EARTHJUSTICE

January 11, 2022

VIA CERTIFIED U.S. MAIL
RETURN RECEIPT REQUESTED
AND VIA EMAIL

Michael S. Regan, Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
Regan.Michael@epa.gov

RE: Notice of Intent to Sue EPA for Failure, Under Clean Water Act Section 303(c), 33 U.S.C. 1313(c), to Approve or Disapprove State of Montana's Revised Water Quality Standards, Senate Bill 358, 75-5-321 Montana Code Annotated

Dear Administrator Regan:

This is a 60-day Notice under the Clean Water Act 33 U.S.C. § 1365(a)(2) on behalf of Upper Missouri Waterkeeper ("Waterkeeper"). The U.S. Environmental Protection Agency ("EPA") has failed to comply with its mandatory duty to review and approve or disapprove changes to a state's water quality standards under the Clean Water Act ("CWA") Section 303(c)(3), 33 U.S.C. § 1313(c)(3). In Montana Senate Bill 358 ("SB 358") the State of Montana repealed EPA-approved numeric water quality standards for nutrients, reverting to generally-applicable narrative criteria. Montana Governor Gianforte signed the bill on April 30, 2021. As of the date of this Notice, EPA has failed to act to approve or disapprove those standards and is therefore in violation of statutory deadlines.

The Clean Water Act requires EPA to review and approve water quality standards before they can be effective. EPA's review must be done within 60 days. 33 U.S.C. § 1313(c)(3). Where EPA disapproves a state standard, EPA must, within 90 days, inform the state of how to correct the standard, direct the state to correct the standard within 60 days from the date EPA informs the state of how to correct the standard, and where the state does not, EPA must promulgate federal regulations where it finds that a state's water quality standards are not consistent with the Clean Water Act's requirements or in any case necessary to meet the goals of the Clean Water Act. 33 U.S.C. §§ 1313(c)(3) and (c)(4).

EPA is in violation of its nondiscretionary duty to review and either approve or disapprove Montana's change in water quality standards within the statutorily-mandated 60 days and this letter constitutes a 60-day notice of intent to file a citizen suit against EPA pursuant to

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Section 505(a)(2) of the Clean Water Act, 33 U.S.C. § 1365(a)(2) and EPA's implementing regulations, 40 C.F.R. § 135.1(a) and 135.3(b).

I. BACKGROUND

For over two decades, EPA has recognized the importance of developing numeric nutrient water quality criteria to protect designated uses of waterbodies (*e.g.*, drinking water, fishing, swimming) from nutrient pollution that is associated with increases in concentrations of nitrogen and phosphorus.[1] In 2015, Montana adopted protective numeric nutrient criteria, recognizing that existing narrative criteria had failed to protect designated uses of Montana waters from the effects of increasing nutrient pollution.[2] EPA approved Montana's nutrient water quality standards in 2015 as fully-supported by sound science and necessary to protect designated uses.[3] Montana had adopted and EPA had approved a combination of reference and stressor-response approaches to nutrient water quality standards embodied in numeric nutrient criteria for nitrogen and phosphorus, grounded in sound science.[4]

During its 2021 session, the Montana legislature adopted SB 358 as state law under 75-5-321 MCA, wholly repealing Montana's numeric nutrient criteria[5] and requiring the Montana Department of Environmental Quality ("DEQ") to adopt implementation rules pursuant to SB 358 by March 1, 2022. SB 358 eliminates the State's science-based numeric nutrient water quality criteria that the state and EPA previously found are necessary to protect designated uses of Montana waters from the harmful effects of nutrient pollution. The state and EPA also previously found that narrative criteria were inadequate to protect designated uses of Montana waters. In addition, SB 358 adds new "nonsignificance" criteria that revise and weaken Montana's antidegradation policy (called "nondegradation" in Montana) to include a whole new suite of exemptions allowing for degradation of local water quality.

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[1] EPA, "Nutrient Criteria Development; Notice of Nutrient Criteria Technical Guidance Manual: Rivers and Streams," 65 Fed. Reg. 46167 (July 27, 2000).

[2] Suplee, Watson, Nov. 2008. "Scientific and Technical Basis of the Numeric Nutrient Criteria for Montana's Wadeable Streams and Rivers" (hereinafter "Technical Basis NNC 2008"); Suplee, M.W., and V. Watson, 2013. "Scientific and Technical Basis of the Numeric Nutrient Criteria for Montana's Wadeable Streams and Rivers—Update 1. Helena, MT: Montana Dept. of Environmental Quality," (hereinafter "Technical Basis NNC 2013); Montana DEQ Circular 12-A, "Numeric Nutrient Criteria in Montana," July 2014 Final Edition (2014) (hereinafter "Circular 12-A"); DEQ, "Notice of Public Hearing on Proposed Amendment (Water Quality), MAR Notice No. 17-356 281," February 3, 2014.

[3] EPA Region 8, "EPA Action on Montana's Numeric Nutrient Criteria and Variance Rules," February 26, 2015 (hereinafter "EPA 2015 Action").

[4] Technical Basis NNC 2013; EPA 2015 Action.

[5] Circular 12-A.

DEQ has already applied the weaker narrative water quality standards to a permit application under the Clean Water Act (City of Helena) (requiring no effluent limits for nutrients)[6] and issued a draft rulemaking implementing SB 358 on December 23, 2021.[7] Waterkeeper notified EPA in writing of Montana's proposed legislation on April 23, 2021, and filed a petition with EPA to act on Montana's legislation on May 24, 2021.[8]

II. LEGAL FRAMEWORK

Whenever a state revises its water quality standards, it is required to submit them to the EPA Administrator. 33 U.S.C. § 1313(c)(1), (c)(2). EPA's regulations require that states submit revised standards "within 30 days of the final state action to adopt and certify the revised standard." 40 C.F.R. § 131.20(c). EPA shall either approve the revised standards within 60 days or deny them within 90 days. *Id.* § 131.21(a). EPA must base its decision on the requirements of the Clean Water Act, as described in EPA's regulations. *Id.* §§ 131.5 and 131.6. EPA must promulgate federal regulations for a state where a state fails to comply with EPA's disapproval of a change or if the Administrator determines that the state's revised standards are inconsistent with the Clean Water Act or in any case where the Administrator determines a revised standard is necessary to meet the requirements of the Clean Water Act. 33 U.S.C. § 1313(c)(4). Failure of a state to submit revised standards to EPA for approval is not an excuse for EPA's failure to act. *See*, analogous case in *Columbia Riverkeeper v. Wheeler*, 944 F.3d 1204, 1208-1211 (9th Cir. 2019) (failure by states to submit TMDLs was constructive submission that triggered EPA's duty to approve or disapprove TMDL).

EPA must approve or disapprove a state's water quality standards by determining, among other things, whether the state has adopted designated water uses consistent with the Clean Water Act, whether the state has adopted criteria that protect the designated water uses based on sound scientific rationale, whether the state has adopted an antidegradation policy consistent with EPA's regulations, whether the state standards are based on appropriate technical and scientific data and analyses, and whether the state has followed the applicable legal procedures

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[6] Letter from Guy Alsentzer, Executive Director Missouri Waterkeeper, to Joe Kenning, Bureau Chief Montana DEQ Water Quality Division, "Comments Opposing Proposed Terms for Renewal of MPDES Permit No. MT0022641, the City of Helena's WWTP, PN #MT-21-16," August 11, 2021 (Attachment 1). DEQ's consideration of Helena's permit is currently on hold and it continues to operate under its expire permit that has no numerical nutrient limits in effluent.

[7] Comment period closes on February 8, 2022. Montana DEQ, "Notice of Public Hearing on Proposed Amendment of ARM 17.30.1304 and Adoption of New Rule," December 23, 2021, available at: https://deq.mt.gov/News/publiccomment-folder/news-article46 (last accessed January 10, 2022).

[8] Letter from Guy Alsentzer, Executive Director Missouri Waterkeeper, to Michael S. Regan, EPA Administrator, "Petition for Rulemaking on Water Quality Standards in the State of Montana," May 24, 2021 (Attachment 2).

for revising or adopting standards. 33 U.S.C. § 1313(c)(2)(a); 40 C.F.R. § 131.21(b), 131.5, and 131.6. Water quality standards must protect the public health or welfare, enhance the quality of water and wherever attainable, provide water quality for the protection and propagation of fish, shellfish and wildlife and for recreation in and on the water, taking into account their use and value of public water supplies, and agricultural, industrial, and other purposes including navigation. 33 U.S.C. § 1313(c)(2)(A).

III. EPA'S VIOLATION

EPA is in violation of its nondiscretionary duty under the Clean Water Act to approve or disapprove Montana's revised water quality standards within 60 days, in compliance with the statute and the deadlines in its own implementing regulations. 33 U.S.C. § 1313(c)(3) and (c)(4); 40 C.F.R. § 131.21(a).

Montana has not submitted its revised water quality standards to EPA. Montana's revised water quality standards became immediately effective under Montana state law on April 30, 2021, when Governor Gianforte signed SB 358. From that date, the State of Montana had 30 days until May 30, 2021, to submit its revised standards to EPA for review, over seven months ago. 40 C.F.R. § 131.20(c). In that time, Montana DEQ has already attempted to apply the revised standards to the City of Helena's permit renewal. It has also issued draft regulations purportedly implementing SB 358 on December 23, 2021, and will finalize these regulations by March 1, 2022, as required by SB 358.

Under the express direction of the Clean Water Act as well as EPA's regulations, EPA had 60 days to approve (July 29, 2021) or 90 days to disapprove (August 28, 2021) Montana's revised standards. 33 U.S.C. § 1313(c)(3); 40 C.F.R. § 131.21(a). By letter dated April 23, 2021, Waterkeeper advised EPA of the pending SB 358 and the likelihood that the bill would pass. By letter dated May 24, 2021, Waterkeeper provided EPA with the finalized legislative action, signed by the Governor putting EPA on formal notice that the standards had been revised. Waterkeeper further notified EPA, through a copy of its comments, of the actions on the City of Helena permit. EPA has taken no action to review, approve, or disapprove the revisions to Montana's water quality standards.[9]

While EPA regulations purport to create a backstop that makes Montana's existing water quality standards applicable until EPA itself approves a change to that water quality standard, 40 C.F.R. § 131.21(c)-(e), Montana's actions demonstrate that DEQ will not apply existing numeric

[9] EPA attended Montana DEQ's August "nutrient workgroup technical subcommittee meetings" and provided comments by letter to Montana DEQ on the revised water quality standards. While EPA indicated an intention to review Montana's revised water quality standards, it has not done so and is past its statutory deadline. *See* Letter from Andrew Todd, Chief, Water Quality Section, EPA Region 8, to Galen Steffens, Water Quality Planning Bureau Chief, Montana DEQ, "EPA Comments on Montana's Proposed Response Variables and Associated Thresholds," August 18, 2021 (Attachment 3).

nutrient water quality standards. Upon information and belief, Montana has never applied nutrient criteria to create new limits on nutrient pollutant discharges since adoption of such criteria in 2015. EPA has actual knowledge of the revision to and weakening of nutrient standards pursuant to Montana state law. EPA cannot stand by and watch Montana implement revised water quality standards that do not comply with the Clean Water Act and EPA's regulations. EPA is ultimately responsible for the administration of the Clean Water Act and cannot avoid its mandatory duty. 33 U.S.C. §§ 1313(c), 1251(d).

In exercising its mandatory duty to act on Montana's revised water quality standards within 60 days, EPA should disapprove the state's revised water quality standards and promulgate its own regulations setting water quality standards pursuant to Clean Water Act Section 303(c)(3) and (c)(4) because the state's revised standards violate the Clean Water Act. Montana's revised water quality standards reverse critical protections for designated uses under the CWA and are indefensible. There is no record or science-based findings accompanying SB 358 to support Montana's revised water quality standards, to demonstrate compliance with the CWA's direction to protect existing or designated uses, to justify repeal of numeric water quality criteria, to substitute less-protective narrative criteria or reliance on a new and unproven adaptive management program for nutrient pollution, or supporting the statutory adoption of new nonsignificance exemptions for nutrients.

IV. IDENTITY AND ADDRESSES OF WATERKEEPER

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V. CONCLUSION

EPA is in continuing violation of its nondiscretionary duty under the CWA and this letter constitutes a 60-day notice of intent to file a citizen suit against EPA pursuant to Section 505(a)(2) of the CWA, 33 U.S.C. § 1365(a)(2) and EPA's implementing regulations, 40 C.F.R. § 135.1(a) and 135.3(b).

It is urgent that EPA immediately disapprove Montana's revised water quality standards because Montana DEQ has issued draft rules to implement the water quality standards that will be final on March 1, 2022. Waterkeeper believes that this issue can be resolved without

litigation and without diverting resources to court proceedings. We stand ready to work with you in good faith to resolve these violations. However, unless this violation is cured within sixty days, we reserve the right to take appropriate legal action to compel EPA to comply with the CWA to protect Montana's waters from nutrient pollution.

Sincerely,

Paulo Palugod
Janette K. Brimmer

encls.
cc (via First Class Mail and email where available):

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August 11, 2021

Submitted electronically to DEQWPBPublicComments@mt.gov & jkenning@mt.gov

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Water Protection Bureau
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Re: Comments Opposing Proposed Terms for Renewal of MPDES Permit No. MT0022641, the City of Helena's WWTP, PN #MT-21-16

Dear Mr. Kenning & Department Staff:

Upper Missouri Waterkeeper submits this comment letter in response to the Department's proposed renewal of a discharge permit for the City of Helena's WWTP (hereinafter the "Permit"). For the reasons discussed below DEQ cannot lawfully renew the permit as-proposed, and we request that DEQ withdraw the Permit and conduct the requisite pollution control and degradation analyses, including incorporating applicable numeric nutrient criteria, before offering this discharge permit again for public comment and decisionmaking.

About Us

Upper Missouri Waterkeeper (hereinafter "Waterkeeper") is a non-profit, membership-based 501(c)3 advocacy organization dedicated to protecting and improving fishable, swimmable, drinkable water and healthy rivers throughout the 25,000 sq. miles of Southwest and West-Central Montana's Upper Missouri River Basin. This river basin includes more than a dozen urban, suburban, and rural watersheds, including Prickly Pear Creek and the larger Lake Helena watershed where the proposed permit would authorize pollution.

Our supporters live, work, or recreate in dozens of waterways across the Basin, including Prickly Pear Creek and Lake Helena. Members enjoy recreating in Lake Helena, value the natural amenities provided by Prickly Pear Creek, and have a strong interest in sound governance and responsible decisionmaking. Our members are expressly supportive of Waterkeeper's advocacy demanding government accountability and thoughtful, science-based decisionmaking by public officials that protects local water resources and complies with federal and state law, and are concerned by decisions – such as the proposed permit renewal - that fail to apply mandatory science-based pollution control criteria and the negative effects that weak or irresponsible pollution permit decisions incite on local water resources in the Lake Helena watershed.

I. The Lake Helena Watershed and Prickly Pear Creek Are Chronically Challenged by Nutrient Pollution

A. Nutrient Pollution

EPA and Montana have long understood that nitrogen and phosphorus pollutants ("nutrients") in lakes, rivers, and streams cause serious water quality problems. Nutrient pollution feeds algal blooms that choke waterways, deplete oxygen for fish and aquatic organisms, and change the balance of ecosystems. At its worst, nutrient pollution can result in toxic or hazardous algal blooms, which can sicken humans and animals, negatively affect property values, and contaminate drinking water sources, which can drastically increase treatment costs and subsequently increase consumer utility bills. According to EPA the primary sources of nutrient pollution to our waters are fertilizer, manure, sewage discharges, detergents, stormwater, cars and power plants, failing septic systems, and pet waste. Montana DEQ has ranked nutrients as top 5 pollutants of concern leading to impairment of Montana's surface waters in several recent Integrated Reports.

Nutrient pollution has diverse and far-reaching effects on the economy, impacting many sectors that depend on clean water. In Montana, the outdoors-based economy - arguably the largest single GDP contributor in the state estimated at more than 4 billion annually - is directly reliant upon clean water and healthy rivers because of the aesthetic qualities and trophy fisheries that such water resources create.

Recognizing the negative effects and increasing threat that nutrient pollution and noxious algal blooms pose to Montana's surface waters, in July 2014 DEQ adopted protective water quality standards for nutrients in DEQ Circular 12-A. Based upon a large body of scientific work, 12-A sets stringent numeric criteria for phosphorus and nitrogen to protect all designated uses such as health, fishing, and recreation, in most waters of Western Montana, including Prickly Pear Creek. These phosphorus and nitrogen concentrations are tied to Montana's ecoregional approach, with the water quality criteria calling for total instream phosphorus and nitrogen concentrations in surface waters of the Prickly Pear Creek to not exceed .03 mg/L and .3 mg/L respectively.

These and related regulatory criteria and are meant to ensure a precautionary approach to water pollution control such that no degradation of surface or ground water resources occurs, as required by Montana's Nondegradation Policy under 75-5-301 MCA, the federal Clean Water Act, and as envisioned by Montana's constitutional guarantee of a "clean and healthful environment" under Article II, Section 3 and Article IX, Section 1. When DEQ fails to be anticipatory and exercise its discretion to require best available science, fails to perform a hard look at the propensity of proposed discharges to exacerbate degradation in receiving waters, and fails to incorporate lawful pollution limits that better protect receiving waters from degradation all as described below, DEQ runs afoul of its duties under the CWA, the MWQA, and the Montana Constitution's guarantee of a 'clean and healthful' environment.

B. Receiving water Prickly Pear Creek and downstream Lake Helena suffer from nutrient impairment and possess TMDLs, and Prickly Pear Creek remains on DEQ's 2020 Integrated Report

Permit renewal documents do not contest the legal and practical reality that receiving waters (Prickly Pear Creek and downgradient Lake Helena) are impaired for several pollutants of concern and possess binding TMDLs. Prickly Pear Cr remains on DEQ's 2020 Integrated Report as impaired for several pollutants of concern that are discharged by the Permit. Furthermore, the Fact Sheet demonstrates that ambient receiving waterway concentrations of several pollutants of concern, including especially nutrients, already exceed water quality standards. Similarly, the Fact Sheet demonstrates that several parameters in proposed discharges are, based on their concentrations and volume relative to receiving water, likely to violate water quality standards. Despite these realities the Permit fails to adequately assess the degradation potential of nutrient discharges, proposes arbitrary mixing zones for toxic parameters, and fails to impose best available science-based limits on metals of concern.

II. The proposed permit does not satisfy mandatory requirements to ensure discharges do not cause or contribute to violations of water quality standards, and does not satisfy DEQ's anticipatory and preventative duties to exercise its authority to protect a 'clean and healthful environment.'

A. Legal Framework

The Clean Water Act, 33 U.S.C. §§ 1251–1387, "is a cornerstone of the federal effort to protect the environment." *Waterkeeper Alliance, Inc. v. U.S.Envtl. Prot. Agency*, 399 F.3d 486, 490 (2d Cir. 2005). Congress passed the Act with the goal of not just reducing, but eliminating, all water pollution. Id. (*citing* 33 U.S.C. § 1251(a)(1)). To achieve this goal, the CWA prohibits the "discharge of any pollutant" from a point source—"any discernible, confined and discrete conveyance"—to navigable waters "except in compliance with law." 33 U.S.C. §§ 1311, 1362. Discharges of polluted water from vessel ballast tanks are "point source" discharges subject to the CWA's general prohibition. *See Nw. Envtl. Advocates v. U.S. E.P.A.*, 537 F.3d 1006, 1021 (9th Cir. 2008).

The main way to achieve compliance with the CWA's general pollutant discharge prohibition is by obtaining an NPDES permit. 33 U.S.C §§ 1311(a), 1342. Every NPDES permit must establish "effluent limitations" for the pollutants being discharged. *Waterkeeper Alliance*, 399 F.3d at 491 (*citing S. Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians*, 541 U.S. 95, 102 (2004)). Technology-based effluent limitations ("TBELs") are based on "a series of increasingly stringent technology-based standards," depending on the type of pollutant being discharged. *NRDC v. U.S. E.P.A.*, 822 F.2d 104, 123–24 (D.C. Cir. 1987); *see also Entergy Corp. v. Riverkeeper, Inc.*, 556 U.S. 208, 219–21 (2009). The most stringent technology-based standard is known as "best available technology economically achievable" ("BAT"), which requires "implementation of pollution controls to the full extent of the best technology which would become available." *NRDC v. U.S. E.P.A.*, 822 F.2d at 123–24.

The CWA's technology-based standards are designed to be "technology- forcing." *See NRDC v. U.S. E.P.A*., 822 F.2d at 123 ("[T]he most salient characteristic of this statutory scheme, articulated time and again by its architects and embedded in the statutory language, is that it is technology-forcing."). In *NRDC v. U.S. E.P.A*., the D.C. Circuit emphasized that the CWA seeks "not only to stimulate but to press development of new, more efficient and effective technologies," which is the "essential purpose of this series of progressively more demanding technology-based standards." *Id*. Underscoring this point, the Supreme Court has explained that "Congress wished to mandate the greatest feasible reduction in water pollution" with the BAT standard because the "plain language" of the CWA "requires the EPA to set 'effluent limitations [which] shall require the elimination of discharges of all pollutants if the Administrator finds . . . that such elimination is technologically and economically achievable[.]'" *Entergy Corp*., 556 U.S. at 219 (quoting 33 U.S.C. § 1311(b)(2)(A)).

If the TBELs in an NPDES permit are not sufficient to meet established water quality standards, permits must also contain water quality-based effluent limitations ("WQBELs") to ensure compliance with water quality standards. *See* 33 U.S.C. §§ 1311(b)(1)(C), 1342(a)(2). EPA "is under a specific obligation to require that level of effluent control which is needed to implement existing water quality standards without regard to the limits of practicability." S. Rep. No. 92-414, at 43 (1971). Because WQBELs are set irrespective of costs and technology availability, they further the technology-forcing policy of the CWA. *See NRDC v. U.S. E.P.A*., 859 F.2d 156, 208 (D.C. Cir. 1987) ("A technology-based standard discards its fundamental premise when it ignores the limits inherent in the technology. By contrast, a water quality-based permit limit begins with the premise that a certain level of water quality will be maintained, come what may, and places upon the permittee the responsibility for realizing that goal."); *see also Riverkeeper, Inc. v. U.S. E.P.A*., 475 F.3d 83, 108 (2d Cir. 2007) (Sotomayor, J.) (referencing the Act's "technology-forcing imperative"), rev'd sub nom by Entergy Corp, 556 U.S. 208.

WQBELs must be set at a level that achieves water quality standards developed by the states for waters within their boundaries. See 33 U.S.C. § 1313(a)(3), (c)(2)(a); 40 C.F.R. Part 131; *PUD No. 1 of Jefferson Cnty. v. Wash. Dept. of Ecology*, 511 U.S. 700, 704–707 (1994). Such standards consist of designated uses for waters and water quality criteria (both numeric and narrative) necessary to protect those uses. 33 U.S.C. § 1313(c)(2)(a); 40 C.F.R. §§ 131.10– .11. Under the CWA's "antidegradation policy," state standards must also protect existing uses of waters and prevent their further degradation. 40 C.F.R. § 131.12. EPA must approve each state's standards. *See* 33 U.S.C. § 1313(a)(3). Even where a state has not established numeric criteria for a particular pollutant, NPDES permits must still ensure compliance with designated uses, anti-degradation policy, and applicable narrative water quality criteria impacted by that pollutant.

EPA's regulations mirror the statutory requirement for WQBELs. 40 C.F.R. § 122.44(d). NPDES effluent limitations must control all pollutants that are or may be discharged at a level "which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." 40 C.F.R. § 122.44(d)(1)(i). WQBELs in NPDES permits must be "derived from" all applicable water quality standards. 40 C.F.R. § 122.44(d)(1)(vii). WQBELs are typically expressed numerically, but when "numeric effluent limitations are infeasible," a permit may instead require "[b]est management practices (BMPs) to control or abate the discharge of pollutants." 40 C.F.R. §

122.44(k)(3). However, "[n]o permit may be issued: . . . [w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States." 40 C.F.R. § 122.4(d).

When EPA or states establish WQBELs, they must translate applicable water quality standards into permit limitations. *See Trustees for Alaska v. U.S. E.P.A*., 749 F.2d 549, 556–57 (9th Cir. 1984) (holding that a permit must do more than merely incorporate state water quality standards—it must translate state water quality standards into the end-of-pipe effluent limitations necessary to achieve those standards). As the D.C. Circuit put it, "the rubber hits the road when the state-created standards are used as the basis for specific effluent limitations in NPDES permits." *American Paper Inst., Inc. v. U.S. E.P.A*, 996 F.2d 346, 350 (D.C. Cir. 1993). Although numeric criteria are easier to translate into a permit limitation, permit writers must also translate state narrative standards. See id.

EPA has explained that a WQBEL is "[a]n effluent limitation determined by selecting the most stringent of the effluent limits calculated using all applicable water quality criteria (e.g., aquatic life, human health, wildlife, translation of narrative criteria) for a specific point source to a specific receiving water." EPA, NPDES Permit Writers' Manual, Appendix A at A-17 (Sept. 2010).

DEQ's water quality MPDES permit program is subject to federal requirements and limitations under the CWA. *See* 33 U.S.C. § 1251, *et seq.* The Montana Water Quality Act, which houses DEQ's MPDES permit program, requires strict conformance to the federal CWA and EPA's regulations, and policy and guidance must inform Montana's decisionmaking concerning water pollution controls. *N. Cheyenne Tribe v. Mont. Dep't of Envtl. Quality*, 2010 MT 111, ¶ 39, 356 Mont. 296, 234 P.3d 51; *see also* 40 C.F.R. § 123.25(a). DEQ may not make MPDES permit decisions that violate requirements of the CWA.

B. The Permit's nutrient WQBEL analyses are fatally flawed

The implementation of WQBELs in MPDES permits relies directly upon DEQ's adherence to and application of water quality standards. Upon EPA approval, a state's standards take effect and, conversely, standards are ineffective as a matter of law unless and until they are approved by EPA. 33 U.S.C. § 1313(c). In July 2014, DEQ published water quality standards for nutrients in DEQ Circulars 12-A. Based upon a large body of scientific work, including extensive work and guidance from EPA's nutrient guidance, Circular 12-A sets numeric criteria for phosphorus and nitrogen as specified in MCA § 75-5-103(2), to protect all designated uses such as fishing, health, and recreation, in most waters of Western Montana. EPA approved Montana's numeric nutrient criteria in DEQ Circular 12-A in February 2015, finding that such criteria are necessary to protect the designated uses of Montana's wadeable streams and certain additional waters.

Circular 12-A's numeric nutrient standards include pollutant concentration limits, geographical areas where the standards apply, and the period od application (i.e., seasonality)/. The limits on phosphorus and nitrogen pollutants are tied to Montana's ecoregional characteristics, and the resulting water quality criteria for total in-stream phosphorus concentrations ranging from 25 to

150 micrograms per liter, and total nitrogen concentrations ranging from 250 to 1300 micrograms per liter.

i. DEQ may not apply rules or make decisions that violate federal water pollution control law under the Clean Water Act

DEQ documentation in support of the proposed Helena WWTP permit renewal fail to apply Montana's numeric nutrient criteria in its WQBEL analysis. Instead of applying appropriate ecoregional numeric nutrient criteria the Fact Sheet applies narrative standards prohibiting, generally, discharges that will create conditions producing undesirable aquatic life. This failure to apply the EPA-approved numeric nutrient criteria is arbitrary, capricious, and violates DEQ's mandatory duty to faithfully apply requirements of the CWA. Unless and until EPA approves the removal or amendment of Circular 12-A criteria, those criteria are binding in permit decisions and must be applied by DEQ in this Permit renewal.

ii. Proposed discharges are likely to degrade Prickly Pear Creek and contribute nutrient pollution in harmful concentrations and quantities to downstream Lake Helena, impairing the ability of these waters to attain beneficial uses

The Permit renewal and Fact Sheet appear to rely both on narrative nutrient standard and on the existence of a Lake Helena Planning Area TMDL and applicable WLAs for Prickly Pear Creek. Commenters do not contest the validity of incorporating the assumptions underpinning WLAs into MPDES permits, but do contest DEQ's failure to provide the requisite analysis and an affirmative demonstration pursuant to 40 CFR 122.44 that the proposed nutrient discharges from the WWTP will not cause or contribute to violations of water quality standards in Prickly Pear Creek and, if as we assert that WWTP discharges cause or contribute to such violations, we contest DEQ's failure to impose effluent limits necessary to prevent such violations. Effluent limits based upon an analysis under 40 CFR 122.44 can be more stringent than and when necessary to protect designated uses, subsume, less stringent assumptions underpinning an applicable WLA. We also contest the lawfulness of DEQ's failure to implement its numeric nutrient criteria in performing the nutrient WQBELs.

Case in point is the exhaustive scientific record found in the Lake Helena Planning Area TMDLs and the Fact Sheet's own data showing that receiving water quality upstream of the Permit is near natural, background concentrations for nutrients. Yet the Permit allows the same volume and concentrations of nutrients as has been authorized since the 2012 Permit iteration, there is no required improvement in the quality of nutrient effluent discharges to protect impaired, receiving waterway health and quality, and there is no discussion or analysis explaining how these terms will ensure that the facility's discharges will not cause, contribute to, or exacerbate ongoing nutrient-based impairment in Prickly Pear Creek (which remains on DEQ's 2020 Integrated Report) or downstream Lake Helena, and is also nutrient impaired. The fact that an ongoing nutrient credit trading program exists between the WWTP and case-by-case subdivisions and septic polluters is irrelevant to the inquiry of whether, per 40 CFR 122.44, the WWTP requires more stringent nutrient effluent limits to protect receiving water quality and downstream beneficial uses. Here, DEQ failed to perform such an analysis.

The Fact Sheet, Table 7, indicates DEQ did not perform a reasonable potential analysis for total nitrogen or total phosphorus despite the fact that receiving waters are impaired for these pollutants; this failure is unlawful and undermines the validity of the Permit's proposed nutrient effluent limits. The same table also illustrates that DEQ is applying human health criteria for nitrate in drinking water instead of applying numeric nutrient criteria to assess the facilities' propensity to discharge nutrient pollution that compromises the ability of receiving waters to attain designated uses.

The Fact Sheet appears to indicate that DEQ's approach to WQBELs for nutrients starts and ends at the Lake Helena TMDLs and simple recitation of the narrative nutrient criteria. However, the fact that a TMDL calculation has been performed for a waterbody in the past does not authorize DEQ to ignore more recent information about water quality in that waterbody when it analyzes the sufficiency of a polluter's permit conditions during the permit renewal process. DEQ cannot, consistent with regulations of the CWA, rely solely upon the existence of a 2006 TMDL and its assignment of a maximum allocation for nutrient pollution to Prickly Pear Creek when setting permit limits. Instead, DEQ must make a determination that the allocation is sufficiently stringent to ensure that the discharge will not impermissibly contribute to an ongoing water quality violation.

Under Section 301(b)(1)(C) of the CWA and EPA's regulations, it is mandatory for DEQ to include a WQBEL that is more stringent than the WLA if necessary to achieve water quality standards. 33 USC § 1313(b)(1)(C); 40 CFR § 122.44. EPA's regulations state that "[e]ach NPDES permit shall include…any requirements in addition to or more stringent than promulgated effluent limitations guidelines or standards…necessary to [a]chieve water quality standards." *Id.* The regulations also state that effluent limitations "must control all pollutants…which are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard." *Id.* § 122.44(d)(1)(i).

Accordingly, DEQ must incorporate into the Permit – above and beyond TBELs – a WQBEL that is stringent enough to reduce the water quality impairment and help achieve the applicable water quality standards for the waterbody. The WLA established for the facility during the nutrient TMDL process serves as the starting point for determining the stringency of WQBELs during the permitting process. 40 CFR §§ 122.44(d), 130.7(a). The WLA establishes the maximum amount of pollution that can be discharged by a particular facility, but the WQBEL in the facility's permit may be more stringent when needed to protect water quality and should hasten achievement of compliance with water quality standards. *Id.* § 130.2(f), (h), (i).

EPA's regulations are not ambiguous—the overriding question for the permitting authority in setting an effluent limitation is whether water quality standards will be met. The State may not simply authorize a discharge up to the level of a pollutant allocated in a TMDL. This is especially important where the TMDL is more than five years old, relies heavily on uncertain predictions about future water quality and pollutant loading conditions, and where DEQ has available expert numeric nutrient criteria. DEQ must analyze whether the discharge will contribute to a violation of water quality standards under conditions existing at the time of each permit reissuance and with best available data.

Here, to determine whether a more stringent WQBEL is necessary to achieve the necessary nutrient reductions, DEQ must conduct an RPA nutrient analysis and such analysis must use the lawfully binding criteria – the numeric nutrient criteria under Circular 12-A. "When developing water quality based effluent limits" at each permit reissuance, EPA regulations provide that DEQ "shall ensure that:…[t]he level of water quality to be achieved by limits on point sources established under this paragraph is derived from, and complies with all applicable water quality standards." 40 CFR § 122.44(d)(1)(vii)(A). In other words, the benchmark for the adequacy of WQBELs is whether they are sufficiently stringent to help achieve water quality standards, not whether they are identical to WLAs set in a TMDL. As noted by EPA's Environmental Appeals Board:

> While the governing regulations require consistency, they do not require that the permit limitations that will finally be adopted in a final NPDES permit be identical to any of the WLAs that may be provided in a TMDL. . . . TMDLs are by definition maximum limits; permit-specific limits like those at hand, which are more conservative than the TMDL maxima, are not inconsistent with those maxima, or the WLA upon which they are based.

In re: City of Moscow, Idaho, 10 E.A.D. 135, 148, 2001 WL 988721 (EPA Envtl. Appeals Bd. 2001) (emphasis in original).

This approach makes sense because water quality standards are the centerpiece of the Clean Water Act's water quality-based protection scheme. The wasteload allocations are only one of several mechanisms that can help achieve water quality standards— consideration of other mechanisms, such as more stringent limits in NPDES permits, are especially important when those WLAs are based on assumptions of pollutant loading that are nearly 20 years old and when better science concerning the impacts of a facilities' nutrient pollution on local water quality is available. Moreover, DEQ's 2018 TMDL Implementation Evaluation of the Lake Helena Planning Area TMDL specifically recognized that point source nutrient discharge reductions are necessary to help achieve even TMDL goals, including facility upgrades and optimization. Yet DEQ's permit renewal here fails to even mention, much less analyze, the facilities' primary role in degrading Prickly Pear Creek for nutrient impairment and contributing to Lake Helena's ongoing nutrient impairment, and fails to require effluent limits adequate to address these pollution contributions.

In fact, the water quality-based effluent limits imposed through the NPDES permitting program are another, perhaps even more critical, mechanism for achieving standards. TMDLs can appropriately be used by permitting agencies as a justification for tightening effluent limits and for holding them constant once water quality standards have been achieved through full TMDL implementation. When, however, as in this case, water quality standards are not being met, a maximum WLA that allows the status quo of impairment to continue cannot be used to short circuit the water quality-based effluent limits analysis required at each permit reissuance. To hold otherwise would undermine the Act's primary objective to "restore and maintain" water quality. 33 U.S.C. § 1251(a). In other words, permit WQBELs must be set at limits that move a waterbody closer to attainment of standards—not farther away.

In sum, DEQ should have applied its numeric nutrient criteria and made the finding that reasonable potential exists for nitrogen and phosphorus discharges to harm receiving water and violate water quality standards. The failure to do so was arbitrary, capricious, and unlawful. Likewise, DEQ's failure to perform a WQBEL analysis for nitrogen and phosphorus, and failure to recognize the WWTP's reasonable potential to violate nutrient water quality standards, is arbitrary, capricious, and unlawful. DEQ must correct these failures and perform the requisite analyses, and incorporate the results of its findings, in terms of revised effluent limits for nitrogen and phosphorus pollution discharges from the WWTP.

C. The proposed alternative mixing zone for ammonia s unlawful and will impair designated uses of Prickly Pear Creek

ARM 17.30.506(1) requires that a mixing zone will not be granted if it would threaten or impair existing beneficial uses. Further, before any mixing zone is allowed, the permittee must provide analysis to determine whether a mixing zone will be allowed or the conditions which should be applied. An alternative or "source specific" mixing zone must comply with ARM 17.30.518, and must include demonstrations proving compliance with the requirements of ARM 17.30.506, 507, and MCA 75-5-303.

Here, the Fact Sheet states that the Helena WWTP does not qualify for a standard mixing zone under ARM 17.30.516(3) due to the lack of an effluent diffuser and the flow of the receiving water compared to the discharge. DEQ then proposes to grant the WWTP an alternative or source-specific mixing zone for ammonia, despite the fact that the applicant did not perform or provide a mixing zone study for ammonia. Furthermore, the Fact Sheet is devoid of any analysis under ARM 17.30.506, 507, or articulating how the proposed mixing zone would comply with 75-5-303 MCA.

Ammonia is a common cause of fish kills.[1] However, the most common problems associated with ammonia relate to elevated concentrations affecting fish growth, gill condition, organ weights and hematocrit (Milne et al. 2000). Exposure duration and frequency strongly influence the severity of effects (Milne et al. 2000). In most fish, ammonia is excreted by passive diffusion of ammonia across the gills according to its partial pressure gradient (Wilson et al. 1998). Disruption of this gradient causes internal ammonia concentrations to increase, affecting internal organs, nervous system function, and respiration. Salmonids tend to be particularly sensitive in acute exposures associated with episodic sources. Early life stages of fish are more sensitive than juveniles or adults. Hence, effects are more likely to occur during seasons when early life stages are present.

Ammonia in sediments typically results from bacterial decomposition of organic matter that accumulates in sediment. Sediment microbiota mineralize organic nitrogen or (less commonly) produce ammonia by dissimilatory nitrate reduction. Ammonia is especially prevalent in anoxic sediments because nitrification (the oxidation of ammonia to nitrite [NO_2^-] and nitrate [NO_3^-]) is inhibited. Ammonia generated in sediment may be toxic to benthic or surface water biota (Lapota et al. 2000).

[1] EPA, "Ammonia", citations made herein available online at: https://www.epa.gov/caddis-vol2/ammonia

Ammonia also exerts a biochemical oxygen demand on receiving waters (referred to as nitrogenous biological oxygen demand or NBOD). This occurs because dissolved oxygen is consumed as bacteria and other microbes oxidize ammonia into nitrite and nitrate. The resulting dissolved oxygen reductions can decrease species diversity and even cause fish kills. Additionally, ammonia can lead to heavy plant growth (eutrophication) due to its nutrient properties. Algae and macrophytes take up ammonia, thereby reducing aqueous concentrations, but inciting potential noxious aquatic plant growth.

Based upon the record presented by DEQ no mixing zone for ammonia should be allowed in this permit renewal. The applicant did not provide any of the necessary analysis or documentation allowing DEQ to consider allowing a source-specific, alternative mixing zone. DEQ's proposed alternative mixing zone violates the plain language of its own rules because DEQ cannot, on its own initiative and without factual and scientific evidence and analysis, allow an alternative mixing zone that does not affirmatively demonstrate compliance with ARM 17.30.506, 507, and MCA 75-5-303.

Relatedly, no explanation or analysis accompanies the proposed alternative mixing zone for ammonia, rendering it arbitrary and capricious to the extent that DEQ has failed to demonstrate why it will not threaten or impair existing beneficial uses. Indeed, even should the propose mixing zone overcome the procedural errors listed above (which render the proposed mixing zone void and unlawful), DEQ has not adequately explained how the proposed mixing zone for a toxic parameter is appropriate for the discharge and Prickly Pear Creek under MCA 75-5-301(4), ARM 17.30.518(4). These considerations are particularly germane for ammonia mixing zones, which is a toxic pollutant capable of seriously degrading water quality conditions for aquatic life and fisheries in particular, and because ammonia can exacerbate the growth of noxious algal and synergistically degrade water with other nutrient pollutants, and because DEQ's own analysis indicates that both chronic and acute ammonia criteria will be consistently exceeded by the facility.

D. The permit fails to require terms adequate to control copper and zinc discharges to ensure those discharges do not cause or contribute to violations of water quality standards

We are concerned that DEQ's Fact Sheet provides the basis for more stringent effluent limits for Copper and Zinc, but arbitrarily proposes to retain old, weaker effluent limits and to require the permittee to develop a mixing zone study, in essence pushing the permittee to examine "dilution as the solution to pollution" instead of imposing the appropriate, science-based effluent limits and imposing a compliance plan. DEQ's proposed approach is counterintuitive as a policy matter under the MWQA and CWA, whose mutual goals are the reduction and ultimate elimination of pollutant discharges, and is also an abuse of discretion.

DEQ's Fact Sheet provides an evidentiary basis for requiring more stringent effluent limits per the discussion in Section E: Proposed WQBELs. New water quality data indicates that copper should have 13.1 and 5.8 µg/L as compared to the old, 2012 limits of 12 and 9, respectively. So too should zinc limits be 113 and 85 µg/L as compared to old, 2012 limits of 110 and 110. DEQ cannot authorize the permittee to discharge zinc and copper in volumes that would violate its

own best available science and, by its own admission, result in ongoing violations of water quality standards. Instead, DEQ must impose the new, more stringent effluent limits for copper and zinc and exercise its discretion to impose a compliance plan laying out a timetable and suite of activities that the permittee must undertake to come into compliance, thus satisfying its duty to "ensure" discharges will not violate 40 CFR § 122.44.

The proposed permit's weakening of monitoring requirements

We are concerned by the proposal to remove monitoring requirements for temperature, dissolved oxygen, and total dissolved solids. These pollutants are both traditional parameters for wastewater monitoring and helpful in accurately characterizing effluent and impacts on receiving water quality. In particular, temperature and dissolved oxygen are helpful parameters for best understanding the WWTP's propensity to cause or contribute to eutrophication degradation and in terms of effluent's impacts on aquatic life, particularly salmonids and aquatic life standards. In fact, because DO and temperature are both synergistically related to eutrophication issues and protection of aquatic life, both of which are impairments in Prickly Pear Creek, it is inappropriate to remove these monitoring requirements on the basis of the potential to exceed these criteria alone.

Similarly, TDS monitoring is helpful to understanding the water balance in the cells of aquatic organisms. Higher concentrations of suspended solids can serve as carriers of toxics, which readily cling to suspended particles. This is particularly a concern where pesticides are being used on irrigated crops, such as within the Prickly Pear Creek subwatershed. Where solids are high, pesticide concentrations may increase well beyond those of the original application as the irrigation water travels down irrigation ditches. Higher levels of solids can also clog irrigation devices and might become so high that irrigated plant roots will lose water rather than gain it. A high concentration of total solids will make drinking water unpalatable and might have an adverse effect on people who are not used to drinking such water. Levels of total solids that are too high or too low can also reduce the efficiency of wastewater treatment plants, as well as the operation of industrial processes that use raw water. Total solids also affect water clarity. Higher solids decrease the passage of light through water, thereby slowing photosynthesis by aquatic plants. Water will heat up more rapidly and hold more heat; this, in turn, might adversely affect aquatic life that has adapted to a lower temperature regime.

To be proactive in assessing the potential for discharges to create a nuisance or render waters harmful DEQ must first have representative data to inform such a determination. DEQ cannot make an informed finding as to whether discharges create harmful conditions in receiving waters, much less affirmatively determine instream exceedances of criteria or standards, if it does not first require appropriate pollutant monitoring. We therefore strongly urge DEQ to retain all its monitoring requirements for DO, TDS, and temperature.

Conclusion

Thank you for the opportunity to submit comments to the Department and share our concerns that the proposed discharge permit would degrade local water quality. We look forward to the Department's response.

Respectfully submitted-

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Upper Missouri Waterkeeper
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CC:

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May 24, 2021

Submitted via Certified Mail, Return Receipt Requested

Michael S. Regan, Administrator
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue N.W.
Washington, DC 20004

RE: **Cover Letter: Petition for Rulemaking on Water Quality Standards in the State of Montana**

Dear Administrator Regan:

Please find enclosed a petition from Upper Missouri Waterkeeper requesting that the U.S. Environmental Protection Agency take specified steps to determine and disapprove recently adopted narrative water quality criteria and nonsignificance exemptions and to promulgate numeric criteria that protect aquatic life, fisheries, and recreation uses in the State of Montana.

As set out in the attached petition EPA not only has the authority to disapprove Montana's recent attempt to eliminate and replace its nutrient criteria and revise its nondegradation policy, but it must do so. This petition demonstrates that nutrient pollution of waterways in Montana is pervasive, that Montana's prior numeric nutrient criteria controlled the undesirable effects of eutrophication and negative changes to water quality that result whereas narrative criteria and ambiguous, novel adaptive management policies fail to do so, and that revisions to the State's nondegradation policy conflict with EPA rules and the intent of the Clean Water Act's antidegradation policy. As I'm sure you are aware, Montana's numeric nutrient criteria were approved by EPA itself less than 10 years ago and, for many years now, EPA has clearly stated that numeric nutrient criteria represent a proven, science-based approach to ensuring adequate protection of waterways and designated uses across the Nation.

Unfortunately, Montana's 2021 Legislative Session, through Senate Bill 358, repealed the State's numeric nutrient criteria under state law, ignoring the wide body of scientific evidence demonstrating the need and efficacy of such criteria for protecting designated uses of most Montana waterways from the negative effects of nutrient pollution, as well as adopted by statute new nonsignificance categories under the State's nondegradation policy that exempt nutrient and other pollutant discharges from mandatory antidegradation review under the CWA. Governor Gianforte signed Senate Bill 358 on April 30, 2021 which, with its immediate effective date, operates to functionally eliminate numeric nutrient criteria and allow new nonsignficance exemptions for pollutant discharges within Montana as a matter of state law, ignoring EPA's mandatory review and approval under CWA Section 303(c) and tenants of cooperative federalism.

In so doing the State of Montana has adopted state law and rules that directly conflict with the Clean Water Act's promise of "restor[ing] and maintain[ing] the chemical, physical, and

biological integrity of the Nation's waters."[1] Specifically, Senate Bill 358 and newly adopted state laws and rules thereunder violate Section 303(c)'s clear directives on the setting of water quality standards, mandatory EPA review of changes to water quality standards before such standards are effective, and requirements of federal antidegradation policy. Montana's SB 358 also runs counter to EPA's longstanding 2000 policy and guidance directing States to adopt numeric water quality criteria for nutrients.

As EPA has watched the years go by knowing that nutrient pollution to surface waters of the United States remains largely uncontrolled, the success story of Montana's precedential adoption of numeric nutrient criteria in 2014 was a small regulatory shift signaling, perhaps, better nutrient pollution control was in fact possible and imminent in America's heartland. Now, the State of Montana has wholesale disregarded a science-based and lawful approach to protecting its waters from one of its most pervasive pollution issues and regressed in its ability to control nutrient pollution and protect aquatic life, fisheries, and the diverse sectors relying on clean water. Revisions to Montana's water quality standards under Senate Bill 358 have far-reaching implications negatively impacting the state's ability to produce water quality assessments, issue NPDES discharge permits, develop Total Maximum Daily Load (TMDL) clean-up plans, and take other regulatory actions to protect Montana's water resources from harmful nutrient pollution.

EPA has a mandatory duty to review the State of Montana's new water quality standards rules and make a determination that such rules comply, or not, with the CWA and its implementing regulations. Moreover, EPA must take action quickly as SB 358's unlawful immediate effective date requires the state to act contrary to express requirements of the Act. As discussed herein Montana's revised water quality standards are unlawful in several respects and there is no rational basis on which EPA can approve these revisions. Therefore, EPA must determine the aforementioned revisions to Montana's water quality standards are unlawful, contrary to the CWA and EPA rules, and must promulgate new numeric nutrient criteria that properly carry out the purposes of the CWA.

We look forward to your response to this petition.

Sincerely,

Guy Alsentzer
Executive Director

Attachment: Petition for Rulemaking under the Clean Water Act: Water Quality Criteria and Nonsignificance Criteria in the State of Montana

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[1] 33 U.S.C. § 1251(a).

BEFORE THE UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

Petition for Rulemaking	)
Under the Clean Water Act	)
	)
Water Quality Criteria for Nutrients	)
and Revisions to	)
Nondegradation Policy	)
in the State of Montana	)

I. Introduction

This petition is brough pursuant to the Administrative Procedures Act, 5 U.S.C. §§ 553(e) and 555(e). For the reasons detailed below Upper Missouri Waterkeeper ("Waterkeeper") hereby petitions the U.S. Environmental Protection Agency ("EPA") to determine that recently adopted statutory changes to the State of Montana's water quality standards under Montana Senate Bill 358[1] do not meet the requirements of the Clean Water Act ("CWA") and EPA regulations implementing the CWA, fail to protect aquatic life, fisheries, recreational, and other designated uses of Montana waters; to disapprove those changes; and to promptly prepare, publish, and finalize regulations setting forth revised or new numeric nutrient criteria that protect designated uses and meet all requirements of the CWA.

Montana Senate Bill 358 ("SB 358") attempts to eliminate the State's science-based numeric nutrient water quality criteria that are necessary to protect many Montana waters and their designated uses from the harmful effects of nutrient pollution. In addition, the bill adds new "nonsignificance" criteria that revise and weaken Montana's antidegradation policy (called "nondegradation" in Montana) to include a whole new suite of exemptions allowing for degradation of local water quality. Both actions are substantive changes of Montana's water quality standards rules requiring EPA approval before becoming effective as a matter of federal law. Moreover, both actions weaken water quality standards and protections for designated uses contrary to the requirements of the CWA and EPA regulations, necessitating determinations from EPA that Montana's nutrient and nondegradation standards do not meet the requirements of the CWA.

[1] Montana Senate Bill 358, April 30th 2021 Final Version. Attached as Exhibit.

II. History and Background

For over two decades, EPA has recognized the importance of developing numeric nutrient water quality criteria to protect designated uses of waterbodies from nutrient pollution that is associated with increases in concentrations of nitrogen and phosphorus.[2] In 2014, Montana adopted protective nutrient criteria, recognizing that the existing narrative criteria had failed to protected designated uses of Montana waters from the effects of increasing nutrient pollution.[3] EPA approved Montana's nutrient water quality standards in 2015 as fully-supported by sound science and necessary to protect designated uses.[4] Montana had adopted and EPA had approved a combination of reference and stressor-response approaches to nutrient water quality standards embodied in numeric nutrient criteria for nitrogen and phosphorus, grounded in sound science.[5] Montana's numeric nutrient criteria was precedential on a national scale as one of first States to comprehensively address the threat of nutrient pollution through strong numeric water quality criteria that protected all designated uses.

Montana Senate Bill 358 ("SB 358") attempts to eliminate the State's science-based numeric nutrient water quality criteria that are necessary to protect many Montana waters and their designated uses from the harmful effects of nutrient pollution. In addition, the bill adds new "nonsignificance" criteria that revise and weaken Montana's antidegradation policy (called "nondegradation" in Montana) to include a whole new suite of exemptions allowing for degradation of local water quality. These revisions represent a 180 degree turn in water pollution controland demonstrate a complete disregard for CWA requirements and sound science.

III. Petition

This petition under 5 U.S.C. §§ 553(e) and 555(e), requests EPA take the following actions under its Sections 303(c)(2) and 303(c)(4)(B) authority:

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[2] EPA, Nutrient Criteria Development; Notice of Nutrient Criteria Technical Guidance Manual: Rivers and Streams, 65 Fed. Reg. 46167 (July 27, 2000). *See also* Administrative Record 228 *et seq.* in Upper Missouri Waterkeeper v. EPA, 377 F. Supp. 3d 1156, 1159-60 (D. Mont. 2019). Where appropriate this Petition also cites to the salient AR provided in EPA's Index to the Administrative Record, filed Dec. 1, 2016 in the aforementioned action.

[3] Suplee, Watson, Nov. 2008. "Scientific and Technical Basis of the Numeric Nutrient Criteria for Montana's Wadeable Streams and Rivers." (hereinafter "Technical Basis NNC 2008"); Suplee, M.W ., and V. Watson , 2013. Scientific and Technical Basis of the Numeric Nutrient Criteria for Montana's Wadeable Streams and Rivers—Update 1.; DEQ, Notice of Public Hearing on Proposed Amendment (Water Quality), MAR Notice No. 17-356 281 (Feb. 3, 2014); AR 1220-1225 (Circular12-A), 1326, 1346, and 1636.

[4] EPA Region 8, "EPA Action on Montana's Numeric Nutrient Criteria and Variance Rules," February 26, 2015.

[5] Technical Basis NNC 2013, AR 1222.

(1) make a determination that the state law elimination of numeric nutrient criteria and required use of a new narrative, adaptive management nutrient program under Senate Bill 358, effective immediate April 30, 2021 on signature by Governor Gianforte, fail to provide full protection for designated uses and violate the CWA;

(2) make a determination that Senate Bill 358's revisions of nonsignificance exemptions under Montana's nondegradation policy violates EPA's antidegradation policy rules and mandatory public participation rules;

(3) make a determination that Senate Bill 358's provisions violate the CWA by providing an immediate effective date upon signature by the Governor without and before providing for mandatory EPA review and action on those sections;

(4) disapprove those offending sections of Senate Bill 358 in Montana code for CWA purposes; and

(5) promulgate federal regulations applicable to Montana setting forth revised numeric nutrient water quality standards as necessary to meet requirements of the CWA.

A. Jurisdiction and Authority of the Environmental Protection Agency

The CWA requires that states adopt water quality standards. Such standards must consist of the designated uses, the water quality criteria for waters based on such uses, and antidegradation requirements.[6] The standards must protect the public health or welfare, enhance the quality of water and wherever attainable, provide water quality for the protection and propagation of fish, shellfish and wildlife and for recreation in and on the water, taking into account their use and value of public water supplies, and agricultural, industrial, and other purposes including navigation.[7]

Water quality criteria must be adopted that protect the designated uses.[8] Water quality criteria are expressed as constituent concentrations, levels, and/or statements, representing a quality of water that supports a designated use(s).[9] Such criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the

[6] 33 U.S.C. § 1313(c)(2)(A); *see also* 40 C.F.R. §§ 131.2, 131.3(i), 131.6.
[7] 33 U.S.C. § 1313(c)(2)(A); *see also* 40 C.F.R. § 131.5(a)-(b).
[8] 40 C.F.R. 131.11(a)(1).
[9] 40 C.F.R. § 131.3(b).

designated use(s).[10] For waters with multiple use designations, the criteria shall support the most sensitive use.[11]

In any instance when EPA determines that a new or revised standard is necessary to meet the requirements of the CWA, the Administrator shall promptly prepare and publish proposed regulations setting forth a revised or new water quality standard.[12] This petition demonstrates that the facts in combination with the CWA's plain language, EPA's regulations and guidance, support the Administrator making a determination that Montana's elimination of its numeric nutrient criteria and replacement 'to-be-determined' narrative adaptive management approach to nutrient pollution control, and revisions of its nondegradation policy's nonsignificance exemptions, are individually and collectively not fully protective of designated uses or based on sound scientific rationale and, moreover, that Montana's revisions to water quality standards and alleged immediate effective date occurred unlawfully without mandatory EPA approval.

B. Nitrogen and Phosphorus Pollution Threaten the Designated Uses of Waters in Montana

1. Nutrient Pollution is Widespread and Harming Uses of Montana's Waterbodies

It is well-documented that the addition of nitrogen and phosphorus to surface waters leads to phenomenon referred to as eutrophication. Eutrophication is increased plant and algae growth and decay in a waterbody, and all the consequential changes to the waterbody and the water quality that occur as a result. Indeed, some problems are caused by high concentrations of the nutrients themselves; for example, direct toxicity of high levels of nitrate in drinking water to humans and to aquatic organisms. Most problems caused by nitrogen and phosphorus, however, result from the stimulating effect these pollutants have on plant and microbial growth, altering the balance of natural communities, robbing the water column of oxygen, and promoting the growth of harmful microorganisms.[13]

These problems prevent waters from attaining the basic CWA "fishable/swimmable" goals, threaten the health of human and wildlife users of these waters, and impose significant costs on drinking water supplies. Nitrogen and phosphorus pollution harm Montana's waters

[10] 40 C.F.R. 131.11(a)(1).
[11] *Id.*
[12] 33 U.S.C. § 1313(c)(4)(B), 40 C.F.R. §§ 131.5(a)(1)-(3), 131.5(b).
[13] *See* Technical Basis NNC 2008, 2013.

through: damage to recreational use of waters; damage to aquatic plant and wildlife communities; damage to drinking water supplies; and damage to aesthetic quality of waters.[14]

An exhaustive body of literature shows that increased nitrogen and phosphorus loading to freshwater systems stimulates algal growth across aquatic ecosystems.[15] Researchers have consistently reported significant positive relationships between nutrient concentrations and both suspended and benthic algal biomass in streams. Chronic nitrogen and phosphorus pollution from anthropogenic nutrient additions, sometimes called cultural eutrophication, shifts aquatic ecosystems out of balance and dramatically alters food webs with many detrimental effects. Nitrogen and phosphorus over-enrichment detrimentally affects aquatic life, and leads to aquatic life impairment. These indirect effects are attributed mostly to changes in the dissolved oxygen regimen and alteration of food and habitat resources. Studies of the effects of nutrient additions to streams and resulting change in algal abundance and composition have shown major changes in the abundance and types of consumers including macroinvertebrates and fishes present in these nutrient-enriched streams.[16]

So too does nutrient pollution impair the aesthetic quality of freshwater by significantly reducing water clarity, causing floating mats of live and decomposing algae, and producing hypo and anoxic conditions resulting in unpleasant odors and event fish kills. The stimulation of freshwater algae and cyanobacteria by nutrient pollution described herein results in excessive quantities of planktonic and sestonic algae in lakes, rivers, and streams. Water clarity is decreased significantly by the algae as they overgrow the system and form blooms. These blooms and poor aesthetic conditions affect the fishing designated use of many waterways.

In adopting its statewide numeric nutrient criteria Montana DEQ specifically recognized that forms of nitrogen and phosphorus rank as the 4th, 8th, 10th, and 12th most common types of pollution in Montana's flowing waters.[17] In fact, excess nitrogen and phosphorus levels account for at least 17% of <u>all</u> stream miles impaired by <u>all</u> forms of water pollution in Montana.[18] DEQ recognized that "the effects of excess nitrogen and phosphorus in streams and rivers go well beyond the undesirable aquatic life referred to in the [previous] narrative standard. Excess nitrogen and phosphorus affect other water quality parameters [e.g. DO, pH, and] [t]he state-of-

[14] *See generally,* DEQ Integrated Reports 2006-2020, 303d Lists.
[15] *See* Technical Basis NNC 2008, "Section 2.0 The Science of Stream Eutrophication" & Technical Basis NNC 2013, "Section 2.5 "Literature Consulted"".
[16] *Id.*
[17] DEQ, 'Nutrient Standards Rules and Statements of Reasonable Necessity,' 2014. (Hereinafter "Rule Statement.")
[18] *Id.*

the-science is such that linkages can clearly be made between nitrogen and phosphorus concentrations and these other, already-adopted standards. Thus, the numeric nutrient criteria will also assure protection and attainment of the state's dissolved oxygen and pH standards which are, in and of themselves, critical to the protection of fish and aquatic life."[19] In turn, Montana developed and adopted nitrogen and phosphorus criteria set at levels so that they protect streams from the undesirable aspects of eutrophication.[20]

2. Numeric Nutrient Criteria Represent Scientific Best Practices and Regulatory Consensus for Maintaining and Restoring Water Quality in Montana

Eutrophication has long been recognized as a serious water quality problem by EPA, illustrated by the fact that the agency undertook a national eutrophication survey of streams just shortly after its creation in the early 1970s. By the late 1990s EPA announced that all states and tribes must develop nutrient criteria for their respective waters, and by 2000 EPA had published a series of regionally-based numeric nutrient criteria recommendations.[21] Acknowledging the serious issues that nutrient pollutants can cause, EPA developed nutrient guidance in 2000 and directed states to create science-based numeric criteria by 2003 to protect designated uses of waters from the harmful effects of nutrient pollution as required by the Clean Water Act.[22] EPA found the nation's reliance on varying narrative standards to control nutrient pollution in waterbodies to be inadequate and lacking quantitative values and lacking specificity.[23] Conversely, EPA has found numeric criteria to be more effective in protecting and supporting designated uses and more effective for regulating pollutant discharges.[24]

Montana first adopted numeric nutrient criteria on large stretches of the Clark Fork River and defined reach-specific nutrient concentrations and benthic algae biomass benchmarks.[25] Montana chose to use numeric criteria for the Clark Fork early on, instead of relying on its then-existing narrative nutrient criteria, because of the quantitative values associated with numeric criteria. Soon after, in crafting numeric nutrient criteria for statewide application, DEQ's expert nutrient scientist Dr. Suplee recognized how numeric nutrient criteria embody the precautionary

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[19] *Id.* at 1.
[20] *See* Circular 12-A, AR 1220-1225.
[21] EPA. Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria, 2000. Washington, D.C., U.S. Environmental Protection Agency.
[22] EPA. Nutrient Criteria Development; Notice of Nutrient Criteria Technical Guidance Manual: Rivers and Streams, 65 Fed. Reg. 46167 (July 27, 2000). (hereinafter "EPA Nutrient Guidance 2000").
[23] EPA Nutrient Guidance 2000 at 1, 3-4.
[24] *Id.* at 4, 9-10.
[25] Montana ARM 17.60.631.

approach and work synergistically with traditional DO and pH numeric criteria to better protect designated uses from eutrophication in Montana streams and rivers than narrative criteria:

> "[S]omething about the DO, pH, and narrative [nutrient] criteria was not and is not working when it comes to stream eutrophication, since eutrophication problems continue to be common in Montana… [I]f one knew the nutrient concentrations that could prevent exceedances of the DO and pH criteria in a waterbody, one has a good chance of actually attaining the DO and pH criteria because the root cause of the problem would be addressed. That is exactly what numeric nutrient criteria are intended to do."[26]

In advocating for the use of numeric nutrient criteria Dr. Suplee explicitly recognized the problematic nature of Montana's prior narrative nutrient criteria, which have "more difficult implementation challenges…there are no definitions in rule of what "undesireable" aquatic life is, or, if that could be determined, what the levels of this aquatic life should be held to."[27] Montana's narrative nutrient criteria are poorly defined such that the application of such criterion is subject to individual interpretation and, consequently, debate and varying levels of efficacy in actually protecting designated uses. Put simply, Montana's previous narrative criteria approach did not adequately address the state's rampant nutrient pollution where excess nitrogen and phosphorus levels accounted for 17 percent of <u>all</u> stream miles impaired in the state by pollution.[28]

C. Montana's Nutrient Water Quality Standards

1. Montana's Numeric Nutrient Criteria & EPA Approval

To address the ongoing issue of pervasive nutrient pollution and to comply with EPA instruction to establish numeric nutrient criteria, Montana's Department of Environmental Quality ("DEQ") developed water quality standards for nutrients in Circular 12-A.[29] Montana did so because narrative nutrient criteria were not adequately addressing water quality impairments.[30] Circular 12-A set science-based numeric criteria for phosphorus and nitrogen to protect all designated use such as health, fishing, and recreation in Montana's wadeable streams.

The limits on in-stream pollutant concentrations in Circular 12-A are tied to the egoregional characteristics of Montana as well as the season in which they are to be applied.

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[26] Technical Basis NNC 2008 at pp. 26.
[27] *Id*.
[28] Notice of Public Hearing on Proposed Amendment (Water Quality). MAR Notice No. 17-356 281 (Feb. 3, 2014).
[29] Circular 12-A, Numeric Nutrient Criteria in Montana. July 2014 Final Edition.
[30] Technical Basis NNC 2013 at 11-12.

"The nitrogen and phosphorus concentrations provided here have been set at levels that will protect beneficial [AKA, designated] uses and prevent exceedances of other surface water quality standards which are commonly linked to nitrogen and phosphorus concentrations (e.g., pH and dissolved oxygen…) The nitrogen and phosphorus concentrations provided here also reflect the intent of the narrative standard at ARM 17.30.637(1)(e) and will preclude the need for case-by-case interpretations…"[31] In other words, Montana's numeric nutrient criteria represent best available science tied directly to the most efficacious means for protecting designated uses of most Montana waterways.

Table 12A-1. Base Numeric Nutrient Standards for Wadeable Streams in Different Montana Ecoregions. If standards have been developed for level IV ecoregions (subcomponents of the level III ecoregions) they are shown in italics below the applicable level III ecoregion. Individual reaches are in the continuation of this table.

			Numeric Nutrient Standard[4]	
Ecoregion[1,2] (level III or IV) and Number	Ecoregion Level	Period When Criteria Apply[3]	Total Phosphorus (µg/L)	Total Nitrogen (µg/L)
Northern Rockies (15)	III	July 1 to September 30	25	275
Canadian Rockies (41)	III	July 1 to September 30	25	325
Idaho Batholith (16)	III	July 1 to September 30	25	275
Middle Rockies (17)	III	July 1 to September 30	30	300
Absaroka-Gallatin Volcanic Mountains (17i)	IV	July 1 to September 30	105	250
Northwestern Glaciated Plains (42)	III	June 16 to September 30	110	1300
Sweetgrass Upland (42l), Milk River Pothole Upland (42n), Rocky Mountain Front Foothill Potholes (42q), and Foothill Grassland (42r)	IV	July 1 to September 30	80	560
Northwestern Great Plains (43) and Wyoming Basin (18)	III	July 1 to September 30	150	1300
River Breaks (43c)	IV	See Endnote 5	See Endnote 5	See Endnote 5
*Non-calcareous Foothill Grassland (43s), Shields-Smith Valleys (43t), Limy Foothill Grassland (43u), Pryor-Bighorn Foothills (43v), and Unglaciated Montana High Plains (43o)**	IV	July 1 to September 30	33	440

Circular DEQ 12-A, p.3, Final July 2014 Edition.

In sum, Montana's numeric nutrient water quality criteria are based on a large body of scientific work, including EPA's nutrient guidance, years of sampling and research by DEQ, and scientific studies that show numeric criteria are necessary to protect the designated uses in

[31] Circular 12-A, Introduction.

Montana's streams.[32] Narrative criteria lack specificity whereas numeric nutrient criteria provide "distinct interpretations of acceptable and unacceptable conditions, form the foundation for responsible measurement of environmental quality, and reduce ambiguity for management and enforcement decisions."[33] The state's analysis and EPA's 2000 guidance established a firm scientific basis supporting Montana's decision to derive numeric nutrient criteria at the ecoregion level III scale.[34] Indeed, EPA found Montana's numeric nutrient criteria to be "scientifically defensible, well supported by the record, and consistent with Clean Water Act requirements" when approving numeric nutrient criteria for CWA purposes in 2015.[35] EPA has not disapproved Montana's numeric nutrient criteria since adoption in 2015 and therefore they are still applicable in Montana as a matter of federal law.

2. Montana's April 2021 Legislative Passage and Governor Gianforte's Signature of Senate Bill 358

The Montana Legislature passed Senate Bill 358 during the 2021 Session.[36] Petitioners sent EPA Region 8 a letter dated April 23, 2021 detailing practical and legal issues with Senate Bill 358 and requesting EPA urge Montana Governor Gianforte to veto the bill and if passed, to exercise its CWA Section 303(c) authority and disapprove its sections amending state water quality standards.[37] Montana Governor Gianforte signed SB 358 into state law on Friday April 30th, 2021.

SB 358 is a blatant attempt to eliminate a well-documented, proven, and science-based approach to protecting designated uses of most Montana waterways with numeric nutrient criteria. Waterkeeper is unaware of a single instance across the Nation in which EPA has allowed a State to regress and remove a duly-promulgated and approved protective numeric criteria approach in favor of a less-protective, narrative criteria approach. As EPA knows, its own regulations for development of water quality standards requires states to adopt numeric criteria unless such criteria cannot be established.[38]

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[32] *See* Technical Basis NNC 2008, 2013; *see also* EPA Nutrient Guidance.
[33] EPA Nutrient Guidance at 10.
[34] EPA Approval Letter 2015.
[35] *Id.* at 2.
[36] Senate Bill 358.
[37] *See* Letter, Upper Missouri Waterkeeper to EPA Region 8, "State of Montana Senate Bill 358; Request For Action From the Environmental Protection Agency," April 23, 2021.
[38] 40 C.F.R. 131.11(b).

Moreover, EPA has already found that Montana's numeric water quality standards are necessary to address nutrient pollution in the state, protect designated uses, and are based on sound science. As EPA stated in its original Action Letter Approving Montana's Numeric Nutrient Criteria in 2015, "[t]he adopted water quality criteria…that are the subject of today's action are scientifically defensible, well supported by the record and consistent with CWA requirements."[39] Further, EPA determined that Montana's numeric nutrient criteria "will protect aquatic life and recreational designated uses and are based on a strong scientific rationale that is consistent with the EPA guidance on deriving NNC using scientifically defensible methods," and therefore approved such numeric criteria in 2015.[40] Based upon this history and the robust scientific record supporting Montana's numeric criteria, EPA cannot now find that the Legislature's elimination of the necessary and protective numeric criteria protecting designated uses of Montana waters is defensible, particularly given the lack of any rationale supporting such revision. Senate Bill 358's changes to Montana's water quality standards cannot be approved, and must be disapproved, as a result.

a. Elimination of Numeric Nutrient Criteria Under SB 358

In SB 358, Section 1, 'Transition for nutrient standards," the bill eliminates Montana's duly-adopted and EPA-approved numeric nutrient criteria and implementing rules and requires the Montana Department of Environmental Quality (hereinafter "DEQ") to adopt new nutrient pollution control rules framed as a so-called "adaptive management program," which is little more than a variant, and a poor one, on the narrative standards approach.

b. SB 358 Violates the CWA

SB 358 is wholly divorced from requirements of the CWA or EPA regulations. Congress directed states to establish water quality standards that "consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses."[41] EPA regulations specify that "[s]uch criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use."[42] Because water quality criteria must be set at a level that protects the designated use, economic factors "are

[39] *See* EPA 2015 Action Letter at 2.
[40] *Id.* at 12.
[41] 33 U.S.C. § 1313(c)(2)(A); 40 C.F.R. § 131.2.
[42] 40 C.F.R. § 131.11(a)(1).

irrelevant" and states should not take them into account.[43]

Water quality standards under § 1313 are standards for protecting waterway health and designated uses. And, as EPA well-knows, science-based and protective water quality standards are foundational to sound implementation of the CWA affecting, in particular, the second primary method of restoring and protecting our waterways: pollutant discharge elimination permits and the development of Total Maximum Daily Load ("TMDL") cleanup plans. Congress prohibited all pollutant discharges to waterways absent a permit, and water quality standards are a primary driver of those permit requirements.[44] A TMDL must be designed to ensure that a waterbody is returned to meeting water quality standards,[45] thus the importance of a science-based goal post for water quality protection.

Repudiating this framework, SB 358 repeals the Montana water quality standard that actually protects designated uses, proposes an ambiguous future regulatory program that does not meet requirements in the Act and will allow permits to be issued that continue to cause and contribute to water quality impairments, and requires a series of novel implementation methods that will have the effect of frustrating the federal requirements discussed above.

i. Adaptive management is not a water quality standard meeting the requirements of 33 U.S.C. § 1313(c).

Adaptive management plans cannot substitute for duly-promulgated water quality standards. Too frequently (in fact most often) "adaptive management" is simply an open-ended and purposefully ambiguous quasi-regulatory scheme that benefits only the regulated community, externalizes the costs of major polluting sectors on the human environment, and does not comply with mandates of federal water pollution control law. It may have some usefulness in long-term planning guidance, but it has no place in setting water quality standards that must protect designated uses—*i.e.,* limits for known pollutant parameters, designed at meeting needs for the waterbodies in question. Standards must include criteria defining a set level of ambient conditions that are protective of human contact, of fish, of aquatic invertebrates, and of wildlife.[46] SB 358 eliminates protective, duly-promulgated and EPA-approved numeric nutrient criteria effective immediately, replacing those standards with nothing other than an

[43] *Miss. Comm'n on Natural Res. v. Costle,* 625 F.2d 1269, 1277 (5th Cir. 1980).
[44] 33 U.S.C. §§ 1311(b)(1)(c) and 1342 (a)(1). *See also,* 40 C.F.R. § 122.44(d).
[45] 33 U.S.C. § 1313(d).
[46] 33 U.S.C. § 1313(c); 40 C.F.R §§ 131.5(a)(2); 131.11(a).

indefinite and unprotective narrative approach and a future rulemaking process. A future state rulemaking process with undefined and speculative result(s) also does not satisfy the CWA's requirements that water quality standards – today - must protect existing and designated uses.

ii. The bizarre implementation provisions of SB 358 are unscientific and will allow increased pollution and harm to Montana's waterways in violation of the Act.

SB 358 would require a 'balancing act' in setting narrative nutrient water quality standards for Montana. However, a balancing act in setting nutrient pollution controls is wholly inappropriate and unlawful. The CWA is clear: a state must set water quality standards at a level necessary to protect designated uses and then point source pollution must be controlled at levels necessary to satisfy applicable standards and to ensure discharges do not cause or contribute to violations of water quality standards. In stark contrast, SB 358 directs DEQ to prioritize phosphorus reductions over nitrogen reductions contrary to an extensive body of nutrient science for Montana's waters[47], functionally incentivizing *more* harm to waterways by allowing a primary causal agent of eutrophication, nitrogen, to be de-emphasized in standard setting decisions. Ample evidence proves that most Montana waterways are nitrogen-limited and nitrogen discharges from point sources are significant causes of pollution.[48]

Lastly, SB 358's requirement to use determinations of novel response variables throws out the State's existing, proactive approach to nutrient pollution control that synthesizes a wide body of science to create effective numeric nutrient criteria that protect designated uses in favor of a crisis management regime where attempts to address site-specific pollution problems occur only after the problem is out of hand. This is contrary to the protective directives of the Clean Water Act and makes little scientific or economic sense as it is far more efficient – and cheaper – to prevent nutrient pollution problems than to try and fix them after the occur.

iii. Montana cannot "repeal" protective numeric standards approved by EPA for weaker narrative standards.

SB 358 has an effective date as of passage and signing by the Governor[49] and requires DEQ to implement a narrative approach to nutrient pollution control until "to-be-determined"

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[47] *See* Technical Basis NNC 2013 at 2-6: DEQ expert nutrient scientist Dr. Suplee recommends complimentary nitrogen and phosphorus criteria because "[w]ater quality standards based on control of only a single nutrient (i.e., P) could result in unwanted ecological consequences in Montana's rivers and streams."
[48] *Id*. *See also* DEQ Circular 12A.
[49] SB 358, Section 11, "Effective Date."

adaptive management program rules are adopted in spring 2022.[50] These sections violate the CWA. The bill tries to prevent DEQ, as of the date on which Governor Gianforte signed SB 358, from implementing numeric nutrient criteria that EPA has approved, which are effective as a matter of federal law, and which fulfill the CWA's intent and purposes of providing a scientific, proven basis for protecting designated uses of most Montana waterways.

While Petitioner notes that DEQ must, under federal law, implement the EPA-approved nutrient criteria in Circular 12A, Waterkeeper is also aware from experience that DEQ has proven unwilling to go against State Legislative directives despite federal law requirements, and therefore it is very likely that lawful point source control of nutrient pollution through federally-applicable numeric nutrient criteria has halted upon SB 358's April 30th 2021 passage to state law. To this point, DEQ is presently undertaking a new state-level Nutrient Work Group stakeholder process specifically designed to implement the new adaptive-management approach to nutrient pollution control required under Senate Bill 358, and is expressing in communication to stakeholders the State of Montana's view that Senate Bill 358 has eliminated numeric nutrient criteria for Clean Water Act purposes.[51]

SB 358 violates the Clean Water Act and directs the overt violation of the State of Montana's duty to faithfully implement requirements of the CWA which, among other items, mandates that changes to water quality standards – like those contemplated by SB 358 – are only effective upon EPA approval and upon a sound scientific and evidentiary basis, all of which are lacking here.[52] Given the numeric nutrient rule package experience with DEQ and this unfortunate state of affairs, time is of the essence and EPA must act very quickly to protect Montana waters from unlawful pollution by acting on this petition within 90 days as contemplated under Section 303(c), and certainly before the state adaptive management rulemaking process required under SB 358 gains traction and wastes valuable time and limited resources on an unlawful wild goose chase.

[50] *Id.* Section 2 "Transition for nutrient standards-department."
[51] *See* Email Solicitation from DEQ to Stakeholders Regarding SB 358 – Narrative Nutrient Standards, May 12, 2021.
[52] 33 U.S.C. § 1313(c)(2).

c. SB 358's Creation of New Nonsignificance Exemptions Under the State of Montana's Nondegradation Policy

In addition to eliminating Montana's numeric nutrient criteria, SB 358 adds new "nonsignificance" exemptions for pollutant discharges under its nondegradation policy. Specifically, SB 358 adds the following:

> **75-5-317. Nonsignificant activities.** (1) The categories or classes of activities identified in subsection (2) cause changes in water quality that are nonsignificant because of their low potential for harm to human health or the environment and their conformance with the guidance found in 75-5-301(5)©.
>
> (2) The following categories or classes of activities are not subject to the provisions of 75-5-303:
>
> …
>
> (u) discharges of total phosphorus or total nitrogen that do not:
>
> (i) create conditions that are toxic or harmful to human, animal, plant, and aquatic life;
> (ii) create conditions that produce undesirable aquatic life; or
> (iii) cause measurable changes in aquatic life; and
>
> v) any other activity that is nonsignficant because of its low potential for harm to human health or to the environment and its conformance with the guidance found in 75-5-301(5)(c).

SB 358, Section 7, pp. 16-17. SB 358's revised nonsignificance criteria operate to allow more, not less, pollution in Montana's waterways.

First, SB 358's new nondegradation exemptions invert the burden of proof in permit decisionmaking, creating a legal presumption that nutrient discharges are *per se* nonsignificant absent a showing triggering one of the thresholds under MCA 75-5-317(2)(u)(i-iii) or the "catch-all" exemption embodied in 75-5-317(2)(v). This allocation of discretion and procedural approach is legally backwards; rather, the starting point for nondegradation review must be that all discharges – and given the record of nutrient pollution in Montana –especially nutrient pollutant discharges, are subject to Tier 2 nondegradation review unless a site-specific showing is made to justify an exemption.[53] Here, no such showing(s) has been made in making revisions to Montana's nondegradation policy.

Second, SB 358's nutrient specific categorical exemptions are not faithful to the CWA's

[53] 40 C.F.R. § 131.12(a)(2). States may exercise their implied *de minimis* authority and exempt a discharge from Tier II analysis only if the discharge's impact on water quality is insignificant, constrained by the purposes of the CWA, and genuinely *de minimis* as proven by findings. *See also* Water Quality Standards Regulatory Revisions, 80 Fed. Reg. 51,020, 51,034 (Aug. 21, 2015).

goals of maintaining and restoring water quality. SB 358 defines nutrient discharges as *insignificant as a matter of law*, operating without regard to the specifics of a proposed discharge and contrary to the very point of nondegradation: preserving water quality by preventing death by a thousand cuts. EPA has emphasized in its Aug 2015 WQS Rule Revisions that a state agency must look at the particular circumstances of a discharge when applying a *de minimis* exemption to ensure that the discharge is *insignificant-in-fact*: "[u]nless a state…can provide appropriate technical justification, it should not create categorical exemptions from Tier 2 review for specific types of activities based on a general finding that such activities do not result in significant degradation."[54] SB 358's new categorical exemptions functionally subvert the State's nondegradation policy because they empower Montana to allow significant, often cumulative, degradation without Tier II review. Doing so exceeds the state's implied authority to create *de minimis* exemptions, lacks a factual basis, and is unlawful.

The same fatal flaws are found in SB 358's new MCA 75-5-317(2)(v), which operates as a 'catch-all' category purportedly exempting any "other activity that is nonsignificant because of its low potential for harm…" This catch-all is incredibly overbroad, potentially authorizing thousands of different activities that could alone, or together synergistically with other discharges to a waterway, harm existing uses and degrade water quality. EPA's rules do not allow such broad exemptions to Tier II reviews under nondegradation policy as doing so is not only contrary to well-established regulation, but so too would allow the 'exception to swallow the rule' through unscientific, categorical exemptions of otherwise polluting activities from meaningful review and permitting. Mandatory public participation requirements are also ignored insofar as this section allows DEQ to exempt potentially significant discharges from any number of activities or types of pollutants, including even bioaccumualtive pollutants, without any findings, notice to the public, or even a public hearing.

Critically, SB 358's revisions to Montana's nondegradation policy through vast expansions of nonsignificance exemptions fail to satisfy public participation requirements of the CWA and EPA rules. SB 358's legislative-based approach to revising Montana's nondegradation policy ignores Section 303(c)'s public participation requirements by mandating an effective date upon signature by the Governor, not approval by EPA or through a requisite

[54] Water Quality Standards Regulatory Revisions, 80 Fed. Reg. 51,020, 51,035 (Aug. 21, 2015) (codified at 40 C.F.R. pt. 131).

public process.[55] There are also no written findings accompanying SB 358 supporting these revisions to Montana's nondegradation policy; without written findings neither EPA nor the public have any way of knowing what the legislature considered in creating these exemptions, whether the changes comply with directives to protect existing or designated uses, and in any case could not meaningfully participate in decisionmaking.

EPA regulation requires states to adopt an antidegradation policy and implementation procedures consistent with 40 CFR § 131.12(a)(1-4). Here, no findings were created, EPA was not given an opportunity to review and take action on the nondegradation policy changes before effective date, and the public was precluded from substantively participating in the development and any subsequent revisions to Montana's nondegradation policy. In both substance and process SB 358's revisions to Montana's nondegradation policy violate the CWA's intent, purpose, and EPA rules.

As described in the EPA WQS Handbook (1994), EPA may disapprove and federally promulgate all or part of an implementation process for antidegradation if, in the judgment of the Administrator, the State's process (or certain provisions thereof) can be implemented in such a way as to circumvent the intent and purpose of the antidegradation policy.[56] EPA must exercise its authority to do so here by disapproving SB 358's unlawful revisions to Montana's nondegradation policy.

IV. Relief Requested by This Petition

For the reasons detailed above, Petitioners hereby petition EPA to, under Section 303(c)(2) and 303(c)(4)(B) to:

(1) make a determination that the State of Montana's statutory elimination of numeric nutrient criteria and creation of a new narrative, adaptive management nutrient criteria under Senate Bill 358, effective immediate April 30, 2021 on signature by Governor Gianforte, fail to provide full protection for designated uses and violate the CWA;

(2) make a determination that Senate Bill 358's revisions of nonsignificance exemptions under Montana's nondegradation policy violates EPA's antidegradation policy rules and mandatory public participation rules;

[55] Section 303(c); 40 C.F.R. 131.12(a)-(b).
[56] *See also* 33 U.S.C. § 1313(c)(4)(B).

(3) make a determination that Senate Bill 358's provisions violate the CWA by providing an immediate effective date upon signature by the Governor without and before providing for mandatory EPA review and action on those sections;

(4) disapprove those offending sections of Senate Bill 358 in Montana code for CWA purposes; and

(5) promulgate federal regulations applicable to Montana setting forth revised numeric nutrient water quality standards as necessary to meet requirements of the CWA.

Conclusion

The results intended by and process for adopting SB 358 under Montana law are contrary to the explicit direction of the Clean Water Act and EPA rules. SB 358 was signed into state law on April 30, 2021 with an unambiguous immediate effective date, resulting in an urgent and stark conflict between federal law and EPA regulations, and state law revisions to water quality standards that do not protect designated uses of Montana's waters, are not based on science, and were not lawfully approved. SB 358's passage into Montana law flies in the face of the scientifically rich record that supports the State's numeric nutrient criteria in Circular 12-A, criteria that EPA has approved for CWA purposes. Montana's Legislature passed and Governor Gianforte signed SB 358 without providing a reasoned rationale for the decision to depart from previous findings, without providing evidentiary support for other substantive revisions to Montana's water quality standards, and failed to provide for mandatory public participation opportunities or EPA review and approval.

For these reasons Waterkeeper petitions EPA to, within 90 days of receipt of this petition, make the determinations requested in Section IV *supra*, to disapprove SB 358's changes to Montana's water quality standards, and to promulgate federal regulations applicable to Montana setting forth revised numeric nutrient water quality standards as necessary to satisfy requirements of the CWA.

Respectfully submitted-

Guy Alsentzer, Executive Director
Upper Missouri Waterkeeper
24 S. Willson Ave,
Suites 6-7
Bozeman, MT 59715

Dated this day, the 24th of May, 2021.
Attachments: List of Citations

List of Citations to Petition for Rulemaking Under the Clean Water Act Regarding Water Quality Standards for Nutrients in the State of Montana

DEQ. Circular 12-A, Numeric Nutrient Criteria in Montana. July 2014 Final Edition.

DEQ. Email Solicitation to Stakeholders Regarding SB 358 Rulemaking – Narrative Nutrient Standards, May 12, 2021. (Attached hereto).

DEQ. Notice of Public Hearing on Proposed Amendment (Water Quality). MAR Notice No. 17-356 281 (Feb. 3, 2014).

DEQ. 'Nutrient Standards Rules and Statements of Reasonable Necessity,' 2014.

EPA. "Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria", 2000. Washington, D.C., U.S. Environmental Protection Agency.

EPA. "Nutrient Criteria Development; Notice of Nutrient Criteria Technical Guidance Manual: Rivers and Streams", 65 Fed. Reg. 46167 (July 27, 2000).

EPA Region 8, "EPA Action on Montana's Numeric Nutrient Criteria and Variance Rules," February 26, 2015.

Letter, Upper Missouri Waterkeeper to EPA Region 8, "State of Montana Senate Bill 358; Request For Action From the Environmental Protection Agency," April 23, 2021. (Attached hereto).

Senate Bill 358, Montana 2021 Legislature, April 30th 2021, Final Version. (Attached hereto).

Suplee, M.W ., and V. Watson , 2013. Scientific and Technical Basis of the Numeric Nutrient Criteria for Montana's Wadeable Streams and Rivers—Update 1. Montana DEQ.

Suplee, Watson, 2008. "Scientific and Technical Basis of the Numeric Nutrient Criteria for Montana's Wadeable Streams and Rivers." Montana DEQ.

From: **Montana DEQ** montanadeq@announcements.mt.gov
Subject: DEQ Implementation of SB 358 - Narrative Nutrient Standards
Date: May 12, 2021 at 5:07 PM
To: guy@uppermissouriwaterkeeper.org

MD

DEQ Montana Department of Environmental Quality

Dear Montana Water Quality Interested Parties,

Over the next year, MT DEQ will be engaging with stakeholders to implement a 2021 signed law (SB358) wl directs DEQ to transition from numeric nutrient water quality standards to narrative nutrient water quality standards. We will provide progress updates on DEQ's Nutrient Work Group **web page**.

The next Nutrient Work Group meeting is scheduled for Wednesday, May 26, from 9:00 - 11:00 a.m. This meeting will be held virtually using Zoom (link and call in information provided below).

If you would like to receive email updates about nutrient water quality standards, enter your email address the subscriptions **web page** and make sure you check the box for Water Quality Nutrient Workgroup.

As always, thank you for your interest in Montana's water quality.

MT DEQ Water Quality Division

Nutrient Work Group Meeting

May 26, 2021, at 9:00 a.m.

Join Zoom by Computer or Web App:

https://mt-gov.zoom.us/j/85449054488

Dial by Telephone (audio only):

1-406-444-9999

Meeting ID:

854 4905 4488

Visit us online at DEQ.MT.GOV

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This email was sent to guy@uppermissouriwaterkeeper.org using GovDelivery Communications Cloud, on behalf of: Montana

April 23, 2021

Submitted via electronic mail to: ***laidlaw.tina@epa.gov*** **,** ***fish.tonya@epa.gov*** **,** ***schefski.kenneth@epa.gov***

Tina Laidlaw, EPA Region 8 MT Office
Tonya Fish, EPA Region 8 WQS Coordinator
Kenneth Schefski, EPA Region 8 Chief Counsel

Re: State of Montana Senate Bill 358; Request For Action From the Environmental Protection Agency

Dear Ms. Laidlaw, Ms. Fish, and Mr. Schefski:

Upper Missouri Waterkeeper ("Waterkeeper") submits this letter to request that the Environmental Protection Agency ("EPA"), as the mandatory backstop for Clean Water Act implementation of the Clean Water Act requirements in 33 U.S.C. § 1313(c)(2) ("Section 303(c)"), take the requested steps to ensure the State of Montana retains strong, science-based numeric nutrient criteria that protect designated uses and aquatic life as required Section 303(c).

As you are aware from Waterkeeper's earlier communications to you, the 2021 Montana Legislature has passed Senate Bill 358 ("SB 358")[1]. SB 358 eliminates the State's strong, science-based numeric nutrient water quality criteria that protect most waterways in the State from the harmful effects of nutrient pollution. In addition, the bill would add new, statutorily-defined nutrient "nonsignificance" criteria, in effect amending Montana's nondegradation policy to include a whole new suite of exemptions allowing for degradation of local water quality from allegedly insignificant discharges of nutrient pollution. Both actions are substantive changes of Montana's water quality standards rules requiring EPA approval before becoming effective as a matter of federal law.

In sum and in its separate parts SB 358 conflicts with the Clean Water Act's promise of "restor[ing] and maintain[ing] the chemical, physical, and biological integrity of the Nation's waters"[2]. Specifically, SB 358 violates Section 303(c)(2)'s clear directives on the setting of water quality standards, mandatory EPA review of changes to water quality standards before such standards are effective, and requirements of federal antidegradation policy under 40 C.F.R. § 141.12. SB 358 further runs counter to EPA's longstanding 2000 policy and guidance directing States to adopt numeric water quality criteria for nutrients.

Waterkeeper asserts there is no lawful path for EPA to approve the WQS changes made under SB 358, and requests that EPA immediately communicate the fatal flaws discussed herein with Governor Gianforte, urge him to veto SB 358, and if he does not, to disapprove the changes made by SB 358.

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[1] Senate Bill 358 in "Enrolled" form, as published by the Montana Legislative Services Division on April 22, 2021, attached as Exhibit A.
[2] 33 U.S.C. § 1251(a).

I. SB 358 REPEALS MONTANA'S SCIENCE-BASED NUMERIC NUTRIENT WATER QUALITY STANDARDS, PREVIOUSLY APPROVED BY EPA.

SB 358 is a blatant attempt to eliminate a well-documented, proven, and science-based approach to protecting designated uses of most Montana waterways with numeric nutrient criteria. Waterkeeper is unaware of a single instance across the Nation in which EPA has allowed a State to regress and remove a duly-promulgated and approved protective numeric criteria approach in favor of a narrative criteria approach. As EPA knows, EPA's own regulations for development of water quality standards requires states to adopt numeric criteria unless such criteria cannot be established. 40 C.F.R. 131.11(b). Moreover, EPA has already found that Montana's narrative water quality standards are inadequate to address nutrient pollution in the state. As EPA stated in its original Action Letter Approving Montana's Numeric Nutrient Criteria in 2015, "[t]he adopted water quality criteria…that are the subject of today's action are scientifically defensible, well supported by the record and consistent with CWA requirements."[3] Based upon this history and record, EPA cannot find that elimination of the necessary and protective numeric criteria protect designated uses of Montana waters is defensible. SB 358 cannot be approved as a result.

A. Text of SB 358.

In SB 358, Section 1, 'Transition for nutrient standards," the bill eliminates Montana's duly-adopted and EPA-approved numeric nutrient criteria and implementing rules and requires the Montana Department of Environmental Quality (hereinafter "DEQ") to adopt new nutrient pollution control rules framed as a so-called "adaptive management program."[4] Further, SB 358 defines broadly what the new adaptive management program for nutrient pollution control must include:

> (2) The rules shall provide for the development of an adaptive management program which provides for an incremental watershed approach for protecting and maintaining water quality, and that:
>
> (a) reasonably balances all factors impacting a water body;
>
> (b) prioritizes the minimization of phosphorus, taking into account site-specific conditions; and
>
> (c) identifies the appropriate response variables affected by nutrients and associated impact thresholds in accordance with the beneficial uses of the waterbody.
>
> (3) In developing the rules in subsection (2), the department shall consider options pertaining to whether the point source is new or existing and whether the receiving water body is considered impaired or unimpaired.

B. SB 358 Violates The Clean Water Act.

The language outlined above is wholly divorced from requirements of the CWA or EPA regulations. Congress directed states to establish water quality standards that "consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses."[5] EPA regulations specify that "[s]uch criteria must be based on sound

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[3] *See* EPA Action Letter on Montana's Numeric Nutrient Criteria and Variance Rules, Feb 26, 2015, pp 2.
[4] SB 358, Section 1.
[5] 33 U.S.C. § 1313(c)(2)(A); 40 C.F.R. § 131.2.

scientific rationale and must contain sufficient parameters or constituents to protect the designated use."[6] Because water quality criteria must be set at a level that protects the designated use, economic factors "are irrelevant" and states should not take them into account.[7]

Water quality standards under § 1313 are science-based, ambient standards for protecting waterway health and designated uses. And, as EPA well-knows, science-based and protective water quality standards is foundational to sound implementation of the CWA affecting, in particular, the second primary method of restoring and protecting our waterways: pollutant discharge elimination permits and the development of Total Maximum Daily Load ("TMDL") cleanup plans. Congress prohibited all pollutant discharges to waterways absent a permit, and water quality standards are a primary driver of those permit requirements.[8] A TMDL must be designed to ensure that a waterbody is returned to meeting water quality standards.[9]

Conversely, SB 358 repeals the water quality standard that actually protects designated uses, proposes an ambiguous new regulatory program that does not meet the requirements in the Act for water quality standards and will allow permits to be issued that continue to cause and contribute to water quality impairments, and requires a series of novel hurdles that will have the effect of frustrating the federal requirements discussed above.

1. Adaptive management is not a water quality standard meeting the requirements of 33 U.S.C. § 1313(c).

Adaptive management plans cannot substitute for duly-promulgated water quality standards. Waterkeeper objects to usage of polluter's favorite catch-phrase - "adaptive management programs." In Waterkeeper's experience this phrase signals an open-ended and purposefully ambiguous regulatory scheme that benefits only the regulated community, externalizes the costs of major polluting sectors on the human environment, and does not comply with mandates of federal water pollution control law. It is telling that the new "adaptive management" regime is vague on implementation details and will likely result in an adversarial process that wastes finite resources, particularly given the bill's lack of water quality standard goalposts and complete detachment from requirements of the CWA.

2. The bizarre implementation provisions of SB 358 are unscientific and will allow increased pollution and harm to Montana's waterways in violation of the Act.

SB 358 would require a balancing act in Montana's nutrient water quality standards. However, a balancing act in setting nutrient pollution controls is wholly inappropriate. The CWA is clear: a state must set water quality standards at a level necessary to protect designated uses and then point source pollution must be controlled at levels necessary to satisfy applicable standards and to ensure discharges do not cause or contribute to violations of water quality standards. Further, SB 358's requirement to prioritize phosphorus reductions over nitrogen reductions is unscientific and contrary to an extensive body of nutrient science for Montana's waters, and will incentivize *more* harm to waterways. Ample evidence proves that most Montana waterways are nitrogen-limited and nitrogen reductions from point sources are significant causes of pollution.[10] Last,

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[6] 40 C.F.R. § 131.11(a)(1).

[7] *Miss. Comm'n on Natural Res. v. Costle,* 625 F.2d 1269, 1277 (5th Cir. 1980).

[8] 33 U.S.C. §§ 1311(b)(1)(c) and 1342 (a)(1). *See also,* 40 C.F.R. § 122.44(d).

[9] 33 U.S.C. § 1313(d).

[10] *See*, administrative record for DEQ 2015 Numeric Nutrient Criteria rulemaking; Circular 12A.

using determinations of novel response variables throws out the State's existing, proactive approach to nutrient pollution control in favor of a crisis management regime where attempts to address site-specific pollution problems occur only after the problem is out of hand. This is contrary to the protective directives of the Clean Water Act, and makes little scientific or economic sense as it is far more efficient – and cheaper – to prevent nutrient pollution problems than to try and fix them after the occur.

3. Montana cannot "repeal" the protective numeric standards approved by EPA for weaker narrative standards.

SB 358 has an effective date as of passage and signing by the Governor[11] and requires DEQ to implement a narrative approach to nutrient pollution control until the adaptive management program rules are adopted in spring 2022.[12] These sections violate the CWA. The bill tries to prevent DEQ, as of the date on which Governor Gianforte signs SB 358, from implementing currently-applicable numeric nutrient criteria that EPA has approved and which are effective as a matter of federal law. While Waterkeeper notes that DEQ must, under federal law, implement the EPA-approved nutrient criteria in Circular 12A, Waterkeeper is also aware from experience that DEQ has proven unwilling to go against Legislative directives even in the face of federal law requirements, and therefore it is very likely that meaningful point source control of nutrient pollution will halt upon SB 358's passage to law.

Overall, SB 358 violates the Clean Water Act and directs the overt violation of the state of Montana's duty to faithfully implement requirements of the CWA which, among other items, mandates that changes to water quality standards – like those contemplated by SB 358 – are only effective upon EPA approval.[13] It is critically important that EPA write to Governor Gianforte concerning the numerous legal issues SB 358 and encourage the Governor to avoid unnecessary conflict and wasted resources by vetoing SB 358.

II. SB 358 CREATES NEW NONSIGNIFICANCE EXEMPTIONS FOR NUTRIENT POLLUTION THAT VIOLATE REQUIREMENTS OF FEDERAL ANTIDEGRADATION POLICY AND WILL INCENTIVIZE MORE NUTRIENT POLLUTION IN MONTANA'S WATERWAYS.

In addition to eliminating Montana's numeric nutrient criteria, SB 358 adds new "nonsignificance" exemptions for nutrient pollution discharges under its nondegradation policy. Specifically, SB 358 adds the following:

> **75-5-317. Nonsignificant activities.** (1) The categories or classes of activities identified in subsection (2) cause changes in water quality that are nonsignificant because of their low potential for harm to human health or the environment and their conformance with the guidance found in 75-5-301(5)(c).
>
> (2) The following categories or classes of activities are not subject to the provisions of 75-5-303:
>
> …

[11] *Id.* Section 11 "Effective Date."
[12] *Id.* Section 2 "Transition for nutrient standards-department."
[13] 33 U.S.C. § 1313(c)(2).

(u) discharges of total phosphorus or total nitrogen that do not:

(i) create conditions that are toxic or harmful to human, animal, plant, and aquatic life;
(ii) create conditions that produce undesirable aquatic life; or
(iii) cause measurable changes in aquatic life; and

v) any other activity that is nonsignficant because of its low potential for harm to human health or to the environment and its conformance with the guidance found in 75-5-301(5)(c)

SB 358, Section 7, pp. 16-17. SB 358's new nonsignificance criteria operate to incentivize more, not less, nutrient pollution in Montana's waterways.

First, SB 358's new nondegradation exemptions invert the burden of proof, creating a legal presumption that nutrient discharges are *per se* nonsignificant absent a showing triggering one of the thresholds under 75-5-317(2)(u)(i-iii) or the "catch-all" exemption embodied in 75-5-317(2)(v). This allocation of discretion and procedural approach is backwards; rather, the starting point must be that all discharges – and given the record of nutrient pollution in Montana –especially nutrient pollutant discharges, are subject to Tier 2 nondegradation review unless a site-specific showing is made to justify an exemption. Here, no such showing(s) has been made.

Second, SB 358's nutrient specific categorical exemptions are not faithful to the CWA's goal of maintaining and restoring water quality. SB 358 defines nutrient discharges as *insignificant as a matter of law*, operating without regard to the specifics of a proposed discharge and contrary to the very point of nondegradation: preserving water quality by preventing death by a thousand cuts. EPA has emphasized in its Aug 2015 WQS Rule Revisions that a state agency must look at the particular circumstances of a discharge when applying a *de minimis* exemption to ensure that the discharge is *insignificant-in-fact*: "[u]nless a state…can provide appropriate technical justification, it should not create categorical exemptions from Tier 2 review for specific types of activities based on a general finding that such activities do not result in significant degradation."[14] SB 358's new categorical exemptions functionally subvert the State's nondegradation policy because they empower Montana to allow significant, often cumulative, degradation without Tier II review. Doing so exceeds the state's implied authority to create *de minimis* exemptions, lacks a factual basis, and is unlawful.

The same fatal flaws are found in new 75-5-317(2)(v), which operates as a catch-all purportedly exempting any "other activity that is nonsignificant because of its low potential for harm…" This catch-all is incredibly overbroad, potentially authorizing thousands of different activities that could alone, or together synergistically with other discharges to a waterway, harm existing uses and degrade water quality. Here too public participation requirements are ignored insofar as this section allows DEQ to exempt potentially significant discharges from any number of activities or types of pollutants, including even bioaccumualtive pollutants, without any findings or notice to the public.

These new categorical exemptions for nutrient discharges also fail to satisfy mandatory public participation requirements of the CWA. SB 358's legislative-based approach to revising Montana's WQS ignores Section 303(c)'s public participation requirements by mandating an effective date upon signature by the Governor, not approval by EPA or a requisite public process. This is unlawful. Further, there are no written findings supporting these new

[14] Water Quality Standards Regulatory Revisions, 80 Fed. Reg. 51,020, 51,035 (Aug. 21, 2015) (codified at 40 C.F.R. pt. 131).

exemptions; without written findings neither EPA nor the public have any way of knowing what the legislature considered in creating these exemptions and in any case could not meaningfully participate in decisionmaking.

EPA's WQS regulation requires states to adopt an antidegradation policy and implementation procedures consistent with 40 CFR § 131.12(a)(1-4). As described in the EPA WQS Handbook (1994), "EPA may disapprove and federally promulgate all or part of an implementation process for antidegradation if, in the judgment of the Administrator, the State's process (or certain provisions thereof) can be implemented in such a way as to circumvent the intent and purpose of the antidegradation policy. While the discussion above is not exhaustive, it does pinpoint several ways in which SB 358's new categorical exemptions violate antidegradation policy, the CWA's intent and purpose, and EPA regulation.

CONCLUSION & REQUEST FOR AFFIRMATIVE ACTION

SB 358 will fundamentally halt meaningful progress addressing point-source nutrient pollution in Montana and act to authorize continued and future, increased nutrient pollution discharges to the detriment of local water quality. Components of SB 358 lack any scientific basis, squarely conflict with the plain language of the CWA and EPA regulation, and contain zero evidentiary basis on which EPA could reasonably conclude local water quality will be protected or restored. Montana was previously a leader in adopting science-based standards to address nutrient pollution. SB 358 means Montana will now be a leader in backsliding and as an ignominious failure to protect some of the last intact river ecosystems in the Lower 48 from nutrient pollution.

As the federal agency with mandatory oversight authority of delegated CWA state programs it is incumbent upon EPA to address the conflict SB 358 creates with federal law. We specifically request that EPA exercise its authority under Section 303(c) to educate Montana Governor Gianforte's Office on the diverse legal and practical issues SB 358 raises and encourage the Governor to veto this bill. Doing so will be in EPA's, the State's, and the public interest because exercising all possible options now, before SB 358 becomes law with the Governor's signature, could avoid future litigation, unlawful pollution, harm to Montana waterways, and likely delay resulting from further obfuscation and obstructionism.

Thank you in advance for carefully considering our concerns and request for action from EPA. We look forward to your response and remain available to discuss this matter further with EPA.

Respectfully-

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August 18, 2021

Ref: 8WP-CWB

Galen Steffens, Water Quality Planning Bureau Chief
Montana Department of Environmental Quality
1520 East 6th Avenue
Helena, MT 59620-0901

Re: EPA Comments on Montana's Proposed Response Variables and Associated Thresholds

Dear Ms. Steffens:

This letter provides the U.S. Environmental Protection Agency (EPA) Region 8 Water Quality Section's comments on Montana Department of Environmental Quality (MDEQ)'s proposed response variables and associated thresholds discussed during the August nutrient workgroup technical subcommittee meetings. The EPA's regulation (40 C.F.R. § 131.11(a)) requires that "criteria must be based on sound scientific rationale and must contain sufficient parameters to protect the designated use." Additionally, States are required to submit to EPA "methods used and analyses conducted to support water quality standards revisions" (40 C.F.R. § 131.6 (b)), as well as "general information which will aid the Agency in determining the adequacy of the scientific basis of the standards which do not include the uses specified in section 101(a)(2) of the Act as well as information on general policies applicable to State standards which may affect their application and implementation" (40 C.F.R. § 131.6 (f)). As such, the EPA is offering comments to assist MDEQ in ensuring that Montana's proposed approach to interpret the narrative water quality standard and supporting documentation comply with these WQS requirements. Please note that our comments are preliminary in nature and should not be interpreted as a final EPA decision under Clean Water Act (CWA) § 303(c).

Additionally, the following information is intended to clarify how EPA will assess revisions to Montana's WQS that result from Montana removing its numeric nutrient criteria (NNC) from Department Circular DEQ 12-A per legislative direction. The record accompanying MDEQ's 2014 adoption of the NNC and EPA's 2015 CWA section 303(c) approval indicates the NNC are scientifically defensible and protective of designated uses, and that both total nitrogen (TN) and total phosphorus (TP) need to be addressed and limited to protect the applicable designated uses. EPA will review MDEQ's replacement rule consistent with EPA's regulatory requirements, including 40 CFR § 131.11(a)(1) which specifies that criteria must contain sufficient parameters or constituents to protect the designated uses.

Because MDEQ is removing numeric criteria that are still scientifically defensible and protective, EPA expects an adequate level of assurance that MDEQ can identify protective levels of both TN and TP for implementation in CWA programs. One way to provide such assurance would be to adopt a numeric translator for the narrative criterion in rule or to incorporate a numeric translator by reference. For example, MDEQ could adopt protective thresholds for response variables that are scientifically defensible and protective of the applicable designated uses in rule, and incorporate by reference the technical documents that provide a reliable process for deriving TN and TP levels associated with those response variable thresholds.

If MDEQ chooses another approach, it should include a procedure that establishes a transparent, reliable, and consistent mechanism for assessing waters, developing TMDLs, evaluating discharges for reasonable potential to cause or contribute to exceedances of translated nutrient levels, and developing water-quality based effluent limitations for those permits where they're needed to protect the designated use. EPA also recommends that MDEQ review EPA's 2013 *Guiding Principles on an Optional Approach for Developing and Implementing a Numeric Nutrient Criterion that Integrates Causal and Response Parameters* (https://www.epa.gov/sites/default/files/2013-09/documents/guiding-principles.pdf). This document offers specific information that may be helpful in development of a narrative criterion translator approach.

Because Montana's proposed approach gives additional weight to ecological response indicators, the sensitivity of the response indicators and derivation of their thresholds is important to ensure protection of aquatic life uses.[1] EPA's technical review of this proposed approach identified a number of questions and concerns related to the proposed response indicators and associated thresholds that are discussed in detail in Attachment A. The bullets below highlight some of the main questions/concerns:

- MDEQ is proposing to apply a single benthic chlorophyll-a threshold for multiple designated uses. EPA's regulation 40 CFR 131.11(a)(1) requires that "[f]or waters with multiple use designations, the criteria shall support the most sensitive use." EPA recommends MDEQ independently analyze the thresholds required to protect each use and demonstrate that the final proposed threshold protects the most sensitive use or identifies unique thresholds for different designated uses.
- For each response indicator, EPA expects MDEQ to provide a scientifically defensible rationale for the response variable threshold selected and specify the link to nitrogen and phosphorus concentrations.
- EPA requests the state provide the available data used to derive the thresholds proposed for all response indicators (i.e., benthic chlorophyll-a, percent bottom cover; dissolved oxygen delta) and associated TN and TP thresholds.
- EPA recommends MDEQ validate the calculations and assumptions used in MDEQ's 2014 memo to demonstrate that the state's proposed threshold of benthic chlorophyll threshold of 125 mg/m^2 is protective of aquatic life uses in western Montana streams.
- EPA is concerned that the proposed benthic chlorophyll-a threshold would not apply to the majority of western MT streams.

[1] See EPA's guidance: Guiding Principles on an Optional Approach for Developing and Implementing a Numeric Nutrient Criterion that Integrates Causal and Response Parameters. 2013. EPA-820-F-13-039. https://www.epa.gov/sites/production/files/2013-09/documents/guiding-principles.pdf.

- EPA recommends MDEQ use available percent bottom cover data collected on western Montana streams to demonstrate that the proposed value will protect aquatic life uses.
- EPA requests additional analyses and information to demonstrate that MDEQ's proposed dissolved oxygen (DO) delta will protect aquatic life uses.
- The existing documentation does not provide information on how proposed thresholds would ensure that water quality standards of downstream waters will be maintained and protected (see 40 CFR 131.10(b)).[2]
- The existing documentation does not include causal variables (TN and TP) or a process for how proposed thresholds would be used to derive TN and TP criteria for the purposes of assessing waters, developing TMDLs, evaluating discharges for reasonable potential to cause or contribute to exceedances of translated nutrient levels, and developing water-quality based effluent limitations for those permits where they're needed to protect the designated use.

In its detailed comments in Appendix A, the EPA has offered suggestions for additional rationale, analyses and/or data collection that could be used to address these concerns before a final technical rationale is submitted to the EPA for review and approval under the Clean Water Act § 303(c).

We hope our comments are helpful to MDEQ. We appreciate MDEQ's efforts to ensure that Montana's revisions to its water quality standards resulting from removal of the NNC comply with the EPA's water quality standards requirements at 40 C.F.R. Part 131. If there are questions concerning our comments, please contact Tina Laidlaw (406-457-5016). We look forward to working with the parties to address these issues.

Sincerely,

Andrew Todd, Ph.D.
Chief, Water Quality Section

Attachment

cc: Tina Laidlaw, EPA
Mike Suplee, MDEQ
Myla Kelly, MDEQ

[2] 40 CFR 131.10(b): In designating uses of a water body and the appropriate criteria for those uses, the State shall take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters.

ATTACHMENT A - Detailed Comments on Montana's Proposed Response Variables and Associated Thresholds

The EPA's regulation (40 C.F.R. § 131.11(a)) requires that "criteria must be based on sound scientific rationale and must contain sufficient parameters to protect the designated use." Additionally, States are required to submit to EPA "methods used and analyses conducted to support water quality standards revisions" (40 C.F.R. § 131.6 (b)), as well as "general information which will aid the Agency in determining the adequacy of the scientific basis of the standards which do not include the uses specified in section 101(a)(2) of the Act as well as information on general policies applicable to State standards which may affect their application and implementation" (40 C.F.R. § 131.6 (f)). The EPA is offering comments to assist MDEQ in ensuring that MDEQ's revisions to Montana's WQS that result from removing its numeric nutrient criteria comply with these WQS requirements.

General Comments:

1. **Criteria Protect the Most Sensitive Use:** 40 CFR 131.11(a)(1) requires state to adopt criteria that protect the designated use and are scientifically defensible. 40 CFR 131.11(a)(1) requires that "[f]or waters with multiple use designations, the criteria shall support the most sensitive use." It appears that the thresholds MDEQ is contemplating may serve as criteria or as the principal translators of criteria. MDEQ's current approach to establishing thresholds for each response variables blends thresholds across multiple designated uses (e.g., recreation versus aquatic life use) without a demonstration that the proposed threshold will protect the most sensitive use. EPA recommends MDEQ independently analyze the thresholds required to protect each designated use and demonstrate that the final proposed threshold protects the most sensitive use. Additionally, EPA recommends MDEQ clearly connect, in rule, the proposed thresholds with the beneficial uses for Montana's waters they are intended to protect.

2. **Linkage to Nutrients Needed**: EPA's document entitled "Guiding Principles on an Optional Approach for Developing and Implementing a Numeric Nutrient Criterion that Integrates Causal and Response Parameters" recommends that a combined criterion "should demonstrate the sensitivity of the response indicator(s) to increased nutrient concentrations and quantify how these nutrient-response linkages will achieve the goal of protecting and maintaining aquatic communities."[3]

   In Montana's case, while the state is not adopting a combined nutrient criterion, the record accompanying MDEQ's 2014 adoption of the NNC and EPA's 2015 CWA section 303(c) approval indicates that both total nitrogen (TN) and total phosphorus (TP) need to be addressed and limited to protect the applicable designated uses. Therefore, for each response indicator selected by MDEQ, EPA expects MDEQ to provide documentation that demonstrates the relationship between the response indicator and TN and TP for the waters to which the response indicator is being applied, a scientifically defensible rationale for the response variable threshold selected, and the link to nitrogen and phosphorus concentrations. In the attached cover letter, EPA identifies several recommendations for how the state can meet EPA's expectations, either in rule or incorporated by reference.

[3] Guiding Principles on an Optional Approach for Developing and Implementing a Numeric Nutrient Criterion that Integrates Causal and Response Parameters. 2013. EPA-820-F-13-039. https://www.epa.gov/sites/production/files/2013-09/documents/guiding-principles.pdf.

The existing documentation does not include causal variables (TN and TP) or identify a process for how proposed thresholds would be used to derive TN and TP criteria for the purposes of assessing waters, developing TMDLs, evaluating discharges for reasonable potential to cause or contribute to exceedances of translated nutrient levels, and developing water-quality based effluent limitations for those permits where they're needed to protect the designated use. EPA recommends MDEQ include a process for deriving TN and TP concentrations associated with meeting the response variable thresholds.

3. **Data:** EPA requests that MDEQ provide a database to all interested stakeholders that contains the available information including, but not limited to, benthic chlorophyll-a, total nitrogen, and total phosphorus data collected throughout the state and considered in the development of Montana's proposed response variables and thresholds. This information provides an opportunity for stakeholders to examine and complete their own analyses using the state's data.

   Additionally, EPA would appreciate MDEQ providing the underlying the data collected at the 78 prairie streams between 2013 to 2017 and used to support the 2021 memo that documents that a dissolved oxygen (DO) delta ≥5.3 mg/L is adequate to protect aquatic life uses in prairie streams.

4. **Western vs. Eastern Streams compared to Ecoregional Approach**: In Montana's 2013 technical support document,[4] MDEQ used ecoregions as the basis for establishing numeric nutrient criteria based on classification analyses completed in 2005.[5] MDEQ's current approach divides wadeable streams into western and eastern systems without describing the basis for that decision. EPA requests that MDEQ please explain how this decision was reached and is supported. Information provided to Montana's nutrient workgroup by MDEQ suggests that stream gradient influences the effect of nutrient concentrations on Montana's wadeable streams. Instead of selecting response variables based on a division between western versus eastern Montana, did MDEQ consider stream gradient (e.g., low vs. high gradient) as a possible classification approach?

5. **ESA Consultation:** EPA's CWA section 303(c) action on Montana's removal of the state's numeric nutrient criteria and its replacement with the narrative standard may be subject to the consultation requirement of Section 7(a)(2) of the Endangered Species Act (ESA). Under Section 7(a)(2) of the ESA, 16 U.S.C. § 1536, EPA has the obligation to ensure that its actions on Montana's WQS revisions will not jeopardize the continued existence of threatened and endangered species and their critical habitat in Montana.

6. **Additional Indicators:** EPA encourages MDEQ to consider the use of diatoms as a possible response indicator that could be used as an independent response variable or provide corroborating evidence for other response variables. EPA welcomes the opportunity to work with MDEQ to explore the use of diatoms as an indicator of nutrient enrichment for the state.

[4] Suplee, M.W1., and V. Watson2, 2013. Scientific and Technical Basis of the Numeric Nutrient Criteria for Montana's Wadeable Streams and Rivers—Update 1. Helena, MT: Montana Dept. of Environmental Quality.
[5] Varghese, Arun and Joshua Cleland. 2005. Seasonally Stratified Water Quality Analysis for Montana Rivers and Streams: Final Report. Fairfax, VA: ICF Consulting.

Indicators for Western Montana Wadeable Streams

7. **Benthic chlorophyll-a of 125 mg/m^2 for Recreational Use Support:** EPA supports the benthic chlorophyll-a and AFDM criteria proposed by MDEQ as protective of recreational uses and has approved similar criteria in Utah and Colorado. The underlying user perception survey identified thresholds for excess algal growth (using chlorophyll-a and AFDM as surrogate metrics) above which recreational users are averse to recreating in a river or stream. The survey asked citizens to review photographs of streams with varying quantities of algae growth and to evaluate whether or not the conditions represented "desirable" or "undesirable" recreational conditions. The premise of this approach is that when algal abundance becomes excessive, the visual appearance of the stream (i.e., its color or "greenness") discourages recreation and impairs recreation designated uses. EPA agrees with the state's rationale that a threshold of 125 mg/m^2 benthic chlorophyll-a is protective of recreational uses.

8. **Benthic chlorophyll-a of 125 mg/m^2 for Aquatic Life Use Support:** Montana's primary basis for selection of a benthic chlorophyll-a threshold of 125 mg/m^2 for aquatic life appears to be the MDEQ 2014 technical memo: "Benthic algae biomass levels protective of fish and aquatic life in western Montana streams."[6] EPA has reviewed that document and has the following comments and recommendations.
    - EPA recommends validating the calculations described in the 2014 memo using data from western MT wadeable streams to which the benthic chlorophyll threshold of 125 mg/m^2 would apply. For example, the equation relies on velocity, stream temperature, and elevation. It is important to ensure these parameters are not estimated and are based on empirical data. EPA requests that MDEQ indicate whether it has validated these assumptions and calculations using data from western MT streams and requests that those results be provided to EPA.
    - MDEQ has indicated that they are not proposing to use DO as a response indicator for western streams because reaeration in many western streams makes DO unresponsive to increases in nutrient concentrations. However, MDEQ linked the proposed benthic chlorophyll-a indicator and associated threshold on impacts to Montana's DO standards. EPA has the following technical concerns:
        i. Please demonstrate that the benthic chlorophyll-a concentration of 125 mg/m^2 relates to meeting a DO minimum concentration of 8 mg/L using data from western Montana streams.
        ii. In addition to the daily DO minimum of 8 mg/L, MDEQ has a numeric 7-day average DO criterion of 9.5 mg/L that would apply to western MT streams and could be calculated because the state deployed continuous data sondes. Please describe whether MDEQ evaluated whether the proposed benthic chlorophyll-a threshold would achieve the 7-day average DO criterion.
        iii. A number of western MT stream segments are designated as "A-closed" waters where the applicable Montana DO standard is: "No change from the naturally occurring dissolved oxygen levels is allowed" (ARM 17.30.621(3)(b)). Please describe how MDEQ's proposed benthic chlorophyll-a threshold that was derived based on meeting

[6] Suplee, Mike and K. Flynn. 2014. Memo to the Montana Board of Environmental Review regarding "Benthic algae biomass levels protective of fish and aquatic life in western Montana streams."

a daily DO minimum criterion of 8 mg/L applies to A-closed waters and would protect A-closed waters.

- EPA is concerned that the proposed benthic chlorophyll-a threshold would not apply to the majority of western MT streams based on the state's analysis which showed the following:
    i. The memo states that the threshold applies to Rosgen C and F channels but not Rosgen A, B, D, E and G channels. Based on this information, please document the percentage of western MT streams that the proposed benthic chlorophyll-a response variable would apply to? Further, EPA is interested in knowing whether the data exist to evaluate the percentage of streams to which this indicator would apply?
    ii. Rosgen E5 streams tend to have lower velocities and lower gradients and may be more responsive to increases in nutrient concentrations. However, MDEQ's proposed approach suggests that benthic chlorophyll-a would <u>not</u> be used as a response variable for these stream types. If benthic chlorophyll-a is not applicable to the most responsive western MT stream types, please explain how this approach will protect aquatic life uses in all western MT wadeable streams.
    iii. Results for three Rosgen channel types are presented. EPA requests that MDEQ share the results of analyses conducted for the other stream types.
    iv. If these models represent low-flow conditions, the flow conditions could be overestimated for western MT. Have these values been validated?
    v. Please explain the basis for using 7 degrees Celsius as a representative of summer temperature for western MT streams. Based on EPA's understanding of average temperatures in western MT streams, this value may be too low which would change the dissolved oxygen (DO) results. Did MDEQ calculate DO saturation at other temperatures?
    vi. The model assumed that low DO would be observed in western Montana streams and drop to 0 mg/L DO. Has this underlying assumption been validated? If so, what data was used in this validation? Please describe that analysis and share those data.
    vii. The memo states (pdf page 5) that: "Thus the equation is applicable to small shallow streams where the oxygen generation and consumption processes are primarily reaeration and SAOD [senesced algae oxygen demand]. It should be noted that reaeration is temperature adjusted using the Arrhenius equation with a theta (θ) of 1.024 (Chapra, 1997). Also, since we have omitted respiration and photosynthesis from our equation, the results are probably only appropriate for night-time conditions only."
        1. EPA assumes that respiration would be an important factor to consider in changes in DO concentrations associated with elevated benthic chlorophyll-a concentrations. Please explain why respiration is not considered in the calculations. If respiration is included, what do the results look like?
    viii. The memo also notes that "the SAOD we calculated is far higher [90 g)2/m2/day] than sediment oxygen demand (SOD) reported in the literature (highest SOD located was 21.4 g O2/m2/day; Ling et al., 2009)." MDEQ justifies the SAOD rates as "reasonable" but higher than reported in the literature. How did MDEQ validate that the SAOD is accurate and applicable to Western MT? Would it be more appropriate to run the calculations using more typical SOD rates?
- Has MDEQ analyzed potential downstream impacts to the Clark Fork River and demonstrated that allowing upstream systems to meet a benthic chlorophyll-a threshold of 125 mg/m^2 will ensure protection of the downstream use and comply with the numeric criterion of 100 mg/m^2 as a summertime average and a maximum concentration of 150

mg/m^2 benthic chlorophyll-a? If the state has not run these analyses, please explain the state's plan to evaluate potential DS impacts.

- Did MDEQ prepare a modeling report that provides additional detail on the assumptions used for the calculations and more detailed results? If so, please share with EPA. If not, EPA encourages the state to provide more detailed documentation on the underlying assumptions and demonstrate the calculations were validated using data from western MT streams.
- Lastly, the New Zealand value cited by MDEQ would allow "periodic short-duration nuisance blooms reflecting moderate nutrient enrichment."[7] EPA does not consider a threshold associated with conditions that support nuisance blooms as protective of aquatic life or as meeting the intent of MDEQ's narrative standard that prohibits substances in concentrations that "produce odors, colors, or other conditions as to which create a nuisance or render undesirable tastes to fish flesh or make fish inedible" or "create conditions which produce undesirable aquatic life." (ARM 17.30.637(d) and (e)). EPA recommends that MDEQ use western Montana data to demonstrate that the values cited in the New Zealand document are protective of aquatic life uses in Montana.

9. **Ash Free Dry Mass (AFDM) of 35 g AFDW/m^2 for Aquatic Life:** MDEQ's proposed threshold for AFDM appears to be based on the following rationale documented in MDEQ's 2016 nutrient assessment method.[8]

> "In Suplee et al. (2009), the threshold Chl a level of 150 mg/m^2 corresponds to 36 g AFDW/m^2. In New Zealand, extensive analysis of algal AFDW resulted in a recommendation of 35 g AFDW/m^2 as the maximum level for gravel/cobble streams, to protect recreation use (Biggs, 2000). Note in Table B1-1 above that the late season AFDW corresponding to 127 mg Chl a/m^2 (the Chl a level linked to the late-season DO problems) is 33 g/m^2. Long -term monitoring in the Clark Fork River (1998-2009) shows that the average summer AFDW at sites that do not develop nuisance algae (i.e., they are consistently <150 mg Chl a/m^2) ranged from 17 to 48 g AFDW/m^2 (mean: 27 g AFDW/m^2). Given the values presented, we recommend that site average AFDW (i.e., mean of the 11 replicates collected at a site, replicates being only templates or hoops) should be no greater than 35 g AFDW/m^2. This value should be protective of both fish and aquatic life and recreation uses."

As documented in Comment #7 above, EPA has identified a number of concerns with the proposed benthic chlorophyll-a threshold of 125mg/m^2 as protective of aquatic life uses. Absent a more robust analysis of the available AFDM data that demonstrates the proposed threshold is protective of aquatic life uses, EPA is concerned that MDEQ's proposed AFDM threshold may not protect aquatic life uses.

10. **<u>% Bottom cover threshold of 30%:</u>** MDEQ's proposed 30% threshold for percent bottom cover currently lacks a clear scientific rationale that demonstrates the proposed threshold will ensure protection of aquatic life uses in western Montana streams. MDEQ did not empirically derive the proposed threshold using available Montana data. EPA recommends MDEQ use data collected from waters where percent bottom cover will be used as a response indicator and demonstrate that the proposed value will protect aquatic life uses. Given the uncertainty with the proposed percent bottom

[7] New Zealand National Policy Statement for Freshwater Management 2014: Updated August 2017. Page 33.
[8] Suplee, M.W., and R. Sada, 2016. Section B.1.3. page B-5. Assessment Methodology for Determining Wadeable Stream Impairment Due to Excess Nitrogen and Phosphorus Levels. Helena, MT: Montana Dept. of Environmental Quality.

cover threshold, EPA recommends MDEQ use percent bottom cover as a secondary indicator of excess primary production *in conjunction with* other measures of adverse effects. Having a robust suite of response indicators is critical to determine that a stream fully supports its aquatic life uses.

Additionally, several of the references cited by the state refer to thresholds associated with protection of recreational use support. EPA recommends MDEQ independently evaluate the effect of the bottom cover threshold may have on aquatic life to ensure that the final proposed threshold is protective of the most sensitive use.

Indicators for Eastern Montana Wadeable Streams

11. **Application to all Eastern Montana Streams:** The 2016 Montana nutrient assessment method mentions that the 5.3 mg/L delta DO threshold was derived using data from both intermittent and perennial streams. Additionally, the 2021 Memo[9] indicates that data were collected at perennial, intermittent and wetland-like streams. Based on this information, EPA assumes that any response variables and associated TN and TP thresholds would be applicable to **all** eastern MT streams (i.e., perennial, intermittent and wetland-like) and used to implement CWA programs for these systems. Please clarify.

12. **Relevance of DO delta as nutrient response indicator/appropriate translator for nutrient criteria**: The preliminary results of Montana's 2013-17 delta DO study[10] lists watershed disturbance, precipitation, conductivity, nutrient levels, drainage area, and water temperature as important predictors of DO delta. Based on the study results, EPA recommends MDEQ document the extent to which DO delta responds to increasing nutrient concentrations and, therefore, serves as a reliable nutrient response variable. The 2021 memo suggests that delta DO may respond primarily to other non-nutrient related factors. If that is the case, please demonstrate whether MDEQ still considers delta DO as an appropriate nutrient response indicator for use in eastern Montana streams.

13. **Rationale for the proposed DO delta threshold:** EPA requests MDEQ share the data and analyses (i.e. 2016 nutrient assessment and the 2013-17 project) used to derive and/or support the proposed DO delta threshold of 5.3 mg/L. According to MDEQ's 2016 nutrient assessment method, the proposed 5.3 mg/L DO delta: (1) corresponds to the 90th percentile of the reference distribution of DO deltas for data collected from two reference sites during 2009-2010; (2) balances the probability of alpha and beta errors during assessment; and (3) is close to the lower bound of the 90% confidence interval of the 6.0 mg/L threshold calculated using change-point analyses. However, the currently available technical documents do not contain the data or analyses.
    - EPA recommends MDEQ revise the changepoint analysis to use readily available nutrient concentrations (TN or TP) as the predictor variable, instead of categorical nutrient ratings, for the change point analysis.
    - EPA requests that MDEQ share the results and present the changepoint analyses graphs for EPA to review the information in more detail. Another option would be for MDEQ to provide the raw data to EPA and EPA could complete its own analyses.

[9] Sada de Suplee, Rosie and M. Suplee M, 2021. Memo to the Nutrient Work Group Technical Subcommittee regarding "Dissolved Oxygen Delta Summary Findings in Prairie Streams."
[10] *Ibid.*

- EPA recommends MDEQ use the 2013-17 dataset (which is far more extensive than the 2009-2010 data used in threshold development) to evaluate and refine, as needed, the basis for the DO delta threshold selection.
- Please clarify whether the delta DO threshold would be applied as a daily or weekly measurement. The 2021 memo suggests that weekly averages are the "more adequate timeframe for assessing DO"; however, the state's current rationale for the proposed delta DO threshold is based on daily delta DO values.

14. **Protectiveness of the proposed DO delta threshold**: Based on a review of the articles provided by MDEQ to support the rationale for a delta DO threshold of 5.3 mg/L, EPA is concerned that a delta DO of 5.3 mg/L may not adequately protect aquatic life uses. For example,

    - The Suplee 2019 JAWRA article documents that: "Heiskary and Bouchard (2015) showed that the percent of tolerant fish increases sharply in a step fashion when DO delta (daily DO maximum–daily DO minimum) of Minnesota's warm-water rivers is above 3.5 mg/L; this undesirable change in the fishery can occur even when daily DO minima have not been found to drop below acceptable concentrations (Heiskary et al. 2013)."
    - MCPA adopted DO delta criteria that range from 3.0 to 4.5 mg/L, depending on geographic zone.[11] MPCA's analyses showed a decline of sensitive fish accompanied by a substantial increase in tolerant fish when DO delta values exceeded 4.5 mg/L.[12]
    - In Tennessee, the maximum DO delta reported was 4 mg/L at reference sites whereas about 45% of impacted streams assessed have measured DO deltas greater than 4.0 mg/L.[13]
    - Most importantly, Suplee at al. 2019 stated that "episodic and spatially discontinuous DO problems can occur at an average DO delta of 3.1 mg/L in a low gradient prairie stream."[14]

    This information and the data presented suggests a lower DO delta threshold may be warranted.

15. **Applicability and protectiveness of BOD as a response indicator:** MDEQ's 2019 study showed that BOD did not respond to increasing nutrient concentrations and therefore, would not be recommended as a nutrient response variable; specifically "there was no significant difference in stream water biochemical oxygen demand (BOD5) between the Before and After periods in either the Low or High Dose Reach." [15] Additionally, MDEQ's proposed threshold of 8 mg/L BOD does not appear to be protective of aquatic life uses. The proposed threshold was identified based on the widely accepted BOD categories for BOD and is associated with BOD concentrations that would allow "Many bacteria, much biodegradable matter."[16]

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[11] Heiskary, S.A., and R.W. Bouchard, Jr. 2015. Development of Eutrophication Criteria for Minnesota Streams and Rivers Using Multiple Lines of Evidence. Freshwater Science 34: 574–92. https://doi.org/10.1086/680662.
[12] *Ibid.*
[13] Arnwine, D. H. and K. J. Sparks. 2003. Comparison of Nutrient Levels, Periphyton Densities and Diurnal Dissolved Oxygen Patterns in Impaired and Reference Quality Streams in Tennessee. Nashville, Tennessee: Tennessee Department of Environment and Conservation, Division of Water Pollution Control.
[14] Suplee, M.W., R. Sada, and D.L. Feldman. 2019. Page 716. Aquatic Plant and Dissolved Oxygen Changes in a Reference-Condition Prairie Stream Subjected to Experimental Nutrient Enrichments. Journal of the American Water Resources Association 55 (3): 700–719. https://doi. org/10.1111/1752-1688.12736.
[15] *Ibid.* Page 707.
[16] Suplee, M.W., and R. Sada, 2016. Section C. 3.0. Assessment Methodology for Determining Wadeable Stream Impairment Due to Excess Nitrogen and Phosphorus Levels. Helena, MT: Montana Dept. of Environmental Quality.

Indicators for Nonwadeable Streams

For medium and large rivers, MDEQ has indicated that they plan to use water quality models to derive the TN and TP thresholds required to meet the selected response indicators. To date, the state has adopted (and EPA approved) numeric TN and TP criteria for individual segments of the Yellowstone River. It is EPA's understanding that the state is removing the applicable TN and TP criteria for those segments of the Yellowstone and plans to apply the general prohibitions narrative standard to all medium and nonwadeable rivers. Because the modeling approach would be applied to waters not previously covered by the NNC, it is EPA's understanding that MDEQ plans to adopt both new and revised WQS for nonwadeable systems.

MDEQ has not provided details that outline what the criteria will be or what detailed guidance dischargers will need to follow to derive model-based TN and TP thresholds. Absent detailed guidance and documentation from MDEQ that specifies the methodologies, models, minimum data requirements, QA/QC requirements, parameters and decision criteria that will be used to derive TN and TP thresholds, any nutrient values derived from the models will need to be submitted to EPA for review and approval prior to implementing the response variable or resulting total nitrogen or total phosphorus concentrations in Clean Water Act programs.