November 28, 2023

Mr. Jason Batchelder, Commissioner
Department of Environmental Conservation
1 National Life Drive, Davis Building
Montpelier, VT 05620-3520

Re: Second Action Letter for Vermont's Triennial Review of Water Quality Standards
Amendments - Environmental Protection Rule Chapter 29A

Dear Mr. Batchelder:

On November 2, 2022, the Vermont Department of Environmental Conservation (DEC)
submitted new and revised Water Quality Standards (WQS) contained in Environmental
Protection Rule Chapter 29A (Chapter 29A) in accordance with Section 303(c) of the Clean
Water Act (CWA). The public comment period for this rulemaking was held from May 25 – July
22, 2022, and a public hearing was held on July 12, 2022. Vermont's WQS revisions were
adopted by the Vermont Agency of Natural Resources under the Vermont Administrative
Procedures Act on October 25, 2022, and became effective on November 15, 2022. The
revisions were certified by Sarah E.B. London, Chief Assistant Attorney General, on October 28,
2022, as having been duly adopted pursuant to state law.

On February 1, 2023, pursuant to Section 303(c)(3) of the CWA and 40 C.F.R. Part 131, EPA
approved numerous items and took no action on others. As more specifically described and for
the reason explained in Attachment A, EPA is now approving the following items on which no
action was previously taken on February 1, 2023:

- Appendix C – Revised acute and chronic aquatic life criteria (ALC) for aluminum
  consistent with EPA's 2018 304(a) recommendation and associated footnotes r and s.
- Appendix C – Footnote o, which requires the use of EPA's 304(a) recommendation for
  acute and chronic ALC for copper which utilizes the biotic ligand model. This shall be
  used in place of the hardness-based criteria for copper when site specific data are
  available.

Consistent with the requirements of the Endangered Species Act (ESA), EPA evaluated the
potential impacts of its approval of the WQS revisions on federally protected species and their

critical habitat and determined that consultation with U.S. Fish and Wildlife Service (USFWS) was necessary. In letters dated June 29 and September 28, 2023, the USFWS, New England Field Office, concurred with EPA's finding that Vermont's revised ALC for aluminum and copper may affect but are not likely to adversely affect listed species under its jurisdiction.

EPA continues to take no action on the following items pending finalization of consultation under the ESA with USFWS:

- Appendix C – Revised chronic ALC for selenium to be consistent with EPA's 2021 304(a) recommendations and associated footnotes i, p, and q. Chronic ALC for guthion, mirex, and methoxychlor to be consistent with EPA's 1986 304(a) recommendations.
- Appendix F – Water classification upgrades for Alder Brook, Blue Bank Brook, and Goshen Brook.

Additionally, in a letter dated May 16, 2023, Vermont requested that EPA take no action on the following items:

- 29A-101(c) in the Applicability section which was amended to specify that the rules apply to wetlands as articulated in sections 29A-104(e) and 29A-105(e).
- The definition of "wetland" at 29A-102(53).
- 29A-104(e) in the Classification of Uses section which incorporates the function and values for Class I and Class II wetlands as uses to be protected.
- 29A-105(e) in the Antidegradation Policy section which provides for the protection of wetland and their functions and values.

In a letter dated May 22, 2023, EPA confirmed that it would not be taking action on these items.

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

Sincerely,

Ken Moraff, Director
Water Division
EPA Region 1

Cc:

Pete LaFlamme, Director, Watershed Management Division, VTDEC
Bethany Sargent, Deputy Director, Watershed Management Division VTDEC

Attachment A
Technical Support Document for the EPA Decisions on
VT WQS Amendments at Environmental Protection Rule 29A
Submitted November 2, 2021 – Aluminum and Copper

Aluminum

Vermont has adopted EPA's nationally recommended 2018 Clean Water Act (CWA) Section 304(a) recommended criteria for aluminum. These criteria are based upon a multiple linear regression (MLR) model that uses pH, hardness, and dissolved organic carbon (DOC) as inputs. To implement the aluminum criteria Vermont developed an implementation procedure which is referenced in footnote s of Appendix C.[1] The implementation establishes two ways to implement the 2018 aluminum criteria:

1. When concurrent data are available, calculate the criteria values for each waterbody or waterbody segment by entering the pH, total hardness, and DOC values into EPA's Aluminum Criteria Calculator V2.0; or
2. When concurrent data are unavailable, use default values for the input variables of pH, total hardness, and DOC and the associated aluminum criteria value in the lookup tables provided in the 2018 Water Quality Criteria document.

When using the first option, a minimum of 12 concurrent samples for pH, total hardness and DOC shall be taken upstream of the outfall representing seasonal conditions (3 samples each in spring, summer, winter and fall). Instantaneous criteria will be calculated for each individual sampling event. For waters without rare, threatened or endangered species, final criteria will be established using the tenth percentile of all instantaneous values. For waters where rare, threatened or endangered species are present, the final criteria will be established using the fifth percentile of all instantaneous values.

For situations where there are less than 12 concurrent samples, state-wide defaults for pH, total hardness, and DOC will be used. The state-wide defaults were developed using Vermont DEC's Watershed Management Division's water quality database which contained 14,358 water chemistry samples for pH (9,478), total hardness (3,678) and DOC (1,202) from 2,171 monitoring locations across Vermont's rivers and streams. For waters without rare, threatened or endangered species the tenth percentile of all pH, total hardness and DOC was used. This resulted in a pH of 6.7, total hardness of 30.3 mg/l, and DOC of 2.9 mg/l. These values result in final aluminum criteria of 790 ug/l acute and 340 ug/l chronic. If partial site-specific data (fewer than 12 samples) are lower than the default values, then the site-specific data will be used to ensure criteria will be protective.

Where rare, threatened or endangered species are present, the fifth percentile of all pH, total hardness, and DOC data was used resulting in a pH value of 6.5, total hardness of 24.7 mg/l,

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[1] https://dec.vermont.gov/sites/dec/files/documents/vermont-implementation-procedure-aluminum.pdf

and DOC of 2.6 mg/l. These values result in final aluminum criteria of 530 mg/l acute and 250 ug/l chronic. If partial site-specific data (fewer than 12 samples) are lower than the default values, then the site-specific data will be used to ensure criteria will be protective.

As required by 40 C.F.R 131.11(a), EPA finds that the revised criteria are based on sound scientific rationale and protective of designated uses for the reasons described in EPA's 2018 Final Aquatic Life Ambient Water Quality Criteria for Aluminum,[2] and therefore approves Vermont's revision to the aluminum criteria and associated implementation plan in footnote s. EPA also approves footnote r which links to the 2018 aluminum criteria document and EPA's Aluminum Criteria Calculator.

Copper
Footnote o has been added to Appendix C for copper. This footnote requires the use of the Biotic Ligand Model (BLM) in EPA's 2007 Aquatic Life Ambient Freshwater Quality Criteria – Copper when site specific data are available. The BLM uses ten water quality parameters to calculate acute and chronic instantaneous water quality criteria. The ten water quality parameters include temperature, pH, DOC, calcium, magnesium, sodium, potassium, sulfate, chloride and alkalinity. When site specific data are not available to use the BLM, the hardness-based copper criteria will still be used.

Vermont included a link to its implementation procedure for the copper BLM in footnote o.[3] The procedure requires a minimum of 12 concurrent samples be taken upstream of the outfall representing seasonal conditions (3 samples each in spring, summer, winter and fall). The BLM will be used to derive instantaneous criteria for each sampling event. The final copper criteria for waters without rare, threatened or endangered species will be the tenth percentile of all instantaneous values. For waters with rare, threatened or endangered species the fifth percentile of all instantaneous values will be used to calculate the final copper criteria. Site-specific conditions may influence the selection of the statistical metric for calculating final numeric criteria.

Pursuant to 40 C.F.R 131.11(a), EPA finds that the revised criteria are based on sound scientific rationale and protective of designated uses for the reasons described in EPA's 2007 Aquatic Life Ambient Freshwater Quality Criteria – Copper,[4] and therefore, approves Vermont's revision to the copper criteria and associated implementation procedure referenced in footnote o.

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[2] https://www.epa.gov/sites/default/files/2018-12/documents/aluminum-final-national-recommended-awqc.pdf

[3] https://www.epa.gov/sites/default/files/2019-02/documents/al-freshwater-copper-2007-revision.pdf

[4] https://www.epa.gov/sites/default/files/2019-02/documents/al-freshwater-copper-2007-revision.pdf