

1 15A NCAC 02B .0206 is proposed for amendment as follows:

2
3 **15A NCAC 02B .0206 FLOW DESIGN CRITERIA FOR EFFLUENT LIMITATIONS**

4 (a) Water quality based effluent limitations are developed to allow appropriate frequency and duration of deviations
5 from water quality standards so that the designated uses of receiving waters are protected. There are water quality
6 standards for a number of categories of pollutants and to protect a range of water uses. For this reason, the
7 appropriate frequency and duration of deviations from water quality standards is not the same for all categories of
8 standards. A flow design criterion is used in the development of water quality based effluent limitations as a
9 simplified means of estimating the acceptable frequency and duration of deviations. More complex modeling
10 techniques can also be used to set effluent limitations directly based on frequency and duration criteria published by
11 the U.S. Environmental Protection Agency pursuant to Section 304(a) of the Federal Clean Water Act as amended.
12 Use of more complex modeling techniques to set water quality based effluent limitations will be approved by the
13 Commission or its designee on a case-by-case basis. Flow design criteria to calculate water quality based effluent
14 limitations for categories of water quality standards are listed as follows:

15 (1) All standards except toxic substances and aesthetics will be protected using the minimum average
16 flow for a period of seven consecutive days that has an average recurrence of once in ten years
17 (7Q10 flow). Other governing flow strategies such as varying discharges with the receiving
18 waters ability to assimilate wastes may be designated by the Commission or its designee on a
19 case-by-case basis if the discharger or permit applicant provide evidence which establishes to the
20 satisfaction of the Director that the alternative flow strategies will give equal or better protection
21 for the water quality standards. Better protection for the standards means that deviations from the
22 standard would be expected less frequently than provided by using the 7Q10 flow.

23 (2) Toxic substance standards to protect aquatic life from chronic toxicity will be protected using the
24 7Q10 flow.

25 (3) Toxic substance standards to protect aquatic life from acute toxicity will be protected using the
26 1Q10 flow.

27 ~~(3)~~(4) Toxic substance standards to protect human health will be:

28 (A) The 7Q10 flow for standards to protect human health through the consumption of water,
29 fish and shellfish from noncarcinogens;

30 (B) The mean annual flow to protect human health from carcinogens through the
31 consumption of water, fish and shellfish unless site specific fish contamination concerns
32 necessitate the use of an alternative design flow;

33 (5) Aesthetic quality will be protected using the minimum average flow for a period of 30 consecutive
34 days that has an average recurrence of once in two years (30Q2 flow).

35 (b) In cases where the stream flow is regulated, a minimum daily low flow may be used as a substitute for the 7Q10
36 flow except in cases where there are acute toxicity concerns for aquatic life. In the cases where there are acute

1 toxicity concerns, an alternative low flow such as the instantaneous minimum release may be used on a case-by-case
2 basis.

3 (c) Flow design criteria are used to develop water quality based effluent limitations and for the design of wastewater
4 treatment facilities. Deviations from a specific water quality standard resulting from discharges which are
5 affirmatively demonstrated to be in compliance with water quality based effluent limitations for that standard will
6 not be a violation pursuant to G.S. 143-215.6 when the actual flow is significantly less than the design flow.

7 (d) In cases where the 7Q10 flow of the receiving stream is estimated to be zero, water quality based effluent
8 limitations will be assigned as follows:

9 (1) Where the 30Q2 flow is estimated to be greater than zero, effluent limitations for new or expanded
10 (additional) discharges of oxygen consuming waste will be set at BOD₅= 5 mg/l, NH₃-N = 2 mg/l
11 and DO = 6 mg/l, unless it is determined that these limitations will not protect water quality
12 standards. Requirements for existing discharges will be determined on a case-by-case basis by the
13 Director. More stringent limits will be applied in cases where violations of water quality
14 standards are predicted to occur for a new or expanded discharge with the limits set pursuant to
15 this Rule, or where existing limits are determined to be inadequate to protect water quality
16 standards.

17 (2) If the 30Q2 and 7Q10 flows are both estimated to be zero, no new or expanded (additional)
18 discharge of oxygen consuming waste will be allowed. Requirements for existing discharges to
19 streams where the 30Q2 and 7Q10 flows are both estimated to be zero will be determined on a
20 case-by-case basis.

21 (3) Other water quality standards will be protected by requiring the discharge to meet the standards
22 unless the alternative limitations are determined by the Director to protect the classified water
23 uses.

24 (e) Receiving water flow statistics will be estimated through consultation with the U.S. Geological Survey.
25 Estimates for any given location may be based on actual flow data, modeling analyses, or other methods determined
26 to be appropriate by the Commission or its designee.

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28 *History Note: Authority G.S. 143-214.1; 143-215.3(a)(1);*

29 *Eff. February 1, 1976;*

30 *Amended Eff. ~~XXX~~; February 1, 1993; October 1, 1989; August 1, 1985; January 1, 1985.*

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1 15A NCAC 02B .0211 is proposed for amendment as follows:

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3 **15A NCAC 02B .0211 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS C WATERS**

4 General. The water quality standards for all fresh surface waters are the basic standards applicable to Class C waters.
5 ~~See Rule .0208 of this Section for standards for toxic substances and temperature. Water quality standards for~~
6 ~~temperature and numerical water quality standards for the protection of human health applicable to all fresh surface~~
7 ~~waters are in Rule .0208 of this Section. Additional and more stringent standards applicable to other specific freshwater~~
8 ~~classifications are specified in Rules .0212, .0214, .0215, .0216, .0217, .0218, .0219, .0223, .0224 and .0225 of this~~
9 ~~Section. Action Levels for purposes of NPDES permitting are specified in Rule .0211 (22).~~

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

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

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

18 ~~(3) Chlorine, total residual: 17 ug/l;~~

19 ~~(4)(a) Chlorophyll a (corrected): not greater than 40 ug/l for lakes, reservoirs, and other waters subject to~~
20 ~~growths of macroscopic or microscopic vegetation not designated as trout waters, and not greater than~~
21 ~~15 ug/l for lakes, reservoirs, and other waters subject to growths of macroscopic or microscopic~~
22 ~~vegetation designated as trout waters (not applicable to lakes or reservoirs less than 10 acres in surface~~
23 ~~area). The Commission or its designee may prohibit or limit any discharge of waste into surface~~
24 ~~waters if, in the opinion of the Director, the surface waters experience or the discharge would result in~~
25 ~~growths of microscopic or macroscopic vegetation such that the standards established pursuant to this~~
26 ~~Rule would be violated or the intended best usage of the waters would be impaired;~~

27 ~~(5) Cyanide, total: 5.0 ug/L;~~

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

31 ~~(7) Fecal coliform: shall not exceed a geometric mean of 200/100ml (MF count) based upon at least five~~
32 ~~consecutive samples examined during any 30 day period, nor exceed 400/100ml in more than 20~~
33 ~~percent of the samples examined during such period. Violations of the fecal coliform standard are~~
34 ~~expected during rainfall events and, in some cases, this violation is expected to be caused by~~
35 ~~uncontrollable nonpoint source pollution. All coliform concentrations are to be analyzed using the~~
36 ~~membrane filter technique unless high turbidity or other adverse conditions necessitate the tube~~

1 dilution method; in case of controversy over results, the MPN 5-tube dilution technique shall be used
 2 as the reference method;

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

6 (9) Fluorides: 1.8 mg/l;

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

8 ~~(e) Organisms of the coliform group: fecal coliforms shall not exceed a geometric mean of~~
 9 ~~200/100ml (MF count) based upon at least five consecutive samples examined during any 30~~
 10 ~~day period, nor exceed 400/100ml in more than 20 percent of the samples examined during~~
 11 ~~such period. Violations of the fecal coliform standard are expected during rainfall events~~
 12 ~~and, in some cases, this violation is expected to be caused by uncontrollable nonpoint source~~
 13 ~~pollution. All coliform concentrations are to be analyzed using the membrane filter~~
 14 ~~technique unless high turbidity or other adverse conditions necessitate the tube dilution~~
 15 ~~method; in case of controversy over results, the MPN 5-tube dilution technique shall be used~~
 16 ~~as the reference method;~~

17 (11) Metals:

18 (a) With the exception of mercury and selenium, freshwater aquatic life standards for metals
 19 shall be based upon measurement of the dissolved fraction of the metal. Mercury and
 20 Selenium water quality standards must be based upon measurement of the total recoverable
 21 metal. Alternative site-specific standards can be developed where studies are designed in
 22 accordance with the "Water Quality Standards Handbook: Second Edition" published by the
 23 US Environmental Protection Agency (EPA 823-B-94-005a) hereby incorporated by
 24 reference including any subsequent amendments;

25 (b) Freshwater metals standards that are not hardness-dependent are as follows:

- 26 (i) Arsenic, dissolved, acute: 340 ug/l;
- 27 (ii) Arsenic, dissolved, chronic: 150 ug/l;
- 28 (iii) Beryllium, dissolved, acute: 65 ug/l;
- 29 (iv) Beryllium, dissolved, chronic: 6.5 ug/l;
- 30 (v) Chromium VI, dissolved, acute: 16 ug/l;
- 31 (vi) Chromium VI, dissolved, chronic: 11 ug/l;
- 32 (vii) Mercury, total recoverable, chronic: 0.012 ug/l;
- 33 (viii) Selenium, total recoverable, chronic: 5 ug/l;
- 34 (ix) Silver, dissolved, chronic: 0.06 ug/l;

35 Hardness-dependent freshwater metals standards are located in Subsection (c) and in Table A:
 36 Dissolved Freshwater Standards for Hardness-dependent Metals;

37 (c) Hardness-dependent freshwater metals standards are as follows:

1 (i) Hardness-dependent metals standards shall be derived using the equations specified in
2 Table A: Dissolved Freshwater Standards for Hardness-Dependent Metals. If the actual
3 instream hardness (expressed as CaCO₃ or Ca+Mg) is less than 25 milligrams/liter (mg/l),
4 standards shall be calculated based upon 25 mg/l hardness. If the actual instream hardness is
5 greater than 25 mg/l and less than 400 mg/l, standards will be calculated based upon the
6 actual instream hardness. If the instream hardness is greater than 400 mg/l, the maximum
7 applicable hardness shall be 400 mg/l;

8 (ii) Hardness-dependent metals standards in NPDES permitting: for NPDES permitting
9 purposes, application of the equations in Table A: Dissolved Freshwater Standards for
10 Hardness-Dependent Metals requires hardness values (expressed as CaCO₃ or Ca+Mg)
11 established using the median of instream hardness data collected within the local US
12 Geological Survey (USGS) and Natural Resources Conservation Service (NRCS) 8-digit
13 Hydrologic Unit (HU). The minimum applicable instream hardness shall be 25 mg/l and the
14 maximum applicable instream hardness shall be 400 mg/l, even when the actual median
15 instream hardness is less than 25 mg/l and greater than 400 mg/l;

Table A: Dissolved Freshwater Standards for Hardness-Dependent Metals

Numeric standards listed below are calculated at 25 mg/l hardness for illustrative purposes.

<u>Metal</u>	<u>Equations for Hardness-Dependent Freshwater Metals (ug/l)</u>	<u>Standard at 25 mg/l hardness (ug/l)</u>
<u>Cadmium, Acute</u>	$\{1.136672 - [\ln \text{hardness}](0.041838)\} \cdot e^{\{0.9151 [\ln \text{hardness}] - 3.1485\}}$	<u>0.82</u>
<u>Cadmium, Acute Trout waters</u>	$\{1.136672 - [\ln \text{hardness}](0.041838)\} \cdot e^{\{0.9151 [\ln \text{hardness}] - 3.6236\}}$	<u>0.51</u>
<u>Cadmium, Chronic</u>	$\{1.101672 - [\ln \text{hardness}](0.041838)\} \cdot e^{\{0.7998 [\ln \text{hardness}] - 4.4451\}}$	<u>0.15</u>
<u>Chromium III, Acute</u>	$0.316 \cdot e^{\{0.8190 [\ln \text{hardness}] + 3.7256\}}$	<u>180</u>
<u>Chromium III, Chronic</u>	$0.860 \cdot e^{\{0.8190 [\ln \text{hardness}] + 0.6848\}}$	<u>24</u>
<u>Copper, Acute</u>	$0.960 \cdot e^{\{0.9422 [\ln \text{hardness}] - 1.700\}}$ Or, <u>Aquatic Life Ambient Freshwater Quality Criteria—Copper 2007 Revision (EPA-822-R-07-001)</u>	<u>3.6</u> <u>N/A</u>
<u>Copper, Chronic</u>	$0.960 \cdot e^{\{0.8545 [\ln \text{hardness}] - 1.702\}}$ Or, <u>Aquatic Life Ambient Freshwater Quality Criteria—Copper 2007 Revision (EPA-822-R-07-001)</u>	<u>2.7</u> <u>N/A</u>
<u>Lead, Acute</u>	$\{1.46203 - [\ln \text{hardness}](0.145712)\} \cdot e^{\{1.273 [\ln \text{hardness}] - 1.460\}}$	<u>14</u>
<u>Lead, Chronic</u>	$\{1.46203 - [\ln \text{hardness}](0.145712)\} \cdot e^{\{1.273 [\ln \text{hardness}] - 4.705\}}$	<u>0.54</u>
<u>Nickel, Acute</u>	$0.998 \cdot e^{\{0.8460 [\ln \text{hardness}] + 2.255\}}$	<u>140</u>
<u>Nickel, Chronic</u>	$0.997 \cdot e^{\{0.8460 [\ln \text{hardness}] + 0.0584\}}$	<u>16</u>

<u>Silver, Acute</u>	$0.85 \cdot e^{\{1.72[\ln \text{ hardness}]-6.59\}}$	<u>0.30</u>
<u>Zinc, Acute</u>	$0.978 \cdot e^{\{0.8473[\ln \text{ hardness}]+0.884\}}$	<u>36</u>
<u>Zinc, Chronic</u>	$0.986 \cdot e^{\{0.8473[\ln \text{ hardness}]+0.884\}}$	<u>36</u>

(d) Compliance with acute instream metals standards shall only be evaluated using an average of two or more samples collected within one hour. Compliance with chronic instream metals standards shall only be evaluated using averages of a minimum of four samples taken on consecutive days, or as a 96-hour average;

(e) With the exception of mercury and selenium, demonstrated attainment of the applicable aquatic life use in a waterbody will take precedence over the application of the aquatic life criteria established for metals associated with these uses. An instream exceedence of the numeric criterion for metals shall not be considered to have caused an adverse impact to the instream aquatic community if biological monitoring has demonstrated attainment of biological integrity.

~~(12)~~ 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 110.3(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, Water Resources~~, 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 forty five dollars (\$45.00);D.C.;~~

(13) 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;

- 1 (i) Heptachlor: 0.004 ug/l;
- 2 (j) Lindane: 0.01 ug/l;
- 3 (k) Methoxychlor: 0.03 ug/l;
- 4 (l) Mirex: 0.001 ug/l;
- 5 (m) Parathion: 0.013 ug/l;
- 6 (n) Toxaphene: 0.0002 ug/l;
- 7 ~~(g)~~(14) pH: shall be normal for the waters in the area, which generally shall range between 6.0 and 9.0 except
- 8 that swamp waters may have a pH as low as 4.3 if it is the result of natural conditions;
- 9 ~~(h)~~(15) Phenolic compounds: only such levels as shall not result in fish-flesh tainting or impairment of other
- 10 best usage;
- 11 (16) Polychlorinated biphenyls (total of all PCBs and congeners identified): 0.001 ug/l;
- 12 ~~(i)~~(17) Radioactive substances:
- 13 ~~(i)~~(a) Combined radium-226 and radium-228: the maximum average annual activity level (based
- 14 on at least four samples collected quarterly) for combined radium-226 and radium-228 shall
- 15 not exceed five picoCuries per liter;
- 16 ~~(ii)~~(b) Alpha Emitters: the average annual gross alpha particle activity (including radium-226, but
- 17 excluding radon and uranium) shall not exceed 15 picoCuries per liter;
- 18 ~~(iii)~~(c) Beta Emitters: the maximum average annual activity level (based on at least four samples,
- 19 collected quarterly) for strontium-90 shall not exceed eight picoCuries per liter; nor shall the
- 20 average annual gross beta particle activity (excluding potassium-40 and other naturally
- 21 occurring radio-nuclides) exceed 50 picoCuries per liter; nor shall the maximum average
- 22 annual activity level for tritium exceed 20,000 picoCuries per liter;
- 23 ~~(j)~~(18) Temperature: not to exceed 2.8 degrees C (5.04 degrees F) above the natural water temperature, and in
- 24 no case to exceed 29 degrees C (84.2 degrees F) for mountain and upper piedmont waters and 32
- 25 degrees C (89.6 degrees F) for lower piedmont and coastal plain Waters; the temperature for trout
- 26 waters shall not be increased by more than 0.5 degrees C (0.9 degrees F) due to the discharge of heated
- 27 liquids, but in no case to exceed 20 degrees C (68 degrees F);
- 28 (19) Toluene: 11 ug/l or 0.36 ug/l in trout classified waters;
- 29 (20) Trialkyltin compounds: 0.07 ug/l expressed as tributyltin;
- 30 ~~(k)~~(21) Turbidity: the turbidity in the receiving water shall not exceed 50 Nephelometric Turbidity Units
- 31 (NTU) in streams not designated as trout waters and 10 NTU in streams, lakes or reservoirs designated
- 32 as trout waters; for lakes and reservoirs not designated as trout waters, the turbidity shall not exceed 25
- 33 NTU; if turbidity exceeds these levels due to natural background conditions, the existing turbidity
- 34 level shall not be increased. Compliance with this turbidity standard can be met when land
- 35 management activities employ Best Management Practices (BMPs) [as defined by Rule .0202 of this
- 36 Section] recommended by the Designated Nonpoint Source Agency [as defined by Rule .0202 of this

1 Section]. BMPs must be in full compliance with all specifications governing the proper design,
2 installation, operation and maintenance of such BMPs;

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

7 ~~(i) Arsenic: 50 ug/l;~~

8 ~~(ii) Beryllium: 6.5 ug/l;~~

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

22 ~~(iv) Chlorine, total residual: 17 ug/l;~~

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

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

28 ~~(vii) Fluorides: 1.8 mg/l;~~

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

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

35 ~~(x) Nickel: 88 ug/l, attainment of these water quality standards in surface waters shall~~
36 ~~be based on measurement of total recoverable metals concentrations unless~~
37 ~~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;~~

(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;~~

~~(xii) Polychlorinated biphenyls: (total of all PCBs and congeners identified) 0.001 ug/l;~~

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

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

~~(xv) Trialkyltin compounds: 0.07 ug/l expressed as tributyltin;~~

~~(4)(22) Action Levels for Toxic Substances: Applicable to NPDES Permits:~~

~~(a) Copper: 7 ug/l; Copper, dissolved, chronic: 2.7 ug/l;~~

~~(b) Iron: 1.0 mg/l;~~

~~(c) Silver: Silver, dissolved, chronic: 0.06 ug/l;~~

~~(d) Zinc: Zinc, dissolved, chronic: 50 ug/l; 36 ug/l;~~

~~(e) Chloride: 230 mg/l;~~

The hardness-dependent freshwater action levels for Copper and Zinc, provided here for illustrative purposes, corresponds to a hardness of 25 mg/L. Copper and Zinc action level values for other instream hardness values shall be calculated per the chronic equations specified in 15A NCAC 02B

1 .0211 (11) Metals- Table A: Dissolved Freshwater Standards for Hardness-Dependent Metals. If the
 2 Action Levels for any of the substances listed in this Subparagraph (which are generally not
 3 bioaccumulative and have variable toxicity to aquatic life because of chemical form, solubility, stream
 4 characteristics or associated waste characteristics) are determined by the waste load allocation to be
 5 exceeded in a receiving water by a discharge under the specified ~~low flow~~ 7Q10 criterion for toxic
 6 ~~substances (Rule .0206 in this Section)~~, substances, the discharger shall monitor the chemical or
 7 biological effects of the discharge; efforts shall be made by all dischargers to reduce or eliminate these
 8 substances from their effluents. Those substances for which Action Levels are listed in this
 9 Subparagraph shall be limited as appropriate in the NPDES permit ~~based on the Action Levels listed in~~
 10 ~~this Subparagraph~~ if sufficient information (to be determined for metals by measurements of that
 11 portion of the dissolved instream concentration of the Action Level parameter attributable to a specific
 12 NPDES permitted discharge) exists to indicate that any of those substances may be a causative factor
 13 resulting in toxicity of the effluent. ~~NPDES permit limits may be based on translation of the toxic~~
 14 ~~form to total recoverable metals. Studies used to determine the toxic form or translators must be~~
 15 ~~designed according to "Water Quality Standards Handbook Second Edition" published by the~~
 16 ~~Environmental Protection Agency (EPA 823-B-94-005a) or "The Metals Translator: Guidance For~~
 17 ~~Calculating a Total Recoverable Permit Limit From a Dissolved Criterion" published by the~~
 18 ~~Environmental Protection Agency (EPA 823-B-96-007) which are hereby incorporated by reference~~
 19 ~~including any subsequent amendments. The Director shall consider conformance to EPA guidance as~~
 20 ~~well as the presence of environmental conditions that limit the applicability of translators in approving~~
 21 ~~the use of metal translators.~~
 22 For purposes other than consideration of NPDES permitting of point source discharges as described in
 23 this Subparagraph, the Action Levels in this Rule, as measured by an appropriate analytical technique,
 24 per 15A NCAC 02B .0103(a), shall be considered as numerical instream water quality standards.

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 26 *History Note:* Authority G.S. 143-214.1; 143-215.3(a)(1);
 27 Eff. February 1, 1976;
 28 Amended Eff. XXX; May 1, 2007; April 1, 2003; August 1, 2000; October 1, 1995; August 1, 1995;
 29 April 1, 1994; February 1, 1993.
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1 15A NCAC 02B .0212 is proposed for amendment as follows:

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3 **15A NCAC 02B .0212 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS WS-I**
4 **WATERS**

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

- 8 (1) The best usage of WS-I waters are as follows: a source of water supply for drinking, culinary, or
9 food-processing purposes for those users desiring maximum protection of their water supplies;
10 waters located on land in public ownership; and any best usage specified for Class C waters;
- 11 (2) The conditions related to the best usage are as follows: waters of this class are protected water
12 supplies within essentially natural and undeveloped watersheds in public ownership with no
13 permitted point source dischargers except those specified in Rule .0104 of this Subchapter; waters
14 within this class must be relatively unimpacted by nonpoint sources of pollution; land use
15 management programs are required to protect waters from nonpoint source pollution; the waters,
16 following treatment required by the Division of Environmental Health, shall meet the Maximum
17 Contaminant Level concentrations considered safe for drinking, culinary, and food-processing
18 purposes which are specified in the national drinking water regulations and in the North Carolina
19 Rules Governing Public Water Supplies, 15A NCAC 18C .1500. Sources of water pollution which
20 preclude any of these uses on either a short-term or long-term basis shall be considered to be
21 violating a water quality standard. The Class WS-I classification may be used to protect portions
22 of Class WS-II, WS-III and WS-IV water supplies. For reclassifications occurring after the July 1,
23 1992 statewide reclassification, the more protective classification requested by local governments
24 shall be considered by the Commission when all local governments having jurisdiction in the
25 affected area(s) have adopted a resolution and the appropriate ordinances to protect the watershed
26 or the Commission acts to protect a watershed when one or more local governments has failed to
27 adopt necessary protection measures;
- 28 (3) Quality standards applicable to Class WS-I Waters are as follows:
- 29 (a) MBAS (Methylene-Blue Active Substances): not greater than 0.5 mg/l to protect the
30 aesthetic qualities of water supplies and to prevent foaming;
- 31 (b) Nonpoint Source Pollution: none shall be allowed that would adversely impact the
32 waters for use as a water supply or any other designated use;
- 33 (c) Organisms of coliform group: total coliforms not to exceed 50/100 ml (MF count) as a
34 monthly geometric mean value in watersheds serving as unfiltered water supplies;
- 35 (d) Chlorinated phenolic compounds: not greater than 1.0 ug/l to protect water supplies from
36 taste and odor problems from chlorinated phenols;

- 1 (e) Sewage, industrial wastes: none shall be allowed except those specified in Subparagraph
2 (2) of this Paragraph or Rule .0104 of this Subchapter;
- 3 (f) Solids, total dissolved: not greater than 500 mg/l;
- 4 (g) Total hardness: not greater than 100 mg/l as calcium ~~carbonate~~; carbonate (CaCO₃ or Ca
5 + Mg);
- 6 (h) Toxic and other deleterious substances:
- 7 (i) Water quality standards (maximum permissible concentrations) to protect
8 human health through water consumption and fish tissue consumption for
9 non-carcinogens in Class WS-I waters:
- 10 (A) Barium: 1.0 mg/l;
- 11 (B) Chloride: 250 mg/l;
- 12 ~~(C) Manganese: 200 ug/l;~~
- 13 ~~(D)~~(C) Nickel: 25 ug/l;
- 14 ~~(E)~~(D) Nitrate nitrogen: 10.0 mg/l;
- 15 ~~(F)~~(E) 2,4-D: ~~400 ug/l;~~70 ug/l;
- 16 ~~(G)~~(F) 2,4,5-TP (Silvex): 10 ug/l;
- 17 ~~(H)~~(G) Sulfates: 250 mg/l;
- 18 (ii) Water quality standards (maximum permissible concentrations) to protect
19 human health through water consumption and fish tissue consumption for
20 carcinogens in Class WS-I waters:
- 21 (A) Aldrin: 0.05 ng/l;
- 22 (B) Arsenic: 10 ug/l;
- 23 (C) Benzene: 1.19 ug/l;
- 24 (D) Carbon tetrachloride: 0.254 ug/l;
- 25 (E) Chlordane: 0.8 ng/l;
- 26 (F) Chlorinated benzenes: 488 ug/l;
- 27 (G) DDT: 0.2 ng/l;
- 28 (H) Dieldrin: 0.05 ng/l;
- 29 (I) Dioxin: 0.000005 ng/l;
- 30 (J) Heptachlor: 0.08 ng/l;
- 31 (K) Hexachlorobutadiene: 0.44 ug/l;
- 32 (L) Polynuclear aromatic hydrocarbons (total of all PAHs): 2.8 ng/l;
- 33 (M) Tetrachloroethane (1,1,2,2): 0.17 ug/l;
- 34 (N) Tetrachloroethylene: 0.7 ug/l;
- 35 (O) Trichloroethylene: 2.5 ug/l;
- 36 (P) Vinyl Chloride: 0.025 ug/l.
- 37

1 *History Note: Authority G.S. 143-214.1; 143-215.3(a)(1);*
2 *Eff. February 1, 1976;*
3 *Amended Eff. XXX; May 1, 2007; April 1, 2003; October 1, 1995; February 1, 1993; March 1,*
4 *1991; October 1, 1989.*
5

1 15A NCAC 02B .0214 is proposed for amendment as follows:

2
3 **15A NCAC 02B .0214 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS WS-II**
4 **WATERS**

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

- 8 (1) The best usage of WS-II waters are as follows: a source of water supply for drinking, culinary, or
9 food-processing purposes for those users desiring maximum protection for their water supplies
10 where a WS-I classification is not feasible and any best usage specified for Class C waters;
- 11 (2) The conditions related to the best usage are as follows: waters of this class are protected as water
12 supplies which are in predominantly undeveloped watersheds and meet average watershed
13 development density levels as specified in Sub-Items (3)(b)(i)(A), (3)(b)(i)(B), (3)(b)(ii)(A) and
14 (3)(b)(ii)(B) of this Rule; discharges which qualify for a General Permit pursuant to 15A NCAC
15 2H .0127, trout farm discharges, recycle (closed loop) systems that only discharge in response to
16 10-year storm events and other stormwater discharges are allowed in the entire watershed; new
17 domestic and industrial discharges of treated wastewater are not allowed in the entire watershed;
18 the waters, following treatment required by the Division of Environmental Health, shall meet the
19 Maximum Contaminant Level concentrations considered safe for drinking, culinary, and
20 food-processing purposes which are specified in the national drinking water regulations and in the
21 North Carolina Rules Governing Public Water Supplies, 15A NCAC 18C .1500. Sources of water
22 pollution which preclude any of these uses on either a short-term or long-term basis shall be
23 considered to be violating a water quality standard. The Class WS-II classification may be used to
24 protect portions of Class WS-III and WS-IV water supplies. For reclassifications of these portions
25 of Class WS-III and WS-IV water supplies occurring after the July 1, 1992 statewide
26 reclassification, the more protective classification requested by local governments shall be
27 considered by the Commission when all local governments having jurisdiction in the affected
28 area(s) have adopted a resolution and the appropriate ordinances to protect the watershed or the
29 Commission acts to protect a watershed when one or more local governments has failed to adopt
30 necessary protection measures;
- 31 (3) Quality standards applicable to Class WS-II Waters are as follows:
- 32 (a) Sewage, industrial wastes, non-process industrial wastes, or other wastes: none shall be
33 allowed except for those specified in either Item (2) of this Rule and Rule .0104 of this
34 Subchapter; none shall be allowed that have an adverse effect on human health or that are
35 not effectively treated to the satisfaction of the Commission and in accordance with the
36 requirements of the Division of Environmental Health, North Carolina Department of
37 Environment and Natural Resources. Any discharger may be required upon request by

1 the Commission to disclose all chemical constituents present or potentially present in
2 their wastes and chemicals which could be spilled or be present in runoff from their
3 facility which may have an adverse impact on downstream water quality. These facilities
4 may be required to have spill and treatment failure control plans as well as perform
5 special monitoring for toxic substances;

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

8 (i) Nonpoint Source and Stormwater Pollution Control Criteria for Entire
9 Watershed:

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

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

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

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

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

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

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

- 1 (IV) areas of concentrated development are located in upland areas
2 and away, to the maximum extent practicable, from surface
3 waters and drainageways;
- 4 (V) remainder of tract to remain in vegetated or natural state;
- 5 (VI) area in the vegetated or natural state may be conveyed to a
6 property owners association, a local government for
7 preservation as a park or greenway, a conservation
8 organization, or placed in a permanent conservation or
9 farmland preservation easement;
- 10 (VII) a maintenance agreement for the vegetated or natural area
11 shall be filed with the Register of Deeds; and
- 12 (VIII) cluster development that meets the applicable low density
13 option requirements shall transport stormwater runoff from the
14 development by vegetated conveyances to the maximum
15 extent practicable;
- 16 (E) A maximum of 10 percent of each jurisdiction's portion of the
17 watershed outside of the critical area as delineated on July 1, 1993 may
18 be developed with new development projects and expansions of
19 existing development of up to 70 percent built-upon surface area in
20 addition to the new development approved in compliance with the
21 appropriate requirements of Sub-Item (3)(b)(i)(A) or Sub-Item
22 (3)(b)(i)(B) of this Rule. For expansions to existing development, the
23 existing built-upon surface area is not counted toward the allowed 70
24 percent built-upon surface area. A local government having
25 jurisdiction within the watershed may transfer, in whole or in part, its
26 right to the 10 percent/70 percent land area to another local government
27 within the watershed upon submittal of a joint resolution and review by
28 the Commission. When the water supply watershed is composed of
29 public lands, such as National Forest land, local governments may
30 count the public land acreage within the watershed outside of the
31 critical area in calculating the acreage allowed under this provision.
32 For local governments that do not choose to use the high density option
33 in that WS-II watershed, each project must, to the maximum extent
34 practicable, minimize built-upon surface area, direct stormwater runoff
35 away from surface waters and incorporate best management practices
36 to minimize water quality impacts. If the local government selects the
37 high density development option within that WS-II watershed, then

- 1 (C) No new permitted sites for land application of residuals or petroleum
 2 contaminated soils are allowed;
- 3 (D) No new landfills are allowed;
- 4 (c) MBAS (Methylene-Blue Active Substances): not greater than 0.5 mg/l to protect the
 5 aesthetic qualities of water supplies and to prevent foaming;
- 6 (d) Odor producing substances contained in sewage or other wastes: only such amounts,
 7 whether alone or in combination with other substances or wastes, as shall not cause taste
 8 and odor difficulties in water supplies which cannot be corrected by treatment, impair the
 9 palatability of fish, or have a deleterious effect upon any best usage established for waters
 10 of this class;
- 11 (e) Chlorinated phenolic compounds: not greater than 1.0 ug/l to protect water supplies from
 12 taste and odor problems from chlorinated phenols;
- 13 (f) Total hardness: not greater than 100 mg/l as calcium ~~carbonate~~; carbonate (CaCO₃ or Ca
 14 + Mg);
- 15 (g) Total dissolved solids: not greater than 500 mg/l;
- 16 (h) Toxic and other deleterious substances:
- 17 (i) Water quality standards (maximum permissible concentrations) to protect
 18 human health through water consumption and fish tissue consumption for
 19 non-carcinogens in Class WS-II waters:
- 20 (A) Barium: 1.0 mg/l;
- 21 (B) Chloride: 250 mg/l;
- 22 ~~(C) Manganese: 200 ug/l;~~
- 23 ~~(D)~~(C) Nickel: 25 ug/l;
- 24 ~~(E)~~(D) Nitrate nitrogen: 10 mg/l;
- 25 ~~(F)~~(E) 2,4-D: ~~100 ug/l;~~ 70 ug/l;
- 26 ~~(G)~~(F) 2,4,5-TP (Silvex): 10 ug/l;
- 27 ~~(H)~~(G) Sulfates: 250 mg/l;
- 28 (ii) Water quality standards (maximum permissible concentrations) to protect
 29 human health through water consumption and fish tissue consumption for
 30 carcinogens in Class WS-II waters:
- 31 (A) Aldrin: 0.05 ng/l;
- 32 (B) Arsenic: 10 ug/l;
- 33 (C) Benzene: 1.19 ug/l;
- 34 (D) Carbon tetrachloride: 0.254 ug/l;
- 35 (E) Chlordane: 0.8 ng/l;
- 36 (F) Chlorinated benzenes: 488 ug/l;
- 37 (G) DDT: 0.2 ng/l;

- 1 (H) Dieldrin: 0.05 ng/l;
2 (I) Dioxin: 0.000005 ng/l;
3 (J) Heptachlor: 0.08 ng/l;
4 (K) Hexachlorobutadiene: 0.44 ug/l;
5 (L) Polynuclear aromatic hydrocarbons (total of all PAHs): 2.8 ng/l;
6 (M) Tetrachloroethane (1,1,2,2): 0.17 ug/l;
7 (N) Tetrachloroethylene: 0.7 ug/l;
8 (O) Trichloroethylene: 2.5 ug/l;
9 (P) Vinyl Chloride: 0.025 ug/l.

10

11 *History Note:* Authority G.S. 143-214.1; 143-215.3(a)(1);

12 *Eff. May 10, 1979;*

13 *Amended Eff. XXX; May 1, 2007; April 1, 2003; January 1, 1996; October 1, 1995.*

14

1 15A NCAC 02B .0215 is proposed for amendment as follows:

2
3 **15A NCAC 02B .0215 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS WS-III**
4 **WATERS**

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

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

10 (2) The conditions related to the best usage are as follows: waters of this class are protected as water
11 supplies which are generally in low to moderately developed watersheds and meet average
12 watershed development density levels as specified in Sub-Items (3)(b)(i)(A), (3)(b)(i)(B),
13 (3)(b)(ii)(A) and (3)(b)(ii)(B) of this Rule; discharges that qualify for a General Permit pursuant to
14 15A NCAC 2H .0127, trout farm discharges, recycle (closed loop) systems that only discharge in
15 response to 10-year storm events, and other stormwater discharges are allowed in the entire
16 watershed; treated domestic wastewater discharges are allowed in the entire watershed but no new
17 domestic wastewater discharges are allowed in the critical area; no new industrial wastewater
18 discharges except non-process industrial discharges are allowed in the entire watershed; the
19 waters, following treatment required by the Division of Environmental Health, shall meet the
20 Maximum Contaminant Level concentrations considered safe for drinking, culinary, or
21 food-processing purposes which are specified in the national drinking water regulations and in the
22 North Carolina Rules Governing Public Water Supplies, 15A NCAC 18C .1500. Sources of water
23 pollution which preclude any of these uses on either a short-term or long-term basis shall be
24 considered to be violating a water quality standard. The Class WS-III classification may be used to
25 protect portions of Class WS-IV water supplies. For reclassifications of these portions of WS-IV
26 water supplies occurring after the July 1, 1992 statewide reclassification, the more protective
27 classification requested by local governments shall be considered by the Commission when all
28 local governments having jurisdiction in the affected area(s) have adopted a resolution and the
29 appropriate ordinances to protect the watershed or the Commission acts to protect a watershed
30 when one or more local governments has failed to adopt necessary protection measures;

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

32 (a) Sewage, industrial wastes, non-process industrial wastes, or other wastes: none shall be
33 allowed except for those specified in Item (2) of this Rule and Rule .0104 of this
34 Subchapter; none shall be allowed that have an adverse effect on human health or that are
35 not effectively treated to the satisfaction of the Commission and in accordance with the
36 requirements of the Division of Environmental Health, North Carolina Department of
37 Environment and Natural Resources. Any discharger may be required by the

1 Commission to disclose all chemical constituents present or potentially present in their
2 wastes and chemicals which could be spilled or be present in runoff from their facility
3 which may have an adverse impact on downstream water quality. These facilities may be
4 required to have spill and treatment failure control plans as well as perform special
5 monitoring for toxic substances;

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

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

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

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

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

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

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

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

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

- 1 (IV) areas of concentrated development are located in upland areas
2 and away, to the maximum extent practicable, from surface
3 waters and drainageways;
- 4 (V) remainder of tract to remain in vegetated or natural state;
- 5 (VI) area in the vegetated or natural state may be conveyed to a
6 property owners association, a local government for
7 preservation as a park or greenway, a conservation
8 organization or placed in a permanent conservation or
9 farmland preservation easement;
- 10 (VII) a maintenance agreement for the vegetated or natural area
11 shall be filed with the Register of Deeds; and
- 12 (VIII) cluster development that meets the applicable low density
13 option requirements shall transport stormwater runoff from the
14 development by vegetated conveyances to the maximum
15 extent practicable;
- 16 (E) A maximum of 10 percent of each jurisdiction's portion of the
17 watershed outside of the critical area as delineated on July 1, 1993 may
18 be developed with new development projects and expansions of
19 existing development of up to 70 percent built-upon surface area in
20 addition to the new development approved in compliance with the
21 appropriate requirements of Sub-Item (3)(b)(i)(A) or Sub-Item
22 (3)(b)(i)(B) of this Rule. For expansions to existing development, the
23 existing built-upon surface area is not counted toward the allowed 70
24 percent built-upon surface area. A local government having
25 jurisdiction within the watershed may transfer, in whole or in part, its
26 right to the 10 percent/70 percent land area to another local government
27 within the watershed upon submittal of a joint resolution and review by
28 the Commission. When the water supply watershed is composed of
29 public lands, such as National Forest land, local governments may
30 count the public land acreage within the watershed outside of the
31 critical area in figuring the acreage allowed under this provision. For
32 local governments that do not choose to use the high density option in
33 that WS-III watershed, each project must, to the maximum extent
34 practicable, minimize built-upon surface area, direct stormwater runoff
35 away from surface waters, and incorporate best management practices
36 to minimize water quality impacts. If the local government selects the
37 high density development option within that WS-III watershed, then

- 1 engineered stormwater controls must be employed for the new
2 development;
- 3 (F) If local governments choose the high density development option
4 which requires engineered stormwater controls, then they shall assume
5 ultimate responsibility for operation and maintenance of the required
6 controls as outlined in Rule .0104 of this Subchapter;
- 7 (G) Minimum 100 foot vegetative buffer is required for all new
8 development activities that exceed the low density requirements as
9 specified in Sub-Item (3)(b)(i)(A) and Sub-Item (3)(b)(ii)(A) of this
10 Rule, otherwise a minimum 30 foot vegetative buffer for development
11 is required along all perennial waters indicated on the most recent
12 versions of U.S.G.S. 1:24,000 (7.5 minute) scale topographic maps or
13 as determined by local government studies. Nothing in this Rule shall
14 stand as a bar to artificial streambank or shoreline stabilization;
- 15 (H) No new development is allowed in the buffer; water dependent
16 structures, or other structures such as flag poles, signs and security
17 lights, which result in only de minimus increases in impervious area
18 and public projects such as road crossings and greenways may be
19 allowed where no practicable alternative exists. These activities shall
20 minimize built-upon surface area, direct runoff away from surface
21 waters and maximize the utilization of BMPs;
- 22 (I) No NPDES permits shall be issued for landfills that discharge treated
23 leachate;
- 24 (ii) Critical Area Nonpoint Source and Stormwater Pollution Control Criteria:
- 25 (A) Low Density Option: new development limited to either no more than
26 one dwelling unit of single family detached residential development per
27 acre (or 40,000 square foot lot excluding roadway right-of-way) or 12
28 percent built-upon area for all other residential and non-residential
29 development; stormwater runoff from the development shall be
30 transported by vegetated conveyances to the maximum extent
31 practicable;
- 32 (B) High Density Option: if new development exceeds the low density
33 requirements specified in Sub-Item (3)(b)(ii)(A) of this Rule, then
34 engineered stormwater controls must be used to control runoff from the
35 first inch of rainfall; development shall not exceed 30 percent
36 built-upon area;

- 1 (C) No new permitted sites for land application of residuals or petroleum
 2 contaminated soils are allowed;
- 3 (D) No new landfills are allowed;
- 4 (c) MBAS (Methylene-Blue Active Substances): not greater than 0.5 mg/l to protect the
 5 aesthetic qualities of water supplies and to prevent foaming;
- 6 (d) Odor producing substances contained in sewage, industrial wastes, or other wastes: only
 7 such amounts, whether alone or in combination with other substances or wastes, as shall
 8 not cause taste and odor difficulties in water supplies which cannot be corrected by
 9 treatment, impair the palatability of fish, or have a deleterious effect upon any best usage
 10 established for waters of this class;
- 11 (e) Chlorinated phenolic compounds: not greater than 1.0 ug/l to protect water supplies from
 12 taste and odor problems from chlorinated phenols;
- 13 (f) Total hardness: not greater than 100 mg/l as calcium ~~carbonate~~; carbonate (CaCO₃ or Ca
 14 + Mg);
- 15 (g) Total dissolved solids: not greater than 500 mg/l;
- 16 (h) Toxic and other deleterious substances:
- 17 (i) Water quality standards (maximum permissible concentrations) to protect
 18 human health through water consumption and fish tissue consumption for
 19 non-carcinogens in Class WS-III waters:
- 20 (A) Barium: 1.0 mg/l;
- 21 (B) Chloride: 250 mg/l;
- 22 ~~(C)~~ ~~Manganese: 200 ug/l;~~
- 23 ~~(D)~~ ~~(C)~~ Nickel: 25 ug/l;
- 24 ~~(E)~~ ~~(D)~~ Nitrate nitrogen: 10 mg/l;
- 25 ~~(F)~~ ~~(E)~~ 2,4-D: ~~100 ug/l;~~ 70 ug/l;
- 26 ~~(G)~~ ~~(F)~~ 2,4,5-TP (Silvex): 10 ug/l;
- 27 ~~(H)~~ ~~(G)~~ Sulfates: 250 mg/l;
- 28 (ii) Water quality standards (maximum permissible concentrations) to protect
 29 human health through water consumption and fish tissue consumption for
 30 carcinogens in Class WS-III waters:
- 31 (A) Aldrin: 0.05 ng/l;
- 32 (B) Arsenic: 10 ug/l;
- 33 (C) Benzene: 1.19 ug/l;
- 34 (D) Carbon tetrachloride: 0.254 ug/l;
- 35 (E) Chlordane: 0.8 ng/l;
- 36 (F) Chlorinated benzenes: 488 ug/l;
- 37 (G) DDT: 0.2 ng/l;

- 1 (H) Dieldrin: 0.05 ng/l;
2 (I) Dioxin: 0.000005 ng/l;
3 (J) Heptachlor: 0.08 ng/l;
4 (K) Hexachlorobutadiene: 0.44 ug/l;
5 (L) Polynuclear aromatic hydrocarbons (total of all PAHs): 2.8 ng/l;
6 (M) Tetrachloroethane (1,1,2,2): 0.17 ug/l;
7 (N) Tetrachloroethylene: 0.7 ug/l;
8 (O) Trichloroethylene: 2.5 ug/l;
9 (P) Vinyl Chloride: 0.025 ug/l.

10

11 *History Note:* Authority G.S. 143-214.1; 143-215.3(a)(1);

12 *Eff. September 9, 1979;*

13 *Amended Eff. XXX; May 1, 2007; April 1, 2003; January 1, 1996; October 1, 1995; October 1,*

14

1989.

15

1 15A NCAC 02B .0216 is proposed for amendment as follows:

2
3 **15A NCAC 02B .0216 FRESH SURFACE WATER QUALITY STANDARDS FOR WS-IV WATERS**

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

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

9 (2) The conditions related to the best usage are as follows: waters of this class are protected as water
10 supplies which are generally in moderately to highly developed watersheds or protected areas and
11 meet average watershed development density levels as specified in Sub-Items (3)(b)(i)(A),
12 (3)(b)(i)(B), (3)(b)(ii)(A) and (3)(b)(ii)(B) of this Rule; discharges which qualify for a General
13 Permit pursuant to 15A NCAC 02H .0127, trout farm discharges, recycle (closed loop) systems
14 that only discharge in response to 10-year storm events, other stormwater discharges and domestic
15 wastewater discharges shall be allowed in the protected and critical areas; treated industrial
16 wastewater discharges are allowed in the protected and critical areas; however, new industrial
17 wastewater discharges in the critical area shall be required to meet the provisions of 15A NCAC
18 02B .0224(1)(b)(iv), (v) and (vii), and 15A NCAC 02B .0203; new industrial connections and
19 expansions to existing municipal discharges with a pretreatment program pursuant to 15A NCAC
20 02H .0904 are allowed; the waters, following treatment required by the Division of Environmental
21 Health, shall meet the Maximum Contaminant Level concentrations considered safe for drinking,
22 culinary, or food-processing purposes which are specified in the national drinking water
23 regulations and in the North Carolina Rules Governing Public Water Supplies, 15A NCAC 18C
24 .1500. Sources of water pollution which preclude any of these uses on either a short-term or
25 long-term basis shall be considered to be violating a water quality standard. The Class WS-II or
26 WS-III classifications may be used to protect portions of Class WS-IV water supplies. For
27 reclassifications of these portions of WS-IV water supplies occurring after the July 1, 1992
28 statewide reclassification, the more protective classification requested by local governments shall
29 be considered by the Commission when all local governments having jurisdiction in the affected
30 area(s) have adopted a resolution and the appropriate ordinances to protect the watershed or the
31 Commission acts to protect a watershed when one or more local governments has failed to adopt
32 necessary protection measures;

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

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

1 with the requirements of the Division of Environmental Health, North Carolina
2 Department of Environment and Natural Resources. Any discharges or industrial users
3 subject to pretreatment standards may be required by the Commission to disclose all
4 chemical constituents present or potentially present in their wastes and chemicals which
5 could be spilled or be present in runoff from their facility which may have an adverse
6 impact on downstream water supplies. These facilities may be required to have spill and
7 treatment failure control plans as well as perform special monitoring for toxic substances;

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

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

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

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

31 (C) Land within the critical and protected area shall be deemed compliant
32 with the density requirements if the following condition is met: the
33 density of all existing development at the time of reclassification does
34 not exceed the density requirement when densities are averaged
35 throughout the entire area;

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

- 1 (I) overall density of the project meets associated density or
2 stormwater control requirements of this Rule;
- 3 (II) buffers meet the minimum statewide water supply watershed
4 protection requirements;
- 5 (III) built-upon areas are designed and located to minimize
6 stormwater runoff impact to the receiving waters, minimize
7 concentrated stormwater flow, maximize the use of sheet flow
8 through vegetated areas, and maximize the flow length
9 through vegetated areas;
- 10 (IV) areas of concentrated development are located in upland areas
11 and away, to the maximum extent practicable, from surface
12 waters and drainageways;
- 13 (V) remainder of tract to remain in vegetated or natural state;
- 14 (VI) area in the vegetated or natural state may be conveyed to a
15 property owners association, a local government for
16 preservation as a park or greenway, a conservation
17 organization, or placed in a permanent conservation or
18 farmland preservation easement;
- 19 (VII) a maintenance agreement for the vegetated or natural area
20 shall be filed with the Register of Deeds; and
- 21 (VIII) cluster development that meets the applicable low density
22 option requirements shall transport stormwater runoff from the
23 development by vegetated conveyances to the maximum
24 extent practicable;
- 25 (E) If local governments choose the high density development option
26 which requires engineered stormwater controls, then they shall assume
27 ultimate responsibility for operation and maintenance of the required
28 controls as outlined in Rule .0104 of this Subchapter;
- 29 (F) Minimum 100 foot vegetative buffer is required for all new
30 development activities that exceed the low density option requirements
31 as specified in Sub-Item (3)(b)(i)(A) or Sub-Item (3)(b)(ii)(A) of this
32 Rule, otherwise a minimum 30 foot vegetative buffer for development
33 shall be required along all perennial waters indicated on the most recent
34 versions of U.S.G.S. 1:24,000 (7.5 minute) scale topographic maps or
35 as determined by local government studies;
- 36 (G) No new development shall be allowed in the buffer; water dependent
37 structures, or other structures, such as flag poles, signs and security

lights, which result in only de minimus 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

- 1 transported by vegetated conveyances to the maximum extent
 2 practicable;
- 3 (B) High Density Option: if new development density exceeds the low
 4 density requirements specified in Sub-Item (3)(b)(ii)(A) of this Rule,
 5 engineered stormwater controls shall be used to control runoff from the
 6 first inch of rainfall; new residential and non-residential development
 7 shall not exceed 50 percent built-upon area;
- 8 (C) No new permitted sites for land application of residuals or petroleum
 9 contaminated soils shall be allowed;
- 10 (D) No new landfills shall be allowed;
- 11 (c) MBAS (Methylene-Blue Active Substances): not greater than 0.5 mg/l to protect the
 12 aesthetic qualities of water supplies and to prevent foaming;
- 13 (d) Odor producing substances contained in sewage, industrial wastes, or other wastes: only
 14 such amounts, whether alone or in combination with other substances or waste, as will
 15 not cause taste and odor difficulties in water supplies which can not be corrected by
 16 treatment, impair the palatability of fish, or have a deleterious effect upon any best usage
 17 established for waters of this class;
- 18 (e) Chlorinated phenolic compounds: not greater than 1.0 ug/l to protect water supplies
 19 from taste and odor problems due to chlorinated phenols shall be allowed. Specific
 20 phenolic compounds may be given a different limit if it is demonstrated not to cause taste
 21 and odor problems and not to be detrimental to other best usage;
- 22 (f) Total hardness shall not exceed 100 mg/l as calcium ~~carbonate~~; carbonate (CaCO₃ or Ca +
 23 Mg);
- 24 (g) Total dissolved solids shall not exceed 500 mg/l;
- 25 (h) Toxic and other deleterious substances:
- 26 (i) Water quality standards (maximum permissible concentrations) to protect
 27 human health through water consumption and fish tissue consumption for
 28 non-carcinogens in Class WS-IV waters:
- 29 (A) Barium: 1.0 mg/l;
- 30 (B) Chloride: 250 mg/l;
- 31 ~~(C) Manganese: 200 ug/l;~~
- 32 ~~(D)(C)~~ Nickel: 25 ug/l;
- 33 ~~(E)(D)~~ Nitrate nitrogen: 10.0 mg/l;
- 34 ~~(F)(E)~~ 2,4-D: ~~400 ug/l;~~ 70 ug/l;
- 35 ~~(G)(F)~~ 2,4,5-TP (Silvex): 10 ug/l;
- 36 ~~(H)(G)~~ Sulfates: 250 mg/l;

- 1 (ii) Water quality standards (maximum permissible concentrations) to protect
2 human health through water consumption and fish tissue consumption for
3 carcinogens in Class WS-IV waters:
4 (A) Aldrin: 0.05 ng/l;
5 (B) Arsenic: 10 ug/l;
6 (C) Benzene: 1.19 ug/l;
7 (D) Carbon tetrachloride: 0.254 ug/l;
8 (E) Chlordane: 0.8 ng/l;
9 (F) Chlorinated benzenes: 488 ug/l;
10 (G) DDT: 0.2 ng/l;
11 (H) Dieldrin: 0.05 ng/l;
12 (I) Dioxin: 0.000005 ng/l;
13 (J) Heptachlor: 0.08 ng/l;
14 (K) Hexachlorobutadiene: 0.44 ug/l;
15 (L) Polynuclear aromatic hydrocarbons (total of all PAHs): 2.8 ng/l;
16 (M) Tetrachloroethane (1,1,2,2): 0.17 ug/l;
17 (N) Tetrachloroethylene: 0.7 ug/l;
18 (O) Trichloroethylene: 2.5 ug/l;
19 (P) Vinyl Chloride: 0.025 ug/l.

20

21 *History Note: Authority G.S. 143-214.1; 143-215.3(a)(1);*

22 *Eff. February 1, 1986;*

23 *Amended Eff. XXX; May 1, 2007; April 1, 2003; June 1, 1996; October 1, 1995; August 1, 1995;*

24 *June 1, 1994.*

25

1 15A NCAC 02B .0218 is proposed for amendment as follows:

2

3 **15A NCAC 02B .0218 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS WS-V**
4 **WATERS**

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

7 (1) The best usage of WS-V waters are as follows: waters that are protected as water supplies which
8 are generally upstream and draining to Class WS-IV waters; or waters previously used for
9 drinking water supply purposes; or waters used by industry to supply their employees, but not
10 municipalities or counties, with a raw drinking water supply source, although this type of use is
11 not restricted to WS-V classification; and all Class C uses. The Commission may consider a more
12 protective classification for the water supply if a resolution requesting a more protective
13 classification is submitted from all local governments having land use jurisdiction within the
14 affected watershed;

15 (2) The conditions related to the best usage are as follows: waters of this class are protected water
16 supplies; the waters, following treatment required by the Division of Environmental Health, shall
17 meet the Maximum Contaminant Level concentrations considered safe for drinking, culinary, or
18 food-processing purposes which are specified in the national drinking water regulations and in the
19 North Carolina Rules Governing Public Water Supplies, 15A NCAC 18C .1500; no categorical
20 restrictions on watershed development or wastewater discharges are required, however, the
21 Commission or its designee may apply management requirements for the protection of waters
22 downstream of receiving waters (15A NCAC 02B .0203). Sources of water pollution which
23 preclude any of these uses on either a short-term or long-term basis shall be considered to be
24 violating a water quality standard;

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

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

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

- 1 (c) Nonpoint Source and Stormwater Pollution: none that would adversely impact the waters
2 for use as water supply or any other designated use;
- 3 (d) Odor producing substances contained in sewage, industrial wastes, or other wastes: only
4 such amounts, whether alone or in combination with other substances or waste, as will
5 not cause taste and odor difficulties in water supplies which can not be corrected by
6 treatment, impair the palatability of fish, or have a deleterious effect upon any best usage
7 established for waters of this class;
- 8 (e) Chlorinated phenolic compounds: not greater than 1.0 ug/l to protect water supplies
9 from taste and odor problems due to chlorinated phenols; specific phenolic compounds
10 may be given a different limit if it is demonstrated not to cause taste and odor problems
11 and not to be detrimental to other best usage;
- 12 (f) Total hardness: not greater than 100 mg/l as calcium ~~carbonate~~; carbonate (CaCO₃ or Ca
13 + Mg);
- 14 (g) Total dissolved solids: not greater than 500 mg/l;
- 15 (h) Toxic and other deleterious substances:
- 16 (i) Water quality standards (maximum permissible concentrations) to protect
17 human health through water consumption and fish tissue consumption for
18 non-carcinogens in Class WS-V waters:
- 19 (A) Barium: 1.0 mg/l;
- 20 (B) Chloride: 250 mg/l;
- 21 ~~(C)~~ ~~Manganese: 200 ug/l;~~
- 22 ~~(D)~~(C) Nickel: 25 ug/l;
- 23 ~~(E)~~(D) Nitrate nitrogen: 10.0 mg/l;
- 24 ~~(F)~~(E) 2,4-D: ~~100 ug/l;~~ 70 ug/l;
- 25 ~~(G)~~(F) 2,4,5-TP (Silvex): 10 ug/l;
- 26 ~~(H)~~(G) Sulfates: 250 mg/l.
- 27 (ii) Water quality standards (maximum permissible concentrations) to protect
28 human health through water consumption and fish tissue consumption for
29 carcinogens in Class WS-V waters:
- 30 (A) Aldrin: 0.05 ng/l;
- 31 (B) Arsenic: 10 ug/l;
- 32 (C) Benzene: 1.19 ug/l;
- 33 (D) Carbon tetrachloride: 0.254 ug/l;
- 34 (E) Chlordane: 0.8 ng/l;
- 35 (F) Chlorinated benzenes: 488 ug/l;
- 36 (G) DDT: 0.2 ng/l;
- 37 (H) Dieldrin: 0.05 ng/l;

- 1 (I) Dioxin: 0.000005 ng/l;
2 (J) Heptachlor: 0.08 ng/l;
3 (K) Hexachlorobutadiene: 0.44 ug/l;
4 (L) Polynuclear aromatic hydrocarbons (total of all PAHs): 2.8 ng/l;
5 (M) Tetrachloroethane (1,1,2,2): 0.17 ug/l;
6 (N) Tetrachloroethylene: 0.7 ug/l;
7 (O) Trichloroethylene: 2.5 ug/l;
8 (P) Vinyl Chloride: 0.025 ug/l.
9

10 *History Note:* Authority G.S. 143-214.1; 143-215.3(a)(1);
11 *Eff. October 1, 1989;*
12 *Amended Eff. XXX; May 1, 2007; April 1, 2003; October 1, 1995.*
13

1 15A NCAC 02B .0220 is proposed for amendment as follows:

2
3 **15A NCAC 02B .0220 TIDAL SALT WATER QUALITY STANDARDS FOR CLASS SC WATERS**

4 General. The water quality standards for all tidal salt waters are the basic standards applicable to Class SC waters.
5 Additional and more stringent standards applicable to other specific tidal salt water classifications are specified in
6 Rules .0221 and .0222 of this Section. Action Levels, for purposes of NPDES permitting, are specified in Rule .0220
7 (20).

8 (1) Best Usage of Waters: any usage except primary recreation or shellfishing for market purposes;
9 usages include aquatic life propagation and maintenance of biological integrity (including fishing,
10 fish and functioning PNAs), wildlife, and secondary recreation;

11 (2) Conditions Related to Best Usage: the waters shall be suitable for aquatic life propagation and
12 maintenance of biological integrity, wildlife, and secondary recreation. Any source of water
13 pollution which precludes any of these uses, including their functioning as PNAs, on either a
14 short-term or a long-term basis shall be considered to be violating a water quality standard;

15 ~~(3) Quality standards applicable to all tidal salt waters:~~

16 ~~(a)(3)~~ Chlorophyll a (corrected): not greater than 40 ug/l in sounds, estuaries, and other waters subject to
17 growths of macroscopic or microscopic vegetation. The Commission or its designee may prohibit
18 or limit any discharge of waste into surface waters if, in the opinion of the Director, the surface
19 waters experience or the discharge would result in growths of microscopic or macroscopic
20 vegetation such that the standards established pursuant to this Rule would be violated or the
21 intended best usage of the waters would be impaired;

22 ~~(4) Cyanide: 1 ug/l;~~

23 ~~(b)(5)~~ Dissolved oxygen: not less than 5.0 mg/l, except that swamp waters, poorly flushed tidally
24 influenced streams or embayments, or estuarine bottom waters may have lower values if caused by
25 natural conditions;

26 ~~(6) Enterococcus, including *Enterococcus faecalis*, *Enterococcus faecium*, *Enterococcus avium* and~~
27 ~~*Enterococcus gallinarium*: not to exceed a geometric mean of 35 enterococci per 100 ml based~~
28 ~~upon a minimum of five samples within any consecutive 30 days. In accordance with 33 U.S.C.~~
29 ~~1313 (Federal Water Pollution Control Act) for purposes of beach monitoring and notification,~~
30 ~~"Coastal Recreational Waters Monitoring, Evaluation and Notification" regulations (15A NCAC~~
31 ~~18A .3400) are hereby incorporated by reference including any subsequent amendments;~~

32 ~~(e)(7)~~ Floating solids, settleable solids, or sludge deposits: only such amounts attributable to sewage,
33 industrial wastes or other wastes, as shall not make the waters unsafe or unsuitable for aquatic life
34 and wildlife, or impair the waters for any designated uses;

35 ~~(d)(8)~~ Gases, total dissolved: not greater than 110 percent of saturation;

36 ~~(e) Enterococcus, including *Enterococcus faecalis*, *Enterococcus faecium*, *Enterococcus avium* and~~
37 ~~*Enterococcus gallinarium*: not to exceed a geometric mean of 35 enterococci per 100 ml based~~

1 ~~upon a minimum of five samples within any consecutive 30 days. In accordance with 33 U.S.C.~~
2 ~~1313 (Federal Water Pollution Control Act) for purposes of beach monitoring and notification,~~
3 ~~"Coastal Recreational Waters Monitoring, Evaluation and Notification" regulations (15A NCAC~~
4 ~~18A .3400) are hereby incorporated by reference including any subsequent amendments;~~

5 (9) Metals:

6 (a) With the exception of mercury and selenium, tidal salt water quality standards for metals
7 shall be based upon measurement of the dissolved fraction of the metals. Mercury and
8 Selenium must be based upon measurement of the total recoverable metal. Alternative
9 site-specific standards can be developed where studies designed according to the "Water
10 Quality Standards Handbook: Second Edition" published by the US Environmental
11 Protection Agency (EPA 823-B-94-005a) hereby incorporated by reference, including
12 any subsequent amendments;

13 (b) Compliance with acute instream metals standards shall only be evaluated using an
14 average of two or more samples collected within one hour. Compliance with chronic
15 instream metals standards shall only be evaluated using averages of a minimum of four
16 samples taken on consecutive days, or as a 96-hour average;

17 (c) With the exception of mercury and selenium, demonstrated attainment of the applicable
18 aquatic life use in a waterbody will take precedence over the application of the aquatic
19 life criteria established for metals associated with these uses. An instream exceedence of
20 the numeric criterion for metals shall not be considered to have caused an adverse impact
21 to the instream aquatic community if biological monitoring has demonstrated attainment
22 of biological integrity;

23 (d) Acute and chronic tidal salt water quality metals standards are as follows:

24 (i) Arsenic, acute: 69 ug/l;

25 (ii) Arsenic, chronic: 36 ug/l;

26 (iii) Cadmium, acute: 40 ug/l;

27 (iv) Cadmium, chronic: 8.8 ug/l;

28 (v) Chromium VI, acute: 1100 ug/l;

29 (vi) Chromium VI, chronic: 50 ug/l;

30 (vii) Copper, acute: 4.8 ug/l;

31 (viii) Copper, chronic: 3.1 ug/l;

32 (ix) Lead, acute: 210 ug/l;

33 (x) Lead, chronic: 8.1 ug/l;

34 (xi) Mercury, total recoverable, chronic: 0.025 ug/l;

35 (xii) Nickel, acute: 74 ug/l;

36 (xiii) Nickel, chronic: 8.2 ug/l;

37 (xiv) Selenium, total recoverable, chronic: 71 ug/l;

- 1 (xv) Silver, acute: 1.9 ug/l;
- 2 (xvi) Silver, chronic: 0.1 ug/l;
- 3 (xvii) Zinc, acute: 90 ug/l;
- 4 (xviii) Zinc, chronic: 81 ug/l;
- 5 ~~(9)~~(10) Oils, deleterious substances, colored or other wastes: only such amounts as shall not render the
- 6 waters injurious to public health, secondary recreation or aquatic life and wildlife or adversely
- 7 affect the palatability of fish, aesthetic quality or impair the waters for any designated uses. For
- 8 the purpose of implementing this Rule, oils, deleterious substances, colored or other wastes shall
- 9 include but not be limited to substances that cause a film or sheen upon or discoloration of the
- 10 surface of the water or adjoining shorelines pursuant to 40 CFR 110.3;
- 11 ~~(10)~~ Pesticides:
- 12 (a) Aldrin: 0.003 ug/l;
- 13 (b) Chlordane: 0.004 ug/l;
- 14 (c) DDT: 0.001 ug/l;
- 15 (d) Demeton: 0.1 ug/l;
- 16 (e) Dieldrin: 0.002 ug/l;
- 17 (f) Endosulfan: 0.009 ug/l;
- 18 (g) Endrin: 0.002 ug/l;
- 19 (h) Guthion: 0.01 ug/l;
- 20 (i) Heptachlor: 0.004 ug/l;
- 21 (j) Lindane: 0.004 ug/l;
- 22 (k) Methoxychlor: 0.03 ug/l;
- 23 (l) Mirex: 0.001 ug/l;
- 24 (m) Parathion: 0.178 ug/l;
- 25 (n) Toxaphene: 0.0002 ug/l;
- 26 ~~(11)~~(12) pH: shall be normal for the waters in the area, which generally shall range between 6.8 and 8.5
- 27 except that swamp waters may have a pH as low as 4.3 if it is the result of natural conditions;
- 28 ~~(12)~~(13) Phenolic compounds: only such levels as shall not result in fish-flesh tainting or impairment of
- 29 other best usage;
- 30 ~~(13)~~ Polychlorinated biphenyls: (total of all PCBs and congeners identified) 0.001 ug/l;
- 31 ~~(14)~~(15) Radioactive substances:
- 32 ~~(i)~~(a) Combined radium-226 and radium-228: The maximum average annual activity level
- 33 (based on at least four samples, collected quarterly) for combined radium-226, and
- 34 radium-228 shall not exceed five picoCuries per liter;
- 35 ~~(ii)~~(b) Alpha Emitters. The average annual gross alpha particle activity (including radium-226,
- 36 but excluding radon and uranium) shall not exceed 15 picoCuries per liter;

~~(iii)(c)~~ 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;

~~(16)~~ Salinity: changes in salinity due to hydrological modifications shall not result in removal of the functions of a PNA. Projects that are determined by the Director to result in modifications of salinity such that functions of a PNA are impaired will be required to employ water management practices to mitigate salinity impacts;

~~(17)~~ Temperature: shall not be increased above the natural water temperature by more than 0.8 degrees C (1.44 degrees F) during the months of June, July, and August nor more than 2.2 degrees C (3.96 degrees F) during other months and in no cases to exceed 32 degrees C (89.6 degrees F) due to the discharge of heated liquids;

(18) Trialkyltin compounds: 0.007 ug/l expressed as tributyltin;

~~(19)~~ Turbidity: the turbidity in the receiving water shall not exceed 25 NTU; if turbidity exceeds this level due to natural background conditions, the existing turbidity level shall not be increased. Compliance with this turbidity standard can be met when land management activities employ Best Management Practices (BMPs) [as defined by Rule .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;

~~(m)~~ Toxic substances: numerical water quality standards (maximum permissible levels) to protect aquatic life applicable to all tidal saltwaters:

~~(i)~~ Arsenic, total recoverable: 50 ug/l;

~~(ii)~~ Cadmium: 5.0 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;

- 1 ~~(iii) — Chromium, total: 20 ug/l;~~
- 2 ~~(iv) — Cyanide: 1.0 ug/l;~~
- 3 ~~(v) — Mercury: 0.025 ug/l;~~
- 4 ~~(vi) — Lead, total recoverable: 25 ug/l; collection of data on sources, transport and fate~~
- 5 ~~of lead shall be required as part of the toxicity reduction evaluation for~~
- 6 ~~dischargers that are out of compliance with whole effluent toxicity testing~~
- 7 ~~requirements and the concentration of lead in the effluent is concomitantly~~
- 8 ~~determined to exceed an instream level of 3.1 ug/l from the discharge;~~
- 9 ~~(vii) — Nickel: 8.3 ug/l; attainment of these water quality standards in surface waters~~
- 10 ~~shall be based on measurement of total recoverable metals concentrations unless~~
- 11 ~~appropriate studies have been conducted to translate total recoverable metals to~~
- 12 ~~a toxic form. Studies used to determine the toxic form or translators must be~~
- 13 ~~designed according to the "Water Quality Standards Handbook Second Edition"~~
- 14 ~~published by the Environmental Protection Agency (EPA 823 B 94 005a) or~~
- 15 ~~"The Metals Translator: Guidance For Calculating a Total Recoverable Permit~~
- 16 ~~Limit From a Dissolved Criterion" published by the Environmental Protection~~
- 17 ~~Agency (EPA 823 B 96 007) which are hereby incorporated by reference~~
- 18 ~~including any subsequent amendments. The Director shall consider~~
- 19 ~~conformance to EPA guidance as well as the presence of environmental~~
- 20 ~~conditions that limit the applicability of translators in approving the use of metal~~
- 21 ~~translators;~~
- 22 ~~(viii) — Pesticides:~~
- 23 ~~(A) — Aldrin: 0.003 ug/l;~~
- 24 ~~(B) — Chlordane: 0.004 ug/l;~~
- 25 ~~(C) — DDT: 0.001 ug/l;~~
- 26 ~~(D) — Demeton: 0.1 ug/l;~~
- 27 ~~(E) — Dieldrin: 0.002 ug/l;~~
- 28 ~~(F) — Endosulfan: 0.009 ug/l;~~
- 29 ~~(G) — Endrin: 0.002 ug/l;~~
- 30 ~~(H) — Guthion: 0.01 ug/l;~~
- 31 ~~(I) — Heptachlor: 0.004 ug/l;~~
- 32 ~~(J) — Lindane: 0.004 ug/l;~~
- 33 ~~(K) — Methoxychlor: 0.03 ug/l;~~
- 34 ~~(L) — Mirex: 0.001 ug/l;~~
- 35 ~~(M) — Parathion: 0.178 ug/l;~~
- 36 ~~(N) — Toxaphene: 0.0002 ug/l;~~

1 ~~(ix) Polychlorinated biphenyls: (total of all PCBs and congeners identified) 0.001~~
 2 ~~ug/l;~~

3 ~~(x) Selenium: 71 ug/l;~~

4 ~~(xi) Trialkyltin compounds: 0.007 ug/l expressed as tributyltin.~~

5 ~~(4)(20) Action Levels for Toxic Substances:~~Substances Applicable to NPDES Permits:

6 ~~(a) Copper:~~Copper, dissolved, chronic: 3 ug/l;3.1 ug/l;

7 ~~(b) Silver:~~Silver, dissolved, chronic: 0.1 ug/l;

8 ~~(c) Zinc:~~Zinc, dissolved, chronic: 86 ug/l;81 ug/l

9 If the chronic Action Levels for any of the substances listed in this Subparagraph (which are
 10 generally not bioaccumulative and have variable toxicity to aquatic life because of chemical form,
 11 solubility, stream characteristics or associated waste characteristics) are determined by the waste
 12 load allocation to be exceeded in a receiving water by a discharge under the ~~specified low~~7Q10
 13 flow criterion for toxic ~~substances (Rule .0206 in this Section),~~substances, the discharger shall be
 14 required to monitor the chemical or biological effects of the discharge; efforts shall be made by all
 15 dischargers to reduce or eliminate these substances from their effluents. Those substances for
 16 which Action Levels are listed in this Subparagraph ~~may~~shall be limited as appropriate in the
 17 NPDES permit if sufficient information (to be determined for metals by measurements of that
 18 portion of the dissolved instream concentration of the Action Level parameter attributable to a
 19 specific NPDES permitted discharge) exists to indicate that any of those substances may be a
 20 causative factor resulting in toxicity of the effluent. ~~NPDES permit limits may be based on~~
 21 ~~translation of the toxic form to total recoverable metals. Studies used to determine the toxic form~~
 22 ~~or translators must be designed according to: "Water Quality Standards Handbook Second~~
 23 ~~Edition" published by the Environmental Protection Agency (EPA 823 B 94 005a) or "The Metals~~
 24 ~~Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved~~
 25 ~~Criterion" published by the Environmental Protection Agency (EPA 823 B 96 007) which are~~
 26 ~~hereby incorporated by reference including any subsequent amendments. The Director shall~~
 27 ~~consider conformance to EPA guidance as well as the presence of environmental conditions that~~
 28 ~~limit the applicability of translators in approving the use of metal translators.~~

29
 30 *History Note:* Authority G.S. 143-214.1; 143-215.3(a)(1);
 31 Eff. October 1, 1995;
 32 Amended Eff. XXX; May 1, 2007; August 1, 2000.

33