



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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August 8, 2014

Neil Kamman
Program Manager, Monitoring, Assessment and Planning Program
Watershed Management Division
Vermont Department of Environmental Conservation
1 National Life Dr., Main 2
Montpelier, VT 05620-3522

RE: Proposed Revisions to Vermont Water Quality Standards

Dear Mr. Kamman,

The Environmental Protection Agency (EPA) has reviewed the proposed revisions to water quality standards (WQS) published by Vermont Department of Environmental Conservation (DEC) on May 23, 2014. This letter is to provide written comments regarding the proposed revisions. They are intended to assist DEC in finalizing WQS revisions consistent with the federal Clean Water Act (CWA).

I would like to compliment DEC on several of its proposed revisions, such as adopting numeric criteria for phosphorus and chloride in freshwaters and updating the State's numeric water quality criteria for toxic pollutants and bacteria. EPA particularly recognizes the hard work that DEC has done collecting and analyzing data in order to derive numeric criteria for phosphorus. The addition of numeric criteria for chloride is important as this is a pollutant of concern especially here in the Northeast where de-icing materials are used heavily in the winter, but the toxic effects of chloride on aquatic life are observed year round. The revisions to the toxics criteria to reflect new scientific findings is essential to protecting human health and aquatic life.

The following comments are in subject area categories (bacteria, nutrients and toxics) and includes concerns and suggested edits to insure that the proposed revisions are consistent with the CWA.

COMMENTS CONCERNING PROPOSED REVISIONS TO VERMONT WQS

Escherichia Coli (e.coli) Criteria Revisions to Protect Primary Contact Recreation

The revisions include a proposal to update recreational criteria for Class A(1), A(2), and B waters consistent with EPA's 2012 recommendation for criteria to protect primary contact recreation uses in fresh waters¹. This includes a recommendation that the geometric mean criteria be averaged over a 30-day period. Vermont's proposed criteria specifies an averaging period "not less than 30 days". EPA is concerned that this ambiguous expression of the

¹ EPA, *Recreational Water Quality Criteria*, Office of Water 820-F-12-058, 2012

averaging period will result in inconsistent assessment and implementation of the criteria. EPA recommends that the criteria averaging period be specified as 30 days, consistent with our 2012 recommendations, or, if there is a scientific basis for it, another specific averaging period.

Adoption of Numeric Total Phosphorus (TP) Criteria

The proposed statewide phosphorus criteria are for medium and high gradient Wadeable streams, lakes and reservoirs greater than 20 acres other than Lakes Champlain and Memphremagog. The new statewide criteria consist of numeric TP values combined with numeric biological response indicator values and will supplement Vermont's existing site specific numeric TP criteria for Lakes Champlain and Memphremagog, which will remain unchanged. Lakes smaller than 20 acres and low gradient and non-wadeable flowing waters will continue to be protected by Vermont's narrative phosphorus criterion.

Vermont's proposed approach is to use a combined criteria method which integrates causal (total phosphorus) and biological response parameters into one water quality standard (WQS). Recognizing the temporal and spatial variability of the biological response to nutrient enrichment, EPA has expressed support for this approach and, in 2013, published guiding principles² to help states decide whether this approach is suitable given state agency biological assessment programs and other considerations. In particular, the EPA's guiding principles recommend this combined criteria approach for states that "have a biological assessment program that confidently measures biological responses and other nutrient-related response parameters through a robust monitoring program to account for spatial and temporal variability to document the effects of nutrient pollution." DEC's exemplary³ and highly ranked⁴ biological assessment program meets this qualification.

The proposed biological response indicators for lakes and reservoirs include a combination of biological response indicators already included in Vermont's WQS (pH, turbidity, dissolved oxygen, and aquatic biota/wildlife/aquatic habitat, as measured using Vermont's macroinvertebrate biocriteria) and new numeric criteria for secchi depth which measures lake clarity, and chlorophyll-a, which measures abundance of algae, or primary production. This suite of biological response indicators is consistent with EPA's guiding principles for combined nutrient criteria.

The proposed biological response indicators for wadeable streams include pH, turbidity, dissolved oxygen and aquatic biota/wildlife/aquatic habitat, but do not include a primary production indicator. While acknowledging that Vermont has successfully identified and monitored restoration of nutrient impaired waters using the state's macroinvertebrate biocriteria, consistent with EPA's guiding principles, we recommend that Vermont consider enhancing the proposed combined criteria with the addition of a primary production indicator following the completion of the periphyton study currently being conducted in Vermont streams.

² EPA, *Guiding Principles on an Optional Approach for Developing and Implementing a Numeric Nutrient Criterion that Integrates Causal and Response Parameters*, EPA-820-F-13-039, September 2013.

³ EPA, *A Primer on Using Biological Assessments to Support Water Quality Management*, October 2011, p. 50

⁴ As of 2010, Vermont DEC's bioassessment program was one of the three highest ranked states, nationwide, based on EPA's bioassessment critical elements evaluation.

Revisions to Numeric Criteria in Appendix C

DEC is proposing numerous revisions and additions to the numeric criteria in Appendix C. Most of these are at least as stringent as EPA's National Recommended Water Quality Criteria. We have the following few concerns.

- Criteria for nonylphenol are proposed for the protection of human health at the same level that EPA recommends for the protection of aquatic biota. This appears to be an error in the table which could be corrected by moving the nonylphenol criteria into the correct column.
- Criteria for ammonia are proposed by reference to EPA's 2013 ammonia criteria document. We recommend that DEC adopt criteria tables into the Vermont's WQS or specifically reference particular tables from the criteria document. This would ensure consistent application of the ammonia criteria since the document includes options for site specific criteria development that DEC may not have intended to include in the new ammonia criteria.

EPA is committed to working with DEC to address these comments and finalize amendments for adoption into Vermont's WQS. Please contact Ellen Weitzler of my staff at 617-918-1582 or weitzler.ellen@epa.gov if you have any questions.

Thank you for the opportunity to comment on the proposed revisions to Vermont's WQS.

Sincerely,



Ken Moraff
Director, Office of Ecosystem Protection

cc.: Ralph Abele, EPA
Ann Williams, EPA
Tracy Bone, EPA

