

# Briefing Summary

**Issue Title from Federal Register:** Request for Scientific Views: Draft Updated Aquatic Life Ambient Water Quality Criteria for Aluminum in Freshwater. July 28, 2017 *Federal Register* (82 Fed. Reg. 35198)

****Publication Information****

**Publication Date: July 28, 2017**

**Comments Due Date: September 26, 2017**

**Date Transmitted** (IGR will enter this date)**:**

****Initiative/Comments Information****

**Brief Summary of Initiative:**

On July 28, 2017, the U.S Environmental Protection Agency (EPA) published in the *Federal Register* notice of proposed revisions to nationally-recommended acute and chronic criteria to protect aquatic life from aluminum in freshwater. The EPA is seeking public comment on the proposed draft criteria, which were updated to reflect the “latest science and to provide users the flexibility to develop site-specific criteria based on site-specific water chemistry.” In addition to general public comment, the EPA is soliciting additional scientific views, data, and information regarding the science and technical approach used in the derivation of the draft criteria.

**Background Information:**

Section (§) 304(a)(1) of the Clean Water Act (CWA) requires the EPA to develop and periodically revise water quality criteria. Federally-recommended criteria for aluminum were last updated by the EPA in 1988. The 1988 criteria were developed with a limited number of toxicity studies, expressed as a fixed value for waters between 6.5 and 9.0 pH units, and did not account for other site-specific factors.

According to the notice, the draft update incorporates the most recently available science, particularly studies that demonstrate pH, dissolved organic carbon (DOC), and hardness alter the bioavailability of aluminum. The bioavailable portion of a chemical can impact toxicity, since it reflects the portion that is free for uptake by aquatic life. The proposal is based upon results of additional toxicity studies, a current understanding of the fate and transport of aluminum in freshwater, and a Multiple Linear Regression (MLR) model that incorporates the effects of site-specific pH, DOC, and hardness on the toxicity of aluminum.

EPA’s proposal is based on total aluminum. When water chemistry is normalized at 7 pH units, hardness of 100 mg/L as CaCO3 and DOC of 1.0 mg/L the criteria are as follows: (1) an acute criterion of 1,400 µg/L, expressed as a one-hour average; and (2) a chronic criterion of

390 µg/L expressed as a four-day average. Neither criteria are to be exceeded more than once every three years.

**Comments Recommendation: Yes**

**Comments provided here support the overall approach to incorporate site-specific factors into criteria development; however, additional information, justification, and guidance are needed to assist states when considering adoption of the criteria.**

**EPA’s proposal would benefit from expanding the range of input data factored into the Multiple Linear Regression (MLR) model to increase its applicability in Texas. Justification is also needed to address technical limitations in EPA’s proposal, including the applicability of the MLR model, which was developed using results of chronic tests, to the development of the acute criterion. Additional technical limitations resulting from the use of censored data in the EPA’s dataset, should be better addressed.**

**Additional guidance is needed to assist states when data needed to run the MLR model are lacking, particularly for rarely-monitored parameters such as dissolved organic carbon. Guidance is also needed to clarify how to address potentially-conflicting results between EPA’s proposal and other procedures approved by EPA to develop site-specific toxic criteria for aluminum, such as Water Effects Ratios. Guidance should be coordinated with states prior to the finalization of the criteria.**

**Why This Issue is of Interest and How It Applies to TCEQ:**

The proposed revisions to aluminum criteria have the potential to affect the development of state water quality standards, and implementation of the water quality standards in wastewater permitting, surface water quality monitoring and assessment, and Total Maximum Daily Load (TMDL) development and implementation.

In accordance with §303(c) of the CWA and 40 Code of Federal Regulations (CFR) §131.20(a), states must adopt water quality criteria that protect designated uses, and if appropriate, modify those criteria once every three years. Additionally, if a state chooses not to adopt federally-recommended water quality criteria, the state is required by 40 CFR §131.20(a) to provide an explanation when submitting the results of its water quality standards review to EPA. The State of Texas has adopted an acute criterion for aluminum in the Texas Surface Water Quality Standards (TSWQS), Texas Administrative Code (TAC), Title 30, Chapter 307. The TCEQ’s criterion, adopted in the 1991 revisions to the TSWQS, was established to protect aquatic life from toxic effects. The TCEQ uses these standards in the following regulatory programs of the CWA:

* Water Quality Standards
* National Pollutant Discharge Elimination Program and Texas Pollutant Discharge Elimination Program
* Surface Water Quality Monitoring and Assessment
* TMDL Program

**Prepared by:**

**Jill Csekitz, Office of Water, Water Quality Planning Division, 239-3136**

**Coordinated with:**

Gregg Easley, Office of Water, Water Quality Division, 239-4539