Aluminum/Water Quality Criteria: U.S. Environmental Protection Agency Pre-Publication Notice for Oregon Fresh Waters

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The United States Environmental Protection Agency ("EPA") in a pre-publication notice stated it is promulgating federal water quality criteria ("WQC") for aluminum that is applicable to fresh waters in the State of Oregon that are jurisdictional under the Clean Water Act.

EPA had disapproved of Oregon's freshwater acute and chronic aluminum WQC in 2013.

Section 303 of the Clean Water Act requires that each state develop water quality standards ("WQS") for jurisdictional waters of the United States within their borders.

WQS consist of three parts:

1. The designated uses of a waterbody;
2. The WQC that are necessary to protect existing uses and to attain the beneficial uses designated by the state; and
3. An anti-degradation statement or policy to protect existing uses in high quality water.

WQS or WQC are contrasted with the end of the pipe discharge limits established by the Clean Water Act categorical effluent limit standards.

Water Quality Criteria ("WQC") are ambient water quality conditions deemed protective for the use established for a water body. States are required to adopt WQC to protect designated uses pursuant to Section 303 of the Clean Water Act. The WQC must specify maximum concentrations of pollutants that may be present in the water without impairing its suitability for certain uses. The WQC represents a judgment as to what levels, concentrations, or conditions can support a desired use.

States can develop their own WQC if justified by technical data.

Aluminum is an abundant element in the earth's crust. It naturally occurs in surface waters. Nevertheless, aluminum can be mobilized in the environment through anthropogenic activities. Such activities might include mining, land management, and industrial practices. Aluminum, in certain circumstances, can be toxic to aquatic life (depending on the local water chemistry conditions).

EPA had disapproved Oregon's freshwater acute (short-term) and chronic (long-term) aluminum WQC as not meeting the Clean Water Act requirements to protect aquatic life in the state. EPA states that its

aluminum WQC are based on its national Clean Water Act Section 304(a) recommended freshwater aquatic life criteria for aluminum.

EPA's WQC aluminum criteria includes a calculator for deriving criteria output values based on site-specific ambient water chemistry. These criteria include pH, dissolved organic carbon, and total hardness. The agency states that the rule establishes acute and chronic aluminum criteria for the state consistent with the calculation approach.

EPA also states that the aluminum WQC allow flexibility in application by regulated entities to account for site-specific water quality characteristics that affect toxicity.

Also addressed in the rule is the state's ability to use what are described as "emerging analytical methods" to measure bioavailable aluminum for characterizing toxicity in ambient waters (where scientifically appropriate and allowable by state and federal regulations).

Note that Oregon can adopt and submit to EPA revised aluminum WQC to meet Clean Water Act requirements. If EPA approves the WQC for aluminum it would undertake a rulemaking to withdraw the federal WQC. In such case, Oregon's aluminum WQC would become effective for Clean Water Act purposes.

A link to the pre-publication rule can be downloaded here.