BEFORE THE BOARD OF ENVIRONMENTAL REVIEW
OF THE STATE OF MONTANA

In the matter of the amendment of ARM 17.30.602 and the adoption of NEW RULE I pertaining to selenium standards for Lake Koocanusa and the Kootenai River	NOTICE TO HOLD VIRTUAL PUBLIC HEARING ON PROPOSED AMENDMENT AND ADOPTION (WATER QUALITY)

TO: All Concerned Persons

1. On November 5, 2020, at 10:00 a.m., the Board of Environmental Review (board) will hold a virtual public hearing via Zoom, to consider the proposed amendment and adoption of the above-stated rules.

Due to the guidance issued by the Governor of the State of Montana on March 26, 2020, regarding the COVID-19 public health situation, the public hearing will be held virtually via the Zoom meeting platform and will be recorded. Persons wishing to attend the public hearing need to register in advance with Zoom. Registration with Zoom may be made at the following link: https://mt-gov.zoom.us/meeting/register/tJYudO6grjIrHN0MjMMCzC9gJR3is4ZkzV6d. After registering, you will receive a confirmation email containing information about joining the hearing. Please contact Sandy Scherer at the Department of Environmental Quality at (406) 444-2630 or sscherer@mt.gov should you encounter any difficulties.

2. The board will make reasonable accommodations for persons with disabilities who wish to participate in this rulemaking process or need an alternative accessible format of this notice. If you require an accommodation, contact Sandy Scherer no later than 5:00 p.m., October 29, 2020, to advise us of the nature of the accommodation that you need. Please contact Sandy Scherer at the Department of Environmental Quality, P.O. Box 200901, Helena, Montana 59620-0901; phone (406) 444-2630; fax (406) 444-4386; or e-mail sscherer@mt.gov.

3. The rule proposed to be amended provides as follows, stricken matter interlined, new matter underlined:

ARM 17.30.602 DEFINITIONS In this subchapter the following terms have the meanings indicated below and are supplemental to the definitions given in 75-5-103, MCA:

(1) through (31) remain the same.

(32) "Steady state" means, for the purposes of [NEW RULE I], conditions whereby there are no activities resulting in new, increasing, or changing selenium loads to the lake or river aquatic ecosystem, and selenium concentrations in fish living in the aquatic ecosystem have stabilized.

(32) through (41) remain the same, but are renumbered (33) through (42).

AUTH: 75-5-201, 75-5-301, MCA

IMP: 75-5-301, 75-5-313, MCA

REASON: Proposed NEW RULE I contains two classes of selenium standards: fish tissue standards, which limit the amount of selenium allowed to accumulate in different tissues, and water column standards, which are derived from bioaccumulation modeling and intended to limit selenium accumulation in fish tissue. Fish tissue standards provide the most direct and accurate assessment of selenium impacts on aquatic life; but if selenium loading to a waterbody is increasing, it can take time (months, years) for the effect to be detected in the fish. This situation—in which there is a delay between increased selenium loading and increased levels of selenium in fish tissue—is referred to as non-steady state. When selenium loadings to the aquatic system are stable and fish selenium concentrations have leveled off, this is referred to as steady state. When steady state is achieved, selenium loading in the water body is reflected in selenium concentrations in fish tissue. It is necessary to adopt the proposed definition of steady state to determine which selenium standard will apply to protect the aquatic life beneficial use. During steady state, the fish tissue standards take precedence over the water column standards. When non-steady state conditions prevail, the fish tissue standards do not take precedence over the water column standards and both standards apply (see NEW RULE I(2)). The proposed definition of steady state provides conditions under which the water body will be determined to be in steady state. If steady state is not achieved, the water body is deemed to be in non-steady state.

4. The rule proposed to be adopted provides as follows:

NEW RULE I SELENIUM STANDARDS FOR LAKE KOOCANUSA AND THE KOOTENAI RIVER (1) For Lake Koocanusa and the Kootenai River mainstem, the standards specified in (6) and (7) supersede the otherwise applicable water quality standards found elsewhere in state law.

(2) Numeric selenium standards for Lake Koocanusa and the Kootenai River mainstem from the US-Canada international boundary to the Montana-Idaho border are expressed as both fish tissue and water column concentrations. When the aquatic ecosystem is in steady state and selenium data is available for both fish tissue and the water column, the fish tissue standards supersede the water column standard. When the aquatic ecosystem is in non-steady state, both the fish tissue and water column standards apply. The numeric selenium standards apply to the lake, to the river, or to both, as provided in this rule.

(3) As of [effective date of this rule], Lake Koocanusa and the Kootenai River aquatic ecosystems are in non-steady state. The department will reassess the status of these aquatic systems triennially and amend this rule to reflect any change.

(4) The water column standards are derived from modeling selenium bioaccumulation in fish tissue and reflect criteria that protect the aquatic life beneficial use. Permit conditions and limits developed from the water column standards comply with the fish tissue standards.

(5) No person may violate the numeric water quality standards in (6) and (7).

(6) Fish tissue standards are applicable to tissues of fish in Lake Koocanusa from the US-Canada international boundary to the Libby Dam and in the mainstem

Kootenai River from the outflow below the Libby Dam to the Montana-Idaho border. Egg/ovary tissue standards supersede any muscle or whole-body standards, as well as the water column standards in (7), when fish egg/ovary samples are available and when the aquatic ecosystem is in steady state.

Fish Tissue	Selenium Concentration
Eggs/Ovaries	15.1 mg/kg dry weight (dw)
Muscle	11.3 mg/kg dw
Whole Body	8.5 mg/kg dw

(7) Water column standards are the numeric standards for total dissolved selenium computed as a 30-day average, and shall not be exceeded more than once in three years, on average.

(a) Lake Koocanusa from the US-Canada international boundary to the Libby Dam: 0.8 µg/L.

(b) Kootenai River mainstem from the outflow below the Libby Dam to the Montana-Idaho border: 3.1 µg/L.

AUTH: 75-5-201, 75-5-301, MCA
IMP: 75-5-301, MCA

REASON: Section 75-5-301(2), MCA, grants the board the authority to adopt water quality standards under the Montana Water Quality Act. Under 75-5-203(1), MCA, the board may not adopt a standard that is more stringent than the comparable federal regulations or guidelines that address the same circumstances. In 2016, the U.S. Environmental Protection Agency (EPA) updated the national selenium criteria guidance published pursuant to section 304(a) of the federal Clean Water Act. The guidance included a recommendation that states and tribes develop site-specific selenium standards, whenever possible, due to the local environmental factors affecting selenium bioaccumulation in aquatic ecosystems.

In 2015, the department began a coordinated effort with an international working group consisting of U.S. and Canadian stakeholders to develop site-specific selenium criteria for Lake Koocanusa. The technical work was undertaken in collaboration with the British Columbia Ministry of Environment and Climate Change Strategy (BC-ENV) and a selenium committee comprised of scientists recognized for their selenium expertise. There was significant stakeholder collaboration and input throughout the multi-year standards development process. The collaborative process also included a partnership with the U.S. Geological Survey to perform bioaccumulation selenium modeling using their peer reviewed Ecosystem-Scale Selenium Model (Presser and Luoma, 2010). The technical basis of the criteria is described in three reports (EPA, 2016; Presser and Naftz, 2020; DEQ, 2020). From this technical work there is a narrow range of protective values from which the department has identified the proposed fish tissue and water column standards that would be applicable to Lake Koocanusa and the Kootenai River.

The fish tissue standards are expressed as instantaneous measurements not to be exceeded. Fish tissue standards have a hierarchy of importance; the egg/ovary standard is the most important because it is the most indicative of selenium toxicological effects on fish at the reproductive stage. Toxicological effects of selenium at the reproductive stage include, but are not limited to, mortality, deformity, growth impairment, oxidative stress, and behavioral impairment. However, fish egg/ovary tissue selenium data is not always available. Fish muscle or whole-body tissue standards can be used in the absence of fish egg/ovary tissue.

The fish tissue standards supersede the water column standard only when the lake or river is in steady state, referring to conditions whereby there are no occurrences of new activities to the lake or river that release selenium to the aquatic ecosystem (EPA, 2016). At the time of this proposed rule adoption, Lake Koocanusa and the Kootenai mainstem river are in non-steady state (Presser and Naftz, 2020). Therefore, both the fish tissue standards and water column standards are the applicable standards for Lake Koocanusa and the Kootenai mainstem river. The department will determine when Lake Koocanusa and the Kootenai mainstem river reach steady state after review and analysis has been carried out by the department during triennial review. The proposed water column standards are chronic values. There is no acute selenium standard included since the greatest toxicity risk to aquatic life is from chronic dietary exposure.

It is necessary to adopt the proposed numeric selenium standards to incorporate the best available science for selenium toxicity and protect selenium-sensitive aquatic life in the Kootenai watershed. The proposed fish tissue and water column standards for the mainstem Kootenai River are based on current EPA 304(a) criteria for lotic (flowing) waters. The proposed fish tissue and water column standards for Lake Koocanusa are based on EPA 304(a) fish tissue criteria, and site-specific water column criteria derived following procedures set forth by EPA in the 304(a) guidance.

Montana's nondegradation rules (ARM Title 17, chapter 30, subchapter 7) classify certain discharge activities as nonsignificant if they meet specified conditions. For a toxic parameter, like selenium, the non-significance determination is a two-step process wherein the expected change in concentration is evaluated against a trigger value, which is usually a concentration threshold set well below the water quality standard. For the first part of the non-significance analysis, if the change does not exceed the trigger value, it is nonsignificant. For the second part of the analysis, if the change in water quality is expected to exceed the trigger value but the change will not exceed 15 percent of the standard, the activity is nonsignificant. Trigger values are housed in Department Circular DEQ-7 (DEQ-7) and there is currently a trigger value for selenium (0.6 µg/L). Although 0.6 µg/L is appropriate for selenium standards elsewhere in the state, it is too high to apply to the selenium standards for Lake Koocanusa set forth in NEW RULE I, where the site-specific standards for the Lake Koocanusa water column is 0.8 µg/L. To address this, the department will include a second selenium trigger value in DEQ-7 at a concentration of 0.02 µg/L. This is the method detection limit (MDL) for very sensitive selenium analysis, and

because it is an MDL, it is appropriate to use as a trigger value. A footnote will be added to the circular indicating the new trigger value applies only to NEW RULE I. The department is currently undertaking a triennial review of DEQ-7, which should be completed in 2021. The new trigger value and footnote will be incorporated into DEQ-7 as part of the current triennial review.

The proposed Lake Koocanusa water column standard (30-day chronic) is no more stringent than the recommended EPA 304(a) criteria because it was developed using federally recommended site-specific procedures; therefore, it is more accurate than the generally applicable national lentic (lake) number.

The technical reports referenced above are as follows:

DEQ (Montana Department of Environmental Quality). 2020. *Technical Support Document for the derivation of a site-specific water column standard for Lake Koocanusa, Montana*. Helena, MT: Montana Dept. of Environmental Quality.

EPA (Environmental Protection Agency). 2016. *Aquatic Life Ambient Water Quality Criterion for Selenium – Freshwater 2016*. Washington DC: United States Environmental Protection Agency.

Presser, T.S., Luoma, S.N., 2010, A methodology for Ecosystem-Scale Modeling of Selenium. *Integrated Environmental Assessment and Management,* Volume 6, *Issue 4,* Pages 685-710.

Presser, T.S., Naftz D.L., 2020. *Understanding and Documenting the Scientific Basis of Selenium Ecological Protection in Support of Site-Specific Guidelines Development for Lake Koocanusa, Montana, U.S.A., and British Columbia, Canada*. Open-File Report 2020-1098, Helena, MT: U.S. Geological Survey.

5. Concerned persons may submit their data, views, or arguments, either orally or in writing, at the hearing. Written data, views, or arguments may also be submitted to Sandy Scherer, Paralegal, Department of Environmental Quality, 1520 E. Sixth Avenue, P.O. Box 200901, Helena, Montana 59620-0901; faxed to (406) 444-4386; or e-mailed to sscherer@mt.gov, no later than 5:00 p.m., November 23, 2020. To be guaranteed consideration, mailed comments must be postmarked on or before that date. A copy of proposed NEW RULE I, as well as technical documents supporting the rules, may be viewed at the department's website: https://deq.mt.gov/water/Surfacewater/standards. Copies of any of these documents may also be obtained by contacting Lauren Sullivan at (406) 444-5226 or Lauren.Sullivan@mt.gov.

6. The board maintains a list of interested persons who wish to receive notices of rulemaking actions proposed by this agency. Persons who wish to have their name added to the list shall make a written request that includes the name, e-mail, and mailing address of the person to receive notices and specifies that the person wishes to receive notices regarding: air quality; hazardous waste/waste oil;

asbestos control; water/wastewater treatment plant operator certification; solid waste; junk vehicles; infectious waste; public water supply; public sewage systems regulation; hard rock (metal) mine reclamation; major facility siting; opencut mine reclamation; strip mine reclamation; subdivisions; renewable energy grants/loans; solar and wind energy bonding, wastewater treatment or safe drinking water revolving grants and loans; water quality; CECRA; underground/above ground storage tanks; MEPA; or general procedural rules other than MEPA. Notices will be sent by e-mail unless a mailing preference is noted in the request. Such written request may be mailed or delivered to Sandy Scherer, Paralegal, Department of Environmental Quality, 1520 E. Sixth Ave., P.O. Box 200901, Helena, Montana 59620-0901, faxed to the office at (406) 444-4386, e-mailed to Sandy Scherer at sscherer@mt.gov, or may be made by completing a request form at any rules hearing held by the department.

7. Sarah Clerget, attorney for the board, or another attorney for the Agency Legal Services Bureau, has been designated to preside over and conduct the hearing.

8. The bill sponsor contact requirements of 2-4-302, MCA, do not apply.

9. With regard to the requirements of 2-4-111, MCA, the board has determined that the amendment and adoption of the above-referenced rules will not significantly and directly impact small businesses.

Reviewed by: BOARD OF ENVIRONMENTAL REVIEW

/s/ Edward Hayes
EDWARD HAYES
Rule Reviewer

BY: */s/ Christine Deveny*
CHRISTINE DEVENY
Chair

Certified to the Secretary of State September 29, 2020.