



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

1595 Wynkoop Street
Denver, CO 80202-1129
Phone 800-227-8917
www.epa.gov/region08

September 20, 2020

Ref: 8WD-CWS

Mr. Tim Davis
Administrator
Water Quality Division
Montana Department of Environmental Quality
P.O. Box 200901
Helena, Montana 59620-0901

Re: Approval of Beaverhead Metals Total Maximum Daily Load Evaluation for the Beaverhead
Total Maximum Daily Load Planning Area (TPA)

Dear Mr. Davis,

The U.S. Environmental Protection Agency (EPA) has completed review of the total maximum daily loads (TMDLs) submitted by your office on August 28th, 2020. In accordance with the Clean Water Act (33 U.S.C. §1251 *et. seq.*) and the EPA's implementing regulations at 40 C.F.R Part 130, the EPA hereby approves Montana's TMDLs for the Beaverhead TPA. The EPA has determined that the separate elements of the TMDLs listed in the enclosure adequately address the pollutants of concern, are designed to attain and maintain applicable water quality standards, consider seasonal variation and includes a margin of safety. The EPA's rationale for this action is contained in the enclosure.

Thank you for submitting these TMDLs for our review and approval. If you have any questions, please contact Justin Wiese on my staff at (303) 312-6637.

Sincerely,

Judy Bloom, Manager
Clean Water Branch

Enclosure:
Beaverhead Metals TMDL EPA Review Summary

EPA TOTAL MAXIMUM DAILY LOAD (TMDL) REVIEW SUMMARY

TMDL: Beaverhead Metals TMDLs

ATTAINS TMDL ID: M02-TMDL-02a

LOCATION: Beaverhead and Madison Counties, Montana

IMPAIRMENTS/POLLUTANTS: The document contains sixteen TMDLs addressing sixteen pollutants prepared for nine waterbody segments, within seven streams in the Beaverhead TMDL planning area (TPA).

Waterbody/Pollutants Addressed in this TMDL Action

Assessment Unit ID	Waterbody Description	Pollutants Addressed
MT41B002_010	Grasshopper Creek, Headwaters to mouth (Beaverhead River)	Lead
MT41B002_090	Rattlesnake Creek, From the Dillon PWS off-channel well T7S R10W S11 to the mouth (Van Camp Slough)	Lead, Copper
MT41B002_091	Rattlesnake Creek, Headwaters to Dillon PWS off-channel well, T7S R10W S11	Lead
MT41B002_080	Spring Creek, Headwaters to mouth (Beaverhead River)	Iron
MT41B002_160	Steel Creek, Headwaters to mouth (Driscoll Creek), T6S R12W S18	Arsenic
MT41B002_132	Stone Creek, Left and Middle Fork to un-named tributary, T6S R7W S34	Iron
MT41B002_131	Stone Creek, Un-named tributary at T6S R7W S34 to Staudaher Bishop Ditch	Aluminum, Copper, Iron
MT41B002_150	Wellman Creek, Headwaters to mouth (Grasshopper Creek)	Aluminum, Cadmium, Copper, Lead, Zinc
MT41B002_060	West Fork Blacktail Deer Creek, Headwaters to mouth (Blacktail Deer Creek)	Arsenic

BACKGROUND: The Montana Department of Environmental Quality (MDEQ) submitted to EPA the final metals TMDLs for the Beaverhead TMDL planning area, with a submittal letter requesting review and approval, to EPA dated August 28th, 2020.

The submittal included:

- Letter requesting EPA's review and approval of the TMDLs
- Final TMDL document for Beaverhead Metals TMDLs
- Water Quality Monitoring Data

APPROVAL RECOMMENDATIONS: Based on the review presented below, the reviewer recommends approval of the final Beaverhead Metals TMDLs. All the required elements of approvable TMDLs have been met.

TMDL Approval Summary	
Number of TMDLs Approved:	16
Number of Causes Addressed by TMDLs:	16

REVIEWERS: Justin Wiese, EPA

The following review summary explains how the TMDL submission meets the statutory and regulatory requirements of TMDLs in accordance with Section 303(d) of the Clean Water Act (CWA), and EPA's implementing regulations in 40 C.F.R. Part 130.

EPA TMDL REVIEW OF THE BEAVERHEAD METALS TMDLS

This TMDL review document includes EPA’s guidelines that summarize the currently effective statutory and regulatory requirements relating to TMDLs (CWA Section 303(d) and 40 C.F.R. Part 130). These TMDL review guidelines are not themselves regulations. Any differences between these guidelines and EPA's regulations should be resolved in favor of the regulations themselves. The italicized sections of this document describe the information generally necessary for EPA to determine if a TMDL submittal fulfills the legal requirements for approval. The sections in regular type reflect EPA's analysis of the state’s compliance with these requirements. Use of the verb “must” below denotes information that is required to be submitted because it relates to elements of the TMDL required by the CWA and by regulation.

1. Identification of Waterbody, Pollutant of Concern, Pollutant Sources, and Priority Ranking

The TMDL submittal must clearly identify (40 C.F.R. §130.7(c)(1)):

- *the waterbody as it appears on the State’s/Tribe’s 303(d) list;*
- *the pollutant for which the TMDL is being established; and*
- *the priority ranking of the waterbody.*

The TMDL submittal must include (40 C.F.R. §130.7(c)(1); 40 C.F.R. §130.2):

- *an identification of the point and nonpoint sources of the pollutant of concern, including location of the source(s) and the quantity of the loading (e.g., lbs. per day);*
- *facility names and NPDES permit numbers for point sources within the watershed; and*
- *a description of the natural background sources, and the magnitude and location of the sources, where it is possible to separate natural background from nonpoint sources.*

This information is necessary for EPA’s review of the load and wasteload allocations, which are required by regulation.

The TMDL submittal should also contain a description of any important assumptions made in developing the TMDL, such as:

- *the spatial extent of the watershed in which the impaired waterbody is located;*
- *the assumed distribution of land use in the watershed (e.g., urban, forested, agriculture);*
- *population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources;*
- *present and future growth trends, if taken into consideration in preparing the TMDL (e.g., the TMDL could include the design capacity of a wastewater treatment facility); and*
- *an explanation and analytical basis for expressing the TMDL through surrogate measures, if applicable. Surrogate measures are parameters such as percent fines and turbidity for sediment impairments; chlorophyll a and phosphorus loadings for excess algae; length of riparian buffer; or number of acres of best management practices.*

The Beaverhead TPA encompasses the Beaverhead River watershed (fourth-code hydrologic unit code 10020002), which begins at the outlet of the Clark Canyon Reservoir and flows northeast 79.5 miles before joining the Big Hole River to form the Jefferson River. The TPA is bounded by the Pioneer Mountains on the west, the Ruby Range to the east, and the Snowcrest Range and Blacktail Mountains to the south. Figure 1-1 displays the general location of the Beaverhead Watershed; Table 1-1 displays impaired segments and the pollutants causing those impairments, and Figures 5-1 thru 5-10 display monitoring stations where data was collected to support TMDL development.

MDEQ has identified nine waterbody segments in Table DS-1 that do not meet applicable metals water quality standards. The concentration of metals for most streams in the Beaverhead TPA does not violate the human health standard but does violate the standard for protecting aquatic life at long-term exposure. Therefore, TMDLs were prepared indicating the amount of metals that must be reduced at example flows to meet the aquatic life standard. The exceptions were Steel Creek and West Fork Blacktail Creek, which exceeded the human health standard for arsenic. For these streams, TMDLs were prepared describing the amount of arsenic that must be reduced at example flows to meet the human health standard. There was one instance of a lead human health criterion exceedance in upper Rattlesnake Creek, however, the lead TMDL was established to meet the more stringent chronic aquatic life criteria.

Section 2.1 (Physical Characteristics) summarizes the topography, hydrology, climate and geology of the Beaverhead TPA. Section 2.2 (Ecological Profile) summarizes ecology (including ecoregions, land cover, fire history and fish species of concern) of the Beaverhead TPA. Section 2.3 (Social Profile) summarizes the human geography (including population, distribution, land ownership, and land management) of the Beaverhead TPA.

Point sources in the Beaverhead TPA are characterized and identified by facility name and permit number in Table 2-1. These include Concentrated Animal Feeding Operations (CAFOs), along with facilities holding groundwater discharge, individual, and industrial stormwater permits regulated under Montana's Pollution Discharge Elimination System (MPDES) program. Abandoned mines are also prevalent across the landscape and some of these sites have point source characteristics. Permitted point sources that discharge into or upstream of metals-impaired streams subject to metals TMDLs are further summarized in Table 5-20.

Assessment: EPA concludes that MDEQ adequately identified the impaired waterbodies, the pollutants of concern, the priority ranking, the identification, location and magnitude of the pollutant sources, and the important assumptions and information used to develop the TMDLs.

2. Description of the Applicable Water Quality Standards and Numeric Water Quality Target

The TMDL submittal must include:

- *a description of the applicable State/Tribal water quality standard, including the designated use(s) of the waterbody, the applicable numeric or narrative water quality criterion, and the antidegradation policy (40 C.F.R. §130.7(c)(1)); and*
- *a numeric water quality target for each TMDL. If the TMDL is based on a target other than a numeric water quality criterion, then a numeric expression must be developed from a narrative criterion and a description of the process used to derive the target must be included in the submittal (40 C.F.R. §130.2(i)).*

EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

Section 3.0 (Montana Water Quality Standards) and Appendix A (Regulatory Framework and Reference Condition Approach) describe the water quality standards applicable to the impaired segments with citations to relevant Montana regulations. All streams and lakes within the Beaverhead River TPA are maintained to be suitable for:

- culinary and food processing purposes after conventional treatment (Drinking Water),
- bathing, swimming, and recreation (Primary Contact Recreation),
- growth and propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers (Aquatic Life),
- agricultural and industrial water supply.

Evaluating attainment of water quality standards for metals-related impairments, and subsequent determination of whether a TMDL is necessary for each waterbody segment involves three steps which are summarized in Section 5.4.1 (Metals TMDL Evaluation Framework). Water quality targets for metals-related impairments in the Beaverhead TMDL TPA consist of metals water quality targets (Table 5-3) and metals sediment quality targets (Table 5-4). Metals water quality targets are based on numeric acute and chronic metals water quality criteria for the protection of aquatic life and human health as defined in Circular DEQ-7 (Montana Department of Environmental Quality, 2019). The metals sediment quality targets are based on narrative criteria for toxins in sediment.

Metals numeric water quality criteria include values for protecting human health and for protecting aquatic life and apply as water quality standards for the streams addressed within this submittal due to their designated use classifications. Aquatic life criteria include values for both acute and chronic effects. For any given pollutant, the most stringent of these criteria is adopted as the water quality target in order to protect all beneficial uses.

Assessment: EPA concludes that MDEQ adequately described its applicable water quality standards and numeric water quality targets for these TMDLs.

3. Loading Capacity - Linking Water Quality and Pollutant Sources

The TMDL submittal must include the loading capacity for each waterbody and pollutant of concern. EPA regulations define loading capacity as the greatest amount of a pollutant that a water can receive without violating water quality standards (40 C.F.R. §130.2(f)).

The TMDL submittal must:

- *describe the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources. In many instances, this method will be a water quality model;*
- *contain documentation supporting the TMDL analysis, including the basis for any assumptions; a discussion of strengths and weaknesses in the analytical process; and results from any water quality modeling; and*
- *include a description and summary of the water quality data used for the TMDL analysis.*

EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation (40 C.F.R. §130.2).

The full water quality dataset should be made available as an appendix to the TMDL or as a separate electronic file. Other datasets used (e.g., land use, flow), if not included within the TMDL submittal, should be referenced by source and year. The TMDL analysis should make use of all readily available data for the waterbody unless the TMDL writer determines that the data are not relevant or appropriate.

The pollutant loadings may be expressed as either mass-per-time, toxicity or other appropriate measure (40 C.F.R. §130.2(i)). Most TMDLs should be expressed as daily loads (USEPA, 2006a). If the TMDL is expressed

in terms other than a daily load (e.g., annual load), the submittal should explain why it is appropriate to express the TMDL in the unit of measurement chosen.

The TMDL submittal must describe the critical conditions and related physical conditions in the waterbody as part of the analysis of loading capacity (40 C.F.R. §130.7(c)(1)). The critical condition can be thought of as the “worst case” scenario of environmental conditions (e.g., stream flow, temperature, loads) in the waterbody in which the loading expressed in the TMDL for the pollutant of concern will continue to meet water quality standards. TMDLs should define the applicable critical conditions and describe the approach used to estimate both point and nonpoint source loads under such critical conditions.

MDEQ used a “weight of evidence” approach to establish the cause and effect relationship between the numeric targets and the identified pollutant sources as summarized in Section 4.2 (Quantifying Pollutant Sources). Source characterization and assessment to determine the major sources in each of the metal impaired waterbodies was accomplished by using monitoring data, aerial photos, Geographic Information System (GIS) analysis, field reconnaissance, literature reviews and abandoned mine inventories. The type and extent of contributing sources is characterized individually for each TMDL subwatershed starting with Section 5.5 (Source Assessment).

MDEQ established TMDLs at levels equivalent to the loading capacity for each waterbody-pollutant combination and expressed the TMDLs in terms of pounds per day under typical high and low flow conditions. The analysis examined water quality data under various hydrologic conditions in order to characterize water chemistry and consider critical conditions. A loading summary and source load allocations were provided for each waterbody-pollutant combination for which a TMDL was prepared. Loading summaries (Section 5.7.1 (Allocations by Waterbody Segment)) were based on the sample data used for metals target evaluations. For each waterbody-pollutant combination, water quality and flow volume data were used to calculate metals loading estimates and the required percent load reduction to achieve the TMDL. Refer to Appendix B for the complete water quality dataset used by MDEQ and Appendix C for the complete set of calculations used in developing the TMDLs and allocations. Additional descriptions of equations used to calculate the TMDLs and rationales for flow data used in TMDL calculations for individual waterbody segments are summarized in Section 5.6.2 (Metals TMDLs Examples for Metals Listed Streams in the Beaverhead TPA).

Assessment: EPA concludes that MDEQ’s loading capacity was calculated using an acceptable approach, used observed concentration data and water quality targets consistent with numeric water quality criteria, and has been appropriately set at a level necessary to attain and maintain the applicable water quality standards. The pollutant loads have been expressed as daily loads. The critical conditions were described and factored into the calculations and were based on a reasonable approach to establish the relationship between the target and pollutant sources.

4. Load Allocation

The TMDL submittal must include load allocations (LAs). EPA regulations define LAs as the portion of a receiving water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution and to natural background sources. Load allocations may range from reasonably accurate estimates to gross allotments (40 C.F.R. §130.2(g)). Where possible, separate LAs should be provided for natural background and for nonpoint sources.

In the rare instance that a TMDL concludes that there are no nonpoint sources or natural background for a pollutant, the load allocation must be expressed as zero and the TMDL should include a discussion of the reasoning behind this decision.

Section 5.6.1 (Metals Allocations) defines load allocations and Section 5.7 (TMDL Allocations) discusses loading estimates and load allocations established for high and low flow scenarios, depending on when each pollutant was exceeded. Equation 6-2 summarizes LA as the portion of the TMDL allocated to natural background (LA_{NB}) and human-caused upstream sources (LA_{UP}).

As described in Section 5.6.2 (Metals TMDLs Examples for Metals Listed Streams in the Beaverhead TPA), TMDLs address impairments that are a result of water quality standard exceedances. With the exception of TMDLs for Upper Stone Creek (which had active MPDES permits) and Lower Rattlesnake Creek (which had a metals allocation to Upper Rattlesnake Creek), metals allocations consisted of a composite WLA to abandoned mines and other human sources and a LA to natural background metals sources. Natural concentrations were estimated from MDEQ water quality sampling sites with similar geology as the TMDL streams in the Beaverhead Watershed with no known history of upstream mining. Table 5-27 presents the metals concentrations chosen to represent natural conditions as the 75th percentile of the median values across monitoring sites. Where data allowed (i.e., high flows), the lower Stone Creek TMDLs established an allocation for upper Stone Creek's anthropogenic contribution (LA_{UP}) by multiplying flow in the upper creek by the water quality standard and then subtracting out the upstream natural load using metals concentrations from Table 5-27 and the same flow values (see Equation 6-5).

Assessment: EPA concludes that MDEQ's LAs provided in the TMDL are reasonable and will result in attainment of the water quality standards.

5. Wasteload Allocations

The TMDL submittal must include wasteload allocations (WLAs). EPA regulations define WLAs as the portion of a receiving water's loading capacity that is allocated to existing and future point sources (40 C.F.R. §130.2(h)). If no point sources are present or if the TMDL recommends a zero WLA for point sources, the WLA must be expressed as zero. If the TMDL recommends a zero WLA after considering all pollutant sources, there must be a discussion of the reasoning behind this decision, since a zero WLA implies an allocation only to nonpoint sources and natural background will result in attainment of the applicable water quality standards, and all point sources have no measurable contribution.

The individual WLAs may take the form of uniform percentage reductions or individual mass based limitations for dischargers where it can be shown that this solution meets WQSs and does not result in localized impairments. In some cases, WLAs may cover more than one discharger (e.g., if the source is contained within a general permit).

Section 5.6.1 (Metals Allocations) defines wasteload allocations. Equation 6-6 summarizes the WLA as the portion of TMDL allocated to wasteload allocations from active mines (WLA_{ACTIVE}) and from abandoned mining sources and all other human sources ($Comp\ WLA_{AB+HS}$).

Section 2.3.4 (Wastewater Discharges) identifies and describes three facilities in the Beaverhead TPA with individual MPDES permits to discharge into surface waters (Table 2-1 and Figure 2-15). There is

one individual groundwater discharge permit. In addition, there are nine authorizations for Concentrated Animal Feeding Operations (CAFOs) and stormwater general permits. These facilities do not regularly discharge into surface water but have the potential during some storm events. These facilities are required to apply best management in order to reduce the likelihood and amount of pollutant discharges. Section 5.6.2 (Metals TMDLs Examples for Metals Listed Streams in the Beaverhead TPA) outlines steps used to calculate WLAs and the amount of reductions needed to meet water quality standards.

Of the permits, only individual permits held by Barretts Minerals (MT0029891) and Beaverhead Talc Mine (MT0027821) and the general permit held by Barretts Minerals (MTR000510) are associated with metals-impaired streams having TMDLs in this document. The discharges associated with these permits are discussed in Section 5.5.6 (Upper Stone Creek (MT41B002_132) Source Assessment) pertaining to Upper Stone Creek. The Beaverhead Talc Mine permit (MT0027821) is in the process of being terminated therefore it was not assigned a WLA. Similarly, Barretts Minerals (MTR000510) was not assigned a WLA because the general stormwater permit rarely discharges. The individual Barretts Minerals permit (MT0029891), however, was assigned a WLA that was calculated based on observed outfall flow multiplied by the water quality standard. Lastly, the Comp WLA_{AB+HS} was determined by calculating the difference between the TMDL and the sum of all other allocations.

Assessment: EPA concludes that MDEQ's WLAs provided in the TMDL are reasonable, will result in the attainment of the water quality standards and will not cause localized impairments. The TMDL accounts for all point sources contributing loads to impaired segments, upstream segments and tributaries in the watershed.

6. Margin of Safety

*The TMDL submittal must include a margin of safety (MOS) to account for any lack of knowledge concerning the relationship between load allocations, wasteload allocations and water quality (CWA §303(d)(1)(C), 40 C.F.R. §130.7(c)(1)). The MOS may be **implicit** or **explicit**.*

*If the MOS is **implicit**, the conservative assumptions in the analysis that account for the MOS must be described. If the MOS is **explicit**, the loading set aside for the MOS must be identified.*

An implicit MOS was established for all metals TMDLs, using conservative assumptions throughout the TMDL development process, as summarized in Section 5.8.2 (Margin of Safety). For example, using the highest stream flow and concentrations measured within the low and high flow conditions allowed for a significant margin of safety by basing the example TMDL and percent reduction on a maximum amount of loading previously measured at the site. The implicit MOS is equal to zero in the TMDL equation.

Assessment: Conservative assumptions mentioned in the TMDL document were adequately described and are reasonable. EPA concludes that MDEQ's TMDLs incorporate an adequate implicit margin of safety.

7. Seasonal Variation

The TMDL submittal must be established with consideration of seasonal variations. The method chosen for including seasonal variations in the TMDL must be described (CWA §303(d)(1)(C), 40 C.F.R. §130.7(c)(1)).

Section 5.5 (Source Assessment) describes and summarizes seasonal variation saying that decreases in stream flow due to seasonal variation or water withdrawals can also have complex effects on metals concentrations in streams.

MDEQ considered the impacts of seasonality in assessing loading conditions and for developing water quality targets, TMDLs, and allocation schemes within Section 5.8.1 (Seasonality). For metals TMDLs, consideration of seasonally influenced streamflow is important because metals loading pathways and water hardness change from high to low flow conditions. Some metals water quality criteria, and thus TMDL targets, depend on water hardness which varies seasonally, therefore MDEQ's monitoring routine and metals assessment methods requires a combination of both high and low flow sampling. During high flows, overland flow and erosion of metals-contaminated soils and mine wastes tend to be the major cause of elevated metals concentrations. During low flow, groundwater and/or adit discharges may be a more significant contributing source of elevated metals concentrations.

Additionally, all TMDLs were established as a function of flow using an equation that incorporates seasonal variability into the loading capacity.

Assessment: EPA concludes that MDEQ's seasonal variations were adequately described and considered to ensure the TMDL allocations will be protective of the applicable water quality standards throughout any given year.

8. Reasonable Assurances

When a TMDL is developed for waters impaired by both point and nonpoint sources, EPA guidance (USEPA, 1991) and court decisions say that the TMDL must provide reasonable assurances that nonpoint source control measures will achieve expected load reductions in order for the TMDL to be approvable. This information is necessary for EPA to determine that the TMDL, including the load and wasteload allocations, has been established at a level necessary to implement the applicable water quality standards (CWA §303(d)(1)(C), 40 C.F.R. §130.7(c)(1)).

EPA guidance (USEPA, 1997) also directs Regions to work with States to achieve TMDL load allocations in waters impaired only by nonpoint sources. However, EPA cannot disapprove a TMDL for nonpoint source-only impaired waters, which do not have a demonstration of reasonable assurance that LAs will be achieved, because such a showing is not required by current regulations.

Section 6.0 (Water Quality Improvement Plan and Monitoring Strategy) contains information on a variety of funding sources and restoration approaches that provide the reasonable assurances that nonpoint source control measures will achieve expected load reductions.

The WLA was established by considering both wasteload allocations from active mines (WLA_{ACTIVE}) and from abandoned mining sources and all other human sources ($Comp\ WLA_{AB+HS}$). The WLA_{ACTIVE} was established based on Barretts Minerals (MT0029891) meeting water quality criteria in facility's effluent (i.e., criteria "end-of-pipe"). Reasonable assurances are addressed for point sources through MPDES permits, which require these facilities to have effluent limits consistent with the assumptions and requirements of WLAs.

Nonregulatory, voluntary-based reasonable assurances are provided for the LA where the submittal discusses MDEQ’s adaptive management approach to the TMDL process, the monitoring strategy that will be used to gauge TMDL effectiveness in the future, and the core aspects of a TMDL implementation strategy. These assurances include the more detailed characterization of nonpoint sources that will guide restoration planning beyond what is summarized in the LA representing all nonpoint source categories and the recommendation of specific activities to focus implementation discussed further starting at Section 6.6 (Restoration Approaches by Source).

Assessment: EPA considered the reasonable assurances contained in the TMDL submittal and concludes that they are adequate to meet the load allocation reductions.

9. Monitoring Plan

The TMDL submittal should include a monitoring plan for all:

- *Phased TMDLs; and*
- *TMDLs with both WLA(s) and LA(s) where reasonable assurances are provided.*

Under certain circumstances, a phased TMDL should be developed when there is significant uncertainty associated with the selection of appropriate numeric targets, estimates of source loadings, assimilative capacity, allocations or when limited existing data are relied upon to develop a TMDL. EPA guidance (USEPA, 2006b) recommends that a phased TMDL submittal, or a separate document (e.g., implementation plan), include a monitoring plan, an explanation of how the supplemental data will be used to address any uncertainties that may exist when the phased TMDL is prepared and a scheduled timeframe for revision of the TMDL.

For TMDLs that need to provide reasonable assurances, the monitoring plan should describe the additional data to be collected to determine if the load reductions included in the TMDL are occurring and leading to attainment of water quality standards.

EPA guidance (USEPA, 1991) recommends post-implementation monitoring for all TMDLs to determine the success of the implementation efforts. Monitoring plans are not a required part of the TMDL and are not approved by EPA but may be necessary to support the decision rationale for approval of the TMDL.

In Section 6.6 (Restoration Approaches by Source) MDEQ commits to supporting future ambient water quality monitoring activities to judge progress towards achieving the goals outlined in the TMDL. Section 6.7 (Strengthening Source Assessment and Increasing Available Data) outlines objectives for future monitoring in the Beaverhead TPA. MDEQ also maintains the ability to modify the TMDL and allocations as new data becomes available using an adaptive management approach in accordance with the TMDL revision process previously recommended by EPA. Once restoration measures have been implemented and given time to take effect, MDEQ is compelled by state law (MCA 75-5-703(7) & (9)) to monitor and re-evaluate the impairment status to determine whether water quality standards (i.e., TMDL targets) are being met.

Assessment: Monitoring plans are not a required element of EPA’s TMDL review and decision-making process. The TMDL submitted by MDEQ includes objectives for future monitoring written to evaluate the progress toward attainment of water quality standards. EPA is taking no action on the monitoring plan included in the TMDL submittal.

10. Implementation

EPA policy (USEPA. 1997) encourages Regions to work in partnership with States/Tribes to achieve nonpoint source load allocations established for 303(d)-listed waters impaired by nonpoint sources. Regions may assist States/Tribes in developing implementation plans that include reasonable assurances that nonpoint source LAs established in TMDLs for waters impaired solely or primarily by nonpoint sources will in fact be achieved. The policy recognizes that other relevant watershed management processes may be used in the TMDL process. EPA is not required to and does not approve TMDL implementation plans.

EPA encourages States/Tribes to include restoration recommendations (e.g., framework) in all TMDLs for stakeholder and public use to guide future implementation planning. This could include identification of a range of potential management measures and practices that might be feasible for addressing the main loading sources in the watershed (see USEPA. 2008, Chapter 10). Implementation plans are not a required part of the TMDL and are not approved by EPA but may be necessary to support the decision rationale for approval of the TMDL.

In Section 6.5 (Overview of Management Recommendations) MDEQ encourages, based on the makeup and contribution of pollutant sources within the watershed, a variety of future implementation activities focused on active or passive abandoned mine restoration, grazing management, replanting native vegetation, and improving irrigation efficiency to reduce water diversion from streams. Section 6.10 (Potential Funding and Technical Assistance Sources) provides additional information to support future implementation activities.

Assessment: Although not a required element of the TMDL approval, MDEQ discussed how information derived from the TMDL analysis process can be used to support implementation of the TMDLs. EPA is taking no action on the implementation portion of the TMDL submittal.

11. Public Participation

EPA policy is that there must be full and meaningful public participation in the TMDL development process. Each State/Tribe must, therefore, provide for public participation consistent with its own continuing planning process and public participation requirements (40 C.F.R. §25.3 and §130.7(c)(1)(ii)).

The final TMDL submittal must describe the State/Tribe's public participation process, including a summary of significant comments and the State/Tribe's responses to those comments (40 C.F.R. §25.3 and §25.8). Inadequate public participation could be a basis for disapproving a TMDL; however, where EPA determines that a State/Tribe has not provided adequate public participation, EPA may defer its approval action until adequate public participation has been provided for, either by the State/Tribe or by EPA.

Section 7.0 (Public Participation and Public Comments) explains the public engagement process MDEQ followed during development of the TMDL document. A draft TMDL report was released for public comment from July 23rd, 2020 to August 21st, 2020. The public comment period and public meeting were announced in a July 23rd, 2020 press release from MDEQ which was published on MDEQ's website and was distributed to multiple media outlets across Montana. A public notice advertising the public comment period and public meeting was published in The Montana Standard and Dillon Tribune newspapers. A virtual public informational meeting was held August 4th, 2020 via Zoom. Additionally, the announcement was distributed to the project's TMDL watershed advisory group, the Statewide TMDL Advisory Group, and other additional contacts via e-mail.

Following the public comment period, no formal, written comments were received.

MDEQ worked to keep stakeholders apprised of project status and solicited input from a TMDL watershed advisory group. MDEQ consulted with the Beaverhead and Gallatin conservation districts during development of the TMDLs in this document, which included opportunities to provide comment during the various stages of TMDL development and an opportunity for participation in the watershed advisory group described above. MDEQ requested participation from the interest groups defined in state law (MCA 75-5-704) and included local city and county representatives; livestock-oriented and farming-oriented agriculture representatives; conservation groups; watershed groups; hydroelectric industry representatives; state and federal land management agencies; and representatives of fishing, recreation, and tourism interests.

Assessment: EPA has reviewed the state's public participation process and concludes that the state involved the public during the development of the TMDL and provided adequate opportunities for the public to comment on the draft report.

12. Submittal Letter

The final TMDL submittal must be accompanied by a submittal letter that explicitly states that the submittal is a final TMDL submitted under Section 303(d) of the Clean Water Act for EPA review and approval. This clearly establishes the State's/Tribe's intent to submit, and EPA's duty to review, the TMDL under the statute (40 C.F.R. §130.7(d)(1)). The final submittal letter should contain such identifying information as the waterbody name, location, assessment unit number and the pollutant(s) of concern.

A transmittal letter with the appropriate information was included with the final TMDL report submission from MDEQ, dated August 28th, 2020 and signed by Tim Davis, Division Administrator, Water Quality Division.

Assessment: EPA concludes that the MDEQ's submittal clearly and unambiguously requested EPA to act on final TMDLs in accordance with the Clean Water Act and the submittal contained all the necessary supporting information.

References

Buchman MF. NOAA screening quick reference tables: NOAA HAZMAT Report 99-1. Seattle: Coastal Protection and Restoration Division; 1999.

DEQ (Montana Department of Environmental Quality). 2012. Beaverhead Sediment Total Maximum Daily Loads and Framework Water Quality Protection Plan. Helena, MT.

DEQ (Montana Department of Environmental Quality). 2014. Lower Beaverhead River and Upper Jefferson River TMDLs. Helena, MT.

DEQ (Montana Department of Environmental Quality). 2017. Montana Nonpoint Source Management Plan. Helena, MT: Montana Dept. of Environmental Quality.

DEQ (Montana Department of Environmental Quality). 2018. Final Water Quality Integrated Report. Helena, MT. Water Quality Planning Bureau.

DEQ (Montana Department of Environmental Quality). 2019. Circular DEQ-7: Montana Numeric Water Quality Standards. Helena, MT: Montana Department of Environmental Quality.
<https://deq.mt.gov/Portals/112/Water/WQPB/Standards/PDF/DEQ7/DEQ-7.pdf>.

Kendy, E. and Ruth E. Tresch. 1996. Geographic, Geologic, and Hydrologic Summaries of Intermountain Basins of the Northern Rocky Mountains. Denver, Co: U.S. Dept. of Interior. Report USGS Water Resources Investigations Report 96-4025.

Makarowski, Kathryn. 2019. Standard Operating Procedure for Sample Collection for Chemistry Analysis: Water, Sediment, and Biological Tissue. Document ID TBD, Version 1.0. Helena, MT: Montana Department of Quality, Water Quality Planning Bureau.

Rogers, Jedediah S. 2008. East Bench Unit, Three Forks Division, Pick Sloan Missouri Basin Program. Bureau of Reclamation.

USEPA. 1991. *Guidance for water quality-based decisions: The TMDL process*. EPA 440-4-91-001. Office of Water, Assessment and Watershed Protection Division and Office of Wetlands, Oceans, and Watersheds, U.S. Environmental Protection Agency, Washington, DC.

USEPA. 1997. *New policies for establishing and implementing Total Maximum Daily Loads (TMDLs)*. Office of Water, U.S. Environmental Protection Agency, Washington, DC.

USEPA. 2006a. *Establishing TMDL "Daily" Loads in Light of the Decision by the U.S. Court of Appeals for the D.C. Circuit*. Office of Water, Office of Wetlands, Oceans, and Watersheds, U.S. Environmental Protection Agency, Washington, DC.

USEPA. 2006b. *Clarification Regarding "Phased" Total Maximum Daily Loads*. Office of Water, Office of Wetlands, Oceans, and Watersheds, U.S. Environmental Protection Agency, Washington, DC.

USEPA. 2008. *Handbook for Developing Watershed Plans to Restore and Protect our Waters*. EPA-841-B-08-002. Office of Water, Environmental Protection Agency, Washington, DC.

USEPA. 2010. *National Pollutant Discharge Elimination System (NPDES) Permit Writers' Manual, Chapter 6, Water Quality-Based Effluent Limitations*. EPA-833-K-10-001. Office of Water, Office of Wastewater Management, Water Permits Division, Washington, DC.

USEPA. 2014. *Water Quality Standards Handbook: Chapter 1: General Provisions*. EPA-820-B-14-008. EPA Office of Water, Office of Science and Technology, Washington, DC.

USEPA. 2017. *Water Quality Standards Handbook: Chapter 3: Water Quality Criteria*. EPA-823-B-17-001. EPA Office of Water, Office of Science and Technology, Washington, DC.

Wischmeier, W. H. and D. Smith. 1978. *Predicting Rainfall Erosion Losses: A Guide to Conservation Planning*. Washington, D.C.: United States Department of Agriculture. Report Agriculture Handbook No. 537.

Williams, B. K., R. C. Szaro, and C. D. Shapiro. 2009. *Adaptive Management: The U.S. Department of the Interior Technical Guide*. Adaptive Management Working Group, U.S. Department of the Interior, Washington, DC.

Woods, Alan J., James M. Omernik, John A. Nesser, Jennifer Shelden, Jeffrey A. Comstock, and Sandra J. Azevedo. 2002. *Ecoregions of Montana*, 2nd ed., Reston, VA: United States Geographical Survey.