance~~ requirements; new fill material
 37 shall be sand or loamy sand, containing not more than 10 percent by volume fibrous organics,

1 building rubble, or other debris and shall not have discreet layers containing greater than 35
2 percent of shell fragments by volume; and the requirements of Rule .0909(c)(8) of this
3 Subchapter, for the projected side slope of the fill shall be met, as determined beginning at a point
4 six inches above the top edge of the ~~gravel~~ bed.

5 (d) Bed systems receiving TS-I or TS-II effluent on sites with a DDF greater than 1,500 gpd and less than or equal to 3,000
6 gpd may be permitted on the following sites:

- 7 (1) The soil and site shall meet the minimum following criteria:
- 8 (A) Group I soils are present for 54 inches below the naturally occurring soil surface;
 - 9 (B) no SWC exists within the first 48 inches below the naturally occurring soil surface; and
 - 10 (C) vertical separation ~~distance~~ of 24 inches to any SWC shall be maintained below the bed bottom,
11 unless a site-specific groundwater mounding analysis is performed and demonstrates a 12-inch
12 separation or 18-inch minimum for a fill system in accordance with Rule .0909(c) of this
13 Subchapter shall be maintained.
- 14 (2) Table XVI in Rule .0901 of this Subchapter shall be used to determine the initial LTAR for a bed system
15 and shall be based on the most limiting, naturally occurring soil horizon within 36 inches of the naturally
16 occurring soil surface or to a depth of 12 inches below the bed bottom, whichever is deeper. The minimum
17 bed size shall be determined in accordance with the following:
- 18 (A) the minimum number of square feet of bed bottom area shall be ~~determined~~ calculated by dividing
19 the DDF by the LTAR;
 - 20 (B) the minimum bed size may be reduced by up to 25 percent when the system is designed and
21 approved to meet TS-I or TS-II effluent standards and will be installed in naturally occurring soil;
22 and
 - 23 (C) the minimum bed size may be reduced by up to 40 percent when all of the following criteria are
24 met: the system is designed and approved to meet TS-II effluent standards; the hydraulic
25 assessment demonstrates that a 24-inch minimum vertical separation ~~distance~~ to a SWC shall be
26 maintained after accounting for projected groundwater mounding; and there shall be 100 percent
27 dispersal field repair area.
- 28 (3) A Special Site Evaluation shall be submitted and approved in accordance with Rule .0510 of this
29 Subchapter.
- 30 (4) No setback reductions shall be allowed in accordance with Table XXVII of Rule .1202 of this Section. The
31 following horizontal setbacks shall be met:
- 32 (A) the minimum setback between initial and repair dispersal field areas serving a single system and
33 facility shall be two feet of naturally occurring soil. Ten feet of naturally occurring soil shall
34 separate the initial and repair dispersal field areas serving separate facilities when these bed
35 systems are on a common site or tract of land;
 - 36 (B) when two beds are used, the minimum separation between two beds shall be 20 feet. When three
37 or more beds are used, the minimum separation between beds shall be 10 feet; and

1 (C) a 25-foot setback shall be maintained from edge of the bed to the property line unless a site-
2 specific nitrogen migration analysis indicates that the ~~nitrate~~ nitrate-nitrogen concentration at the
3 property line will not exceed 10 ~~m/L~~, mg/L or TS-II or better effluent is produced by the approved
4 system.

5 (5) Bed system installation shall be in accordance with Rule .0903(d) of this Subchapter and the following
6 criteria:

7 (A) two or more equally sized beds shall be used and the beds shall not be located directly beneath the
8 advanced pretreatment components; and

9 (B) effluent shall be distributed to the beds by a pressure dispersal system. A timer control system
10 shall be used to distribute flow evenly to the beds over a 24-hour period.

11 (e) Bed systems receiving TS-I or TS-II quality effluent may be proposed for a site with existing fill that meets the
12 requirements of Rule .0909(d) of this Subchapter under the following conditions:

13 (1) no SWC exists within 18 inches of the existing fill surface;

14 (2) 18 inches of vertical separation exists to the SWC;

15 (3) the DDF shall not exceed 480 gpd; and

16 (4) pressure dispersal is used. The requirement for pressure dispersal shall not be required if the advanced
17 pretreatment system PIA Approval allows for advanced pretreatment unit(s) to discharge directly to the
18 underlying bed and for multiple units, where applicable, to be uniformly laid out over the bed area.

19
20 *History Note:* Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.

21 Eff. October 1, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1302

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), please change "this Rule applies" to "this Rule shall apply"

In (b), please consider changing "the following provisions apply" to "the following applies"

In (b)(1), I understand that different systems may require different operator classifications and that will be set forth in the OP: however, how will the decision be made as to what classification will be appropriate? Is this set forth elsewhere in rule or statute?

In (b)(2), just so I understand the use of "as applicable" here, are there going to be times that it will not be necessary to notify the LHD, the State, and the manufacturer? Also, how is this requirement different than that in .1304(f)? This appears to be a duplicative requirement.

In (c)(5), page 2, line 2, please change "the Subchapter" to "this Subchapter"

In (c)(5)(B), what is meant by "State certified laboratory"? Do you mean certified by CPH?

In (c)(5)(C), what is meant by "complete chain of custody"

IN (e)(1), what is meant by "compliant conditions"

In Item (1), rather than "the arithmetic mean (geometric mean for Fecal Coliform)" please consider saying "the geometric mean for Fecal Coliform" and delete "the arithmetic mean"?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1302 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1302 OPERATION AND MAINTENANCE OF ADVANCED PRETREATMENT SYSTEMS**

4 (a) This Rule applies to all advanced pretreatment systems approved in accordance with Sections .1500 and .1700 of this
5 Subchapter.

6 (b) System management in accordance with Table XXXI of Rule .1301 of this Section shall be required for advanced
7 pretreatment systems. The following provisions apply to the operation and maintenance contracts for advanced pretreatment
8 systems:

9 (1) prior to the issuance or re-issuance of an OP for an advanced pretreatment system, the owner shall provide
10 to the LHD documentation that a contract for operation and maintenance of the system is in place with a
11 Management Entity. For proprietary advanced pretreatment systems, the contract shall be with either the
12 manufacturer, manufacturer's representative, or a Management Entity authorized in writing by the
13 manufacturer or manufacturer's representative to operate the system. For non-proprietary advanced
14 pretreatment systems, the contract shall be with an operator certified for the classification indicated on the
15 OP; and

16 (2) the Management Entity shall notify the ~~LHD and LHD~~, the ~~State~~ State, and the proprietary advanced
17 pretreatment manufacturer, as applicable, when the owner chooses to not renew an operation and
18 maintenance contract executed in accordance with this Paragraph.

19 (c) Operation and maintenance for advanced pretreatment shall be in accordance with the following:

20 (1) the Management Entity shall evaluate the performance of each system;

21 (2) minimum inspection, sampling, and reporting frequency shall be in accordance with this Section, Rule
22 .1709 of this Subchapter, the RWTS or PIA Approval, and conditions of the OP;

23 (3) the Management Entity shall inspect each system during one or more of the required Management Entity
24 ~~inspection~~ inspections while the system is in operation using a VIP specified by the manufacturer and
25 included in the RWTS or PIA Approval. The VIP shall include the following:

26 (A) a visual inspection and evaluation of all critical treatment components and of the effluent in the
27 field for solids, clarity, color, and odor. The VIP shall also include field tests of pH, turbidity, and
28 dissolved oxygen content and, for TS-II systems, alkalinity, and any other tests proposed by the
29 manufacturer and specified in the RWTS or PIA Approval;

30 (B) criteria to determine system compliance status and proposed responses to conditions observed;
31 and

32 (C) for systems serving vacation rentals subject to the North Carolina Vacation Rental Act, G.S. 42A,
33 this visit shall be scheduled during the seasonal high use period and shall coincide with a water
34 quality sampling event if required in accordance with Rule .1709 of this Subchapter;

35 (4) the actual flow shall be recorded in accordance with the RWTS or PIA Approval by the Management
36 Entity prior to the visual inspection of the system in accordance with Subparagraph (c)(3) of this Rule and
37 prior to any effluent sampling event required in accordance with Rule .1709 of this Subchapter; and

(5) sampling and resampling for an approved ~~RWTS, Provisional, and Innovative~~ RWTS or PIA System shall be undertaken as required in accordance with Rule .1709 of the Subchapter and the following:

(A) all samples shall be collected, preserved, transported, and analyzed in compliance with 40 CFR 136;

(B) samples shall be taken to a State certified laboratory for analyzing;

(C) complete chain of custody from sample collection to analysis for each sample collected shall be maintained; and

(D) repeat sampling at any site shall be performed as required in the RWTS or PIA Approval, Rule .1709 of this Subchapter, or as otherwise directed by the LHD or State as part of an enforcement action. The owner, manufacturer, or manufacturer's representative may also re-sample a system to verify or refute sample results and substitute out of compliance samples with compliant samples. All samples results collected shall be reported.

(d) The results of all effluent sampling shall be reported by the Management Entity to the owner, LHD and the State. LHD, State, and the proprietary advanced pretreatment manufacturer.

(e) An individual advanced pretreatment system at a single site shall be considered compliant when the following conditions are met:

(1) annual VIP specified in the RWTS or PIA Approval indicates compliant conditions; and

(2) arithmetic mean (geometric mean for Fecal Coliform) of each constituent across three or more consecutive sampling dates does not exceed the designated effluent standard in Table XXIV in Rule .1201 of this Subchapter. Non-compliant data may be substituted with a new data set found to meet the designated effluent standard upon re-sampling within 30 days of receipt of the non-compliant data results for purposes of meeting the effluent quality standard.

(f) Mass loading for BOD₅, TSS, or TN may be used to show site compliance with Subparagraph ~~(d)(2)~~ (e)(2) of this Rule for ~~TN for a TS-II wastewater~~ system with a DDF less than or equal to 3,000 gpd. The mass loading to the wastewater system shall be based on site specific water use data and effluent sampling results. At least one year of water use data shall be used in this calculation. The mass loading to the wastewater system shall be calculated as follows:

$$\text{EML} = \text{Flow} \times \text{TN EFF (mg/L)}$$

$$\text{AML} = 0.6 \times \text{DDF} \times \text{30 TS mg/L (mg/L)}$$

If $\text{EML} \leq \text{AML}$, the site is compliant

Where EML = effective mass loading

AML = allowable mass loading

Flow = average daily flow during the peak water use month or the average of the peak 30 consecutive day period during the prior year

~~TN~~ EFF = average of the most recent effluent sampling ~~results.~~ results for the constituent (BOD₅, TSS, or TN). A minimum of two effluent sampling results shall be required

1 TS = the effluent limit based on the constituent and effluent standard from Table XXIV in
2 Rule .1201 of this Subchapter

3 (g) The Management Entity may record daily wastewater flow and may sample influent to the advanced pretreatment system
4 as needed to determine compliance with this Rule and OP conditions.

5

6 *History Note: Authority G.S. 130A-335(e) and (f).*

7 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1303

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Just so I understand, in (a)(2), when would it be necessary to remove the contents of a tank? Is this to prevent (a)(1)(A) through (C)

In (a)(1)(A), please delete or define "directly"

IN (a)(2), what is meant by "Legal remedies may be pursued after an authorized agent has observed and documented one or more of the malfunctioning conditions and has issued an NOV"? What is your specific authority for this?

In (a)(3), what is meant by "proper operation"?

In (a)(3), when is cleaning or replacement needed?

In (a)(5), when is pumping needed?

In (b)(5), are these to be determined by the owner and the Management Entity?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1303 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1303 OWNER RESPONSIBILITIES FOR WASTEWATER SYSTEM OPERATION AND**
4 **MAINTENANCE**

5 (a) Any person owning or controlling the property upon which a wastewater system is installed shall be responsible for the
6 following items regarding the operation and maintenance of the system:

7 (1) the wastewater system shall be operated and maintained to protect North Carolina ground and surface water
8 quality standards and to prevent the following conditions:

9 (A) discharge of sewage or effluent to the surface of the ground, surface waters, or directly into
10 groundwater at any time;

11 (B) back-up of sewage or effluent into the facility, building drains, collection system, freeboard
12 volume of the tanks, or distribution system; or

13 (C) effluent within three inches of finished grade over one or more trenches based on two or more
14 observations made not less than 24 hours apart, and greater than 24 hours after a rainfall event;

15 (2) the system shall be considered to be malfunctioning when it fails to meet one or more of the conditions of
16 Subparagraph (a)(1) of this ~~Rule, either continuously or intermittently, Rule~~ or if it is necessary to remove
17 the contents of the tank(s) at a frequency greater than once per month in order to satisfy these conditions.
18 The owner shall contact the LHD when the wastewater system is malfunctioning. Legal remedies may be
19 pursued after an authorized agent has observed and documented one or more of the malfunctioning
20 conditions and has issued an NOV;

21 (3) wastewater systems shall be inspected, and the entire contents of all septic tank compartments shall be
22 removed to ensure proper operation of the system. The contents shall be pumped whenever the solids level
23 (scum and sludge) is found to be more than 1/3 of the liquid depth in any compartment. The effluent filter
24 shall be cleaned or replaced as needed;

25 (4) residuals from the wastewater system shall be transported and disposed of in accordance with G.S. 130A,
26 Article 9, and 15A NCAC 13B et seq;

27 (5) grease traps and grease tanks shall be pumped as needed, but no less than yearly. ~~The owner shall maintain~~
28 ~~a contract with a certified pumpier. Grease traps and grease tanks shall be maintained in accordance with~~
29 Rule .0803(h) of this Subchapter and the owner shall maintain a contract with a septage management firm.
30 All pumping records shall be maintained onsite;

31 (6) site-specific vegetation shall be established and maintained over the wastewater system and repair area to
32 stabilize slope and control erosion; and

33 (7) activities that result in soil disturbance or soil compaction shall not occur over the initial and repair
34 dispersal field areas.

35 (b) A contract shall be executed between the system owner and a Management Entity prior to the issuance of an OP for a
36 system required to be maintained by a Management Entity, as specified in Table XXXI of Rule .1301 of the Section, unless
37 the system owner and Management Entity are the same. The contract shall include:

- 1 (1) specific requirements for operation, maintenance, and associated reporting;
- 2 (2) responsibilities of the owner;
- 3 (3) responsibilities of the system Management Entity;
- 4 (4) provisions that the contract shall be in effect for as long as the system is in use; and
- 5 (5) other requirements for the continued performance of the system.

6

7 *History Note: Authority G.S. 130A-335(e) and (f).*

8 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1304

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), please add commas before and after "at a minimum"

In (a), how will it be determined whether additional certifications will be necessary? Please provide some factors.

In (a), what is meant by "with the commission governing operators of water pollution control facilities"? Do you mean the Water Treatment Facility Operators Board of Certification"? Also, what is meant by "if required by G.S. 90A"? Do you mean the on-site wastewater contractors and inspectors certification board in Article 5 of G.S. 90A?

How is (f) different than .1302(b)(2)? These appear to be duplicate requirements.

In (g), what written report? Is there a cross-reference available?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1304 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1304 MANAGEMENT ENTITY RESPONSIBILITIES FOR WASTEWATER SYSTEM**
4 **OPERATION AND MAINTENANCE**

5 (a) When a Management Entity is required to be or to employ a certified operator as ~~specific~~ specified in Table XXXI in Rule
6 .1301 of this Section, the operator shall at a minimum be certified as a subsurface operator in accordance with G.S. 90A,
7 Article 3, and the rules in 15A NCAC 08G. Operators of systems classified as Type V or VI in Table XXXI may be required
8 to have additional certifications by the State, upon consultation with the commission governing operators of water pollution
9 control facilities, if required by G.S. 90A.

10 (b) The Management Entity shall inspect the wastewater system at the frequency specified in Table XXXI in Rule .1301 of
11 this Section or in accordance with the RWTS or PIA Approval.

12 (c) The Management Entity shall provide a copy of the inspection ~~report~~ report, including results of the VIP and effluent
13 sampling, to the owner and LHD within 30 days of the system inspection.

14 (d) When inspections indicate the need for system repairs, the Management Entity shall notify the LHD within 48 hours for
15 the owner to obtain a CA for the repairs.

16 (e) The Management Entity shall be responsible for assuring routine maintenance procedures and monitoring requirements in
17 accordance with the conditions of the OP and the contract.

18 (f) The Management Entity shall notify the LHD when the owner or the Management Entity chooses not to renew an
19 operation and maintenance contract executed in accordance with this Rule.

20 (g) The Management Entity shall submit their written report to the State centralized data management system.

21

22 *History Note: Authority G.S. 130A-335(e) and (f).*

23 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1305

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), what are the "operation and maintenance requirements"? Those set forth in these Rules?

In (b), please delete "resolution of"

In (e), by "may" do you mean "shall"? If you mean "may", how will it be determined whether a notice of non-compliance will be issued?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1305 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1305 LOCAL HEALTH DEPARTMENT RESPONSIBILITIES FOR WASTEWATER SYSTEM**
4 **OPERATION AND MAINTENANCE**

5 (a) No IP, CA, or OP shall be issued for Type IV, V, or VI systems, unless a Management Entity of the type specified in
6 Table XXXI in Rule .1301 of this Section is authorized and operational to carry out operation and maintenance requirements
7 for the wastewater system.

8 (b) A LHD may be the Management Entity only for systems classified Type IV, Va, ~~and Vb~~ Vb, Vc, Vd, Ve, Vf, and Vg and
9 only when authorized by resolution of the local board of health.

10 (c) An authorized agent shall review the performance and operation reports submitted in accordance with Rule .1304(c) of
11 this Section and perform an on-site compliance inspection of the systems as required in Table XXXI in Rule .1301 of this
12 Section. More frequent inspections may be performed by an authorized agent if requested by the system owner or the
13 Management Entity, or identified in the PIA approval or OP.

14 (d) The LHD may provide the owner with the option for a private Management Entity to perform the on-site compliance
15 inspection for Type IIIb and ~~IIIh~~ IIIh systems in accordance with Table XXXI in Rule .1301 of this Section instead of the
16 LHD. The Management Entity shall provide to the owner and LHD a written compliance inspection report.

17 (e) The LHD or State may issue a written notice of non-compliance to the owner when the wastewater system is non-
18 compliant with the performance standards listed in the CA and OP.

19

20 *History Note: Authority G.S. 130A-335(e) and (f).*

21 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1306

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

I'm a bit confused regarding the overall process of this Rule. For example, how do (c) and (f) go together? How about (d)? Does requirement only apply when there is a malfunction in accordance with Rule .1303 or whenever something in (a) occurs? Please review this Rule as a whole and clarify the process where needed.

In (a)(2), please delete "directly"

In (a)(3), what is meant by "destroyed"?

In (b), when will a time frame other than 30 days be required? How will this determination be made?

In (c), when must the owner apply for a repair permit? Also, what is a "repair permit"? Do you mean a CA? "repair permit" is not used elsewhere in these Rules.

In (d), what is meant by "its best professional judgment"? Wouldn't the owner just need to fix what is broken such that you could say something like "The owner shall make any necessary repairs that will enable the system to function in accordance with the manufacturer's specifications"?

Please end (f) with something like "subject to the following" to provide some introduction to (f)(1) and (2).

In (f)(1), is the responsibility on the LHD to obtain the information or on the owner to provide the information? If it's on the owner, please say something like "Prior to issuance of the CA by the LHD, the Owner shall provide the following information:"

In (h), by "may be approved", do you mean "shall be approved"? If you mean "may", please say how this determination will be made.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1306 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .1306 SYSTEM MALFUNCTION AND REPAIR

- (a) The LHD or State shall issue a written NOV to the wastewater system owner for the following:
 - (1) malfunctioning wastewater system determined in accordance with Rule .1303(a)(1) and (2) of this Section;
 - (2) wastewater system that creates or has created a public health hazard or nuisance by effluent surfacing, or effluent discharging directly into groundwater or surface waters; or
 - (3) wastewater system that is partially or totally destroyed.
- (b) The wastewater system shall be repaired within 30 days of ~~notification~~ the date on the NOV issued by the State or LHD unless the NOV specifies a different time frame for the repair.
- (c) The owner shall apply for a repair permit in accordance with Section .0200 of this Subchapter.
- (d) After investigating the malfunction, the State or LHD shall use its best professional judgement in requiring repairs that will enable the system to function.
- (e) When necessary to protect the public health, the State or LHD shall require the owner of a malfunctioning system to pump and haul sewage to an approved wastewater system during the time needed to repair the wastewater system. This requirement shall be included in the NOV issued to the owner.
- (f) If no repair options are available for the wastewater system, the LHD may issue a CA for a permanent pump and haul system.
 - (1) Prior to issuing the CA, the LHD shall receive the following information from the owner:
 - (A) confirmation that a septage management firm permitted in accordance with G.S. 130A-291.1 is under contract to pump and haul the sewage from the pump and haul tanks;
 - (B) documentation of the approved wastewater system that will be accepting the sewage. The wastewater system shall be approved under this Subchapter or approved ~~by the Environmental Management Commission~~ in accordance with 15A NCAC 02H or 15A NCAC 02T; and
 - (C) documentation from the facility receiving the sewage confirming that the facility has the capacity for the additional sewage.
 - (2) A non-transferrable OP, valid for a period not to exceed five years, shall be issued to the pump and haul system owner.
- (g) A malfunctioning wastewater system that has been disconnected from the facility for any reason shall be repaired prior to reuse.
- (h) If a malfunctioning wastewater system is found to be ~~nonrepairable, or is no longer required,~~ nonrepairable the dispersal system shall not be used. Tanks may be approved by the LHD for permanent pump and haul if shown to be structurally sound and watertight. The system owner shall be required to abandon the system to protect the public health and safety as specified in Rule .1307 of this Section.

*History Note: Authority G.S. 130A-291.1; 130A-291.2; 130A-335(e) and (f).
Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1307

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Please consider breaking the requirements of the system into a list.

On line 4, is the wording of "if a wastewater system is no longer required to be used" accurate? This is a bit awkward, would it be correct to say something like "if a wastewater system is abandoned or is otherwise no longer in use, the tanks shall

- (1) have the contents removed by a septage management firm permitted in accordance with G.S. 130A-291.1;*
- (2) be collapsed, backfilled, or otherwise secured; and*
- (3) have the aboveground components de-energized and removed.*

On line 6, what is meant by "otherwise secured"? I think some additional information would be helpful here.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1307 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1307 WASTEWATER SYSTEM ABANDONMENT**

4 If a wastewater system is ~~found to be non-repairable or is no longer required,~~ required to be used, the tanks shall have the
5 contents removed by a septage management firm permitted in accordance with G.S. 130A-291.1, the tanks collapsed,
6 backfilled, or otherwise secured, and the aboveground components de-energized and removed as directed by the authorized
7 agent to protect public health and safety.

8

9 *History Note: Authority G.S. 130A-335.*

10 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1401

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Overall, I'm having a difficult time understanding what is going on in this Section – is .1401 supposed to be an overview of what is required for each approval (or preapproval as stated in .1404) and then each Rule is intended to address a specific product? Or is (a) specific to prefabricated tanks and the other rules are specific to other products? I think it's the latter, but either way, please make it clear in the body of the text of the Rule to what the rule is applying.

In (a), how will be it determined whether these are approved? Are the standards or factors in determining approval set forth elsewhere? If so, please provide a cross-reference. I see in (e) what they are required to give you, but I don't see how you're going to decide to approve one over another. Also, is the process for this approval that they submit an application (which this Rule does not speak to, so I may be assuming incorrectly) and also the plans and specifications with the information provided in (c)? I think this could be much more clear.

Would it make sense to make the second sentence in (a) its own Paragraph?

(b) seems to have some extra language. For example, "tank or appurtenance (tank approval...) Is the first tank referring to the same as the second tank? Please review and clarify if needed.

In (b), I don't understand the use of "subsequent changes or modifications" here. Is the intent that each time they make a change or modification to an approved tank or appurtenance, they need to get another approval? If so, say that. If you all decide to keep this language here (which I don't know is totally clear,) please put commas before and after "including subsequent changes or modifications" I would suggest putting this language with the second sentence in (a) as its own paragraph and say something like "All tanks, risers, effluent filters, and pipe penetrations approved by the State shall maintain the materials, designs, and construction specified in the approved plans and shall comply with all rule of this Section." Any subsequent changes or modifications shall be approved by the State in accordance with this Rule." Again, assuming that this I the intent.

Amber May

Commission Counsel

Date submitted to agency: September 6, 2018

In (c), please consider changing “show the design in detail, including the following:” to “shall include the following:” If you choose not to do this, please delete or define “in detail”

In (c), please delete or define “pertinent.” By pertinent, do you mean those dimensions in (c)(1)? If so, “pertinent” appears to be superfluous. Also, dimensions of what? The product?

In (c)(2), what is meant by “as applicable” here? Do all products not have reinforcement material? If not, I think this is fine, but I wanted to be sure.

In (c)(4), is the pipe penetration boot going to be approved in accordance with a different set of rules or this Rule?

In (c)(6), please delete “detailed”

In (c)(7), should “recommend” be “recommended”? Also, recommend by whom?

In (c)(7), since you’ve said “including”, “as applicable” is not needed.

In (d), please delete “in detail”

In (e), what is meant by “The information shall indicate the tank shall perform in the same manner and to the same standard as those designed in accordance with the rules of this Section”? Do you simply mean that in order to be approved, the tank must perform in accordance with the Rules of this Section? If so, say that. Also, do you mean Section or do you mean Rule? The other Rules of this Section appear to pertain to other things.

In (f), when will an inspection take place? At random?

In (f), please remove the comma after “system”

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1401 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1401 PLANS FOR PREFABRICATED TANKS**

4 (a) All tanks, risers, effluent filters, ~~or~~ and pipe penetrations proposed for use in a wastewater system shall be approved by
5 the State. All tanks, risers, effluent filters, and pipe penetrations approved by the State shall maintain the materials, design,
6 and construction specified in the approved plans and shall comply with all rules of this Section.

7 (b) Three separate sets of plans and specifications for the initial design of each tank or appurtenance (tank approval, riser
8 approval, effluent filter approval, or pipe penetration approval) including subsequent changes or modifications shall be
9 submitted to and approved by the State prior to being offered for sale or use in North Carolina.

10 (c) Plans and specifications for tanks with a total liquid capacity less than or equal to 4,000 gallons shall show the design in
11 detail, including the following:

- 12 (1) all pertinent dimensions in inches, including:
 - 13 (A) top, bottom, and sidewall thickness and variations;
 - 14 (B) minimum and maximum dimensions on tanks with tapered or ribbed walls;
 - 15 (C) baffle wall minimum and maximum thickness and variations;
 - 16 (D) location and dimension of all openings in baffle wall for gas and liquid movement; and
 - 17 (E) dimensions of all compartments;
- 18 (2) material type and strength, including reinforcement material and location, as applicable, specified by the
19 manufacturer;
- 20 (3) liquid depth and operating capacity in gallons;
- 21 (4) pipe penetration locations and State approved pipe penetration boot;
- 22 (5) methods and material for sealing sections and forming water tight joints in tanks with multiple sections;
- 23 (6) detailed drawings showing access openings, tank lids, access manhole risers, and other proposed
24 appurtenances to the tank; and
- 25 (7) tank manufacturer and PE requirements for installation, including ~~bedding and bedding~~, recommend
26 methods for additional sealing, as ~~applicable~~. applicable, and leak testing procedures.

27 (d) Plans and specifications for tanks with a total liquid capacity greater than 4,000 gallons and all tanks designed for traffic
28 loads shall be designed by a PE in accordance with ASTM C890. Plans shall show the design in detail, including all the
29 information listed in Paragraph ~~(d)~~ (c) of this Rule and engineering calculations showing the minimum and maximum soil
30 cover, water table, and traffic load the tank is designed to support.

31 (e) Plans for prefabricated tanks other than those approved for general use and issued an identification number under this
32 Section shall be considered for tank approval on an individual basis based on the information provided by the tank
33 manufacturer or designer to the State. The information shall indicate the tank shall perform in the same manner and to the
34 same standard as those designed in accordance with the rules of this Section.

35 (f) The State or LHD may inspect approved tanks at the place of manufacture, the inventoried sites of the distributors, or at
36 the installation of the tank in a wastewater system, for compliance with the approved plans and specifications.

1 (g) Tanks found to be out of compliance shall be brought back into compliance by the tank manufacturer or the installer as
2 directed by the State or LHD. Tanks that are not or cannot brought into compliance shall not be used in a wastewater system.
3 The ~~imprint detailed~~ imprints identified in Rule ~~1402~~ 1402(d)(10) or (e)(8) of this Section shall be permanently marked over
4 by the authorized agent.

5

6 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

7 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1402

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), please delete or define "excessive"

In (b), how will it be determined whether filters and access devices will be approved? Here, do you mean that they must meet the requirements set forth in these Rules?

In (c), please change "will be" to "are" in "will be deeper"

In (c), please delete or define "visibly"

Please add "a" at the beginning of (d)(1) and (2)

Please add "the" at the beginning of (d)(3) and (4).

In (d)(5), please add "there shall be"

In (d)(6), please delete or define "resilient" and "flexible." Alternatively, given the ASTM standard, do you need "resilient, watertight, sealed, non-corrodible, and flexible? Wouldn't they be all these things if they met the ASTM standard?"

In (d)(6), how will it be determined whether the tank will be approved by the State? Do you mean that it must meet the requirements of these Rules?

Please change (d)(8) to read "there shall be no openings below the septic tank operating liquid level"

In (d)(9), what is meant by "approved effluent filter"? Do you mean a filter meeting the requirements set forth in these Rules?

Please add "the" at the beginning of (d)(10).

What is the intent of (d)(11)? I don't understand its placement here. Should it go with (d)(9) as an alternative option?

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

In (d)(12)(G), will other methods be approved if they show identical performance? If so, please say something like “other methods for designing partitions shall be approved by the state on a case-by-case basis upon a showing that the performance is identical to those designed in accordance with this Rule.”

In (d)(13), please change “having” to “have”

In (d)(13), what is meant by “nominal”? Is this an industry term”?

In (d)(15), please delete or define “secured”? What is the difference in “locked” and ase add “shla

In (g), s“secured”?

In (e)(2), what is meant by “nominal clear” Is this different than “nominal”?

In (e)(3), when will two or more pumps be required? Also, what is meant by “larger or multiple access risers”? How is this to be determined?

In (g), is “the following modifications” accurate? Would it be appropriate to say something like “Siphon tanks shall meet the design requirements of Paragraph (e) of this Rule and shall:”

In (g)(1), please add “be” at the beginning. Also, what is meant by “the minimum dose and construction requirements of this Rule”? Is this something other than Paragraph (e)?

Please add “have” at the beginning of (g)(2).

Please add “the” at the beginning of (g)(3).

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1402 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .1402 TANK DESIGN AND CONSTRUCTION**

4 (a) Tanks shall be watertight, structurally sound, and not subject to excessive corrosion or decay.

5 (b) Septic tanks and grease tanks shall have State approved effluent filters and access devices. An effluent filter and support
6 case shall be installed level in the outlet end of the septic tank or grease tank and shall meet the following criteria:

- 7 (1) solvent welded to a minimum of three-inch PVC Schedule 40 outlet pipe;
- 8 (2) installed in accordance with filter manufacturer's specifications and effluent filter approval; and
- 9 (3) accessible and removable without entering the septic tank or grease tank.

10 (c) Septic tanks installed where the access openings on the top of the tank will be deeper than six inches below finished grade
11 shall have an access riser over each compartment with cover, extending to within six inches of the finished grade. The
12 opening shall be adequate to accommodate the removal of the septic tank lid. When the top of the septic tank or access riser is
13 below the finished grade, the location of the tank shall be visibly marked at finished grade. Risers shall be installed in
14 accordance with the rules of this Subchapter, the manufacturer's specifications, and a product specific approval.

15 (d) Septic tanks shall meet the following minimum design standards:

- 16 (1) minimum liquid depth of 36 inches;
- 17 (2) minimum of nine inches freeboard, measured as the air space between the top of the liquid and the bottom
18 of the tank top. Venting of the tank shall be provided to prevent the buildup of gases;
- 19 (3) approved septic tank capacity shall be determined as the liquid volume below the outlet invert to the
20 bottom of the tank;
- 21 (4) length of the tank shall be a minimum of twice as long as the width, as measured by the longest axis and
22 widest axis based on the internal tank dimensions;
- 23 (5) three inlet openings in the tank, one on the tank end and one on each sidewall of the inlet end of the tank;
- 24 (6) outlet openings shall have a cast or manufactured penetration point and include resilient, watertight, sealed,
25 non-corrodible, and flexible connective sleeve. The connective sleeve shall meet ASTM C1644 for precast
26 concrete tanks or ASTM C1644, C923, or C564 for thermoplastic or glass-fiber-reinforced polyester tanks
27 and be approved by the State;
- 28 (7) inlet penetrations shall be greater than or equal to four inches in diameter and outlet penetrations shall be
29 greater than or equal to three inches in diameter;
- 30 (8) ~~no pipe penetration points or~~ openings shall be permitted below the septic tank operating liquid level;
- 31 (9) the outlet shall be through an approved effluent filter secured in place in an effluent filter support case. The
32 effluent filter case inlet shall extend down to between 25 and 50 percent of the liquid depth measured from
33 the top of the liquid level;
- 34 (10) invert of the outlet shall be a minimum of two inches lower in elevation than the invert of the inlet;
- 35 (11) other methods of supporting the effluent filter case and for making pipe penetrations shall meet all the
36 requirements of this Rule and shall be reviewed on a case by case basis by the State;

1 (12) all septic tanks shall be designed with a partition so that the tank contains two compartments. The
2 following conditions shall be met:

3 (A) the partition shall be located at a point not less than two-thirds or more than three-fourths the
4 length of the tank from the inlet end;

5 (B) the partition shall be designed, manufactured, installed, and maintained to remain in position
6 when subjected to a liquid capacity in one ~~compartment~~; compartment that corresponds with the
7 lowermost elevation of the water passage slot or holes;

8 (C) the partition shall be designed to create a gas passage, not less than the area of the inlet pipe, and
9 the passage shall not extend lower than seven inches from the bottom side of the tank top;

10 (D) the top and bottom sections of the partition shall be designed to create a water passage slot four
11 inches high for the full interior width of the tank;

12 (E) a minimum of two four or five-inch openings, or one four or five-inch opening per 30 horizontal
13 linear inches of baffle wall, whichever is greater, may be designed into the partition instead of the
14 four-inch slot;

15 (F) the entire liquid passage in the partition wall shall be located between 25 and 50 percent of the
16 liquid depth of the tank, as measured from the top of the liquid level; and

17 ~~(G) there shall be no other openings in the partition wall below the water passage slot or openings;~~
18 ~~and~~

19 ~~(H)~~(G) other methods for designing partition showing performance identical to those designed in
20 accordance with this Paragraph shall be considered for approval by the State on an individual
21 basis;

22 (13) access openings shall be provided in the top of the tank, located over each compartment, and having a
23 minimum nominal opening of 15 inches by 15 inches or 17 inches in diameter. The opening shall allow for
24 maintenance and removal of internal devices of the septic tank;

25 (14) access risers and covers shall be designed and maintained to prevent surface water infiltration;

26 (15) tank lids and riser covers shall be locked, secured, or weigh a minimum of 40 pounds, but no more than 80
27 pounds; and

28 (16) all septic tanks shall bear an imprint identifying the manufacturer, the septic tank serial number assigned to
29 the manufacturer's plans and specifications approved by the State, and the liquid or working capacity of the
30 tanks. The imprint shall be located to the right of the blockout made for the outlet pipe on the top or end of
31 outlet end of the tank.

32 (e) Pump tanks shall meet the design requirements of Paragraph (d) of this Rule with the following modifications:

33 (1) a watertight access riser with removable cover shall be located over the pump. The access riser shall extend
34 to a minimum of six inches above finished grade, and be designed and maintained to prevent surface water
35 infiltration;

36 (2) the access opening over the pump shall have a nominal clear opening of 24 inches in diameter or other
37 equidimensional opening;

- 1 (3) larger or multiple access risers shall be provided when two or more pumps are required;
- 2 (4) tanks may be designed with a single compartment. If a partition is provided, the partition shall be designed
- 3 to contain a minimum of two four-inch diameter circular openings, or equivalent, located no more than 12
- 4 inches above the tank bottom;
- 5 (5) there shall be no requirement as to tank length, width, or shape, provided the tank satisfies all other
- 6 requirements of this Section;
- 7 (6) the invert of the inlet openings shall be located within 12 inches of the tank top. No freeboard shall be
- 8 required in the pump tank;
- 9 (7) tanks shall be vented if located more than 50 feet from the facility, and accessible for routine maintenance;
- 10 (8) all pump tanks shall bear an imprint identifying the manufacturer, the pump tank serial number assigned to
- 11 the ~~manufacturer~~ manufacturer's plans and specifications by the State, and the liquid or working capacity
- 12 of the tank. The imprint shall be located to the left of the blockout made for the outlet pipe on the top or
- 13 end of outlet end of the tank; and
- 14 (9) the pump tank working capacity shall be the entire internal tank volume.

15 (f) Grease tanks shall be septic tanks approved in accordance with Paragraph (d) of this Rule with the following
16 modifications:

- 17 (1) the liquid passage between chambers shall be located between 40 and 60 percent of the operating liquid
- 18 depth measured from the top of the liquid level. The liquid passage between chambers may be made using
- 19 a sanitary tee extending down between 40 and 60 percent of the liquid depth measured from the top of the
- 20 liquid level;
- 21 (2) when sanitary tees are used as the liquid passage through an interior compartment partition, an access
- 22 opening and riser to grade over the tees shall be provided for servicing and routine ~~maintenance.~~
- 23 maintenance;
- 24 (3) when two or more tanks are ~~used,~~ used in series a sanitary tee shall be provided in the outlet end of each
- 25 interconnected tank extending down between 40 and 60 percent of the liquid depth;
- 26 (4) the final chamber shall contain an effluent filter and case extending down between 40 and 60 percent of the
- 27 liquid depth. The effluent filter shall be approved by the State for use in grease tanks. The grease rated
- 28 effluent filter shall be sized for the DDF and have opening of 1/32-inch or less; and
- 29 (5) access risers shall extend to finished grade and be capped with cast iron manhole rings and covers.
- 30 Lockable aluminum hatches may be substituted for cast iron manhole rings and covers in non-traffic areas.
- 31 Aluminum hatches or manhole rings and covers shall be designed and maintained to prevent surface water
- 32 infiltration. Locks shall be the responsibility of the person owning or controlling the system.

33 (g) Siphon tanks shall meet the design requirements of Paragraph (e) of this Rule with the following modifications:

- 34 (1) designed in accordance with the minimum dose and construction requirements of this Rule;
- 35 (2) provide three inches of freeboard;
- 36 (3) inlet pipe shall be three inches above the siphon trip level; and

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1403

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), what is meant by “capable of resisting corrosion from sewage and sewage gases and active and passive loads on tank walls”? Do you mean that they must be made of reinforced precast concrete, thermoplastic, glass-fiber reinforced polyester, or cast or manufactured in place? If so, I think it would be much more clear if you just said that.

In (b)(5), how will the State determine whether it will approve the design?

In (b)(6), when may a tank be subject to testing? As part of the approval process of .1401?

In (b)(7), what is meant by “state approved equivalent”? Is there a list somewhere or will this be determined by you all on a case by case basis? If there is an approval, how will it be decided? Must it meet the ASTM C990, be waterproof, corrosion-resistant and approved for use? If so, do you need the “State approved” language?

In (b)(7), line 25, approved for use with concrete tanks by whom? The manufacturer?

In (e), what are the approval standards for tanks cast or manufactured in place?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1403 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .1403 TANK MATERIAL REQUIREMENTS

(a) Tanks designed to hold sewage shall be structurally sound and constructed with materials capable of resisting corrosion from sewage and sewage gases, and the active and passive loads on tank walls.

(b) Reinforced precast concrete tanks shall meet the following minimum material and construction requirements:

- (1) the ends and sides of the tank shall have a minimum thickness of two and one-half inches. The top and bottom of the tanks shall be a minimum of three inches thick;
- (2) the top, bottom, end and sides of the concrete tank and tank lid shall be reinforced by using a minimum reinforcing of six-inch by six-inch No. 10 gage welded steel reinforcing wire. Reinforcement shall be placed to maximize the structural integrity of the tank;
- (3) alternative reinforcement designs may be used when shown to be equal to or greater than the reinforcement design in Subparagraph (2) of this Paragraph;
- (4) when the concrete tank, tank lid, riser, or riser cover are subjected to vehicular traffic, the tank shall be designed by a PE to handle the traffic load in accordance with ASTM C890;
- (5) any tank installed deeper than three feet shall be designed by a PE for the proposed tank burial depth. The tank design shall be submitted to the State for review and tank approval;
- (6) the concrete shall achieve a minimum 28-day compressive strength of 3,500 psi. The concrete shall meet the compressive strength of 3,500 psi prior to removal of the tank from the place of manufacture. It shall be the responsibility of the manufacturer to certify that this condition has been met prior to shipment. A tank may be subject to testing to ascertain the strength of the concrete prior to its being approved for installation. Testing shall be performed using a ~~properly~~ calibrated Schmidt Rebound Hammer or approved equal;
- (7) tanks manufactured in multiple sections shall be joined and sealed at the joint by using butyl rubber or other pliable sealant meeting ASTM C990 or State approved equivalent that is waterproof, corrosion-resistant, and approved for use with concrete tanks; and
- (8) tank lids and riser covers shall have a durable handle made of ~~rot-resistant~~ corrosion-resistant materials and capable of pull capacity for the weight of the lid or cover.

(c) Thermoplastic tanks shall either be IAPMO/ANSI Z1000 or CSA B66 certified and enrolled in a third-party quality assurance and quality control program, which includes material testing and unannounced annual audits.

(d) Glass-fiber-reinforced polyester tanks shall meet the following requirements:

- (1) top, bottom, ends, and sides of the tank shall have a minimum thickness of 1/5-inches. The baffle wall shall be a minimum of 3/16-inch thick;
- (2) material and laminate requirements specified in ~~IAMPO/ANSI~~ IAPMO/ANSI Z1000 for glass-fiber-reinforced polyester tanks; and
- (3) enrolled in a third-party quality assurance and quality control program, which include material testing and unannounced annual audits.

1 (e) Cast or manufactured in place tanks shall be designed by a PE, if required by G.S. 89C, and approved by the State.

2

3 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

4 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1404

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

How does this go with .1401(a) which also speaks to risers, effluent filters and pipe penetrations? Does it? Should this reference be in .1401?

(f) seems to indicate that this Rule is for preapproval of risers and riser lids, but that is not clear in this Rule. Please review and clarify. Perhaps it would be helpful to add a Paragraph at the beginning outlining when and to what this Rule is applicable (remember that Rules are read without their titles)

Please correct the spacing in (b)(1)-(7) and (c)(1).

In (b), please delete or define "in detail" A suggestion would be to change "shall show the design of the riser in detail, including" to "shall show the design of the riser and include the following information:"

In (b)(4), a third party what? I'm assuming that you don't mean any third party.

Are (b)(5) and (6) requirements of the riser or are you asking for documentation for the submission for approval? Please review and clarify as needed. Also, what is meant by "state approved"?

In (b)(5), delete "additional"

*Please consider revising (b)(4) as follows: documentation **from a third-party showing** that the riser **meets can meet** the load **required requirements** specified in Paragraph (a) of this **Rule; Rule shall be provided by a third-party;***

In (c) and (d), please change "in detail, including" to "and include the following information:"

In (f), what is meant by "The information shall indicate the riser, effluent filter, or pipe penetration shall perform in the same manner and to the same standard as those designed in accordance with the provisions of this Section"? Do you simply mean that in

Amber May

Commission Counsel

Date submitted to agency: September 6, 2018

order to be approved, the tank must perform in accordance with the Rules of this Section? If so, say that. Also, do you mean Section or do you mean Rule? Please change "provision" to "rule" or whatever is meant.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1404 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1404 PLANS AND SPECIFICATIONS FOR RISERS, EFFLUENT FILTERS, AND PIPE**
4 **PENETRATIONS**

5 (a) Risers and riser lids shall be able to withstand a uniform live loading of 150 pounds per square foot in addition to all loads
6 to which a riser is normally subjected, such as dead weight of the material and soil cover and active soil pressure on riser
7 walls.

8 (b) Riser plans and specifications submitted for review and approval shall show the design of the riser in detail, including:

- 9 (1) manufacturer's name, address, phone, and fax numbers;
- 10 (2) physical dimensions of the riser and riser cover, such as wall thickness, internal
11 diameter, proposed casting or installation details and methods, and pipe penetrations;
- 12 (3) material type and strength including reinforcement material and location as
13 required;
- 14 (4) documentation that the riser can meet the load required specified in Paragraph
15 (a) of this Rule shall be provided by a third-party;
- 16 (5) for septic tank risers, a secondary lid, concrete plug, or other State approved
17 safety device to be provided inside the riser for additional security and to prevent accidental entry;
- 18 (6) for pump tank risers, primary and secondary safety mechanisms shall be
19 provided. The primary safety mechanism shall be a locking riser lid, ring and lock, or other State approved
20 riser lid locking mechanism. The secondary safety mechanism shall be a secondary lid, concrete plug, or
21 other State approved safety device to be provided inside the pump tank riser; and
- 22 (7) specifications for application, installation, operation, and maintenance for both
23 new and retrofit applications for single and multiple riser sections.

24 (c) Effluent filter plans and specifications submitted for review and approval shall show the design of the effluent filter in
25 detail, including:

- 26 (1) manufacturer's name, address, phone, and fax numbers;
- 27 (2) documentation and a written certification that the effluent filter is designed, constructed, and performs in
28 compliance with G.S. 130A-335.1(a);
- 29 (3) capacity and wastewater strength for all models of proposed filters to be approved; and
- 30 (4) specifications for application, installation, operation, and maintenance.

31 (d) Pipe penetration plans and specifications submitted for review and approval shall show the design of the pipe penetration
32 in detail, including:

- 33 (1) manufacturer's name, address, phone and fax numbers;
- 34 (2) design specifications and materials used in the manufacture of pipe penetration components;
- 35 (3) applicable testing results from third-party verification showing pull and flexibility testing;
- 36 (4) testing for watertight seal around piping including any component or device included to ensure the seal,
37 such as non-corrodible adjustable bands;

1 (5) documentation that the pipe penetration meets the requirements of ASTM C1644 for precast concrete tanks
2 or ASTM C1644, C923, or C564 for thermoplastic or glass-fiber-reinforced polyester tanks; and

3 (6) specifications for application, installation, operation, and maintenance.

4 (e) Plans for risers, effluent filters, and pipe penetrations shall be reviewed and approved by the State and ~~assigned an~~
5 ~~Identification Number~~ an approval letter issued when the design is found to comply with this Section.

6 (f) Plans for prefabricated risers, effluent filters, and pipe penetrations other than those pre-approved under this Rule shall be
7 considered for approval on an individual basis based on the information provided by the manufacturer or designer to the State.
8 The information shall indicate the riser, effluent filter, or pipe penetration shall perform to the same standard as those
9 designed in accordance with the provisions of this Section.

10

11 *History Note: Authority G.S. 130A-335(e), (f), and (f1); 130A-335.1.*

12 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1405

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Please consider breaking (a) up into two paragraphs with lines 11-13 ("All riser, effluent filter... of each year" as (a) and lines 13-15 (The renewal form shall include...) as (b). Please also consider breaking the requirements on lines 14-15 into list form.

In (b), by "information describing how to request renewal" do you mean submitted the form in accordance with this Rule? If so, it's fine as written, but I want to be sure that there are no additional requirements outside of your rules.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1405 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1405 RISERS, EFFLUENT FILTERS, AND PIPE PENETRATION APPROVAL RENEWAL**

4 ~~(e) The State may re issue a riser, effluent filter, or pipe penetration approval for a new five year period when the~~
5 ~~manufacturer's re approval request provided in accordance with Paragraph (b) of this Rule shows continued product~~
6 ~~compliance. All riser, effluent filter, and pipe penetration approvals shall expire on December 31 of each year. Riser, effluent~~
7 ~~filter, and pipe penetration manufacturers who wish to continue product approval shall submit annually a proprietary product~~
8 ~~renewal form provided by the State. State no later than November 30 of each year. The renewal form shall include the~~
9 ~~following updated information: company's name, address, contact information, contact name, model number(s) approved, and~~
10 ~~a notarized statement that the product(s) has not changed from the previous year.~~

11 (a) All riser, effluent filter, and pipe penetration approvals shall expire on December 31 of each year. Riser, effluent filter,
12 and pipe penetration manufacturers who wish to continue product approval shall submit annually a proprietary product
13 renewal form provided by the State. State no later than November 30 of each year. The renewal form shall include the
14 following updated information: company's name, address, contact information, contact name, model number(s) approved, and
15 a notarized statement that the product(s) has not changed from the previous year.

16 (b) The Department shall notify the manufacturer of the pending PIA Approval expiration in writing no later than September
17 30 of each year. The notification shall provide the manufacturer with information describing how to request renewal.

18 (c) The riser, effluent filter, and pipe penetration approval shall be deemed to be renewed upon receipt of a completed
19 renewal form in accordance with this Rule.

20

21 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

22 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1406

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In Item (3), what are the "performance standards"? Are these set by the manufacturer?

In Item (4), what is meant by "applicable laws and rules"? The struck through language seems to provide the necessary information.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1406 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1406 MODIFICATION, SUSPENSION, AND REVOCATION OF APPROVALS**

4 The State shall modify, suspend, or revoke the approval for tanks, risers, effluent filters, or pipe penetrations upon a finding
5 that:

6 (1) approval is determined to be based on false, incomplete, or misleading ~~information or the tank or tank~~
7 ~~components have been subsequently altered;~~ information;

8 (2) the product has been altered;

9 ~~(2) — experience with the product or component results in altered conclusions about system performance,~~
10 ~~reliability, safety, or design;~~

11 (3) the product or component fails to perform in compliance with performance standards established for the
12 ~~product or component;~~ product; or

13 (4) the product ~~product, component, or the applicant~~ fails to meet conditions of its approval or comply with
14 ~~G.S. 130A, Article 11, Rule .1405 of this Section, this Subchapter, or conditions of the approval.~~ applicable
15 laws and rules.

16

17 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

18 *Eff. October 1, 2018*

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1501 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1501 GENERAL**

4 (a) RWTS that comply with NSF International Standard 40 for Class I residential wastewater treatment systems shall be
5 designed, constructed, and installed in accordance with this Section to serve facilities with a DDF less than or equal to 1,500
6 gpd.

7 (b) RWTS shall only be used with ~~domestic strength wastewater.~~ DSE.

8 (c) RWTS shall bear one of the following to certify that the product is in accordance with NSF Standard 40:

9 (1) the NSF mark and the NSF listed model number; or

10 (2) the certification mark and listed model number of a third-party certification program accredited by ANSI to
11 certify RWTS in accordance with NSF Standard 40.

12 (d) For approval of an RWTS as a ~~Provisional or Innovative~~ PIA System, a manufacturer shall apply in accordance with
13 Section .1700 of this Subchapter.

14

15 *History Note: Authority G.S. 130A-342.*

16 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1502

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In Item (4), please delete or define "legible"

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1502 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1502 APPLICATION**

4 An application shall be submitted for RWTS approval in writing to the State and shall include the following:

- 5 (1) manufacturer's name, address, phone number, plant location(s), and contact information for distributors;
- 6 (2) verification of NSF Standard 40 Class I system approval and listing by NSF International or other ANSI-
7 accredited third-party certification program;
- 8 (3) manufacturer's identifying name or logo, listed model number(s) and treatment capacity in gpd to be
9 imprinted on unit;
- 10 (4) three legible copies of plans and specifications, including information required to evaluate any tanks as
11 required in accordance with Rule .1401 of this Subchapter; and
- 12 (5) fee payment as required by G.S. 130A-343(k)(6), by corporate check, money order or cashier's check made
13 payable to: North Carolina On-Site Water Protection Account or North Carolina OSWW System Account,
14 and mailed to the State.

15

16 *History Note: Authority G.S. 130A-342.*

17 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1503

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Please consider revising (2)(e) to say "repairing and maintaining any system components."

In Item (6), when will this demonstration be conducted?

In Item (11), please delete or define "specially" and "specific"

Also in Item (11), what is meant by "approved prefabricated septic tank" and "approved by the State as part of the plans for RWTS"? Is additional information regarding these approvals set forth elsewhere in rule or statute?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1503 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .1503 DESIGN AND CONSTRUCTION STANDARDS**

4 RWTS shall meet the following design and construction standards:

- 5 (1) No blockouts or openings shall be permitted below the liquid level of the RWTS.
- 6 (2) RWTS shall be watertight, corrosion resistant structures, with all components requiring maintenance
7 accessible to the Management Entity. Access openings shall be provided in the RWTS top. Access shall be
8 provided for:
- 9 (a) cleaning or rodding out the inlet pipe;
- 10 (b) cleaning or clearing the air or gas passage space above any partition;
- 11 (c) pumping of each compartment required to be pumped;
- 12 (d) sampling the effluent; and
- 13 (e) repairing any system components or maintaining system components requiring repair or
14 maintenance.
- 15 (3) Tanks used in RWTS designed to hold sewage or effluent shall comply with all tank requirements in
16 accordance with Section .1400 of this Subchapter.
- 17 (4) RWTS shall bear an imprint identifying the manufacturer, the RWTS serial number assigned to the
18 manufacturer's model approved by the State, and the liquid or working capacity of the unit. The imprint
19 shall be located on the outlet end of the tank within 24 inches of the top of the tank.
- 20 (5) The design, construction, and operation of RWTS shall prevent bypass of wastewater.
- 21 (6) The manufacturer shall demonstrate that the system can be sampled in compliance with 40 CFR 136 and
22 shall specify the recommended method for effluent sampling.
- 23 (7) Control panels provided by the manufacturer shall comply with the requirements for control panels in
24 accordance with Rule .1103 of this Subchapter.
- 25 (8) The RWTS shall have an alarm device or devices to warn the user or Management Entity of a unit
26 malfunction or a high-water condition in accordance with Rule .1103 of this Subchapter.
- 27 (9) The control panel shall include a method to automatically measure and record daily wastewater flow
28 dispersed to the dispersal field in accordance with Rule .1702(a)(2)(I) of this Subchapter.
- 29 (10) The blower location shall be shown on the plans and detail proposed corrosion-resistant blower enclosures,
30 if applicable.
- 31 (11) A settling tank shall be required prior to or as an integral part of the design of the RWTS. The liquid
32 capacity of the settling tank shall be a minimum of half of the DDF of the RWTS, or as otherwise specified
33 by the manufacturer, whichever is larger. The settling tank may either be an integral chamber of the RWTS
34 tank, an approved prefabricated septic tank, or another tank specially designed for a specific individual
35 system and approved by the State as a part of the plans for the RWTS.

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37 *History Note: Authority G.S. 130A-342.*

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1504 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1504 SAMPLING REQUIREMENTS FOR RESIDENTIAL WASTEWATER TREATMENT**
4 **SYSTEMS**

5 Effluent from an approved RWTS shall be grab or 24-hour composite sampled annually for all effluent standards listed in
6 Table XXIV of Rule .1201 of this Subchapter for NSF-40 systems, unless adjusted sampling requirements have been
7 requested and granted in accordance with Rules .1302 and .1709 of this Subchapter.

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9 *History Note: Authority G.S. 130A-342.*

10 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1505

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Please change "includes" to "shall include" on line 6. Please also consider breaking (a) up as follows:

(a) All RWTS Approvals shall expire on December 31 of each year. RWTS manufacturers who wish to continue product approval shall submit annually a proprietary product renewal form provided by the ~~State~~. State no later than November 30 of each year.

(b) The renewal form shall include ~~includes~~ the following updated information:

(1) company's name, address, contact information, and contact name, name;

(2) model number(s) approved, and approved;

(3) a notarized statement that the product(s) product has not changed from the previous year, year; and

(4) The renewal request shall include verification of the manufacturer's continued certification and listing by a nationally recognized certification body, including compliance with NSF Standard 40.

Also, on line 7, what is meant by "model number(s) approved"? In accordance with a different rule?

In (d), how will it be determined that the system is failing to perform in compliance with the effluent standards?

Also, in (d), what are "established effluent standards"? Do you mean the Rules in this Subchapter?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1505 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1505 RESIDENTIAL WASTEWATER TREATMENT SYSTEM APPROVAL RENEWAL**

4 (a) All RWTS Approvals shall expire on December 31 of each year. RWTS manufacturers who wish to continue product
5 approval shall submit annually a proprietary product renewal form provided by the ~~State~~. State no later than November 30 of
6 each year. The renewal form includes the following updated information: company's name, address, contact information,
7 contact name, model number(s) approved, and a notarized statement that the product(s) has not changed from the previous
8 year. The renewal request shall include verification of the manufacturer's continued certification and listing by a nationally
9 recognized certification body, including compliance with NSF Standard 40.

10 (b) The Department shall notify the manufacturer of the pending RWTS Approval expiration in writing no later than
11 September 30 of each year. The notification shall provide the manufacturer with information describing how to request
12 renewal.

13 (c) The RWTS approval shall be deemed renewed upon receipt of the completed renewal form and verification of
14 certification in accordance with this Rule.

15 ~~(b)(d)~~ (d) The State may suspend or revoke a system approval upon a finding that the system fails to perform in compliance with
16 established effluent ~~standards~~. standards or as provided for in Rule .1708(b) of this Subchapter.

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18 *History Note: Authority G.S. 130A-342.*

19 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1601

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (f), just to make sure that I understand, "as applicable" is used here because a drip dispersal system may not always have to comply with .0908, .1204, and Section .1300?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1601 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .1601 GENERAL

(a) Drip dispersal systems for DDF less than or equal to 3,000 gpd shall be configured as a package and approved as a ~~Provisional, Innovative, or Accepted PIA~~ System in accordance with Section .1700 of this Subchapter.

(b) The integrated system package shall be provided from a single source manufacturer or system integrator, comprised of catalogued standardized design components that have been coordinated and tested by the manufacturer or integrator.

Components shall include:

- (1) dispersal field pump(s) and floats;
- (2) headworks assemblies;
- (3) dispersal field piping network, drip tubing, and appurtenances; and
- (4) system controls that provide for automatic filter cleaning, timed field dosing, field flushing, alarm notification, and recording of system operation.

(c) All components shall be integrated and designed to work together for the operation of the drip dispersal system. The system manufacturer or integrator shall provide system design information including:

- (1) head loss charts, tables, or formulas for various drip tubing lateral lengths during a dosing and flushing cycle;
- (2) minimum and maximum zone size and design;
- (3) design plans and specifications for all components;
- (4) installation specifications; and
- (5) operation and maintenance manuals.

(d) The system manufacturer shall provide support to train and authorize designers, installers, Management Entities, regulators, and users.

(e) Drip dispersal system performance, siting, sizing, installation, operation, monitoring, maintenance and reporting requirements shall comply with Rules .0908, .1204, and Section .1300 of this Subchapter, as applicable, and this Section.

(f) Drip dispersal systems that are not pre-engineered packages approved in accordance with Section .1700 of this Subchapter shall be designed on a project specific basis by a PE. The drip dispersal system design shall comply with Rules .0908, .1204, Section .1300 of this Subchapter, and this Section, as applicable.

(g) Drip dispersal systems for DDF greater than 3,000 gpd shall comply with the design and performance requirements of this Section and shall be designed on a project specific basis by a PE. The system design shall be reviewed and approved by the State in accordance with Rule .0302 of this Subchapter, unless the system is permitted in accordance with Rule .0207 of this Subchapter.

*History Note: Authority G.S. 130A-343.
Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1602

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), should "and Table XXIV" or "or"? I think it should be "or", since it's "one of the following:" on line 4.

Please add "have" at the beginning of (b)(1) and (2).

(c)(1) through (3) and (5) and (6) appear to be missing a word. Please add a corresponding verb to go with the introduction in (c).

Please remove the comma after "septic tank" in (d)(4).

In (e)(1) and (e)(3), please delete or define "uniformly"

In (e)(5), what are "unfavorable site conditions"? Can you provide some examples?

In (e)(5), what is meant by "differently colored"? Different from what?

Please add "the" at the beginning of (e)(6).

In (f)(1), what is meant by "regular intervals"? Please delete or define or provide some examples.

In (f)(2), what is meant by "varying operating conditions"?

In (g), I understand that these will be approved on a case-by-case basis, but what criteria will be used for the approval?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1602 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .1602 DESIGN AND CONSTRUCTION STANDARDS**

4 (a) Drip dispersal systems shall be preceded by pretreatment designed to meet one of the following effluent standards: DSE,
5 NSF-40, TS-I, TS-II, or RCW as specified in Table III of Rule .0402, Rule .1002, and Table XXIV of Rule .1201 of this
6 ~~Subchapter.~~ Subchapter, as applicable.

7 (b) The drip dispersal system pump tank shall meet the following conditions:

- 8 (1) a separate pump tank sized in accordance with Rule .0802 of this Subchapter; or
9 (2) a pump tank or compartment that is part of an advanced pretreatment system approved in accordance with
10 Section .1700 of this Subchapter. Pump tank operating levels shall not result in effluent backing up into a
11 part of any pretreatment component designed for free gravity flow drainage. All pump submergence, dose
12 volume, flow equalization, and emergency storage capacity requirements for the dosing system shall be met
13 without interfering in the performance of the pretreatment components.

14 (c) Pumps shall meet the following conditions:

- 15 (1) sufficient capacity to accommodate projected flow and total dynamic head conditions;
16 (2) delivery of ~~40~~ 15 to 60 psi of pressure during dosing events;
17 (3) minimum flow and pressure as required to backwash or forward flush headworks filter;
18 (4) manufacturer requirements shall be followed to protect the pump intake from solids materials that may
19 accumulate in the pump tank and for pump cooling during operation;
20 (5) maintenance of velocities of two feet per second at the distal end of each drip lateral line during automatic
21 field flushing for DSE; and
22 (6) maintenance of velocities of one-foot per second at the distal end of each drip lateral line during automatic
23 field flushing for advanced pretreatment effluent. Valving shall be provided to achieve flushing velocities
24 of two feet per second at the distal end of each dripline with manual flushing.

25 (d) Headworks assemblies shall contain filtration, totalizing flow meter, ~~mechanism~~ provisions for filter cleaning, and field
26 flushing valves. Zone and isolation valves may be located in the headworks assembly or in the drip dispersal field. The
27 headworks assemblies shall meet the following conditions:

- 28 (1) filters shall remove particles greater than 115 microns at the peak ~~DDF~~, operating flow rate, ~~typically~~
29 during network forward flushing. Filter number and size shall operate during both dosing and flushing
30 conditions at a pump operating flow rate within the filter manufacturer's specified acceptable operating
31 range;
32 (2) filters for drip dispersal systems receiving DSE shall be configured with two independently backwashed
33 disk filters;
34 (3) for drip dispersal systems receiving advanced pretreatment effluent, single or multiple screens or disc
35 filters may be used, designed to be cleaned by either backwashing or forward washing;
36 (4) filter cleaning and field flushing residuals shall be returned to the head of the ~~pretreatment unit~~, septic tank,
37 or settling tank prior to being returned to the pretreatment unit;

1 (5) a totalizing flow meter shall be used to record total flow through the system. The meter shall also be used
2 to monitor pump operating flow rates during dosing and flushing events; and

3 (6) the headworks and associated components shall be in a separate enclosure that is freeze protected, UV and
4 corrosion resistant, and accessible for routine operation, maintenance, monitoring and servicing. Design
5 shall facilitate access to all internal components.

6 (e) The drip dispersal field shall consist of one or more separately dosed zones comprised of a supply and return manifold,
7 manifold to lateral connections, laterals containing drip tubing with emitters, blank sections of tubing, and associated field
8 appurtenances. Drip emitter and associated field appurtenances design shall meet the following:

9 (1) drip emitters shall be designed and demonstrated to uniformly distribute wastewater effluent at a pre-
10 determined rate when operated in accordance with manufacturer's specified pressure range for emitter
11 operation. Emitter design coefficient of variation (Cv) shall be five percent or less. Emitters shall be
12 designed to be self-cleaning and to resist root intrusion. Hydraulic design of a drip dispersal zone shall be
13 based upon achieving no more than a 10 percent variation in flow from any emitter over the entire zone,
14 regardless of emitter elevation or position along the lateral including any effluent redistribution due to
15 drainback;

16 (2) drip emitters shall be pressure compensating unless the manufacturer and designer provide documentation
17 and calculations that a maximum 10 percent flow variance allowance can otherwise be achieved with non-
18 pressure compensating emitters in a PIA Approval or on a project-specific basis. Drip tubing shall be
19 marked to identify the emitter type and flow rate;

20 (3) drip emitters shall be uniformly spaced along the tubing on 24-inch centers or less, and drip tubing with
21 emitters shall be spaced an average of 24 inches on centers or less, in accordance with the proposed system
22 design. Spacing shall be chosen as needed to ensure a sufficient number and density of emitters are present
23 to achieve uniform distribution and instantaneous emitter loading rates that do not exceed the hydraulic
24 capacity of the receiving infiltrative surfaces;

25 (4) connections between supply and return manifolds, and between runs or drip lateral sections installed at
26 varying elevations or locations shall be made with solvent welded solid Schedule 40 PVC or flexible PVC;

27 (5) blanking sections of tubing without drip emitters may be used where unfavorable site conditions are
28 encountered along a drip run. Blanking tubing shall be differently colored or marked tubing of the same
29 material, specifications and diameter as the connecting dripline, or flexible PVC;

30 (6) manufacturer shall specify methods for drainback prevention; and

31 (7) field appurtenances shall include the following:

32 (A) air or vacuum relief valve at the highest elevation of each zone;

33 (B) cleanout at both ends of the supply and return manifolds;

34 (C) pressure monitoring fittings at the zone inlet and outlet points;

35 (D) pressure regulating valve where needed;

1 (E) for two or more zones: solenoid valves for each zone in the headworks or at the field, with an
2 isolation valve on the supply line side; and a check valve with an isolation valve for each zone
3 between the return manifold and the common return line; and

4 (F) valves, vents, cleanouts, and pressure monitoring fittings shall be provided with protective vaults
5 or boxes that are decay resistant, ultraviolet rated, and accessible to the Management Entity from
6 the ground surface.

7 (f) An integrated controller shall be provided to manage the multifunction processes of drip dispersal systems and meet the
8 following conditions:

9 (1) enable each drip dispersal field or zone to be time-dosed at regular intervals throughout the day, at a
10 projected average flow and to accommodate the DDF. The controller shall allow for adjustable and variable
11 dose volumes between or among zones;

12 (2) adjust pump dosing and resting cycles to meet system design and varying operating conditions;

13 (3) provide a minimum dose volume per zone that is a minimum of five times the liquid capacity of the drip
14 laterals or so that 80 percent of each dose is delivered when the minimum pressure in the field network is
15 10 psi;

16 (4) provide for automatic cleaning of headworks filter(s) at designer and manufacturer-specified frequency and
17 duration;

18 (5) provide for routine automatic forward flushing of the drip laterals (field flushing) with filtered effluent, at
19 designer and manufacturer-specified frequency and duration. Automatic forward flushing frequency and
20 duration shall be adjustable;

21 (6) monitor pump cycles and run times;

22 (7) telemetry, in accordance with Rule .1103(c) of this Subchapter, shall be provided for systems with a DDF
23 greater than 1,500 gpd or as required in conjunction with an advanced pretreatment system ~~shall include~~
24 ~~telemetry in accordance with Rule .1103(e) of this Subchapter; system;~~

25 (8) for systems with a DDF greater than 3,000 gpd the controller shall monitor flow volume to each zone and
26 provide a flow variance indication when flow is plus or minus 20 percent of design. The telemetry system
27 and alarm shall include an automatically rechargeable battery back-up power supply or be otherwise
28 designed to be functional during power outages;

29 (9) for multi-zone systems, the system controller shall provide for a zone to be rested or taken out of service
30 manually. The controller shall have the capability to bypass the zones that have been taken out of service
31 and dose the next available zone with the normal dosing sequence continuing; and

32 (10) controls and floats in the pump tank are to be configured to ensure the minimum dose is available prior to
33 initiating a dosing cycle to the dispersal field or zone and to provide that a full dose is delivered.

34 (g) Alternatives to the design criteria in this Rule may be proposed by the manufacturer during the PIA approval process or
35 by a PE on a project-specific basis. These alternatives shall be reviewed by the State on a case-by-case basis.

36
37 *History Note: Authority G.S. 130A-343.*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1603

DEADLINE FOR RECEIPT: Friday, September 14, 2018

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In reviewing this Rule, the staff recommends the following technical changes be made:

(a)(2)(C) and (D) seems to be missing a word. Should there be a "shall" in there like you have with (a)(2)(A), (B), and (E)?

In (b), when will they be demonstrated and to whom? As part of the approval process? I'm not sure that a change is needed here, so long as it is clear somewhere.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1603 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1603 DRIP DISPERSAL SYSTEM TESTING**

4 (a) The drip dispersal system field testing shall include the following items and any other requirements included by the
5 system designer:

6 (1) all leaks in the pipe network or from emitters exhibiting excessive emission rates, as evidenced by wet
7 spots during dosing cycles comparable to normal operating conditions, shall be repaired; and

8 (2) after the system is pressurized, dosing and flushing flow rates and pressures for each zone shall be
9 measured and confirmed to be in accordance with the drip system design parameters as follows:

10 (A) dosing pressure shall be measured at the lowest point in the supply manifold and highest point in
11 the return manifold;

12 (B) minimum and maximum emitter pressure shall be verified to be within emitter design parameters;

13 (C) flushing pressures at the ends of each supply and return manifold within each zone;

14 (D) dosing and flushing flow rates measured with the flow meter after the system is pressurized; and

15 (E) all dosing and flushing flow rates and pressures shall be recorded.

16 (b) All mechanical components, pumps, pump cycling, filters, valves, vents, flushing, high-water alarm, and telemetry
17 systems shall be demonstrated to be operable and in accordance with their design.

18

19 *History Note: Authority G.S. 130A-343.*

20 *Eff. October 1, 2018*

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1701 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1701 GENERAL**

4 PIA Systems are any wastewater systems, system components, or devices as defined by G.S 130-343(a) that are not described
5 in other Sections of this Subchapter. This includes systems for which any of the following are proposed:

- 6 (1) reduced minimum setbacks;
- 7 (2) reduced depth to ~~LC or SWC~~; LC or vertical separation requirements; or
- 8 ~~(3) reduced vertical separation distance requirements; or~~
- 9 ~~(4)~~(3) increased LTAR.

10 This Section shall provide for the approval and permitting of PIA Systems.

11

12 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

13 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1702

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a)(2)(E), please delete or define "detailed." Also, please change "design/drawing" to either "design and drawing" or "design or drawing", whatever is meant.

In (a)(3)(A), please delete or define "pertinent"

In (a)(4)(B), please consider breaking lines 34-line 2 on page 2 into a list with i, ii, iii. This will require a waiver of OAH's Rule, but I think that it makes the most sense.

In (a)(4)(B), what is meant by "comparable"? By whom and how will this determination be made?

In (a)(4)(C), what is meant by "as applicable"? Is this not always required (based on other language of this Rule (such as (a)(5), it appears as though it is)?

In (a)(6), do you mean "G.S. 132-1"?

What is meant by (a)(7)? Specifically, what is meant by "minimum certification/licensing requirements for designers, installers, and Management Entities"? Do you mean requirements as set forth in the applicable certification and licensing statutes and rules? I assume that you aren't trying to create a new set of standards for these folks. Also, please change "certification/licensing" to "certification or licensing"

In (a)(7), please add "and" before "minimum"

In (b)(6), please delete or define "successful"

In (f), when "may" the Department initial review of a nonproprietary PIA system? Given that it recites 130A-343(i), is this necessary?

In (f), if this language is necessary, should "if" be before "the system" so that the sentence reads "The system may be approved as Provisional or Innovative or the Department may recommend approval to the Commission as an Accepted System if it

Amber May

Commission Counsel

Date submitted to agency: September 6, 2018

has been shown to meet all applicable approval criteria of this Section.” Also, here, by “may” do you mean “shall”? How will it be determined whether it will be classified as provisional, innovative, or accepted?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1702 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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15A NCAC 18E .1702 APPLICATION

(a) An application shall be submitted in writing to the Department for a PIA System. All applications shall include the information required by G.S. 130A-343(d), (f), (g), (g1), and (h), and the following, as applicable:

- (1) identification of the type of PIA Approval requested:
 - (A) Provisional;
 - (B) Innovative;
 - (C) Functionally Equivalent;
 - (D) Accepted; or
 - (E) a combination of any of the above;
- (2) plans and specifications for the system, including the following:
 - (A) description of the system;
 - (B) materials used in construction;
 - (C) proposed use of system;
 - (D) system design criteria;
 - (E) detailed system design/drawings;
 - (F) installation manual;
 - (G) operation and maintenance manual, including a checklist for documentation of inspection and maintenance activities and the VIP;
 - (H) influent and effluent sampling locations for advanced pretreatment systems while the system remains in operation;
 - (I) method for automatically measuring and recording daily wastewater flow dispersed to the dispersal field for advanced pretreatment systems; and
 - (J) start-up requirements and information;
- (3) summary of the following information:
 - (A) pertinent literature;
 - (B) published research; and
 - (C) previous experience and performance with the system;
- (4) results of any available testing, research or monitoring of pilot systems or full-scale operational systems including:
 - (A) identification of the third-party research or testing organization that conducted the testing, research, or monitoring provided;
 - (B) documentation that the protocol or evaluation used in the testing, research, or monitoring is: established by a nationally recognized certification body; a listed protocol that has been approved by the Department in accordance with G.S. 130A-343(d); a comparable evaluation protocol used

1 for system approval in other states; or in accordance with an alternative performance evaluation
2 protocol proposed for approval by the manufacturer;

3 (C) documentation that the system is tested, certified, and listed by a nationally recognized
4 certification body and complies with an ongoing verification program administered by that
5 certification body, as applicable; and

6 (D) documentation that the system can be sampled in compliance with 40 CFR 136 and that the
7 method for system sampling ~~accurately~~ monitors system compliance with effluent standards;

8 (5) verification that the product submitted for PIA Approval is the same as the certified, listed, or tested
9 product, and if not, identification of any modifications made to the submitted product;

10 (6) notification of any proprietary or trade secret information, system, component, or device. All documents
11 received are considered Public Records in accordance with G.S. 132, unless they meet the criteria for
12 classification as a trade secret as defined in G.S. 66-152(3);

13 (7) draft written PIA Approval that includes criteria for site selection, installation requirements, operation and
14 maintenance procedures including a VIP, system classification, frequency of system inspection and
15 monitoring in accordance with Table XXXI of Rule .1301 of this Subchapter, minimum
16 certification/licensing requirements for designers, installers, and Management Entities; and

17 (8) fee payment as required by G.S. 130A-343(k), by corporate check, money order or cashier's check made
18 payable to: North Carolina On-Site Water Protection System Account or North Carolina OSWW System
19 Account, and mailed to the State. Fees received are non-refundable.

20 (b) Innovative System applications shall include the information listed in Paragraph (a) of this Rule.

21 ~~(b)(c)~~ Provisional System applications shall include the information listed in Paragraph (a) of this Rule and ~~the following an~~
22 evaluation proposal containing all information set forth in G.S. 130-343(f), including:

23 (1) identity and qualifications of the proposed third-party evaluator, including documentation of their third-
24 party status;

25 (2) description of the evaluation ~~proposal~~ proposal, including any proposed laboratory and field testing;

26 (3) number of systems to be installed;

27 (4) site selection criteria;

28 (5) system monitoring and reporting procedures, and proposed duration of evaluation; and

29 (6) any other information needed for the system to be able to achieve Innovative status upon successful
30 completion of the Provisional System evaluation proposal.

31 ~~(e)(d)~~ Functionally Equivalent Trench System Innovative applications shall include the information listed in Paragraph (a) of
32 this Rule and documentation that the manufacturer has petitioned the Commission for Public Health in accordance with G.S.
33 130A-343(g1).

34 ~~(d)(e)~~ Accepted Wastewater Dispersal System applications shall include the information listed in Paragraph (a) of this Rule
35 and documentation that the manufacturer has petitioned the Commission for Public Health in accordance with G.S. 130A-
36 343(h).

1 ~~(e)~~(f) The Department may initiate review of a nonproprietary PIA System in accordance with G.S. 130A-343(i) without
2 having received an application from a manufacturer. The system may be approved as Provisional or Innovative or the
3 Department may recommend approval to the Commission as an Accepted System. The system shall have been shown to meet
4 all applicable approval criteria of this Section.

5

6 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

7 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1703

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Is (h) necessary? If so, how will it be determined whether the Department will hold these meetings?

In (i), what are the appeal rights? Are these set forth elsewhere in rule or statute such that they can be cross-referenced?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1703 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1703 DEPARTMENT AND COMMISSION APPLICATION REVIEW**

4 (a) The Department shall review all applications submitted to determine if the information listed in Rule .1702 of this Section
5 is included and determine whether additional information is needed to continue the review.

6 (b) Within 30 days of receipt of the initial application, the Department shall notify the manufacturer of any items necessary to
7 complete the application or notify the manufacturer that the application is complete. This determination shall not constitute a
8 qualitative review of the information provided, nor the approval or denial of the proposed system designation. Specified
9 additional information shall be received within 180 days or the application file shall be closed.

10 (c) Upon receipt of a complete application, the Department shall conduct a qualitative review in accordance with PIA
11 Approval criteria identified in Rules .1704, .1705, and .1706 of this Section.

12 (d) For systems that are certified and listed by a nationally recognized certification body, the Department shall complete its
13 review and determine whether to approve or deny Provisional System applications within 90 days of receipt of a complete
14 application.

15 (e) The Department shall complete its review and determine whether to approve or deny Innovative System applications
16 within 90 days of publication in the North Carolina Register of the notice of receipt of a complete application.

17 (f) The Department shall prepare and submit its findings and recommendations for a ~~functionally equivalent trench system~~
18 Functionally Equivalent Trench System or an Accepted ~~wastewater dispersal system~~ System to the Commission within 120
19 days of receipt of a complete application.

20 (g) Upon request by the petitioner, the Commission may modify the 180-day time frame for receipt of additional information
21 specified by the Department for a functionally equivalent or Accepted System petition based on a determination that a petition
22 is incomplete and additional information is needed. The petitioner may also request Commission review of the Department's
23 determination that a petition is incomplete or additional information request.

24 (h) The Department may hold meetings to discuss PIA applications with stakeholders.

25 (i) The Department shall notify the applicant and LHDs of the approval or denial of a PIA System. The PIA Approval shall
26 include conditions for permitting, siting, installation, use, monitoring, operation and maintenance, and number of systems that
27 can be installed. When an application is denied, the Department shall inform the applicant in writing of the reason for denial
28 and specify appeal rights. The Department shall assign a unique code to the approved products for tracking purposes.

29 (j) An applicant may reapply in accordance with this Section. When reapplying, a new application shall be required and the
30 applicant shall make a new fee payment as required by G.S. 130A-343(k).

31

32 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

33 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1704

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In order to match the introduction provided in (a), please make the following changes:

- *begin (a)(1), (2), and (3) with lower-case letters.*
- *change (a)(1) to read "Documentation of one of the following is provided:*
- *(a)(1)(A) seems to be missing a word. Would it be appropriate to say something like "the systems have been operational and in use for a minimum of 50 installations and 12 months"*
- *(a)(1)(B) seems to be missing a word. I think the first sentence needs a verb. Perhaps something like "the system's design is functionally similar to another approved..."*
- *change (a)(2) to read "Documentation is provided..."*
- *end (a)(1)(D) with a semi-colon*
- *end (a)(2) with a semi-colon and "or" (assuming that you mean or, rather than and.)*
- *change (a)(3) to read "a proposed evaluation protocol to be overseen by a third-party evaluator is submitted"*

In (a)(1)(D), what is meant by "comparable"? By whom and how will this determination be made?

In (a)(2), I assume that the underlying requirement that trench and dispersal systems comply with AASHTO Standard H-5 and H-10 is set forth elsewhere in rule or statute?

In (a)(3), is the requirement here that they actually submit the protocol to someone or that they simply provide documentation of the submission? To whom is the protocol to be submitted? To the Department or to the evaluator?

In order to match the introduction provided in (b), please make the following changes:

- *begin (a)(1), (2), and (3) with lower-case letters.*

Amber May
Commission Counsel

Date submitted to agency: September 6, 2018

- *change (b)(1) to read “Documentation of one of the following is provided for designs...”*
- *(b)(1)(B) seems to be missing a word. I think the first sentence needs verb. Perhaps something like “the system’s design is functionally similar to another approved...”*

In (b)(1)(D), what is meant by “comparable”? By whom and how will this determination be made?

In (b)(2), is the requirement here that they actually submit the protocol to someone or that they simply provide documentation of the submission? To whom is the protocol to be submitted? To the Department or to the evaluator?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1704 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .1704 APPROVAL CRITERIA FOR PROVISIONAL SYSTEMS**

4 (a) Trench and dispersal systems shall be approved for use as a Provisional System when the following criteria have been
5 met:

- 6 (1) Documentation of one of the following:
- 7 (A) a minimum of 50 installations operational and in use for a minimum of 12 months, with available
8 information indicating comparable hydraulic performance and rate of malfunction to a
9 conventional trench system;
 - 10 (B) the system's design and functional similarity to another approved system described elsewhere in
11 this Subchapter, or to a ~~Provisional, Innovative or Accepted~~ PIA System approved in accordance
12 with this Section. The system's design and functional similarity shall be equal or superior to the
13 comparable system for the following: material physical properties and chemical durability; field
14 installed permeable sidewall area and bottom infiltrative area; method and manner of function for
15 conveyance and application of effluent; structural integrity; and field installed storage volume;
 - 16 (C) the system has been certified and listed by a nationally recognized certification body, as defined
17 by G.S. 130A-343(a)(6), for a period that exceeds one year; or
 - 18 (D) the system has complied with a comparable evaluation protocol used for system approval in other
19 states.
- 20 (2) Documentation shall be provided that all trench and dispersal systems have been subject to and complied
21 with AASHTO Standard H-5 and H-10 load testing that demonstrates the structural integrity to be
22 comparable to a conventional trench system.
- 23 (3) Submittal of a proposed evaluation protocol to be overseen by a third-party evaluator. The evaluation
24 protocol shall ensure that all information necessary to satisfy the criteria to achieve ~~Innovative Approval~~
25 under Approval, as specified in G.S. 130A-343(f) and Rule .1705 of this Section ~~Section~~, is collected. The
26 protocol shall include the following:
- 27 (A) a minimum of 100 installations operational and in use for a minimum of 12 months; and
 - 28 (B) sufficient information collected to evaluate the system's hydraulic performance, structural
29 integrity and rate of malfunction compared with a conventional trench system.

30 (b) Advanced pretreatment systems shall be approved for use as a Provisional System when the following criteria have been
31 met:

- 32 (1) Documentation of one of the following for designs complying with TS-I, TS-II, or RCW effluent standards:
- 33 (A) a minimum of 50 complete third-party field verification data sets from a minimum of 15 sites in
34 operation for six months, including all constituents necessary to verify compliance with the
35 applicable effluent standard. Two to five data sets may be from the same site if collected a
36 minimum of three months apart, with no data excluded from the field sampling sites. The data sets

1 shall demonstrate compliance with TS-I, TS-II, or RCW effluent standards in accordance with
2 ~~Rule .1709 of this Section;~~ Rules .1002 and .1709 of this Subchapter, as applicable;

3 (B) the system's design and functional similarity to another approved system described elsewhere in
4 this Subchapter, or to a Provisional or Innovative System approved in accordance with this
5 Section. The system's design and functional similarity shall be equal or superior to the comparable
6 system for all of the following: material physical properties and chemical durability; structural
7 integrity; biological, chemical, or physical treatment processes; method and manner of function
8 for conveyance and application of effluent through the system; and number and size of system
9 compartments;

10 (C) the system has been certified and listed by a nationally recognized certification body, as defined
11 by G.S. 130A-343(a)(6), for a period that exceeds one year; or

12 (D) the system has complied with a comparable evaluation protocol used for system approval in other
13 states.

14 (2) Submittal of a proposed evaluation protocol to be overseen by a third-party evaluator. The evaluation
15 protocol shall ensure that all information necessary to satisfy the criteria to achieve Innovative Approval
16 ~~under Approval, as specified in~~ G.S. 130A-343(f) and Rule .1705 of this Section is collected. The
17 protocol shall include one of the following:

18 (A) for a system that has been certified and listed by a nationally recognized certification body, as
19 defined by G.S. 130A-343(a)(6) for a period that exceeds two consecutive years, a minimum of
20 50 complete third-party field verification data sets from a minimum of 15 sites in operation for a
21 minimum of six months, including all constituents necessary to verify compliance with the
22 applicable effluent standard. Two to five data sets may be from the same site if collected a
23 minimum of three months apart, with no data excluded from the field sampling sites. The data
24 may be collected from systems in-state or out-of-state. The data sets shall show compliance with
25 TS-I, TS-II, or RCW effluent standards in accordance with ~~Rule .1709 of this Section;~~ Rules
26 .1002 and .1709 of this Subchapter, as applicable; or

27 (B) a minimum of 150 complete third-party field verification data sets from a minimum of 50 sites in
28 operation for a minimum of six months, including all constituents necessary to verify compliance
29 with the applicable effluent standard. Two to five data sets may be from the same site if collected
30 a minimum of three months apart, with no data excluded from the field sampling sites. The data
31 may be collected from systems in-state or out-of-state. The data sets shall demonstrate compliance
32 with TS-I, TS-II, or RCW effluent standards in accordance with Rule .1709 of this Section, as
33 applicable

34 (c) Manufacturers requesting Provisional Approval as both an advanced pretreatment and dispersal system ~~must~~ shall meet
35 the requirements for advanced pretreatment and dispersal as described in this Rule.

36
37 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1705

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In order to match the introductory language in (a), please begin (a)(1) through (5) with lower-case letters, end (a)(1) through (4) with semi-colons, and end (a)(4) with "and" (assuming that's what you mean.)

In (a)(2), please change "shall be equal" to "are equal" (again to match (a))

In (a)(3), please change "which" to "that"

In (a)(4)(B), please delete or define "comparable"? Does this mean research of this system in other states or comparable systems in other states?

In (a)(4)(B), please change "the results of which" to "that"

Please review (b), it appears to be missing a word. Do you mean "Advanced pretreatment systems for designs complying with TS-I, TS-II, or RCW effluent standards shall be approved for use as an Innovative System when the following information is provided:"?

Please delete "is provided" in (b)(2) since you have said "is provided" at the end of (b).

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1705 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1705 APPROVAL CRITERIA FOR INNOVATIVE SYSTEMS**

4 (a) A trench and dispersal system shall be approved for use as an Innovative System when the following criteria have been
5 met:

6 (1) The performance requirements for an Innovative System identified in G.S. 130A-343(a)(5) and (g) have
7 been met.

8 (2) Materials used in construction shall be equal or superior in physical properties, chemical durability, and
9 structural integrity compared to materials used for similar proposed systems described in other Sections of
10 this Subchapter.

11 (3) The system has been demonstrated to perform equal or superior to a system which is described in other
12 Sections of this Subchapter or to an Innovative or Accepted System previously approved in accordance
13 with this Section, based upon controlled pilot-scale research studies or ~~statistically valid~~ statistically valid
14 monitoring of full-scale operational systems.

15 (4) The system has met one of the following criteria:

16 (A) the system has completed an evaluation protocol as a Provisional System in accordance with Rule
17 .1704 of this Section;

18 (B) the manufacturer has provided comparable third-party research and testing conducted in other
19 states, with the data and findings of all evaluations of the system performance, the results of
20 which support the proposed use of the system; or

21 (C) the system has been evaluated in accordance with G.S. 130A-343(g)(3).

22 (5) The following documentation is provided:

23 (A) the results of AASHTO Standard H-5 and H-10 load testing that demonstrate structural integrity
24 comparable to a conventional trench system;

25 (B) a minimum of 100 installations operational and in use for a minimum of one year. The 100
26 installations sites may include any combination of systems installed in conjunction with an
27 approved Provisional System evaluation completed in North Carolina and systems in other states;
28 and

29 (C) system hydraulic performance and rate of malfunction is equal or superior to the demonstrated
30 performance of a conventional trench system.

31 (b) Advanced pretreatment systems requesting Innovative Approval for designs complying with TS-I, TS-II, or RCW effluent
32 standards the following information is provided:

33 (1) information required in Paragraphs (a)(1) through (a)(4) of this Rule; and

34 (2) documentation is provided of one of the following:

35 (A) for a system that has been certified and listed by a nationally recognized certification body, as
36 defined by G.S. 130A-343(a)(6) for a period that exceeds two consecutive years, a minimum of
37 50 complete third-party field verification data sets from a minimum of 15 sites in operation for a

1 minimum of six months, including all constituents necessary to verify compliance with the
2 applicable effluent standard. Two to five data sets may be from the same site if collected a
3 minimum of three months apart, with no data excluded from the field sampling sites. The data
4 may be collected from systems in-state or out-of-state. The data sets shall demonstrate compliance
5 with TS-I, TS-II, or RCW effluent standards, as applicable; or

6 (B) a minimum of 150 complete third-party field verification data sets from a minimum of 50 sites in
7 operation for a minimum of six months, including all constituents necessary to verify compliance
8 with the applicable effluent standard. Two to five data sets may be from the same site if collected
9 a minimum of three months apart, with no data excluded from the field sampling sites. The 50
10 sites may include a combination of sites monitored in conjunction with an approved Provisional
11 System evaluation completed in North Carolina and sites in other states. The data sets shall
12 demonstrate compliance with TS-I, TS-II, or RCW effluent standards, as applicable.

13 (c) Manufacturers requesting Innovative Approval as both an advanced pretreatment and dispersal system shall ~~also~~ meet the
14 requirements for advanced pretreatment and dispersal as described in this Rule.

15
16 *History Note Authority G.S. 130A-335(e) and (f); 130A-343.*

17 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1706

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Please delete or define "clear, convincing, and cogent evidence"

In (a), should there also be a reference to this Rule? Perhaps something like "based on the information provided in accordance with this Rule"? It appears to me that this Rule gives you all the information needed to make the determination whether it meets the standards set forth in 130a-343.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1706 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1706 APPROVAL CRITERIA FOR ACCEPTED SYSTEMS**

4 (a) The Commission shall designate a wastewater dispersal system as an Accepted System when it finds based on clear,
5 convincing, and cogent evidence that the standards set forth by G.S. 130A-343(a)(1) and G.S. 130A-343(h) have been met.

6 (b) The following information shall be provided by the petitioner and reviewed by the Commission prior to granting
7 Accepted System status:

8 (1) documentation of a minimum of 300 systems installed statewide and in use as an approved Innovative
9 System for more than five years;

10 (2) data and findings of all prior evaluations of the system performance as provided by the manufacturer;

11 (3) results of prior performance surveys of Innovative Systems in use in North Carolina for the five-year period
12 immediately preceding the petition, including any information available to the manufacturer pertinent to the
13 accuracy and validity of performance surveys not completed under their control;

14 (4) review(s) of records on system use and performance reported by LHDs, authorized designers, installers,
15 and Management Entities documenting the experiences with performance of the system in North Carolina,
16 including information collected and reported in accordance with Rules .1711 and .1712 of this Section.
17 Upon request of the manufacturer, the Department and manufacturer shall meet to discuss the accuracy and
18 validity of performance data and surveys to be considered for inclusion in the review. LHDs and other
19 stakeholders shall be invited to participate in the discussion;

20 (5) a statistically valid survey of system performance shall be performed, as follows:

21 (A) the manufacturer shall provide a proposed survey plan for Department concurrence prior to
22 carrying out the survey. This plan shall specify the number of systems to be evaluated, period of
23 evaluation, method to randomly select systems to be evaluated, methods of field and data
24 evaluation, and proposed survey team members, including proposed cooperative arrangements to
25 be made with Department and LHD staff. The Department shall facilitate LHD participation with
26 any performance review or survey. The Department shall utilize the Division of Public Health's
27 State Center for Health Statistics for assistance in evaluating the statistical validity of proposed
28 evaluation protocols; and

29 (B) the survey shall include the field evaluation of a minimum of 250 randomly selected Innovative
30 Systems compared with a minimum of 250 comparably aged randomly selected conventional
31 systems, with a minimum of 100 of each type of surveyed system currently in use and in
32 operation for a minimum of five years. Systems surveyed shall be distributed throughout the three
33 physiographic regions of the state (Mountain, Piedmont and Coastal Plain) in approximate
34 proportion to the relative usage in the three regions. The survey shall determine comparative
35 system failure rates, with field evaluations completed during a typical wet-weather season
36 (February through early April), with matched Innovative and conventional Systems sampled
37 during similar time periods in each region. The petitioner shall provide a statistical analysis of the

1 survey results showing a one-sided test where, if the failure rate in the sample of Innovative
2 Systems is a minimum of five percentage points higher than the failure rate in the sample of
3 conventional systems, there is only a five percent chance that a difference this large would occur
4 by chance (95 percent confidence level). If a statistically significant higher failure rate in the
5 Innovative System is not detected, the Commission shall find that the Innovative System performs
6 the same as or better than the conventional system;

7 (6) Other criteria for determining whether the proposed system has been in general use, and other surveys,
8 including evaluations of different numbers of Innovative and conventional systems, designed to verify
9 equal or superior performance of the Innovative System compared to the conventional system under actual
10 field conditions in North Carolina shall be approved by the Department when they are demonstrated to
11 have comparable statistical validity as described in Subparagraph (b)(5) of this Rule. The Department's
12 review and approval of proposed alternate criteria for determining whether the system has been in general
13 use, or of other proposed surveys are subject to review and concurrence by the Commission.

14 (c) The Commission shall impose any use, design, installation, operation, maintenance, monitoring, and management
15 conditions in accordance with G.S. 130A-343.

16 ~~(d) Accepted System applications for products that are approved to both treat and disperse wastewater must meet the~~
17 ~~requirements for treatment and dispersal as described in this Section.~~

18
19 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

20 *Eff. October 1, 2018*

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1707 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1707 DESIGN AND INSTALLATION CRITERIA FOR PROVISIONAL, INNOVATIVE, AND**
4 **ACCEPTED APPROVALS**

5 All products approved under this Section shall be designed and installed in accordance with the requirements of the PIA
6 Approval.

7

8 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

9 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1709

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a)(5), what is meant by “determined to be non-compliant”? Does this simply mean that they don’t meet the requirements of this Rule? I just want to be sure.

In (a)(5), what is meant by “the effluent must be sampled for Fecal Coliforms when re-sampled”? Is there a separate underlying requirement that a resample occur? Also, what is meant by “until an effluent sample is determined to be non-compliant”? Overall, I’m a bit confused of the intent here. Same question for (e)(6). Is this referring to the resampling in (e)(8)?

In (a)(8), by “may”, do you mean “shall” be re-sampled?

In (e), what are the application requirements and approval standards? Same question for (f).

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1709 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2
3 **15A NCAC 18E .1709 WASTEWATER SAMPLING REQUIREMENTS FOR ADVANCED PRETREATMENT**
4 **~~SYSTEMS, INCLUDING REDUCED SAMPLING REQUIREMENTS~~ SYSTEMS**

5 (a) Wastewater sampling requirements shall vary in accordance with system classification, designated effluent standard,
6 system DDF, and system performance history.

7 (1) Provisional Systems shall be grab or composite sampled quarterly for all applicable influent and effluent
8 constituents listed in Table XXIV of Rule .1201 of this Subchapter until the system receives Innovative
9 Approval, unless ~~adjusted sampling requirements have been requested and approved in accordance with~~
10 ~~this Rule.~~ otherwise specified in the Provisional Approval.

11 (2) When the DDF is less than or equal to 1,500 gpd, Innovative Systems shall be grab or composite sampled
12 annually for all applicable influent and effluent constituents, unless adjusted sampling requirements have
13 been requested and approved in accordance with this Rule.

14 (3) When the DDF is greater than 1,500 gpd and less than or equal to 3,000 gpd, Innovative Systems shall be
15 grab or composite sampled twice a year for all applicable influent and effluent constituents listed in Table
16 XXIV of Rule .1201 of this Subchapter, unless adjusted sampling requirements have been requested and
17 approved in accordance with this Rule.

18 (4) Provisional Systems shall be sampled for Fecal Coliforms. A manufacturer with a Provisional Approval
19 may apply for elimination of Fecal Coliform sampling based on a written application and documentation
20 submitted to the Department that includes the following information:

21 (A) data from a minimum of five separate North Carolina sites in operation for a minimum of six
22 months;

23 (B) a minimum of 25 data sets including results for fecal coliforms. No data sets shall be ~~excluded,~~
24 ~~including all data sets that do not meet the effluent standards.~~ excluded. Data sets may be from the
25 same site if collected a minimum of three months apart; and

26 (C) analysis indicating compliant system performance in accordance with Rule .1710 of this Section.

27 (5) If an effluent sample for a Provisional System that does not have to sample for Fecal Coliforms is
28 determined to be non-compliant, the effluent must be sampled for Fecal Coliforms when re-sampled. If the
29 re-sampled effluent indicates compliance, no further Fecal Coliform sampling is required from that ~~site.~~
30 site, until an effluent sample is determined to be non-compliant.

31 (6) Innovative Systems shall not be sampled for Fecal Coliforms at any site that is found to be compliant with
32 the effluent standards for all other constituents required to be analyzed. If an effluent sample is determined
33 to be non-compliant, the effluent must be sampled for Fecal Coliforms when re-sampled. If the re-sampled
34 effluent indicates compliance, no further Fecal Coliform sampling is required from that ~~site.~~ site, until an
35 effluent sample is determined to be non-compliant.

36 (7) Innovative Systems serving vacation rentals subject to the North Carolina Vacation Rental Act, G.S. 42A,
37 shall be sampled during the seasonal high use period.

1 (8) Effluent may be re-sampled within 30 days of receipt of laboratory results indicating non-compliance with
2 Table XXIV of Rule .1201 of this Subchapter. Complete data sets from resampling may be substituted to
3 meet the minimum number of compliant data sets required for PIA Approval. Data sets from resampling
4 may be used by a manufacturer as part of a reduced effluent sampling request in accordance with Paragraph
5 (f) of this Rule.

6 (9) The Management Entity may record daily wastewater flow and sample influent to the advanced
7 pretreatment system as needed to determine compliance with Rule .1302(f) of this Subchapter.

8 (b) The manufacturer of an approved Innovative System may request an adjustment in sampling requirements (constituents or
9 frequency), including reducing to field parameters only, based on a written application submitted to the Department that
10 includes the following information:

- 11 (1) data from a minimum of 25 separate North Carolina sites in operation for a minimum of six months after
12 the Innovative Approval has been issued;
- 13 (2) written reports summarizing results of the VIP inspections for all North Carolina sites submitted as part of
14 this Rule;
- 15 (3) a minimum of 50 complete data sets, ~~including all data sets that do not meet the effluent standards.~~ with no
16 data excluded. Data sets may be from the same site if collected a minimum of three months apart;
- 17 (4) analysis indicating compliant system performance in accordance with Rule .1710 of this Section; and
- 18 (5) identification of the constituents for which the manufacturer requests a reduced sampling frequency.

19 (c) Systems approved for field parameters ~~only~~ shall only be required to sample the field parameters listed in Table XXXII at
20 the site during a VIP Management Entity inspection, or ~~more frequently~~ as specified in the PIA Approval. The results shall be
21 recorded in the written report. If the field parameters fall outside the approved range, an effluent sample shall be collected and
22 analyzed for all parameters as necessary to demonstrate system compliance with the site's applicable effluent standard.

23
24 **TABLE XXXII.** Field parameters advanced pretreatment systems

Field Parameter	Effluent Criteria
pH	6-10 <u>5-9</u>
Turbidity	≤ 10
DO	≤ ≥ 2

25
26 (d) Manufacturers of proprietary advanced pretreatment systems with Innovative Approval that have ~~previously~~ demonstrated
27 compliant system performance in accordance with Rule .1710 of this Section may submit a written application to the
28 Department requesting field parameters sampling only.

29 (e) Manufacturers of proprietary advanced pretreatment systems with Innovative Approval that are also certified and listed by
30 a nationally recognized certification body and are in compliance with the ongoing verification program of such body, may
31 submit a written application with a sampling protocol that reduces the data set requirements by up to 50 percent.

1 (f) Manufacturers of proprietary advanced pretreatment systems that comply with Paragraphs (b) or ~~(e)~~ (d) of this Rule may
2 apply to the Department to replace the requirement for routine effluent sampling of all individual sites with routine field
3 constituent testing that is included as part of the VIP.

4 (g) While routine sampling of individual sites may no longer be required in accordance with Paragraphs (b), (c), or (d) of this
5 Rule, effluent sampling may still be determined to be necessary during the visual inspection of the system in accordance with
6 Rule ~~1302(b)~~ 1302(c) of this Subchapter or if required as part of an enforcement action by the LHD or the Department.

7 (h) Alternative sampling requirements may be proposed by the manufacturer for a Provisional or Innovative System and
8 approved by the Department when determined to provide an equal or more reliable indication of system compliance with
9 effluent ~~standards~~ standards.

10

11 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

12 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1710

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In Item (1), rather than “the arithmetic mean (geometric mean for Fecal Coliform)” please consider saying “the geometric mean for Fecal Coliform” and delete “the arithmetic mean”?

In Item (4), what is meant by “subjected to significant abuse”? Please delete or define “significant.” Also, what is meant by “abuse”? In this context, I have no idea.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1710 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1710 ~~OMPLIANCE~~ COMPLIANCE CRITERIA FOR ADVANCED PRETREATMENT**
4 **SYSTEMS**

5 An approved system shall be considered in compliance with the effluent standards of Table XXIV of Rule .1201 of this
6 Subchapter when all the following conditions are met:

7 (1) the arithmetic mean (geometric mean for Fecal Coliform) of all data collected from all sites does not
8 exceed the designated effluent standard;

9 (2) no more than 20 percent of all data from all sites shall exceed the designated effluent standard for any
10 applicable constituent. Non-compliant data may be substituted with a new data set meeting the designated
11 effluent standard upon re-sampling within 30 days of receipt of the non-compliant data results;

12 (3) fifty percent of all complete data sets from all sites shall comply with the designated effluent standard for
13 all applicable constituents;

14 (4) when determining compliance with system effluent standards in Items (1), (2), and (3) of this Rule, no data
15 sets shall be excluded from individual advanced pretreatment systems except at single sites found to be out
16 of compliance in accordance with Rule ~~.1302(d)~~ .1302(e) of this Subchapter and sites that have been
17 otherwise documented to have been subjected to significant abuse; and

18 (5) results of influent samples from all sites shall be provided to demonstrate compliance with percent
19 reduction effluent criteria in accordance with Table XXIV in Rule .1201 of this Subchapter.

20

21 *History Note:* Authority G.S. 130A-335(e) and (f); 130A-343.

22 Eff. October 1, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1711

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), line 6, please change "the renewal form includes" to "the renewal form shall include the following:" and put lines 6-8 in list form.

Just as a curiosity question in (a), what happens if the product has changed? I assume that you would not want this statement?

In (b), what is meant by "with information describing how to request renewal"? Do you mean in accordance with this Rule?

In (c)(2), just so I understand the use of "as applicable" here, are there times when a system with a PA would not have an effluent sample collected? If so, I think it's fine to use "as applicable" here. If not, please delete it. Same question for (c)(3).

In (e), by "its approval conditions", do you mean the approval conditions of the PA?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1711 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1711 PROVISIONAL AND INNOVATIVE APPROVAL RENEWAL**

4 (a) All PIA Approvals shall expire on December 31 of each year. PIA manufacturers or other parties who wish to continue
5 product approval shall submit annually a ~~proprietary~~ product renewal form provided by the ~~Department~~. Department no later
6 than November 30 of each year. The renewal form includes the following updated information: ~~company's~~ company or
7 organization's name, address, contact information, contact name, model number(s) approved, and a notarized statement that
8 the product(s) has not changed from the previous year.

9 (b) The Department shall notify the manufacturer of the pending PIA Approval expiration in writing no later than September
10 30 of each year. The notification shall provide the manufacturer with information describing how to request renewal.

11 ~~(b)(c)~~ Manufacturers of proprietary products with Provisional Approvals shall additionally submit with its renewal form an
12 annual report to the State with the following information:

- 13 (1) list of all systems ~~currently~~ installed under the Provisional Approval;
- 14 (2) results of all effluent samples collected, as applicable;
- 15 (3) copies of all Management Entity inspection reports, as applicable;
- 16 (4) assessment of system performance in relation to this Subchapter;
- 17 (5) summary of progress made to complete installations, research, and testing as outlined in the approved
18 evaluation protocol;
- 19 (6) any conditions and limitations related to the use of the system; and
- 20 (7) a list of all authorized designers, installers, and management entities.

21 ~~(e)(d)~~ A PIA Approval shall be deemed to be renewed upon receipt of the completed renewal form and annual report in
22 accordance with Paragraphs (a) and ~~(b)~~ (c) of this Rule, as applicable.

23 ~~(d)(e)~~ The Department shall review all annual reports for Provisional Approvals for compliance with its approval conditions,
24 including its approved evaluation protocol, and determine whether any action to modify, suspend, or revoke the approval is
25 warranted in accordance with Rule .1708 of this Section.

26

27 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

28 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1712

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

In (a), when will it be required in the PIA approval? I understand that the approval will potentially set different terms for different systems, but how is this determination going to be made by the Department? Please provide some factors.

Please break (b) up into at least two separate sentences. Perhaps something like "Manufacturers of proprietary systems... as identified in the PIA Approval to the Department and LHDs. The manufacturers shall update this list annually and include it with the product renewal form required in accordance with Rule .1711 of this Section."

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1712 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1712 AUTHORIZED DESIGNERS, INSTALLERS, AND MANAGEMENT ENTITIES**

4 (a) Designers, installers, and Management Entities shall be authorized in writing by the manufacturer when required in the
5 PIA Approval.

6 (b) Manufacturers of proprietary systems approved under this Section shall provide a list of manufacturer's authorized
7 designers, installers, and Management Entities, as identified in the PIA Approval, to the Department and LHDs, and update
8 this list annually and submit with the product renewal form required in accordance with Rule .1711(a) of this Section.

9

10 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

11 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1713

DEADLINE FOR RECEIPT: Friday, September 14, 2018

PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

Please delete the "or" at the end of (1)(a).

In Item (8), please add commas before and after "as well as the manufacturer or their authorized representative"

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May
Commission Counsel
Date submitted to agency: September 6, 2018

Permanent Adoption with Changes for Publication in the NCAC

1 15A NCAC 18E .1713 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1713 LOCAL HEALTH DEPARTMENT RESPONSIBILITIES**

4 To implement this Section the LHD shall:

5 (1) When a Provisional System is proposed, confirm that the designated repair system complies with the
6 provisions of Rule .0508 of this Subchapter and with individual PIA Approval requirements, except:

7 (a) when an existing wastewater system is available for immediate use, including connection to a
8 public or community wastewater system; or

9 (b) when the Provisional System is used as a repair to an existing malfunctioning system when there
10 are no other approved Innovative or Accepted repair options; or

11 (c) as provided in G.S. 130A-343(f) for Provisional Systems.

12 (2) Notify the Department of all IPs, CAs, and OPs issued for Provisional Systems.

13 (3) Notify the Department of all OPs issued for Innovative Systems.

14 (4) Permit systems designated as approved Accepted Systems in an equivalent manner to a conventional
15 system at the owner's request, provided the location of each trench, trench depth, or effluent distribution
16 method remains unchanged. The type of Accepted System installed shall be indicated on the OP.

17 (5) Grant permit reductions in total trench length less than or equal to 25 percent for Innovative or Accepted
18 Systems only to dispersal fields receiving DSE or better quality. A facility with a full kitchen shall not be
19 granted a permit reduction in total trench length.

20 (6) Grant facilities generating HSE the 25 percent reduction allowed for Innovative or Accepted Systems if the
21 system includes an approved advanced pretreatment system designed to ensure effluent strength equal to or
22 better than DSE.

23 (7) Prohibit issuance of an OP for a proprietary system installed by a person not authorized by the
24 manufacturer, unless the manufacturer of the proprietary system approves the installation in writing.

25 (8) Inform the Department as well as the manufacturer or their authorized representative of any system
26 determined to be malfunctioning.

27 (9) Issue a NOV to the owner when the system is determined to be malfunctioning in accordance with Rule
28 .1303(a)(1) and (2) of this Subchapter or when an individual advanced pretreatment system at a single site
29 is out of compliance in accordance with Rule ~~.1302(d)~~ .1302(e) of this Subchapter. The notice shall identify
30 the violations and steps necessary to remedy the problems, including modification of the system,
31 established time frame to achieve compliance, other follow-up requirements, and specify further
32 enforcement possibilities if compliance is not achieved.

33 (10) Include in its monthly activity report submitted to the Department the following information identified by
34 unique codes:

35 (a) number of new system OPs issued for PIA Systems;

36 (b) number of new system OPs issued for Accepted Systems;

37 (c) number of CAs issued for Provisional Systems, including system type;

- 1 (d) number of CAs issued for repairs of PIA Systems, including system type being repaired;
- 2 (e) number of CAs issued for repairs of Accepted Systems, including system type being repaired; and
- 3 (f) repair system type.
- 4

5 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*
6 *Eff. October 1, 2018*