15A NCAC 02L .0202 is proposed for amendment as follows:

15A NCAC 02L .0202 GROUNDWATER QUALITY STANDARDS

(a) The groundwater quality standards for the protection of the groundwaters of the State are those specified in this Rule. They are the maximum allowable concentrations resulting from any discharge of contaminants to the land or waters of the State, which may be tolerated without creating a threat to human health or which would otherwise render the groundwater unsuitable for its intended best usage.

(b) The groundwater quality standards for contaminants specified in Paragraphs (h) and (i) of this Rule are as listed, except that:

(1) Where the standard for a substance is less than the practical quantitation limit, the detection of that substance at or above the practical quantitation limit constitutes a violation of the standard. The practical quantitation limit, defined in Rule .0102 of this Subchapter, is a scientific standard pursuant to G.S. 150B-2(8a)(h).

(2) Where two or more substances exist in combination, the Director shall consider the effects of chemical interactions after consulting with the Division of Public Health and may establish maximum concentrations at values less than those established in accordance with Paragraphs (c), (h), or (i) of this Rule, based on additive toxic effects. In the absence of information to the contrary, in accordance with Paragraph (d) of this Rule, the carcinogenic risks associated with carcinogens present shall be considered additive and the toxic effects associated with non-carcinogens present shall also be considered additive.

(3) Where naturally occurring substances exceed the established standard, the standard shall be the naturally occurring concentration as established by the Director based upon site-specific conditions.

(4) Where the groundwater standard for a substance is greater than the Maximum Contaminant Level (MCL), the Director shall apply the MCL as the groundwater standard at any private drinking water well or public water system well that may be impacted.

(c) Except for tracers, the use of which has been permitted by the Division in 15A NCAC 02C .0200, substances that are not naturally occurring and for which no standard is specified in Paragraphs (h) or (i) of this Rule shall not be permitted in concentrations at or above the practical quantitation limit in Class GA or Class GSA groundwaters. Any person may request the Director of the Division of Water Resources modify this requirement by establishing an Interim Maximum Allowable Concentration (IMAC) in accordance with the specific guidelines listed in Subparagraphs (1)-(9) of this Paragraph. In addition, any person may request the Director of the Division of Water Resources to update or remove an existing IMAC in accordance with the specific guidelines listed in Subparagraphs (1)-(9) of this Paragraph. The requestor shall submit relevant toxicological and epidemiological data, study results, and calculations in accordance with Paragraphs (d) and (e) of this Rule. The specific guidelines are as follows:

(1) The Division shall review the request to determine whether the information submitted is in accordance with Paragraphs (d) and (e) of this Rule.

(2) If the information submitted is not in accordance with Paragraphs (d) and (e) of this Rule, the Director of the Division of Water Resources shall request additional information from the requester. If the requester does not provide the additional information necessary to be in accordance with Paragraphs (d) and (e) of this Rule, the Director of the Division of Water Resources shall return the request.

(3) If the information submitted is in accordance with Paragraphs (d) and (e) of this Rule, at least 30 days prior to establishing, updating, or removing an IMAC for any substance, the Division of Water Resources shall provide public notice and opportunity for comment that an IMAC has been requested to be established, updated, or removed. The public notice shall include:

(A) the request for the establishment, update, or removal of the IMAC for a substance,

(B) the level of the proposed IMAC, which is calculated by the Division of Water Resources in accordance with Paragraphs (d) and (e) of this Rule,

(C) if applicable the level of the existing IMAC, and

(D) the basis upon which the Division of Water Resources has relied in development of the proposed IMAC establishment, update, or removal.

This notice shall be emailed to interested parties and posted on the Division of Water Resources' website: https://deq.nc.gov/about/divisions/water-resources/water-planning/classification-standards/groundwater-imacs.

(4) If the Director of the Division of Water Resources finds the establishment, update or removal will not degrade the quality of the groundwaters, will not likely cause or contribute to pollution of the waters of the state, and will be protective of public health, then the Director shall establish, update or remove the IMAC. If the request does not meet the requirements listed in this Subparagraph, the Director of the Division of Water Resources shall return the request. The Director shall establish, update, or remove the IMAC or return the request within 180 calendar days of receipt of a request submitted in accordance with Paragraphs (d) and (e) of this Rule unless the requester agrees, in writing, to a longer period. Failure by the Director to establish, update or remove an IMAC or return the request within 180 days of receipt of a request submitted in accordance with Paragraphs (d) and (e) of this Rule shall be considered a return of the request.

(5) If the Director of the Division of Water Resources establishes or updates an IMAC, the IMAC shall be posted on the Division of Water Resource's website and the Commission shall be notified in writing within 30 calendar days and at the next regularly scheduled Commission meeting that a new IMAC has been established or an existing IMAC has been updated or removed.

(6) (A) Within 12 months of establishing an IMAC pursuant to this Paragraph, the Director of the Division of Water Resources shall make a recommendation to the Commission whether:

(i) a new groundwater standard in place of the IMAC should be established pursuant to this Rule; or

(ii) the IMAC should expire.

(B) After a recommendation is presented by the Director under Part (A) of this Subparagraph, the Commission shall decide whether rulemaking shall be initiated to adopt a new groundwater standard in place of the IMAC.

(C) If the Commission initiates rulemaking to adopt a new groundwater standard in place of the IMAC, then the IMAC shall remain in effect unless it expires under Subparagraph (7) of this Paragraph.

(7) An IMAC shall expire upon the earliest of:

(A) the date the Commission declines to initiate rulemaking to adopt a new groundwater standard in place of the IMAC under Part (B) of Subparagraph (c)(6);

(B) the effective date of a Rule adopted by the Commission establishing a new groundwater standard in place of the IMAC; or

(C) after initiating rulemaking pursuant to Part (C) of Subparagraph (c)(6), the date the Commission declines to adopt a new groundwater standard in place of the IMAC.

(8) For any IMAC that expires prior to the adoption by the Commission of a new groundwater standard in place of the IMAC, any person may request an IMAC be established again under this Paragraph based on new information in accordance with Paragraphs (d) and (e) of this Rule that was not included in the original IMAC request to the Director or new site information that was not included in the original IMAC request to the Director.

(9) The Director of the Division of Water Resources shall provide an annual update to the Commission on the status of pending IMAC requests and any IMACs that have been established, updated or removed during the previous calendar year.

(d) Except as provided in Paragraph (f) of this Rule, groundwater quality standards for substances in Class GA and Class GSA groundwaters are established as the least of:

(1) Systemic threshold concentration calculated as follows: [Reference Dose (mg/kg/day) x 70 kg (adult body weight) x Relative Source Contribution (0.10 for inorganics; 0.20 for organics)] / [2 liters/day (avg. water consumption)];

(2) Concentration that corresponds to an incremental lifetime cancer risk of 1x10-6;

(3) Taste threshold limit value;

(4) Odor threshold limit value;

(5) Maximum contaminant level; or

(6) National secondary drinking water standard.

(e) The following references, in order of preference, shall be used in establishing concentrations of substances which correspond to levels described in Paragraph (d) of this Rule:

(1) Integrated Risk Information System (U.S. EPA);

(2) Health Advisories (U.S. EPA Office of Drinking Water);

(3) Other health risk assessment data published by the U.S. EPA; or

(4) Other relevant, published health risk assessment data, and scientifically valid peer-reviewed published toxicological data.

(f) The Commission may establish groundwater standards less stringent than existing maximum contaminant levels or national secondary drinking water standards if it finds, after public notice and opportunity for hearing in accordance with G.S. 150B, that:

(1) more recent data published in the EPA health references listed in Paragraph (e) of this Rule results in a standard that is protective of public health, taste threshold, or odor threshold;

(2) the standard will not endanger the public health and safety, including health and environmental effects from exposure to groundwater contaminants; and

(3) compliance with a standard based on the maximum contaminant level or national secondary drinking water standard would produce substantial hardship without equal or greater public benefit.

(g) Groundwater quality standards specified in Paragraphs (h) and (i) of this Rule shall be reviewed by the Division of Water Resources on a triennial basis to consider whether to recommend to the Commission that new or revised groundwater quality standards be adopted in accordance with Paragraphs (d) and (e) of this Rule.

(h) Class GA Standards. Unless otherwise indicated, the standard refers to the total concentration in micrograms per liter (µg/L) of any constituent in a dissolved, colloidal, or particulate form that is mobile in groundwater. These standards do not apply to sediment or other particulate matter that is preserved in a groundwater sample as a result of well construction or sampling procedures. The Class GA standards are:

Substance	Chemical Abstracts Service (CAS) Registry Number	Standard ~~(µg/L)~~ (µg/L unless otherwise indicated)
Acenaphthene	83-32-9	80
Acenaphthylene	208-96-8	200
Acetic acid	64-19-7	5,000
Acetochlor	34256-82-1	100
Acetochlor ESA	187022-11-3	500
Acetochlor OXA	184992-44-4	500
Acetone	67-64-1	6,000
Acetophenone	98-86-2	700
Acrolein	107-02-8	4
Acrylamide	79-06-1	0.008
Alachlor	15972-60-8	2
Aldrin	309-00-2	0.002
Anthracene	120-12-7	2,000
Antimony	7440-36-0	1

Arsenic	7440-38-2	10
Atrazine and chlorotriazine metabolites	1912-24-9	3
Barium	7440-39-3	700
Benzene	71-43-2	1
Benzo(a)anthracene	56-55-3	0.05
Benzo(a)pyrene	50-32-8	0.005
Benzo(b)fluoranthene	205-99-2	0.05
Benzo(g,h,i)perylene	191-24-2	200
Benzo(k)fluoranthene	207-08-9	0.5
Benzoic acid	65-85-0	30,000
Benzyl alcohol	100-51-6	700
Beryllium	7440-41-7	4
Bis(chloroethyl)ether	111-44-4	0.03
Bis(2-ethylhexyl) phthalate	117-81-7	3
Boron	7440-42-8	700
Bromodichloromethane	75-27-4	0.6
Bromoform	75-25-2	4
Bromomethane	74-83-9	10
n-Butanol	71-36-3	590
sec-Butanol	78-92-2	10,000
n-Butylbenzene	104-51-8	70
sec-Butylbenzene	135-98-8	70
tert-Butylbenzene	98-06-6	70
Butylbenzyl phthalate	85-68-7	1,000
Cadmium	7440-43-9	2
Caprolactam	105-60-2	4,000
Carbofuran	1563-66-2	40
Carbon disulfide	75-15-0	700
Carbon tetrachloride	56-23-5	0.3
Chlordane	12789-03-6	0.1
Chloride	16887-00-6	250,000
Chlorobenzene	108-90-7	50
Chloroethane	75-00-3	3,000
Chloroform	67-66-3	70
Chloromethane	74-87-3	3

2-Chlorophenol	95-57-8	0.4
2-Chlorotoluene	95-49-8	100
4-Chlorotoluene	106-43-4	24
Chromium	7440-47-3	10
Chrysene	218-01-9	5
Cobalt	7440-48-4	1
Coliform organisms (total)	No CAS Registry Number	1 per 100 mL
Color	No CAS Registry Number	15 color units
Copper	7440-50-8	1,000
Cyanide (free cyanide)	57-12-5	70
2,4-D (2,4-dichlorophenoxy acetic acid)	94-75-7	70
Dalapon	75-99-0	200
DDD	72-54-8	0.1
DDE	72-55-9	0.1
DDT	50-29-3	0.1
Dibenz(a,h)anthracene	53-70-3	0.005
1,4-Dibromobenzene	106-37-6	70
Dibromochloromethane	124-48-1	0.4
1,2-Dibromo-3-chloropropane	96-12-8	0.04
Dibutyl phthalate	84-74-2	700
Dichloroacetic acid	79-43-6	0.7
1,2-Dichlorobenzene	95-50-1	20
1,3-Dichlorobenzene	541-73-1	200
1,4-Dichlorobenzene	106-46-7	6
Dichlorodifluoromethane	75-71-8	1,000
1,1-Dichloroethane	75-34-3	6
1,2-Dichloroethane	107-06-2	0.4
1,2-Dichloroethene (cis)	156-59-2	70
1,2-Dichloroethene (trans)	156-60-5	100
1,1-Dichloroethylene	75-35-4	350
2,4-Dichlorophenol	120-83-2	0.98
1,2-Dichloropropane	78-87-5	0.6
1,3-Dichloropropene (cis and trans isomers)	542-75-6	0.4
Dieldrin	60-57-1	0.002
Diethylphthalate	84-66-2	6,000

2,4-Dimethylphenol	105-67-9	100
2,4-Dinitrotoluene	121-14-2	0.05
2,6-Dinitrotoluene	606-20-2	0.05
Di-n-octyl phthalate	117-84-0	100
Dinoseb	88-85-7	7
1,4-Dioxane	123-91-1	3
Dioxin (2,3,7,8-TCDD)	1746-01-6	0.0002 ng/L
1,1-Diphenyl	92-52-4	400
Diphenyl ether	101-84-8	180
Diquat	85-00-7	20
Dissolved solids (total)	No CAS Registry Number	500,000
Disulfoton	298-04-4	0.3
Diundecyl phthalate (Santicizer 711)	3648-20-2	100
Endosulfan	115-29-7	40
Endosulfan sulfate	1031-07-8	40
Endothall	145-73-3	100
Endrin, total (includes endrin, endrin aldehyde, and endrin ketone)	72-20-8	2
Epichlorohydrin	106-89-8	4
Ethyl acetate	141-78-6	3,000
Ethylbenzene	100-41-4	600
Ethylene dibromide	106-93-4	0.02
Ethylene glycol	107-21-1	10,000
Fluoranthene	206-44-0	300
Fluorene	86-73-7	300
Fluoride	16984-48-8	2,000
Foaming agents	No CAS Registry Number	500
Formaldehyde	50-00-0	600
Gross alpha (adjusted) particle activity (excludes radium-226 and uranium)	12587-46-1	15 pCi/L
Heptachlor	76-44-8	0.008
Heptachlor epoxide	1024-57-3	0.004
Heptane	142-82-5	400
Hexachlorobenzene	118-74-1	0.02
Hexachlorobutadiene	87-68-3	0.4
Hexachlorocyclohexane isomers (technical grade)	608-73-1	0.02
alpha-Hexachlorocyclohexane	319-84-6	0.006

beta-Hexachlorocyclohexane	319-85-7	0.02
gamma-Hexachlorocyclohexane (Lindane)	58-89-9	0.03
Hexafluoropropylene oxide dimer acid (HFPO-DA)	13252-13-6	0.01
n-Hexane	110-54-3	400
Indeno(1,2,3-cd)pyrene	193-39-5	0.05
Iron	7439-89-6	300
Isophorone	78-59-1	40
Isopropyl ether	108-20-3	70
Isopropylbenzene	98-82-8	70
4-Isopropyltoluene	99-87-6	25
Lead	7439-92-1	15
Manganese	7439-96-5	50
Mercury	7439-97-6	1
Methanol	67-56-1	4,000
Methoxychlor	72-43-5	40
Methylene chloride	75-09-2	5
Methyl butyl ketone	591-78-6	40
Methyl ethyl ketone	78-93-3	4,000
Methyl isobutyl ketone	108-10-1	100
Methyl methacrylate	80-62-6	25
1-Methylnapthalene	90-12-0	1
2-Methylnaphthalene	91-57-6	30
2-Methylphenol	95-48-7	400
3-Methylphenol	108-39-4	400
4-Methylphenol	106-44-5	40
Methyl tert-butyl ether (MTBE)	1634-04-4	20
Naphthalene	91-20-3	6
Nickel	7440-02-0	100
Nitrate (as N)	14797-55-8	10,000
Nitrite (as N)	14797-65-0	1,000
N-nitrosodimethylamine	62-75-9	0.0007
Oxamyl	23135-22-0	200
Pentachlorophenol	87-86-5	0.3
Petroleum aliphatic carbon fraction class (C5 – C8)	No CAS Registry Number	400
Perfluorobutane sulfonic acid (PFBS)	375-73-5	2

Perfluorobutanoic acid (PFBA)	375-22-4	7
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01
Perfluorohexanoic acid (PFHxA)	307-24-4	4
Perfluorononanoic acid (PFNA)	375-95-1	0.01
Perfluorooctanoic acid (PFOA)	335-67-1	0.001 ng/L
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.7 ng/L
Petroleum aliphatic carbon fraction class (C9 – C18)	No CAS Registry Number	700
Petroleum aliphatic carbon fraction class (C19 – C36)	No CAS Registry Number	10,000
Petroleum aromatics carbon fraction class (C9 – C22)	No CAS Registry Number	200
pH	No CAS Registry Number	6.5 - 8.5 (no unit)
Phenanthrene	85-01-8	200
Phenol	108-95-2	30
Phorate	298-02-2	1
n-Propylbenzene	103-65-1	70
Propylene glycol	57-55-6	100,000
Pyrene	129-00-0	200
Selenium	7782-49-2	20
Silver	7440-22-4	20
Simazine	122-34-9	4
Strontium	7440-24-6	2,000
Styrene	100-42-5	70
Sulfate	14808-79-8	250,000
1,2,4,5-Tetrachlorobenzene	95-94-3	2
1,1,2,2-Tetrachloroethane	79-34-5	0.2
1,1,1,2-Tetrachloroethane	630-20-6	1
Tetrachloroethylene (PCE)	127-18-4	0.7
2,3,4,6-Tetrachlorophenol	58-90-2	200
Thallium	7440-28-0	2
Tin (inorganic forms)	7440-31-5	2,000
Toluene	108-88-3	600
Toxaphene	8001-35-2	0.03
2,4,5-TP (Silvex)	93-72-1	50
1,2,4-Trichlorobenzene	120-82-1	70
1,1,1-Trichloroethane	71-55-6	200
1,1,2-Trichloroethane	79-00-5	0.6
Trichloroethylene (TCE)	79-01-6	3

Trichlorofluoromethane	75-69-4	2,000
2,4,5-Trichlorophenol	95-95-4	63
2,4,6-Trichlorophenol	88-06-2	4
1,2,3-Trichloropropane	96-18-4	0.005
1,2,4-Trimethylbenzene	95-63-6	400
1,3,5-Trimethylbenzene	108-67-8	400
Vanadium	7440-62-2	7
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	200,000
Vinyl chloride	75-01-4	0.03
Xylenes	1330-20-7	500
Zinc	7440-66-6	1,000

(i) Class GSA Standards. The standards for this class are the same as those for Class GA except as follows:

(1) chloride: allowable increase not to exceed 100 percent of the natural quality concentration; and

(2) dissolved solids (total): 1,000,000 µg/L.

(j) Class GC Standards.

(1) The concentrations of substances that, at the time of classification, exceed the standards applicable to Class GA or GSA groundwaters shall not be caused to increase, nor shall the concentrations of other substances be caused to exceed the GA or GSA standards as a result of further disposal of contaminants to or beneath the surface of the land within the boundary of the area classified GC.

(2) The concentrations of substances that, at the time of classification, exceed the standards applicable to GA or GSA groundwaters shall not be caused to migrate as a result of activities within the boundary of the GC classification, so as to violate the groundwater or surface water quality standards in adjoining waters of a different class.

(3) Concentrations of specific substances, that exceed the established standard at the time of classification, are listed in Section .0300 of this Subchapter.

History Note: *Authority G.S. 143-214.1; 143-214.2; 143-215.3(a)(1); 143-215.3(a)(4); 143B-282(a)(2); 150B-2(8a)(h); 150B-19(6);*
Eff. June 10, 1979;
Amended Eff. November 1, 1994; October 1, 1993; September 1, 1992; August 1, 1989;
Temporary Amendment Eff. June 30, 2002;
Amended Eff. August 1, 2002;
Temporary Amendment Expired February 9, 2003;
Amended Eff. April 1, 2013; January 1, 2010; April 1, 2005;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 6, 2018;

Amended Eff. April 1, ~~2022.~~2022;

Amended Eff. [Date TBD].