



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10**

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OFFICE OF
WATER AND WATERSHEDS

July 10, 2017

Jason Pappani
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Boise, Idaho 83706

RE: EPA's Comments on Idaho's Draft Implementation Guidance for the Idaho Copper Criteria for Aquatic Life Using the Biotic Ligand Model and Negotiated Rule Draft #3, Docket No. 58-0102-1502

Dear Jason:

The EPA appreciates the opportunity to provide comments to the Idaho Department of Environmental Quality (DEQ) on the June 2017 version of Idaho's draft implementation guidance for deriving copper criteria values using the biotic ligand model (BLM) and draft #3 of the rule language. In addition, the information presented at the June 6, 2017 negotiated rulemaking meeting was helpful in understanding DEQ's approach to establishing criteria values when BLM input data are not available or adequate to characterize critical conditions. The EPA continues to be supportive of DEQ's work on developing implementation guidance because appropriate specifications about how the BLM will be used site-specifically are important when using a statewide approach to adopting BLM derived copper criteria as DEQ proposes. As stated in EPA's May 18, 2017 comment letter, given our more recent experience reviewing state adoption of the BLM, the EPA recommends either of the following two options from states who want to update their copper criteria:

- Use of the BLM at specific sites to determine site-specific criteria (SSC) that are submitted to EPA for 303(c) action. The state of Colorado has adopted this approach.
- Use of the BLM as a performance-based approach where the EPA approves the approach but not the resulting SSC, as long as there are appropriate specifications around how it will be used site-specifically. The state of Oregon has adopted such an approach.

As stated in the EPA's previous comment letters to IDEQ on the Cu BLM implementation guidance, criteria derivation and implementation methods are critical for model-derived criteria because models rely on input parameters that can vary in concentration or level over time and spatially throughout a site. Criteria derivation and implementation methods should address key considerations for model inputs and outputs, such as site selection and characterization and how the most bioavailable conditions will be determined (including analyzing model outputs, identifying the estimated default input parameters) for Idaho waters. In addition, the methods should identify when default input values and/or criteria values are to be used in lieu of sufficient ambient data at a particular site, provide recommendations for sampling frequency and locations, and describe the methodology for data screening, data processing, and model output

interpretation. The EPA views criteria derivation and implementation methods as important for applying the copper criteria in a consistent, repeatable, and protective manner. The methods must provide sufficient confidence that the criteria are protective of the aquatic life uses in Idaho.

The EPA is supportive of DEQ referencing a guidance document in rule. However, at the April 25, 2017 rulemaking meeting, DEQ stated it does not view the guidance as legally binding. The EPA believes it is important to include additional clarification and defined procedures in rule if the guidance is not legally binding. Additional clarity on this issue would be helpful because as described in the revised draft guidance, estimated or default acute and chronic criteria values as provided by DEQ in the guidance can be used when no data are available or when data do not adequately characterize conditions when copper is most bioavailable or when dissolved organic carbon (DOC) or pH data are absent. As DEQ states in the draft guidance, these criteria values can be utilized by the Idaho Pollutant Discharge Elimination System program when developing effluent limits for permits in those circumstances when data is insufficient or absent. Given how DEQ expects the estimated/default criteria values will be used in some circumstances, it seems reasonable to interpret these values as essentially legally binding criteria values.

As stated in the EPA's previous comment letter, default criteria values are especially important in Idaho given DEQ is proposing to adopt the copper BLM as its statewide criteria for copper. It is EPA's understanding that data for the ten input variables/parameters to calculate freshwater copper criteria (temperature, pH, dissolved organic carbon (DOC), calcium, magnesium, sodium, potassium, sulfate, chloride, and alkalinity) on a waterbody specific basis in Idaho may be currently limited and/or non-existent. Therefore, it is particularly important for DEQ to provide legally binding default criteria values to be used in lieu of sufficient data at a particular site. As stated in previous comment letters, EPA continues to recommend DEQ consider including the applicable defaults in rule or incorporate DEQ's implementation guidance by reference and indicate the guidance is legally binding.

During the June 6, 2017 negotiated rulemaking meeting, DEQ stated the approach to Idaho's adoption of the BLM is a performance-based approach. In order to develop protective criteria values using the BLM as a performance-based approach, where the EPA approves the approach but not the resulting SSC, the state should include appropriate specifications around how it will be used site-specifically. A performance-based approach consists of a legally binding methodology¹ that provides a transparent, predictable, repeatable, and scientifically defensible procedure for the protection of designated uses. This approach relies on the adoption of a systematic process (i.e., a criterion derivation methodology) rather than a specific outcome. The comprehensive and detailed implementation procedures (methodologies, minimum data requirements, and decision thresholds) of a performance-based approach establish a clear, predictable decision-making framework and have sufficient detail and suitable safeguards to ensure repeatable outcomes. Such procedures are either adopted into rule or provided in legally binding guidance that is referenced in rule. The EPA approval of such an approach also serves as

¹ EPA 2000. *EPA Review and Approval of State and Tribal Water Quality Standards*. Federal Register: April 27, 2000 (Volume 65, Number 82); Rules and Regulations; Page 24641-24653. Procedures to identify opportunities by which their adoption of criteria, as well as EPA's approval, can be streamlined.

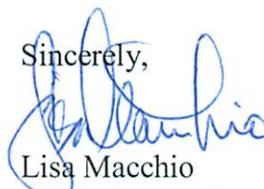
approval of the outcomes as well. DEQ's revised draft implementation guidance lacks the necessary specificity to be considered a performance-based approach. The EPA is available to provide further assistance to DEQ to ensure that Idaho's copper BLM implementation guidance meets the requirements to be considered a performance-based approach. The EPA's current and previous comments have recommended the kind of additional detail to include in guidance or in rule when adopting the copper BLM as statewide criteria. Because the state of Oregon recently adopted, and the EPA approved a performance-based approach for a statewide copper criteria using the BLM with sufficient detail, the EPA recommends DEQ include a similar level of detail in rule as Oregon has done and/or in binding guidance.

The EPA reviewed DEQ's revised draft implementation guidance and draft rule language and provides recommendations in the enclosure to this letter. In addition, the EPA notes that a number of comments provided to DEQ in the EPA's previous comment letters have not been addressed (January 12, 2016, August 10, 2016, January 31, 2017, and May 18, 2017). Therefore, the EPA is reiterating those in the enclosure.

The EPA is pleased to see DEQ's revised rule language now include the necessary specificity that input measurements must capture conditions when copper is most bioavailable. This additional clarity is essential given that input values to derive copper criteria must be scientifically sound and provide protection against toxicity to aquatic organisms in waters in Idaho consistent with the requirement that aquatic life criteria protect Idaho's designated uses.

The EPA appreciates DEQ's commitment to develop implementation guidance to accompany Idaho's rule updating the aquatic life copper criteria using the BLM. The EPA continues to be available to provide assistance to DEQ on further development of the rule language and implementation procedures. If you have any questions or would like to discuss these comments further, please contact me at (206) 553-1834 or Mark Jankowski at (206) 553-1476.

Sincerely,



Lisa Macchio
Water Quality Standards Coordinator

Enclosure

Enclosure

Comments on Idaho DEQ's Draft Implementation Guidance for the Idaho Copper Criteria for Aquatic Life (June 2017 version) and Draft Rule #3

1) Deriving Estimated Input Parameters

The draft implementation guidance seems to suggest that deriving estimated input parameters is not recommended. The discussion on pages 21-22 appears to rule out the possibility of estimating inputs and states the following:

“Ignoring such realities and taking low end inputs across the board can result in unrealistic and needlessly stringent criteria.”

The EPA recommends replacing ‘unrealistic and needlessly’ with ‘overly’. Default or estimated criteria are conservative by design, to assure an adequate level of protection throughout a given area, over time.

The EPA recommends DEQ use estimated input parameter data where measured data are unavailable. Therefore, it is important for DEQ to include specific methods to derive input parameters for the application of the BLM for the following parameters: calcium, magnesium, sodium, potassium, alkalinity, chloride, sulfate, and dissolved organic carbon. Estimation methods could be acceptable if more conservative factors or specific procedures are included (if input data is sourced from measurements from a nearest neighbor best estimate location that includes the most bioavailable conditions or ways to identify representative conditions that are comparable to the site). Inclusion of methods to address estimating input parameters would certainly provide clarity and be of value and assistance to the public, stakeholders, IPDES permittees, and permit writers. The EPA recommends DEQ include methods for deriving default inputs when available data are limited as well as present the option of using the EPA’s missing parameters document as a guide.

2) Deriving Estimated Default Criteria

Table 2 in section 6 as now revised is much improved as it includes the additional data DEQ collected in April 2017. As mentioned previously, the EPA recommends DEQ provide default criteria to be used when there is insufficient input data at a particular site. The EPA is still concerned that DEQ has not explained in the guidance how the approach to deriving estimated default criteria in Table 2 is representative of the conditions under which copper would be most bioavailable at each site. Given the limited data collection, i.e., one sample from each site, are the results presented in Table 2 useful as potential default criteria, are they scientifically defensible? In order to discern how protective the default criteria are of Idaho waters, a Type II error (*false negative*) analysis is recommended. This is an important analysis for DEQ to perform that would, in part, provide a justification for use of these criteria values and that the values are protective of Idaho’s aquatic life uses. In addition, the EPA recommends including all available

data of acceptable quality, including U.S. Geological Survey's National Water System Information System (NWIS) data.

3) Rule Language

The newly added provision at 58.01.02.210.03.c.v.(1)(b) is unclear. The following is the text of that provision:

c. Application of aquatic life metals criteria.

v. Copper Criteria for Aquatic Life.

(1) Aquatic life criteria for copper shall be derived using:

(a) Biotic Ligand Model (BLM) software that calculated criteria consistent with the "Aquatic Life Ambient Freshwater Quality Criteria – Copper": EPA-822-R-07-001 (February 2007), available at www.deq.idaho.gov/58-0102-1502; or

(b) An estimate that is based on a scientifically sound method and protective of the designated aquatic life use.

For Part c.v.(1)(a), the EPA recommends adding the phrase "calculated using adequate site-specific data to protect aquatic life under the range of conditions expected at the given site." The provision at c.v.(1)(b) effectively provides the option to develop copper criteria using an "estimate" that does not utilize the BLM. It's not clear that this is DEQ's intention. If the intention is to allow the use of "default" or "estimated" criteria that DEQ has calculated, such as the criteria in Table 2 from Section 6, the EPA recommends clarifying (b) to include the BLM-based estimates in rule, such as Table 2 from Section 6. Otherwise, the provision lacks specificity on the procedures or methods to be used to develop the estimate/criteria. If, alternatively, copper criteria are developed that do not utilize the BLM, those site-specific criteria would need to be developed consistent with all regulatory requirements for adoption of criteria, including a sound scientific rationale demonstrating that the criteria protect designated uses, as well as inclusion of a public process and subsequent submission to EPA for CWA review and action. The EPA strongly recommends 58.01.02.210.03.c.v.(1)(b) be deleted or DEQ provide clarity as follows:

"These estimates" are considered individual site-specific criteria and will be developed consistent with DEQ's procedures and requirements for site-specific criteria as provided for in 58.01.02.275 - Site Specific Surface Water Quality Criteria."

The newly added provision at 58.01.02.210.03.c.v.(3) specifies that input values (from measured data) shall capture the most bioavailable conditions for copper. The EPA is supportive of this additional provision as it provides a requirement in rule that numeric values derived from the BLM are protective during the most bioavailable time period. Although the draft implementation guidance makes mention of critical time period and bioavailability, there is a lack of detail with respect to the various options and approaches, therefore, adding this into rule provides that

necessary detail. The EPA continues to recommend DEQ include additional specificity in rule regarding copper bioavailability. As stated in EPA's May 18, 2017 comment letter, the EPA

recommends the following additional language be included in rule under 58.01.02.210.03.c.v.:

General Policy for the copper BLM

- 1) *Determination of where and when the most bioavailable conditions occur at a site is required.*
- 2) *Use of appropriate statistical methods to collect sufficiently representative data of the site is required in order to ensure that the most bioavailable period is captured by the dataset.*
- 3) *When reconciling multiple instantaneous water quality criteria (IWQC) derived using the BLM, procedures will be used to ensure that the waterbody is protected at all times, including sensitive conditions i.e., most bioavailable.*

EPA continues to recommend DEQ not include values for copper in the table of numeric toxic criteria because inserting example values in the table, even with an explanatory footnote, leads to confusion as to whether the values are the applicable criteria for all waters.

The revised rule at 210.03.c.v.(5) states the following:

c. *Application of aquatic life metals criteria.*

v. (5) *Implementation Guidance for the Idaho Copper Criteria for Aquatic Life. The "Implementation Guidance for the Idaho Copper Criteria for Aquatic Life" **describes in detail methods for implementing the aquatic life criteria for copper using the BLM. This guidance, or its updates, will provide assistance to the Department and the public for determining minimum data requirements for BLM inputs and how to estimate criteria when data are incomplete or unavailable.** The "Implementation Guidance for the Idaho Copper Criteria for Aquatic Life" is available at the Department of Environmental Quality, 1410 N. Hilton, Boise, Idaho 83706, and on the DEQ website at www.deq.idaho.gov.*

There are a number of important areas in which the draft guidance does not provide detailed implementation methods i.e., determining minimum data requirements, guidance on developing permit limits, and identifying impairments. The EPA reviewed DEQ's most recent draft IPDES and water body assessment guidance and did not find detailed procedures or methods with respect to developing permit limits or identifying impairments for copper using the BLM. Furthermore, in some instances the information in DEQ's current draft IPDES Effluent Limit Development Guidance (ELDG) is inconsistent with DEQ's draft Implementation Guidance for the Idaho Copper Criteria for Aquatic Life. For example, values in Table 37 section 3.7.9.2 of the ELDG on reasonable potential analysis are not consistent with the default/estimated criteria values in Table 2 of the WQS implementation guidance. Additionally, section 3.7.9.1.2 of the ELDG on estimating criteria when data are absent does not provide the same information on performing reasonable potential analysis as provided in section 6.1 of the WQS implementation

guidance. The EPA continues to recommend that DEQ's implementation guidance include detailed methods for its Clean Water Act programs, including identifying the default or estimated criteria values that DEQ intends permit and TMDL writers, and DEQ's listing program to use if sufficient data are lacking for a site, evaluating reasonable potential to exceed, development of water quality based effluent limits using the copper BLM criteria under NPDES permitting, and methods that will be used to identify impairments of copper for 303(d) listing, and TMDL development.

In Section 3 of the draft implementation guidance, "General Implementation for Aquatic Life Criteria," DEQ identifies an existing provision of the Idaho rules that states the following: "When a mixing zone is authorized, the BLM derived chronic copper criterion will apply at the boundary of the mixing zone (Section 210.03.a)." Because it is unlikely that limits on DOC will be in any permit, criteria calculated at the edge of the mixing zone could be less stringent than criteria calculated at a representative ambient location, and therefore may not protect downstream uses. Likewise, certain discharges could result in less stringent criteria calculated upstream of the discharge than at the edge of the mixing zone. Therefore, the guidance should be more specific regarding the calculation of criteria at a representative ambient location, taking into account the most bioavailable conditions at a site.

4) Previous and Specific Comments

Section 5.3: Spatial Representation. EPA recommends that DEQ provide more detail or decision criteria for determining what is a "representative" location; this would help EPA more fully understand DEQ's proposed procedures. For example, how will DEQ determine if a sampling location is representative of an assessment unit? Also, what is the spatial extent of an assessment unit? DEQ is required to assess all readily available data to determine attainment. If data is not being used, DEQ will need to provide a rationale as to why that sampling location is not representative and the data does not apply to the assessment unit. Therefore, DEQ should design their monitoring plan to focus on representative sampling locations to ensure the majority of collected data can be fully utilized for the assessment.

Section 5.2.3: "Monitoring to Identify Criteria for Use in Effluent Limit Development." Given this section is intended to address the IPDES program element, the EPA encourages DEQ to include more detail or reference the IPDES program guidance, which should include more detail.

The EPA reiterates our previous comment that to protect sensitive aquatic uses, when monitoring to determine criteria values, a location that is representative of the most bioavailable conditions (baseline) of the receiving water at a site should be used. The EPA recommends DEQ include clarification that monitoring must represent and characterize conditions when copper is most bioavailable. Further, DEQ should include a discussion that determination of where and when the most bioavailable conditions occur at a site is required. Whether the location is downstream or upstream of effluent is not as critical as monitoring a location that is known to represent the most bioavailable conditions at a site.

6.1 Estimating Conservative Criteria: The EPA continues to recommend that DEQ use all available high quality data, including NWIS, in deriving estimates/default criteria. Additionally, the estimates/default criteria should be included in the rule or at a minimum cited in the rule.

Page 27 refers to the procedures in the ELDG (DEQ 2017a). The EPA recommends DEQ provide the specific page number for those procedures. In addition, there is a reference to an analysis in DEQ 2017b. The EPA recommends DEQ also provide the specific page number for that analysis. The EPA recommends DEQ include methods for deriving default inputs when available data are limited as well as present the option of using the EPA's missing parameters document as a guide for those default inputs. This type of information should be included in both the ELDG and the Draft Implementation Guidance for the Idaho Copper Criteria for Aquatic Life.

In addition, on page 27, DEQ provides for "users" to propose alternative methods for estimating protective criteria and that the proposed estimates must be based on scientifically sound methods and demonstrated to be protective of aquatic life. Who are the "users" proposing alternate methods? Given there is no detail regarding the methodology that would be employed, it is not clear that the public, stakeholders, and EPA would have the opportunity to provide comments on the derivation process. The EPA recommends DEQ either remove this wording or provide clarity that an approach that deviates from what DEQ provides in rule or guidance would entail adoption as site-specific criteria. Furthermore, the process for such an approach would include all elements consistent with a site-specific criteria approach, which includes adoption into rule and submission to EPA for CWA review and action.

IPDES: The EPA strongly recommends that DEQ develop detailed methods associated with deriving copper criteria and that detail is best contained in rule or in DEQ's Draft Implementation Guidance for the Idaho Copper Criteria for Aquatic Life rather than in IPDES guidance. Water quality standards staff should be the experts at BLM criteria development and should provide technical assistance for its use in other programs. Furthermore, DEQ's IPDES program and permit writers should be provided with sufficient direction and detail from DEQ's water quality standards program as to derive the applicable copper criteria for a waterbody. In circumstances where criteria need to be determined on a waterbody specific basis, DEQ's water quality standards program should be able to provide detailed procedures/methodology for each approach and/or option that DEQ recommends as appropriate in the guidance.

The EPA recommends further coordination between the WQS and IPDES programs to develop sufficiently detailed guidance for evaluating both reasonable potential to exceed (RPTE) and development of water quality-based effluent limits (WQBELs) using the copper BLM criteria. Guidance should cover unique considerations or circumstances for identifying copper as a pollutant of concern, determining the applicable criteria (considering spatial and temporal variation), evaluating RPTE both with or without data needed to establish the applicable criteria and calculating WQBELs based on the applicable criteria. If copper is identified as a pollutant of concern then reasonable potential must be evaluated using the applicable criteria, with or without monitored input data. If RPTE is found, then the permit must include WQBELs. The guidance should identify how to address this uncertainty in permitting.

The EPA Region 10 WQS and NPDES programs are coordinating our review of DEQ's Draft Implementation Guidance for the Idaho Copper Criteria for Aquatic Life and DEQ's IPDES ELDG guidance, specifically with respect to the section on the copper BLM. The EPA believes it would be beneficial for the two programs (NPDES/WQS) at both DEQ and EPA to work collectively to address the various criteria issues that are likely to be challenging from a permitting perspective. The goal would be to develop additional detailed methods so that the IPDES program has the necessary tools to consistently develop protective effluent limits based on the copper BLM derived criteria. For example, EPA could provide assistance to DEQ in development of a template to be used by both the water quality standards and IPDES permitting staff that would contain a number of specific procedures. For example, methods on the approach or approaches to use when there is a lack of input data to use in the model, the kind of data and specific methods to use when deriving estimated input values, and more specific detail on representative monitoring.

303(d) Listings: Pages 4 and 18 reference Idaho's 2012 Integrated Report (IR) as the most recently approved list. The EPA approved Idaho's 2014 IR on June 5, 2017; therefore, the EPA recommends DEQ update this reference and the associated information from that report.

It is prudent to be cautious with impairment listings and guard against false positives (listed when it was not warranted), but it is also prudent to be cautious of not listing a water when it should be. Please describe how false negative (not listing a water when it is warranted) determinations will be minimized. Note that because the State can and should be able to derive estimated or default inputs, such as using those provided in EPA's Draft Missing Parameters Document, the EPA expects Idaho to be able to calculate copper criteria using the BLM for any waterbody from the time that the criteria are in effect. Therefore, there should be no case where a waterbody is listed under Category 3 (insufficient information) for a lack of input parameter data; Category 3 should only be used where a site lacks copper data to compare with the calculated criterion. Please provide more clarity on the listing procedures that DEQ will use vis-a-vis the availability of input data and defaults to be used when data are unavailable. These should include a listing methodology that details the order of operations for determining what parameter data are available, and when defaults or estimates will be used vs. when the model will be run. Please also describe how this information will be managed and tracked from listing cycle to listing cycle, and if there is a process by which a third party could provide new parameter data and request re-assessment using the model.