

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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Ref: 8WD-IO

Amy Steinmetz, Water Quality Division Administrator
Montana Department of Environmental Quality
1520 East 6th Avenue
Helena, MT 59620-0901

Subject: EPA comments on MDEQ's revised approach to implementing SB 358

Dear Ms. Steinmetz:

The U.S. Environmental Protection Agency (EPA) Region 8 Water Quality Section appreciates the opportunity to review the Montana Department of Environmental Quality (MDEQ)'s 2022 revised approach to implementing Montana Senate Bill (SB) 358 discussed with EPA on March 21, 2022. EPA recognizes that MDEQ is working to address the requirements of the Clean Water Act and EPA's regulations while developing this revised draft approach and appreciates the early outreach to us. This letter provides EPA's initial reaction to MDEQ's revised approach based on the information we have reviewed thus far. It is EPA's understanding that MDEQ intends to proceed with proposing an approach to implementing SB 358 by June 2022, at which time, MDEQ will provide opportunity for public comment. EPA looks forward to continued opportunities to engage with MDEQ as it proceeds with its state proposed and final rulemakings.

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)).

40 C.F.R. § 122.44(d)(1) requires that NPDES permits shall include any requirements necessary to "[a]chieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality. Such limitations must control all pollutants or pollutant parameters 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, including State narrative criteria for water quality." 40 C.F.R. § 122.44(d)(1)(i). As EPA explained when promulgating this regulation, "Effluent limitations must attain and maintain water quality standards in order to be consistent with the requirements of the Clean Water Act." 54 Fed. Reg. 23868, 23873 (June 2, 1989).

As such, EPA is offering comments to assist MDEQ in ensuring that the approach Montana ultimately proposes 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).

MDEQ's revised approach outlines different paths for three discharger categories: lagoons, mechanical publicly owned treatment works (POTWs), and industry. MDEQ also mentioned a modeling effort for large rivers but did not provide extensive detail. At this time, EPA is not commenting on the state's revised draft modeling approach for large rivers and recommends the state review our August 18, 2021 comments on Montana's proposed approach for nonwadeable streams.¹ Our comments focus on Montana's proposed approach for the three categories of dischargers that is summarized below:

- For **lagoons**, MDEQ's revised approach proposes the following steps: conduct a qualitative reasonable potential analysis based on the narrative standard; derive water quality based effluent limits (WQBELs) based on the ecoregional threshold ranges for total nitrogen (TN) and total phosphorus (TP); based on economic impacts of nutrient control, develop a multiple discharger water quality standards (WQS) variance for lagoons where facilities are capped at their current TN and TP loads and develop and implement a pollutant minimization program (PMP). Facilities not interested in the WQS variance can enter the Adaptive Management Program (AMP).
- For **mechanical POTWs**, MDEQ's revised approach proposes the following steps: conduct a qualitative reasonable potential analysis based on the narrative standard; as part of the AMP, derive WQBELs based on the ecoregional threshold range for TP only but require optimization for TN and cap at existing permit limits; establish compliance schedules for TP and implement the necessary treatment technology to achieve the WQBEL; and conduct effluent and response variable monitoring to evaluate potential water quality improvements. If water quality improvements are not observed, the permittee could choose whether to pursue WQBELs for TN and TP either through an AMP, WQS variance, or compliance schedule without the AMP.
- For **industrial facilities**, MDEQ's revised approach proposes the following steps: conduct a qualitative reasonable potential analysis based on the narrative standard; as part of the AMP, derive WQBELs based on the ecoregional threshold range for TP, if appropriate, or allow the permittee to choose whether to pursue an AMP with a long-term compliance schedule, WQS variance, or compliance schedule without the AMP.

Overall Comments

Because MDEQ is removing numeric nutrient criteria (NNC) that are scientifically sound and protective of designated uses, EPA expects an adequate level of assurance that MDEQ can identify protective levels of both TN and TP for implementation in CWA programs. To comply with EPA's regulation,

¹ August 18, 2021 letter from Andrew Todd, EPA Region 8 Water Quality Section Chief, sent to Galen Steffens, Water Quality Planning Bureau Chief, regarding EPA comments on Montana's proposed response variables and associated thresholds.

MDEQ's criteria must be based on sound scientific rationale and must contain sufficient parameters to protect the designated use. 40 C.F.R. § 131.11(a). While EPA is pleased that MDEQ intends to propose to adopt a range of numeric TN and TP ecoregional thresholds that may be protective, EPA believes that further adjustments to the upper thresholds of the range, especially for TN, may be required to protect designated uses. Further, EPA would like additional information on how the state plans to identify values within the range for implementation in CWA programs (e.g., assessment, listing, TMDLs, permitting) and whether these thresholds will be applied uniformly in CWA programs.

MDEQ is proposing to use these ecoregional threshold ranges as binding numeric translators for interpreting Montana's narrative standard. Therefore, EPA expects these binding thresholds would be implemented in CWA programs (i.e., permitting, 303(d) assessments, TMDLs) when the state is interpreting its narrative standard. However, EPA's understanding is that the application of the ecoregional thresholds may vary between CWA programs and even within individual programs. For example, within the permitting context, the process for all three categories of dischargers begins with the following analysis: "qualitative reasonable potential to cause or contribute to an exceedance [of the] narrative nutrient standard." In discussions with MDEQ, the state has indicated that the ecoregional threshold ranges for TN and TP would not be used in the state's reasonable potential analysis. Instead, the state would focus on evaluating the condition of the waterbody (e.g., impairment status, flow conditions), condition of the facility (e.g., facility type, effluent concentrations; optimization, compliance history) and the fate and persistence of pollutants. Once the state has completed the reasonable potential analysis, MDEQ is proposing to use the TP ecoregional threshold ranges to establish water quality-based effluent limitations (WQBELs) for TP. Any analysis for TN would be delayed.

Based on this information, MDEQ does not appear to plan to: (1) implement the ecoregional thresholds in the state's qualitative reasonable potential analysis; (2) ensure there is transparent and consistent process for selecting a value within the range that would be used for permitting purposes; and (3) consider both TN and TP. This approach is problematic for several reasons:

- *Qualitative Reasonable Potential requirements:* As discussed above, 40 C.F.R. § 122.44(d)(1) requires that NPDES permits include any requirements necessary to "[a]chieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality. Such limitations must control all pollutants or pollutant parameters 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, including State narrative criteria for water quality." Considering that the ecoregional threshold ranges are proposed as the primary means to interpret the narrative standard, it is unclear how any corresponding reasonable potential analysis concerning an excursion above the standard could not involve the ecoregional thresholds. Over the past 5-10 years, many facilities in the state have collected robust effluent and ambient nutrient monitoring datasets as part of their permit monitoring requirements. Additionally, MDEQ has collected considerable ambient monitoring data as part of this focus as well. All of these data are readily available to use in conjunction with the ecoregional threshold ranges. Because MDEQ plans to use the ecoregional threshold ranges as binding numeric translators of the narrative standard for purposes of establishing WQBELs, it would be inconsistent not to apply them in their reasonable potential analysis of the narrative standard.

- *Compliance Schedule Length*: MDEQ’s revised approach indicates that compliance schedules under the AMP may be used to meet the WQBEL for TP and may allow up to ten years to meet these limits. MDEQ’s revised approach also suggests that “long-term” compliance schedules may be a component of an AMP with milestones such as “stakeholder engagement, watershed inventory.” EPA’s regulations require that any compliance schedules implemented in a permit, whether under an AMP or not, must meet final WQBEL “as soon as possible” and must include an “enforceable sequence of actions or operations” leading to compliance with the WQBEL.² See 40 C.F.R. § 122.47(a). The State of Montana also has a similar “as soon as possible” requirement in ARM 17.30.1350(1)(a). Any activities identified in the compliance schedule will need to meet these requirements in 40 C.F.R. § 122.47(a) and should ensure the facility achieves the WQBEL as soon as possible, which may be less than the ten-year or “long-term” timeframe discussed in Montana’s revised approach.
- *Prioritization of TP while delaying TN*: The record accompanying MDEQ’s 2014 adoption of the NNC and EPA’s 2015 CWA section 303(c) approval of the NNC demonstrates the NNC are based on sound science and protective of designated uses, and that both TN and TP must be addressed and limited to protect the applicable designated uses.^{3,4}

If a reasonable potential analysis that complies with 40 C.F.R. § 122.44(d)(1)(i) has been completed and demonstrates that a facility has reasonable potential to cause or contribute to an exceedance of both the TN and TP ecoregional thresholds, then WQBELs for both TN and TP should be included in permits. While it may be possible to utilize compliance schedules or WQS variances in a manner consistent with EPA’s regulations to stagger the timeframes to meet each pollutant, an approach that does not apply protective TN thresholds would not comply with 40 C.F.R. § 131.11(a) or 40 C.F.R. § 122.44(d)(1)(i). See additional discussion on this topic in the mechanical POTW and industrial facilities sections.

Lagoons

For lagoons, EPA generally supports MDEQ’s proposed approach for facilities that follow the WQS variance path because the state’s revised approach recognizes that most lagoons will have reasonable potential for both TN and TP and that it likely will be economically infeasible for most small communities to meet the TN and TP thresholds.⁵ EPA recommends MDEQ consider the following recommendations when finalizing its proposed approach for lagoons.

- While EPA supports the potential use of a multi-discharger WQS variance for lagoons, we recommend MDEQ consider EPA’s FAQs on WQS variances for multiple dischargers and group permittees based on specific facility characteristics relevant to nutrient removal that

² Memorandum from James A. Hanlon, Director, Office of Wastewater Management, to Alexis Strauss, Director, Water Division, EPA Region 9, regarding compliances schedules for water quality-based effluent limitations in NPDEQ permits. May 10, 2007. https://www3.epa.gov/npdes/pubs/memo_complianceschedules_may07.pdf.

³ 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.

⁴ EPA Action letter sent from Martin Hestmark, Assistant EPA Regional Administrator, to Tom Livers, Acting MDEQ, on February 26, 2015 regarding EPA action on Montana’s numeric nutrient criteria and variance rules.

⁵ For lagoons that would pursue an AMP approach, please see EPA’s comments above on prioritization of TP.

the permittees share (e.g., single cell lagoons, multi-cell aerated lagoons, multi-cell facultative lagoons, lagoons with nutrient add-ons). Any economic analyses, especially for identification of what is economically feasible to achieve, should be conducted for these homogeneous subgroups versus a single WQS variance that groups all lagoons collectively.⁶

- Instead of generally capping lagoons at their current load, EPA recommends reviewing the available literature and performance at well maintained and operated lagoons and using effluent data from these facilities to establish a goal for the effluent concentrations that could be achieved by lagoons.
- Facility-specific PMP activities would need to be identified and adopted as part of any WQS variance submission.
- EPA expects permit limits under this scenario to be implemented as concentration-based effluent limits because the applicable standards and limitations established in a variance would be expressed as a concentration. If MDEQ believes that load-based limits are also appropriate, then both concentration-based and load-based limits can be included in the permit. Concentration-based limits will align with any effluent concentrations identified as the highest attainable condition in the variance. 40 C.F.R. § 131.14(b)(1)(ii)(A).

Mechanical POTWs

EPA is also concerned that prioritizing TP for mechanical POTWs while delaying any evaluation for TN would not protect designated uses under the narrative standard (40 C.F.R. § 131.11(a)) and would be inconsistent with 40 C.F.R. § 122.44(d)(1). As discussed above, MDEQ's proposed approach of prioritizing TP for mechanical POTWs and not setting WQBELs for TN for up to 10 years after removal of the NNC is a cause for concern because it could result in a lack of TN reductions necessary to protect designated uses.

EPA estimates that six facilities (Bozeman, Helena, Kalispell, Conrad, Cut Bank, and Manhattan) would likely have TP limits set at or near the ecoregional value (i.e., "end-of-pipe") because of lack of dilution in the receiving waterbody. It is unclear whether facilities can afford to implement the necessary technology to reliably achieve TP concentrations, especially for facilities where the western ecoregional thresholds for TP (approximately 20-50 ug/L TP) would apply and/or if TN reductions would be more effective and result in more timely water quality improvements. For example, to achieve low TP concentrations, facilities may need to install treatment systems beyond simple addition of alum (e.g., two-stage tertiary treatment with filtration; tertiary membrane processes; etc.). At such low TP limits, large amounts of alum may be needed which would generate significantly more sludge and have additional cost and environmental implications. Thus, this approach may be economically or environmentally infeasible for many mechanical POTWs and could further delay reductions in TN. Instead, EPA recommends modifying the mechanical POTW approach to follow a similar approach as lagoons but one that is customized to meet the site-specific conditions of each facility. WQS variances could provide the flexibility for permittees to incorporate the AMP concepts, including prioritizing TP reductions, while ensuring that permits comply with 40 CFR § 122.44(d)(1)(vi) and include limits that protect the designated uses for all pollutants (i.e., TN or TP) that have the reasonable potential to cause or contribute to an exceedance of the narrative. Thus, EPA recommends MDEQ tailor its mechanical POTWs approach to evaluate whether protective levels for both TN and TP could be achieved or if other

⁶ <https://www.epa.gov/sites/default/files/2018-10/documents/discharger-specific-variances-faqs.pdf>

CWA applicable tools are needed (i.e., individual WQS variance). An outline of EPA's recommended approach is provided below:

- Apply both the TN and TP ecoregional thresholds to mechanical POTWs for the reasonable potential analysis and to derive WQBELs, if needed.
- Evaluate treatment options that could be implemented to achieve the TP or TN WQBELs; the associated timeframes for each parameter; and the feasibility of implementing those options.
- Implement concentration-based effluent limits because the applicable standards and limitations established in a variance would be expressed as a concentration. If MDEQ believes that load-based limits are also appropriate, then both concentration-based and load-based limits can be included in the permit. Concentration-based limits will align with any effluent concentrations identified as the highest attainable condition in the variance. 40 C.F.R. § 131.14(b)(1)(ii)(A).
- Use a compliance schedule that meets the requirements of 40 C.F.R. § 122.47(a) and includes enforceable actions to meet the WQBEL, as appropriate, for either TN or TP, or both.
- If the facility has demonstrated that it is infeasible to meet the TN and/or TP limit consistent with regulatory requirements, then utilize an individual WQS variance for one or both pollutants. This approach could allow mechanical POTWs to prioritize TP reductions if that approach would best lead to near term water quality improvements.

Industrial Facilities

As stated above, EPA is concerned that prioritizing TP while delaying any evaluation for TN would not protect designated uses under the narrative standard (40 C.F.R. § 131.11(a)) and would be inconsistent with 40 C.F.R. § 122.44(d)(1). Montana's proposed approach of prioritizing TP for industrial facilities and not setting TN limits for up to 10 years after removal of the NNC is a cause for concern because it could result in no reductions in TN necessary to protect designated uses. This concern is especially relevant for private sector facilities where current monitoring data suggest that TN may be a significant component of their discharge (i.e., mining facilities, sugar beet processing plants). EPA recommends working individually with each industrial facility to evaluate the best approach. Many industrial facilities will need to address TN and focusing solely on TP will not address all the pollutants of concern.

We appreciate MDEQ's outreach about this revised approach and the opportunity for interactive discussion and to provide written comments. We hope our comments are helpful to MDEQ. We appreciate MDEQ's efforts to ensure that Montana's approach complies with the CWA and EPA's regulations. If you have any questions related to EPA's comments, please contact Tina Laidlaw at (406) 457-5016 or laidlaw.tina@epa.gov. For permitting questions, please contact Erik Makus at (406) 457-5017 or makus.erik@epa.gov.

Sincerely,

Darcy O'Connor, Director
Water Division