

**Alaska Department of  
Environmental Conservation  
Division of Water**

**Amendments to 18 AAC 70 (Water Quality  
Standards) to Adopt a Performance-Based  
Approach for the Development of Site-  
Specific Criteria Using the Biotic Ligand  
Model for Copper**

Public Noticed

August 15, 2025 - October 24, 2025

Response to Comments

April 2026

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## **1. Introduction**

### **1.1. Summary of Proposal**

The Alaska Department of Environmental Conservation (DEC) proposes to expand regulatory options to develop site-specific criteria for copper. Amended regulations would provide an alternate, yet equally protective, method for calculating copper criteria on a site-specific basis. This proposal does not alter statewide copper criteria, or the method used to calculate those criteria.

### **1.2. Opportunities for Public Participation**

The Department published a public notice of the proposed changes on its website on both the Water Quality Standards' program home page and the Commissioner's Office Public Notice page. Documents were uploaded to the Online Public Notice System, including text of proposed changes, a technical support document, and an accessible "frequently asked questions" document. The Department published a post on Facebook announcing the public notice period and sent a message to the Water Quality Standards listserv, which is promoted on the Department's website for individuals interested in developments regarding Alaska's Water Quality Standards. A telephonic public meeting and public hearing was held on October 6, 2025, at 4:00 pm, providing members of the public with the opportunity to call in or join with Microsoft Teams to hear a presentation on the proposed changes, ask any clarifying questions, and provide public comments.

### **1.3. Final Action**

Final regulations were adopted by the Department and filed by the Lieutenant Governor on April 1, 2026. Changes were made from the public noticed draft of the document to be adopted by reference in response to comments.

## **2. General Comments**

### **2.1. Regulation Summary**

The regulatory change proposed would modify the Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances (the Toxics Manual) to append text in endnote 20 adopting by reference the performance-based approach titled “Implementation of the Biotic Ligand Model for Derivation of Freshwater Aquatic Life Criteria for Copper on a Site-Specific Basis in State Water Quality Standards” (the Copper PBA) and allowing its use. Additionally, the regulations of 18 AAC 70.020(b) and 70.020(b) Note 5 are proposed to be amended to reflect the adoption date of the revised Toxics Manual; and 18 AAC 70.235 Site-specific criteria is proposed to be repealed and readopted to allow site-specific water quality criterion to be developed in permits using the proposed performance-based approach.

These changes will create an alternative, scientifically supported pathway for developing copper criteria protective of aquatic life in Alaska’s surface waters.

### **2.2. Comment Summary**

The department received a range of general comments on the proposed changes. Comments were received both generally opposing the proposed amendments without significant changes, and comments generally in support of the amendment with suggestions for improvements. Two commenters addressed broader policy issues that were outside the scope of the proposed rulemaking. These included objections to the rulemaking process itself and calls for legislative rather than administrative action.

### **2.3. Commenters**

Comments were received from two individuals, one public utility, one organization, and one agency:

- Sam Harris on behalf of Benjamin Cook
- Carrie Harris
- Anchorage Water and Wastewater Utility

- Southeast Alaska Conservation Council
- United States Environmental Protection Agency

#### **2.4. Response**

The Department appreciates the time and consideration given to the proposed amendments by the Alaskans, organizations and agencies that provided their input. Specific concerns raised in comments will be addressed in the following sections.

### **3. Comments on Transparency**

#### **3.1. Summary of Existing Proposal**

The Copper PBA public notice draft states that site-specific criteria will be subject to public notification, review and comment through the public notice period of the permit for which they are developed.

#### **3.2. Comment Summary**

Commenters expressed concern that the proposed amendments lack transparency around where the biotic ligand model for copper is used to derive site-specific criteria for public review, and accessibility of data used as inputs to the biotic ligand model. Commenters suggested that the Department publish all input water quality data and quality assurance information as well as all model output, use extended public comment periods and implement additional steps to ensure that the locations where the PBA-derived criteria apply are publicly available and readily accessible. Some comments advocated additional measures for transparency and public participation, such as extended public review periods, publishing of plain-language summaries, and the establishment of technical review panels.

#### **3.3. Commenters**

Four out of five comment letters addressed transparency; all four of these favored more transparency than the current draft.

- Sam Harris on behalf of Benjamin Cook
- Carrie Harris
- Southeast Alaska Conservation Council
- United States Environmental Protection Agency

#### **3.4. Response**

The Department agrees that a single, publicly accessible resource describing all locations where the Department has applied the proposed performance-based approach to derive site-specific criteria for copper and including the resultant criterion and extent of the site to which it is applied is an appropriate measure for transparency. In response to these comments, the Copper PBA has been amended to include, in both the executive summary

and in Section 10, that the Department will maintain finalized water quality criterion developed by use of the PBA in a central, publicly available location. Final data submission required by the Copper PBA will be available online and summarized in permit fact sheets.

However, the Department finds that requiring extended public notices broadly, convening technical review panels, or otherwise modifying the Department's existing procedures for transparency and public participation is unnecessary and overly burdensome. Requests to extend specific public notice periods will be considered and are routinely granted.

## **4. Comments on Environmental Protection**

### **4.1. Summary of Proposal**

Alaska's waters are classified by use, and by default, Alaska's waters are protected for all uses. Each use classification is associated with water quality criteria found to be protective of the use. Alaska currently uses hardness-based equations for copper criteria protective of aquatic life in Alaska's waters classified for the growth and propagation of fish, shellfish, other aquatic life and wildlife on a statewide basis.

The amendments proposed provide an alternative method for calculating copper criteria that are protective of aquatic life, using additional water quality information, on a site-specific basis. The alternative method proposed is the biotic ligand model, which considers water chemistry impacts on the bioavailability of copper beyond that of hardness alone.

### **4.2. Comment Summary**

Several commenters agree that the biotic ligand model (BLM) represents a modern, scientific approach to the derivation of copper criteria protective of aquatic life. Other commenters oppose the proposed amendments due to concerns about reduced protection. Opposition comments also express concerns that increased copper concentrations could compound in downstream waters. Specific objections express concern that BLM-derived site-specific criteria would not be revisited or enforced.

### **4.3. Commenters**

Four out of five commenters mentioned the level of protection offered by the process proposed to be adopted.

Two commenters stated that the proposed revisions weaken environmental protections:

- Sam Harris on behalf of Benjamin Cook
- Carrie Harris

Two commenters voiced support of the proposed amendments' protection of the environment:

- Anchorage Water and Wastewater Utility
- Southeast Alaska Conservation Council

#### **4.4. Response**

The Department finds, in keeping with antidegradation requirements, that the proposed amendments do not constitute a reduction in protection or degradation of existing water quality. Rather, the amendments allow future site-specific copper criteria to be developed using an alternative approach, namely the biotic ligand model implemented as described in the Copper PBA. The alternative proposed approach is equally protective of aquatic life. In implementing the Copper PBA, the Department will ensure protection of downstream waters, in keeping with existing policies and procedures.

## **5. Comments on Data Collection and Analysis**

### **5.1. Regulation Summary**

The Copper PBA describes a minimum data requirement of 20 monthly samples collected over 2 years, i.e. of 80% completeness for 24 monthly samples with recommended additional hourly sampling to quantify diurnal variability. This data is input to the copper BLM, which produces instantaneous water quality criteria (IWQC) protective of aquatic life for the conditions present at each sampling event. The Department will either employ the fixed monitoring benchmark (FMB) generated by the BLM, if ambient copper data is collected and the FMB result is deemed appropriate, or will select the lowest tenth percentile (or lower, if deemed necessary) of values in the distribution of IWQC to calculate acute and chronic copper criteria protective of aquatic life at the site.

### **5.2. Comment Summary**

The department received comments expressing concerns regarding monitoring requirements, both that the current requirements may not be rigorous enough to ensure representativeness, and that they may be too burdensome. Specific concerns regarding data collection include that the Copper PBA requires:

1. Sample storage not in alignment with all analysis method requirements for sample storage
2. Sampling of effluent parameters which are not BLM inputs with every sample when compliance monitoring may not require this frequency
3. Sampling downstream of the discharge point every sampling event, which may not be appropriate or necessary
4. Overly stringent (7Q10) flow for dilution calculation when using a composite of upstream and effluent to synthesize downstream in instances where downstream sampling is not conducted for safety or similar reasons
5. Burdensome hourly sampling that does not align with discharge permit monitoring requirements
6. Restrictions on sample collection immediately after rainfall events which increase receiving water flow by 5% over the preceding 30-day average, which may reduce the representativeness of the dataset, particularly in Alaska's temperate rainforest

### **5.3. Commenters**

Three out of five commenters discussed data collection and quality assurance requirements of the proposed Copper PBA.

Two commenters expressed concerns of insufficient stringency:

- Sam Harris on behalf of Benjamin Cook
- Carrie Harris

One commenter expressed concerns of excessive stringency:

- Anchorage Water and Wastewater Utility

### **5.4. Response**

The Department finds that the data requirements proposed in this project are consistent with data requirements applied to determining the condition of Alaska's surface waters for purposes related to Alaska's water quality standards, including the Integrated Report, historic and recent use attainability analyses, and for other site-specific criteria development projects. Collection of data over at least two years ensures that a single unusual season does not misrepresent the site's typical conditions. Eighty percent data completeness (20 samples completed out of 24 months) is a widely accepted threshold for this quality assurance measure.

Responses to specific concerns in this category:

1. The Department agrees that any sampling for the application of the Copper PBA should defer to approved EPA methods for storage, hold time, and analysis procedures. This change has been incorporated into the final document.
2. Collecting data for the biotic ligand model may require more frequent analysis of certain parameters than compliance monitoring requirements. Compliance monitoring requirements are designed with known water quality criteria for the receiving water. The biotic ligand model predicts IWQC in the receiving water based upon the ambient and effluent water chemistry; all inputs must be collected at every sampling event to generate IWQC for each sampling event. However, the Copper PBA should not require that effluent monitoring of parameters which are not inputs for the biotic ligand model be

- collected more frequently than permits require. Language has been revised to ensure that this intent is clear.
3. The Department requires downstream sampling as the downstream location exhibits the actual exposure conditions that aquatic life in the receiving water experience. Downstream sampling is the “ground truth” of waterbody conditions for which the dynamic copper criterion protective of aquatic life must be identified. Monitoring conducted for compliance determines whether a known water quality criterion is being exceeded; the Copper PBA has a more complex goal of determining what the water quality criterion protective of aquatic life for copper in a specific waterbody is. As a result, downstream monitoring is more critical for the implementation of the Copper PBA than for compliance monitoring. Downstream monitoring requirements remain unchanged.
  4. The Department prefers that downstream samples be collected at every event. If downstream samples cannot be collected, conservative dilution ensures that the resulting criterion is protective.
  5. The Copper PBA public notice draft requires hourly samples to quantify diurnal variation of those parameters which may experience diurnal variation. The specifics are left for the sampling plan to determine based on knowledge of the specific site and facility in question. Language has been clarified to ensure that this intent is clear.
  6. The prohibition on sampling during or immediately following a “rainfall event” that raises the receiving water flow 5% or more above its preceding 30-day average should not create an outsize impact on sampling availability in areas which experience frequent rain. For example, if a climatic region consistently experiences precipitation, the preceding 30-day average flow should reflect the level of precipitation that typically occurs. However, it’s possible that a 5% fluctuation from that average is typical for some streams, and that these variations may not always be driven by rainfall. DEC has revised the section at 5.3.3 regarding hydrologic representation to redefine conditions during which sample collection is prohibited to specifically target 24-hour precipitation totals exceeding those expected to recur every five years, based on NOAA data.

## **6. Comments Requesting Clarification**

### **6.1. Comment Summary**

Commenters requested clarification of several points:

7. Regarding whether the PBA intends to develop site-specific water quality criteria or to develop water-quality based effluent limits
8. Regarding whether the PBA is intended to apply only to copper
9. Regarding why a final data report should include TSS or any parameter not used as an input for the BLM
10. Regarding EPA's oversight of individual criteria developed via the Copper PBA
11. Regarding the minimum number of samples that the PBA requires
12. Regarding whether site-specific criteria would apply to implementations other than the APDES program, for example, water quality assessment

### **6.2. Commenters**

- EPA
- SEACC
- AWWU

### **6.3. Response**

The Department has revised language in several locations to clarify that:

1. The Copper PBA will be implemented for the development of site-specific criteria for the protection of aquatic life for copper, which in turn are intended to be implemented in water quality based effluent limits in discharge permits
2. The Copper PBA applies only to the development of copper criteria
3. Inclusion of other parameters monitored during the sampling program in a final data report may provide context and insight into anomalies in the data
4. EPA oversees both the APDES program and Alaska's Water Quality Standards. If EPA approves the inclusion of the Copper PBA in Alaska's Water Quality Standards, EPA will not need to review implementation of the Copper PBA as a Water Quality Standards action. However, in

- reviewing the application of these criteria to APDES permits, EPA will maintain oversight of the outcomes.
5. The PBA requires monthly sampling for twenty-four months, and a minimum of 80% data completeness, to result in a minimum 20 complete and valid samples collected across that time period. The Department recommends planning and completing twenty-four monthly sampling events.
  6. For sites where the PBA has been applied, the only applicable water quality criterion for the protection of aquatic life for copper is the criterion developed by the PBA. This includes all implementations of water quality standards, including water quality assessment.

## **Appendix A: Comment Letters**



## REGION 10

SEATTLE, WA 98101

October 24, 2025

Ms. Rachel Newell  
Division of Water  
Alaska Department of Environmental Conservation  
555 Cordova Street  
Anchorage, Alaska 99501-2617

Dear Ms. Newell:

Thank you for the opportunity to provide comments on the Alaska Department of Environmental Conservation's amendments to water quality standards at 18 AAC 70, proposed on August 15, 2025 at <https://aws.state.ak.us/OnlinePublicNotices/Notices/View.aspx?id=220489>, to adopt an alternative method for developing aquatic life criteria for copper. The U.S. Environmental Protection Agency commends DEC's efforts in revising Alaska's WQS and appreciates the opportunity to coordinate with DEC throughout the state's rulemaking process. The EPA requests clarification from DEC on the below aspects of the package.

1. Please clarify the purpose of the performance-based approach.

DEC is proposing to adopt the EPA's current Clean Water Act section 304(a) aquatic life criteria recommendation for copper, the copper biotic ligand model, for use as an alternative approach for developing site-specific copper criteria, implemented by the process outlined in *Implementation of the Biotic Ligand Model for Derivation of Freshwater Aquatic Life Criteria for Copper on a Site-Specific Basis in State Water Quality Standards* (2025). The state's Technical Support Document states:

DEC has developed a performance-based approach (PBA) titled *Implementation of the Biotic Ligand Model for Derivation of Freshwater Aquatic Life Criteria for Metals on a Site-specific Basis in State Water Quality Standards* (2025). The PBA will be used by permittees seeking to develop site-specific criteria to be used in the calculation of permit-specific effluent limits and meeting the explicit requirements of the PBA. The PBA will serve as the foundation for developing water quality-based effluent limits, subject to APDES policies and procedures (page 4).

Based on the above statement and conversations with DEC staff, the EPA's understanding is that DEC intends to adopt this implementation document by reference as a PBA<sup>1</sup> for developing site specific

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<sup>1</sup> A performance-based approach in the WQS context is described in the "Alaska Rule" at 65 FR 24648 (April 27, 2000). <https://www.federalregister.gov/d/00-8536/p-88>

copper criteria which will be implemented in wastewater discharge permits, as appropriate. Therefore, the EPA will treat the PBA as a WQS revision subject to CWA review and action.

However, the PBA also seems to indicate that it is a procedure for developing water quality-based effluent limits for wastewater discharge permits, not site-specific water quality criteria. To avoid future confusion, the EPA suggests that DEC clarify this distinction in the Executive Summary of the PBA.

2. Please clarify that copper is the only parameter subject to this PBA and WQS change.

The new language in endnote 20 of the *Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances* proposes to adopt the EPA's CWA section 304(a) criteria recommendation for copper (EPA-822-R-07-001, February 2007) by reference. This document provides guidance to states and tribes for establishing WQS to protect aquatic life from copper exposure. However, the state's Technical Support Document indicates that the approach will also be used for zinc. For example, page 1 of the Technical Support Document states:

The Alaska Department of Environmental Conservation (DEC) is proposing to adopt use of an alternative means of deriving water quality criteria entitled the *biotic ligand model* (BLM), as described in *Aquatic Life Ambient Freshwater Quality Criteria- Copper* (EPA-822-R-07-001, February 2007), for the development of water quality-based effluent limits for copper and zinc (page 1).

The EPA's understanding is that the state is proposing an alternative method for developing copper criteria on a site-specific basis and the proposal is not applicable to other metals. Since EPA-822-R-007-001 and the state's PBA outlined in *Implementation of the Biotic Ligand Model for Derivation of Freshwater Aquatic Life Criteria for Copper on a Site-Specific Basis in State Water Quality Standards* are only applicable to copper, please clarify or remove the reference to zinc in the state's Technical Support Document. If the state intends to adopt a PBA for zinc in the future, the EPA is available to provide review and technical support for that effort.

3. Please clarify which criteria would be applicable instream for CWA implementation programs, other than APDES permits, where BLM-based criteria have been developed by DEC.

The EPA appreciates that DEC included language in the PBA describing the scope and applicability of the approach. The state's public notice announcement explains that the state's PBA will be used to calculate site-specific copper criteria for the derivation of wastewater discharge permit limits for authorized permittees regulated under the APDES program. Further, the PBA states that Alaska's statewide, hardness-based copper criteria will apply to waters outside of the state-defined site boundaries (i.e., end-of-pipe, zone of instantaneous mixing, or edge of a regulatory mixing zone) (page 9). However, it is not clear what criteria would be applicable for the purposes of other CWA implementation programs (e.g., water quality assessment, CWA section 303(d)) within a site's boundaries. To avoid the perception that there are competing criteria applicable in the receiving water of a site (e.g., PBA derived criteria, instantaneous BLM water quality criteria, or statewide hardness-

based criteria), please clarify the criteria that would be applicable instream where BLM-based criteria have been developed by DEC using the PBA.

4. Please consider additional steps to ensure the locations where PBA-derived site-specific criteria apply are publicly available and readily accessible.

The EPA appreciates that the PBA specifies how permits/permit factsheets will contain information relevant to the derivation of any PBA-derived criteria: “discrete locations where BLM-derived criteria have been adopted via the PBA will be published by DEC in the respective draft permit fact sheet together with the inputs used to derive the criteria and subject to public comment. Final permit limits for Cu will reflect the draft fact sheet and associated information” (page 2). For increased transparency the EPA suggests that DEC considers also posting the resulting criteria, locations where the criteria apply, and associated permits on a publicly available website or database. This recommendation is reflected in the preamble of the 2000 Alaska Rule in describing the concept of performance-based approaches:

The State or Tribe would need to maintain a publically available, comprehensive list of all site-by-site decisions made using the procedures; however, such decisions would not, as a Federal matter, have to be codified in State or Tribal regulation. (65 FR 24648).

The EPA looks forward to continued coordination with DEC on this package and future revisions to Alaska’s WQS. If you have any questions regarding this letter, please contact Rachael Renkens, Alaska Water Quality Standards Coordinator, at (206) 553-1058 or renkens.rachael@epa.gov.

Sincerely,

Hanh Shaw, Manager  
Standards, Assessment and Watershed  
Management Branch  
Water Division



SOUTHEAST ALASKA CONSERVATION COUNCIL (SEACC)

October 24, 2025

To: Rachel Newell, EPS IV/WQS Coordinator

Alaska Department of Environmental Conservation, Division of Water

**Re: Amendments to 18 AAC 70 to adopt a performance-based approach (PBA) for site-specific copper criteria using the Biotic Ligand Model (BLM)**

### Summary Position

The Southeast Alaska Conservation Council (SEACC) appreciates the opportunity to comment on the Alaska Department of Environmental Conservation's (DEC) proposal to amend 18 AAC 70.020(b) and readopt 18 AAC 70.235 to allow development of freshwater site-specific criteria (SSC) for copper using a performance-based approach (PBA) employing the Biotic Ligand Model (BLM). The proposal would adopt, by reference, an implementation document in the Alaska Water Quality Criteria Manual ("Toxics Manual," note 20) and enable site-specific criteria to be set in permits using the PBA.<sup>1</sup>

In general, the regulations do not need to be updated. There are, however, a few areas that could be strengthened to ensure Alaska's water quality standards continue to protect aquatic life and subsistence resources. SEACC supports DEC's goal of improving technical precision in copper toxicity assessment, provided that any implementation fully maintains transparency, public involvement, and federal consistency under the Clean Water Act.

### Key Considerations

**1. Maintain Existing Statewide Criteria.**

DEC has stated that this proposal does not alter statewide copper criteria. SEACC agrees that maintaining existing criteria as the default is appropriate. Any use of site-specific criteria should occur only where robust, transparent data demonstrate a need for refinement and show that aquatic life protection is fully maintained.<sup>2</sup>

**2. Clarify EPA Oversight.**

The Technical Support Document notes that site-specific applications of BLM-derived criteria require EPA review and approval under Clean Water Act (CWA) §303(c). SEACC encourages DEC to clearly state this requirement in the final rule to

<sup>1</sup> Alaska Department of Environmental Conservation (DEC), *Public Notice Draft Amendments to 18 AAC 70 – Adoption of PBA for Copper 1* (Aug. 15, 2025), <https://dec.alaska.gov/commish/public-notices/>.

<sup>2</sup> DEC, *FAQ – Copper PBA 2* (Aug. 19, 2025), <https://dec.alaska.gov/water/water-quality/standards/>.



avoid confusion about when EPA approval is necessary.<sup>3</sup>

**3. Strengthen Data and Transparency Requirements.**

The Implementation Guidance appropriately requires 20 monthly samples over two years, covering seasonal and hydrologic variation. SEACC recommends strengthening this further by requiring public disclosure of all input data, model results, and quality assurance documentation in an accessible, centralized database.<sup>4</sup>

**4. Ensure Full Public Participation.**

If site-specific criteria are developed under the PBA, DEC should provide extended comment periods and clear opportunities for public and Tribal engagement. Publishing plain-language summaries of BLM inputs and model outcomes would also help increase accessibility and trust.<sup>5</sup>

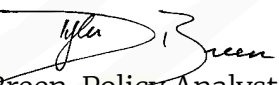
**5. Program Capacity and Implementation.**

While the Additional Regulation Notice identifies no fiscal impact, SEACC encourages DEC to ensure adequate staff capacity for technical review and oversight of BLM applications to maintain statewide consistency.<sup>6</sup>

## Closing

In summary, SEACC finds that Alaska's current regulations remain generally sufficient and do not require immediate revision. However, strengthening transparency, oversight, and data accessibility will be necessary to monitor any potential implementation of the Biotic Ligand Model and maintain strong environmental and public protections. We encourage DEC to consider these comments to improve clarity and consistency while preserving the strength of existing safeguards.

Respectfully submitted,

  
Tyler Breen, Policy Analyst  
Southeast Alaska Conservation Council

<sup>3</sup> DEC, *Technical Support Document: Water Quality Standards – Adoption of Biotic Ligand Model for Copper 2* (Mar. 4, 2025), <https://dec.alaska.gov/water/water-quality/standards/>.

<sup>4</sup> DEC, *Implementation of the Biotic Ligand Model for Derivation of Freshwater Aquatic Life Criteria for Copper on a Site-Specific Basis 10–13* (Aug. 15, 2025), <https://dec.alaska.gov/water/water-quality/standards/>.

<sup>5</sup> Id. at 2.

<sup>6</sup> DEC, *Additional Regulation Notice Information (AS 44.62.190(d)) 2* (June 2, 2025), <https://dec.alaska.gov/commish/public-notices/>.



# Anchorage Water & Wastewater Utility

## General Manager's Office



October 24, 2025

Rachel Newell  
DEC Division of Water  
555 Cordova Street  
Anchorage, AK 99501-2617  
Transmitted via email: [Rachel.newell@alaska.gov](mailto:Rachel.newell@alaska.gov)

Re: Comments to Amendments to 18 AAC 70 (Water Quality Standards) to Adopt a Performance-Based Approach for the Development of Site-Specific Criteria Using the Biotic Ligand Model for Copper

Dear Ms. Newell,

Anchorage Water & Wastewater Utility (AWWU) of the Municipality of Anchorage supports the Alaska Department of Environmental Conservation's (DEC) Performance-Based Approach (PBA) for implementing the Biotic Ligand Model (BLM) in developing site-specific freshwater criteria for copper (Cu).

As a municipally owned utility, AWWU is committed to protecting Alaska's aquatic environments while ensuring responsible, efficient and sustainable operation of its wastewater systems. The BLM provides a science-based framework that considers key local water chemistry factors that influence copper bioavailability and toxicity. This allows criteria to be protective of aquatic life while accurately representing the conditions present in Alaska's diverse waterbodies.

AWWU views DEC's PBA for the BLM as a practical advancement toward more predictable, transparent, and scientifically defensible water quality standards. The approach promotes criteria that align with real water chemistry, provides clear guidance for data collection and model application, and supports collaboration among utilities, regulators, and stakeholders to maintain strong water quality protection while improving regulatory clarity and efficiency.

To further support successful implementation, AWWU offers the following detailed comments on the document entitled *Implementation of the Biotic Ligand Model of Freshwater Aquatic Life Criteria for Copper on a Site-Specific Basis in State Water Quality Standards*.

### Section 5.2 General Chemistry Data Requirements

- This section does not include discussion that the laboratory analyzing samples must have a Method Detection Limit (MDL) low enough to quantify copper concentrations in samples. Not all laboratories have sufficiently low MDLs to detect copper levels in Alaskan receiving waterbodies, as discussed during the approval process of the Quality Assurance Project Plan (QAPP) for the Girdwood Wastewater Treatment Facility (GWWTF) study.

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Anchorage Water & Wastewater Utility  Clearly

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- The section also does not discuss the use of EPA Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels. This was discussed at length during QAPP approval for the GWWTF due to low copper concentrations in the receiving waterbody.

### Section 5.3 Representativeness of Water Quality Data

- The section discusses how samples should be stored at 0 to 4°C in the dark with no air space in the sample container. This is not the standard sampling protocol for all parameters that are sampled for the BLM. Instead, it should state that the parameters will be collected, preserved, and stored according to the method that is being used. For example, copper was sampled using method 1669 has a 125 mL HDPE container preserved with nitric acid and temperature was  $4\pm 2^{\circ}\text{C}$ . There is no discussion in the method about air space or being collected in a dark amber bottle.
- This section also states that sampling of effluent should capture all effluent parameters that are required to be reported in APDES/State Permit Discharge Monitoring Reports to provide information on the representativeness of the sample(s). Not all parameters as part of an APDES permit or DMR are required to be tested on the same time frame. There are some parameters that are collected on a weekly, monthly, and in some cases yearly basis.

To require this level of sampling to prove representativeness is burdensome and costly and does not necessarily prove representativeness. Rather the collection of the effluent during 24 sampling events over the course of a period of two years should show how the effluent changes over seasons and flows.

#### Section 5.3.1 Spatial Representation

- This section states “To ensure projects capture the range of water quality present in the physical vicinity of the discharge, sample collection must occur at a minimum of three locations; upstream of the point of discharge yet close enough to be representative of water quality anticipated to occur absent the influence of effluent discharge, end-of-pipe, and downstream of the zone of rapid mixing and complete mixing is to occur as demonstrated through modelling software such as CORMIX and sampling data.”

During the GWWTF sampling program it was agreed upon in the QAPP that downstream sampling would only be conducted on a few sampling events to confirm the CORMIX model, not during every sampling event. Downstream sampling is necessary but could be changed to be representative of flow changes in the receiving waterbody due to seasonal changes or changes in flows at the WWTF.

- This section also states “DEC will also consider the results of a composite of upstream and effluent that corresponds to the dilution provided by the 7Q10 flow should it be determined that sample collection at the “downstream” location is compromised by geophysical and hydrodynamic conditions (that can impact access, safety of collection).” In some cases, the downstream sampling location may not be able to be accessed due to safety because of



extremely high flows. In this situation 7Q10 is not suitable to use for dilution as it will be overly conservative.

#### Section 5.3.2 Temporal Representation

- This section states that a minimum of 20 monthly samples be collected. However, in other sections it states 24 samples are to be collected. Is this a typo or will DEC accept 20 monthly samples?
- This section also states that “Monthly sample collection coupled with some hourly sampling to represent the most bioavailable times of the day will assist with identifying the temporal (e.g., diurnal and seasonal) representation of the Site.” Discharge permits have effluent monitoring requirements that do not take into account the time-of-day effluent is discharged into the receiving waterbody.

Rather metals effluent monitoring is typically required to be grab samples collected on a weekly or monthly basis. In some cases, composite samples are collected over a 24 hour period but not all 24 samples are analyzed separately. This is overly burdensome both in time and cost to request that samples be collected on an hour basis. Currently, many wastewater facilities are understaffed and budget strapped.

#### Section 5.3.3 Hydrologic Representation

- This section states “Sampling is not to occur during or immediately after rainfall events (i.e., 24 hours) to ensure samples are not representative of episodic events, unless these are the hydrologic conditions specific to the permit conditions (i.e., stormwater permittee). A rainfall event is defined as one that significantly (e.g., 5% above the preceding 30-day average flow) increases receiving water stream flow.” For many places this is a representative flow and happens on a seasonal basis, so to not be allowed to sample when it is raining could cause some facilities to not be able to complete the sampling requirement of 24 samples in two years.

This removes an important data point that does occur on a regular basis, especially for facilities located in a temperate rainforest. This could also remove a data point for when wastewater treatment facilities could see inflow and infiltration impacts to their facilities due to large storm events. This is a real-world condition that these facilities operate in and it should be taken into account.

#### Section 6.0 General Treatment of Missing Parameters

- Item 3, (“Cu”) should specify dissolved copper.

#### Section 8.0 Final Reporting Requirements

- Item 3, TSS is not a listed item throughout the document except here. It is not a required parameter to be tested and is not understood why it shows up in this section.
- Item 7, The Water Quality Exchange template was not included in the guide and it would be good to include an example so that it can be set up early in sampling program.



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### Section 10.0 Implementation of BLM Criteria in APDES/State Permitting Process

- We request that the statement “DEC will re-evaluate WQBELs based on site-specific BLM results at least every 5 years” should also include “or with permit reissuance, whichever occurs sooner.”

Overall there is concern that the study conducted at GWWTF under a DEC approved QAPP did not include some of the forementioned requirements and when approval is sought once this rulemaking is complete, that AWWU will not have met the requirements of this guide and will be asked to complete an additional two years of sampling which has already been financially burdensome to AWWU.

AWWU appreciates the opportunity to comment on the proposed amendments to adopt a Performance-Based Approach for the Biotic Ligand Model for Copper. AWWU also thanks DEC for its commitment to advancing science-based approaches that improve both environmental protection and regulatory efficiency.

Sincerely,

Signed by:

DAVID PERSINGER

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David A. Persinger, P.E.

General Manager

Anchorage Water & Wastewater Utility



**We have received a comment for Amendments to 18 AAC 70 (Water Quality Standards) to Adopt a Performance-Based Approach for the Development of Site-Specific Criteria Using the Biotic Ligand Model for Copper**

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**From** ADEC Public Notice Comment Submission <noreply@formresponse.com>

**Date** Wed 10/15/2025 12:03 PM

**To** Newell, Rachel L (DEC) <rachel.newell@alaska.gov>

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OPN ID	220489
Umbraco Node ID	41299
Open Date	08-15-2025
Close Date	10-24-2025
DEC Division	Water
Title of Notice	Amendments to 18 AAC 70 (Water Quality Standards) to Adopt a Performance-Based Approach for the Development of Site-Specific Criteria Using the Biotic Ligand Model for Copper
Today's Date	10-15-2025
Contact	rachel.newell@alaska.gov
Display Name	Carrie Harris
Submitted By	Individual

Name Carrie Harris

Address P.O. Box 385, Anchor Point, Alaska

ZIP Code 99556

Email myalaska9.3@gmail.com

Your Comment

I oppose adoption of discretionary, performance-based site-specific copper criteria under 18 AAC 70 because the proposal hands unelected agency staff and permit applicants undue power to weaken protections for subsistence, domestic, livestock, irrigation, and community water supplies and to shift the costs and risks of state policy onto private landowners and communities. Natural background copper must be treated as a protective baseline, not as a justification to raise numeric limits that increase actual exposure at intake points.

Required enforceable protections before any site-specific criterion may be approved

- State-funded independent review and monitoring — The State shall pay for and oversee a minimum five-year independent review that includes 24 months of pre-approval seasonal baseline monitoring and at least 36 months of post-approval monitoring at intake and receptor points. All sampling must be conducted by independent contractors and analyzed by independent laboratories selected through a transparent procurement process paid by the State. Applicants must not control baseline monitoring or its primary design.

Bright-line no-greater-exposure rule — No site-specific copper criterion may be approved if it would allow greater actual copper concentrations at any municipal, community, or homestead intake than the verified baseline protective level. Approvals that would reduce the ability to use property to its lawful highest and best purpose are prohibited unless just compensation is provided.

Compensation for regulatory diminution and takings If application of a site-specific criterion, or any regulatory action implementing it, permanently or effectively permanently diminishes the lawful highest and best use of private or State property, the State must provide just compensation equal to fair market value for the loss of use or diminution consistent with the Takings Clause and controlling Supreme Court precedent.

Equal protection for State property uses Protections for highest and best use must apply equally to private and State lands; where State regulatory action prevents the State from using its lands for lawful public purposes, including responsible mineral development such as copper mining, the State must follow the same independent review, notice, and compensation rules.

Watershed cumulative assessment and hydrogeologic attribution — DEC must require watershed-scale cumulative impact assessments before approving any increase in allowable copper loads and must require independent hydrogeologic connectivity studies and attribution protocols that demonstrate whether and how site activities affect receptors.

- Transparency, public notice, and independent review panel — DEC must publish all raw monitoring data, model inputs, and model runs in the public docket at least 120 days before any proposed approval and provide a minimum 60-day public

comment period. An independent technical review panel must be convened with equal appointments by DEC, affected Tribes/boroughs, and public interest representatives.

- Adaptive triggers, automatic rollback, and enforcement — Define binding numeric and biological triggers that automatically suspend permits and revert site-specific criteria to statewide numeric criteria if monitoring shows an attributable exceedance or measurable biological harm; require immediate remedial actions and enforceable timelines.

- Weather-aware design to avoid precipitation bias — Monitoring must use flow-normalized loads, paired reference watersheds, event-triggered sampling, continuous discharge/turbidity sensors, and statistical methods that account for wet/dry year variability so that single storm years do not produce misleading conclusions.

- Citizen standing and cost recovery — Preserve and expand citizen standing for expedited administrative reconsideration and judicial review; when citizen petitions reveal material agency error or misrepresentation, the State shall pay for independent confirmatory testing and reimburse petitioners' reasonable testing costs.

- Pre-approval statistical power and monitoring design — Require a pre-approval statistical power analysis to set sampling frequency and sample sizes capable of detecting realistic effect sizes given background variability; monitoring plans must include biological endpoints such as benthic invertebrate surveys and fish tissue sampling.

Short summary statement to submit

I oppose adoption of site-specific copper criteria under 18 AAC 70 unless DEC incorporates mandatory, state-funded five-year independent review and monitoring, a bright-line prohibition on increasing actual intake exposure, watershed cumulative accounting, hydrogeologic attribution, equal protection and compensation for loss of highest and best use for private and State property, full public transparency and independent technical review, automatic rollback and enforcement triggers, weather-aware monitoring design, and expanded citizen standing with cost recovery. If the State will alter baseline protections that reduce property value or lawful use, the State must pay for the science, validation, and any lawful compensation required by the Constitution. Do not adopt these amendments without these enforceable safeguards.

In short this is something that needs to be left up to our legislatures to decide not bureaucrats!

Respectfully submitted,  
Carrie Harris  
Anchor Point, Alaska

I understand the above disclaimer.

Yes, I understand

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## Public comment on Amendments to 18 AAC 70 (Water Quality Standards) to Adopt a Performance-Based Approach for the Development of Site-Specific Criteria

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From Sam HARRIS <saminanchor@gmail.com>

Date Wed 10/15/2025 12:12 PM

To Newell, Rachel L (DEC) <rachel.newell@alaska.gov>

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**CAUTION:** This email originated from outside the State of Alaska mail system. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Public comment for 18 AAC 70 Water Quality Standards — site-specific copper criteria (submitted on behalf of my son)

I oppose the proposed adoption of discretionary, performance-based site-specific copper criteria under 18 AAC 70 in the strongest possible terms. This rule as written hands agencies and permit applicants unchecked power to weaken protections for subsistence, domestic, livestock, irrigation, and community water supplies. The answer is no.

Key problem areas (brief, direct)

Open-ended delegation — The rule lets DEC and applicants rewrite protections through modeling without bright-line limits. No.

Background copper loophole — Treating natural background as justification to raise numeric limits normalizes contamination. No.

Applicant-funded science — Allowing applicants to control baseline monitoring invites manipulation of inputs and results. No.

Insufficient monitoring duration — Short, event-biased monitoring cannot distinguish long-term trends from weather variability. No.

No watershed cumulative accounting — Approving site changes in isolation ignores aggregate impacts from multiple sources. No.

Weak public process and transparency — Lack of mandatory public notice, raw data publication, and independent review denies meaningful oversight. No.

No automatic rollback or enforceable triggers

Without binding rollback, modeled assumptions become permanent policy even if they cause harm. No.

Takings and compensation risk ignored — The rule fails to require compensation when regulatory actions destroy highest and best use of private or State lands. No.

Inadequate citizen remedies — No clear standing, no cost recovery, no expedited review for citizens who uncover agency error. No.

Do not adopt these amendments. Though this is something that needs to be left to the legislature, anything and everything done needs to have an economic impact statement made with it. Like it or not some things we need are going to cause pollution like the airplane you fly around in for vacation.

Benjamin Cook  
Anchor Point