



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET, SW  
ATLANTA, GEORGIA 30303-3104

**August 3, 2021**

Jennifer Hughes  
Interim Chief  
Bureau of Water  
South Carolina Department of Health and Environmental Control  
2600 Bull Street  
Columbia, South Carolina 29201-1708

Dear Ms. Hughes:

The purpose of this letter is for the U.S. Environmental Protection Agency to provide suggestions for items to be considered in the 2022 triennial review of South Carolina's water quality standards (WQS), in accordance with Clean Water Act (CWA) Subsection 303(c)(1). As discussed in a meeting with your staff on May 13, 2021, the last triennial review public hearing was held on November 7, 2019. It is our understanding that your intent is to hold the next public hearing by no later than November 7, 2022 to meet the statutory requirement. We have the following recommendations for updates or revisions of WQS for your consideration:

**Aluminum Criteria**

The EPA published new recommended criteria for aluminum for the protection of aquatic life in December 2018. This reflects the latest science and allows stakeholders to develop criteria reflecting the impacts of local water chemistry on aluminum toxicity. The state should review and consider adopting this criteria (Ambient Aquatic Life Quality Criteria for Aluminum 2018). Information can be found on the EPA website at <https://www.epa.gov/wqc/aquatic-life-criteria-aluminum>.

**Ammonia Criteria**

The EPA published national recommended criteria for ammonia under the CWA Section 304(a) on August 22, 2013. This recommendation for ammonia is an update to the 1999 criteria and incorporates new toxicity data from 69 studies, including new data on freshwater mussels and gill-bearing snails, which are both sensitive to ammonia toxicity. In particular, the freshwater mussels are more sensitive to ammonia than the organisms included in the 1999 criteria dataset. The new water quality criteria recommendation reflects significant research that has taken place to establish levels that are protective of designated uses. The EPA Region 4 is encouraging states and tribes to adopt these criteria, per the February 4, 2014 letter from Mr. James D. Giattina, EPA Region 4 Water Protection Division Director to Mr. David Wilson, SC DHEC Chief of the Bureau of Water. The ammonia criteria update can be found by contacting the EPA or on the EPA's website at: <https://www.epa.gov/wqc/aquatic-life-criteria-ammonia>.

## **Selenium Criteria**

The EPA published draft national recommended criteria for selenium under CWA Section 304(a) on July 27, 2015. The draft criterion document is a revision of the EPA's 2014 External Peer Review Draft Freshwater chronic aquatic life criterion for selenium. This 2015 draft criteria is expected to be finalized during South Carolina's triennial review. The recommended criteria reflect the latest scientific information, which indicates that selenium toxicity to aquatic life is primarily driven by organisms consuming selenium-contaminated food rather than by direct exposure to selenium dissolved in water. The draft criterion has four parts, including two fish tissue-based and two water column-based elements. The draft selenium criteria update can be found by contacting the EPA or on the EPA's website at: <https://www.epa.gov/wqc/aquatic-life-criterion-selenium>.

## **Human Health Updates**

The EPA published updated ambient water quality criteria for the protection of human health on June 29, 2015. In this 2015 update, the EPA revised 94 of the existing human health criteria to reflect the latest scientific information, including updated exposure factors (body weight, drinking water consumption rates, fish consumption rate), bioaccumulation factors, and toxicity factors (reference dose, cancer slope factor). The criteria have also been updated to follow the current EPA methodology for deriving human health criteria (USEPA 2000).

The EPA also developed chemical specific science documents for each of the 94 chemical pollutants. The science documents detail the latest scientific information supporting the updated final human health criteria, particularly the updated toxicity and exposure input values. These human health criteria updates can be found by contacting the EPA or on the EPA's website at <https://www.epa.gov/wqc/human-health-water-quality-criteria-and-methods-toxics>.

## **Nutrient Criteria**

During the May 13, 2021 meeting between EPA and SCDHEC, the state agreed to update the 2014 Nutrient Criteria Development Plan to more accurately reflect the state's current approach to nutrient criteria development for estuaries, lakes, and rivers and streams. Staff continue to meet and anticipate that the new plan will be submitted to EPA for review this fall. EPA encourages the state to include milestones in that plan to ensure that state waters are protected from nutrient pollution. Where possible, the state should consider whether nutrient criteria that are in development can be included in this upcoming triennial. The EPA welcomes the opportunity to work with the state and provide any needed resources to assist in the continued development of nutrient criteria.

## **Development of Hydrologic Criteria**

The EPA has facilitated numerous discussions with states and tribes relating to the development of hydrologic criteria (the water quantity needed to protect water quality). Drought, floods, water disputes, climate change, and the development of regional and state water plans have brought water quantity/quality issues into sharp focus-including impacts of both extreme low and high flows on habitat and aquatic life. Around the country and here in Region 4, states and tribes have begun to address flow through the WQS program. Existing WQS implicitly protect flow through narratives for protection of aquatic life, protection of designated uses, biological integrity, habitat protection, and antidegradation policies. Region 4 is encouraging all of our states and tribes to consider explicit expression of flow as a

water quality standard, either through a narrative standard, (i.e. such as used by Tennessee “...flow shall support the aquatic criteria...” or through a numeric standard (i.e. such as used by Vermont, “no more than 5% 7Q10 change from natural flow regime...”) and to ensure good coordination between state entities responsible for water supply decisions and WQS decisions. South Carolina indicated in the response to public comments in the 2019 triennial the intention to hold stakeholder meetings and to address the development of hydrologic criteria during this triennial. EPA encourages the state to proceed in the development of hydrologic criteria to ensure protection of state waters. The EPA welcomes the opportunity to participate in the stakeholder meetings and to assist in any way possible.

## **Reg Revisions**

On August 21, 2015, the EPA published Water Quality Standard Regulatory Revisions in the Federal Register. We encourage South Carolina to determine whether any additional WQS provisions should be revised to stay current with the new and revised regulatory language.

In addition, 40 CFR Section 131.20(a) was amended as part of the 2015 WQS regulation revision. The amended regulation requires states that choose not to adopt new or revised criteria for any parameters for which the EPA has published new or updated criteria recommendations under CWA Section 304(a) to explain their decision when reporting the results of their triennial review to the EPA. The goal of this revised provision is to ensure public transparency about state WQS decisions. The EPA appreciates the state’s compliance with this provision in the 2019 triennial submission and looks forward to the state’s continued work on those provisions not yet adopted.

The above items cover the major items that the EPA recommends the state address in its next triennial review. As always, new items may come up during the course of the state’s review, not only from the EPA, but also from the state’s internal discussions as well as from interested parties in the public. The EPA expects the state to address these issues as they arise as well. Should you have any questions, please contact me at (404) 562-9273 or Lisa Perras Gordon at (404) 562-9317.

Sincerely,

Tony Able, Chief  
Water Quality Planning Branch

cc: Shawn Clarke, SC DHEC  
Brenda Green, SC DHEC  
Andrew Edwards, PE, SC DHEC