

JANUARY 8, 2021

TO: Idaho Department of Environmental Quality

FROM: Brad Barnhart, Ph.D., Senior Research Scientist

SUBJECT: Human health water quality criteria rulemaking for arsenic

NCASI appreciates the opportunity to comment on the current rulemaking being conducted by the Idaho Department of Environmental Quality (IDEQ) for arsenic human health water quality criteria (HHWQC) to protect recreation and domestic water supply designated uses. We respectfully submit these comments following IDEQ's December 16, 2020 rulemaking meeting (IDEQ 2020a) on the Preliminary Draft Rule (Draft No. 1) (IDEQ 2020b).

NCASI is an independent, non-profit research institute that focuses on environmental topics of interest to the forest products industry. Members of NCASI represent more than 80% of the pulp and paper production in the United States. In its capacity as a research organization, NCASI has a long history of working to contribute to the science needed to address numerous environmental topics related to the forest products industry including effluent regulation, water quality management, and relationships between human and natural stressors on aquatic ecosystems. NCASI also has a long history of collaboration with state agencies and EPA on the use of sound science needed for the development and implementation of responsible environmental management practices.

Recommendation for Aggregating Information on IDEQ's Monitoring Program Data, Analyses, and Results

During the December 16, 2020 rulemaking meeting, it became apparent that some federal regulators and stakeholders are unfamiliar with the details of IDEQ's recent statewide monitoring initiatives as well as subsequent analyses conducted to support current criteria development. For example, IDEQ's recent monitoring consisted of speciated inorganic and total arsenic measurements that used probabilistic and targeted sampling methodologies to quantify arsenic levels over spatially and temporally variable extents. Numerous paired samples of water concentrations and fish tissue concentrations included multiple fish species and trophic levels. In addition, several exploratory data curation methods were implemented by IDEQ to construct numerous linear regression models – for example, by removing outliers, removing values less than the minimum reporting limit, and isolating measurements by species or trophic level – in order to explore the relationship (or lack thereof) between fish tissue concentrations and water concentrations. Ultimately, these data and analyses were used to inform the

decisions to propose HHWQC in the Preliminary Draft Rule (Draft No. 1) (IDEQ 2020b).

We commend IDEQ for posting all the relevant information outlined above on its website in various presentations and discussion papers. However, to make this information more easily accessible and abundantly clear, we recommend that IDEQ create a single comprehensive scientific support document that includes the details of the sampling programs, data, and analyses used to support the criteria proposed in the Preliminary Draft Rule (Draft No. 1). Having the information in a single location should allow stakeholders and federal regulators to better understand the criteria development process and how recent scientific monitoring data were used to inform criteria decisions.

Reiterated Feedback on Criteria Alternatives

Recreational Use (Fish Consumption Only)

Our previous comments noted that IDEQ's monitoring data showed no clear relationship between concentrations of inorganic arsenic in fish tissues and water column concentrations. These extensive data included 45 (non-duplicate water and fish composite) paired samples collected throughout the state using a probabilistic sampling design that represented various site conditions at different times of the year and also included multiple species and trophic levels of fish (IDEQ 2020c). The lack of a relationship between water and tissue concentrations indicates that the use of a bioaccumulation or bioconcentration factor in the derivation of a water quality concentration criterion based on fish tissue consumption is not scientifically justified. We therefore commend IDEQ for choosing an inorganic arsenic fish tissue criterion of 8 ug/kg that is directly informed by recent data and IDEQ's current understanding of arsenic bioaccumulation in Idaho's waters.

Domestic Water Supply Use (Water + Fish Consumption)

As noted in our previous comments, the HHWQC for water consumption calculated using the standard deterministic equation is 0.22 ug/L. This value falls well below the geometric mean of monthly samples collected from August 2019 – February 2020, suggesting that, for many locations, inorganic arsenic concentrations in water exceeds the calculated water criterion. Therefore, we again commend IDEQ for using data from their extensive monitoring program to inform criteria development. We reiterate that the narrative criteria proposed in the Preliminary Draft Rule (Draft No. 1) is both rational and scientifically defensible.

References

IDEQ. 2020a. Revision of Idaho's Human Health Criteria for Arsenic – DEQ PowerPoint Presentation. Docket No. 58-0102-1801. Presented December 16, 2020.

<https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14689>

IDEQ. 2020b. Preliminary Draft Rule (Draft No. 1). Docket No. 58-0102-1801.

<https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14688>

IDEQ. 2020c. 2019 Arsenic Accumulation in Fish Tissue: Preliminary Monitoring Results, DEQ. March 2020.

<https://www2.deq.idaho.gov/admin/LEIA/api/document/download/3437>