15A NCAC 02B .0208 has been amended with changes as published in 17:1 NCR 48-50 as follows:

.0208 STANDARDS FOR TOXIC SUBSTANCES AND TEMPERATURE

(a) Toxic Substances. The concentration of toxic substances, either alone or in combination with other wastes, in surface waters ~~will~~ shall not render waters injurious to aquatic life or wildlife, recreational activities, public health, or impair the waters for any designated uses. Specific standards for toxic substances to protect freshwater and tidal saltwater uses are listed in Rules .0211 and ~~.0212~~ .0220 of this Section, respectively. Procedures for interpreting the narrative standard for toxic substances and numerical standards applicable to all waters are as follows:

(1) Aquatic life standards. The concentration of toxic substances ~~will~~ shall not result in chronic toxicity. Any levels in excess of the chronic value will be considered to result in chronic toxicity. In the absence of direct measurements of chronic toxicity, the concentration of toxic substances ~~will~~ shall not exceed the concentration specified by the fraction of the lowest LC50 value ~~which~~ that predicts a no effect chronic level (as determined by the use of acceptable acute/chronic ratios). If an acceptable acute/chronic ratio is not available, then that toxic substance ~~will~~ shall not exceed one-one hundredth (0.01) of the lowest LC50 or if it is affirmatively demonstrated that a toxic substance has a half-life of less than 96 hours the maximum concentration ~~will~~ shall not exceed one-twentieth (0.05) of the lowest LC50.

(2) Human health standards. The concentration of toxic substances ~~will~~ shall not exceed the level necessary to protect human health through exposure routes of fish (or shellfish) tissue consumption, water consumption, or other route identified as appropriate for the water body.

(A) For non-carcinogens, these concentrations ~~will~~ shall be determined using a Reference Dose (RfD) as published by the U.S. Environmental Protection Agency pursuant to Section 304(a) of the Federal Water Pollution Control Act as amended or a RfD issued by the U.S. Environmental Protection Agency as listed in the Integrated Risk Information System (IRIS) file or a RfD approved by the Director after consultation with the State Health director. Water quality standards or criteria used to calculate water quality based effluent limitations to protect human health through the different exposure routes are determined as follows:

(i) Fish tissue consumption:

WQS = (RfD-DT) x Body Weight / (FCRxBCF)

where:

WQS = water quality standard or criteria;

RfD = reference dose;

DT = estimated non-fish dietary intake (when available);

FCR = fish consumption rate (assumed to be 6.5 gm/person-day);

BCF = bioconcentration factor, or bioaccumulation factor (BAF), as appropriate.

BCF or BAF values are based on U.S. Environmental Protection Agency publications pursuant to Section 304(a) of the Federal Water Pollution Control Act as amended, literature values, or site specific bioconcentration data approved by the Commission or its designee; FCR values are average consumption rates for a 70 Kg adult for the lifetime of the population; alternative FCR values may be used when it is considered necessary to protect localized populations ~~which~~ that may be consuming fish at a higher rate;

(ii) Water consumption (including a correction for fish consumption):

WQS = (RfD-DT) x Body Weight / [WCR+(FCRxBCF)]

where:

WQS = water quality standard or criteria;

RfD = reference dose;

DT = estimated non-fish dietary intake (when available);

FCR = fish consumption rate (assumed to be 6.5 gm/person-day);

BCF = bioconcentration factor, or bioaccumulation factor (BAF), as appropriate;

WCR = water consumption rate (assumed to be 2 liters per day for adults).

To protect sensitive groups, exposure may be based on a 10 Kg child drinking one liter of water per day. Standards may also be based on drinking water standards based on the requirements of the Federal Safe Drinking Water Act [42 U.S.C. 300(f)(g)-1]. For non-carcinogens, specific numerical water quality standards have not been included in this Rule because water quality standards to protect aquatic life for all toxic substances for which standards have been considered are more stringent than numerical standards to protect human health from non-carcinogens through consumption of fish; standards to protect human health from non-carcinogens through water consumption are listed under the water supply classification standards in Rule .0211 of this Section; the equations listed in this Subparagraph ~~will~~ shall be used to develop water quality based effluent limitations on a case-by-case basis for toxic substances ~~which~~ that are not presently included in the water quality standards. Alternative FCR values may be used when it is considered necessary to protect localized populations ~~which~~ that may be consuming fish at a higher rate;

(B) For carcinogens, the concentrations of toxic substances ~~will~~ shall not result in unacceptable health risks and ~~will~~ shall be based on a Carcinogenic Potency Factor (CPF). An unacceptable health risk for cancer ~~will~~ shall be considered to be more than one case of cancer per one million people exposed (10-6 risk level). The CPF is a measure of the cancer-causing potency of a substance estimated by the upper 95 percent confidence limit of the slope of a straight line calculated by the Linearized Multistage

Model or other appropriate model according to U.S. Environmental Protection Agency Guidelines [FR 51 (185): 33992-34003; and FR 45 (231 Part V): 79318-79379]. Water quality standards or criteria for water quality based effluent limitations are calculated using the procedures given in Subparagraphs (A) and (B) of this Rule. Standards to protect human health from carcinogens through water consumption are listed under the water supply classification standards in ~~Rule .0211~~ Rules .0212, .0214, .0215, .0216, and .0218 of this Section; standards to protect human health from carcinogens through the consumption of fish (and shellfish) only are applicable to all waters as follows:

~~(i) Berylium: 117 ng/1;~~

~~(ii) Benzene: 71.4 ug/1;~~

~~(iii) Carbon tetrachloride: 4.42 ug/l;~~

~~(iv) Dioxin: 0.000014 ng/l;~~

~~(v) Hexachlorobutadiene: 49.7 ug/l;~~

~~(vi) Polychlorinated biphenyls: 0.079 ng/l;~~

~~(vii) Polynuclear aromatic hydrocarbons: 31.1 ng/l;~~

~~(viii) Tetrachloroethane (1,1,2,2): 10.8 ug/l;~~

~~(ix) Trichloroethylene: 92.4 ug/l;~~

~~(x) Vinyl chloride: 525 ug/l;~~

~~(xi) Aldrin: 0.136 ng/1;~~

~~(xii) Chlordane: 0.588 ng/1;~~

~~(xiii) DDT: 0.591 ng/1;~~

~~(xiv) Dieldrin: 0.11 ng/1;~~

~~(xv) Heptachlor: 0.214 ng/1.~~

(i) Aldrin: 0.136 ng/l;

(ii) Arsenic: 10 ug/l;

(iii) Benzene: 71.4 ug/l;

(iv) Beryllium: 117 ng/l;

(v) Carbon tetrachloride: 4.42 ug/l;

(vi) Chlordane: 0.588 ng/l;

(vii) DDT: 0.591 ng/l;

(viii) Dieldrin: 0.144 ng/l;

(ix) Dioxin: 0.000014 ng/l;

(x) Heptachlor: 0.214 ng/l;

(xi) Hexachlorobutadiene: 49.7 ug/l;

(xii) Polychlorinated biphenyls: 0.079 ng/l;

(xiii) Polynuclear aromatic hydrocarbons: 31.1 ng/l;

(xiv) Tetrachloroethane (1,1,2,2): 10.8 ug/l;

(xv) Trichloroethylene: 92.4 ug/l;

(xvi) Vinyl chloride: 525 ug/l.

The values listed in (i) through ~~(xv)~~(xvi) in Subparagraph (B) of this Rule may be adjusted by the Commission or its designee on a case-by-case basis to account for site-specific or chemical-specific information pertaining to the assumed BCF, FCR or CPF values or other ~~appropriate~~ data.

(b) Temperature. The Commission may establish a water quality standard for temperature for specific water bodies other than the standards specified in Rules .0211 and ~~.0212~~ .0220 of this Section, upon a case-by-case determination that thermal discharges to these waters, ~~which~~ that serve or may serve as a source ~~and/or~~ or receptor of industrial cooling water provide for the maintenance of the designated best use throughout a reasonable portion of the water body. Such revisions of the temperature standard must be consistent with the provisions of Section 316(a) of the Federal Water Pollution Control Act as amended and ~~will~~ shall be noted in Rule .0218 of this Section.

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1);*
Eff. February 1, 1976;
Amended Eff. April 1, 2003; February 1, 1993; October 1, 1989; January 1, 1985; September 9, 1979.

15A NCAC 2B .0211 has been amended as published in 17:1 NCR 50-54 as follows:

.0211 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS C WATERS

General. The water quality standards for all fresh surface waters are the basic standards applicable to Class C waters. See Rule .0208 of this Section for standards for toxic substances and temperature. Additional and more stringent standards applicable to other specific freshwater classifications are specified in Rules .0212, .0214, .0215, .0216, .0217, .0218, .0219, .0223, .0224 and .0225 of this Section.

(1) Best Usage of Waters. Aquatic life propagation and maintenance of biological integrity (including fishing, and fish), wildlife, secondary recreation, agriculture and any other usage except for primary recreation or as a source of water supply for drinking, culinary or food processing purposes;

(2) Conditions Related to Best Usage. The waters shall be suitable for aquatic life propagation and maintenance of biological integrity, wildlife, secondary recreation, and agriculture; sources of water pollution which preclude any of these uses on either a short-term or long-term basis shall be considered to be violating a water quality standard;

(3) Quality standards applicable to all fresh surface waters:

(a) Chlorophyll a (corrected): not greater than 40 ug/l for lakes, reservoirs, and other waters subject to growths of macroscopic or microscopic vegetation not designated as trout waters, and not greater than 15 ug/l for lakes, reservoirs, and other waters subject to growths of macroscopic or microscopic vegetation designated as trout waters (not applicable to lakes and reservoirs less than 10 acres in surface area); the Commission or its designee may prohibit or limit any discharge of waste into surface waters if, in the opinion of the Director, the surface waters experience or the discharge would result in growths of microscopic or macroscopic vegetation such that the standards established pursuant to this Rule would be violated or the intended best usage of the waters would be impaired;

(b) Dissolved oxygen: not less than 6.0 mg/l for trout waters; for non-trout waters, not less than a daily average of 5.0 mg/l with a minimum instantaneous value of not less than 4.0 mg/l; swamp waters, lake coves or backwaters, and lake bottom waters may have lower values if caused by natural conditions;

(c) Floating solids; settleable solids; sludge deposits: only such amounts attributable to sewage, industrial wastes or other wastes as shall not make the water unsafe or unsuitable for aquatic life and wildlife or impair the waters for any designated uses;

(d) Gases, total dissolved: not greater than 110 percent of saturation;

(e) Organisms of the coliform group: fecal coliforms shall not exceed a geometric mean of 200/100ml (MF count) based upon at least five consecutive samples examined during any 30 day period, nor exceed 400/100ml in more than 20 percent of the samples examined

during such period; violations of the fecal coliform standard are expected during rainfall events and, in some cases, this violation is expected to be caused by uncontrollable nonpoint source pollution; all coliform concentrations are to be analyzed using the membrane filter technique unless high turbidity or other adverse conditions necessitate the tube dilution method; in case of controversy over results, the MPN 5-tube dilution technique shall be used as the reference method;

(f) Oils; deleterious substances; colored or other wastes: only such amounts as shall not render the waters injurious to public health, secondary recreation or to aquatic life and wildlife or adversely affect the palatability of fish, aesthetic quality or impair the waters for any designated uses; for the purpose of implementing this Rule, oils, deleterious substances, colored or other wastes shall include but not be limited to substances that cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines pursuant to 40 CFR 110.4(a)-(b) which are hereby incorporated by reference including any subsequent amendments and additions. This material is available for inspection at the Department of Environment and Natural Resources, Division of Water Quality, 512 North Salisbury Street, Raleigh, North Carolina. Copies may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402-9325 at a cost of thirteen dollars ($13.00).

(g) pH: shall be normal for the waters in the area, which generally shall range between 6.0 and 9.0 except that swamp waters may have a pH as low as 4.3 if it is the result of natural conditions;

(h) Phenolic compounds: only such levels as shall not result in fish-flesh tainting or impairment of other best usage;

(i) Radioactive substances:

(i) Combined radium-226 and radium-228: the maximum average annual activity level (based on at least four samples collected quarterly) for combined radium-226 and radium-228 shall not exceed five picoCuries per liter;

(ii) Alpha Emitters: the average annual gross alpha particle activity (including radium-226, but excluding radon and uranium) shall not exceed 15 picoCuries per liter;

(iii) Beta Emitters: the maximum average annual activity level (based on at least four samples, collected quarterly) for strontium-90 shall not exceed eight picoCuries per liter; nor shall the average annual gross beta particle activity (excluding potassium-40 and other naturally occurring radio-nuclides) exceed 50 picoCuries per liter; nor shall the maximum average annual activity level for tritium exceed 20,000 picoCuries per liter;

(j) Temperature: not to exceed 2.8 degrees C (5.04 degrees F) above the natural water temperature, and in no case to exceed 29 degrees C (84.2 degrees F) for mountain and upper piedmont waters and 32 degrees C (89.6 degrees F) for lower piedmont and coastal plain waters. The temperature for trout waters shall not be increased by more than 0.5 degrees C (0.9 degrees F) due to the discharge of heated liquids, but in no case to exceed 20 degrees C (68 degrees F);

(k) Turbidity: the turbidity in the receiving water shall not exceed 50 Nephelometric Turbidity Units (NTU) in streams not designated as trout waters and 10 NTU in streams, lakes or reservoirs designated as trout waters; for lakes and reservoirs not designated as trout waters, the turbidity shall not exceed 25 NTU; if turbidity exceeds these levels due to natural background conditions, the existing turbidity level cannot be increased. Compliance with this turbidity standard can be met when land management activities employ Best Management Practices (BMPs) [as defined by Rule ~~.0202(6)~~ .0202 of this Section] recommended by the Designated Nonpoint Source Agency [as defined by Rule .0202 of this Section]. BMPs must be in full compliance with all specifications governing the proper design, installation, operation and maintenance of such BMPs;

(l) Toxic substances: numerical water quality standards (maximum permissible levels) for the protection of human health applicable to all fresh surface waters are in Rule .0208 of this Section; numerical water quality standards (maximum permissible levels) to protect aquatic life applicable to all fresh surface waters:

(i) Arsenic: 50 ug/l;

(ii) Beryllium: 6.5 ug/l;

(iii) Cadmium: 0.4 ug/l for trout waters and 2.0 ug/l for non-trout waters; attainment of these water quality standards in surface waters shall be based on measurement of total recoverable metals concentrations unless appropriate studies have been conducted to translate total recoverable metals to a toxic form. Studies used to determine the toxic form or translators must be designed according to the "Water Quality Standards Handbook Second Edition" published by the Environmental Protection Agency (EPA 823-B-94-005a) or "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion" published by the Environmental Protection Agency (EPA 823-B-96-007) which are hereby incorporated by reference including any subsequent amendments. The Director shall consider conformance to EPA guidance as well as the presence of environmental conditions that limit the applicability of translators in approving the use of metal translators.

(iv) Chlorine, total residual: ~~17 ug/l for trout waters (Tr); (Action Level of 17 ug/l for all waters not classified as trout waters (Tr); see Item (4) of this Rule);~~ 17 ug/l;

(v) Chromium, total recoverable: 50 ug/l;

(vi) Cyanide: 5.0 ug/l; unless site-specific criteria are developed based upon the aquatic life at the site utilizing The Recalculation Procedure in Appendix B of Appendix L in the Environmental Protection Agency's Water Quality Standards Handbook hereby incorporated by reference including any subsequent amendments;

(vii) Fluorides: 1.8 mg/l;

(viii) Lead, total recoverable: 25 ug/l; collection of data on sources, transport and fate of lead shall be required as part of the toxicity reduction evaluation for dischargers that are out of compliance with whole effluent toxicity testing requirements and the concentration of lead in the effluent is concomitantly determined to exceed an instream level of 3.1 ug/l from the discharge;

~~(ix) MBAS (Methylene Blue Active Substances): 0.5 mg/l;~~

~~(x)~~(ix) Mercury: 0.012 ug/l;

~~(xi)~~(x) Nickel: 88 ug/l; attainment of these water quality standards in surface waters shall be based on measurement of total recoverable metals concentrations unless appropriate studies have been conducted to translate total recoverable metals to a toxic form. Studies used to determine the toxic form or translators must be designed according to the "Water Quality Standards Handbook Second Edition" published by the Environmental Protection Agency (EPA 823-B-94-005a) or "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion" published by the Environmental Protection Agency (EPA 823-B-96-007) which are hereby incorporated by reference including any subsequent amendments. The Director shall consider conformance to EPA guidance as well as the presence of environmental conditions that limit the applicability of translators in approving the use of metal translators.

~~(xii)~~(xi) Pesticides:

(A) Aldrin: 0.002 ug/l;

(B) Chlordane: 0.004 ug/l;

(C) DDT: 0.001 ug/l;

(D) Demeton: 0.1 ug/l;

(E) Dieldrin: 0.002 ug/l;

(F) Endosulfan: 0.05 ug/l;

(G) Endrin: 0.002 ug/l;

(H) Guthion: 0.01 ug/l;

(I) Heptachlor: 0.004 ug/l;

(J) Lindane: 0.01 ug/l;

(K) Methoxychlor: 0.03 ug/l;

(L) Mirex: 0.001 ug/l;

(M) Parathion: 0.013 ug/l;

(N) Toxaphene: 0.0002 ug/l;

~~(xiii)~~(xii) Polychlorinated biphenyls: 0.001 ug/l;

~~(xiv)~~(xiii) Selenium: 5 ug/l;

~~(xv)~~(xiv) Toluene: 11 ug/l or 0.36 ug/l in trout waters;

~~(xvi)~~(xv) Trialkyltin compounds: 0.008 ug/l expressed as tributyltin;

(4) Action Levels for Toxic Substances: if the Action Levels for any of the substances listed in this Subparagraph (which are generally not bioaccumulative and have variable toxicity to aquatic life because of chemical form, solubility, stream characteristics or associated waste characteristics) are determined by the waste load allocation to be exceeded in a receiving water by a discharge under the specified low flow criterion for toxic substances (Rule .0206 in this Section), the discharger shall monitor the chemical or biological effects of the discharge; efforts shall be made by all dischargers to reduce or eliminate these substances from their effluents. Those substances for which Action Levels are listed in this Subparagraph shall be limited as appropriate in the NPDES permit based on the Action Levels listed in this Subparagraph if sufficient information (to be determined for metals by measurements of that portion of the dissolved instream concentration of the Action Level parameter attributable to a specific NPDES permitted discharge) exists to indicate that any of those substances may be a causative factor resulting in toxicity of the effluent. NPDES permit limits may be based on translation of the toxic form to total recoverable metals. Studies used to determine the toxic form or translators must be designed according to "Water Quality Standards Handbook Second Edition" published by the Environmental Protection Agency (EPA 823-B-94-005a) or "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion" published by the Environmental Protection Agency (EPA 823-B-96-007) which are hereby incorporated by reference including any subsequent amendments. The Director shall consider conformance to EPA guidance as well as the presence of environmental conditions that limit the applicability of translators in approving the use of metal translators.

(a) Copper: 7 ug/l;

(b) Iron: 1.0 mg/l;

(c) Silver: 0.06 ug/l;

(d) Zinc: 50 ug/l;

(e) Chloride: 230 mg/l;

~~(f) Chlorine, total residual: 17 ug/l in all waters except trout waters (Tr); [a standard of 17 ug/l exists for waters classified as trout waters and is applicable as such to all dischargers to trout waters; see Sub-Item (3)(1)(iv) of this Rule];~~

For purposes other than consideration of NPDES permitting of point source discharges as described in this Subparagraph, the Action Levels in this Rule, as measured by an appropriate analytical technique, per 15A NCAC 2B .0103(a), shall be considered as numerical ambient water quality standards.

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1);*
Eff. February 1, 1976;
Amended Eff. April 1, 2003; August 1, 2000; October 1, 1995; August 1, 1995; April 1, 1994; February 1, 1993.

15A NCAC 2B .0212 has been amended with changes as published in 17:1 NCR 54-55 as follows:

.0212 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS WS-I WATERS

The following water quality standards apply to surface waters within water supply watersheds that are classified WS-I. Water quality standards applicable to Class C waters as described in Rule .0211 of this Section also apply to Class WS-I waters.

(1) ~~Best Usage of Waters. Source~~ The best usage of WS-I waters are as follows: a source of water supply for drinking, culinary, or food-processing purposes for those users desiring maximum protection of their water supplies, waters located on land in public ownership, and any best usage specified for Class C waters.

(2) ~~Conditions Related to the Best Usage. Waters~~ The conditions related to the best usage are as follows: waters of this class are protected water supplies within essentially natural and undeveloped watersheds in public ownership with no permitted point source dischargers except those specified in Rule .0104 of this Subchapter; waters within this class must be relatively unimpacted by nonpoint sources of pollution; land use management programs are required to protect waters from nonpoint source pollution; the waters, following treatment required by the Division of Environmental Health, shall meet the Maximum Contaminant Level concentrations considered safe for drinking, culinary, and food-processing purposes which are specified in the national drinking water regulations and in the North Carolina Rules Governing Public Water Supplies, 15A NCAC 18C .1500; sources of water pollution which preclude any of these uses on either a short-term or long-term basis shall be considered to be violating a water quality standard. The Class WS-I classification may be used to protect portions of Class WS-II, WS-III and WS-IV water supplies. For reclassifications occurring after the July 1, 1992 statewide reclassification, the more protective classification requested by local governments shall be considered by the Commission when all local governments having jurisdiction in the affected area(s) have adopted a resolution and the appropriate ordinances to protect the watershed or the Commission acts to protect a watershed when one or more local governments has failed to adopt necessary protection measures.

(3) ~~Quality Standards Applicable to Class WS-I Waters:~~ Quality standards applicable to Class WS-I Waters are as follows:

(a) MBAS (Methylene-Blue Active Substances): not greater than 0.5 mg/l to protect the aesthetic qualities of water supplies and to prevent foaming;

~~(a)~~(b) Nonpoint Source Pollution: none that would adversely impact the waters for use as a water supply or any other designated use;

~~(b)~~(c) Organisms of coliform group: total coliforms not to exceed 50/100 ml (MF count) as a monthly geometric mean value in watersheds serving as unfiltered water supplies;

~~(c)~~(d) Phenolic compounds: not greater than 1.0 ug/l (phenols) to protect water supplies from taste and odor problems from chlorinated phenols;

~~(d)~~(e) Sewage, industrial wastes: none except those specified in Subparagraph (2) of this Paragraph or Rule .0104 of this Subchapter;

~~(e)~~(f) Solids, total dissolved: not greater than 500 mg/l;

~~(f)~~(g) Total hardness: not greater than 100 mg/l as calcium carbonate;

~~(g)~~(h) Toxic and other deleterious substances:

(i) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for non-carcinogens in Class WS-I waters:

(A) Barium: 1.0 mg/l;

(B) Chloride: 250 mg/l;

(C) Manganese: 200 ug/l;

(D) Nickel: 25 ug/l;

(E) Nitrate nitrogen: 10.0 mg/l;

(F) 2,4-D: 100 ug/l;

(G) 2,4,5-TP (Silvex): 10 ug/l;

(H) Sulfates: 250 mg/l;

(ii) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for carcinogens in Class WS-I waters:

~~(A) Berylium: 6.8 ng/1;~~

~~(B) Benzene: 1.19 ug/1;~~

~~(C) Carbon tetrachloride: 0.254 ug/l;~~

~~(D) Chlorinated benzenes: 488 ug/l;~~

~~(E) Dioxin: 0.000013 ng/l;~~

~~(F) Hexachlorobutadiene: 0.445 ug/l;~~

~~(G) Polynuclear aromatic hydrocarbons: 2.8 ng/l;~~

~~(H) Tetrachloroethane (1,1,2,2): 0.172 ug/l;~~

~~(I) Tetrachloroethylene: 0.8 ug/l;~~

~~(J) Trichloroethylene: 3.08 ug/l;~~

~~(K) Vinyl Chloride: 2 ug/l;~~

~~(L) Aldrin: 0.127 ng/1;~~

~~(M) Chlordane: 0.575 ng/1;~~

~~(N) DDT: 0.588 ng/1;~~

~~(O) Dieldrin: 0.135 ng/1;~~

~~(P) Heptachlor: 0.208 ng/1.~~

(A) Aldrin: 0.127 ng/1;

(B) Arsenic: 10 ug/l;

(C) Benzene: 1.19 ug/1;

(D) Beryllium: 6.8 ng/1;

(E) Carbon tetrachloride: 0.254 ug/l;

(F) Chlordane: 0.575 ng/1;

(G) Chlorinated benzenes: 488 ug/l;

(H) DDT: 0.588 ng/1;

(I) Dieldrin: 0.135 ng/1;

(J) Dioxin: 0.000013 ng/l;

(K) Heptachlor: 0.208 ng/1;

(L) Hexachlorobutadiene: 0.445 ug/l;

(M) Polynuclear aromatic hydrocarbons: 2.8 ng/l;

(N) Tetrachloroethane (1,1,2,2): 0.172 ug/l;

(O) Tetrachloroethylene: 0.8 ug/l;

(P) Trichloroethylene: 3.08 ug/l;

(Q) Vinyl Chloride: 2 ug/l.

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1);*
Eff. February 1, 1976;
Amended Eff. April 1, 2003; October 1, 1995; February 1, 1993; March 1, 1991; October 1, 1989.

15A NCAC 2B .0214 has been amended with changes as published in 17:1 NCR 55-60 as follows:

.0214 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS WS-II WATERS

The following water quality standards apply to surface waters within water supply watersheds that are classified WS-II. Water quality standards applicable to Class C waters as described in Rule .0211 of this Section also apply to Class WS-II waters.

(1) ~~Best Usage of Waters. Source~~ The best usage of WS-II waters are as follows: a source of water supply for drinking, culinary, or food-processing purposes for those users desiring maximum protection for their water supplies where a WS-I classification is not feasible and any best usage specified for Class C waters.

(2) ~~Conditions Related to Best Usage. Waters~~ The conditions related to the best usage are as follows: waters of this class are protected as water supplies which are in predominantly undeveloped watersheds and meet average watershed development density levels as specified in Sub-Items (3)(b)(i)(A), (3)(b)(i)(B), (3)(b)(ii)(A) and (3)(b)(ii)(B) of this Rule; discharges which qualify for a General Permit pursuant to 15A NCAC 2H .0127, trout farm discharges, recycle (closed loop) systems that only discharge in response to 10-year storm events and other stormwater discharges are allowed in the entire watershed; new domestic and industrial discharges of treated wastewater are not allowed in the entire watershed; the waters, following treatment required by the Division of Environmental Health, shall meet the Maximum Contaminant Level concentrations considered safe for drinking, culinary, and food-processing purposes which are specified in the national drinking water regulations and in the North Carolina Rules Governing Public Water Supplies, 15A NCAC 18C .1500; sources of water pollution which preclude any of these uses on either a short-term or long-term basis shall be considered to be violating a water quality standard. The Class WS-II classification may be used to protect portions of Class WS-III and WS-IV water supplies. For reclassifications of these portions of Class WS-III and WS-IV water supplies occurring after the July 1, 1992 statewide reclassification, the more protective classification requested by local governments shall be considered by the Commission when all local governments having jurisdiction in the affected area(s) have adopted a resolution and the appropriate ordinances to protect the watershed or the Commission acts to protect a watershed when one or more local governments has failed to adopt necessary protection measures.

(3) ~~Quality Standards Applicable to Class WS-II Waters:~~ Quality standards applicable to Class WS-II Waters are as follows:

(a) Sewage, industrial wastes, non-process industrial wastes, or other wastes: none except for those specified in either Item (2) of this Rule and Rule .0104 of this Subchapter; and none which shall have an adverse effect on human health or which are not effectively treated to the satisfaction of the Commission and in accordance with the requirements of the Division of Environmental Health, North Carolina Department of ~~Environment,~~

~~Health,~~ Environment and Natural Resources; any discharger may be required upon request by the Commission to disclose all chemical constituents present or potentially present in their wastes and chemicals which could be spilled or be present in runoff from their facility which may have an adverse impact on downstream water quality; these facilities may be required to have spill and treatment failure control plans as well as perform special monitoring for toxic substances;

(b) Nonpoint Source and Stormwater Pollution: none that would adversely impact the waters for use as a water supply or any other designated use;

(i) Nonpoint Source and Stormwater Pollution Control Criteria For Entire Watershed:

(A) Low Density Option: Development density must be limited to either no more than one dwelling unit per acre of single family detached residential development (or 40,000 square foot lot excluding roadway right-of-way) or 12 percent built-upon area for all other residential and non-residential development in the watershed outside of the critical area; Stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable;

(B) High Density Option: If new development exceeds the low density option requirements as stated in Sub-Item (3)(b)(i)(A) of this Rule, then engineered stormwater controls must be used to control runoff from the first inch of rainfall; new residential and non-residential development shall not exceed 30 percent built-upon area;

(C) Land within the watershed shall be deemed compliant with the density requirements if the following condition is met: The density of all existing development at the time of reclassification does not exceed the density requirement when densities are averaged throughout the entire watershed area at the time of classification;

(D) Cluster development is allowed on a project-by-project basis as follows:

(I) overall density of the project meets associated density or stormwater control requirements of this ~~Section;~~ Rule;

(II) buffers meet the minimum statewide water supply watershed protection requirements;

(III) built-upon areas are designed and located to minimize stormwater runoff impact to the receiving waters, minimize concentrated stormwater flow, maximize the use of sheet flow

through vegetated areas; and maximize the flow length through vegetated areas;

(IV) areas of concentrated development are located in upland areas and away, to the maximum extent practicable, from surface waters and drainageways;

(V) remainder of tract to remain in vegetated or natural state;

(VI) area in the vegetated or natural state may be conveyed to a property owners association; a local government for preservation as a park or greenway; a conservation organization; or placed in a permanent conservation or farmland preservation easement;

(VII) a maintenance agreement for the vegetated or natural area shall be filed with the Register of Deeds; and

(VIII) cluster development that meets the applicable low density option requirements shall transport stormwater runoff from the development by vegetated conveyances to the maximum extent practicable;

(E) A maximum of 10 percent of each jurisdiction's portion of the watershed outside of the critical area as delineated on July 1, 1993 may be developed with new development projects and expansions of existing development of up to 70 percent built-upon surface area in addition to the new development approved in compliance with the appropriate requirements of Sub-Item (3)(b)(i)(A) or Sub-Item (3)(b)(i)(B) of this Rule. For expansions to existing development, the existing built-upon surface area is not counted toward the allowed 70 percent built-upon surface area. A local government having jurisdiction within the watershed may transfer, in whole or in part, its right to the 10 percent/70 percent land area to another local government within the watershed upon submittal of a joint resolution and review by the Commission. When the water supply watershed is composed of public lands, such as National Forest land, local governments may count the public land acreage within the watershed outside of the critical area in calculating the acreage allowed under this provision. For local governments that do not choose to use the high density option in that WS-II watershed, each project must, to the maximum extent practicable, minimize built-upon surface area, direct stormwater runoff away from surface waters and incorporate best management practices

to minimize water quality impacts; if the local government selects the high density development option within that WS-II watershed, then engineered stormwater controls must be employed for the new development;

(F) If local governments choose the high density development option which requires stormwater controls, then they shall assume ultimate responsibility for operation and maintenance of the required controls as outlined in Rule .0104 of this Subchapter;

(G) Minimum 100 foot vegetative buffer is required for all new development activities that exceed the low density option requirements as specified in Sub-Items (3)(b)(i)(A) and Sub-Item (3)(b)(ii)(A) of this Rule; otherwise a minimum 30 foot vegetative buffer for development activities is required along all perennial waters indicated on the most recent versions of U.S.G.S. 1:24,000 (7.5 minute) scale topographic maps or as determined by local government studies; nothing in this ~~Section~~ Rule shall stand as a bar to ~~desirable~~ artificial streambank or shoreline stabilization;

(H) No new development is allowed in the buffer; water dependent structures, or other structures such as flag poles, signs and security lights, which result in only diminimus increases in impervious area and public projects such as road crossings and greenways may be allowed where no practicable alternative exists; these activities shall minimize built-upon surface area, direct runoff away from the surface waters and maximize the utilization of BMPs;

(I) No NPDES permits shall be issued for landfills that discharge treated leachate;

(ii) Critical Area Nonpoint Source and Stormwater Pollution Control Criteria:

(A) Low Density Option: New development is limited to either no more than one dwelling unit of single family detached residential development per two acres (or 80,000 square foot lot excluding roadway right-of-way) or six percent built-upon area for all other residential and non-residential development; Stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable;

(B) High Density Option: If new development density exceeds the low density requirements specified in Sub-Item (3)(b)(ii)(A) of this Rule, then engineered stormwater controls must be used to control runoff

from the first inch of rainfall; new residential and non-residential development density not to exceed 24 percent built-upon area;

(C) No new permitted sites for land application of residuals or petroleum contaminated soils are allowed;

(D) No new landfills are allowed;

(c) MBAS (Methylene-Blue Active Substances): not greater than 0.5 mg/l to protect the aesthetic qualities of water supplies and to prevent foaming;

~~(c)~~(d) Odor producing substances contained in sewage or other wastes: only such amounts, whether alone or in combination with other substances or wastes, as will not cause~~:~~ taste and odor difficulties in water supplies which cannot be corrected by treatment, impair the palatability of fish, or have a deleterious effect upon any best usage established for waters of this class;

~~(d)~~(e) Phenolic compounds: not greater than 1.0 ug/l (phenols) to protect water supplies from taste and odor problems from chlorinated phenols;

~~(e)~~(f) Total hardness: not greater than 100 mg/l as calcium carbonate;

~~(f)~~(g) Total dissolved solids: not greater than 500 mg/l;

~~(g)~~(h) Toxic and other deleterious substances:

(i) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for non-carcinogens in Class WS-II waters:

(A) Barium: 1.0 mg/l;

(B) Chloride: 250 mg/l;

(C) Manganese: 200 ug/l;

(D) Nickel: 25 ug/l;

(E) Nitrate nitrogen: 10 mg/l;

(F) 2,4-D: 100 ug/l;

(G) 2,4,5-TP: 10 ug/l;

(H) Sulfates: 250 mg/l;

(ii) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for carcinogens in Class WS-II waters:

~~(A) Beryllium: 6.8 ng/1;~~

~~(B) Benzene: 1.19 ug/1;~~

~~(C) Carbon tetrachloride: 0.254 ug/l;~~

~~(D) Chlorinated benzenes: 488 ug/l;~~

~~(E) Dioxin: 0.000013 ng/l;~~

~~(F) Hexachlorobutadiene: 0.445 ug/l;~~

~~(G) Polynuclear aromatic hydrocarbons: 2.8 ng/l;~~

~~(H) Tetrachloroethane (1,1,2,2): 0.172 ug/l;~~

~~(I) Tetrachloroethylene: 0.8 ug/l;~~

~~(J) Trichloroethylene: 3.08 ug/l;~~

~~(K) Vinyl Chloride: 2 ug/l;~~

~~(L) Aldrin: 0.127 ng/1;~~

~~(M) Chlordane: 0.575 ng/1;~~

~~(N) DDT: 0.588 ng/1;~~

~~(O) Dieldrin: 0.135 ng/1;~~

~~(P) Heptachlor: 0.208 ng/1.~~

(A) Aldrin: 0.127 ng/l;

(B) Arsenic: 10 ug/l;

(C) Benzene: 1.19 ug/l;

(D) Beryllium: 6.8 ng/l;

(E) Carbon tetrachloride: 0.254 ug/l;

(F) Chlordane: 0.575 ng/l;

(G) Chlorinated benzenes: 488 ug/l;

(H) DDT: 0.588 ng/l;

(I) Dieldrin: 0.135 ng/l;

(J) Dioxin: 0.000013 ng/l;

(K) Heptachlor: 0.208 ng/l;

(L) Hexachlorobutadiene: 0.445 ug/l;

(M) Polynuclear aromatic hydrocarbons: 2.8 ng/l;

(N) Tetrachloroethane (1,1,2,2): 0.172 ug/l;

(O) Tetrachloroethylene: 0.8 ug/l;

(P) Trichloroethylene: 3.08 ug/l;

(Q) Vinyl Chloride: 2 ug/l.

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1);*
Eff. May 10, 1979;
Amended Eff. April 1, 2003; January 1, 1996; October 1, 1995.

15A NCAC 2B .0215 has been amended with changes as published in 17:1 NCR 60-65 as follows:

.0215 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS WS-III WATERS

The following water quality standards apply to surface water supply waters that are classified WS-III. Water quality standards applicable to Class C waters as described in Rule .0211 of this Section also apply to Class WS-III waters.

(1) ~~Best Usage of Waters. Source~~ The best usage of WS-III waters are as follows: a source of water supply for drinking, culinary, or food-processing purposes for those users where a more protective WS-I or WS-II classification is not feasible and any other best usage specified for Class C ~~waters;~~ waters.

(2) ~~Conditions Related to Best Usage. Waters~~ The conditions related to the best usage are as follows: waters of this class are protected as water supplies which are generally in low to moderately developed watersheds and meet average watershed development density levels as specified in Sub-Items (3)(b)(i)(A), (3)(b)(i)(B), (3)(b)(ii)(A) and (3)(b)(ii)(B) of this Rule; discharges that qualify for a General Permit pursuant to 15A NCAC 2H .0127, trout farm discharges, recycle (closed loop) systems that only discharge in response to 10-year storm events, and other stormwater discharges are allowed in the entire watershed; treated domestic wastewater discharges are allowed in the entire watershed but no new domestic wastewater discharges are allowed in the critical area; no new industrial wastewater discharges except non-process industrial discharges are allowed in the entire watershed; the waters, following treatment required by the Division of Environmental Health, shall meet the Maximum Contaminant Level concentrations considered safe for drinking, culinary, or food-processing purposes which are specified in the national drinking water regulations and in the North Carolina Rules Governing Public Water Supplies, 15A NCAC 18C .1500; sources of water pollution which preclude any of these uses on either a short-term or long-term basis shall be considered to be violating a water quality standard; the Class WS-III classification may be used to protect portions of Class WS-IV water supplies. For reclassifications of these portions of WS-IV water supplies occurring after the July 1, 1992 statewide reclassification, the more protective classification requested by local governments shall be considered by the Commission when all local governments having jurisdiction in the affected area(s) have adopted a resolution and the appropriate ordinances to protect the watershed or the Commission acts to protect a watershed when one or more local governments has failed to adopt necessary protection measures.

(3) ~~Quality Standards Applicable to Class WS-III Waters:~~ Quality standards applicable to Class WS-III Waters are as follows:

(a) Sewage, industrial wastes, non-process industrial wastes, or other wastes: none except for those specified in Item (2) of this Rule and Rule .0104 of this Subchapter; and none which shall have an adverse effect on human health or which are not effectively treated to the satisfaction of the Commission and in accordance with the requirements of the

Division of Environmental Health, North Carolina Department of ~~Environment, Health,~~Environment and Natural Resources; any discharger may be required by the Commission to disclose all chemical constituents present or potentially present in their wastes and chemicals which could be spilled or be present in runoff from their facility which may have an adverse impact on downstream water quality; these facilities may be required to have spill and treatment failure control plans as well as perform special monitoring for toxic substances;

(b) Nonpoint Source and Stormwater Pollution: none that would adversely impact the waters for use as water supply or any other designated use;

(i) Nonpoint Source and Stormwater Pollution Control Criteria For Entire Watershed:

(A) Low Density Option: Development density must be limited to either no more than two dwelling units of single family detached residential development per acre (or 20,000 square foot lot excluding roadway right-of-way) or 24 percent built-upon area for all other residential and non-residential development in watershed outside of the critical area; Stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable;

(B) High Density Option: If new development density exceeds the low density option requirements specified in Sub-Item (3)(b)(i)(A) of this Rule then development must control runoff from the first inch of rainfall; new residential and non-residential development shall not exceed 50 percent built-upon area;

(C) Land within the watershed shall be deemed compliant with the density requirements if the following condition is met: The density of all existing development at the time of reclassification does not exceed the density requirement when densities are averaged throughout the entire watershed area;

(D) Cluster development is allowed on a project-by-project basis as follows:

(I) overall density of the project meets associated density or stormwater control requirements of this ~~Section;~~ Rule;

(II) buffers meet the minimum statewide water supply watershed protection requirements;

(III) built-upon areas are designed and located to minimize stormwater runoff impact to the receiving waters, minimize concentrated stormwater flow, maximize the use of sheet flow

through vegetated areas; and maximize the flow length through vegetated areas;

(IV) areas of concentrated development are located in upland areas and away, to the maximum extent practicable, from surface waters and drainageways;

(V) remainder of tract to remain in vegetated or natural state;

(VI) area in the vegetated or natural state may be conveyed to a property owners association; a local government for preservation as a park or greenway; a conservation organization; or placed in a permanent conservation or farmland preservation easement;

(VII) a maintenance agreement for the vegetated or natural area shall be filed with the Register of Deeds; and

(VIII) cluster development that meets the applicable low density option requirements shall transport stormwater runoff from the development by vegetated conveyances to the maximum extent practicable;

(E) A maximum of 10 percent of each jurisdiction's portion of the watershed outside of the critical area as delineated on July 1, 1993 may be developed with new development projects and expansions of existing development of up to 70 percent built-upon surface area in addition to the new development approved in compliance with the appropriate requirements of Sub-Item (3)(b)(i)(A) or Sub-Item (3)(b)(i)(B) of this Rule. For expansions to existing development, the existing built-upon surface area is not counted toward the allowed 70 percent built-upon surface area. A local government having jurisdiction within the watershed may transfer, in whole or in part, its right to the 10 percent/70 percent land area to another local government within the watershed upon submittal of a joint resolution and review by the Commission. When the water supply watershed is composed of public lands, such as National Forest land, local governments may count the public land acreage within the watershed outside of the critical area in figuring the acreage allowed under this provision. For local governments that do not choose to use the high density option in that WS-III watershed, each project must, to the maximum extent practicable, minimize built-upon surface area, direct stormwater runoff away from surface waters, and incorporate best management practices

to minimize water quality impacts; if the local government selects the high density development option within that WS-III watershed, then engineered stormwater controls must be employed for the new development;

(F) If local governments choose the high density development option which requires engineered stormwater controls, then they shall assume ultimate responsibility for operation and maintenance of the required controls as outlined in Rule .0104 of this Subchapter;

(G) Minimum 100 foot vegetative buffer is required for all new development activities that exceed the low density requirements as specified in Sub-Item (3)(b)(i)(A) and Sub-Item (3)(b)(ii)(A) of this Rule, otherwise a minimum 30 foot vegetative buffer for development is required along all perennial waters indicated on the most recent versions of U.S.G.S. 1:24,000 (7.5 minute) scale topographic maps or as determined by local government studies; nothing in this ~~Section~~ Rule shall stand as a bar to artificial streambank or shoreline stabilization;

(H) No new development is allowed in the buffer; water dependent structures, or other structures such as flag poles, signs and security lights, which result in only diminimus increases in impervious area and public projects such as road crossings and greenways may be allowed where no practicable alternative exists; these activities shall minimize built-upon surface area, direct runoff away from surface waters and maximize the utilization of BMPs;

(I) No NPDES permits shall be issued for landfills that discharge treated leachate;

(ii) Critical Area Nonpoint Source and Stormwater Pollution Control Criteria:

(A) Low Density Option: New development limited to either no more than one dwelling unit of single family detached residential development per acre (or 40,000 square foot lot excluding roadway right-of-way) or 12 percent built-upon area for all other residential and non-residential development; Stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable;

(B) High Density Option: If new development exceeds the low density requirements specified in Sub-Item (3)(b)(ii)(A) of this Rule, then engineered stormwater controls must be used to control runoff from the

first inch of rainfall; development shall not exceed 30 percent built-upon area;

(C) No new permitted sites for land application of residuals or petroleum contaminated soils are allowed;

(D) No new landfills are allowed;

(c) MBAS (Methylene-Blue Active Substances): not greater than 0.5 mg/l to protect the aesthetic qualities of water supplies and to prevent foaming;

(d)~~(c)~~ Odor producing substances contained in sewage, industrial wastes, or other wastes: only such amounts, whether alone or in combination with other substances or wastes, as shall not cause taste and odor difficulties in water supplies which cannot be corrected by treatment, impair the palatability of fish, or have a deleterious effect upon any best usage established for waters of this class;

~~(d)~~(e) Phenolic compounds: not greater than 1.0 ug/l (phenols) to protect water supplies from taste and odor problems from chlorinated phenols;

~~(e)~~(f) Total hardness: not greater than 100 mg/l as calcium carbonate;

~~(f)~~(g) Total dissolved solids: not greater than 500 mg/l;

~~(g)~~(h) Toxic and other deleterious substances:

(i) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for non-carcinogens in Class WS-III waters:

(A) Barium: 1.0 mg/l;

(B) Chloride: 250 mg/l;

(C) Manganese: 200 ug/l;

(D) Nickel: 25 ug/l;

(E) Nitrate nitrogen: 10 mg/l;

(F) 2,4-D: 100 ug/l;

(G) 2,4,5-TP (Silvex): 10 ug/l;

(H) Sulfates: 250 mg/l;

(ii) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for carcinogens in Class WS-III waters:

~~(A) Beryllium: 6.8 ng/1;~~

~~(B) Benzene: 1.19 ug/1;~~

~~(C) Carbon tetrachloride: 0.254 ug/l;~~

~~(D) Chlorinated benzenes: 488 ug/l;~~

~~(E) Dioxin: 0.000013 ng/l;~~

~~(F) Hexachlorobutadiene: 0.445 ug/l;~~

~~(G) Polynuclear aromatic hydrocarbons: 2.8 ng/l;~~

~~(H) Tetrachloroethane (1,1,2,2): 0.172 ug/l;~~

~~(I) Tetrachloroethylene: 0.8 ug/l;~~

~~(J) Trichloroethylene: 3.08 ug/l;~~

~~(K) Vinyl Chloride: 2 ug/l;~~

~~(L) Aldrin: 0.127 ng/1;~~

~~(M) Chlordane: 0.575 ng/1;~~

~~(N) DDT: 0.588 ng/1;~~

~~(O) Dieldrin: 0.135 ng/1;~~

~~(P) Heptachlor: 0.208 ng/1.~~

(A) Aldrin: 0.127 ng/l;

(B) Arsenic: 10 ug/l;

(C) Benzene: 1.19 ug/l;

(D) Beryllium: 6.8 ng/l;

(E) Carbon tetrachloride: 0.254 ug/l;

(F) Chlordane: 0.575 ng/l;

(G) Chlorinated benzenes: 488 ug/l;

(H) DDT: 0.588 ng/l;

(I) Dieldrin: 0.135 ng/l;

(J) Dioxin: 0.000013 ng/l;

(K) Heptachlor: 0.208 ng/l;

(L) Hexachlorobutadiene: 0.445 ug/l;

(M) Polynuclear aromatic hydrocarbons: 2.8 ng/l;

(N) Tetrachloroethane (1,1,2,2): 0.172 ug/l;

(O) Tetrachloroethylene: 0.8 ug/l;

(P) Trichloroethylene: 3.08 ug/l;

(Q) Vinyl Chloride: 2 ug/l.

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1);*
Eff. September 9, 1979;
Amended Eff. April 1, 2003; January 1, 1996; October 1, 1995; October 1, 1989.

15A NCAC 2B .0216 has been amended with changes as published in 17:1 NCR 65-70 as follows:

.0216 FRESH SURFACE WATER QUALITY STANDARDS FOR WS-IV WATERS

The following water quality standards apply to surface water supply waters that are classified WS-IV. Water quality standards applicable to Class C waters as described in Rule .0211 of this Section also apply to Class WS-IV waters.

(1) ~~Best Usage of Waters. Source~~ The best usage of WS-IV waters are as follows: a source of water supply for drinking, culinary, or food-processing purposes for those users where a more protective WS-I, WS-II or WS-III classification is not feasible and any other best usage specified for Class C waters.

(2) ~~Conditions Related to Best Usage. Waters~~ The conditions related to the best usage are as follows: waters of this class are protected as water supplies which are generally in moderately to highly developed watersheds or protected areas and meet average watershed development density levels as specified in Sub-Items (3)(b)(i)(A), (3)(b)(i)(B), (3)(b)(ii)(A) and (3)(b)(ii)(B) of this Rule. Discharges which qualify for a General Permit pursuant to 15A NCAC 2H .0127, trout farm discharges, recycle (closed loop) systems that only discharge in response to 10-year storm events, other stormwater discharges and domestic wastewater discharges shall be allowed in the protected and critical areas. Treated industrial wastewater discharges are allowed in the protected and critical areas; however, new industrial wastewater discharges in the critical area shall be required to meet the provisions of 15A NCAC 2B ~~.0201(d)(1)(B)(iv), (v) and (vii),~~ .0224(1)(b)(iv), (v) and (vii), and 15A NCAC 2B .0203. New industrial connections and expansions to existing municipal discharges with a pretreatment program pursuant to 15A NCAC 2H .0904 are ~~the~~ allowed. The waters, following treatment required by the Division of Environmental Health, shall meet the Maximum Contaminant Level concentrations considered safe for drinking, culinary, or food-processing purposes which are specified in the national drinking water regulations and in the North Carolina Rules Governing Public Water Supplies, 15A NCAC 18C .1500. Sources of water pollution which preclude any of these uses on either a short-term or long-term basis shall be considered to be violating a water quality standard. The Class WS-II or WS-III classifications may be used to protect portions of Class WS-IV water supplies. For reclassifications of these portions of WS-IV water supplies occurring after the July 1, 1992 statewide reclassification, the more protective classification requested by local governments shall be considered by the Commission when all local governments having jurisdiction in the affected area(s) have adopted a resolution and the appropriate ordinances to protect the watershed or the Commission acts to protect a watershed when one or more local governments has failed to adopt necessary protection measures.

(3) ~~Quality Standards Applicable to Class WS-IV Waters:~~ Quality standards applicable to Class WS-IV Waters are as follows:

(a) Sewage, industrial wastes, non-process industrial wastes, or other wastes: none shall be allowed except for those specified in Item (2) of this Rule and Rule .0104 of this Subchapter and none shall be allowed which shall have an adverse effect on human health or which are not effectively treated to the satisfaction of the Commission and in accordance with the requirements of the Division of Environmental Health, North Carolina Department of ~~Environment, Health,~~ Environment and Natural Resources. Any discharges or industrial users subject to pretreatment standards may be required by the Commission to disclose all chemical constituents present or potentially present in their wastes and chemicals which could be spilled or be present in runoff from their facility which may have an adverse impact on downstream water supplies. These facilities may be required to have spill and treatment failure control plans as well as perform special monitoring for toxic substances;

(b) Nonpoint Source and Stormwater Pollution: none shall be allowed that would adversely impact the waters for use as water supply or any other designated use.

(i) Nonpoint Source and Stormwater Pollution Control Criteria For Entire Watershed or Protected Area:

(A) Low Density Option: Development activities which require a Sedimentation/Erosion Control Plan in accordance with 15A NCAC 4 established by the North Carolina Sedimentation Control Commission or approved local government programs as delegated by the Sedimentation Control Commission shall be limited to no more than either: two dwelling units of single family detached development per acre (or 20,000 square foot lot excluding roadway right-of-way) or 24 percent built-upon on area for all other residential and non-residential development; or three dwelling units per acre or 36 percent built-upon area for projects without curb and gutter street systems in the protected area outside of the critical area; Stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable;

(B) High Density Option: If new development activities which require a Sedimentation/Erosion Control Plan exceed the low density requirements of Sub-Item (3)(b)(i)(A) of this Rule then development shall control the runoff from the first inch of rainfall; new residential and non-residential development shall not exceed 70 percent built-upon area;

(C) Land within the critical and protected area shall be deemed compliant with the density requirements if the following condition is met: The

density of all existing development at the time of reclassification does not exceed the density requirement when densities are averaged throughout the entire area;

(D) Cluster development shall be allowed on a project-by-project basis as follows:

(I) overall density of the project meets associated density or stormwater control requirements of this ~~Section;~~ Rule;

(II) buffers meet the minimum statewide water supply watershed protection requirements;

(III) built-upon areas are designed and located to minimize stormwater runoff impact to the receiving waters, minimize concentrated stormwater flow, maximize the use of sheet flow through vegetated areas, and maximize the flow length through vegetated areas;

(IV) areas of concentrated development are located in upland areas and away, to the maximum extent practicable, from surface waters and drainageways;

(V) remainder of tract to remain in vegetated or natural state;

(VI) area in the vegetated or natural state may be conveyed to a property owners association; a local government for preservation as a park or greenway; a conservation organization; or placed in a permanent conservation or farmland preservation easement;

(VII) a maintenance agreement for the vegetated or natural area shall be filed with the Register of Deeds, and;

(VIII) cluster development that meets the applicable low density option requirements shall transport stormwater runoff from the development by vegetated conveyances to the maximum extent practicable;

(E) If local governments choose the high density development option which requires engineered stormwater controls, then they shall assume ultimate responsibility for operation and maintenance of the required controls as outlined in Rule .0104 of this Subchapter;

(F) Minimum 100 foot vegetative buffer is required for all new development activities that exceed the low density option requirements as specified in Sub-Item (3)(b)(i)(A) or Sub-Item (3)(b)(ii)(A) of this Rule, otherwise a minimum 30 foot vegetative buffer for development

shall be required along all perennial waters indicated on the most recent versions of U.S.G.S. 1:24,000 (7.5 minute) scale topographic maps or as determined by local government studies;

(G) No new development shall be allowed in the buffer; water dependent structures, or other structures, such as flag poles, signs and security lights, which result in only diminimus increases in impervious area and public projects such as road crossings and greenways may be allowed where no practicable alternative exists; these activities shall minimize built-upon surface area, divert runoff away from surface waters and maximize the utilization of BMPs;

(H) For local governments that do not use the high density option, a maximum of 10 percent of each jurisdiction's portion of the watershed outside of the critical area as delineated on July 1, 1995 may be developed with new development projects and expansions to existing development of up to 70 percent built-upon surface area in addition to the new development approved in compliance with the appropriate requirements of Sub-Item (3)(b)(i)(A) of this Rule. For expansions to existing development, the existing built-upon surface area shall not be counted toward the allowed 70 percent built-upon surface area. A local government having jurisdiction within the watershed may transfer, in whole or in part, its right to the 10 percent/70 percent land area to another local government within the watershed upon submittal of a joint resolution for review by the Commission. When the designated water supply watershed area is composed of public land, such as National Forest land, local governments may count the public land acreage within the designated watershed area outside of the critical area in figuring the acreage allowed under this provision. Each project shall, to the maximum extent practicable, minimize built-upon surface area, direct stormwater runoff away from surface waters and incorporate best management practices to minimize water quality impacts;

(ii) Critical Area Nonpoint Source and Stormwater Pollution Control Criteria:

(A) Low Density Option: New development activities which require a Sedimentation/Erosion Control Plan in accordance with 15A NCAC 4 established by the North Carolina Sedimentation Control Commission or approved local government programs as delegated by the Sedimentation Control Commission shall be limited to no more than

two dwelling units of single family detached development per acre (or 20,000 square foot lot excluding roadway right-of-way) or 24 percent built-upon area for all other residential and non-residential development; Stormwater runoff from the development shall be transported by vegetated conveyances to the maximum extent practicable;

(B) High Density Option: If new development density exceeds the low density requirements specified in Sub-Item (3)(b)(ii)(A) of this Rule engineered stormwater controls shall be used to control runoff from the first inch of rainfall; new residential and non-residential development shall not exceed 50 percent built-upon area;

(C) No new permitted sites for land application of residuals or petroleum contaminated soils shall be allowed;

(D) No new landfills shall be allowed;

(c) MBAS (Methylene-Blue Active Substances): not greater than 0.5 mg/l to protect the aesthetic qualities of water supplies and to prevent foaming;

~~(c)~~(d) Odor producing substances contained in sewage, industrial wastes, or other wastes: only such amounts, whether alone or in combination with other substances or waste, as will not cause taste and odor difficulties in water supplies which can not be corrected by treatment, impair the palatability of fish, or have a deleterious effect upon any best usage established for waters of this class;

~~(d)~~(e) Phenolic compounds: not greater than 1.0 ug/l (phenols) to protect water supplies from taste and odor problems due to chlorinated phenols shall be allowed. Specific phenolic compounds may be given a different limit if it is demonstrated not to cause taste and odor problems and not to be detrimental to other best usage;

~~(e)~~(f) Total hardness shall not exceed 100 mg/l as calcium carbonate;

~~(f)~~(g) Total dissolved solids shall not exceed 500 mg/l;

~~(g)~~(h) Toxic and other deleterious substances:

(i) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for non-carcinogens in Class WS-IV waters shall be allowed as follows:

(A) Barium: 1.0 mg/l;

(B) Chloride: 250 mg/l;

(C) Manganese: 200 ug/l;

(D) Nickel: 25 ug/l;

(E) Nitrate nitrogen: 10.0 mg/l;

(F) 2,4-D: 100 ug/l;

(G) 2,4,5-TP (Silvex): 10 ug/l;

(H) Sulfates: 250 mg/l;

(ii) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for carcinogens in Class WS-IV waters shall be allowed as follows:

~~(A) Beryllium: 6.8 ng/1;~~

~~(B) Benzene: 1.19 ug/1;~~

~~(C) Carbon tetrachloride: 0.254 ug/l;~~

~~(D) Chlorinated benzenes: 488 ug/l;~~

~~(E) Dioxin: 0.000013 ng/l;~~

~~(F) Hexachlorobutadiene: 0.445 ug/l;~~

~~(G) Polynuclear aromatic hydrocarbons: 2.8 ng/l;~~

~~(H) Tetrachloroethane (1,1,2,2): 0.172 ug/l;~~

~~(I) Tetrachloroethylene: 0.8 ug/l;~~

~~(J) Trichloroethylene: 3.08 ug/l;~~

~~(K) Vinyl Chloride: 2 ug/l;~~

~~(L) Aldrin: 0.127 ng/1;~~

~~(M) Chlordane: 0.575 ng/1;~~

~~(N) DDT: 0.588 ng/1;~~

~~(O) Dieldrin: 0.135 ng/1;~~

~~(P) Heptachlor: 0.208 ng/1.~~

(A) Aldrin: 0.127 ng/l;

(B) Arsenic: 10 ug/l;

(C) Benzene: 1.19 ug/l;

(D) Beryllium: 6.8 ng/l;

(E) Carbon tetrachloride: 0.254 ug/l;

(F) Chlordane: 0.575 ng/l;

(G) Chlorinated benzenes: 488 ug/l;

(H) DDT: 0.588 ng/l;

(I) Dieldrin: 0.135 ng/l;

(J) Dioxin: 0.000013 ng/l;

(K) Heptachlor: 0.208 ng/l;

(L) Hexachlorobutadiene: 0.445 ug/l;

(M) Polynuclear aromatic hydrocarbons: 2.8 ng/l;

(N) Tetrachloroethane (1,1,2,2): 0.172 ug/l;

(O) Tetrachloroethylene: 0.8 ug/l;

(P) Trichloroethylene: 3.08 ug/l;

(Q) Vinyl Chloride: 2 ug/l.

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1);*
Eff. February 1, 1986;
Amended Eff. April 1, 2003; June 1, 1996; October 1, 1995; August 1, 1995; June 1, 1994.

15A NCAC 2B .0218 has been amended with changes as published in 17:1 NCR 70-72 as follows:

.0218 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS WS-V WATERS

The following water quality standards apply to surface water supply waters that are classified WS-V. Water quality standards applicable to Class C waters as described in Rule .0211 of this Section also apply to Class WS-V waters.

(1) ~~Best Usage of Waters. Waters~~ The best usage of WS-V waters are as follows: waters that are protected as water supplies which are generally upstream and draining to Class WS-IV waters or waters previously used for drinking water supply purposes or waters used by industry to supply their employees, but not municipalities or counties, with a raw drinking water supply source, although this type of use is not restricted to WS-V classification. Class WS-V waters are suitable for all Class C uses. The Commission may consider a more protective classification for the water supply if a resolution requesting a more protective classification is submitted from all local governments having land use jurisdiction within the affected watershed; no categorical restrictions on watershed development or wastewater discharges are required, however, the Commission or its designee may apply appropriate management requirements as deemed necessary for the protection of waters downstream of receiving waters (15A NCAC 2B .0203).

(2) ~~Conditions Related to Best Usage. Waters~~ The conditions related to the best usage are as follows: waters of this class are protected water supplies; the waters, following treatment required by the Division of Environmental Health, shall meet the Maximum Contaminant Level concentrations considered safe for drinking, culinary, or food-processing purposes which are specified in the national drinking water regulations and in the North Carolina Rules Governing Public Water Supplies, 15A NCAC 18C .1500; sources of water pollution which preclude any of these uses on either a short-term or long-term basis shall be considered to be violating a water quality standard.

(3) ~~Quality Standards Applicable to Class WS-V Waters:~~ Quality standards applicable to Class WS-V Waters are as follows:

(a) Sewage, industrial wastes, non-process industrial wastes, or other wastes: none which shall have an adverse effect on human health or which are not effectively treated to the satisfaction of the Commission and in accordance with the requirements of the Division of Environmental Health, North Carolina Department of ~~Environment, Health,~~Environment and Natural Resources; any discharges or industrial users subject to pretreatment standards may be required by the Commission to disclose all chemical constituents present or potentially present in their wastes and chemicals which could be spilled or be present in runoff from their facility which may have an adverse impact on downstream water supplies; these facilities may be required to have spill and treatment failure control plans as well as perform special monitoring for toxic substances;

(b) MBAS (Methylene-Blue Active Substances): not greater than 0.5 mg/l to protect the aesthetic qualities of water supplies and to prevent foaming;

~~(b)~~(c) Nonpoint Source and Stormwater Pollution: none that would adversely impact the waters for use as water supply or any other designated use;

~~(c)~~(d) Odor producing substances contained in sewage, industrial wastes, or other wastes: only such amounts, whether alone or in combination with other substances or waste, as will not cause taste and odor difficulties in water supplies which can not be corrected by treatment, impair the palatability of fish, or have a deleterious effect upon any best usage established for waters of this class;

~~(d)~~(e) Phenolic compounds: not greater than 1.0 ug/l (phenols) to protect water supplies from taste and odor problems due to chlorinated phenols; specific phenolic compounds may be given a different limit if it is demonstrated not to cause taste and odor problems and not to be detrimental to other best usage;

~~(e)~~(f) Total hardness: not greater than 100 mg/l as calcium carbonate;

~~(f)~~(g) Total dissolved solids: not greater than 500 mg/l;

~~(g)~~(h) Toxic and other deleterious substances:

(i) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for non-carcinogens in Class WS-V waters:

(A) Barium: 1.0 mg/l;

(B) Chloride: 250 mg/l;

(C) Manganese: 200 ug/l;

(D) Nickel: 25 ug/l;

(E) Nitrate nitrogen: 10.0 mg/l;

(F) 2,4-D: 100 ug/l;

(G) 2,4,5-TP (Silvex): 10 ug/l;

(H) Sulfates: 250 mg/l.

(ii) Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for carcinogens in Class WS-V waters:

~~(A) Beryllium: 6.8 ng/1;~~

~~(B) Benzene: 1.19 ug/1;~~

~~(C) Carbon tetrachloride: 0.254 ug/l;~~

~~(D) Chlorinated benzenes: 488 ug/l;~~

~~(E) Dioxin: 0.000013 ng/l;~~

~~(F) Hexachlorobutadiene: 0.445 ug/l;~~

~~(G) Polynuclear aromatic hydrocarbons: 2.8 ng/l;~~

~~(H) Tetrachloroethane (1,1,2,2): 0.172 ug/l;~~

~~(I) Tetrachloroethylene: 0.8 ug/l;~~

~~(J) Trichloroethylene: 3.08 ug/l;~~

~~(K) Vinyl Chloride: 2 ug/l;~~

~~(L) Aldrin: 0.127 ng/1;~~

~~(M) Chlordane: 0.575 ng/1;~~

~~(N) DDT: 0.588 ng/1;~~

~~(O) Dieldrin: 0.135 ng/1;~~

~~(P) Heptachlor: 0.208 ng/1.~~

(A) Aldrin: 0.127 ng/l;

(B) Arsenic: 10 ug/l;

(C) Benzene: 1.19 ug/l;

(D) Beryllium: 6.8 ng/l;

(E) Carbon tetrachloride: 0.254 ug/l;

(F) Chlordane: 0.575 ng/l;

(G) Chlorinated benzenes: 488 ug/l;

(H) DDT: 0.588 ng/l;

(I) Dieldrin: 0.135 ng/l;

(J) Dioxin: 0.000013 ng/l;

(K) Heptachlor: 0.208 ng/l;

(L) Hexachlorobutadiene: 0.445 ug/l;

(M) Polynuclear aromatic hydrocarbons: 2.8 ng/l;

(N) Tetrachloroethane (1,1,2,2): 0.172 ug/l;

(O) Tetrachloroethylene: 0.8 ug/l;

(P) Trichloroethylene: 3.08 ug/l;

(Q) Vinyl Chloride: 2 ug/l.

History Note: *Authority G.S. 143-214.1; 143-215.3(a)(1);*
Eff. October 1, 1989;
Amended Eff. April 1, 2003; October 1, 1995.