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OFFICE OF
WATER AND WATERSHEDS

June 6, 2017

Stephanie Jenkins
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, Idaho 83706

RE: EPA's Comments on Idaho's Preliminary Draft Negotiated Rule for Aquatic Life Criterion for Selenium, Docket No. 58-0102-1701

Dear Stephanie:

The EPA appreciates the opportunity to provide comments to the Idaho Department of Environmental Quality (DEQ) on the preliminary draft negotiated rule for updating Idaho's selenium aquatic life criterion. The EPA continues to support DEQ's work with respect to considering revisions to criteria for which the EPA has published new and/or revised Clean Water Act Section 304(a) recommended criteria.

From the information presented at the April 27, 2017 negotiated rulemaking meeting, the EPA understands DEQ is considering a site-specific recalculation-based approach for deriving selenium criteria for certain waters in Idaho where sturgeon are not a resident species. DEQ's presentation was helpful in providing a general understanding of DEQ's thinking regarding this proposed recalculation approach; however, there are still a number of important details that require additional consideration by DEQ.

The EPA acknowledges that development of site-specific fish tissue criterion elements using the species recalculation procedure may be an appropriate approach for deriving protective criteria in some circumstances. However, it is unclear whether the site-specific approach is appropriate in the case of Idaho waters. The species recalculation procedure is intended to allow site-specific criteria to differ from the national criteria recommendations (i.e., concentrations that are higher or lower than national recommendations) when there are demonstrated differences in sensitivity between the site's resident aquatic species and those that were used to derive the national criteria recommendations.

As with any criterion, a site-specific criterion must protect the most sensitive designated use and must be based on a sound scientific rationale. With regard to deletion of species (e.g., the sturgeon), DEQ will need to consider how to adequately demonstrate that the species is not resident to the proposed sites in order to justify why such a criterion would be appropriate and indicate that the criterion is protective of the designated use (e.g., aquatic life) in those waters. The EPA provides guidance regarding species that are "resident" or "occur at the site" in the EPA 2013 Revised Deletion Process for the Site Specific Recalculation Procedure for Aquatic

Life Criteria.¹ Species that are “resident” or “occur at the site” includes life stages and species that are usually present at the site; are present at the site only seasonally due to migration; are present at the site intermittently because they periodically return to or extend their ranges into the site; were present at the site in the past, or are not currently present at the site due to degraded conditions, but are expected to return to the site when conditions improve.

Additionally, DEQ will need to ensure that any criteria provide protection of recreationally and commercially important aquatic species. For example, species within the family Salmonidae may occur in locations where sturgeon do not; thus, DEQ should consider appropriate toxicity data (e.g., whole body *Oncorhynchus* Genus Mean Chronic Value (an EC₁₀) of 9.052 mg/kg dry weight) in light of any recalculation procedure, especially if toxicity values fall below the recalculated criteria.²

Lastly, as with any criterion, the EPA regulations at 40 CFR 131.10(b) provide that “[i]n designating uses of a waterbody and the appropriate criteria for those uses, the state shall take into consideration the water quality standards of downstream waters and ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters.” Especially in cases where downstream waters are lentic waterbody types (e.g., lakes, reservoirs, impoundments, some slow-moving rivers), or harbor more sensitive species, a selenium criterion more stringent than that required to protect in-stream uses may be necessary to ensure that water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters.

The EPA currently has insufficient detail and information to provide useful comments on DEQ’s proposed recalculation approach of deleting sturgeon. More specifically, the EPA does not have specific details regarding how DEQ derived the whole-body and muscle tissue criteria when sturgeon were absent, the scientific justification for how these values were translated to the water column criteria for sturgeon free waters, how DEQ will demonstrate sturgeon are not resident to the “site(s),” how DEQ will demonstrate what species assemblage is present at the “site(s)” and how the assemblage relates to the taxonomic representation in the criterion, and finally how DEQ will ensure that the site-specific criteria provide for the attainment and maintenance of water quality standards of downstream waters. It is also not clear if DEQ has made a final decision on whether the BAF or mechanistic modeling approach will be taken for the derivation of the water column element of the criterion in waters where sturgeon are absent. In either case, more detail is required for any chosen parameter value, which can vary greatly with site conditions. If DEQ is interested in moving forward on the proposed recalculation approach, it would be important for DEQ to consider these issues more carefully, develop a robust

¹ USEPA (U.S. Environmental Protection Agency). 2016. *Revised Deletion Process for the Site Specific Recalculation Procedure for Aquatic Life Criteria*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

² USEPA (U.S. Environmental Protection Agency). 2016. *Aquatic Life Ambient Water Quality Criterion for Selenium–Freshwater 2016*. EPA 822-R-16-006. U.S. Environmental Protection Agency, Office of Water, Washington, DC. (pages 142-144) <https://www.epa.gov/wqc/aquatic-life-criterion-selenium-documents>

scientifically sound justification, and provide the necessary detail so the public and the EPA can provide meaningful input to DEQ.

With respect to DEQ's proposed rule for a statewide selenium criterion, the EPA has reviewed DEQ's draft rule language as provided in Section 210.01, Idaho's table of toxic criteria and associated footnotes, and finds the language generally consistent with EPA's Aquatic Life Ambient Water Quality Criterion for Selenium – Freshwater 2016.³ The EPA's 2016 national recommended selenium criterion recommends one selenium criterion composed of four elements, recognizing that fish tissue elements supersede the water elements (except in special situations as described in the 2016 criterion) and that the egg-ovary tissue element supersedes all other tissue elements. DEQ's draft rule language includes all four elements, and expresses the four elements in a manner that explicitly affirms that the whole-body or muscle elements supersede the water column element, and the egg-ovary element supersedes any other element.

The EPA notes that DEQ has included the wording "instantaneous measurement" in footnotes 1 and 3 related to egg/ovary and fish whole-body or muscle tissue without additional explanatory language. The EPA recommends DEQ revise this language to be consistent with Table 4.1 of the EPA 2016 criterion recommendation. The EPA explained that fish tissue data provide instantaneous point measurements that reflect integrative accumulation of selenium over time and space in fish population(s) at a given site. DEQ's proposed language does not include this additional explanation and the EPA believes this additional text would provide important context for the term "instantaneous" specifically with respect to measurements in tissue.

Selenium water quality criterion elements based on fish tissue (egg-ovary, whole body, and/or muscle) sample data override the criterion elements based on water column selenium data due to the fact that fish tissue concentrations provide the most robust and direct information on potential selenium exposure and effects in fish. However, because selenium concentrations in fish tissue are a result of selenium bioaccumulation via dietary exposure, there are two specific circumstances where the fish tissue concentrations do not fully represent potential effects on fish and the aquatic ecosystem: 1) in "fishless" waters, and 2) in areas with new selenium inputs. Because of the inability to collect sufficient fish tissue to measure selenium concentrations in such waters, water column concentrations will best represent selenium levels required to protect aquatic communities and downstream waters in such areas.

The EPA supports DEQ's approach to the draft rule language as it is consistent with the EPA's suggested summary of the criteria at Table 4.1 of the EPA's 2016 national recommended selenium criterion regarding these two specific circumstances. However, the EPA recommends DEQ include additional detail (i.e., evidence for waters where sturgeon are not resident) and information regarding these situations as it will provide the public with a better understanding of DEQ's approach to the application of the water column criterion in these situations. The EPA recommends DEQ develop additional guidance which provides a full discussion and establishes a detailed procedure for the application of selenium criterion in fishless waters and in areas with

³ USEPA (U.S. Environmental Protection Agency). 2016. *Aquatic Life Ambient Water Quality Criterion for Selenium–Freshwater 2016*. EPA 822-R-16-006. U.S. Environmental Protection Agency, Office of Water, Washington, DC. <https://www.epa.gov/wqc/aquatic-life-criterion-selenium-documents>

new selenium inputs. Such guidance should include a discussion of what is meant by “new selenium inputs” and activities that are likely included so that these situations are better understood by the public as well as the regulated community. The EPA includes the following discussion of new inputs in the 2016 national recommended selenium criterion document:

*New inputs are defined as new activities resulting in selenium being released into a lentic or lotic waterbody. New inputs will likely result in increased selenium in the food web, likely resulting in increased bioaccumulation of selenium in fish over a period of time until the new or increased selenium release achieves a quasi-“steady state” balance within the food web. EPA estimates that concentrations of selenium fish tissue will not represent a “steady state” for several months in lotic systems, and longer time periods (e.g., two to three years) in lentic systems, depending upon the hydrodynamics of a given system such as the location of the selenium input related to the shape and internal circulation of the waterbody, particularly in reservoirs with multiple riverine inputs, hydraulic residence time, and the particular food web. Estimates of steady state under new or increased selenium input situations are expected to be site dependent, so local information should be used to better refine these estimates for a particular waterbody. Thus, EPA recommends that fish tissue concentration not override water column concentration in these situations until these periods of time have passed in lotic and lentic systems, respectively, or steady state conditions can be estimated.*⁴

In implementing the water quality criterion for selenium under the NPDES permits program, DEQ may need to establish additional procedures due to the unique components of the selenium criterion. Where states use the selenium water column concentration criterion element values only (as opposed to using both the water column and fish tissue elements) for conducting reasonable potential (RP) determinations and establishing water quality-based effluent limitations (WQBELS) per 40 CFR 122.44(d), existing implementation procedures used for other acute and chronic aquatic life protection criteria may be appropriate. However, if states also decide to use the selenium fish tissue criterion element values for NPDES permitting purposes, additional state WQS implementation procedures will be needed to determine the need for and development of WQBELS necessary to ensure that the fish tissue criterion element(s) are met. The EPA recommends the use of the water column element in developing WQBELS.

States and authorized tribes have flexibility in how they interpret a discrete fish sample to represent a population. Generally, fish collected to calculate average tissue concentrations for a site are collected in one sampling event, or over a short time interval due to logistical constraints and costs for obtaining samples. The EPA provides information on sampling of fish populations in the *Draft Technical Support for Fish Tissue Monitoring for Implementation of EPA’s 2016 Selenium Criterion*.⁵ Furthermore, the EPA provides information on how to use the four-part

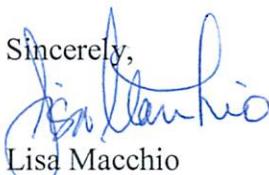
⁴ Ibid.

⁵ USEPA (U.S. Environmental Protection Agency). 2016. *Technical Support for Fish Tissue Monitoring for Implementation of EPA’s 2016 Selenium Criterion*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

criterion for the purposes of National Pollutant Discharge Elimination System (NPDES) permitting and waterbody assessment, listing, and total maximum daily load (TMDL) development in the following documents: *Draft Frequently Asked Questions (FAQs): Implementing WQS that Include Elements Similar or Identical to EPA's 2016 Selenium Criterion in Clean Water Act Section 402 NPDES Programs* and *Draft Frequently Asked Questions (FAQs): Implementing the 2016 Selenium Criterion in Clean Water Act Sections 303(d) and 305(b) Assessment, Listing, and Total Maximum Daily Load (TMDL) Programs*, respectively.^{6 7} The EPA recommends DEQ provide additional detail and specific procedures for application of the selenium criteria in Clean Water Act programs and that this be included in implementation guidance.

The EPA appreciates DEQ's thoughtful consideration to these issues as you move forward in adopting revised aquatic life criteria for selenium that are protective of aquatic life in Idaho's waters. 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

⁶ USEPA (U.S. Environmental Protection Agency). 2016. *Frequently Asked Questions (FAQs): Implementing WQS that Include Elements Similar or Identical to EPA's 2016 Selenium Criterion in Clean Water Act Section 402 NPDES Programs*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

⁷ USEPA (U.S. Environmental Protection Agency). 2016. *Frequently Asked Questions (FAQs): Implementing the 2016 Selenium Criterion in Clean Water Act Sections 303(d) and 305(b) Assessment, Listing, and Total Maximum Daily Load (TMDL) Programs*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.