SUBCHAPTER 18C - WATER SUPPLIES

SECTION .0100 - PROTECTION OF PUBLIC WATER SUPPLIES

Rules .0101 - .0102 of Title 15A Subchapter 18C of the North Carolina Administrative Code (T15A.18C .0101 - .0102); has been transferred and recodified from Rules .0701 - .0702 Title 10 Subchapter 10D of the North Carolina Administrative Code (T10.10D .0701 - .0702), effective April 4, 1990.

15A NCAC 18C .0101 PURPOSE AND SCOPE

History Note: *Authority G.S. 130A-315;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. October 1, 1984; September 1, 1979; January 1, 1978;
Repealed Eff. September 1, 1990.

15A NCAC 18C .0102 DEFINITIONS

(a) The definitions contained in G.S. 130A-2, G.S. 130A-290, and G.S. 130A-313 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection at the principal address of the Division of Water Resources at 512 North Salisbury Street, Raleigh NC 27604-1170; 1634 Mail Service Center, Raleigh NC 27699-1634; or at the website of the Division at www.ncwater.org.

(b) The definitions contained in 40 C.F.R. 141.2 are hereby incorporated by reference including any subsequent amendments and editions except the following definitions are not adopted:

(1) "Disinfection;"
(2) "Maximum containment level;"
(3) ”Person;"
(4) "Public Water System;" and
(5) "Supplier of water."

Copies are available for public inspection as set forth in Rule 18C .0102 of this Section. In addition, copies of governing federal regulations may be obtained from the Environmental Protection Agency's (USEPA) homepage at http://water.epa.gov/lawsregs/rulesregs/sdwa/index.cfm or from the USEPA's Drinking Water Hotline at 1-800-426-4791.

(c) In addition to the definitions incorporated by reference as set forth in Paragraph (a), the following definitions shall apply to this Subchapter:

(1) "Act" means the North Carolina Drinking Water Act.
(2) "Class I reservoir" means a reservoir from which water flows by gravity or is pumped directly to a treatment plant or to a small intervening storage basin and thence to a treatment plant.
(3) "Class II reservoir" means a reservoir from which the water flows by gravity or is pumped to a Class I reservoir prior to final entrance to a water treatment plant.
(4) "Class III reservoir" means an impoundment used for electric power generation, flood control, and similar purposes, and that serves as a source of raw water for a community water system.
(5) "Cross-connection" means:
    (A) any physical connection between a potable water supply system and any other piping system, sewer fixture, container, or device, whereby water or other liquids, mixtures, or substances may flow into or enter the potable water supply system;
    (B) any potable water supply outlet which is submerged or is designed or intended to be submerged in non-potable water or in any source of contamination; or
    (C) an air gap, providing a space between the potable water pipe outlet and the flood level rim of a receiving vessel of less than twice the diameter of the potable water pipe.
(6) "Community Water System intake" means the structure at the head of a conduit into which water is diverted from a stream or reservoir for transmission to water treatment facilities.
(7) "Disinfection" means a process that inactivates pathogenic organisms in water.
(8) "Fecal Coliform" means bacteria found in the intestine of humans and other warm blooded animals that are not normally disease producing but serve as indicators of recent fecal contamination. They are members of the Family Enterobacteriaceae, Genus Escherichia, Species Coli.

(9) "Mobile Home Park" means a site or tract of land where spaces are provided for lease or rental only to mobile home occupants.
(10) "Mobile home subdivision" means a subdivided site or tract of land in which lots are sold for use by mobile home occupants.
(11) "Non-potable water supply" means waters not approved for drinking or other household uses.
(12) "Potable water supply" means water approved for drinking or other household uses.
(13) "Raw water" means surface water or groundwater that because of bacteriological quality, chemical quality, turbidity, color, or mineral content makes it unsatisfactory as a source for a community water system without treatment.
(14) "Raw water reservoir" means a natural or artificial impoundment used for the primary purpose of storing raw water to be subsequently treated for use as a source for a community water system.
(15) "Service connection" means a piped connection from a water main for the purpose of conveying water to a building or onto a premise for human use.
(16) "Water supply product" means any chemical or substance added to a public water system in conjunction with a treatment technique or material used in construction of a public water system. The term includes any material used in the manufacture of public water system components, appurtenances, any pipe, storage tank or valve that comes in contact with water intended for use in a public water system.

History Note: *Authority G.S. 130A-311 through 130A-327; P.L. 93-523; 40 C.F.R. 141.2;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. April 1, 2014; July 1, 1994; August 1, 1991; January 1, 1991; September 1, 1990.

SECTION .0200 – LOCATION OF SOURCES OF PUBLIC WATER SUPPLIES

15A NCAC 18C .0201 SURFACE SUPPLIES FOR PUBLIC WATER SYSTEMS

(a) A surface supply may be used for a community or a non-transient, non-community water system with disinfection and without filtration if it complies with the provisions of this Section and Rule .2005 of this Subchapter.
(b) Such water supply shall be derived from uninhabited wooded areas.
(c) The entire watershed shall be either owned or controlled by the person supplying the water or be under the control of the federal or state government; however, no such new water supply shall be created except where the water system owner shall own in its entirety the watershed from which the water will be obtained.
(d) The water after disinfection shall be of potable quality as determined by bacteriological and chemical tests performed by a certified laboratory. The presence of contaminants shall not exceed the limits set forth in Section .1500 of this Subchapter.
(e) The water source shall have a WS-I classification as established by the Environmental Management Commission and shall meet the quality standards for that classification, codified in 15A NCAC 02B. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

History Note: *Authority G.S. 130A-315; 130A-318; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. April 1, 2014; July 1, 1994; February 1, 1987; September 1, 1979;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0202 REMOVAL OF DISSOLVED MATTER AND SUSPENDED MATTER

Any surface water that is to receive treatment for removal of dissolved matter or suspended matter in order to be used for a public water system shall be obtained from a source that meets the WS-I, WS-II, WS-III, WS-IV or WS-V stream classification standards established by the Environmental Management Commission codified in 15A NCAC 02B. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter. The source shall be protected from potential sources of pollution as determined by a sanitary survey of the watershed made by an authorized representative of the Department. The source supply shall be sufficient in capacity to satisfy the anticipated needs of the users for the period of design.

History Note: *Authority G.S. 130A-315; 130A-318; P.L. 93-523;*

Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. April 1, 2014; July 1, 1994; September 1, 1990; February 1, 1987; September 1, 1979.

15A NCAC 18C .0203 PUBLIC WELL WATER SUPPLIES

(a) Any site or sites for any water supply well to be used as a community or non-transient, non-community water system shall be investigated by an authorized representative of the Division of Water Resources. Approval by the Division is required in addition to any approval or permit issued by any other state agency. The site shall meet the following requirements at the time of approval:

(1) The well shall be located on a lot so that the area within 100 feet of the well shall be owned or controlled by the person supplying the water. The supplier of water shall be able to protect the well lot from potential sources of pollution and to construct landscape features for drainage and diversion of pollution.

(2) The minimum horizontal separation between the well and known potential sources of pollution shall be as follows:

(A) 100 feet from any sanitary sewage disposal system, sewer, or a sewer pipe unless the sewer is constructed of water main materials and joints, in which case the sewer pipe shall be at least 50 feet from the well;

(B) 200 feet from a subsurface sanitary sewage treatment and disposal system designed for 3000 or more gallons of wastewater a day flows, unless it is determined that the well water source utilizes a confined aquifer;

(C) 500 feet from a septage disposal site;

(D) 100 feet from buildings, mobile homes, permanent structures, animal houses or lots, or cultivated areas to which chemicals are applied;

(E) 100 feet from surface water;

(F) 100 feet from a chemical or petroleum fuel underground storage tank with secondary containment;

(G) 500 feet from a chemical or petroleum fuel underground storage tank without secondary containment;

(H) 500 feet from the boundary of a ground water contamination area;

(I) 500 feet from a sanitary landfill or non-permitted non-hazardous solid waste disposal site;

(J) 1000 feet from a hazardous waste disposal site or in any location which conflicts with the North Carolina Hazardous Waste Management Rules cited as 15A NCAC 13A;

(K) 300 feet from a cemetery or burial ground; and

(L) 100 feet from any other potential source of pollution.

(3) The Department may require greater separation distances or impose other protective measures when necessary to protect the well from pollution; the Department shall consider as follows:

(A) The hazard or health risk associated with the source of pollution;

(B) The proximity of the potential source to the well;

(C) The type of material, facility or circumstance that poses the source or potential source of pollution;

(D) The volume or size of the source or potential source of pollution;

(E) Hydrogeological features of the site which could affect the movement of contaminants to the source water;

(F) The effect that well operation might have on the movement of contamination; and

(G) The feasibility of providing additional separation distances or protective measures.

(4) The lot shall be graded or sloped so that surface water is diverted away from the wellhead. The lot shall not be subject to flooding.

(5) When the supplier of water is unable to locate water from any other approved source and when an existing well can no longer provide water that meets the requirements of this Subchapter, a representative of the Division may approve a smaller well lot and reduced separation distances for temporary use.

(b) The Division of Water Resources may grant a variance from the minimum horizontal separation distances for public water supply wells set out in 15A NCAC 18C .0203(a)(2)(D) and 15A NCAC 18C .0203(a)(2)(E).

(1) Such variance shall require the following findings:

(A) The well supplies water to a non-community water system as defined in G.S. 130A-313(10)(b) or supplies water to a business or institution, such as a school, that has become a non-community water system through an increase in the number of people served by the well.

(B) It is impracticable, taking into consideration feasibility and cost, for the public water system to comply with the minimum horizontal separation distance set out in the applicable sub-subpart of 15A NCAC 18C .0203(a)(2).

(C) There is no reasonable alternative source of drinking water available to the public water supply system.

(D) The granting of the variance will not result in an unreasonable risk to public health.

(2) Such variance shall require that the non-community public water supply well meet the following requirements:

(A) The well shall comply with the minimum horizontal separation distances set out in 15A NCAC 18C .0203(a)(2)(D) and 15A NCAC 18C .0203(a)(2)(E) to the maximum extent practicable.

(B) The well shall meet a minimum horizontal separation distance of 25 feet from a building, mobile home, or other permanent structure that is not used primarily to house animals.

(C) The well shall meet a minimum horizontal separation distance of 100 feet from any animal house or feedlot and from cultivated areas to which chemicals are applied.

(D) The well shall meet a minimum horizontal separation distance of 50 feet from surface water.

(E) The well shall comply with all other requirements for public well water supplies set out in 15A NCAC 18C .0203(a).

History Note: *Authority G.S. 130A-315; 130A-318; P.L. 93-523; S.L. 2011-394;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 7, 2014; July 1, 1994; September 1, 1990; September 1, 1979.

SECTION .0300 - SUBMISSION OF PLANS: SPECIFICATIONS: AND REPORTS

Rules .0301 - .0308 of Title 15A Subchapter 18C of the North Carolina Administrative Code (T15A.18C .0301 - .0308); has been transferred and recodified from Rules .0901 - .0908 Title 10 Subchapter 10D of the North Carolina Administrative Code (T10.10D .0901 - .0908), effective April 4, 1990.

15A NCAC 18C .0301 APPLICABILITY: PRIOR NOTICE

(a) All persons, including units of local government, intending to construct, alter, or expand a community or non-transient, non-community water system shall give written notice thereof, including submission of applicable Water System Management Plan, engineering reports, and engineering plans and specifications to the Department, as required by the rules of this Section. Any construction, alteration, or expansion which affects capacity, hydraulic conditions, operating units, the functioning of water treatment processes or the quality of water to be delivered shall require submission of the documents described in this Paragraph. A non-community water system using surface water or ground water under the direct influence of surface water shall be subject to the provisions of this Rule. Non-transient, non-community water systems shall not be subject to the provisions of this Rule unless constructed, altered, or expanded on or after July 1, 1994.

(b) Water System Management Plan and Engineer=s Report shall be submitted to the Department at least 60 days prior to the date upon which action by the Department is desired.

(c) All reports, other than those in Paragraph (b) of this Rule, engineering plans and specifications and other data intended for approval shall be submitted to the Department at least 30 days prior to the date upon which action by the Department is desired.

(d) If revisions to the Water System Management Plan are necessary, the system applicant will be notified. A revised Water System Management Plan will constitute a resubmittal and additional time will be required for review.

(e) If revisions to the engineering plans or specifications are necessary, the engineer who prepared them will be notified. Revised engineering plans and specifications will constitute a resubmittal and additional time will be required for review.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; September 1, 1990; March 1, 1989; June 30, 1980; September 1, 1979;
Temporary Amendment Eff. October 1, 1999;
Amended Eff. August 1, 2000;

Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0302 SUBMITTALS

(a) All plans, specifications, reports, or other data shall be submitted in triplicate for review by the Public Water Supply Section, Division of Water Resources at 512 N Salisbury Street, Room 1304A, Raleigh NC 27604-1170, or 1634 Mail Service Center, Raleigh NC 27699-1634.

(b) Engineering plans shall consist of legible prints having black, blue, or brown lines on a white background suitable for microfilming. The engineering plans shall not be more than 36 inches wide and 48 inches long and not be less than 11 inches wide and 17 inches long.

(c) An applicant subject to G.S. 143-355(l) shall submit three copies of the adopted Local Water Supply Plan. If information required in the Engineer's Report or the Water System Management Plan is included in an adopted Local Water Supply Plan, a submittal to the Department may incorporate this information by referencing the location in the adopted Local Water Supply Plan.

(d) Existing systems that have previously submitted an Engineer's Report and a Water System Management Plan in accordance with Rule .0307 of this Section shall document any changes either as revised reports and plans or addendums.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; December 1, 1991; September 1, 1990; June 30, 1980; September 1, 1979;
Temporary Amendment Eff. October 1, 1999;
Amended Eff. April 1, 2014; August 1, 2000;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0303 SUBMISSIONS REQUIRED BY ENGINEER AND APPLICANT

(a) Detailed Engineer's Reports and engineering plans and specifications shall be prepared by a professional engineer licensed to practice in the State of North Carolina. These documents shall bear an imprint of the registration seal of the engineer. Upon completion of the construction or modification, the applicant shall submit a certification statement signed and sealed by a registered professional engineer stating that construction was completed in accordance with approved engineering plans and specifications, including any provisions stipulated in the Department's plan approval letter or authorization to construct letter, and revised only in accordance with the provisions of Rule .0306 of this Section. The statement shall be based upon observations during and upon completion of construction by the engineer or a representative of the engineer's office who is under the engineer's supervision.

(b) A Water System Management Plan as required in Paragraph (c) of Rule .0307 of this Section shall include a signed certification stating that the information submitted is true, accurate, and complete. This certification shall be in accordance with Paragraph (d) of this Rule.

(c) The applicant shall submit a signed certification, prior to Final Approval, stating that the requirements in Paragraph (d) (Operation and Maintenance Plan) and Paragraph (e) (Emergency Management Plan) of Rule .0307 of this Section have been satisfied, and that the system will have a certified operator as required by Section .1300 of this Subchapter prior to operation. This certification shall be in accordance with Paragraph (d) of this Rule.

(e) The certifications required in Paragraphs (b) and (c) of this Rule shall be provided on a form provided by the Department and shall be signed by the following individual or his duly authorized representative:

(1) for a corporation, limited liability company, home owner association or a non-profit organization: a president, vice president, secretary, or treasurer;
(2) for a partnership or sole proprietorship: by a general partner or the proprietor; or
(3) for a municipality, State, Federal or other agency: by either a principal executive officer or ranking elected official.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; December 1, 1987; September 1, 1979;
Temporary Amendment Eff. October 1, 1999;

Amended Eff. August 1, 2000;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0304 APPLICATION FOR APPROVAL: BY WHOM MADE

Applications for approval shall be filed by the current owner on blanks which will be supplied by the Department. If ownership changes before Final Approval, the new owner shall submit a new Water System Management Plan in accordance with Rule .0307 of this Section.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. September 1, 1990;
Temporary Amendment Eff. October 1, 1999;
Amended Eff. August 1, 2000;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0305 APPROVALS NECESSARY BEFORE CONTRACTING OR CONSTRUCTING

(a) No construction shall be undertaken, and no contract for construction, alteration, or installation shall be entered into unless the Department determines the system complies with G.S. 130A-317(c) and the Department issues the authorization to construct letter. This authorization shall be issued following completion and submittal of the Engineer=s Report and Water System Management Plan and approval of the engineering plans and specifications by the Department. Authorization to construct from the Department shall be valid for twenty-four months from the date of the letter. Authorization to construct may only be extended if the rules governing a public water supply and site conditions have not changed. The authorization to construct and approval letter for engineering plans and specifications from the Department shall be posted at the primary entrance of the job site before construction begins.

(b) Upon request, permission to drill test wells at approved sites in order to establish quality and quantity may be granted by the Department prior to completion and submittal of the Engineer's Report and Water System Management Plan and approval of engineering plans and specifications. All wells abandoned, either temporarily or permanently, shall be abandoned in accordance with 15A NCAC 2C .0113 (Well Construction Standards) and all local ordinances.

(c) Units of local government which have an adopted water system extension policy, upon submission to and approval of a copy of their policy by the Department, may be excluded from the requirements of submitting engineering plans and specifications for water main extensions, and that would not have adverse effect upon the existing system supply or pressure, provided the following requirements are met:

(1) Engineering plans and specifications for all such extensions shall be prepared by or under the direct supervision of an engineer licensed to practice in the State of North Carolina.
(2) All engineering plans shall be approved by the units of local government engineering department or its consulting engineers prior to the commencement of construction.
(3) The Department shall have approved the extension policy submitted by the unit of local government prior to construction commencing.
(4) The extension policy submitted for review and approval by the Department shall provide for establishing ownership, operation and maintenance of water system extensions, and shall constitute prior notice of proposed construction.
(5) Where design is to be based on a local government's standard specifications in lieu of written separate specifications for each extension project, the standard specifications shall have been previously approved by the Department.
(6) The local government shall have obtained from the Department a letter stating they have met the aforementioned requirement and are excluded from the requirement for submitting detailed engineering plans and specifications for each minor extension in keeping with the intent of this Rule.
(7) Where such minor additions or extensions have been made, an annual up-to-date plan of the entire system shall be submitted for review and approval by the Department.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;

Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; September 1, 1990; September 1, 1979;
Temporary Amendment Eff. October 1, 1999;
Amended Eff. August 1, 2000.

15A NCAC 18C .0306 CHANGES IN ENGINEERING PLANS OR SPECIFICATIONS AFTER APPROVAL

Deviations from the approved engineering plans and specifications or changes in site conditions affecting capacity, hydraulic conditions, operating units, the functioning of water treatment processes, the quality of water to be delivered, or any provisos stipulated in the Department's original and subsequent letters of approval must be approved by the Department before any construction or installation. Revised engineering plans and specifications shall be submitted in time to permit the review and approval of such plans or specifications before any construction work affected by such deviations is begun. The Secretary may seek injunctive relief under G.S. 130A-18, assess an administrative penalty under G.S. 130A-22(b), or revoke or suspend engineering plan approval under G.S. 130A-23 for any violation of this Rule.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. November 1, 1987;
Temporary Amendment Eff. October 1, 1999;
Amended Eff. August 1, 2000;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0307 ENGINEER'S REPORT, WATER SYSTEM MANAGEMENT PLAN AND OTHER PLANS

(a) The applicant shall submit to the Department an Engineer=s Report and Water System Management Plan covering the basic factors and principles considered in planning of the project.

(b) Engineer's Report. The Engineer's Report shall contain a system description for the entire project, including scheduled phase development and the following information, where applicable:

(1) description of any existing water system related to this project;
(2) identification of the municipality, community, area, or facility to be served by the proposed water system;
(3) the name and address of the applicant;
(4) a description of the nature of the establishments and of the area to be served by the proposed water system;
(5) a description of the future service areas of the public water system for 5, 10, 15 and 20 years;
(6) consideration of alternative plans for meeting the water supply requirements of the area, including, for new systems, obtaining water service from an existing system;
(7) for applicants seeking State loan or grant support for the project, financial considerations, including:
    (A) any technical alternatives;
    (B) costs of integral units; and
    (C) total costs.
(8) population records and trends, present and anticipated future water demands, present and future yield of source or sources of water supply, including provisions to supply water to other systems;
(9) character of source or sources of water supply, including:
    (A) hydrological or hydrogeological data;
    (B) stream flow rates or well yields;
    (C) for surface sources, analytical results for chemical, mineral, bacteriological, and physical qualities; and
    (D) location and nature of sources of pollution.
(10) proposed water treatment processes, including:
    (A) criteria and basis of design of units;
    (B) methods or procedures used in arriving at recommendations; and
    (C) reasons or justifications for any deviations from conventional or indicated process or method.
(11) for purchased water, a copy of the agreement with the supplier and the hydraulic analysis showing the supplier's capabilities for supplying the purchased water;
(12) a description of the design basis of the source, treatment, and distribution system, and the useful life of all sources, treatment, and transmission facilities including pipes, pumping stations, and storage facilities;

(13) for existing system projects intending to alter or expand a distribution system, provide a statement of maximum daily treated water supply and maximum daily demand. Provide supporting documentation and calculations; and

(14) for existing systems, a prioritized list of infrastructure improvements.

(c) Water System Management Plan. The Water System Management Plan shall document, where applicable, the ability to finance, operate, and manage the system in accordance with this Subchapter for the current owner and for any entity that assumes ownership of the water system within the first 24 months of operation:

(1) Organization:
  (A) description of organizational structure or a chart showing all aspects of water system management and operation;
  (B) identification of positions responsible for policy decisions ensuring compliance with State rules and the day-to-day operation of the system; and
  (C) copies of any contracts for management or operation of the water system by persons or agencies other than the system's owner.

(2) Ownership:
  (A) identify the ownership structure (sole proprietor, partnership, corporation, limited liability company, homeowner association, nonprofit organization, local government unit, state or federal agency, or other legal entity) and disclose if the ownership of the system is expected to change once the system is constructed, and if known, identify the future owners;
  (B) provide mailing address and street address of the owner, and physical location of the water system;
  (C) disclose any encumbrances, trust indentures, bankruptcy decrees, legal orders or proceedings, or other items that may affect or limit the owner's control over the system and describe how compliance with the requirements of this Subchapter will still be maintained; and
  (D) describe the legal authority, such as ownership, leases or recorded easements allowing inspection repair and maintenance of system components.

(3) Management qualifications:
  (A) describe the qualifications of the owners and managers of the water system, including any training and experience in owning or managing a water system; and
  (B) provide the name and Public Water Supply Identification Number of all public water systems owned within the last five years as well as any systems operated under contract for another owner within the last five years. For systems with administrative penalties assessed, describe how the owner will prevent similar violations at this system.

(4) Management training. Describe plans to keep management current with regulatory requirements for managing and operating a public water system.

(5) Policies. At a minimum, the system shall have policies regarding the following procedures:
  (A) cross-connection control;
  (B) customer information, complaints, and public education;
  (C) budget development and rate structure;
  (D) response and notification if water quality violations occur;
  (E) customer connection, disconnection, billing, and collection; and
  (F) safety procedures.

(6) System monitoring, reporting and record keeping. At a minimum the applicant shall provide:
  (A) A summary of the applicable system monitoring and reporting requirements; and
  (B) A description of procedures for keeping and compiling records and reports in accordance with Rule .1526 of this Subchapter.

(7) Financial Plans. The plan shall contain the following financial information, where applicable:
  (A) Units of Local Government:
    (i) For projects that require the unit of local government to incur debt, the unit of local government shall submit a statement from the Local Government Commission stating that debt issue has been approved; or
    (ii) For projects that do not require the unit of local government to incur debt, the unit of local government shall submit the following:

(I) a statement from the unit of local government documenting that they are in compliance with G. S. 159, Article 3, The Local Government Budget and Fiscal Control Act; and

(II) estimated revenues, expenditures and rate structure for the construction, operation and maintenance, administration and reasonable expansion of the project. This information shall be provided on a form designated by the Department and shall demonstrate that revenues are greater than expenses.

(B) The North Carolina Utilities Commission's financial determination may be used as the financial plan for systems subject to its regulations:

(i) submit a copy of the Order Granting Franchise and Approving Rates from the North Carolina Utility Commission; or

(ii) submit a copy of the Order Recognizing Continuous Extension and Approving Rates from the North Carolina Utilities Commission.

(C) All other community and non-transient non-community water systems shall document the following:

(i) analysis that compares anticipated revenues with planned expenditures for a five year period that demonstrates a positive cash flow in each year, and a 20-year equipment replacement cost plan documenting the method(s) to finance equipment replacement;

(ii) the creation and funding of a continuous operating cash reserve greater than or equal to one-eighth of the annual operating, maintenance and administrative expenses for the water system. The reserve shall be fully funded by the end of the first year of operation;

(iii) the creation and funding of an emergency cash reserve greater than or equal the cost of replacing the largest capacity pump. The reserve shall be fully funded by the end of the fifth year of operation;

(iv) a description of the budget and expenditure control procedures that assure budget control for the applicant which includes procedures or policies to prevent misuse of funds and a demonstration that the system has adopted generally accepted accounting procedures; and

(v) in lieu of Sub-Items (ii) and (iii) of this Paragraph, substitute documentation may be accepted in the following instances:

(I) an applicant with multiple water systems showing reserves affording greater or equal capabilities; or

(II) an applicant showing equivalent financial capacity to comply with requirements of this Section.

(8) One Water System Management Plan may be submitted on behalf of an applicant owning and operating multiple water systems or an applicant pursuing multiple alterations or expansions and may include future projected construction or system acquisitions. The applicant shall submit a new Water System Management Plan for a project not covered under the existing Water System Management Plan or when violations of this Subchapter occur or continue at a system under an applicant's ownership or control.

(d) Operation and Maintenance Plan. The plan does not have to be submitted to the Department but shall be completed prior to submitting the applicant's certification in accordance with Paragraph (c) of Rule .0303 of this Section. This plan shall be accessible to operator on duty at all times and available to the Department upon request. The Operation and Maintenance Plan shall include, at a minimum, a description of the location and routine operation and maintenance procedures for:

(1) components of the treatment facility;

(2) pumps, meters, valves, blowoffs, and hydrants;

(3) backflow devices;

(4) storage tanks; and

(5) all other appurtenances requiring routine operation and maintenance.

(e) Emergency Management Plan. The plan does not have to be submitted to the Department, but shall be completed prior to submitting the applicant certification required in Paragraph (c) of Rule .0303 of this Section. The Emergency Management Plan shall be available to personnel responsible for emergency management and operator on duty at all times and available to the Department upon request. The plan shall contain the following information where applicable:

(1) For community water systems, a plan with the following elements is required:

(A) identification and phone numbers of personnel responsible for emergency management, including system, local, state, and federal emergency contacts;

(B) identification of foreseeable natural and human-caused emergency event including water shortages and outages;
(C) description of the emergency response plan for each identified event;
(D) description of the notification procedures; and
(E) identification and evaluation of all facilities and equipment whose failure would result in a water outage or water quality violations.

(2) For non-transient, non-community water systems, the plan shall contain the positions and phone numbers of responsible persons to contact in the event of an emergency, including system, local, state, and federal emergency contacts.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; September 1, 1990; June 30, 1980; September 1, 1979;
Temporary Amendment Eff. October 1, 1999;
Amended Eff. August 1, 2000.

15A NCAC 18C .0308 ENGINEERING PLANS AND SPECIFICATIONS

(a) Engineering Plans. Engineering Plans for water supply systems shall consist of the following:

(1) title information including the following:
(A) name of the city, town, board, commission or other owner for whom the plans were prepared;
(B) the locality of the project;
(C) the general title of the set of drawings and prints;
(D) the specific title of each sheet;
(E) the date; and
(F) the scales used;

(2) a preliminary plat plan or map showing the location of proposed sources of water supply;

(3) a general map of the entire water system showing layout and all pertinent topographic features;

(4) detail map of source or sources of water supply;

(5) layout and detail plans for intakes, dams, reservoirs, elevated storage tanks, standpipes, pumping stations, treatment plants, transmission pipelines, distribution mains, valves, and appurtenances and their relation to any existing water system, and the location of all known existing structures or installations and natural barriers that might interfere with the proposed construction; and

(6) the north point.

(b) Specifications. Complete detailed specifications for materials, equipment, workmanship, test procedures and specified test results shall accompany the plans. The specifications shall include, where applicable:

(1) the design and number of chemical feeders, mixing devices, flocculators, pumps, motors, pipes, valves, filter media, filter controls, laboratory facilities and equipment, and water quality control equipment and devices;

(2) provision for continuing with minimum interruption the operation of existing water supply facilities during construction of additional facilities;

(3) safety devices and equipment;

(4) procedure for disinfection of tanks, basins, filters, wells and pipes; and

(5) identification of type, brand name, and model number for all back flow devices.

(c) One copy of the engineering plans and specification, upon approval, will be returned to the person or persons making application for approval.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; July 1, 1993;
Temporary Amendment Eff. October 1, 1999;
Amended Eff. August 1, 2000;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0309 FINAL APPROVAL

(a) No construction, alteration, or expansion of a water system, subject to approval as described in Section .0300 of this Subchapter, shall be placed into final service or made available for human consumption until the applicant has complied fully with Section .0300 of this Subchapter and received Final Approval from the Department.

(b) Temporary approval may be granted by the Department for system alterations required to remedy an imminent hazard as determined by the Department.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Temporary Adoption Eff. October 1, 1999;
Eff. August 1, 2000;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

SECTION .0400 – WATER SUPPLY DESIGN CRITERIA

15A NCAC 18C .0401 MINIMUM REQUIREMENTS

The design criteria given in this Section are the minimum requirements for approval of plans and specifications by the Department. The Department provides supplemental criteria for design of water systems in Sections .0500-.1000 of this Subchapter.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. April 1, 2014; July 1, 1994; September 1, 1979;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0402 WATER SUPPLY WELLS

(a) Well Construction. The construction of water supply wells shall conform to well construction regulations and standards of the Division of Water Resources, Department of Environment and Natural Resources, codified in 15A NCAC 02C. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

(b) Upper Terminal of Well. The well casing shall neither terminate below ground nor in a pit. The pump pedestal for above ground pumps of every water supply well shall project not less than six inches above the concrete floor of the well house, or the concrete slab surrounding the well. The well casing shall project at least one inch above the pump pedestal. For submersible pumps the casing shall project at least six inches above the concrete floor or slab surrounding the well head.

(c) Sanitary Seal. The upper terminal of the well casing shall be sealed watertight with the exception of a vent pipe or vent tube having a downward-directed, screened opening.

(d) Concrete Slab or Well House Floor. Every water supply well shall have a continuous bond concrete slab or well house concrete floor extending at least three feet horizontally around the outside of the well casing. Minimum thickness for the concrete slab or floor shall be four inches.

(e) Sample Tap and Waste Discharge Pipe. Faucets or spigots shall be provided for sampling both raw water prior to treatment and treated water prior to delivery to the first customer. Sample spigots shall not be threaded for hose connection. Threaded hose bibs shall be equipped with anti-siphon devices. A water sample tap and piping arrangement for discharge of water to waste shall be provided.

(f) Physical Security and Well Protection. A water supply well shall be secured against unauthorized access and protected from the weather. One of the following structures shall be provided:

(1) Well house. A well house shall be constructed as follows:
  (A) structures shall comply with applicable provisions of state and local building codes;
  (B) drainage shall be provided by floor drain, wall drain, or slope to door;
  (C) access into the structure shall be a doorway with minimum dimensions of 36 inches wide and 80 inches high;
  (D) the structure shall have adequate space for the use and maintenance of the piping and appurtenances. If treatment is provided at the well, the provisions of Rule .0404(a) of this Section shall apply; and

(E) the structure shall be secured with lock and key.

(2) Prefabricated structures. A prefabricated structure shall be constructed as follows:
(A) a well-head cover shall be hinged and constructed so that it can be lifted by one person;
(B) a locking mechanism shall be provided; and
(C) permanent fastening to the slab (such as with bolts) shall not be permitted.

(3) Fencing and temperature protection. Fencing and temperature protection shall be constructed as follows:
(A) the fence height shall be a minimum of six feet;
(B) the fence shall be constructed of chain link with locked access;
(C) the fence shall enclose the well, hydropneumatic tank, and associated equipment;
(D) access shall be provided for maintenance and operation; and
(E) the well, piping, treatment equipment, and electrical controls shall be protected against freezing. Wrapping with insulation is acceptable for appurtenances such as the air vent, meter, valves, and sample taps provided they are visible and accessible. Insulation shall be jacketed.

(g) Yield:

(1) Wells shall be tested for yield and drawdown. A report or log of at least a 24-hour drawdown test to determine yield shall be submitted to the Division of Water Resources for each well.

(2) Wells shall be located so that the drawdown of any well shall not interfere with the required yield of another well.

(3) The combined yield of all wells of a water system shall provide in 12 hours pumping time the average daily demand as determined in Rule .0409 of this Section.

(4) The capacity of the permanent pump to be installed in each well shall not exceed the yield of the well as determined by the drawdown test.

(5) A residential community water system using well water as its source of supply and designed to serve 50 or more connections shall provide at least two wells. A travel trailer park or campground designed to serve 100 or more connections shall provide at least two wells. In lieu of a second well, another approved water supply source may be accepted.

(6) A totalizing meter shall be installed in the piping system from each well.

(h) Initial Disinfection of Water Supply Well. All new wells, and wells that have been repaired or reconditioned shall be cleaned of foreign substances such as soil, grease, and oil, and then shall be disinfected. A representative sample or samples of the water (free of chlorine) shall be collected and submitted to a certified laboratory for bacteriological analyses. The water supply shall not be placed into service after disinfection until bacteriological test results of representative water samples analyzed in a certified laboratory are found to be free of bacteriological contamination.

(i) Initial Chemical Analyses. A representative sample of water from every new water supply well shall be collected and submitted for chemical analyses to the Division of Laboratory Services or to a certified laboratory. The results of the analysis shall demonstrate the water is treatable to meet water quality standards in Section .1500 of this Subchapter and needed treatment shall be provided before the well is placed into service.

(j) Continuous Disinfection. Continuous application of chlorine, hypochlorite solution, or some other approved and equally efficient disinfectant shall be provided for all well water supplies introduced on or after January 1, 1972. Equipment for determining residual chlorine concentration in the water shall be included in the plans and specifications.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. April 1, 2014; July 1, 1994; September 1, 1990; January 1, 1986; March 31, 1980.

15A NCAC 18C .0403 SURFACE WATER FACILITIES

(a) Unimpounded Stream. Both the minimum daily flow of record of the stream and the estimated minimum flow calculated from rainfall and run-off shall exceed the maximum daily draft for which the water treatment plant is designed with due consideration given to requirements for future expansion of the treatment plant. The Department may approve a water plant capacity greater than the minimum daily flow of record of the stream when rules of other government agencies will not be violated. The maximum allowable system expansion shall be based on the minimum daily flow of record of the stream.

(b) Pre-settling Reservoirs. Construction of a pre-settling or pre-treatment reservoir shall be required where wide and rapid variations in turbidity, bacterial concentrations or chemical qualities occur or where the following raw water quality standards are not met: turbidity - 150 NTU, coliform bacteria - 3000/100 ml, fecal coliform bacteria - 300/100 ml, color - 75 CU.

(c) Impoundments. Raw water storage capacity shall be sufficient to reasonably satisfy the designed water supply demand during periods of drought.
(d) Clearing of Land for Impoundment. The area in and around the proposed impoundment of class I and class II reservoirs shall be cleared as follows:

(1) The area from normal full level to five feet below the normal pool elevation of the impoundment shall be cleared and grubbed of all vegetation and shall be kept cleared until the reservoir is filled. Secondary growth shall be removed prior to flooding.
(2) The entire area below the five foot water depth shall be cleared and shall be kept cleared of all growth of less than six inches in diameter until the reservoir is filled. Stumps greater than six inches in diameter may be cut off at ground level.
(3) All brush, trees, and stumps shall be burned or removed from the proposed reservoir.

(e) Existing Impoundments. Existing impoundments may be approved as raw water sources as follows:

(1) The requirements of Paragraph (c) of this Rule, and Section .0200 of this Subchapter shall be met;
(2) A class I or class II reservoir shall meet the requirements of Section .1200 of this Subchapter; and
(3) The supplier of water shall have an engineer along with other qualified consultants as needed conduct a study of the impoundment and provide the Department information to determine whether the requirements of this Subchapter are met. The study shall include as follows:
    (A) Plans and specifications of the impounding structure;
    (B) Information concerning clearing of the land for impoundment as provided in Paragraph (d) of this Rule;
    (C) Information concerning sources of pollution on the watershed;
    (D) Documentation of control by the supplier of water of the impoundment and 50 foot margin around the impoundment measured from the normal pool elevation;
    (E) Information concerning the quality of the water and sediments which could cause water quality fluctuations such as lake stratification, turnover and algae bloom; and
    (F) Other information necessary to show the proposed source will meet the requirements of this Subchapter.

(f) A margin of at least 50 feet around a class I and class II reservoir measured from the normal pool elevation shall be owned or controlled by the water supplier.
(g) Intakes, Pumps, Treatment Units, and Equipment. Raw water intakes, pumps, treatment units and equipment shall be designed to provide water of potable quality meeting the water quality requirements stated in Section .1500 of this Subchapter.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; July 1, 1992; September 1, 1990.

15A NCAC 18C .0404 WATER TREATMENT FACILITIES

(a) Physical Security and Facility Protection. Treatment equipment and chemicals shall be secured against unauthorized access and shall be protected against the weather as follows:

(1) Structures shall comply with provisions of state and local building codes;
(2) Drainage shall be provided by floor drain, wall drain, or slope to door;
(3) Access to the structure shall be a doorway with minimum dimensions of 36 inches wide and 80 inches high or larger. The doorway shall be large enough to accommodate installation or removal of equipment; and
(4) The structure shall have space to facilitate operation and maintenance of treatment equipment, storage of chemicals, required piping and appurtenances, electrical controls, and laboratory testing.

(b) Mixing and Dispersion of Chemicals. Provisions shall be made for mixing and dispersion of chlorine and other chemicals applied to the water. All facilities treating surface water or ground water influenced by surface water shall comply with the disinfection requirements in Rule .2002 of this Subchapter.
(c) Chemical Feed Machines

(1) Durable chemical feed machines designed for adjustable accurate control of feed rates shall be installed for application of all chemicals necessary for appropriate treatment of the water. Sufficient stand-by units to assure uninterrupted operation of the treatment processes shall be provided. Continuous chemical

application must be protected from electrical circuit interruption which could result in overfeed, underfeed or interrupt the feed of chemicals.

(2) Chemical feed lines from the feeders to the points of application shall be of material sized for the design flow rate, corrosion resistant, easily accessible for cleaning and protected against freezing. Length and the number of bends shall be reduced to a minimum.

(3) Piping and appurtenances shall be constructed of suitable material for the chemical being added and the specific application.

(4) A separate feeder shall be used for each chemical applied.

(d) Disinfection Equipment:

(1) Equipment designed for application of chlorine, or some other approved, equally efficient disinfectant shall be provided. Stand-by units shall be provided. The plans and specifications shall describe the equipment in detail.

(2) Chlorinators shall be installed in tightly constructed, above ground rooms with mechanical ventilation to the outside air. The capacity of exhaust fans shall be sufficient to discharge all air in the rooms every 30 seconds to 1 minute. The fans or their suction ducts shall be located not more than eight inches above floor level. Provisions for entrance of fresh air shall be made. The point of discharge shall be so located as not to contaminate the air in any building or inhabited areas. Electrical switches for operation of fans shall be located outside the chlorinator rooms. Rooms used for storage of chlorine cylinders shall be designed as described above.

(e) Safety Breathing Apparatus. Self-contained emergency breathing apparatus for operators shall be stored outside rooms where gaseous chlorine is used or stored.

(f) Meters and Gauges. Meters and gauges, including raw and finished water meters, shall be installed to indicate and record water flow entering the treatment plant and water pumped or conducted to the distribution system.

(g) Prevention of Backflow and Back-Siphonage. Submerged inlets and interconnections whereby non-potable water, or water of questionable quality, or other liquids may be siphoned or forced into or otherwise allowed to enter the finished water supply shall not be permitted.

(h) Chemical Storage. Separate space for storing at least 30 days supply of chemicals shall be provided. A separate room or partitioned space shall be provided for storage of dry fluoride chemicals or liquid fluoride chemicals in portable containers.

(i) Laboratory. Adequate space, equipment, and supplies shall be provided for daily, routine chemical and bacteriological tests. A layout of laboratory furniture and equipment shall be included in the plans.

(j) Toilet Facilities. Toilet facilities shall be provided for the plant personnel.

(k) Waste Handling and Disposal.

(1) Provisions must be made for disposal of water treatment plant wastes such as clarification sludge, softening sludge, iron-manganese sludge, filter backwash water and brines. Untreated waste shall not be returned to the head of the water treatment plant.

(2) Recycling of supernatant or filtrate from waste treatment facilities treating filter wash water, sedimentation basin sludge or clarifier basin sludge to the head of the water treatment plant may be allowed when the following conditions are met:

(A) The water recycled shall be less than 10 percent by volume of the raw water entering the water treatment plant.

(B) A permit has been issued by the appropriate regulatory authority for discharge of wastes to sanitary sewer, stream, lagoon or spray irrigation.

(C) The raw water does not contain excessive algae, finished water taste and odor problems are not encountered and trihalomethane levels in the distribution system do not exceed allowable levels in Rule .1517 in this Subchapter.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994.

15A NCAC 18C .0405 STORAGE OF FINISHED WATER

(a) Ground Level Storage

(1) Finished Water Ground Storage Tank. Finished water ground storage tanks shall be provided with a light-proof and insect-proof cover of concrete, steel, or equivalent material approved by the Division. The

construction joints between side walls and the covers of concrete tanks or reservoirs shall be above ground level and above flood level; except that clearwells constructed below filters may be excepted from this requirement when total design, including waterproof joints, gives equal protection from flooding.

(2) Access Manholes. The access manholes for finished water ground storage tanks or reservoirs shall be framed at least four inches above the tank or reservoir covers at the opening and shall be fitted with solid covers of materials that overlap the framed openings and extend down around the frames at least two inches. The covers for the openings shall be hinged at one side and fitted with a locking device.

(3) Venting. Finished water ground storage tanks or reservoirs shall have vents with screened, downward directed openings. The vent and screen shall be of corrosion resistant material.

(4) Overflow. The overflow pipes for finished water ground storage tanks or reservoirs shall not be connected directly to sewers or storm drains. Screens or other devices to prevent access by rodents, insects, etc. shall be provided in the overflow pipe.

(5) Inlets and Outlets. Water supply inlets and outlets of finished water ground storage tanks and reservoirs shall be located and designed to provide circulation of the water and to meet the CT requirements in Section .2000 of this Subchapter. Baffles shall be constructed where necessary to provide thorough circulation of the water.

(6) Drain Valves. All finished water ground storage tanks and reservoirs shall be equipped with drain valves.

(b) Elevated Storage Tanks:

(1) Standards. The specifications for elevated tanks, stand-pipes, towers, paints, coatings, and other appurtenances shall meet the appropriate ANSI/AWWA Standards D 100 84 and D 101-53(R86) of the American Water Works Association, Inc. that are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

(2) Elevation of Storage Tanks. The elevation of storage tanks shall be sufficient to produce a designed minimum distribution system pressure of 20 pounds per square inch at peak demand (fire flow) and 30 pounds per square inch during peak flow.

(3) Drain. Elevated storage tanks shall be equipped with drain valves.

(c) Hydropneumatic Storage Tanks (Pressure Tanks)

(1) Use of Pressure Tanks. Where well yields and pumping capacities are sufficient, hydropneumatic (pressure) tanks may be used to control pumps, stabilize pressures, and provide a minimum of storage. Pressure tanks shall have the capacity to maintain a minimum pressure of 30 pounds per square inch throughout periods of peak flow. Pressure tanks shall not be considered acceptable for meeting total storage requirements for water systems of over 300 connections, except as provided in Paragraph (d) of this Rule.

(2) Corrosion Control. Pressure tanks shall be galvanized after fabrication, provided with an ANSI/NSF approved liner or coating in accordance with Rule .1537 of this Subchapter.

(3) Required Parts. Pressure tanks shall have access manholes, bottom drains, pressure gauges, and properly sized safety and vacuum relief valves.

(4) Controls. Automatic pressure and start-stop controls for operation of pumps shall be provided.

(5) Hydropneumatic Storage Tanks. Hydropneumatic storage tanks shall conform to the construction requirements for pressure vessels adopted by the North Carolina Department of Labor and codified in 13 NCAC 13 that is hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

(6) Appurtenances to hydropneumatic storage tanks such as valves, drains, gauges, sight tubes, safety devices, air-water volume controls, and chemical feed lines shall be protected against freezing.

(d) High Yield Aquifers:

(1) Equipment. In lieu of providing elevated storage for systems over 300 connections in areas where aquifers are known to produce high yields, e.g., 400-500 gpm from an eight-inch well, a system of extra well pumping capacity, auxiliary power generating equipment, hydropneumatic tanks, controls, alarms, and monitoring systems may be provided. The design and installation of such system shall assure that reliable, continuous service is provided.

(2) Auxiliary Power. Such a system shall have an adequate number of wells equipped with sufficient pumping capacity so that the required flow rate may be maintained with the single largest capacity well and pump out of operation. Auxiliary power generating equipment shall be provided for each well sufficient to

operate the pump, lights, controls, chemical feeders, alarms, and other electrical equipment as may be necessary.

(3) Pump Control. Hydropneumatic tanks designed in accordance with Paragraph (c) of this Rule and Section .0800 of this Subchapter shall be provided to maintain pressure and control the pump operation.

(4) Alarm System. An alarm system shall be provided that will send a visual or audible signal to a constantly monitored location so that the water system operator will be advised of a primary power failure.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. April 1, 2014; July 1, 1994; September 1, 1990; October 1, 1986; June 30, 1980.

15A NCAC 18C .0406 DISTRIBUTION SYSTEMS

(a) Water Pipe Materials. Distribution mains shall be cast iron, ductile iron, asbestos-cement, reinforced concrete, plastic, or other material designed for potable water system service and shall be the appropriate AWWA standards, section C, or NSF Standards No. 14 and No. 15 that is hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter. The pressure rating class of the pipe shall be in excess of the maximum design pressure within that section of the water distribution system. The quality of pipe to be used shall be stated in the project specifications.

(b) Cross-Connections

(1) No potable water supply shall be connected by any means to another source of water supply or to a storage facility unless such connection has been previously approved by the Department. No connection shall be made to any plumbing system that does not comply with the North Carolina State Building Code, volume II, or any applicable local plumbing code.

(2) No person shall introduce any water into the distribution system of a public water supply through any means other than from a source of supply duly approved by the Department or its representatives, or make a physical connection between an approved supply and unapproved supply unless authorized in an emergency by the Department or its representative.

(3) In cases where storage capacity is used only for non-potable purposes and there is installed either an elevated or ground tank or a ground reservoir, the following precautions shall be taken:

(A) When the reservoir or tank is filled from a supply other than a public water supply and the public water supply is used as a supplemental supply, the pipeline from the public water supply shall be installed in such a manner that the water will be discharged over the top or rim of the reservoir or tank. There shall be a complete physical break between the outlet end of the fill pipe and the top or overflow rim of the tank of at least twice the inside diameter of the inlet pipe.

(B) When the reservoir or tank is filled entirely by water from a public water supply:

(i) If a covered ground reservoir or covered elevated tank is used, an approved reduced pressure back-flow preventor or an approved double check valve assembly may be used. The back-flow prevention device shall be installed in such a manner as to afford adequate protection, be easily accessible, and include all necessary pressure gauges and drains for testing. Gate valves shall be installed in the line at both ends of the back-flow prevention device.

(ii) If an uncovered ground reservoir or uncovered elevated tank is used, a complete physical break shall be provided between the reservoir or elevated tank and the public supply. The physical break between the inlet pipe and the top or overflow rim of the reservoir shall be at least twice the diameter of the inlet pipe.

(4) All cross-connections between potable water supplies and non-potable or unprotected supplies that are not specifically covered in the categories in this Paragraph will be considered special problems and the protective devices required shall be determined by the Department on the basis of the degree of health hazard involved.

(5) Persons desiring to install non-potable water supplies in conjunction with a public water supply shall submit detailed plans and specifications in triplicate showing the non-potable water supply and its relation to the potable water supply to the Department in accordance with Rule .0302(a) of this Subchapter.

(6) Any such interconnection to a potable water system is subject to the approval of the water supplier and shall not be made until authorized by the water supplier in addition to the Department.

(7) No person shall fill special use tanks or tankers containing pesticides, fertilizers, other toxic chemicals, or their residues from a public water system except at a location equipped with an over-the-rim free discharge of water or a reduced pressure backflow preventer properly installed on the public water supply that has been approved by the Department. No supplier of water shall permit the filling of such special use tanks or tankers except at locations so equipped.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. April 1, 2014; September 1, 1990; December 1, 1988; June 30, 1980.

15A NCAC 18C .0407 ELECTRICAL SYSTEMS

Electrical wiring and equipment shall comply with applicable provisions of the national, state, and local electrical codes. Protection against moisture and overheating shall be provided.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0408 LEAD FREE CONSTRUCTION

(a) Any pipe, pipe fitting, solder or flux used after June 19, 1988 in the installation or repair of any public water system shall be lead free.
(b) "Lead free" means that solders and flux shall not contain more than 0.2 percent lead, and pipes and pipe fittings shall not contain more than 8.0 percent lead.
(c) This Rule shall not apply to leaded joints necessary for the repair of cast iron pipes.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. June 1, 1988;
Amended Eff. August 1, 2002.

15A NCAC 18C .0409 SERVICE CONNECTIONS

(a) Local Water Supply Plan. Units of local government which are operating under a local water supply plan in accordance with G.S. 143-355(l) shall not be limited in the number of service connections.
(b) No local water supply plan. A public water system which does not have a local water supply plan as stated in Paragraph (a) shall limit its number of service connections as follows:
(1) A public water system shall meet the daily flow requirements specified in Table 1:

Table 1: Daily Flow Requirements

Type of Service Connection	Daily Flow for Design
Residential	400 gallon/connection
Mobile Home Parks	250 gallon/connection
Campgrounds and Travel Trailer Parks	100 gallon/space
Marina	10 gallon/boat slip
Marina with bathhouse	30 gallon/boat slip
Rest Homes and Nursing Homes	
with laundry	120 gallon/bed
without laundry	60 gallon/bed
Schools	15 gallon/student
Day Care Facilities	15 gallon/student
Construction, work, or summer camps	60 gallon/person
Business, office, factory (exclusive of industrial use)	

without showers	25 gallon/person/shift
with showers	35 gallon/person/shift
Hospitals	300 gallon/bed

or;

(2) A public water system serving different types of service connections shall meet the maximum daily demand calculated as follows:

(A) Where records of the previous year are available that reflect daily usage, the average of the two highest consecutive days of record of the water treated shall be the value used to determine if there is capacity to serve additional service connections (unusual events such as massive line breaks or line flushings shall not be considered).

(B) Where complete daily records of water treated are not available, the public water system shall multiply the daily average use based on the amount of water treated during the previous year of record by the appropriate factor to determine maximum daily demand, as follows:

(i) A system serving a population of 10,000 or less shall multiply the daily average use by 2.5; or

(ii) A system serving a population greater than 10,000 shall multiply the daily average use by 2.0.

History Note: *Authority G.S. 130A-315; 103A-317; P.L. 93-523;*
Eff. July 1, 1994.

SECTION .0500 - SUPPLEMENTAL DESIGN CRITERIA

Rules .0501 - .0502 of Title 15A Subchapter 18C of the North Carolina Administrative Code (T15A.18C .0501 - .0502); has been transferred and recodified from Rules .1701 - .1702 Title 10 Subchapter 10D of the North Carolina Administrative Code (T10.10D .1701 - .1702), effective April 4, 1990.

15A NCAC 18C .0501 PURPOSE

For the protection of the public health, and pursuant to authority granted by Article 10 of Chapter 130A of the General Statutes of North Carolina, the Commission for Public Health hereby adopts the following rules (15A NCAC 18C .0500 through .1000) as supplemental design criteria for approval of plans and specifications.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; September 1, 1991; September 1, 1979;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0502 DESIGN CRITERIA

Community and non-transient, non-community water systems and non-community water systems using surface water or ground water under the influence of surface water shall comply with these supplemental design criteria unless alternate design proposals are approved by the Department. The Department shall consider the following factors in approving an alternate design:

(1) The potential health risk of using the alternate design;
(2) The need for deviation from the supplemental design criteria;
(3) The degree of deviation from the supplemental design criteria; and
(4) The capability of the alternate design to meet the maximum contaminant levels, treatment techniques and other requirements of this Subchapter.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; September 1, 1979; January 1, 1978;

Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

SECTION .0600 - RAW SURFACE WATER FACILITIES

Rules .0601 - .0604 of Title 15A Subchapter 18C of the North Carolina Administrative Code (T15A.18C .0601 - .0604); has been transferred and recodified from Rules .1801 - .1804 Title 10 Subchapter 10D of the North Carolina Administrative Code (T10.10D .1801 - .1804), effective April 4, 1990.

15A NCAC 18C .0601 IMPOUNDMENTS: PRE-SETTLING RESERVOIRS

Where impoundment of the water supply stream does not or will not provide a raw water of acceptable quality, a pre-settling or pre-treatment reservoir located outside the watershed or catchment area may be required.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977.

15A NCAC 18C .0602 RAW WATER INTAKES

(a) Stream Intakes. The intake structure for unimpounded streams shall be constructed so that it will not be affected by flood water or damaged by floating debris. It shall be located and designed to minimize entrance of sand, silt, fish and debris. A bar screen or grating shall be provided, with the area of the openings designed to restrict the entrance velocity to 30 feet per minute or less.

(b) Reservoir Intakes. Where water quality variations affecting the treatment process will occur at different depths of a reservoir, the intake structure shall be constructed with multiple inlets that can be readily opened and closed for selection of the optimum water quality level. A bar screen or grating shall be provided, with the area of the openings designed to restrict the entrance velocity to 50 feet per minute or less.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0603 INTAKE CONDUITS

The pipes, tunnels, or flumes used for intake conduits shall be designed to conduct water at self-cleaning velocities of at least two feet per second. A screen, accessible for cleaning, shall be provided to protect the pumps.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0604 PUMPS: POWER FACILITIES

At least two pumping units with necessary check valves, gate valves, piping and appurtenances shall be provided for both raw water and finished water. Auxiliary facilities shall be provided to supply power or to provide other means to satisfy the design minimum water needs of the system.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

SECTION .0700 - SURFACE WATER TREATMENT FACILITIES

Rules .0701 - .0709 of Title 15A Subchapter 18C of the North Carolina Administrative Code (T15A.18C .0701 - .0709); has been transferred and recodified from Rules .1901 - .1909 Title 10 Subchapter 10D of the North Carolina Administrative Code (T10.10D .1901 - .1909), effective April 4, 1990.

15A NCAC 18C .0701 FLASH OR RAPID MIXING FACILITY

Mixing shall be adequate to obtain rapid and thorough dispersal of the chemicals in the raw water before it enters the flocculation basins. The design of the flash mix facilities shall provide sufficient and efficient transfer of energy to the water to effect thorough mixing.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0702 AIR MIXING

Diffused air mixing may be used only in conjunction with mechanical or baffled mixers.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0703 MECHANICAL FLOCCULATION

(a) Basin Inlet and Outlet. The design of inlets and outlets of flocculation basins shall prevent short circuiting of the water and destruction or deterioration of the floc.
(b) Detention Period. The flocculation basins shall have a theoretical detention period of not less than 20 minutes.
(c) Agitator Control. The agitators of flocculation basins shall be equipped with variable speed controls.
(d) Paddles. Peripheral speed and paddle configuration shall be designed to obtain optimum velocity gradient.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0704 BAFFLED MIXING AND FLOCCULATION BASINS

(a) Detention Period. The theoretical detention period of baffled mixing and flocculation shall be at least 25 minutes.
(b) Velocities
    (1) The velocity of the water between the baffles shall be as follows:
        (A) first third of basin -- 1.5 feet per second;
        (B) second third of basin -- 0.75 feet per second; and
        (C) last third of basin -- 0.4 to 0.5 feet per second.
    (2) The velocity of the water under and over the baffles shall not exceed the velocity between the baffles.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0705 CONDUITS: PIPES AND FLUMES: GATES AND VALVES

Conduits conducting flocculated or coagulated water to sedimentation basins shall have sufficient capacity to limit velocity of flow to 0.5 feet per second. The optimum velocity to prevent both the breaking up and the settling of the floc is considered to be 0.5 feet per second.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0706 SEDIMENTATION BASIN

(a) Inlets. Inlets to sedimentation basins shall be designed to dissipate inlet velocities before the diffusion walls or before other entrance arrangements designed to provide uniform flow across the basins.
(b) Detention Period. A theoretical detention period of four hours shall be considered to be a minimum standard unless evidence, acceptable to the Division of Water Resources, is presented to support approval of a lower period of detention.
(c) Bottom of Basin. The bottom of the basin shall be sloped and provided with drain valve or valves for ready removal of sludge.
(d) Outlet. Sedimentation basin outlets shall consist of submerged weirs or orifices. The equivalent rate of flow over or through the outlet device should not exceed 20,000 gallons per day per foot of equivalent weir length.
(e) Overflow. Sedimentation basins shall be equipped with an overflow pipe or pipes to limit the maximum water level over the filters and to prevent flooding above the walls of filters and basins.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. April 1, 2014.

15A NCAC 18C .0707 SOLIDS CONTACT OR UP-FLOW UNITS

(a) Approval of Solids Contact or Up-Flow Units. Solids contact or up-flow clarification units shall be approved only where raw water characteristics are substantially constant and shall not be approved for raw waters that have wide and rapid variations in turbidity or other qualities that would adversely affect the treatment process.
(b) Water Rise Rate. The rise rate shall not exceed 1.0 gallon per minute per square foot of clarification area unless the requirements of Rule .0711 of this Section have been satisfied.
(c) Weir Loading. Weir loading shall not exceed seven gallons per minute per foot of weir length. Horizontal flow to the collection trough shall not exceed 10 feet.
(d) Speed Agitator Equipment. Mixing and flocculation shall be accomplished by means of adjustable, variable speed agitator equipment.
(e) Sludge Withdrawal. Sludge withdrawal equipment shall include an intermittent sludge removal mechanism controlled by an adjustable automatic timer.
(f) Basin Drain. The basin shall be provided with a bottom drain that is of sufficient size to empty the basin in two hours or less.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994.

15A NCAC 18C .0708 GRAVITY FILTERS

(a) Filtration Rates. The standard rate of filtration for a single media filter shall be two gallons per minute per square foot. Higher filtration rates up to four gallons per minute per square foot may be approved for dual media or multi-media filters. Filtration rates in excess of four gallons per minute per square foot may be approved subject to pilot plant or plant scale demonstrations conducted in accordance with Rule .0714 of this Section.
(b) Wash Water Rate. The backwash rate of flow shall be designed to theoretically expand the filter media 50 percent.

(c) Rate Control Devices. Rate control equipment shall be provided to control or regulate the filtration rate and the backwash rate. If declining rate filtration is to be utilized, orifice plates shall be installed on each filter effluent pipe to control maximum filtration rates.
(d) Surface Washers. Filter beds shall be equipped with a revolving or fixed system of nozzles designed for agitation of the entire beds.
(e) Gauges and Flow Indicators. Gauges or meters shall be installed to indicate the rate of filtration, the loss of head, and backwash rate for every filter.
(f) Filter Media:

(1) Filter Sand. Filter sand shall be clean silica sand having:
  (A) an effective size of 0.35 mm to 0.55 mm,
  (B) a uniformity coefficient of not more than 1.70,
  (C) a dust content (passing 150 mesh tyler) less than 0.5 percent, and
  (D) a minimum depth of at least 24 inches.

(2) Anthracite Filter Media. If anthracite coal is used as a single filter media, it shall have an effective size of 0.35 mm to 0.55 mm and a uniformity coefficient of 1.70 or less. Minimum depth of the media shall be 24 inches.

(3) Dual Media or Multi-media Filters. Dual media and mixed media filter beds may have a wider range of gradation than single media beds. Particle sizes may range from 0.15 mm to 1.2 mm within the beds. Influent water quality shall be considered in specifying particle sizes of mixed media beds. The minimum depth of the filter media shall be 24 inches.

(g) Supporting Media and Underdrain System. The underdrain system and layers of gravel or other media supporting the filter media shall be designed to provide uniform filtration and uniform backwash throughout the filter media.
(h) Wash Water Troughs Elevation. The elevation of the bottom of the wash water troughs for new installations shall be above the maximum level of the expanded media during washing at the normal design wash water rate. The elevation of the top of the wash water troughs shall provide a two-inch freeboard above the expanded media at the maximum rate of wash.
(i) Turbidity Monitoring. Turbidimeters employing the nephelometric method, or measurement of the intensity of scattered light, shall be provided for the continuous determination of the turbidities of filtered water from each filter unit.
(j) Sampling Tap. A tap shall be installed for convenient sampling of the effluent from each filter.
(k) Multiple Filter Units. Two or more filter units shall be provided such that the annual average daily demand can be satisfied at the approved filtration rate with one filter removed from service.
(l) Structural Design. Filters shall have vertical walls with no protrusions or curvature. Floors of filter rooms shall be designed to prevent flooding or spillage into filters through provisions of overflow drainage and a minimum of four inch curbs around the filters.
(m) Filter to Waste. All filters shall have provisions for filtering to waste with backflow prevention.
(n) Filter Backwash. Backwash capacity to ensure thorough cleaning of the filters shall be provided.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; January 1, 1978.

15A NCAC 18C .0709 PREVENTION OF BACKFLOW AND BACK-SIPHONAGE

The following methods and devices for prevention of backflow or back-siphonage shall be provided for the conditions indicated:

(1) Dry Chemical Feeders. Dry chemical feeders with submerged water inlets shall have a non-pressure type vacuum breaker installed on the atmospheric side of the last control valve.

(2) Fluoride Chemical Feeders
  (a) Sodium fluoride saturator tank make-up water lines shall have air gaps between the overflow rim of the tank and the water supply pipe of at least four inches.
  (b) When using the positive displacement fluoride chemical solution feed pumps, if the point of application to the water supply is at atmospheric pressure and is below the maximum elevation of the solution in the fluoride solution tank, an air gap shall be installed in the fluoride discharge line at a point above the liquid level in the tank. If the point of application is a pressure line, then a pressure type vacuum breaker shall be used.

(3) Filter Surface Wash Agitators. Either a non-pressure type vacuum breaker shall be installed on the atmospheric side of the last control valve of each agitator, or pressure type vacuum breaker or an approved backflow preventer shall be installed on the pipe line supplying only the agitators.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0710 OTHER WATER TREATMENT PLANTS

Water treatment plants which provide conventional filtration treatment, as defined in Rule .0102 of this Subchapter, but do not meet the minimum design criteria for process flow times established in this Rule, may be approved to treat high quality source waters under the following conditions:

(1) A proposal shall be presented to the Department to justify deviation from minimum criteria. The proposal shall include an engineering report containing information and data to substantiate high source water quality characteristics and demonstrate water treatment plant effectiveness.

(2) The flocculation process shall have a minimum of 20 minutes theoretical detention time.

(3) The sedimentation compartment shall utilize tube settlers, plates or equivalent settling enhancement mechanisms and have a minimum of 30 minutes detention time.

(4) The filter media shall be a minimum of 24 inches in depth and consist of dual or multi-media.

(5) The source waters shall be derived from watersheds which are classified as WS-I, WS-II or WS-III and shall be protected from sources of pollution as determined by a sanitary survey in accordance with Rule .0202 of this Subchapter.

(6) The following raw water quality standards shall apply:

(a) WS-I, WS-II or WS-III raw water quality standards established by the Environmental Management Commission shall be met.

(b) In addition to Sub-Item (6)(a) of this Rule, the following maximum concentration of turbidity, coliform, fecal coliform and color shall be allowed in the water plant influent water, based on sedimentation time provided by the water treatment plant. Off-stream pre-treatment to maintain these standards shall be provided as specified in Item (7) of this Rule.

SED TIME	4 hrs.	2 hrs.	1 hr.	½ hrs.
Turbidity (NTU)	150	75	50	25
Coliform/100 ml	3,000	2,000	1,000	500
Fecal coliform/100 ml	300	200	100	50
Color (CU)	75	60	40	20

Note: Uneven values are to be interpolated.

(c) Maximum allowable fluctuations in turbidity, coliform, fecal coliform, color (up to the maximum of Sub-Item (6)(b) of this Rule, chemicals and other water quality characteristics shall be established by a pilot study conducted in accordance with Rule .0714 of this Section.

(d) The allowable raw water concentration of all other contaminants, for which drinking water standards are established in this Subchapter, shall be based on the removal capacity of the water plant as demonstrated in a pilot study conducted in accordance with Rule .0714 of this Section.

(7) Off-stream pre-treatment/storage reservoirs shall be provided to maintain the raw water quality standards of Item (6) of this Rule, equalize fluctuations and provide an unpolluted storage reserve in the event of contaminant spills as follows:

(a) Off-stream pre-treatment/storage reservoirs shall not be required for source waters derived from uninhabited watersheds classified WS-I if it is demonstrated that the raw water quality standards and fluctuations of Item (6) of this Rule are maintained in the water treatment plant influent water.

(b) Off-stream pre-treatment/storage shall not be required for source waters derived from Class I, II or III reservoirs on WS-I, WS-II or WS-III watersheds if an engineering report demonstrates to the Department the source is not vulnerable to spills and that the water quality standards and fluctuations of Item (6) of this Rule can be maintained in the water plant influent water.

(c) For all other source waters derived from WS-I, WS-II or WS-III watersheds, a minimum of five days off-stream pre-treatment/storage shall be provided. An engineering report as described in Item (1) of this Rule shall be submitted to demonstrate that five days storage is adequate or to determine the greater storage needed to maintain the raw water quality standards and fluctuations of Item (6) of this Rule in the water treatment plant influent water.

(d) When terrain or space constraints make it infeasible to construct a pre-treatment/storage reservoir, a mechanical pre-treatment system may be approved when an engineering report demonstrates to the Department that the source is not vulnerable to contaminant spills and that the raw water quality standards and fluctuations of Item (6) of this Rule can be maintained in the water treatment plant influent water.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. July 1, 1994;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0711 ALTERNATIVE FILTRATION TREATMENT TECHNOLOGIES

A public water system may propose an alternative filtration treatment technology as provided in Rule .2003 of this Subchapter. The following conditions shall apply:

(1) The source waters shall be derived from WS-I, WS-II or WS-III watersheds and shall be protected from sources of pollution as determined from a sanitary survey in accordance with Rule .0202 of this Subchapter.

(2) The raw water quality standards and fluctuations shall be as specified in Rule .0710 Item (6) of this Section, except that the following maximum concentrations shall be allowed in the influent water to the water treatment plant: Turbidity - 20 NTU, coliform - 500/100 ml, fecal coliform - 50/100 ml, color - 20 CU.

(3) Off-stream pre-treatment/storage shall be provided as specified in Rule .0710 of this Section except that the raw water quality standards of Item (2) of this Rule shall be maintained in the water treatment plant influent water.

(4) If the Department determines that the proposed water treatment plant employs treatment techniques that are consistent with this Subchapter, a pilot study shall be conducted in accordance with Rule .0714 of this Section.

(5) If the pilot study demonstrates to the Department that the proposed water treatment plant can consistently produce water which complies with all requirements of this Subchapter, detailed engineering plans and specifications for the proposed plant and appurtenances shall be presented to the Department for review and approval prior to construction or letting a contract.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. July 1, 1994.

15A NCAC 18C .0712 DIRECT FILTRATION

Water treatment plants which use direct filtration may be approved to treat high quality source waters derived from uninhibited watersheds classified WS-I. A proposal, including an engineering report as described in Rule .0710 Item (1) of this Section shall be submitted to the Department.

(1) The following raw water maximum contaminant concentrations shall be met: Turbidity - 5 NTU, coliform - 500/100 ml, fecal coliform - 50/100 ml, color - 15 CU. Fluctuations shall not exceed 5 percent per hour.

(2) A minimum of 5 days off-stream storage shall be provided except in cases where the source waters are derived from in-stream impoundments and it is demonstrated that the raw water quality standards and fluctuations or Item (1) of this Rule are maintained at the entrance to the water treatment plant.

(3) If the Department determines that the proposed water treatment plant provides treatment techniques that are consistent with this Subchapter and that the treatment is feasible for the source water, a pilot plant study shall be conducted in accordance with Rule .0714 of this Section.

(4) If the pilot study demonstrates to the Department that the proposed plant can consistently produce water which complies with all requirements of this Subchapter, detailed engineering plans and specifications for the proposed plant and appurtenances shall be presented to the Department for review and approval prior to construction or letting a contract.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. July 1, 1994;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0713 PRESSURE FILTERS

Pressure filters shall not be used in treatment of surface waters. Pressure filters may be approved for treatment of existing groundwater sources under the influence of surface water under the following conditions:

(1) Design standards for gravity filters in Rule .0708 of this Section shall apply.
(2) Overall plant design shall comply with Rule .0404 of this Subchapter.
(3) Special design or operational features or modifications shall be provided when needed due to water quality or design of the proposed filter.
(4) If the Department determines that the proposed water treatment plant employs treatment techniques that are consistent with this Subchapter, a pilot plant study shall be conducted in accordance with Rule .0714 of this Section.
(5) If the pilot study demonstrates to the Department that the proposed plant can consistently produce water which complies with all requirements of this Subchapter, detailed engineering plans and specifications for the proposed plant and appurtenances shall be presented to the Department for review and approval prior to construction or letting a contract.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. July 1, 1994.

15A NCAC 18C .0714 PILOT PLANT STUDIES

(a) A pilot plant study proposal shall be submitted to the Department for approval before the study is conducted. The following conditions shall apply:

(1) An engineering report shall describe the proposed study and shall include the information and data to justify use of the particular plant to treat the source water;
(2) The proposed plant shall employ treatment techniques that are consistent with this Subchapter;
(3) The pilot plant shall be of the same design and operation as the proposed plant;
(4) A protocol for conducting the study shall be submitted which includes the duration, testing procedures, reporting procedures, plant scale and other factors which affect the proposed plant operation; and
(5) The study shall be conducted over a time sufficient to treat all worst case source water conditions expected through the year.

(b) Pilot plant finished water shall not be introduced to a public water system unless approved by the Department.
(c) When the proposed plant or pilot plant has been tested under worst case conditions on similar water and achieved 3.0 log removal of *Giardia* cysts and a maximum of 0.3 NTU turbidity levels 95 percent of the time in filtered effluent, the particular model plant may be proposed without on-site testing.
(d) The pilot plant shall comply with the provisions of Section .2000 of this Subchapter.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. July 1, 1994;
Amended Eff. October 1, 2009.

15A NCAC 18C .0715 OTHER DESIGN STANDARDS

In evaluation of water systems or water system design features not addressed in this Section, the Department shall consider standards from the American Water Works Association or Recommended Standards for Water Works of 10 states and Ontario, that is hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. July 1, 1994;
Amended Eff. April 1, 2014;

Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

SECTION .0800 - HYDROPNEUMATIC STORAGE TANKS RULES

.0801 - .0805 of Title 15A Subchapter 18C of the North Carolina Administrative Code (T15A.18C .0801 - .0805); has been transferred and recodified from Rules .2001 - .2005 Title 10 Subchapter 10D of the North Carolina Administrative Code (T10.10D .2001 - .2005), effective April 4, 1990.

15A NCAC 18C .0801 CAPACITIES: DETERMINING MINIMUM EFFECTIVE VOLUME

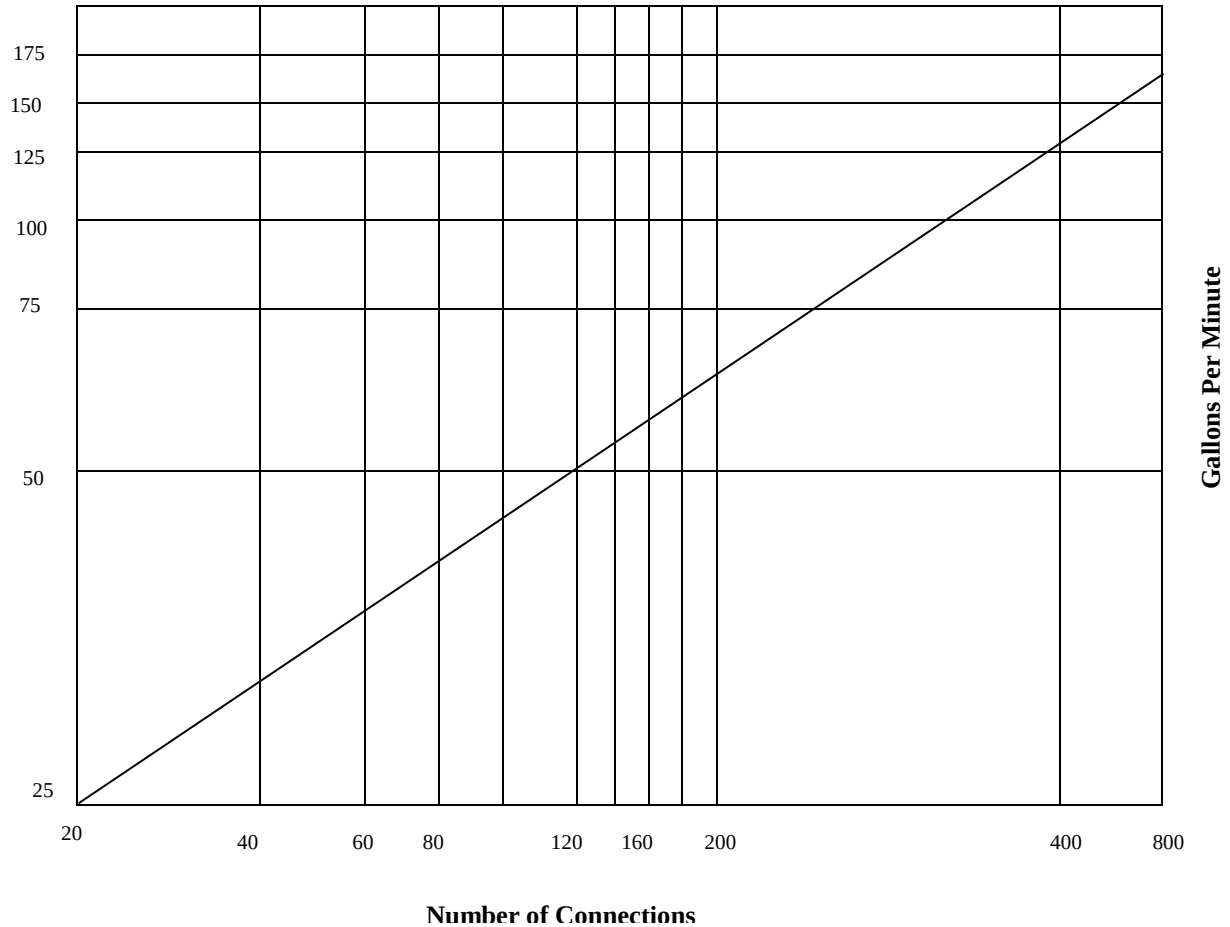
The minimum effective volume of pressure tanks, in gallons, shall equal the peak demand, in gallons per minute, minus the pumping capacity (gpm), multiplied by 20.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

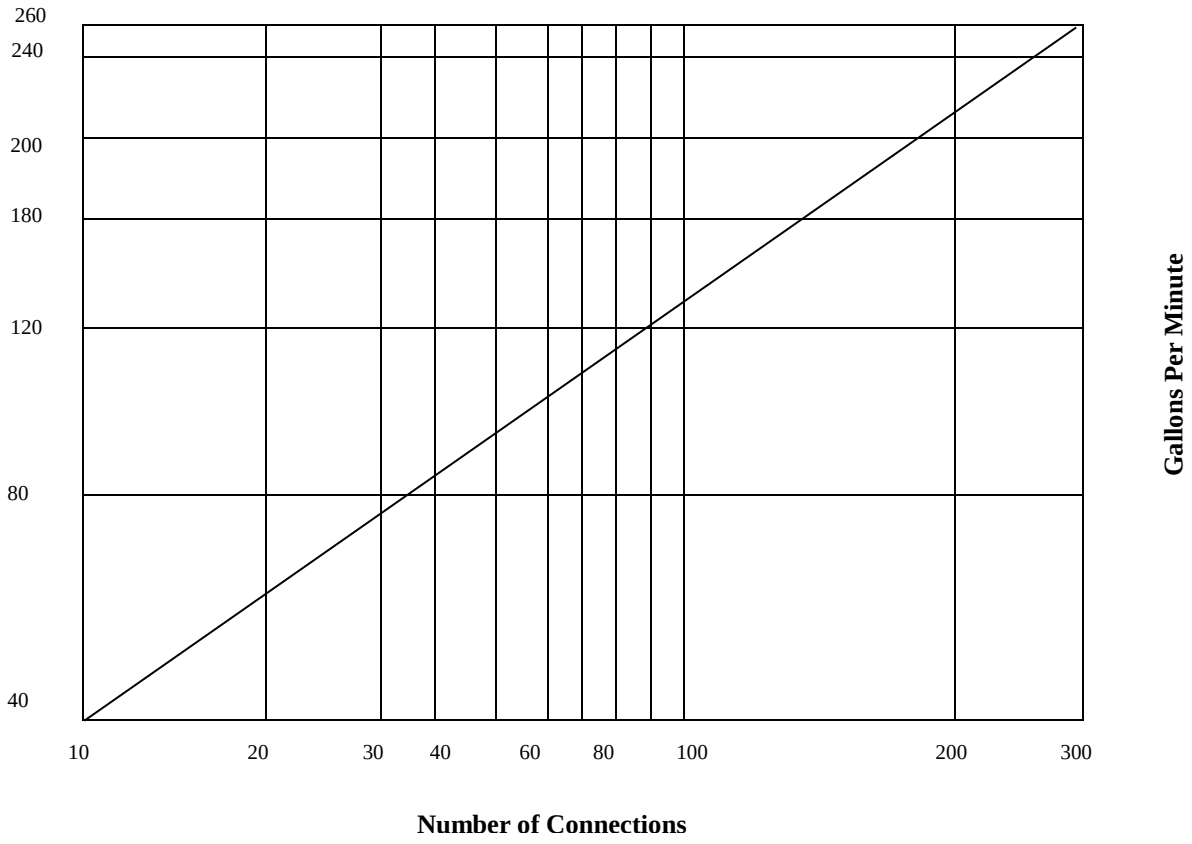
15A NCAC 18C .0802 CAPACITIES: DETERMINING PEAK DEMAND

(a) The following charts shall be used to determine the peak demand for campground, residential community, and mobile home park water systems:

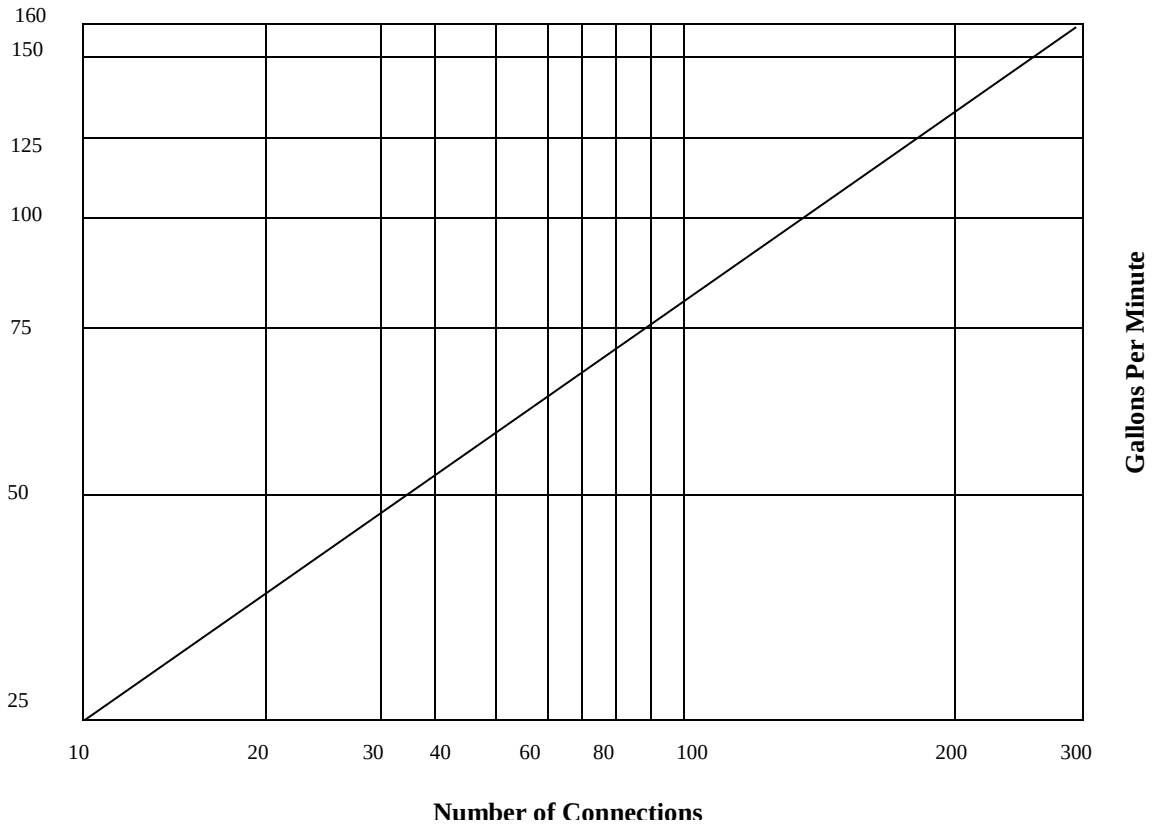
PEAK DEMAND FOR CAMPGROUND WATER SYSTEMS
(Number of Connections vs Gallons per Minute)



PEAK DEMAND FOR RESIDENTIAL COMMUNITY WATER SYSTEMS
(Number of Connections vs Gallons per Minute)



PEAK DEMAND FOR MOBILE HOME PARK WATER SYSTEMS
(Number of Connections vs Gallons per Minute)



(b) The peak demand for non-transient, non-community water systems shall be determined based on the total demand weight of fixtures in accordance with the procedures of the North Carolina State Building Code, Volume II, Plumbing Section that are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. April 1, 2014; July 1, 1994; June 30, 1980;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0803 CAPACITIES: DETERMINING TOTAL VOLUME

The total volume of a pressure tank shall be calculated by using the principle of Boyle's Law. The total volume (gallons) shall be not less than 25 times the number of connections or 500 gallons, whichever is greater for a mobile home park. In the case of a residential community (community water system) the total volume shall not be less than 40 times the number of connections or 500 gallons, whichever is greater. In the case of campgrounds, the total volume shall not be less than 10 times the number of connections or 500 gallons, whichever is greater.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; March 31, 1980.

15A NCAC 18C .0804 CAPACITIES: GROUND STORAGE PLUS HYDROPNEUMATIC TANKS
When ground level storage tanks and high-service pumps are to be used, hydropneumatic tanks shall be sized in relation to peak demand and the high-service pump capacity.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0805 CAPACITIES: ELEVATED STORAGE
(a) Where feasible, elevated storage capacity shall meet the requirements of the ISO Commercial Risk Services, Inc. Fire Suppression Rating Schedule that are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.
(b) The elevated storage capacity for a municipality shall be sufficient to minimize the effect of fluctuating demand and provide a reserve for fire protection, but not be less than 75,000 gallons in capacity.
(c) The combined elevated and ground storage capacity of the finished water for community and non-transient, non-community water systems shall be a minimum of one-half day's supply of the average annual daily demand.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1978;
Amended Eff. April 1, 2014; July 1, 1994;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

SECTION .0900 - DISTRIBUTION SYSTEMS

Rules .0901 - .0907 of Title 15A Subchapter 18C of the North Carolina Administrative Code (T15A.18C .0901 - .0907); has been transferred and recodified from Rules .2101 - .2107 Title 10 Subchapter 10D of the North Carolina Administrative Code (T10.10D .2101 - .2107), effective April 4, 1990.

15A NCAC 18C .0901 SIZE OF THE WATER MAINS
Water distribution mains shall be sized to provide a minimum pressure at all points within the distribution system of not less than 20 pounds per square inch (gauge) during periods of peak demand (fire flow), but in any case water mains shall not be less than two-inch standard nominal diameter. Fire hydrants shall not be installed on water mains of less than six inches diameter or on water mains or water systems not designed to carry fire protection flows. Systems not designed for fire flows shall have the capacity to maintain a pressure of at least 30 pounds per square inch (gauge) throughout the system during periods of peak flow.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. March 31, 1980;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0902 NUMBER OF RESIDENCES ON A WATER MAIN
(a) No more than 20, or the equivalent of 20 residences shall be connected to a two-inch diameter water line, unless the main is looped or otherwise supplied from two connections with mains of adequate capacities.
(b) A looped two-inch main shall serve no more than 40 residences, or the equivalent water demand of 40 residences. A two-inch diameter main shall not exceed 1000 feet in length.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*

Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. January 1, 1978;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0903 DEAD-END WATER MAINS

Where installation of dead-end water mains cannot be avoided, a hydrant or a valve of adequate size for flushing shall be installed at the terminal end of the line. The flush valves shall have an above-ground discharge and shall be protected from contamination.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0904 PIPE LAYING

Trenching, pipe laying, and backfilling shall be accomplished in a manner to prevent damage and mis-alignment of the pipe. Water mains shall be buried to a depth below the frostline or to a depth sufficient to provide a minimum of 30 inches cover, whichever is greater.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0905 TESTING NEW WATER MAINS

New water mains shall be tested for leakage and any necessary repairs and re-testing shall be accomplished as specified in AWWA standards.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0906 RELATION OF WATER MAINS TO SEWERS

(a) Lateral Separation of Sewers and Water Mains. Water mains shall be laid at least 10 feet laterally from existing or proposed sewers, unless local conditions or barriers prevent a 10-foot lateral separation--in which case:

(1) The water main is laid in a separate trench, with the elevation of the bottom of the water main at least 18 inches above the top of the sewer; or

(2) The water main is laid in the same trench as the sewer with the water main located at one side on a bench of undisturbed earth, and with the elevation of the bottom of the water main at least 18 inches above the top of the sewer.

(b) Crossing a Water Main Over a Sewer. Whenever it is necessary for a water main to cross over a sewer, the water main shall be laid at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer, unless local conditions or barriers prevent an 18 inch vertical separation--in which case both the water main and sewer shall be constructed of ferrous materials and with joints that are equivalent to water main standards for a distance of 10 feet on each side of the point of crossing.

(c) Crossing a Water Main Under a Sewer. Whenever it is necessary for a water main to cross under a sewer, both the water main and the sewer shall be constructed of ferrous materials and with joints equivalent to water main standards for a distance of 10 feet on each side of the point of crossing. A section of water main pipe shall be centered at the point of crossing.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977.

15A NCAC 18C .0907 VALVES

(a) Valves should be installed on all branches from feeder mains, and between mains and hydrants according to the following schedule:

(1) three valves at x (crosses),
(2) two valves at T's (tees), and
(3) one valve on single hydrant branch.

(b) All valves installed in water distribution systems shall meet the appropriate AWWA Standards C 500-71 (adopted in 1971), C 504-74 (adopted in 1974), and C 507-73 (adopted in 1973) of the American Water Works Association, Inc., that are incorporated by reference including any subsequent amendments or editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter. All valves must be installed in such a manner as to be readily accessible, preferably, the use of an appropriate valve box and cover.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. April 1, 2014; March 31, 1980;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

SECTION .1000 - DISINFECTION OF WATER SUPPLY SYSTEMS

Rules .1001 - .1004 of Title 15A Subchapter 18C of the North Carolina Administrative Code (T15A.18C .1001 - .1004); has been transferred and recodified from Rules .2201 - .2204 Title 10 Subchapter 10D of the North Carolina Administrative Code (T10.10D .2201 - .2204), effective April 4, 1990.

15A NCAC 18C .1001 DISINFECTION OF NEW SYSTEMS

(a) All interior surfaces of new potable water supply systems, including wells, filters, storage tanks and distribution lines shall be thoroughly disinfected by means of hypochlorite or chlorine solutions, after which bacteriological test samples shall be collected.

(b) After disinfection the water supply shall not be placed into service until bacteriological test results of representative water samples analyzed in an approved laboratory are found to be satisfactory.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1002 DISINFECTION OF WELLS

(a) After water supply wells have been cleaned of foreign substances, including sediment, grease and oil, the wells shall be disinfected by the addition of chlorine solution in concentrations sufficient to produce a minimum chlorine residual of 100 milligrams per liter (or ppm) in the entire water column within the well casing.

(b) The chlorine solution shall remain in the well for a period of 24 hours. The well shall then be pumped until the water is free of chlorine.

(c) A representative sample or samples of the water shall be collected and analyzed by a certified laboratory. If bacteriological tests indicate that the water is free of bacteriological contamination, the well may be placed in service.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994.

15A NCAC 18C .1003 DISINFECTION OF STORAGE TANKS AND DISTRIBUTION SYSTEMS

(a) Water distribution systems, including storage tanks and water mains, after flushing to remove sediment and other foreign matter, and after testing for leaks, shall be disinfected by the addition and thorough dispersion of a chlorine solution in concentrations sufficient to produce a chlorine residual of at least 50 milligrams per liter (or ppm) in the water throughout the distribution system, including all water mains and storage tanks.

(b) The chlorine solution shall remain in contact with interior surfaces of the water system for a period of 24 hours. Then the water system shall be flushed with fresh water from an approved water source until the chlorine solution is dispelled.

(c) Representative samples of the water shall then be collected. If bacteriological tests of the samples indicate that the water quality is satisfactory, the water mains and storage tanks may be placed in service.

(d) In unusual situations where large volume tanks are involved and where there is not sufficient water available to fill the tank or there is not available a suitable drainage area for the chlorinated water, an alternate disinfection procedure for tanks may be proposed. Such proposal must be submitted in writing completely describing the proposed disinfection procedure and substantiating the need for an alternate procedure in the particular circumstance. Such alternate procedure must be approved before being implemented. The conclusion of the department shall be final.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. January 1, 1978.

15A NCAC 18C .1004 DISINFECTION OF FILTERS

(a) After filters have been thoroughly backwashed to remove dust, silt and other foreign matter the entire filter (including filter media, supporting material and underdrain system) shall be disinfected by application of a chlorine solution having a minimum concentration of 50 milligrams per liter (or ppm).

(b) The solution shall be dispersed throughout the filter bed and remain in contact for a minimum of 24 hours.

(c) For treatment equipment that cannot tolerate chlorine, alternate disinfection procedures as recommended by the equipment manufacturer may be used if equivalent to the disinfection procedure using chlorine.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994.

SECTION .1100 - PROTECTION OF UNFILTERED PUBLIC WATER SUPPLIES

Rules .1101 - .1108 of Title 15A Subchapter 18C of the North Carolina Administrative Code (T15A.18C .1101 - .1108); has been transferred and recodified from Rules .1201 - .1208 Title 10 Subchapter 10D of the North Carolina Administrative Code (T10.10D .1201 - .1208), effective April 4, 1990.

15A NCAC 18C .1101 WATERSHED AREA

No dwelling house, pasture, hog lot, cattle or horse barn, or other areas where domestic animals are confined or permitted, and no parks, camping grounds or other places of public assembly shall be permitted within the watershed area of an unfiltered public water system. The watershed area shall be posted in accordance with Rule .1107 of this Section.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; September 1, 1990; September 1, 1979;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1102 AUTHORIZED PERSONS WITHIN WATERSHED AREA

No persons, other than a duly authorized representative of the person or company supplying the water from an unfiltered public water system or a representative of the local health department, or the Department, or a game warden, state forester or

law enforcement officer, or a representative of the U.S. Park Service or U.S. Forest Service shall be permitted within the area of the watershed of an unfiltered public water system at any time and for any purpose unless the Department determines that the proposed activity does not adversely affect the quality of the water.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; September 1, 1990; September 1, 1979;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1103 HUNTING: FISHING: OR HIKING

Hunting, fishing, or hiking shall not be permitted within the watershed area.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. September 1, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1104 DISPOSAL OF CARCASSES

The carcass of any dead animal found within the watershed area of an unfiltered community water system shall be buried by the owner or person in charge of the animal and by the person owning or in charge of the land upon which the animal dies with a covering of at least three feet of earth, or the carcass shall be burned, or removed from the watershed and buried as required by G.S. 106-403. In no case shall dead animals be placed in the reservoir or the tributaries of an unfiltered community water system.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. September 1, 1979;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1105 PROHIBITED CONDUCT ON WATERSHED

No timbering, lumbering, construction, or reforestation operations shall be permitted on the watershed of an unfiltered public water system unless the Department determines that the project will provide for the sanitary and physical protection of the water supply during such operations. The applicant shall submit a project plan describing the nature and scope of the project and precautions for protection of the water supply.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; September 1, 1990; September 1, 1979;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1106 INSPECTION OF WATERSHEDS

The person or company supplying water from the watershed of an unfiltered source shall employ an adequate number of responsible inspectors and cause satisfactory inspection of the watershed to be made at least at quarterly intervals to assure that the watershed area is at all times maintained in a manner that will promote and insure the sanitary and physical protection of the supply. A copy of the watershed inspection report shall be submitted to the Public Water Supply Section, within ten days after completion of the inspection.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. September 1, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1107 WATERSHED BOUNDARY SIGNS

Signs advising the public of the watershed boundaries and prohibiting trespassing by all unauthorized persons shall be posted at the water works intake and along the boundaries and at entrances and accesses throughout the watershed area of an unfiltered public water system. It shall be the duty of the watershed inspectors and other water supply officials to see that these signs are posted and maintained.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; September 1, 1979;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1108 CONTINUOUS DISINFECTION OF WATER SUPPLY

The water supply shall be continuously disinfected by means of chlorination or by other methods approved by the Commission for Public Health. Equipment shall be provided to assure uninterrupted disinfection.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

SECTION .1200 - PROTECTION OF FILTERED WATER SUPPLIES

15A NCAC 18C .1201 RECREATIONAL ACTIVITIES

(a) No recreational activities shall be permitted on a class I or class II reservoir without a resolution by the commission or without approval by the Department. The Department may approve recreational events on a class I or class II reservoir which last one day or less upon a showing that the recreational event will not adversely affect the quality of the water to the point of rendering it unsuitable as a source for a public water system. All other recreational activities on a class I or class II reservoir shall be permitted only upon a resolution by the commission authorizing the activity.

(b) Upon request for such a resolution, the Division shall make or cause to be made a thorough investigation of the quality of the water to determine the extent to which the proposed recreational activities would adversely affect the quality of the water. If, after such investigation, the Commission for Public Health is of the opinion that the proposed recreational activities will not adversely affect the quality of the water to the point of rendering it unsuitable as a source of public water system, the Commission for Public Health may adopt a resolution authorizing the proposed recreational activities.

(c) Only those recreational activities specifically authorized in the resolution will be allowed. No recreational activities shall be permitted within 50 yards of any public water system intake.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. October 1, 1985; September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .1301 Eff. April 4, 1990;
Amended Eff. July 1, 1994; September 1, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1202 PROTECTION OF WATER QUALITY

The issuance of a resolution by the Commission for Public Health for recreational activities on public water supply reservoirs shall be contingent upon the governing authority establishing provisions for adequate sanitation facilities, supervision and police control to insure the protection of the water quality.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Transferred and Recodified from 10 NCAC 10D .1311 Eff. April 4, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1203 MAINTENANCE OF PARKS

Parks or other places of resort for the use and entertainment of the public which may be established and maintained on a watershed shall be provided with sanitary facilities for the collection of garbage and disposal of sewage. Such facilities must not cause deterioration of water quality. Persons in charge of such facilities must maintain these facilities at all times in order to prevent the pollution of the public water system.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .1302 Eff. April 4, 1990;
Amended Eff. July 1, 1994; September 1, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1204 FISHING

(a) Fishing shall not be permitted on any Class I or Class II public water supply reservoir without a resolution granting permission by the Commission for Public Health. In order to obtain permission, a written application shall be submitted by the owner of the water supply to the Commission for Public Health. Permission shall not be issued until an investigation has been made by an authorized representative of the Division of Water Resources and a determination made that fishing in the reservoir shall not adversely affect the water quality.

(b) The application requesting permission to fish in any reservoir shall be accompanied by sufficient evidence (such as ordinances adopted by the applicant) to insure that the following requirements shall be enforced by the applicant:

(1) Fishing shall be permitted only from boats owned or controlled by the applicant. Boats will at all times be under the supervision and jurisdiction of a responsible representative of the applicant. Bank fishing may be permitted in restricted supervised areas with proper sanitation facilities when included as a specific, listed activity and approved by the Commission for Public Health.

(2) A sufficient number of wardens and watershed inspectors shall be employed at all times to insure that no acts of urination, defecation, or other acts which would defile the water supply are committed by any person while fishing in the public water supply reservoir.

(3) A dock shall be provided or controlled by the applicant for the purpose of docking fishing boats. No boat shall enter or leave the reservoir except from a ramp owned or controlled by the applicant.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .1303 Eff. April 4, 1990;
Amended Eff. April 1, 2014; September 1, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1205 PERMISSION TO FISH

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Transferred and Recodified from 10 NCAC 10D .1501 Eff. April 4, 1990;
Repealed Eff. September 1, 1990.

15A NCAC 18C .1206 ENFORCEMENT OF FISHING REQUIREMENTS

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Transferred and Recodified from 10 NCAC 10D .1502 Eff. April 4, 1990;
Repealed Eff. September 1, 1990.

15A NCAC 18C .1207 ANIMALS IN RESERVOIR

The watering, washing or wallowing of any horses, mules, cattle, or domestic animals shall not be permitted in any class I or class II reservoir. The supplier of water may permit domestic animals within 50 feet of normal pool elevation if the animal is under direct supervision by a person and the activity is regulated by the supplier of water to ensure that water quality is not adversely affected.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Transferred and Recodified from 10 NCAC 10D .1304 Eff. April 4, 1990;
Amended Eff. July 1, 1994;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1208 CONTROLLING THE DRAINAGE OF WASTES

Precautions shall be taken on the watershed of class I and class II reservoirs and water intakes located on unimpounded streams to control the drainage of wastes from animal and poultry pens or lots, into such sources.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Transferred and Recodified from 10 NCAC 10D .1305 Eff. April 4, 1990;
Amended Eff. September 1, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1209 UNTREATED DOMESTIC SEWAGE OR INDUSTRIAL WASTES

No treated or untreated domestic sewage, treated or untreated industrial waste or by-products shall be stored on the watershed of or discharged into any public water supply reservoir or stream tributary to that reservoir whose waters are classified as WS-I. No untreated domestic sewage or industrial waste by-products shall be discharged into any public water supply reservoir or stream classified as WS-II, WS-III, WS-IV, or WS-V. No hazardous waste, industrial by-products, treated or untreated domestic sewage shall be stored in the watershed of a Class I or Class II water supply reservoir. No hazardous waste or industrial by-products shall be stored in the watershed of a WS-II, WS-III, WS-IV, or WS-V stream unless precautions are taken to prevent its being spilled into or otherwise entering the raw water supply.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. February 1, 1987;
Transferred and Recodified from 10 NCAC 10D .1306 Eff. April 4, 1990;

Amended Eff. July 1, 1994; September 1, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1210 SEWAGE DISPOSAL

Any residence, place of business or public assembly, located on a watershed shall be provided with a sanitary means of sewage disposal.

History Note: *Authority G.S. 130A-315; 130A-320;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Transferred and Recodified from 10 NCAC 10D .1309 Eff. April 4, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1211 GROUND ABSORPTION SEWAGE COLLECTION: TREATMENT/DISP SYSTEMS

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. February 1, 1987;
Amended Eff. December 1, 1988;
Transferred and Recodified from 10 NCAC 10D .1313 Eff. April 4, 1990;
Amended Eff. July 1, 1994; September 1, 1990;
Expired Eff. December 1, 2015 pursuant to G.S. 150B-21.3A.

15A NCAC 18C .1212 BURIAL OF CARCASSES

The carcass of any dead animal found within the watershed shall be buried by the owner or person in charge of the animal or the person owning or in charge of the land upon which the animal dies with a covering of at least three feet of earth or the carcass shall be burned or removed from the watershed and buried as required by G.S. 106-403. In no case shall dead animals be placed in the reservoir.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Transferred and Recodified 10 NCAC 10D .1307 Eff. April 4, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1213 BURIAL GROUND

No burial ground shall be established on any watershed within 1,500 feet upstream from a public water supply intake on an unimpounded stream or within 300 feet of any class I or class II reservoir.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Transferred and Recodified from 10 NCAC 10D .1308 Eff. April 4, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1214 DISPOSAL OF ANY SUBSTANCE

Any person who intends to dispose of or store any substance that may adversely affect the quality of the water, to the point of rendering the water unsuitable as a source for a public water system, shall notify the Division prior to disposal or storage. The notification shall be in writing and shall list any substances that will be disposed of or stored. No substances shall be disposed of or stored without the Division's approval. The owner of the water supply shall be responsible for maintaining surveillance of the reservoirs and watersheds to insure protection of the water quality and shall notify the Department of any activities that may endanger water quality.

History Note: *Authority G.S. 130A-315; 130A-320; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Transferred and Recodified from 10 NCAC 10D .1310 Eff. April 4, 1990;
Amended Eff. September 1, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

SECTION .1300 - OPERATION OF PUBLIC WATER SUPPLIES

Rules .1301 - .1303 of Title 15A Subchapter 18C of the North Carolina Administrative Code (T15A.18C .1301 - .1303); has been transferred and recodified from Rules .1101 - .1103 Title 10 Subchapter 10D of the North Carolina Administrative Code (T10.10D .1101 - .1103), effective April 4, 1990.

15A NCAC 18C .1301 GENERAL REQUIREMENTS

(a) For the purposes of this Section,

(1) A "facility" is defined as any individual operational unit or a combination of operational units that a public water system uses in the treatment or distribution of drinking water.

(2) Any "operator" referenced in this Section shall hold a valid certificate issued by the North Carolina Water Treatment Facility Operators Certification Board. An "Operator in Responsible Charge (ORC)" designated for each facility shall hold a grade of certification corresponding to or higher than the classification of the facility.

(b) Treatment facility. The supplier of water shall have an Operator in Responsible Charge (ORC), as required by 15A NCAC 18D .0206. The ORC or certified treatment facility operator working under the direction of the ORC shall be familiar with the entire water system, including the chlorinators, piping and other appurtenances pertaining to the operation of the treatment plant and the distribution system.

(c) Distribution facility. The collection of distribution system samples and field measurements required on monthly operation reports, including residual disinfectant testing in the distribution system in accordance with Rule .1302(a)(2)(A) of this Section may be performed by a person under the ORC's direction, subject to the following provisions:

(1) The standard operating procedures plan prepared in accordance with 15A NCAC 18D .0701(f) shall include procedures for sampling and for performing residual disinfectant tests and other field measurements.

(2) In order to report low residual disinfectant test readings or other problems, the designee shall, at all times, be able to contact the ORC or certified operator working under the direction of the ORC, who shall take corrective action as needed to keep the system in compliance.

History Note: *Authority G.S. 90A-29; 130A-315; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. October 1, 2009; July 1, 1994; September 1, 1990; June 30, 1980; September 1, 1979;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1302 TESTS, FORMS AND REPORTING

(a) Required tests. If a public water system uses disinfectants or other chemicals for the treatment of water, residual disinfectant tests and other applicable water quality tests required by this Subchapter shall be made during every oversight visit to the facility required by Rule .1303 of this Section. Residual disinfectant concentrations shall be maintained in accordance with 15A NCAC 18C .2002 and .2201 and shall be tested as follows:

(1) Residual disinfectant tests at the entry point. For systems providing treatment, residual disinfectant concentrations shall be measured in the water entering the distribution system by the operator during every visit required by Rule .1303(a) of this Section.

(2) Residual disinfectant tests in the distribution system shall be performed as follows:

(A) Residual disinfectant concentrations shall be measured weekly at locations that represent maximum residence time of the water in the distribution system or at other locations with high

water age. These locations shall be designated on the sample siting plan required under 15A NCAC 18C .1534. The number of required weekly tests is shown in Table A below. Samples collected on the same day must be collected from different locations.

Table A: Measurement Requirements for Residual Disinfectant Concentrations and Chloramine Operational Parameters

Distribution System Classification according to 15A NCAC 18D .0205(b)	Minimum Number of Samples Per Week
D	1
C	3
A and B	5

(B) Distribution systems classified as C or D in Table A may request the Department to reduce the requirements for measuring residual disinfectant concentrations in the distribution system at the locations that represent maximum residence time or other locations with high water age as required in Part (a)(2)(A) of this Rule. The request shall be in writing and shall demonstrate to the Department that the residual disinfectant concentrations measured at the entry point in accordance with Subparagraph (a)(1) of this Rule are sufficient in providing the minimum residual disinfectant concentrations required under 15A NCAC 18C .2002 and .2201. The Department shall consider the presence of continuous monitoring, size and configuration of the distribution system, magnitude of disinfectant degradation and results of performance studies.

(3) Chloramine Operational Parameters. When ammonia and chlorine are applied disinfectants, the system shall measure analytical parameters pertinent to the operation as follows:

(A) Water entering the distribution system. Parameters to be measured shall, at a minimum, include total chlorine, monochloramine, free ammonia, and pH and shall be performed daily, while the treatment facility is in operation.

(B) Water in the distribution system. Parameters to be measured shall, at a minimum, include total chlorine, monochloramine, free ammonia, and pH and shall be measured no less often than denoted in Table A.

(b) Forms, Reports and Records. A public water system shall report and retain records as follows:

(1) Test results shall be documented and reported monthly on forms and in a format provided by the Department and shall be signed by the ORC. Copies of report forms may be obtained from the Public Water Supply Section. The monthly report shall be submitted by the 10th day of the following month to the Public Water Supply Section.

(2) The forms and reports shall be in an electronic format provided by the Department for water systems owned or operated by local governments and all community water systems serving 1,000 or more service connections or 3,000 or more individuals, regardless of ownership, effective April 1, 2010. Community water systems serving less than 1,000 service connections and less than 3,000 individuals and all non-transient, non-community water systems shall report test results in an electronic format provided by the Department effective October 1, 2010. The Department may waive the requirement for electronic submission in accordance with G.S. 130A-329. Requests for waivers shall be submitted in writing to the Department no less than two months prior to the deadline.

(3) Records documenting compliance with Section .1300 shall be retained on the premises of the water system for a minimum of three years.

History Note: *Authority G.S. 90A-29; 130A-315; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. October 1, 2009; July 1, 1994; September 1, 1990; February 1, 1987; June 30, 1980;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1303 FACILITY OVERSIGHT

(a) Treatment Facility Oversight. At a minimum, the supplier of water shall ensure that during each oversight visit required by this Rule the water system's treatment facility receives a routine visual inspection from the source to the point where water enters the distribution system; equipment settings are adjusted and chemical feed tanks are filled as necessary; dates and quantities of chemicals added are recorded; and the physical and chemical tests required on plant monthly operation reports are performed. In addition, the supplier of water shall have an ORC, or a certified treatment facility operator working under the direction of the ORC, on site as frequently as necessary to ensure compliance with the requirements of this Section and Subchapter. At least one visit per week shall be performed by the ORC for the treatment facility or by an operator with a grade of certification corresponding to or higher than the classification of the facility. The supplier of water shall provide oversight at a public water system treatment facility while the facility is in operation, as follows:

(1) Surface Water or Groundwater Under the Direct Influence (GWUDI) of Surface Water Treatment Facilities. Surface water or GWUDI systems shall provide an operator as required in 15A NCAC 18D .0206 and shall have the ORC or an operator with a grade of certification corresponding to or higher than the classification of the facility on-site at least 20 percent of the time the facility is in operation, as calculated on a weekly basis.

(2) Ground Water Treatment Facilities. The requirements for ground water treatment facilities are as follows:

(A) Ground water treatment facilities with any individual parameter rating value of 10 or higher as classified by 15A NCAC 18D .0203 shall be visited by an operator daily.

(B) Ground water treatment facilities with all individual parameter rating values less than 10 as classified 15A NCAC 18D .0203 shall be visited by an operator as often as necessary to ensure compliance with the requirements of this Subchapter but no less often than denoted in Table B below. For the standard frequency of three times per week, no more than two consecutive days shall pass between operator oversight visits. For the standard frequency of two times per week, no more than three consecutive days shall pass between operator oversight visits.

(3) Supplemental Treatment Facilities. The requirements for supplemental treatment facilities are as follows:

(A) A supplemental treatment facility, including booster chlorination, is a facility designed to treat water that has previously been treated to meet standards of the "North Carolina Drinking Water Act." Supplemental treatment facilities with any individual parameter rating value of 10 or higher as designated by 15A NCAC 18D .0203 shall be visited by an operator daily.

(B) Supplemental treatment facilities with all individual parameter rating values less than 10 as designated by 15A NCAC 18D .0203 shall be visited by an operator as often as necessary to ensure compliance with the requirements of this Subchapter but no less often than denoted in Table B below. For the standard frequency of three times per week, no more than two consecutive days shall pass between operator oversight visits. For the standard frequency of two times per week, no more than three consecutive days shall pass between operator oversight visits.

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Table B: Standard Frequency of Oversight Visits for Ground Water and Supplemental Treatment Facilities

SYSTEM TYPE	Population size	standard frequency of oversight VISITS
Community	> 10,000 > 3,300 to 9,999 501 to 3,300 500 or fewer	Daily Five times per week Three times per week Two times per week
Non-transient, non-community	> 1,000 1,000 or fewer	Three times per week Two times per week
Transient, non-community	Any population size	Once per week, unless an ORC is not required by 15A NCAC 18D .0206

(b) Distribution Facility Oversight. Distribution facilities have no specified standard frequency of oversight visits under this Section. The distribution facility shall be visited by the operator as frequently as necessary to operate the facility, provide emergency response and ensure compliance with the requirements of this Section and Subchapter.

(c) Increased Frequency of Oversight. The requirements for increasing the frequency of oversight visits are:

(1) A system that fails to maintain any operational parameter or has any failure of the treatment or distribution facility that would cause a violation of water quality or treatment standards of Section .1500 of this

Subchapter shall be visited by the operator daily until the system has returned to compliance, as determined by the Department. Daily visits shall be required for all systems failing to maintain minimum residual disinfectant concentrations under Rules .2002 or .2201 of this Subchapter or maximum residual disinfectant levels under Rule .2008 of this Subchapter until compliant disinfection levels are restored, regardless of the standard frequency of oversight visits for that system.

(2) The Department may require additional operator oversight visits for a system that has a violation of this Subchapter, an equipment malfunction, a customer complaint, an emergency or other situation that may affect the ability of the system to comply with the requirements of this Subchapter. In determining the frequency and duration of increased oversight visits, the Department shall consider the following:

(A) nature of the malfunction, complaint, emergency or other situation;
(B) degree of risk to the public health or welfare;
(C) size and type of population exposed;
(D) type of treatment and chemicals used by the water system;
(E) type, size, and configuration of the distribution system; and
(F) potential or actual damage to property or the environment.

(d) Reduced Frequency of Oversight. The Department may grant written approval to reduce the standard frequency of operator oversight visits of this Subchapter to not less than once per week if a system can document compliance with this Subchapter and any of the following:

(1) Equivalent public health protection is provided through use of remotely controlled continuous monitoring and recording technology. The recorded data must be reviewed at a minimum of five days a week. This technology must be capable of contacting the operator 24 hours a day, seven days a week in case of operational failure, including a loss of signal.

(2) Equivalent public health protection is provided by operator visits less frequent than those specified under Part (a)(2)(B) of this Rule based on a facility's overall contribution to the daily flow of the water system and the system's proposed alternative plan and schedule.

(3) Equivalent public health protection is provided through use of process control devices and standard operating procedures to ensure that no chemical misfeeds can occur and include all of the following, at a minimum:

(A) wiring of chemical pumps to the well pumps such that they must operate simultaneously;
(B) devices to regulate chemical feeds such that overfeeding and underfeeding of chemicals is prevented;
(C) anti-siphoning devices installed to prevent siphonage of chemicals into the water system;
(D) demonstration that adequate chemical storage and supply is available to ensure continuous feed between visits; and
(E) equipment is calibrated in accordance with manufacturers' recommendations but in no case less than once per year.

History Note: *Authority G.S. 90A-29; 130A-315; P.L. 93-523;*
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. October 1, 2009; July 1, 1994; September 1, 1990; June 30, 1980; September 1, 1979;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1304 WATER SYSTEM OPERATION AND MAINTENANCE

(a) Water systems shall be operated and maintained in accordance with applicable approved engineering plans and specifications, Water System Management Plan and Operation and Maintenance Plan.

(b) Water systems shall be operated and maintained in accordance with 15A NCAC 18D, Rules Governing Water Treatment Facility Operators, Rule .0206 and G.S. 90A-29.

History Note: *Authority G.S. 90A-29; 130A-315; P.L. 93-523;*
Temporary Adoption Eff. October 1, 1999;
Eff. August 1, 2000;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1305 SOURCE WATER PROTECTION PLANNING

(a) In compliance with G.S. 130A-320, every supplier of water operating a public water system treating and furnishing water from a surface water source shall create and implement a Source Water Protection Plan (SWPP) based upon the following schedule:

(1) Water systems that have a single source of supply and a source susceptibility rating of higher or moderate, as determined by the Department, shall create and implement a SWPP by January 1, 2021.

(2) Water systems that have multiple sources of supply and any source susceptibility rating of higher, as determined by the Department, shall create and implement a SWPP by January 1, 2022.

(3) All other water systems treating and furnishing water from surface water sources shall create and implement an SWPP by January 1, 2023.

(4) Any public water system that begins treating and furnishing water from a surface water source on or after January 1, 2021 shall create and implement a SWPP that satisfies the requirements of this Rule prior to the commencement of its operations.

(b) Any public water system required to create and implement a SWPP in accordance with this Rule shall review and update their SWPP at three year intervals from the creation deadline specified in Paragraph (a) of this Rule. Updated information in the SWPP must address the plan elements listed in Paragraph (c) of this Rule.

(c) Each SWPP shall contain the following elements:

(1) A list of potential contaminant sources (PCSs), both provided by the Department and identified by the water system, located in the following areas as defined in Classifications and Water Quality Standards Applicable to Surface Waters and Wetlands of North Carolina, 15A NCAC 02B .0200, which is hereby incorporated by reference, including subsequent amendments and editions and can be found at no charge at http://portal.ncdenr.org/c/document_library/get_file?uuid=f12e8078-b128-44cc-b55b-fc5e7d876f3c&groupId=38364;

(A) within the entire watershed for waters classified as WS-I;

(B) within the critical area and 1,000 feet from perennial streambanks within the protected area for waters classified as WS-II and WS-III;

(C) within the critical area and 1,000 feet from perennial streambanks, within the protected area for waters classified as WS-IV;

(D) within ½ mile from the normal pool elevation in which the intake is located, or to the ridge line of the watershed, whichever comes first, for a reservoir within waters classified as WS-V; and

(E) within ½ mile, measured as a straight line, upstream from and draining to the intake located directly in the stream or river, or to the ridge line of the watershed, whichever comes first, for a direct-stream intake within waters classified as WS-V.

(2) For community water systems, a contingency strategy that documents the system's planned response to an emergency event or contamination of its water source(s) that includes the following:

(A) identification and contact information of personnel responsible for emergency management, including water system, local, State, and federal emergency response personnel;

(B) identification of foreseeable natural and human-caused emergency events including water shortages and outages;

(C) description of the emergency response strategies for each identified shortage or outage event and each potential contamination event associated with PCSs identified and listed in Subparagraph (c)(1) of this Rule;

(D) standard operating procedures to close intakes and switch to an alternate intake during a contamination event, including procedures that outline exercises designed to practice closure and switching of the intake(s);

(E) description of public notification procedures; and

(F) identification and evaluation of all facilities and equipment that upon failure would result in a water outage or violations of the Rules Governing Public Water Systems, 15A NCAC 18C.

(3) For non-transient, non-community water systems, the contingency strategy shall contain the positions and phone numbers of responsible persons to contact in the event of an emergency, including water system, local, State, and federal emergency contacts.

(4) An evaluation of a water system's ability to take the following actions:

(A) close its water intake(s) in the event of contamination, including a determination of the duration of time the water intake(s) can remain closed while maintaining positive water pressure within the distribution system;
(B) isolate or divert contaminated water from its surface water intake(s);
(C) reduce demand by implementing conservation measures during a contamination event. Water Shortage Response Plans can be referenced to fulfill this requirement for water systems required to prepare a Water Shortage Response Plan under 15A NCAC 02E .0607, which is hereby incorporated by reference, including subsequent amendments and editions and can be found at no charge at http://reports.oah.state.nc.us/ncac/title%2015a%20–%20environmental%20quality/chapter%2002%20–%20environmental%20management/subchapter%20e/15a%20ncac%2002e%20.0607.pdf; and
(D) meet demand via alternate sources of supply in the event of contamination or loss of its primary water source.

(5) Verification of outreach efforts provided to the owners of the PCSs identified in Subparagraph (c)(1) of this Rule to raise awareness of the proximity of the drinking water intake(s) and provide emergency contact information for use during a contamination event.
(6) A description of proactive activities and management strategies designed to protect the source(s) from contamination, including documentation of any voluntary source water protection activities that have been implemented by the water system.
(7) Description of public awareness communication efforts that include the following:
(A) publication of the emergency and source water protection planning status, the next revision date, and a reference to this Rule in the community water system's annual Consumer Confidence Report, as required by 15A NCAC 18C .1538; and
(B) notification to any other public water system to which the system is directly interconnected of the contingency strategy set forth in Subparagraph (c)(2) of this Rule. A description of this communication shall be maintained in the SWPP.

(d) The supplier of water shall maintain a copy of the current SWPP onsite at each water treatment facility and make the SWPP available to personnel responsible for emergency management and operator(s) on duty at all times. The SWPP and any associated documentation used in its creation and implementation shall be available for review by Section staff upon request.
(e) The supplier of water shall certify that a SWPP has been created and implemented, and that the water system's governing body has been advised of the SWPP creation and implementation. The certification shall be submitted to the Department by the deadline specified in Paragraph (a) of this Rule.
(f) The supplier of water shall certify that a SWPP has been revised and that the water system's governing body has been advised of the revision. The certification shall be submitted to the Department by the revision deadline specified in Paragraph (b) of this Rule.

History Note: *Authority G.S. 130A-315; 130A-320(c);*
Eff. January 1, 2019.

SECTION .1400 - FLUORIDATION OF PUBLIC WATER SUPPLIES

Rules .1401 - .1409 of Title 15A Subchapter 18C of the North Carolina Administrative Code (T15A.18C .1401 - .1409); has been transferred and recodified from Rules .0601 - .0609 Title 10 Subchapter 10D of the North Carolina Administrative Code (T10.10D .0601 - .0609), effective April 4, 1990.

15A NCAC 18C .1401 POLICY

Upon receipt of an application from a community water system to fluoridate its water supply, the Department will approve the application provided the rules for fluoridation pursuant to this Section are followed.

History Note: *Authority G.S. 130A-316;*
Eff. February 1, 1976;
Readopted Eff. December 5, 1977;
Amended Eff. September 1, 1990; September 1, 1979;

Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1402 FORMAL APPLICATION

(a) Fluoride shall not be added to a community water system until a formal application has been submitted to and written approval is granted by the Secretary of the Department.

(b) Such approval will be considered upon written application and after adequate investigation has been made to determine if the policy adopted by the Division has been satisfied and the facilities, their accuracy and the proposed method of control are satisfactory and meet the requirements hereafter stated.

(c) The application shall include a resolution by the unit of local government or the governing body operating the community water system. The resolution shall state that the local board of health has approved the proposed fluoridation procedure.

History Note: *Authority G.S. 130A-316;*
Eff. February 1, 1976;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1993; September 1, 1990; September 1, 1979;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1403 RESOLUTION

History Note: *Authority G.S. 130A-316;*
Eff. February 1, 1976;
Readopted Eff. December 5, 1977;
Repealed Eff. July 1, 1990 in accordance with G.S. 150B-59(c).

15A NCAC 18C .1404 FEEDING EQUIPMENT

Accurate feeding equipment shall be provided for applying fluoride. Either gravimetric or volumetric dry-feed equipment or positive displacement liquid-feed equipment with accuracy within five percent shall be required.

History Note: *Authority G.S. 130A-316;*
Eff. February 1, 1976;
Readopted Eff. December 5, 1977;
Amended Eff. September 1, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1405 PROTECTION OF OPERATORS

(a) Special precautions shall be taken to protect the operators from inhaling fluoride dust when handling this chemical and while charging the hoppers of the feeders.

(b) Dry feeders shall be equipped with dust collectors consisting of bag filters operating under positive air pressure and vented to the outside air.

(c) Each operator who handles fluoride shall be provided with his individual toxic dust respirator to be used only when handling the chemical.

(d) When liquid or solution feed equipment is used, special precautions against siphonage and improper chemical mixing must be provided after consultation with and approval by the Department.

History Note: *Authority G.S. 130A-316;*
Eff. February 1, 1976;
Readopted Eff. December 5, 1977;
Amended Eff. September 1, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1406 CONTROL OF TREATMENT PROCESS

(a) The treatment process shall result in the adjustment of fluoride ion (F-) in the treated water to 1.0 mg/liter.
(b) A water treatment plant operator certified under 15A NCAC 18D shall conduct the necessary chemical analyses and supervise application of the fluoride.
(c) Samples shall be collected and analyzed from points before and after fluoridation and from one or more points in the distribution system. The minimum number of control tests required and the number of check samples to be collected and submitted to the North Carolina State Laboratory of Public Health for analysis shall be determined by the Department in conjunction with the State Health Director, based on guidance from the Center for Disease Control, and considering recommendations from the local health department and the supplier of water.
(d) The fluoride content of the water shall be determined in accordance with methods in Rule .1508 of this Subchapter.
(e) Accurate records of the amount of fluoride applied to the water and the results of all fluoride analyses shall be recorded on forms approved by the Department and submitted to the Department weekly.
(f) Any fluoridation product used by a water system shall meet the requirements of Rule .1537 of this Subchapter.

History Note: *Authority G.S. 90A-29; 130A-316;*
Eff. February 1, 1976;
Readopted Eff. December 5, 1977;
Amended Eff. April 1, 2014; July 1, 1994; September 1, 1990; December 17, 1979.

15A NCAC 18C .1407 APPROVAL MAY BE RESCINDED

Failure to thoroughly and effectively carry out the requirements governing the application of fluoride, or for other good cause, shall be considered sufficient cause to rescind the approval of the Department and to withdraw the authorization granted for the permission to add fluoride to a community water system.

History Note: *Authority G.S. 130A-316;*
Eff. February 1, 1976;
Readopted Eff. December 5, 1977;
Amended Eff. September 1, 1990; September 1, 1979;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1408 SEVERABILITY

History Note: *Authority G.S. 130A-316;*
Eff. February 1, 1976;
Readopted Eff. December 5, 1977;
Repealed Eff. July 1, 1990 in accordance with G.S. 150B-59(c).

15A NCAC 18C .1409 REFERENCE RULES

History Note: *Authority G.S. 130A-316;*
Eff. February 1, 1976;
Amended Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. December 17, 1979;
Repealed Eff. September 1, 1990.

SECTION .1500 - WATER QUALITY STANDARDS

15A NCAC 18C .1501 PURPOSE

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .1610 Eff. April 4, 1990;
Repealed Eff. September 1, 1990.

15A NCAC 18C .1502 MONITORING OF CONSECUTIVE PUBLIC WATER SYSTEMS

(a) When a public water system supplies water to one or more other public water systems the Department may modify the monitoring requirements imposed by this Section to the extent that the interconnection of the systems justifies treating them as a single system for monitoring purposes. Any modified monitoring shall be conducted pursuant to a schedule specified by the Department and concurred in by the Administrator of the U.S. Environmental Protection Agency.

(b) All public water systems which purchase water for resale and which do not provide any treatment except booster chlorination will be required to perform bacteriological monitoring in accordance with Rule .1534 of this Section.

(c) The Department may exempt a public water system that obtains treated water from another public water system serving more than 10,000 persons from conducting compliance monitoring for the organic chemicals under 15A NCAC 18C .1518(a), provided that the system from which the water is obtained has conducted the analyses required under 15A NCAC 18C .1518(a). Exempted public water systems which disinfect are required to monitor under 15A NCAC 18C .1516.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Amended Eff. June 1, 1988;
Transferred and Recodified from 10 NCAC 10D .1628 Eff. April 4, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1503 MICROBIOLOGICAL CONTAMINANT SAMPLING AND ANALYSIS
15A NCAC 18C .1504 MAXIMUM MICROBIOLOGICAL CONTAMINANT LEVELS

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Amended Eff. March 1, 1989; December 1, 1988; March 31, 1981; December 19, 1979;
15A NCAC 18C .1503 was Transferred and Recodified from 10 NCAC 10D .1622
Eff. April 4, 1990;
15A NCAC 18C .1504 was Transferred and Recodified from 10 NCAC 10D .1613
Eff. April 4, 1990;
Amended Eff. September 1, 1990;
Repealed Eff. January 1, 1991.

15A NCAC 18C .1505 TURBIDITY SAMPLING AND ANALYSIS

The requirements of this Rule shall apply only to public water systems that use water obtained in whole or in part from surface sources. The provisions of 40 C.F.R. 141.22 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter. Any dates set forth in the federal rule shall be applicable.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Amended Eff. March 31, 1981; December 19, 1979;
Transferred and Recodified from 10 NCAC 10D .1623 Eff. April 4, 1990;
Amended Eff. April 1, 2014; August 1, 2002; January 1, 1991; September 1, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1506 MAXIMUM CONTAMINANT LEVELS FOR TURBIDITY

The requirements of this Rule shall apply to public water systems that use water obtained in whole or in part from surface water sources. The provisions of 40 C.F.R. 141.13 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter. Any dates set forth in the federal rule shall be applicable.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .1614 Eff. April 4, 1990;

Amended Eff. April 1, 2014; August 1, 2002; January 1, 1991; September 1, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1507 CORROSION CONTROL AND LEAD AND COPPER MONITORING

(a) Control and adjustment of pH shall be provided for community water systems having water with a pH below 6.5; such control and adjustment to be approved by the Department. Most waters are corrosive in varying degrees at pH 6.5 and slightly above, and such waters may have pH adjustment.

(b) The provisions of 40 C.F.R. 141.42 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

(c) The provisions of 40 C.F.R. 141, Subpart I - Control of Lead and Copper are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

(d) Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by G.S. 130A-313(10), but do not serve 25 or more of the same persons more than six months per year, shall be exempt from the provisions of this Rule.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Amended Eff. October 1, 1982; February 27, 1982;
Transferred and Recodified from 10 NCAC 10D .1621 Eff. April 4, 1990;
Amended Eff. April 1, 2014; July 1, 1994; October 1, 1992; December 1, 1991.

15A NCAC 18C .1508 INORGANIC CHEMICAL SAMPLING AND ANALYSIS

The provisions of 40 C.F.R. 141.23 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter. In addition, two or more water systems that are adjacent and are owned or operated by the same supplier of water and that together serve 15 or more service connections or 25 or more persons shall conform to the following sampling schedule:

(a) a water supplier shall submit samples every three years from each section of the water system supplied from a separate source, and

(b) travel trailer parks, campgrounds, and marina slips that are community water systems as defined by G.S. 130A-313(10), but do not serve 25 or more of the same people more than six months per year shall monitor as specified for transient non-community water systems.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Amended Eff. March 1, 1989; February 1, 1987; October 1, 1986; April 1, 1983;
Transferred and Recodified from 10 NCAC 10D .1625 Eff. April 4, 1990;
Amended Eff. April 1, 2014; July 1, 1994; April 1, 1992; December 1, 1991;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1509 SPECIAL MONITORING FOR SODIUM

(a) Suppliers of water for community water systems shall collect and analyze one sample per plant at the entry point of the distribution system for the determination of sodium concentration levels. Samples must be collected and analyzed annually for systems utilizing surface water sources in whole or in part, and at least every three years for systems utilizing solely ground water sources. The minimum number of samples required to be taken by the system shall be based on the number of treatment plants used by the system, except that multiple wells drawing raw water from a single aquifer may, with Department approval, be considered one treatment plant for determining the minimum number of samples. The supplier of water may be required by the Department to collect and analyze water samples for sodium more frequently in locations where the sodium content is variable.

(b) Suppliers of water for community water systems shall report to the Department the results of the analyses for sodium within the first 10 days of the month following the month in which the sample results were received or within the first 10 days following the end of the required monitoring period as stipulated by the Department, whichever is first. If more than annual

sampling is required, the supplier shall report the average sodium concentration within 10 days of the month following the month in which the analytical results of the last sample used for the annual average was received.
(c) The Department shall notify appropriate local health officials of the sodium levels found in community water systems.
(d) Analyses conducted to determine compliance with this Rule shall be made in accordance with methods adopted by the United States Environmental Protection Agency and codified as 40 C.F.R. 141.41(d) that are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.
(e) Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by G.S. 130A-313(10), but do not serve 25 or more of the same persons more than six months per year shall be exempt from the provisions of this Rule.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. February 27, 1982;
Transferred and Recodified from 10 NCAC 10D .1636 Eff. April 4, 1990;
Amended Eff. April 1, 2014; July 1, 1994; September 1, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1510 MAXIMUM CONTAMINANT LEVELS FOR INORGANIC CHEMICALS
(a) The provisions of 40 C.F.R. 141.11 are hereby incorporated by reference including any subsequent amendments and editions, except the maximum contaminant level for arsenic shall be regulated as set forth in Paragraph (c) of this Rule. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.
(b) The provisions of 40 C.F.R. 141.62 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.
(c) Effective January 1, 2002, the maximum contaminant level for arsenic applies to community and non-transient non-community water systems are as follows:

(1) The maximum contaminant level for arsenic is 0.010 milligrams per liter, until such time as the USEPA revises the standard to a level lower than 0.010 milligrams per liter at which time the more stringent level shall apply.
(2) Sampling, analytical requirements, and compliance calculations for arsenic shall be conducted as specified for contaminants in Rule .1508 of this Subchapter.
(3) Certified laboratories must report quantifiable results down to at least 0.005 milligrams per liter.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Amended Eff. October 1, 1986; October 1, 1982; April 1, 1982; March 31, 1981;
Transferred and Recodified from 10 NCAC 10D .1616 Eff. April 4, 1990;
Amended Eff. April 1, 1992;
Temporary Amendment Eff. January 1, 2002;
Amended Eff. April 1, 2014; April 1, 2003;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1511 CONCENTRATION OF IRON
(a) The requirements of this Rule apply only to community water systems. A community water system which has an iron concentration in excess of 0.30 mg/l shall provide treatment to control the water quality. Analysis of samples shall be made on an as needed basis determined by the Department. Such need basis shall include, but not be limited to, addition of a new well or other raw water source, approval of a new community water system, approval of an existing system not previously approved, or problems and complaints of water quality normally associated with iron concentration.
(b) Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by G.S. 130A-313(10), but do not serve 25 or more of the same persons more than six months per year shall be exempt from the provisions of this Rule.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;

Transferred and Recodified from 10 NCAC 10D .1619 Eff. April 4, 1990;
Amended Eff. July 1, 1994;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1512 CONCENTRATION OF MANGANESE

(a) The requirements of this Rule apply only to community water systems. A community water system which has a manganese concentration in excess of 0.05 mg/l shall provide treatment to control the water quality. Analysis of samples shall be made on an as needed basis determined by the Department. Such need basis shall include, but not be limited to, addition of a new well or other raw water source, approval of a new community water system, approval of an existing system not previously approved, or problems and complaints of water quality normally associated with manganese concentration.

(b) Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by G.S. 130A-313(10), but do not serve 25 or more of the same persons more than six months per year shall be exempt from the provisions of this Rule.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Amended Eff. September 9, 1980;
Transferred and Recodified from 10 NCAC 10D .1620 Eff. April 4, 1990;
Amended Eff. July 1, 1994;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1513 TOTAL TRIHALOMETHANES SAMPLING AND ANALYSIS: 10,000 OR MORE

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 CFR 141;*
Eff. September 30, 1980;
Amended Eff. April 1, 1983;
Transferred and Recodified from 10 NCAC 10D .1635 Eff. April 4, 1990;
Amended Eff. August 1, 2000; August 1, 1990;
Expired Eff. December 1, 2015 pursuant to G.S. 150B-21.3A.

15A NCAC 18C .1514 TREATMENT TECHNIQUES FOR TOTAL TRIHALOMETHANES

History Note: *Authority G.S. 130A-315; P. L. 93-523; 40 C.F.R. 141;*
Eff. October 1, 1983;
Transferred and Recodified from 10 NCAC 10D .1637 Eff. April 4, 1990;
Amended Eff. August 1, 1990;
Expired Eff. December 1, 2015 pursuant to G.S. 150B-21.3A.

15A NCAC 18C .1515 ORGANIC CHEMICALS OTHER THAN TTHM, SAMPLING AND ANALYSIS

(a) The requirements of this Rule shall apply to community and non-transient non-community water systems. The provisions of 40 C.F.R. 141.24 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter. Any dates set forth in the federal rule shall be applicable.

(b) If the result of an analysis made pursuant to Paragraph (a) of this Rule indicates that the level of any contaminant listed in Rule .1517 of this Subchapter exceeds the maximum contaminant level, the supplier of water shall report to the Department within 48 hours and initiate three additional analyses within one month.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Amended Eff. November 1, 1989; December 1, 1988; June 1, 1988; October 1, 1982;
Transferred and Recodified from 10 NCAC 10D .1624 Eff. April 4, 1990;

Amended Eff. April 1, 2014; August 1, 2002; April 1, 1992; December 1, 1991; September 1, 1990.

15A NCAC 18C .1516 SPECIAL MONITORING FOR INORGANIC AND ORGANIC CHEMICALS

(a) The provisions of 40 C.F.R. 141.40 are hereby incorporated by reference including any subsequent amendments and editions, except that 40 C.F.R. 141.40(n)(10) is not adopted. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

(b) To comply with the monitoring requirements of this Rule, a community water system or non-transient, non-community water system serving fewer than 150 service connections shall take a single water sample to be analyzed for inorganic and organic chemicals.

(c) Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by G.S. 130A-313(10), but do not serve 25 or more of the same persons more than six months per year shall be exempt from the provisions of this Rule.

History Note: *Authority G.S. 130A-313; 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. June 1, 1988;
Amended Eff. November 1, 1989;
Transferred and Recodified from 10 NCAC 10D .1638 Eff. April 4, 1990;
Amended Eff. April 1, 2014; July 1, 1994; April 1, 1992; December 1, 1991; August 1, 1990.

15A NCAC 18C .1517 MAXIMUM CONTAMINANT LEVELS FOR ORGANIC CHEMICALS

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Amended Eff. September 30, 1980;
Transferred and Recodified from 10 NCAC 10D .1615 Eff. April 4, 1990;
Amended Eff. April 1, 2014; April 1, 1992; August 1, 1990;
Expired Eff. December 1, 2015 pursuant to G.S. 150B-21.3A.

15A NCAC 18C .1518 MAXIMUM CONTAMINANT LEVELS FOR ORGANIC CONTAMINANTS

The provisions of 40 C.F.R. 141.61 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. June 1, 1988;
Transferred and Recodified from 10 NCAC 10D .1639 Eff. April 4, 1990;
Amended Eff. April 1, 2014; April 1, 1992;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1519 MONITORING FREQUENCY FOR RADIOACTIVITY

(a) The requirements of this Rule shall apply to community water systems. The provisions of 40 C.F.R. 141.26 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter. Any dates set forth in the federal rule shall be applicable.

(b) An adjacent water system as defined in G.S. 130A-315(b2) shall conform to the sampling schedule as set in Paragraph (c) of this rule rather than the schedule set forth in 40 C.F.R. 141.26(a) and (b).

(c) When the Secretary determines that the system is in an area subject to radiological contamination, a water supplier shall take samples for the following contaminants:

(1) gross alpha particle activity;
(2) radium-226;
(3) radium-228;
(4) uranium; and
(5) man-made radioactivity from the water system.

When the sampling is required, a water supplier shall submit samples every four years from each section of the water system supplied from a separate source.

(d) Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by G.S. 130A-313(10), but do not serve 25 or more of the same persons more than six months per year shall monitor the same as required by adjacent systems in Paragraph (b) of this Rule.

History Note: *Authority G.S. 130A-313; 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Amended Eff. March 1, 1989; September 9, 1980; December 19, 1979;
Transferred and Recodified from 10 NCAC 10D .1627 Eff. April 4, 1990;
Amended Eff. April 1, 2014; August 1, 2002; July 1, 1994;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1520 MAXIMUM CONTAMINANT LEVELS FOR RADIONUCLIDES

The provisions of 40 C.F.R. 141.66 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .1617 Eff. April 4, 1990;
Amended Eff. April 1, 2014; August 1, 2002; July 1, 1994;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1521 MAXIMUM CONTAMINANT LEVEL GOALS FOR RADIONUCLIDES

The provisions of 40 C.F.R. 141.55 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .1618 Eff. April 4, 1990;
Amended Eff. April 1, 2014; August 1, 2002; July 1, 1994;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1522 ANALYTICAL METHODS FOR RADIOACTIVITY

The provisions of 40 C.F.R. 141.25 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Amended Eff. March 31, 1981; March 31, 1980;
Transferred and Recodified from 10 NCAC 10D .1626 Eff. April 4, 1990;
Amended Eff. April 1, 2014; August 1, 2002; September 1, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1523 PUBLIC NOTIFICATION REQUIREMENTS

(a) The provisions of 40 C.F.R. 141.32 are hereby incorporated by reference including any subsequent amendments and editions, except that multi-lingual notice shall be given if 30 percent or more of the consumers served by the system are non-English speaking. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.
(b) The provisions of 40 C.F.R. 141, Subpart Q – Public Notification of Drinking Water Violations are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.
(c) Special notification for distribution system samples. The requirements of this Paragraph shall be additional to the public notice requirements in Paragraphs (a) and (b) of this Rule and to the reporting requirements contained in Rule .1525 of this

Subchapter. When a distribution sample is taken on property not owned or controlled by the supplier of water, the supplier of water shall notify the person authorizing the sample if any individual water sample exceeds an action level, maximum contaminant level, or maximum residual disinfectant level established in this Subchapter, or if any individual sample is positive for coliform bacteria. The supplier of water shall give notice to the person authorizing the sample in a format provided by the Department, as follows:

(1) For a contaminant listed as Tier 1 in Appendix A to 40 C.F.R. 141, Subpart Q, notice shall be provided by telephone within 24 hours of receipt of analytical results and shall be followed by written notice by mail or direct delivery within 48 hours of receipt. The written notice shall include the analytical results and appropriate health effects language.

(2) For a contaminant listed as Tier 2 or Tier 3 in Appendix A to 40 C.F.R. 141, Subpart Q, notice shall be provided within 48 hours of receipt of analytical results. Written notice shall be provided by mail or direct delivery to the person authorizing the sample and shall include the analytical results and appropriate health effects language.

(3) The supplier of water shall submit a copy of the written notice and certification of delivery to the Department within 10 days of completing notification.

The person authorizing the sample may waive the notification required by this Paragraph. The waiver shall be documented in writing and signed by the authorizing person. The waiver is valid for five years and is renewable.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. January 1, 1990;
Transferred and Recodified from 10 NCAC 10D .1642 Eff. April 4, 1990;
Amended Eff. April 1, 2014; October 1, 2006; August 1, 2002; April 1, 1992; December 1, 1991; January 1, 1991; October 1, 1990.

15A NCAC 18C .1524 REPORTING FOR ORGANIC CHEMICALS

(a) The requirements of this Rule only apply to the contaminants listed in 15A NCAC 18C .1516.

(b) The water supplier for a community water system or non-transient, non-community water system who is required to monitor under 15A NCAC 18C .1516 shall send a copy of the results of such monitoring within 30 days of receipt and any public notice under Paragraph (d) of this Rule to the Department.

(c) The Department shall furnish the following information to the administrator for each sample analyzed:

(1) Results of all analytical methods, including negatives;
(2) Name and address of the system that supplied the sample;
(3) Contaminants;
(4) Analytical methods used;
(5) Date of sample;
(6) Date of analysis.

(d) The water supplier shall notify persons served by the system of the availability of the results of sampling by including a notice in the first set of water bills issued after the receipt of the results, or by written or newspaper notice, within three months. The notice shall identify a person and telephone number to contact for information on the monitoring results. For surface water systems, public notice is required only after the first quarter's monitoring and shall include a statement that additional monitoring will be conducted for three more quarters with the results available upon request.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. June 1, 1988;
Amended Eff. November 1, 1989;
Transferred and Recodified from 10 NCAC 10D .1640 Eff. April 4, 1990.

15A NCAC 18C .1525 REPORTING REQUIREMENTS

(a) The requirements of this Rule shall apply to all public water systems. The provisions of 40 C.F.R. 141.31 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter. Any dates set forth in the federal rule shall be applicable.

(b) When a certified laboratory analyzes a compliance sample for a supplier of water, the certified laboratory shall report the results to both the Department and to the supplier of water or his designated representative within the required periods as set

forth in 40 C.F.R. 141.31. The laboratory reporting to the Department shall include analytical results for any maximum contaminant level exceedence within the timeframes applicable to the system owner. Reporting shall be in a format, to include electronic reporting, provided by the Department and shall be filled out completely. Should a certified laboratory fail to properly report a compliance sample result, it shall be the responsibility of the supplier of water to report results to the Department as required by this Rule.

History Note: *Authority G.S. 130A-315; 40 C.F.R 141;*
Eff. September 1, 1979;
Amended Eff. February 1, 1987; October 1, 1984; March 31, 1981; March 31, 1980;
Transferred and Recodified from 10 NCAC 10D .1631 Eff. April 4, 1990;
Amended Eff. April 1, 2014; August 1, 2002; January 1, 1991;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1526 RECORD MAINTENANCE

The provisions of 40 C.F.R. 141.33 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .1632 Eff. April 4, 1990;
Amended Eff. April 1, 2014; August 1, 2002;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1527 CERTIFIED LABORATORIES

(a) For the purpose of determining compliance with the requirements of this Section, samples may be considered only if they have been analyzed by a laboratory certified by the Division of Laboratory Services Laboratory Certification Branch. However, measurements for turbidity, free chlorine residual, temperature and pH may be performed by any person who has been instructed in the appropriate procedure by the Department or a certified laboratory. Measurements may also be performed by a person who holds a valid certificate issued by the North Carolina Water Treatment Facility Operators Board of Certification.
(b) Nothing in this Section shall be construed to preclude the Department or any duly designated representative from taking samples or from using the results from such samples to determine compliance by a supplier of water with the applicable requirements of this Section.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Amended Eff. March 31, 1981;
Transferred and Recodified from 10 NCAC 10D .1629 Eff. April 4, 1990;
Amended Eff. April 1, 1992; September 1, 1990.

15A NCAC 18C .1528 ALTERNATE ANALYTICAL TECHNIQUES

With the written permission of the Secretary, concurred in by the Administrator of the U.S. Environmental Protection Agency, an alternate analytical technique may be employed. An alternate technique shall be acceptable only if it is substantially equivalent to the prescribed test in both precision and accuracy as it relates to the determination of compliance with any maximum contaminant level. The use of the alternate analytical technique shall not decrease the frequency of monitoring required by this Section.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Amended Eff. March 31, 1981;
Transferred and Recodified from 10 NCAC 10D .1630 Eff. April 4, 1990.

15A NCAC 18C .1529 POINT-OF-ENTRY AND OTHER TREATMENT DEVICES

(a) Public water systems may use point-of-entry devices to comply with maximum contaminant levels only if they meet the requirements of this Rule.

(b) The water supplier shall operate and maintain the point-of-entry treatment system.

(c) The water supplier shall develop a monitoring plan and obtain department approval of the plan before point-of-entry devices are installed for compliance. The approved plan shall provide health protection equivalent to central water treatment. "Equivalent" means that the water would meet all maximum contaminant levels in this Subchapter and would be of an acceptable quality similar to water distributed by a well operated central treatment plant. In addition to monitoring for volatile organic chemicals, monitoring shall include physical measurements and observations such as total flow treated and mechanical condition of the treatment equipment.

(d) Effective technology shall be properly applied under a plan approved by the Department and the microbiological safety of the water must be maintained as follows:

(1) Certification of performance, field testing, and, if not included in the certification process, an engineering design review of the point-of-entry devices shall be provided; and

(2) The tendency for increase in heterotrophic bacteria concentrations in water treated with activated carbon shall be considered in the design and application of the point-of-entry devices. Frequent backwashing, post-contactor disinfection, and Heterotrophic Plate Count monitoring shall be used when necessary to ensure that the microbiological safety of the water is not compromised.

(e) Every building connected to the system shall have a point-of-entry device installed, maintained, and adequately monitored. The rights and responsibilities of the public water system consumer shall be conveyed with title upon sale of property.

(f) Public water systems shall not use bottled water or point-of-use devices to achieve compliance with a maximum contaminant level. Bottled water or point-of-use devices may be used on a temporary basis to avoid an unreasonable risk to health.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. June 1, 1988;
Transferred and Recodified from 10 NCAC 10D .1641 Eff. April 4, 1990;
Amended Eff. September 1, 1990.

15A NCAC 18C .1530 CONSTRUCTION

This Section shall be construed as enabling the State of North Carolina to undertake primary responsibility for the enforcement of the federal act.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .1611 Eff. April 4, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1531 SITING REQUIREMENTS

(a) Any person constructing or modifying a public water system shall to the extent practicable, avoid locating all or part of a new or expanded facility at a site which:

(1) is subject to a significant risk from earthquakes, floods, fires or other disasters which could cause a breakdown of the public water system or a portion thereof; or

(2) except for intake structures, is within the floodplain of a 100-year flood or is lower than any recorded high tide where appropriate records exist.

(b) Additional requirements concerning the siting of raw water intakes shall be found in 15A NCAC 18C .0602.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Amended Eff. March 31, 1980;
Transferred and Recodified from 10 NCAC 10D .1612 Eff. April 4, 1990;

Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1532 VARIANCES AND EXEMPTIONS

The provisions of 40 C.F.R. 141.4 are hereby adopted by reference in accordance with G.S. 150B-14(c).

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .1634 Eff. April 4, 1990;
Amended Eff. January 1, 1991;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1533 TOTAL TRIHALOMETHANES SAMPLING AND ANALYSIS: LESS THAN 10,000

History Note: *Authority G.S. 130A-315;*
Eff. August 1, 1990;
Amended Eff. July 1, 1994;
Expired Eff. December 1, 2015 pursuant to G.S. 150B-21.3A.

15A NCAC 18C .1534 COLIFORM SAMPLING

(a) The provisions of 40 C.F.R. 141.21 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter. The provisions are incorporated with the following exceptions:

(1) the provision of 40 C.F.R. 141.21(a)(2) concerning the reduction of monitoring frequency for community water systems serving 25 to 1,000 persons is not adopted;

(2) the provision of 40 C.F.R. 141.21(b)(3) concerning collection of large volume repeat samples in containers of any size is not adopted; and

(3) the provision of 40 C.F.R. 141.21(c)(2) concerning waiver of the 24-hour limit for re-sampling is not adopted.

(b) An adjacent water system shall submit samples monthly from each section of the water system supplied from a separate source. The minimum number of samples each month per section is based on the population served by the section and shall be determined by the table in 40 C.F.R. 141.21(a)(2).

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141.21;*
Eff. January 1, 1991;
Amended Eff. April 1, 2014; February 1, 1992;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1535 MAXIMUM CONTAMINANT LEVELS FOR COLIFORM BACTERIA

(a) The provisions of 40 C.F.R. 141.63 are hereby adopted by reference in accordance with G.S. 150B-14(c).
(b) The provisions of 40 C.F.R. 141.52 are hereby adopted by reference in accordance with G.S. 150B-14(c).

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141.52; 40 C.F.R. 141.63;*
Eff. January 1, 1991;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1536 TREATMENT TECHNIQUES

The provisions of 40 C.F.R. 141. Subpart K are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. April 1, 1992;

Amended Eff. April 1, 2014;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1537 DRINKING WATER ADDITIVES

(a) The standards set forth in American National Standards Institute/NSF International, codified at ANSI/NSF Standard 60 and ANSI/NSF Standard 61, are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

(b) A water supply product used in a public water system shall meet the standards incorporated by reference in Paragraph (a) of this Rule. A product certified by an organization having a third-party certification program accredited by the American National Standards Institute to test and certify such products is acceptable for use in a public water system.

(c) A supplier of water shall maintain a list of all water supply products used in a public water system for inspection by the Department. Prior to using a product not previously listed, a supplier of water shall either determine the product is certified as required by Paragraph (b) of this Rule or notify the Department of the type, name and manufacturer of a product.

(d) A supplier of water shall not introduce or permit the introduction of a water supply product into a public water system which does not meet the requirements of this Rule.

History Note: *Authority G.S. 130A-315; P.L. 93-523;*
Eff. July 1, 1994;
Amended Eff. April 1, 2014;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1538 CONSUMER CONFIDENCE REPORT

(a) The provisions of 40 C.F.R. 141, Subpart O - Consumer Confidence Reports are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

(b) Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by G.S. 130A-313(10), but do not serve 25 or more of the same persons more than six months per year shall be exempt from the provisions of this Rule.

History Note: *Authority G.S. 130A-313; 130A-315; P.L. 93-523; 40 C.F.R. 141;*
Eff. August 1, 2000;
Amended Eff. April 1, 2014;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1539 REVISED TOTAL COLIFORM RULE

The provisions of 40 C.F.R. 141, Subpart Y - Revised Total Coliform Rule are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102(a) and (b) of this Subchapter.

History Note: *Authority G.S. 130A-315;*
Eff. July 1, 2015.

SECTION .1600 - VARIANCES AND EXEMPTIONS

15A NCAC 18C .1601 REQUIREMENTS FOR A VARIANCE

(a) The Secretary may grant one or more variances to any public water system within the state from any requirement respecting a maximum contaminant level of an applicable rule of 15A NCAC 18C Section .1500 upon a finding that:

(1) Because of characteristics of the raw water sources which are reasonably available to the system, the system cannot meet the requirements respecting the maximum contaminant levels of such drinking water regulations despite application of the best technology, treatment techniques, or other means, which the Secretary, with the concurrence of the administrator, finds are generally available (taking costs into consideration); and

(2) The granting of a variance will not result in an unreasonable risk to the health of persons served by the system.

(b) The Secretary may grant one or more variances to any public water system within the state from any requirement of a specified treatment technique of an applicable rule of 15A NCAC 18C Section .1500 upon finding that the public water system applying for the variance has demonstrated that such treatment technique is not necessary to protect the health of persons because of the nature of the raw water source of such systems.

History Note: *Authority G.S. 130A-315; 130A-321; P.L. 93-523; 40 C.F.R. 142;*
Eff. September 1, 1979;
Amended Eff. December 19, 1979;
Transferred and Recodified from 10 NCAC 10D .2501 Eff. April 4, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1602 VARIANCE REQUEST

A supplier of water may request a variance for a public water system by submitting a written request to the Secretary. Suppliers of water may submit a joint request for variances when they seek similar variances under similar circumstances. A request for a variance or variances shall include the following information:

(1) the nature and duration of variance requested;
(2) relevant analytical results of water quality sampling of the system, including results of relevant tests conducted pursuant to the rules of 15A NCAC 18C Section .1500;
(3) for any request made under .1601(a) of this Section:
    (a) explanation in full and evidence of the best available treatment technology and techniques;
    (b) economic and legal factors relevant to ability to comply;
    (c) analytical results of raw water quality relevant to ability to comply;
    (d) a proposed compliance schedule, including the date each step toward compliance will be achieved; Such schedule shall include as a minimum the following dates:
        (i) date by which arrangement for alternative raw water source or improvement of existing raw water source will be completed,
        (ii) date of initiation of the connection of the alternative raw water source or improvement of existing raw water source,
        (iii) date by which final compliance is to be achieved;
    (e) a plan for the provision of safe drinking water in the case of an excessive rise in the contaminant level for which the variance is requested;
    (f) a plan for interim control measures during the effective period of variance;
(4) for any request made under .1601(b) of this Section, a statement that the system will perform monitoring and other reasonable requirements prescribed by the Secretary as a condition to the variance;
(5) other information, if any, believed to be pertinent by the applicant;
(6) such other information as the Secretary may require.

History Note: *Authority G.S. 130A-315; 130A-321; P.L. 93-523; 40 C.F.R. 142;*
Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .2502 Eff. April 4, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1603 CONSIDERATION OF A VARIANCE REQUEST

(a) The Secretary shall act on any variance request submitted pursuant to .1602 of this Section within 90 days of receipt of the request.

(b) In consideration of whether the public water system is unable to comply with a contaminant level required by 15A NCAC 18C Section .1500 because of the nature of the raw water source, the Secretary shall consider such factors as the following:

(1) the availability and effectiveness of treatment methods for the contaminant for which the variance is requested;
(2) cost and other economic considerations such as implementing treatment, improving the quality of the source water or using an alternate source.

(c) In consideration of whether a public water system should be granted a variance to a required treatment technique because such treatment is unnecessary to protect the public health, the Secretary shall consider such factors as the following:

(1) quality of the water source including water quality data and pertinent sources of pollution,
(2) source protection measures employed by the public water system.

History Note: *Authority G.S. 130A-315; 130A-321; P.L. 93-523; 40 C.F.R. 142;*
Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .2503 Eff. April 4, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1604 DISPOSITION OF A VARIANCE REQUEST

(a) If the Secretary decides to deny the application for a variance, the applicant shall be notified of the intention to issue a denial. Such notice shall include a statement of reasons for the proposed denial. Within 30 days after the receipt of such notice, the applicant may request a hearing for the purpose of contesting the proposed denial. Such hearing shall be conducted in the manner set forth in G.S. 150B-22 through 150B-37. If no hearing is requested by the applicant within the 30 day period, the application shall be denied.

(b) If the Secretary proposes to grant a variance request submitted pursuant to .1602 of this Section, the applicant shall be notified of the decision in writing. Such notice shall identify the variance, the facility covered, and shall specify the period of time for which the variance will be effective:

(1) For the type of variance specified in .1601(a) of this Section, such notice shall provide that the variance will be terminated when the system comes into compliance with the applicable regulation, and may be terminated upon a finding by the Secretary that the system has failed to comply with any requirements of a final schedule issued pursuant to .1605 of this Section.
(2) For the type of variance specified in .1601(b) of this Section, such notice shall provide that the variance may be terminated at any time upon a finding that the nature of the raw water source is such that the specified treatment technique for which the variance was granted is necessary to protect the health of persons or upon a finding that the public water system has failed to comply with monitoring and other requirements prescribed by the Secretary as a condition to the granting of the variance.

(c) For a variance specified in .1601(a)(1) of this Section, the Department shall propose a schedule for:

(1) compliance (including increments of progress) by the public water system with each contaminant level requirement covered by the variance, and
(2) implementation by the public water system of such control measures as the Department may require for each contaminant covered by the variance.

(d) The proposed schedule for compliance shall specify dates by which steps towards compliance are to be taken, including at the minimum, where applicable:

(1) date by which arrangement for an alternative raw water source or improvement of existing raw water source will be completed,
(2) date of initiation of the connection for the alternative raw water source or improvement of the existing raw water source,
(3) date by which final compliance is to be achieved.

(e) The proposed schedule may, if the public water system has no access to an alternative raw water source, and can effect or anticipate no adequate improvement of the existing raw water source, specify an indefinite time period for compliance until a new and effective treatment technology is developed at which time a new compliance schedule shall be prescribed by the Secretary.

(f) The proposed schedule for implementation of interim control measures during the period of variance shall specify interim treatment techniques, methods and equipment, and dates by which steps toward meeting the interim control measures are to be met.

(g) The schedule shall be prescribed by the secretary within one year after the granting of the variance, subsequent to provision of opportunity for hearing pursuant to .1605 of this Section.

History Note: *Authority G.S. 130A-315; 130A-321; P.L. 93-523; 40 C.F.R. 142;*
Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .2504 Eff. April 4, 1990;
Amended Eff. September 1, 1991;

Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1605 PUBLIC HEARINGS ON VARIANCES AND SCHEDULES

(a) Before a variance or a schedule proposed by the Secretary pursuant to Rule.1604 of this Section may take effect, the Secretary shall provide notice and opportunity for public hearing on the variance or schedule. Such notice may cover the granting of more than one variance, and a hearing held pursuant to such notice shall include each of the variances covered by that notice.

(b) Public notice of an opportunity for hearing on a variance or schedule shall be circulated in a manner designed to inform interested and potentially interested persons of the proposed variance or schedule and shall include the following minimum requirements:

(1) posting of a notice in the principal post office of each municipality or area served by the public water system, and publishing of a notice in a newspaper or newspapers of general circulation in the area served by the public water system;

(2) mailing of a notice to the Public Water Supply Section, Division of Water Resources and to other appropriate state or local agencies at the Department's discretion; and

(3) such notice shall include a summary of the proposed variance or schedule and shall inform interested persons that they may request a public hearing on the proposed variance or schedule.

(c) Requests for hearing may be submitted by any interested person. Frivolous or insubstantial requests for hearing may be denied by the Secretary. Requests shall be submitted to the Secretary within 30 days after issuance of the public notice provided for in Paragraph (b) of this Rule. Such requests shall include the following information:

(1) the name, address and telephone number of the individual, organization or other entity requesting a hearing;

(2) a brief statement of the interest of the individual, organization or other entity making the request in the proposed variance or schedule and of information that the requestor intends to submit at such hearing; and

(3) the signature of the individual making the request or if the request is made on behalf of an organization or other entity, the signature of a responsible official of the organization or other entity.

(d) Any hearing held pursuant to a request submitted by an individual, organization or other entity or on the Secretary's own motion shall be conducted in the manner set forth in G.S. 150B-22 through 150B-37.

History Note: *Authority G.S. 130A-315; 130A-321; P.L. 93-523; 40 C.F.R. 142;*
Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .2505 Eff. April 4, 1990;
Amended Eff. April 1, 2014; September 1, 1991;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1606 VARIANCES FOR FLUORIDE

(a) The following shall be the best technology, treatment techniques or other means generally available for achieving compliance with the maximum contaminant level for fluoride:

(1) Activated alumina absorption, centrally applied,

(2) Reverse osmosis, centrally applied.

(b) The Division shall require a community water system to install and/or use any treatment method identified in (a) of this Rule as a condition for granting a variance unless it is determined that such a treatment method is not available and effective for fluoride control for the system. A treatment method shall not be available and effective for a water system if the method would not be technically appropriate and technically feasible. If upon application for a variance it is determined that no treatment method is available and effective then the water system shall be entitled to a variance. A determination of availability and effectiveness of treatment methods shall be based upon studies by the water system and other relevant information. A finding shall be made by the Division whether the information supports a decision that a treatment method is not available and effective before requiring installation and use of the treatment method.

(c) The Division shall issue a compliance schedule that may require the water system to examine the following treatment methods to determine the probability that any method will significantly reduce the level of fluoride and to determine whether any method is technically feasible and economically reasonable and that the fluoride reduction obtained will be commensurate with the costs incurred with installation and use of the treatment methods:

(1) Modification of lime softening;

(2) Alum coagulation;

(3) Electrodialysis;
(4) Anion exchange resins;
(5) Well field management;
(6) Alternate source; and
(7) Regionalization.

(d) If the Division determines that a treatment method identified in (c) of this Rule or any other treatment method is technically feasible, economically reasonable, and will achieve fluoride reductions commensurate with the costs incurred with the installation and use of such treatment method for the system, the Division shall require the system to install and/or use that treatment method in connection with a compliance schedule. The determination shall be based upon studies by the system and other relevant information.

History Note: *Authority G.S. 130A-315; 130A-321; P.L. 93-523; 40 C.F.R. 142;*
Eff. October 1, 1986;
Transferred and Recodified from 10 NCAC 10D .2512 Eff. April 4, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1607 VARIANCES AND EXEMPTIONS FOR CHEMICALS, LEAD AND COPPER, AND RADIONUCLIDES

(a) The provisions of 40 C.F.R. 142.62 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

(b) The provisions of 40 C.F.R. 142.65 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 142;*
Eff. June 1, 1988;
Transferred and Recodified from 10 NCAC 10D .2514 Eff. April 4, 1990;
Amended Eff. April 1, 2014; August 1, 2002; October 1, 1992;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1608 REQUIREMENTS FOR AN EXEMPTION

The Secretary may exempt any public water system in the state from any requirement respecting a maximum contaminant level or any treatment technique requirement, or from both, of an applicable rule of this Subchapter upon a finding that:

(1) Due to compelling factors (which may include economic factors), the public water system is unable to comply with such contaminant level or treatment technique requirement;
(2) The public water system was in operation on the effective date of federal promulgation of such contaminant level or treatment technique requirement; and
(3) The granting of the exemption will not result in an unreasonable risk to health.

History Note: *Authority G.S. 130A-315; 130A-321; P.L. 93-523; 40 C.F.R. 142;*
Eff. September 1, 1979;
Amended Eff. December 19, 1979;
Transferred and Recodified from 10 NCAC 10D .2506 Eff. April 4, 1990;
Amended Eff. July 1, 1993;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1609 EXEMPTION REQUEST

A supplier of water may request an exemption for a public water system by submitting a written request to the Secretary. Suppliers of water may submit a joint request for exemptions when they seek similar exemptions under similar circumstances. Any request for an exemption or exemptions shall include the following information:

(1) the nature and duration of exemption requested;
(2) relevant analytical results of water quality sampling of the system, including results of relevant tests conducted pursuant to the requirements of the drinking water regulations;

(3) explanation of the compelling factors such as time or economic factors which prevent such system from achieving compliance;
(4) other information, if any, believed by the applicant to be pertinent to the application;
(5) a proposed compliance schedule, including the date when each step toward compliance will be achieved;
(6) such other information as the Secretary may require.

History Note: *Authority G.S. 130A-315; 130A-321; P.L. 93-523; 40 C.F.R. 142;*
Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .2507 Eff. April 4, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1610 CONSIDERATION OF AN EXEMPTION REQUEST

(a) The Secretary shall act on any exemption request submitted pursuant to .1609 of this Section within 90 days of receipt of the request.
(b) In consideration of whether the public water system is unable to comply due to compelling factors, the Secretary shall consider such factors as the following:
(1) construction, installation, or modification of treatment equipment or systems;
(2) the time needed to put into operation a new treatment facility to replace an existing system which is not in compliance;
(3) economic feasibility of compliance.

History Note: *Authority G.S. 130A-315; 130A-321; P.L. 93-523; 40 C.F.R. 142;*
Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .2508 Eff. April 4, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1611 DISPOSITION OF AN EXEMPTION REQUEST

(a) If the Secretary decides to deny the application for an exemption, the applicant shall be notified of the intention to issue a denial. Such notice shall include a statement of reasons for the proposed denial. Within 30 days after the receipt of such notice, the applicant may request a hearing for the purpose of contesting the proposed denial. Such hearing shall be conducted in the manner set forth in G.S. 150B-22 through 150B-37. If no hearing is requested by the applicant within the 30 day period, the application shall be denied.
(b) If the Secretary grants an exemption request submitted pursuant to .1609 of this Section, the applicant shall be notified of the decision in writing. Such notice shall identify the facility covered and shall specify the termination date of the exemption. Such notice shall provide that the exemption will be terminated when the system comes into compliance with the applicable rule, and may be terminated upon a finding by the Secretary that the system has failed to comply with any requirements of a final schedule issued pursuant to .1613 of this Section.
(c) The Secretary shall propose a schedule for:
(1) compliance (including increments of progress) by the public water system with each contaminant level requirement and treatment technique requirement covered by the exemption, and
(2) implementation by the public water system of such control measures as the Secretary may require for each contaminant covered by the exemption.
(d) The schedule shall be prescribed by the secretary within one year after the granting of the exemption, subsequent to provision of opportunity for hearing pursuant to .1612 of this Section.

History Note: *Authority G.S. 130A-315; 130A-321; P.L. 93-523; 40 C.F.R. 142;*
Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .2509 Eff. April 4, 1990;
Amended Eff. September 1, 1991;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1612 PUBLIC HEARINGS ON EXEMPTION SCHEDULES

(a) Before a schedule proposed by the Secretary pursuant to Rule.1611 of this Section may take effect, the Secretary shall provide notice and opportunity for public hearing on the schedule. Such notice may cover the proposal of more than one such schedule and a hearing held pursuant to such notice shall include each of the schedules covered by the notice.
(b) Public notice of an opportunity for hearing on an exemption schedule shall be circulated in a manner designed to inform interested and potentially interested persons of the proposed schedule, and shall include the following minimum requirements:

(1) posting of a notice in the principal post office of each municipality or area served by the public water system, and publishing a notice in the newspaper or newspapers of general circulation in the area served by the public water system;
(2) mailing of a notice to the Public Water Supply Section, Division of Water Resources and to other appropriate state or local agencies at the Secretary's discretion; and
(3) such notices shall include a summary of the proposed schedule and shall inform interested persons that they may request a public hearing on the proposed schedule.

(c) Requests for hearing may be submitted by any interested person. Frivolous or insubstantial requests for hearing may be denied by the Secretary. Requests shall be submitted to the Secretary within 30 days after issuance of the public notices provided for in Paragraph (b) of this Rule. Such requests shall include the following information:

(1) the name, address and telephone number of the individual, organization or other entity requesting a hearing;
(2) a brief statement of the interest of the individual, organization or other entity making the request in the proposed schedule and of information that the requestor intends to submit at such hearing; and
(3) the signature of the individual making the request, or, if the request is made on behalf of an organization or other entity, the signature of a responsible official of the organization or other entity.

(d) Any hearing held pursuant to a request submitted by an individual, organization or other entity or on the Secretary's own motion shall be conducted in the manner set forth in G.S. 150B-22 through 150B-37.

History Note: *Authority G.S. 130A-315; 130A-321; P.L. 93-523; 40 C.F.R. 142;*
Eff. September 1, 1979;
Transferred and Recodified from 10 NCAC 10D .2510 Eff. April 4, 1990;
Amended Eff. April 1, 2014; December 1, 1991;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1613 FINAL SCHEDULE

(a) Within a reasonable time after the termination of a hearing conducted in the manner set forth in G.S. 150B-22 through 150B-37, the Secretary shall, based upon consideration of the hearing record as a whole, revise the proposed schedule as necessary and prescribe the final schedule for compliance and interim measures for the public water system granted an exemption under .1609 of this Section.
(b) Such schedule shall require compliance by the public water system with each contaminant level and treatment technique requirement prescribed by:

(1) regulations in 15A NCAC 18C Section .1500 adopted on or before September 1, 1979, by no later than January 1, 1981; and
(2) amendments to 15A NCAC 18C adopted after September 1, 1979, by no later than seven years after the effective date of the revised National Primary Drinking Water Regulations.

(c) If the public water system has entered into an enforceable agreement to become a part of a regional public water system, as determined by the Secretary, such schedule shall require compliance by the public water system with each contaminant level and treatment technique requirement prescribed by:

(1) regulations in 15A NCAC 18C Section .1500 adopted on or before September 1, 1979, by no later than January 1, 1983; and
(2) amendments to 15A NCAC 18C Section .1500 adopted after September 1, 1979, by no later than nine years after the effective date of the revised National Primary Drinking Water Regulations.

History Note: *Authority G.S. 130A-315; 130A-321; P.L. 93-523; 40 C.F.R. 142;*
Eff. September 1, 1979;
Amended Eff. December 19, 1979;
Transferred and Recodified from 10 NCAC 10D .2511 Eff. April 4, 1990;
Amended Eff. September 1, 1991;

Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1614 BOTTLED WATER AND POINT-OF-USE DEVICES

The provisions of 40 C.F.R. 142.57 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 142;*
Eff. June 1, 1988;
Transferred and Recodified from 10 NCAC 10D .2513 Eff. April 4, 1990;
Amended Eff. April 1, 2014; October 1, 1992; December 1, 1988;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

SECTION .1700 – WATER SUPPLY SYSTEM GRANTS

15A NCAC 18C .1701 PURPOSE
15A NCAC 18C .1702 GRANT COMMITMENTS FROM CURRENT ALLOCATION
15A NCAC 18C .1703 COUNTY ALLOCATIONS COMMITTED BEFORE STATEWIDE ALLOCATION
15A NCAC 18C .1704 REFERENCE RULE

History Note: *Authority S.L. 1971, Ch. 909, as amended by S.L. 1973, Ch. 232; S.L. 1977, Ch. 677;*
Eff. June 30, 1978;
Repealed Eff. April 1, 2014.

SECTION .1800 - LOCAL PLAN APPROVAL

Rules .1801 - .1805 of Title 15A Subchapter 18C of the North Carolina Administrative Code (T15A.18C .1801 - .1805); has been transferred and recodified from Rules .2601 - .2605 Title 10 Subchapter 10D of the North Carolina Administrative Code (T10.10D .2601 - .2605), effective April 4, 1990.

15A NCAC 18C .1801 LOCAL APPROVAL PROGRAM

This Section implements G.S. 130A-317(d) which authorizes the certification of local programs for approval of the construction or alteration of the distribution system of a community water system. For purposes of this Section, distribution system means the network of pipes, valves, hydrants and related appurtenances but does not include pumps, storage tanks, treatment devices, wells or other facilities.

History Note: *Authority G.S. 130A-317; 1985 S.L., c. 697, s. 3;*
Eff. January 1, 1986;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1802 APPLICATION FOR CERTIFICATION

Application for certification shall be made to the Public Water Supply Section, Division of Water Resources, 1634 Mail Service Center, Raleigh North Carolina 27699-1634. Application shall be submitted in triplicate and shall designate the office or agency which will administer the program.

History Note: *Authority G.S. 130A-317; S.L. 1985-697, s. 3;*
Eff. January 1, 1986;
Amended Eff. April 1, 2014; December 1, 1991;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1803 CERTIFICATION

The Department shall certify a local approval program which satisfies the requirements of G.S. 130A-317(d). The requirements of G.S. 130A-317(d)(4) are satisfied when a local approval program provides by ordinance or local law for enforcement provisions equivalent to G.S. 130A-18 and G.S. 130A-25. The requirements of G.S. 130A-317(d)(5) are satisfied when a local approval program has a minimum staff and other resources of: a designer who is a professional engineer registered in this state and whose duty is to devote the time necessary for an effective local approval program; a technical staff, budget, equipment and facilities sufficient to support a design engineering office; and an organizational structure sufficient to carry out this purpose.

History Note: *Authority G.S. 130A-317; 1985 S.L., c. 697, s. 3;*
Eff. January 1, 1986;
Amended Eff. February 1, 1987;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1804 NOTICE

(a) A local approval program shall submit notice to the Department of each approval of the construction or alteration of the distribution system of a community water system. The notice shall consist of one copy of the application with construction plans, any revisions made to the plans and the final approval letter.
(b) The local approval program shall provide notice to the department within 10 days of any change in staff, budget or other resources which may affect the ability to effectively carry out the plan review program.
(c) Upon completion of the construction or alteration of the distribution system, the applicant shall submit a statement to the local approval program signed by a registered professional engineer stating that construction was completed in substantial accordance with approved plans and specifications and revised only in accordance with 15A NCAC 18C .0306. The statement shall be based upon adequate observations during and upon completion of construction by the engineer or a representative of the engineer's office supervised by the engineer. The local approval program shall provide a copy of the statement to the Department.

History Note: *Authority G.S. 130A-317; 1985 S.L., c. 697, s. 3;*
Eff. January 1, 1986;
Amended Eff. December 1, 1988;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1805 DEPARTMENTAL ENFORCEMENT

If the Department determines that a community water system is violating local approval requirements and the local approval program has not enforced its requirements, the Department may, after written notice, to the local program, enforce the requirements in accordance with provisions of G.S. 130A-17 through 130A-28.

History Note: *Authority G.S. 130A-317; 1985 S.L., c. 697, s. 3;*
Eff. January 1, 1986;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

SECTION .1900 - ADMINISTRATIVE PENALTIES

Rules .1901 - .1913 of Title 15A Subchapter 18C of the North Carolina Administrative Code (T15A.18C .1901 - .1913); has been transferred and recodified from Rules .2401 - .2413 Title 10 Subchapter 10D of the North Carolina Administrative Code (T10.10D .2401 - .2413), effective April 4, 1990.

15A NCAC 18C .1901 DEFINITIONS

As used in the following rules, the term:

(1) "Delegate" means any person to whom the Department has delegated authority in writing to act in its stead in relation to civil penalties;
(2) "Hearing officer" means the presiding officer in a contested case hearing;
(3) "Respondent" means the person against whom a penalty has been assessed.

History Note: *Authority G.S. 130A-22(f);*
Eff. September 1, 1979;
Amended Eff. May 1, 1987;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1902 ADMINISTRATIVE PENALTIES

The following rules provide the procedures and standards governing the assessment, remission, mitigation and appeal of administrative penalties imposed by the Department or its delegates under G.S. 130A-22(b) for violations of the North Carolina Drinking Water Act, Article 10 of Chapter 130A and 15A NCAC 18C.

History Note: *Authority G.S. 130A-22(f);*
Eff. September 1, 1979;
Amended Eff. April 1, 2014; October 1, 1984;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1903 WHO MAY ASSESS PENALTIES

Administrative penalties may be assessed by the Department or its delegate.

History Note: *Authority G.S. 130A-22(f);*
Eff. September 1, 1979;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1904 WHEN PENALTIES MAY BE ASSESSED

Administrative penalties may be assessed against any person for violations as described in G.S. 130A-325.

History Note: *Authority G.S. 130A-22(f);*
Eff. September 1, 1979;
Amended Eff. October 1, 1984;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1905 AMOUNT OF PENALTY ASSESSMENT

(a) An administrative penalty may not exceed the amount which may be assessed for violations as prescribed in G.S. 130A-22(b).
(b) Each day of a continuing violation shall constitute a separate violation.
(c) Each violation of a specific provision of Article 10 of Chapter 130A, the rules issued thereunder, and any order pursuant thereto, shall be a separate violation.

History Note: *Authority G.S. 130A-22(f);*
Eff. September 1, 1979;
Amended Eff. October 1, 1984;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1906 CONSIDERATIONS IN ASSESSING ADMINISTRATIVE PENALTIES

In determining the amount of the assessment, the Department or its delegates shall consider the following criteria and shall cite the provisions that are applicable:

(1) nature of the violation and the degree and extent of the harm, including the following:
    (a) for a violation of the North Carolina Drinking Water Act, Article 10 of Chapter 130A, and the rules in this Subchapter:
        (i) type of violation,

(ii) type of contaminant involved,
(iii) duration,
(iv) cause (whether resulting from a negligent, reckless or intentional act, or omission),
(v) potential effect on public health and the environment,
(vi) effectiveness of responsive measures taken by the violator,
(vii) damage to private property, and
(viii) size of the water system and population exposed;

(b) for a violation of an order issued under the North Carolina Drinking Water Act, Article 10 of Chapter 130A:
(i) subject matter of order,
(ii) duration,
(iii) cause (whether resulting from a negligent, reckless or intentional act, or omission),
(iv) type of violation, if any,
(v) potential effect on public health and the environment, and
(vi) effectiveness of responsive measures taken by violator;

(c) for refusing to allow an authorized representative of the Commission for Public Health, any local board of health, or the Department a right of entry as provided for in G.S. 130A-17:
(i) type of other violation, if any,
(ii) duration of refusal, and
(iii) potential effect on public health and the environment;

(d) for failure to give adequate public notice as required by G.S. 130A-324:
(i) inadequacy of type of notice,
(ii) misleading in nature,
(iii) delay in providing notice, and
(iv) potential effect on public health from failure to give adequate notice;

(2) cost of rectifying any damage; and

(3) the violator's previous record in complying or not complying with the North Carolina Drinking Water Act, Article 10 of Chapter 130A and the rules in this Subchapter.

History Note: *Authority G.S. 130A-22(f); 130A-17; 130A-324;*
Eff. September 1, 1979;
Amended Eff. April 1, 2014; October 1, 1984;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1907 PROCEDURE FOR ASSESSMENT

(a) Depending on the violation involved, the Department or its delegates may issue a notice of penalty assessment immediately or grant the violator a period of time within which to cease the violation.

(b) For all violations for which a penalty is assessed, a notice of such action shall be sent to the respondent by registered or certified mail. The notice shall describe the nature of the violation with reasonable particularity, the amount of the penalty for each violation, that each day of a continuing violation constitutes a separate violation, advise that the penalty is now due or that it will become due at the end of a specified time, and advise the respondent of his rights of appeal.

(c) The Department or its delegates may modify a penalty upon finding that additional or different facts should have been considered in determining the amount of the assessment.

History Note: *Authority G.S. 130A-22(f);*
Eff. September 1, 1979;
Amended Eff. May 1, 1987;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1908 IMMINENT HAZARD

If violation of the rules or law presents an imminent hazard to the public health as determined by the Secretary, an order may be issued pursuant to G.S. 130A-322.

History Note: *Authority G.S. 130A-22(f);*
Eff. September 1, 1979;
Amended Eff. October 1, 1984;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1909 PAYMENTS: HEARING

(a) Within 30 days after receipt of notification of a penalty assessment, the respondent must tender payment, or submit in writing a request for an administrative hearing. All appeals shall be made in accordance with G.S. 150B.
(b) Payment may be tendered in conjunction with a hearing request and in such case, the payment will be accepted as conditional upon final action.
(c) This Rule shall not preclude informal conferences concerning the penalty assessed.
(d) Whenever an administrative hearing is scheduled, to avoid undue costs and delay, the respondent will be required to state all the issues in dispute and the Department will be required to hold only one administrative hearing.
(e) The Department will acknowledge the receipt of all payments.

History Note: *Authority G.S. 130A-22(f);*
Eff. September 1, 1979;
Amended Eff. May 1, 1987;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1910 STAY OF PENALTY ASSESSMENT

When an administrative hearing is requested for a purpose other than remission or mitigation of the penalty assessed, the penalty will be stayed as of the date of said request until service of the final decision or other settlement of the matter.

History Note: *Authority G.S. 130A-22(f);*
Eff. September 1, 1979;
Amended Eff. May 1, 1987;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1911 WAIVER OF ADMINISTRATIVE HEARING

A respondent waives his right to a hearing when he:

(1) submits a written waiver to the Department or its delegates of his right to an administrative hearing,
(2) fails to request a hearing within 30 days of receipt of notice of penalty assessment as provided for in Rule .1909 of this Subchapter, or
(3) fails to attend a scheduled administrative hearing.

History Note: *Authority G.S. 130A-22(f);*
Eff. September 1, 1979;
Amended Eff. May 1, 1987;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1912 REFERRAL

If any administrative penalty as finally assessed is not paid within 60 days after receipt of notice of penalty assessment where no administrative hearing was requested or within 60 days after service of a written copy of the decision as provided for in G.S. 150B-36 where an administrative hearing was requested, the Secretary shall request the Attorney General to commence an action to recover the amount of the assessment.

History Note: *Authority G.S. 130A-22(f);*
Eff. September 1, 1979;
Amended Eff. September 1, 1991;

Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .1913 RIGHT OF ENTRY AND INSPECTION

(a) Any supplier of water or other person subject to drinking water regulations shall, at any time, allow the Secretary, or a designated representative, upon presenting appropriate credentials and a written notice of inspection, to enter any establishment, facility or other property of such supplier or other person to determine whether such supplier or other person has acted or is acting in compliance with the requirements of the North Carolina Drinking Water Act (G.S. 130A-311 through 130A-328) or the rules of 15A NCAC 18C. Such inspection may include inspection, at reasonable times, of records, files, papers, processes, controls and facilities, or testing of any feature of a public water system, including its raw water source.
(b) If entry is refused, then the Secretary or designated representative may obtain an administrative search warrant pursuant to the requirements of G.S. 15-27.2.

History Note: *Authority G.S. 130A-22(f);*
Eff. December 19, 1979;
Amended Eff. October 1, 1984;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

SECTION .2000 - FILTRATION AND DISINFECTION

15A NCAC 18C .2001 GENERAL REQUIREMENTS

The provisions of 40 C.F.R. 141.70 are hereby adopted by reference in accordance with G.S. 150B-14(c).

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141.70;*
Eff. January 1, 1991;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .2002 DISINFECTION

The provisions of 40 C.F.R. 141.72 are hereby adopted by reference in accordance with G.S. 150B-21.6 including subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter. These provisions are adopted with the following exceptions:

(1) Water entering the distribution system. In 40 C.F.R. 141.72 (a)(2), (a)(3), and (b)(2), "0.2 mg/l" of residual disinfectant concentration shall be replaced with "0.2 mg/l measured as free chlorine when chlorine is the singular applied disinfectant and 1.0 mg/l measured as total chlorine when ammonia and chlorine are applied disinfectants."

(2) Water in the distribution system at coliform sampling sites. In 40 C.F.R. 141.72(a)(4) and (b)(3), "undetectable" shall be replaced with "less than 0.2 mg/1 measured as free chlorine when chlorine is the singular applied disinfectant and less than 1.0 mg/l measured as total chlorine when ammonia and chlorine are applied disinfectants."

(3) Water in the distribution system at maximum residence time sites. For samples collected at maximum residence time sites or at other locations with high water age as required by Rule .1302(a)(2) of this Subchapter, residual disinfectant concentrations shall be at detectable levels as set forth and calculated in 40 C.F.R. 141.72(a)(4) and (b)(3).

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141.72;*
Eff. January 1, 1991;
Amended Eff. April 1, 2014; October 1, 2009;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .2003 FILTER BACKWASH RECYCLING RULE

(a) The requirements of this Rule shall apply to a public water system that uses a surface water source or a groundwater source under the direct influence of surface water. The provisions of 40 C.F.R. 141.73 are hereby incorporated by reference

including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter. Any dates set forth in the federal rule shall be applicable.

(b) The requirements of this Rule shall apply to a public water system that uses a surface water source or a groundwater source under the direct influence of surface water; uses direct or conventional filtration processes; and recycles spent filter backwash water, sludge thickener supernatant, or liquids from dewatering processes. The provisions of 40 C.F.R. 141.76 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter. Any dates set forth in the federal rule shall be applicable.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141.73; 40 C.F.R. 141.76;*
Eff. January 1, 1991;
Amended Eff. April 1, 2014; August 1, 2002;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .2004 ANALYTICAL AND MONITORING REQUIREMENTS

The provisions of 40 C.F.R. 141.74 are hereby adopted by reference in accordance with G.S. 150B-21.6 including subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter. These provisions are adopted with the following exceptions:

(1) The residual disinfectant concentration of the water entering the distribution system shall be monitored continuously, and the lowest value shall be recorded each day, except that if there is a failure in the continuous monitoring equipment, grab sampling every four hours may be conducted in lieu of continuously monitoring, but for no more than five working days following the failure of the equipment. Systems serving 3,300 or fewer persons may take grab samples in lieu of providing continuous monitoring on an ongoing basis at the frequency of every four hours that water is being treated.

(2) In 40 C.F.R. 141.74, "0.2 mg/l" of residual disinfectant concentration shall be replaced with "0.2 mg/l measured as free chlorine when chlorine is the singular applied disinfectant and 1.0 mg/l measured as total chlorine when ammonia and chlorine are applied disinfectants."

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141.74;*
Eff. January 1, 1991;
Amended Eff. April 1, 2014; October 1, 2009;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .2005 CRITERIA FOR AVOIDING FILTRATION

The provisions of 40 C.F.R. 141.71 are hereby adopted by reference in accordance with G.S. 150B-14(c).

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141.71;*
Eff. January 1, 1991;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .2006 REPORTING AND RECORD KEEPING REQUIREMENTS

The provisions of 40 C.F.R. 141.75 are hereby adopted by reference in accordance with G.S. 150B-21.6 including subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter. These provisions are adopted with the following exception: In 40 C.F.R. 141.75, "0.2 mg/l" of residual disinfectant concentration shall be replaced with "0.2 mg/l measured as free chlorine when chlorine is the singular applied disinfectant and 1.0 mg/l measured as total chlorine when ammonia and chlorine are applied disinfectants."

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141.75;*
Eff. January 1, 1991;
Amended Eff. April 1, 2014; October 1, 2009;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .2007 ENHANCED FILTRATION AND DISINFECTION

(a) Public water systems shall respond to the Department in writing to significant deficiencies outlined in sanitary survey reports no later than 45 days after receipt of the report, indicating how and on what schedule the system will address significant deficiencies noted in the survey.

(b) Public water systems shall take necessary steps to address significant deficiencies identified in sanitary survey reports if such deficiencies are within the control of the public water system and its governing body.

(c) Sanitary survey means an onsite review by the Department of the water source (identifying sources of contamination using results of source water assessments where available), facilities, equipment, operation, maintenance, and monitoring compliance of a public water system to evaluate the adequacy of the system, its sources and operations and the distribution of safe drinking water.

(d) Significant deficiency means a defect in a system's design, operation, or maintenance, as well as any failures or malfunctions of its treatment, storage, or distribution system, that is causing or has the potential to cause the introduction of contamination into water delivered to customers.

(e) When a public water system is required to conduct a comprehensive performance evaluation (CPE) pursuant to this Subchapter, the CPE shall include:

(1) assessment of water treatment plant performance;
(2) evaluation of major unit processes;
(3) identification and prioritization of performance limiting factors;
(4) assessment of the applicability of comprehensive technical assistance; and
(5) a written CPE report.

The public water system shall participate in a comprehensive technical assistance (CTA) activity when the Department determines, based on the CPE results, there is a potential for improved water treatment performance and the public water system is able to receive and implement technical assistance. During the CTA phase, the public water system shall use the CPE results to identify and systematically address factors limiting performance of its water treatment plant; further, the public water system shall implement process control priority-setting techniques, and maintain long-term involvement in training staff and administrators.

(f) The provisions of 40 C.F.R. 141, Subpart P - Enhanced Filtration and Disinfection - (Systems Serving 10,000 or More People), and Subpart T - Enhanced Filtration and Disinfection - (Systems Serving Fewer than 10,000 People) and the provisions of 40 C.F.R. 141, Subpart W- Enhanced Treatment for Cryptosporidium are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

History Note: *Authority G.S. 130A-315; P.L. 93-523; 40 C.F.R. 141*
Eff. August 1, 2000;
Amended Eff. April 1, 2014; October 1, 2009; November 1, 2005;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .2008 DISINFECTANTS AND DISINFECTION BYPRODUCTS

(a) The provisions of 40 C.F.R. 141.53 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

(b) The provisions of 40 C.F.R. 141.54 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

(c) The provisions of 40 C.F.R. 141.64 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

(d) The provisions of 40 C.F.R. 141.65 are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

(e) The provisions of 40 C.F.R. 141, Subpart L- Disinfectant Residuals, Disinfection Byproducts, and Disinfection Byproduct Precursors, and the provisions of 40 C.F.R. 141, Subparts U-Initial Distribution System Evaluations and Subpart V - Stage 2 Disinfection Byproducts Requirements are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

(f) Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by G.S. 130A-313(10), but do not serve 25 or more of the same persons more than six months per year shall be regulated as transient non-community water systems for the purpose of this Rule.

History Note: *Authority G.S. 130A-313; 130A-315; P.L. 93-525; 40 C.F.R. 141;*
Eff. August 1, 2000;
Amended Eff. April 1, 2014; October 1, 2009; August 1, 2002;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

SECTION .2100 - OPERATING PERMITS

15A NCAC 18C .2101 PERMITS

(a) Operating permits are required for all community water systems as of January 1, 1992.
(b) Permits shall be valid from January 1 through December 31 of each year.
(c) Community water systems which are constructed or which begin operation after January 1, 1992 shall obtain a permit prior to providing water to any connections. The permit shall be effective on the date that water service to the first customer begins and shall be valid until December 31 of each year issued. The annual fee shall be prorated on a monthly basis for permits obtained after January 1 of each year.

History Note: *Authority G.S. 130A-328;*
Temporary Adoption Eff. January 22, 1992 for a Period of 180 Days to Expire on July 19, 1992;
Eff. April 1, 1992;
Amended Eff. July 1, 1993;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .2102 APPLICATION FOR PERMIT

(a) An application for the issuance or renewal of an operating permit for a community water system shall be made on forms provided by the Department. An application shall include the following information:

(1) name and identification number of the community water system;
(2) name, address, and social security number or tax identification number of the supplier of water;
(3) name, address, and certification number of the certified operator in responsible charge of the community water system;
(4) name of each certified laboratory which provides analyses of water samples; and
(5) population served by the community water system.

(b) The fee for issuance or renewal of an operating permit is set forth in G.S. 130A-328.
(c) Payment shall be made by check, payable to the Department of Environment and Natural Resources and shall accompany the application.
(d) Applications for operating permits shall not be processed prior to the receipt of the required fees.
(e) An operating permit shall be renewed annually.
(f) The supplier of water who holds a current operating permit shall inform the Department of any change of address or transfer of ownership within 30 days of the change.

History Note: *Authority G.S. 130A-328;*
Temporary Adoption Eff. January 22, 1992 for a Period of 180 Days to Expire on July 19, 1992;
Eff. April 1, 1992;
Amended Eff. April 1, 2014; July 1, 1993;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .2103 INITIAL PERMIT PERIOD

History Note: *Authority G.S. 130A-328;*
Temporary Adoption Eff. January 22, 1992 for a Period of 180 Days to Expire on July 19, 1992;
Eff. April 1, 1992;
Expired Eff. December 1, 2015 pursuant to G.S. 150B-21.3A.

15A NCAC 18C .2104 RENEWAL FEES

Payment for permit renewal shall be due 60 days prior to the expiration of the prior year's permit. Failure to pay the fee by the permit expiration date shall result in assessment of an administrative penalty pursuant to G.S. 130A-22(b) equal to one-half of the fee set forth in G.S. 130A-328. Failure to pay the fee and the administrative penalty within 45 days after permit expiration shall result in an additional administrative penalty of ten dollars ($10.00) per day for each day that the fee and the penalty are not paid.

History Note: *Authority G.S. 130A-328;*
Temporary Adoption Eff. January 22, 1992 for a Period of 180 Days to Expire on July 19, 1992;
Eff. April 1, 1992;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .2105 REVOCATION

(a) The Department may revoke or suspend an operating permit when it is found that a supplier of water has:

(1) Failed to pay the annual fee;

(2) Failed to submit a complete permit application or provided fraudulent or misleading information in a permit application; or

(3) Failed to comply with rules governing community water systems set forth in 15A NCAC 18C.

(b) Action to revoke or suspend an operating permit shall not preclude the Department from seeking other remedies authorized by Part 2, Article 1 of Chapter 130A of the General Statutes.

History Note: *Authority G.S. 130A-328;*
Temporary Adoption Eff. January 22, 1992 for a Period of 180 Days to Expire on July 19, 1992;
Eff. April 1, 1992;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

SECTION .2200 - GROUND WATER SYSTEMS

15 A NCAC 18C .2201 APPLICABILITY AND RESIDUAL DISINFECTANT CONCENTRATIONS

(a) Applicability. The provisions of this Section apply to all ground water systems. A ground water system is defined as any public water system that uses ground water including a consecutive system receiving finished ground water. A ground water system does not include public water systems that combine all of their ground water with surface water or with ground water under the direct influence of surface water prior to treatment under Subpart H.

(b) Disinfection. Systems providing chemical disinfection in accordance with 15A NCAC 18C .0402(j) shall measure residual disinfectant concentrations. The locations and concentrations shall be as follows:

(1) Water entering the distribution system. The residual disinfectant concentration shall not be less than 0.2 mg/1 measured as free chlorine when chlorine is the singular applied disinfectant and shall not be less than 1.0 mg/l measured as total chlorine when ammonia and chlorine are applied disinfectants for more than two consecutive daily visits for systems that are collecting grab samples and not more than four hours for systems that perform continuous monitoring.

(2) Water in the distribution system at Coliform Sampling Sites. The residual disinfectant concentration shall not be less than 0.2 mg/1 measured as free chlorine when chlorine is the singular applied disinfectant and shall not be less than 1.0 mg/l measured as total chlorine when ammonia and chlorine are applied disinfectants.

(3) Water in the distribution system at Maximum Residence Time Sites. Systems shall measure residual disinfectant concentrations at maximum residence time sites or at other locations with high water age. The residual disinfectant concentrations at these locations shall be at detectable levels as set forth and calculated in 40 C.F.R. 141.72(a)(4) and (b)(3).

History Note: *Authority G.S. 130A-315; P.L. 93-523;*
Eff. October 1, 2009;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .2202 GROUND WATER RULE

The provisions of 40 C.F.R. 141, Subpart S – Ground Water Rule are hereby incorporated by reference including any subsequent amendments and editions. Copies are available for public inspection as set forth in Rule .0102 of this Subchapter.

The provisions are incorporated with the following exceptions:

(1) Fecal indicator for source water monitoring. When systems are required to conduct triggered source water monitoring or assessment source water monitoring under 40 C.F.R. 141.402 (a) and (b) respectively, any of the following three fecal indicators can be used: E. coli, enterococci, or coliphage.

(2) Corrective Action Alternatives. Ground water systems that are required to implement corrective action in accordance with 40 C.F.R. 141.403(a)(6) must determine that alternatives (a)(6)(i), (a)(6)(ii), and (a)(6)(iii) are not feasible before implementing alternative (a)(6)(iv). The rationale for selection of alternative (a)(6)(iv) must be documented in accordance with Rule .0307(b)(10) of this Subchapter.

(3) Assessment Source Water Monitoring. The Department shall use information from the Public Water Supply Section's database and from its Source Water Assessment Program to identify sources subject to assessment source water monitoring. Systems notified by the Department must commence assessment source water monitoring for the sources identified. The system shall conduct assessment source water monitoring for any source that receives physical or chemical treatment and possesses any one of the following characteristics:

(a) Any source subject to the requirements of G.S. 130A-317(b) and rules in this Subchapter for which the public water system did not receive approval from the Department for construction or alteration.

(b) Source is deemed by the Source Water Assessment Program to have a Higher Inherent Vulnerability Rating and the system has historical total or fecal coliform MCL violations during the compliance periods between January 1, 2005 and December 31, 2008.

(c) Source is deemed by the Source Water Assessment Program to have a Higher Inherent Vulnerability Rating and the system has total or fecal coliform monitoring violations cited for more than 25 percent of the compliance periods between January 1, 2005 and December 31, 2008.

(4) Any system shall perform assessment source water monitoring as directed by the Department in response to deficiencies identified by a sanitary survey that are related to source or treatment. Assessment source water monitoring shall be conducted in accordance with the requirements specified in 40 C.F.R. 141.402(b)(1) through (6) using any of the following three fecal indicators: E. coli, enterococci, or coliphage.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523; 40 C.F.R. 141 Subpart S;*
Eff. October 1, 2009;
Amended Eff. April 1, 2014;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.