



State of Utah

SPENCER J. COX  
Governor

DEIDRE HENDERSON  
Lieutenant Governor

Department of  
Environmental Quality

Kimberly D. Shelley  
Executive Director

DIVISION OF WATER QUALITY  
Erica Brown Gaddis, PhD  
Director

**MEMORANDUM**

TO: Water Quality Standards Workgroup  
FROM: Chris Bittner  
DATE: March 21, 2022  
SUBJECT: Proposed changes to rule language for updating Utah’s aluminum water quality criteria for the protection of aquatic life

At the January, 2022 workgroup meeting, DWQ proposed updates to Utah’s aluminum criteria. The proposed update, [Criteria Support Document: Aluminum Criteria for the Protection of Aquatic Life, Review Draft Version 1.0, December 8, 2021](#), was shared with the workgroup for comment.

The proposed rule language was structured to have a 3-year overlap when both either the existing or updated criteria could apply. The intent of the overlap was to provide sufficient time for dischargers to collect dissolved organic carbon data and for DWQ to revise the assessment methods to support the updated criteria.

After reviewing the proposal, the EPA asked how the regulated community and DWQ would determine which criteria were applicable during the overlap. In response, DWQ has revised the rule language to indicate that the updated criteria will supersede the existing criteria 3 years after the Water Quality Board adopts the updated criteria. The newly proposed revisions to Footnote 5 are shown below. All proposed additions to the rule are shown in underlined font and deletions shown in strikeout fonts. The changes specific to deleting the previously proposed 3-year overlap are shown in yellow highlighted font. DWQ will update the Criteria Support Document in Version 2.0 with these changes and other revisions resulting from workgroup comments.

Table 2.14.2, [R317-2](#)

METALS

(TOTAL RECOVERABLE, UG/L)

Aluminum (4) (5)

4 Day Average	87	87	87	87
1 Hour Average	750	750	750	750

METALS, METALLOIDS, AND SUBSTANCES (4)  
 (DISSOLVED,  
 UG/L) ~~(5)~~ (6)

<del>Aluminum</del>				
<del>4 Day Average (6)</del>	<del>87</del>	<del>87</del>	<del>87</del>	<del>87</del>
<del>1 Hour Average</del>	<del>750</del>	<del>750</del>	<del>750</del>	<del>750</del>

Arsenic (Trivalent)				
4 Day Average	150	150	150	150
1 Hour Average	340	340	340	340

-----BREAK-----

(4) Where criteria are listed as 4-day average and 1-hour average concentrations, these concentrations should not be exceeded more often than once every three years on the average.

(5) The criteria for aluminum will be implemented as follows:  
Until [insert DATE at least 3 years from Board adoption date], where the pH is equal to or greater than 7.0 and the hardness is equal to or greater than 50 ppm as CaCO<sub>3</sub> in the receiving water after mixing, the 87 ug/l chronic criterion (expressed as total recoverable) will not apply, and aluminum will be regulated based on compliance with the 750 ug/l acute aluminum criterion (expressed as total recoverable).

On and after [insert DATE at least 3 years from Board adoption date], the one-hour and four-day aluminum criteria are incorporated by reference from Appendix K, Recommended Criteria for Various Water Chemistry Conditions, Final Ambient Water Quality Criteria for Aluminum 2018, EPA-822-R-18-001.

5(a) For water chemistry conditions not specifically listed in Appendix K, the criteria are the more stringent of the criteria bracketed by the two most similar water chemistry conditions or may be interpolated using the same equations used to create the Appendix K tables.

5(b) Criteria based on ambient water chemistry conditions must protect the water body over the full range of water chemistry conditions, including during conditions when aluminum is most toxic.

5(c) For characterizing ambient waters, total recoverable analytical methods may be used or different scientifically appropriate analytical methods that measure the bioavailable fraction of aluminum that includes the measurement of amorphous aluminum hydroxide yet minimizes the measurement of mineralized forms of aluminum such as aluminum silicates associated with suspended sediment particles or clays.

~~(S)~~(6) The dissolved metals method involves filtration of the sample in the field, acidification of the sample in the field, no digestion process in the laboratory, and analysis by EPA approved laboratory methods for the required detection levels.