

PUBLIC PARTICIPATION RESPONSIVENESS SUMMARY

FOR

RULEMAKING ON 567 IAC 61.3(3)

Aquatic Life Water Quality Criteria for Metals

IOWA DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL SERVICES DIVISION

WATER QUALITY BUREAU

August 28, 2020

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INTRODUCTION

This is a summary of the Iowa Department of Natural Resources' (DNR) response to comments received in response to 567 IAC 61.3(3) proposed rulemaking on Water Quality Standards, aquatic life water quality criteria for metals. Notice of the proposed rulemaking was released for public review and comments following approval of the Notice of Intended Action (NOIA) by the Environmental Protection Commission (EPC) on March 17, 2020. The EPC meeting minutes which include the NOIA are available online

(<https://www.iowadnr.gov/Portals/idnr/uploads/epc/20200317epc.pdf?ver=2020-04-22-103534-483>). In addition, the proposed rulemaking was published in the Iowa Administrative Bulletin (NOIA ARC 5044C) on June 3, 2020, (<https://www.legis.iowa.gov/docs/aco/bulletin/06-03-2020.pdf>) and in the DNR EcoNewsWire on June 18, 2020. Public comments were accepted from March 17, 2020, through June 23, 2020, with a virtual public meeting held on the last day of the comment period.

The proposed rulemaking has two primary purposes: to change the aquatic life criteria for metals (with the exception of aluminum) from "total recoverable" to "dissolved" and to change the aquatic life criteria for aluminum from "total recoverable" to "bioavailable" values based on the new USEPA model.

This responsiveness summary provides a discussion of the issues raised by the comments received and how the comments were incorporated into the development of DNR's final aquatic life water quality criteria for metals.

COMMENTS ON FOOTNOTE (R) ABOUT BIOAVAILABLE ALUMINUM

The DNR received the following comments on the bioavailability of aluminum and the language of footnote (r), “The criteria are expressed as the bioavailable fraction.”

COMMENTER 1: Ken Thomas, Arconic

Date Received: Mar. 10, 2020

Comment:



3/10/2020

Iowa Department of Natural Resources
502 East 9th Street
Des Moines, IA 50319
Attr: Roger Bruner

Ken Thomas
EHS Manager
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Arconic Davenport LLC
Iowa Water Quality Standards (Update to Metals Criteria)
Comments on Notice of Intended Action

The State of Iowa is working to revise its Water Quality Standards to update them with the latest scientific information on metal toxicity. In 2020, Iowa released its Notice of Intended Action to amend these standards. Arconic has reviewed this Notice and provides the following comments.

Arconic supports these revisions of the Water Quality Standards that use "dissolved" metals instead of "total recoverable" metals as the basis for the water quality criteria (with the exception of aluminum).

For aluminum, we believe that the current rule lacks clarity on what portion of aluminum within the water column will be used to evaluate water quality. The rule states that Aluminum the criteria is expressed as the bioavailable fraction within footnote "r". This term is inconsistent between the purpose and summary section of the proposed standard and its application to the numerical water quality value calculated using the EPA's Final Aquatic Life Ambient Water Quality Criteria for Aluminum. Arconic requests that proposed footnote "r" be revised to read "(r) *The criteria are expressed as the sum of the dissolved concentration and colloidal concentration.*"

Please refer to the Attachment A for detailed comments on this matter. If you have any questions on this matter please do not hesitate to contact John Hylton at (563) 459-3208 or john.hylton@arconic.com.

Ken Thomas

EHS Manager
Davenport Works and Satellite Facilities

Attached

- Technical Review of Iowa Water Quality Standards (Update to Metals Criteria)



Attachment A

Technical Review of Iowa Water Quality Standards (Update to Metals Criteria)

The draft standard proposes to revise the aluminum criteria using the EPA's Final Aquatic Life Ambient Water Quality Criteria for Aluminum published in 2017 and finalized in 2018 (EPA's 2018 Criteria). This criterion calculates aluminum water quality criteria based upon a multiple linear regression model using water quality parameters including pH, total hardness, and dissolved organic carbon. The model is bounded by input parameters of; pH of 5.0 to 10.5, total hardness of 0.01 to 430 mg/L as CaCO₃, and dissolved organic carbon of 0.08 to 12.0 mg/L. These three factors were demonstrated to impact the bioavailability, and thus toxicity, of total aluminum concentrations under laboratory conditions.

The numerical value calculated by the model is the total concentration of aluminum (consisting of dissolved and precipitated aluminum) which may be present under specific pH, Hardness, and DOC before the aluminum reaches its established threshold for toxicity as described in section 5.3.3 of the 2018 Criteria. The method was developed under conditions that excluded sources of aluminum found within large particulate matter and which does not contribute to toxicity under ambient conditions.

The use of the 2018 Criteria to determine water quality attainment in natural waters is complicated by current testing methodologies which include aluminum that would not become bioavailable under the established model. Current testing methodology determines total recoverable aluminum, which requires acid digestion of analytical samples at a pH of <2 prior to analysis. This acid digestion process liberates aluminum found in large particulate matter, which under ambient conditions would not have the potential to become bioavailable. These sources of aluminum are not modeled in the EPA's 2018 Criteria, and therefore the use of water quality data containing these sources of aluminum will overstate the concentration of aluminum which may become bioavailable under ambient conditions. The EPA's 2018 Criteria discusses this matter in detail within sections 2.6.1, 2.6.2, and 5.3.3.

The draft Iowa standards attempt to overcome this complication by specifying that water quality criteria will be stated in terms of its "bioavailable fraction". This language was initially proposed in a draft Water Quality Standard in 2019 in which Iowa defined the bioavailable concentration as the portion of aluminum within water samples which includes dissolved and colloidal aluminum. The purpose and scope section of the draft rule stated that "*the proposed aluminum criteria are expressed as bioavailable concentrations, which include both dissolved and colloidal aluminum.*"

The proposed water quality standard released in February of 2020 contained revisions to the purpose and summary that removed the original statement describing how aluminum concentrations will be expressed. Language was added to this section discussing that bioavailability includes "*both dissolved and some non-dissolved (colloidal) aluminum which can*



be toxic to aquatic life” and is a function of pH, DOC, and hardness. It states that “The proposed aluminum criteria also take into account new data which establishes that aluminum bioavailability is dependent upon ambient levels of certain chemical parameters in the receiving stream, like pH, dissolved organic carbon, and hardness.” This revised narrative is now consistent with the EPA’s 2018 Criteria in its use of the term “bioavailable”.

The 2020 proposed standard creates confusion with regard to how the aluminum criteria is expressed. It states in footnote “r” that aluminum will be expressed as “(r) *The criteria are expressed as the bioavailable fraction*”. The 2019 draft standard made it clear that this referred to the concentration of dissolved and colloidal aluminum. The 2020 proposed standard describes bioavailable aluminum as the portion of aluminum which can be toxic based on the pH, DOC and hardness parameters, and includes both dissolved and some colloidal aluminum which may be toxic. Stating that the aluminum criteria is expressed in terms its bioavailable fraction, indicates that the criteria is expressed in terms of the concentration of aluminum which is dissolved plus the concentration of colloidal aluminum which is contributing to toxicity. The numerical value expressed for the criteria is calculated using the EPA’s 2018 Criteria is a measure of the total amount total concentration of aluminum (consisting of dissolved and precipitated aluminum) which may be present under specific pH, Hardness, and DOC before the bioavailable aluminum reaches its established threshold for toxicity.

Modification of footnote “r” to indicate that aluminum will be expressed as the sum of dissolved plus colloidal aluminum will eliminate the conflicting usage of the term bioavailable within the proposed standard. This will ensure that the concentration of aluminum evaluated for water quality purposes is consistent with the expressed numerical values within the water quality standard. This is consistent with the language used for other metals where toxic concentrations are calculated based on ambient water quality parameters and values are expressed as “dissolved”, not their actual biological fraction.

COMMENTS: Steven Jennings, Arconic

Date Received: Jun. 18, 2020

Comment:



6/18/2020

Iowa Department of Natural Resources
502 East 9th Street
Des Moines, IA 50319
Attn: Roger Bruner

Steven Jennings
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Arconic Davenport LLC
Iowa Water Quality Standards (Update to Metals Criteria)
Comments on Notice of Intended Action

Arconic Davenport LLC appreciates the opportunity to participate in this rule making process and asks that the following comments be taken into consideration with the finalization of this rule.

Update of Water Quality Criteria for Metals (except for Aluminum)

Arconic supports the proposed amendments to update the current aquatic life water quality criteria for arsenic (III), cadmium, chromium (VI), lead, mercury, nickel, silver, and zinc as proposed. Use of dissolved metals in lieu of total recoverable metals is supported by the latest scientific information and provides a more appropriate approximation of the bioavailable fraction of these metals.

Update of the Water Quality Criteria for Aluminum

Arconic supports an update of the aquatic life water quality criteria for aluminum to incorporate the latest scientific information on metal toxicity. The proposed rule relies on a recently developed model from the EPA which establishes that bioavailability of aluminum is dependent upon certain chemical parameters in the receiving stream including pH, dissolved organic carbon, and hardness.

The numerical value calculated by this model establishes the concentration of aluminum which may be present under specific stream conditions before aluminum reaches levels of toxicity. The model was developed under conditions that only considered sources of aluminum which may contribute to toxicity, including dissolved aluminum and colloidal aluminum, and excluded sources of aluminum bound within large particulate matter and which does not contribute to toxicity under ambient stream conditions.

The proposed rule specifies that the criteria is intended to encompass this portion of aluminum which may contribute to toxicity in the Purpose and Summary section where it states that "the Commission is proposing aluminum aquatic life water quality criteria in the form of bioavailable concentration values, which include both dissolved and some non-dissolved (colloidal) aluminum



which can be toxic to aquatic life." The proposed rule includes a footnote pertaining to the aluminum criteria which states "(r) The criteria are expressed as the bioavailable fraction."

Currently approved test methods for water quality only determine the total recoverable aluminum, which requires acid digestion of analytical samples at a pH of <2 prior to analysis. This acid digestion process liberates aluminum found in large particulate matter, which under ambient conditions would not have the potential to become bioavailable. A test method is being developed to specifically address this concern and allow for differentiation within natural waters of aluminum concentrations which may contribute to toxicity from those which do not as identified within the EPA model.

Arconic believes that it is crucial that the final rule clearly establishes that only sources of aluminum which have the potential to contribute to toxicity under ambient conditions are intended to be included in the aluminum criteria. The rule should be unambiguous in its intent to rely data once it becomes available from subsequently approved test methods which exclude concentrations of aluminum which do not contribute to toxicity.

Clarification should be added to footnote "(r)" to clarify the intent of this rule making process. Arconic would propose the following edit:

(r) the criteria is expressed as the bioavailable fraction consisting of those concentrations of aluminum which may contribute to toxicity as modeled in the "Final Aquatic Life Ambient Water Quality Criteria for Aluminum 2018 (EPA-822-R-18-001), December 2018." Aluminum concentrations identified through an approved test method which do not contribute to aluminum concentrations considered within this model, including sources from particulate matter which remain bound under natural conditions, shall be excluded from this criteria.

Arconic would like to reiterate its appreciation for the opportunity to participate in this rule making activity. Should you have any further questions on this matter please contact John Hylton at john.hylton@arconic.com or at (563)-459-3208.

Sincerely,

Steven Jennings
Manufacturing Director for Davenport Works and Satellites

COMMENTER 3: John Riches, Arconic

Date Received: Jun. 23, 2020

Comment:

Transcript: Good afternoon. My name is John Riches and I'm the Public Affairs Manager for Arconic here in Riverdale, Iowa on the eastern side of the state along the Mississippi. Some of you may be more familiar with us as Alcoa. Our name changed a few years ago. Arconic appreciates the opportunity to participate in this process and we along with the Aluminum Association and Iowa ABI have submitted formal comments. I'll be brief this afternoon, the main thing we're seeking is a commitment from DNR that will rely on data from the new test method that uses dissolved and colloidal aluminum once it is adopted. In the formal comments we submitted ahead of this meeting, we supplied a suggestion for a way to include this in the rule itself and short of that just asking for a commitment noting the intention to use the new test method when it becomes available. And with that I'd just say thanks for your time this afternoon and we also want to thank DNR for working to improve the water quality standard for the state. Thanks.

COMMENTER 4: JD Davis and Brad Hartkopf, ABI

Date Received: Jun. 23, 2020

Comment:



6/23/2020

Roger Bruner
Supervisor: Water Monitoring Staff
Iowa Department of Natural Resources
502 E 9th St.
Des Moines, IA 50319

Dear Mr. Bruner:

Thank you very much for the opportunity to comment on the DNR's proposed amendment that updates the current aquatic life water quality criteria. The Iowa Association of Business and Industry (ABI) represents 1,500 member companies from all corners of the state. ABI members represent industries from insurance and banking to manufacturing and construction. With a diverse range of members, ABI has a vested interest in the policies that the Department and Bureau implement.

After reviewing the proposal and receiving feedback from our members, ABI supports the Department's proposed amendment. Converting the aquatic life water quality criteria from total recoverable metals to dissolved metals will provide industry more flexibility as they seek to comply with regulations issued by the Department in this arena.

Businesses comply with numerous regulations and statutes as they employ Iowans across the state. Therefore, using the latest scientific data is important to ensuring that the Department is issuing sound regulations that are effective and not antiquated or overly burdensome.

ABI would also note that we are supportive of Arconic Davenport LLC's comments and would humbly ask the Department to consider and respond in the affirmative to their request.

Thank you for the opportunity to comment.

Respectfully submitted,

JD Davis & Brad Hartkopf
Vice President & Director, Public Policy (ABI)

COMMENTER 5: The Aluminum Association

Date Received: Jun. 23, 2020

Comment:



Submitted electronically to roger.bruner@dnr.iowa.gov

June 23, 2020

Iowa Department of Natural Resources
502 East 9th Street
Des Moines, IA 50319
Attn: Roger Bruner

The Aluminum Association

Comments on Intended Action:

Aquatic Life Water Quality Criteria for Certain Metals 61.3(3)

The Aluminum Association appreciates the opportunity to provide comment on the State of Iowa's Notice of Intended Action to revise its Water Quality Standards Criteria. The Aluminum Association represents US producers and sellers of primary aluminum, aluminum recyclers, producers of fabricated aluminum products, and industry suppliers. Overall, the aluminum industry directly and indirectly contributes nearly 1% of the US GDP.

Member companies own and operate over 200 manufacturing facilities located throughout the United States and multiple member companies operate major aluminum manufacturing facilities in Iowa that would be directly affected by the revision of the Iowa Water Quality Criteria. As such, the Association's Water Workgroup has significant interest in the revision of Iowa's Water Quality Standards and is providing the comments below for EPA's consideration in finalizing it.

Aluminum Water Quality Criteria Revisions [Amendments to 61.3(3) TABLE 1]

The Iowa proposed rule revises TABLE 1 to set the acute criteria at 2500 ug/L and the chronic criteria at 890 ug/L using the 2018 EPA aluminum criteria calculator, which is a Multi-Linear

Regression (MLR) approach that was developed using the most recent science on aluminum toxicity in water and updates criteria that were over 30 years old and not reflective of current science. These criteria were calculated using the lowest 10th percentile of individual model outputs using spatially and temporally representative model inputs from across the state, which is a methodology that is consistent with one of the approaches that the EPA outlined for states to use in implementation of the 2018 aluminum criteria.

The Association supports these proposed revisions of Iowa's Water Quality Criteria for aluminum and is happy to see that Iowa is taking a leading role among the states in implementing the new criteria in this manner.

Bioavailable Fraction [New Footnote (r) in 61.3(3) TABLE 1]

The Iowa proposed rule adds a new footnote (r) to TABLE 1 for the aluminum criteria which states that "the criteria are expressed as the bioavailable fraction". The concept embodied in this footnote is important because the criteria were developed under laboratory conditions without sources of aluminum present in particulate matter that do not contribute to aluminum toxicity under ambient water conditions. Thus, in lab water, the amount of aluminum present measured as total recoverable aluminum is essentially the same as the bioavailable fraction. However, natural waters contain particulate matter measured as total suspended solids (TSS) and that do not generally contribute to aluminum toxicity.

The analytical procedure for total recoverable metals involves lowering the pH of the water sample to 2 in sulfuric acid, heating and stirring for upwards to 8 hours, and then filtering the sample for final analysis. This processing step dissolves all silicate and organo-metallic aluminum, thus far overpredicting the amount of aluminum that is actually bioavailable under ambient conditions and making the test method unrepresentative for use in assessment of natural waters against water quality criteria.

Aluminum exists in several forms within the water column. There are the dissolved, colloidal, silicate, and organo-metallic forms. Not all of these forms are "biologically" available to the aquatic life in the receiving streams. The only forms that are bioavailable are the dissolved and colloidal fractions. Most metals are moving towards measuring only dissolved metals for this

reason but the colloidal fraction of aluminum, often $Al(OH)_3$ or $Al(OH)_4^-$, can cause aquatic toxicity under certain conditions. For this reason, dissolved aluminum testing may not be sufficient to capture all of the toxicity within the water column due to aluminum.

In recognition of this situation, a new test method involving lowering of the pH of the water sample to 4 is being developed through ASTM to most accurately measure the bioavailable (dissolved and colloidal) fraction of aluminum in waters with TSS components. This test method was recognized by EPA within the preamble of the 2018 aluminum criteria as follows:

“The validation of the pH 4 extraction method is still on-going, with the expectation that this approach will better estimate the bioavailable fraction of aluminum in natural waters.”

Unfortunately, this bioavailable test method is still in validation through the ASTM test method development process and is not yet available and approved for use. However, the method has been published in the peer reviewed literature (*Rodriguez P, Arbildua J, Villavicencio G, Urrestarazu P, Opazo M, Cardwell A, Stubblefield W, Nordheim E, and Adams W. 2019. Determination of Bioavailable Aluminum in Natural Waters in the Presence of Suspended Solids. Environ Toxicol and Chem. 38 (8): 1668–1681.*)

Given the situation as described above, the Association requests that footnote (r) be revised to state:

(r) the criteria are expressed as the bioavailable fraction consisting of those concentrations of aluminum which may contribute to toxicity as modeled in the “Final Aquatic Life Ambient Water Quality Criteria for Aluminum 2018 (EPA-822-R-18-001), December 2018.” Aluminum concentrations identified through an approved test method which do not contribute to aluminum concentrations considered within this model, including sources from particulate matter which lack bioavailability under ambient conditions, shall be excluded from these criteria.

This proposed revision addresses the misalignment of laboratory water testing conditions versus ambient natural water conditions and also provides for use of the new pH 4 method once it has been validated through the ASTM process.

The Association again thanks EPA for the opportunity to provide comment on Iowa’s proposed revisions to their aquatic life water quality criteria. If you have any questions about these comments and/or the Association can be of further assistance on this topic, please contact Curt Wells, the Association’s Senior Manager of Regulatory Affairs at cwells@aluminum.org, (703) 358-2976 (office) or (804) 385-6351.

August 28, 2020

DNR RESPONSE

The proposed numerical criteria for aluminum were calculated using Aluminum Criteria Calculator V2.0 (Excel) as described in “Final Aquatic Life Ambient Water Quality Criteria for Aluminum 2018 (EPA-822-R-18-001), December 2018” which was based on toxicity research using total aluminum concentrations (due to availability of data). However, recent research has shown that in ambient waters, the “bioavailable” portion of aluminum that is toxic to aquatic life can be less than total aluminum (e.g., “Analytical method validation for determining bioavailable aluminum in freshwater,” Oregon State University, 2018).

The “bioavailable” portion for other metals is the dissolved fraction, as reflected in Item 16 (footnote (p)) of the proposed rulemaking. However, the original EPA metals criteria were for total recoverable metals. Subsequently, the EPA issued a memo clarifying that dissolved criteria for metals would be appropriate and protective of aquatic life in 1993 (“Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria”).

Aluminum is different from other metals, as dissolved aluminum and some colloidal aluminum may be bioavailable and therefore toxic to aquatic life. During the development of the EPA criteria for aluminum, additional research has focused on developing a method to quantify “bioavailable” aluminum using a weak acid digestion (i.e., at pH 4 rather than pH 2) as recognized in the 2018 EPA aluminum criteria document (EPA criteria document). Although the validation process for such a method is ongoing, the purpose of aquatic life water quality criteria for metals is to protect aquatic life from bioavailable (and thus, toxic) forms of metals. It is the DNR’s position that current research shows that the expression of aluminum criteria as total aluminum is overly stringent.

While the calculation of the proposed aluminum criteria is based on toxicity studies with total aluminum concentrations, the following is noted in the EPA criteria document (emphasis added):

“Applying the aluminum criteria to total recoverable aluminum is considered conservative because it includes monomeric (both organic and inorganic) forms, polymeric and colloidal forms, as well as particulate forms and aluminum sorbed to clays (Wilson 2012). However, under natural conditions not all of these forms would be biologically available to aquatic species (e.g., clay-bound aluminum).”

The EPA criteria document further states the following (emphasis added):

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“Research on new analytical methods is ongoing to address concerns with including aluminum bound to particulate matter (i.e., clay) in the total recoverable aluminum concentrations (OSU 2018c). One approach would not acidify the sample to pH less than 2 but rather to pH 4 (pH 4 extracted method) to better capture the bioavailable fraction of aluminum (CIMM 2016, OSU 2018c) [...] The validation of the pH 4 extraction method is still on-going, with the expectation that this approach will better estimate the bioavailable fraction of aluminum in natural waters.”

Research to date has established that all forms of aluminum that may be present in natural waters are not bioavailable to aquatic organisms, which is supported by the EPA criteria document. The ultimate expression of the aluminum criteria as “bioavailable” is most appropriate for protecting aquatic life.

As mentioned, validation of a method for bioavailable aluminum is ongoing. Prior to this, use of the term “bioavailable” in reference to concentrations (rather than dissolved/colloidal forms, or a particular method) ensures the flexibility needed for measuring the appropriate portion of aluminum applicable to the criteria.

COMMENTS ON IMPLEMENTATION OF DISSOLVED METALS CRITERIA

COMMENTER 6: Lenny Larson, PE, and Julie Sievers, ISG

JUNE 23, 2020

Roger Bruner
Department of Natural Resources
Wallace State Office Building
502 East Ninth Street
Des Moines, Iowa 50319
roger.bruner@dnr.iowa.gov



RE: COMMENTS ON PROPOSED RULE CHANGES, 567 IAC 61, AQUATIC LIFE WATER QUALITY CRITERIA FOR METALS TOXICITY

Dear Mr. Bruner,

ISG provides the following comments and questions on the proposed changes to the aquatic life water quality standards for metals toxicity in Chapter 61. While we understand the science behind the change from the use of the "total recoverable" value to a "dissolved" value for the metals except aluminum and to the "bioavailable" value for aluminum, we have the following comments on the proposed rule and the implementation of the rule change.

1. The change to dissolved metals will increase the sampling complexity as it requires field filtering of the sample before preservation. This will increase the time for sample collection and require additional equipment many facilities do not currently have available.
2. If the current results for total recoverable metals are less than the limits for the dissolved metals, will sampling for the total recoverable be acceptable?
3. As with other water quality standards, a statewide hardness value of 200 mg/L is being used in the calculation of the limits. This value is not representative of the hardness of many streams in northern and western Iowa. The burden to use more a representative or site-specific hardness value in the calculation of the limit falls to the facility and increases their costs significantly. Will the department allow hardness results collected as part of other site-specific monitoring or in the same watershed to be used? We strongly encourage the department to use regional hardness values rather than one statewide value.
4. We have heard that implementation is not part of the criteria. Is there a timetable for implementation and will it be immediate or will there be a phased approach?

Thank you for the opportunity to comment.

If you have questions on any of these, please contact Lenny or Julie Sievers at 712.732.7745.

Sincerely,

Handwritten signature of Lenny Larson in black ink.

Lenny Larson, PE
Civil Engineer
Lenny.Larson@ISGInc.com

Handwritten signature of Julie Sievers in black ink.

Julie Sievers
Senior Water Solutions Specialist
Julie.Sievers@ISGInc.com

DNR RESPONSE

As stated in the Fiscal Impact Statement and NOIA, it is estimated that the projected cost savings from this rulemaking will be \$85 million to \$95 million because more facilities will be able to comply with water quality criteria (while still protecting aquatic life) without installing metals removal technology.

For consistency for permittees, the preferred approach will be to express limits for metals with “dissolved” criteria as “total recoverable” in NPDES permits using dissolved metal translators. This would prevent some required duplication of samples (e.g., if a facility also has a technology based effluent limit for a metal as “total recoverable” and would face taking an additional sample for “dissolved”) as well as possible confusion associated with field filtering samples. This would not preclude facilities from obtaining dissolved and/or site-specific limits on a case by case basis.

Hardness data is currently accepted by the DNR for site-specific criteria and water quality based effluent limits and it will remain acceptable subsequent to the rulemaking. If hardness results are collected as part of other site-specific monitoring for a facility (e.g., to develop site-specific chloride limits), this data may also be used to develop site-specific limits for metals criteria with equations using hardness in Chapter 61. If hardness results are collected in a different part of the same watershed rather than just upstream of a facility’s discharge, the DNR will consider the data on a case by case basis to determine if it would be representative for the stream to which a particular facility discharges. The DNR will continue to monitor and evaluate the state’s water quality data and stream hardness values, as well as continue endeavors to use and update scientifically defensible approaches in the development of water quality based effluent limits. This input related to hardness is appreciated, however, a change to background hardness is not an aspect of this particular rule making.

The dissolved metals criteria and corresponding limits will be implemented in new NPDES permits and NPDES permit renewals that follow the effective date of the rule. Permits that are not currently up for renewal will have the criteria implemented in their next renewal following the effective date of the rule. If a permit is not up for renewal, but a permittee would like the criteria used in their permit prior to renewal, the permittee may seek an amendment.

GENERAL COMMENTS

COMMENTS: John Riches, Arconic

Date Received: Nov. 7, 2019

Comment:



4879 State Street
PO Box 3567
Bettendorf, IA 52722

November 7, 2019

The Honorable Kim Reynolds
Governor of Iowa
Iowa State Capitol Building
Des Moines, IA 50319

Dear Governor Reynolds:

On behalf of Arconic Davenport Works, I am writing to request your support of a draft rule proposed by the Iowa Environmental Protection Commission. The proposed rule updates the current aquatic life criteria for aluminum.

This proposed rule was years in the making. Arconic participated in the DNR's stakeholder meetings and technical advisory committee meetings related to this proposed rule. Arconic is asking for your support of this rule and immediate consideration by the Administrative Rules Review Committee.

Thank you for your time and consideration.

Sincerely,



John Riches
Public Affairs Manager
Arconic

cc: Kayla Lyon, Director, Iowa Department of Natural Resources
Sara Craig Gongol, Chief of Staff, Office of Governor Kim Reynolds
Matthew Dvorak, Iowa Department of Natural Resources

Innovation, engineered.

DNR RESPONSE

Thank you for your comment.

CHANGES TO FINAL RULE BASED ON COMMENTS

For the final rule, the DNR has incorporated the following changes based on comments received.

ITEM 2: FOOTNOTE (O)

It was indicated that as proposed, footnote (o) would not allow for calculation of site-specific aluminum criteria without additional rulemaking, nor allow for use of newer versions of the criteria calculator. Footnote (o) as proposed is shown below:

“The acute and chronic criteria listed in the main table are calculated using Aluminum Criteria Calculator V2.0 (Excel) as described in “Final Aquatic Life Ambient Water Quality Criteria for Aluminum 2018 (EPA-822-R-18-001), December 2018”. The criteria were calculated using the lowest 10th percentile of individual model outputs using spatially and temporally representative model inputs from across the state.”

To allow calculation of site-specific criteria using the same approach used to develop the proposed aluminum criteria, as well as the use of the newer versions of the criteria calculator, footnote (o) will be updated to the following:

“The acute and chronic criteria listed in the main table were calculated using Aluminum Criteria Calculator V2.0 (Excel) as described in “Final Aquatic Life Ambient Water Quality Criteria for Aluminum 2018 (EPA-822-R-18-001), December 2018.” The criteria were calculated using the lowest 10th percentile of individual model outputs using spatially and temporally representative model inputs from across the state. Site-specific criteria shall also be developed using this approach and the most recent version of the calculator.”

ITEM 17: FOOTNOTE (R)

Footnote (r), “The criteria are expressed as the bioavailable fraction,” has been proposed to allow for use of an approved method to analyze bioavailable aluminum. This would enable application of the criteria as “bioavailable.”

To adequately acknowledge the difference between the bioavailable fraction of other metals in the rulemaking (i.e., dissolved) and the bioavailable portion of aluminum (with the exact definition depending upon a validated laboratory method), footnote (r) will be updated to the following:

“The criteria are expressed as the bioavailable portion of aluminum.”

August 28, 2020

ITEM 18: CONSISTENCY IN IOWA WASTELOAD ALLOCATION PROCEDURE DOCUMENT

A conflict was noted with this final rule and the current language in the Iowa Wasteload Allocation Procedure (WLAP) document. The WLAP is a rule-referenced document that outlines how wasteload allocations are developed. This conflict will be resolved by deleting the sentence “Iowa’s numerical chemical criteria are expressed in total recoverable concentrations” found on page 77 of the WLAP. The effective date of the WLAP will be updated to November 11, 2020.