UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912

January 29, 2021

Mr. Robert R. Scott, Commissioner
State of New Hampshire – Department of Environmental Services
29 Hazen Drive, PO Box 95
Concord, NH 03302-0095

Re: Partial Review and Action on New Hampshire Surface Water Quality Standards, Env-Wq 1700.

Dear Mr. Scott:

By letter dated December 12, 2016, the New Hampshire Department of Environmental Services (DES) submitted new and revised Water Quality Standards (WQS) in accordance with Section 303(c) of the Clean Water Act (CWA). Public notice of this rulemaking was published on May 26, 2016. The New Hampshire Joint Legislative Committee on Administrative Rules (JLCAR) held a public hearing on the proposed rulemaking on July 21, 2016. The public comment period closed on July 22, 2016. The revisions were certified by the New Hampshire Attorney General's Office on November 17, 2016 as having been duly adopted pursuant to state law.

Pursuant to Section 303(c)(3) of the CWA and 40 CFR Part 131, I hereby approve New Hampshire's revisions to the following provisions, as more specifically described and for the reasons explained in the attachment:

- Human health criteria (HHC) for 44 toxic pollutants
- Aquatic Life Criteria for Cadmium and Ammonia
- Revision of the hardness floor from 25 to 20 mg/l $CaCO_3$
- Revisions to definitions at Env-Wq 1702
- Revisions to the designated use definition at Env-Wq 1702.17 and revisions to provisions to change designated uses at Env-Wq 1709
- Additional clarification at Env-Wq 1703.04(b)
- Certain provisions of 1703.22 Notes for Table 1703-1
- Procedures for alternative site-specific criteria for the protection of human health at Env-Wq 1704.02
- Mixing zone provision at Env-Wq 1707.03
- Antidegradation policy at Env-Wq 1708
- Non-substantive changes to Env-Wq 1700 submitted on Dec 12, 2016

In a letter dated October 30, 2020, the National Marine Fisheries Service (NMFS) concurred with EPA's determination that the new and revised water quality criteria for cadmium and ammonia are not likely to adversely affect any NMFS Endangered Species Act (ESA)-listed species or designated critical habitat. Similarly, in a letter dated December 22, 2020, the United States Fish and Wildlife Service (USFWS), New England Ecological Services Field Office concurred with EPA's determination that the revised water quality criteria for ammonia and cadmium are not likely to adversely affect the dwarf wedgemussel, northeastern bulrush, Jesup's milk-vetch, piping plover, roseate tern, and red knot based on insignificant and/or discountable effects to these ESA-listed species.

EPA is not taking action on other new and revised WQS at this time while the agency continues to review the scientific defensibility and protectiveness of the remaining parts of the submission, including whether certain revised criteria protect federally threatened and endangered species and their designated critical habitat.

We look forward to continued cooperation with New Hampshire in the development and review of water quality standards pursuant to our responsibilities under the CWA. If you have any questions, please contact Dan Arsenault (617-918-1562) or Michael Knapp (617-918-1053).

Sincerely,

KENNETH MORAFF
Digitally signed by KENNETH MORAFF
Date: 2021.01.29 14:51:48 -05'00'

Ken Moraff, Director
Water Division
EPA Region 1

cc:

Ted Diers, NHDES
Ken Edwardson, NHDES

Technical Support Document for EPA Water Quality Standards Approval Decisions on Revisions to NH DES WQS Submitted Dec 12, 2016

Background

Clean Water Act Requirements for Water Quality Standards

Under Clean Water Act (CWA) Section 303(c) and the EPA's implementing regulations at 40 CFR part 131, states have the primary responsibility for reviewing, establishing, and revising WQS, which include the designated uses of a waterbody or waterbody segment and the water quality criteria necessary to protect those designated uses. The EPA' s regulations at 40 CFR § 131.11(a)(l) provide that "[s]uch criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use. For waters with multiple use designations, the criteria shall support the most sensitive use." In addition, 40 CFR § 131.10(b) provides that "[i]n designating uses of a water body and the appropriate criteria for those uses, the state shall take into consideration the water quality standards of downstream waters and ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters."

CWA Section 303(c)(2)(B) requires states to adopt numeric water quality criteria for toxic pollutants listed pursuant to section 307(a)(l), 33 U.S.C. 1317(a)(l), for which the EPA has published criteria under Section 304(a), 33 U.S.C. 1314(a), where the discharge or presence of these toxics could reasonably be expected to interfere with the designated uses adopted by the state. In establishing criteria, states should establish numeric values based on one of the following: (1) Section 304(a) criteria; (2) Section 304(a) criteria modified to reflect site-specific conditions; or, (3) other scientifically defensible methods. 40 CFR § 131.1 l(b). Above and beyond these requirements, states can establish narrative criteria where numeric criteria cannot be established, or to supplement numeric criteria.

At least once every three years, states are required to review their applicable WQS, and as appropriate, modify these standards and/or adopt new standards (40 CFR § 131.20). CWA Section 303(c) also requires states to submit new or revised WQS to the EPA for review, as the EPA must ensure that any revisions to surface WQS are consistent with the CWA and the EPA's implementing regulations. In addition, the state must follow its own legal procedures for adopting such standards (40 CFR § 131.5), and submit certification by the state's attorney general, or other appropriate legal authority within the state, that the WQS were duly adopted pursuant to state law (40 CFR § 13l .6(e)).

Also, consistent with the requirements of the ESA, EPA evaluated the potential impacts of its approval of the WQS revisions on federally protected species and determined that consultation with the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) was necessary. In a letter dated October 30, 2020, NMFS concurred with EPA’s determination that the new and revised water quality criteria for cadmium and ammonia are not likely to adversely affect any listed species or designated critical habitat under the NMFS’ jurisdiction. Similarly, in a letter dated December 22, 2020, the USFWS, New England Ecological Services Field Office concurred with EPA’s determination that the revised water

quality criteria for ammonia and cadmium are not likely to adversely affect the dwarf wedgemussel, northeastern bulrush, Jesup's milk-vetch, piping plover, roseate tern, and red knot based on insignificant and/or discountable effects to these ESA-listed species.

Human Health Criteria at Table 1703-1 and Related Footnotes in Env-Wq 1703.22

Pursuant to Section 303(c)(3) of the CWA and 40 CFR Part 131, EPA approves the revisions to HHC for 44 pollutants listed in Table 1 below, as they appear in WQS Table 1703-1. These include the addition of the fish tissue-based human health criterion for methylmercury and other updates to the criteria to be consistent with EPA's current CWA Section 304(a) National Recommended Water Quality Criteria for these pollutants.

EPA's review of the new and revised HHC in Table 1703-1 is based on whether the criteria protect designated uses and are based on sound scientific rationale, including consideration of EPA's National Recommended Water Quality Criteria published pursuant to Section 304(a) of the CWA. EPA is approving New Hampshire's criteria where they are as stringent as or more stringent than EPA's 304(a) criteria. Of the new and revised HHC for 97 priority pollutants that DES submitted on December 12, 2016, EPA is approving 44 of New Hampshire's HHC under CWA Section 303(c). EPA is continuing to evaluate whether the remainder of New Hampshire's new and revised HHC protect applicable designated uses.

EPA finds that the HHC specified in Table 1 below are scientifically defensible and protective of designated uses for the reasons explained in the EPA criteria documents for those pollutants.

The revisions to HHC include new and updated footnotes in Env-Wq 1703.22. EPA approves the updates to Env-Wq 1703.22 Notes for Table 1703-1 (c), (e), (h), (j), (n), and (q), which include the rewording of explanatory footnotes that provide useful information to the public. EPA is not taking action on the remaining new or revised provisions of Env-Wq 1703.22 pertaining to HHC at this time.

Table 1. Approved DES HHC Revisions

Pollutant	**Consumption of Water plus Organisms (µg)**	**Consumption of Organisms Only (µg)**
Acrolein	-	400
Acrylonitrile	0.061	7
Antimony	5.6	640
Benzene	-	58
Benzidine	0.14 ng	0.11 ng
Benzo(k)fluoranthene	0.012	-
Bis (Chloromethyl) Ether	0.15 ng	0.17 ng
Bis (2-Chloroethyl) Ether	0.03	2.2
Bromoform	7	-
Carbon Tetrachloride	0.4	5

Chlorodibromomethane	0.8	21
Chloroform	60	2,000
Chlorophenoxy Herbicide (2,4-D)	1,300	-
Chlorophenoxy Herbicide (2,4,5-TP) [Silvex]	100	-
Chrysene	0.12	0.013
Cyanide	-	140
Dichlorobromomethane	0.95	27
Endrin Aldehyde	1	1
gamma-Hexachlorocyclohexane [Lindane]	4.2	4.4
Isophorone	-	1,800
Methyl Bromide	100	10,000
Methylene Chloride	20	1,000
Methylmercury	-	0.3 mg/kg
Nitrosodibutylamine	6.3 ng	220 ng
Nitrosopyrrolidine	-	34,000 ng
N-Nitrosodiphenylamine	3.3	6
N-Nitrosodimethylamine	-	3
N-Nitrosodi-n-Propylamine	-	0.51
Polychlorinated Biphenyls (PCBs)	0.064 ng	0.064 ng
Selenium	-	4,200
Tetrachloroethylene	0.1	29
Thallium	0.24	0.47
Toxaphene	0.70 ng	0.71 ng
1,1-Dichloroethylene	-	20,000
1,1,2,2-Tetrachloroethane	0.2	-
1,2-Dichlorobenzene	1,000	3,000
1,2-Dichloroethane	9.9	650
1,2-Dichloropropane	0.9	31
1,2-Diphenylhydrazine	-	0.2
1,4-Dichlorobenzene	300	900
2,3,7,8-TCDD (Dioxin)	0.000005 ng	0.0000051 ng
2,4-Dichlorophenol*	0.3	0.3
2,4,6-Trichlorophenol	1.5	-
3,3-Dichlorobenzidine	0.049	0.15

*Criteria are based on the prevention of taste and odor effects in the surface water and in fish and other aquatic life.

Aquatic Life Criteria for Cadmium at Env-Wq 1703.24(c)

New Hampshire updated its acute and chronic criteria for cadmium to be consistent with EPA's nationally recommended 2016 CWA Section 304(a) freshwater and estuarine/marine cadmium Aquatic Life Criteria (ALC), which reflect the latest science for the protection of aquatic life.

EPA finds that New Hampshire's revised criteria are scientifically defensible and protective of designated uses for the reasons explained in the EPA's 2016 cadmium criteria document[1].

Freshwater Aquatic Life Criteria for Ammonia at Env-Wq 1703.25 and 1703.26

New Hampshire has updated its criteria for ammonia to be consistent with EPA's nationally recommended 2013 CWA Section 304(a) freshwater ammonia criteria. The criteria are expressed as functions of temperature and pH, so the applicable acute and chronic criterion magnitudes vary by waterbody, depending on the temperature and pH of those waters. EPA finds that the revised criteria are scientifically defensible and protective of designated uses for the reasons explained in the EPA's 2013 ammonia criteria document[2].

Definitions at Env-Wq 1702

EPA approves all revisions to definitions in Section 1702. These definitions provide the necessary information to apply and implement New Hampshire's WQS. EPA approves these definitions because they are consistent with Section 303(c) of the CWA and the implementation regulations at 40 CFR Part 131. Further discussion of designated uses in Env-Wq 1702.17 can be found in the section below.

Designated Use Definition and Change in Designated Uses at Env-Wq 1702.17 and 1709

New Hampshire's revised definition of designated uses at Env-Wq 1702.17 provides much greater specificity about the designated uses of surface waters that the state intends to protect, by specifically identifying six uses. EPA approves this definition because it is consistent with CWA Sections 101(a)(2) and 303(c). The definition addresses the 101(a)(2) interim goal of the CWA to provide water quality for the protection and propagation of fish, shellfish, and wildlife, and provide for recreation in and on the water ("fishable/swimmable") where attainable. This definition provides information needed to apply and implement the WQS.

Additionally, the changes made in Section 1709 address changes in designated uses. EPA approves these changes because these regulations are more stringent than federal regulations by requiring a Use Attainability Analysis (UAA) for all use downgrades whereas federal regulation only requires a UAA for downgrades to uses specified in Section 101(a)(2) of the CWA.

Additional Clarification for Class-Specific Criteria at Env-Wq 1703.04(b)

EPA approves the revisions to Section 1703.04(b). These revisions improve the precision of the language to clarify that surface waters in each classification shall satisfy all "criteria" applicable

[1] Aquatic Life Ambient Water Quality Criteria Cadmium – 2016. EPA 820-R-16-002 Available online at https://www.epa.gov/sites/production/files/2016-03/documents/cadmium-final-report-2016.pdf

[2] Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater 2013. EPA 822-R-18-002. Available online at https://www.epa.gov/sites/production/files/2015-08/documents/aquatic-life-ambient-water-quality-criteria-for-ammonia-freshwater-2013.pdf.

to lower classifications rather than the vaguer "provisions." EPA notes that "criteria" includes both numeric and narrative criteria.

Water Effect Ratios for Metals at Env-Wq 1703.22(d)

EPA approves edits to Env-Wq 1703.22(d) as non-substantive revisions to WQS. This section specifies:

> "The letter 'd' shall indicate that the criteria for these metals are expressed as a function of the water effect ration (WER) as defined in 40 CFR § 131.36(c), and that because the values displayed in Table 1703-1 correspond to a WER of 1.0, metals criteria for different WERs shall be determined using the procedures described in EPA publication 'Interim Guidance on Determination and Use of the Water-Effect Ratios for Metals', EPA-823-B-94-001, dated February 1994, available as noted in Appendix B, provided that for copper, either of the following references, both available as noted in Appendix B, may be used:
>
> > (1) The 'Streamlined Water-Effect Ratio procedure for Discharges of Copper', EPA-822-R-01-005, dated March 2001; or
> > (2) The 'Aquatic Life Ambient Freshwater Quality Criteria – Copper, EPA-822-R-07-001, dated February 2007."

Regarding the two methods for copper that "may be used," EPA suggests that in its triennial review process NH changes this language to "may also be used" to avoid any confusion. The current language could be construed to mean that for copper one of the procedures in items 1 and 2 needs to be used. However, the "Interim Guidance on Determination and Use of the Water-Effect Ratios for Metals" can be used for copper as well. EPA recommends that DES clarify this language in its next triennial review.

EPA reiterates its comment in our September 17, 2013, approval letter[3] that any site-specific criteria developed using either the Water-Effect Ratio, the Biotic Ligand Model, or any other methodology, must be reviewed and approved by EPA, pursuant to Section 303(c)(3) of the Clean Water Act and 40 CFR Part 131, before they can be effective for CWA purposes.

Hardness Floor for Hardness-Dependent Aquatic Life Metals Criteria at Env-Wq 1703.22(f) and (i) and 1703.23(d)

Revisions to Env-Wq 1703.22(f) and (i) and 1703.23(d) lower New Hampshire's hardness floor from 25 mg/L to 20 mg/L. Based on the revised language, when measured site water hardness is less than 20 mg/L, a hardness of 20 mg/L shall be used to calculate aquatic life criteria concentrations for hardness-dependent metals.[4] EPA is approving these revisions because they

[3] USEPA. 2013. September 17, 2013 letter from Ken Moraff, OEP Division Director, EPA-R1 to Thomas S. Burack, Commissioner, New Hampshire Department of Environmental Services.

[4] Where measured site water hardness is between 20 mg/L and 400 mg/L, the actual hardness shall be used. Env-Wq. 1703.23(d).

protect aquatic life under a greater range of receiving water conditions than New Hampshire's previous hardness floor of 25 mg/L.

However, to ensure that its metals criteria protect aquatic life under the full range of receiving water conditions, EPA recommends that during its upcoming triennial review New Hampshire delete the hardness floor entirely from its standards.

The hardness floor is inconsistent with EPA's current national recommendations for calculating criteria concentrations for hardness-dependent metals to protect aquatic life. As explained in EPA's National Recommended Water Quality Criteria: 2002 (EPA-822-R-02-047) *Guidance on the Calculation of Hardness-Dependent Metals Criteria*, the toxicity of a metal to aquatic life increases as water hardness decreases. Prior to 2002, EPA recommended that when the hardness of fresh surface water is less than 25 mg/L, hardness-dependent metal criteria concentrations be calculated as if the hardness is 25 mg/L. However, in the 2002 document EPA recognized that a hardness floor of 25 mg/L without additional data or justification may result in criteria that provide less protection than intended. Since 2002 EPA has recommended that a hardness floor not be used.

Procedures for Alternative Site-Specific Criteria for the Protection of Human Health at Env-Wq 1704.02

The revisions to Env-Wq 1704.02 update the list of technical support documents for determining alternative site-specific criteria for the protection of human health. EPA approves the revisions in this section as they are consistent with the most updated EPA policy and guidance, the CWA, and federal water quality standards regulations at 40 CFR Part 131. New Hampshire must submit any site-specific criteria developed in accordance with this guidance to EPA for review as new or revised water quality standards.

Conditions for Mixing Zones at Env-Wq 1707.03

EPA approves Env-Wq 1707.03 relating to conditions for mixing zones. Env-Wq 1707.03 is a new provision of New Hampshire DES's WQS. It allows DES to include conditions for approved mixing zones to ensure that the criteria on which the approval is based are met. It is EPA's understanding that conditions for mixing zones may be added to certain permits, and in particular, National Pollutant Discharge Elimination System (NPDES) permits. For example, if water quality modeling is conducted to establish a designated mixing zone for an NPDES permit, some of the model inputs and results may be included in the NPDES permit including, but not limited to, the physical dimensions of the mixing zone, and/or discharge rate. Additionally, the inspection of any outfall diffusers may be required to ensure that the conditions upon which a mixing zone is established are protected and maintained.

Antidegradation at Env-Wq 1708.01-1708.11

EPA approves revisions to New Hampshire's antidegradation policy and procedures in Env-Wq 1708.01 through 1708.11. These revisions comprise non-substantive and minor substantive updates and are consistent with the federal antidegradation regulation at 40 CFR § 131.12.

Non-WQS Provisions at Env-Wq 1703.22(g) and 1708.12

EPA finds that the revisions to Env-Wq 1703.22(g) concerning how a consumption advisory would be established if the human health criterion for methylmercury is exceeded and 1708.12 regarding the transfer of water from one basin to another are not water quality standards requiring EPA review and approval pursuant to Section 303(c)(3) of the Clean Water Act and 40 CFR Part 131 because the revisions do not affect criteria, designated uses, or antidegradation requirements.

Non-Substantive Revisions

EPA considers non-substantive edits to existing WQS to constitute new or revised WQS that it has the authority to approve or disapprove under Section 303(c)(3). While these revisions do not substantively change the meaning or intent of the existing WQS, EPA believes it is reasonable to treat such revisions in this manner to ensure public transparency as to which provisions are applicable for CWA purposes. EPA notes that the scope of its review and action on non-substantive edits or editorial changes extends only to the edits or changes themselves. EPA is not re-opening or reconsidering the underlying WQS that are the subject of the non-substantive edits or editorial changes.

Turbidity, Slicks, Odors and Floating Solids
EPA is approving conditions related to turbidity at Env-Wq 1703.11(c) and slicks, odors, and surface floating solids at Env-Wq 1703.12(c). It is EPA's understanding that "waters identified in RSA 485-A:8, III" referenced in Env-Wq 1703.11(c) are synonymous with "temporary partial use areas" referenced in Env-Wq 1703.12(c). Further, it is EPA's understanding that there are not currently any waters that are "waters identified in RSA 485-A:8, III" or "temporary partial use areas." If, in the future, the State decides to designate "temporary partial use areas," a UAA will need to be completed to support any use changes with less stringent criteria than previously applicable.

Combined Sewer Overflows
EPA also approves Env-Wq 1703.05(c) related to combined sewer overflows. It is EPA's understanding that if exceedances of Class B criteria and uses exist after full implementation of a long-term combined sewer overflow facilities plan developed in accordance with "EPA Combined Sewer Overflow (CSO) Control Policy," EPA 830-B-94-001, a UAA pursuant to Env-Wq 1703.05(a) and (b) would need to be completed to support any use changes with less stringent criteria than previously applicable.

Finally, EPA is approving the following revisions in Env-Wq 1700 based on a determination that they are non-substantive revisions to WQS:

- All re-numbering
- All revisions to headings
- All revisions to Section 1701

- Revisions to Section 1703.01(a) and Section 1703.01(d)
- All revisions to Section 1703.03(b), Section 1703.03(c)(1), and Section 1703.03(c)(2)
- All revisions to Section 1703.05(a) and Section 1703.05(b)
- All revisions to Sections 1703.06(a) and 1703.06(c)
- All revisions to Section 1703.07(b)
- All revisions to Section 1703.07(c) including removal of "not directly exposed to the water" and addition of "buried in the gravel on the bed of the surface water"
- All revisions to Section 1703.07(e)
- Removal of "accordance with" and addition of "as specified" in Section 1703.13(b)
- Revisions to Sections 1703.14(c) and 1703.14(e)
- All revisions to Sections 1703.18(b) and 1703.18(c)
- Removal of "The" and addition of "All" in Section 1703.19(a)
- All revisions to Section 1703.20
- Removal of "part" in Section 1703.21(a), revisions to Sections 1703.21(a)(2)(a) and 1703.21(a)(2)(b), and revisions to Section 1703.21(b) excluding Table 1703.1
- Editorial revisions to Table 1703.1
- Revisions to Section 1703.22(a) 1703.22(r), and 1703.22(s), and 1703.22(t)
- Revisions in Sections 1703.23(a) through 1703.23(e)
- Revisions to Section 1703.24
- All Revisions to Sections 1703.27 through 1703.32
- The removal of "develop" and addition of "establish" in Section 1704.01, renumbering in Section 1704.01(a), removal of "which" and addition of "and" in Section 1704.01(b), and all revisions in Section 1704.01(c)
- Deletion of Section 1704.02(b)
- All revisions to Section 1704.03
- All revisions to Section 1705.01
- All revisions including the addition of "non-tidal" to Section 1705.02(c) and Section 1705.02(d)
- All revisions to Section 1706.01
- Designation of Mixing Zones in 1707.01(a) and 1707.01(b)
- All revisions in Sections 1707.02(a) through 1707.02(i)
- All revisions to Section 1707.04