



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

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

Ref: 8WD-CWS

**SENT VIA EMAIL
DIGITAL READ RECEIPT REQUESTED**

Tim Davis, Administrator
Water Quality Division
Montana Department of Environmental Quality
timdavis@mt.gov

Re: Approval of Sheep Creek Aluminum TMDL

Dear Mr. Davis,

The U.S. Environmental Protection Agency (EPA) has completed review of the total maximum daily load (TMDL) submitted by your office on November 19, 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 aluminum TMDL for Sheep Creek. The EPA has determined that the separate elements of the TMDL listed in the enclosure adequately address the pollutant 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 this TMDL for our review and approval. If you have any questions, please contact Peter Brumm on my staff at (406) 457-5029.

Sincerely,

JUDY
BLOOM

Digitally signed by
JUDY BLOOM
Date: 2020.12.17
13:09:39 -07'00'

Judy Bloom, Manager
Clean Water Branch

Enclosure:

Sheep Creek Aluminum TMDL EPA Decision Rationale

Cc: Galen Steffens, Chief, Water Quality Planning Bureau, Montana DEQ
Kristy Fortman, Supervisor, Watershed Protection Section, Montana DEQ

EPA TOTAL MAXIMUM DAILY LOAD (TMDL) DECISION RATIONALE

TMDL: Sheep Creek Aluminum TMDL

ATTAINS TMDL ID: M10-TMDL-01b

LOCATION: Meagher County, Montana

IMPAIRMENTS/POLLUTANTS: The submittal contains one TMDL addressing one pollutant for a single waterbody segment as noted in the table below.

Waterbody/Pollutant Addressed in this TMDL Action

Assessment Unit ID	Waterbody Description	Pollutants Addressed
MT41J002_030	Sheep Creek – Headwaters to mouth (Smith River)	Aluminum

BACKGROUND: The Montana Department of Environmental Quality (DEQ) transmitted the final aluminum TMDL for Sheep Creek to EPA on November 19, 2020 with a submittal letter requesting review and approval dated November 16, 2020.

The submittal included:

- Letter requesting EPA’s review and approval of the TMDLs
- Final TMDL document for Sheep Creek
- TMDL document appendices
- Public comments / responses to comments

APPROVAL RECOMMENDATIONS: Based on the review presented below, the reviewer recommends approval of the final Sheep Creek Aluminum TMDL. All the required elements of an approvable TMDL have been met.

TMDL Approval Summary

Number of TMDLs Approved:	1
Number of Causes Addressed by TMDLs:	1

REVIEWERS: Peter Brumm, 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 SHEEP CREEK ALUMINUM TMDL

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 regulatory 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 Sheep Creek TMDL Project Area encompasses the 195 square mile drainage area of Sheep Creek and is located in Meagher County in central Montana. The Creek flows 41 miles from the headwaters to its confluence with the Smith River. Figure 1-1 displays the general location of the project area, Sheep Creek, and several of its significant tributaries; Table 5-1 clearly identifies the aluminum-impaired segment as it appears on Montana’s 303(d) list; and Figure 5-1 displays monitoring locations where data was collected for use in TMDL development. The aluminum impairment on Sheep Creek was first

identified in 2012 and was assigned a high priority for TMDL development on the most recent 303(d) list approved by EPA (DEQ, 2018).

Section 2.0 (Sheep Creek TMDL Project Area Description) summarizes the physical, ecological and social profile of the project area and refers to multiple maps contained in Appendix A of the submittal that show the distribution of various watershed attributes such as geology, precipitation, fire history and population density.

Potential sources contributing aluminum to Sheep Creek are reviewed in Section 5.5.2. There are currently no point sources in the watershed, however, DEQ reviewed abandoned mine records and the operations of an active hard rock mine, Black Butte Iron Mine, to verify that characteristics of point sources (40 C.F.R. §122.2) do not exist at these sites and verify that NPDES permits and WLAs were not necessary. Aluminum loading from a proposed copper mine is also quantified and the TMDL provides WLAs to address the future loads consistent with the Tintina Montana, Inc. final NPDES permit (MT0031909) that became effective June 1st, 2020. Lastly, the submittal reviews the contribution of several nonpoint source categories such as natural background, unpaved roads, a downhill ski area and grazing related erosion.

Assessment: EPA concludes that DEQ adequately identified the impaired waterbody, the pollutant of concern, the priority ranking, the identification, location and magnitude of the pollutant sources, and the important assumptions and information used to develop the TMDL.

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) describes the applicable water quality standards with citations to relevant Montana regulations. Sheep Creek is to be maintained suitable for the following uses:

- Drinking, 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

The submittal states that aluminum is currently preventing aquatic life from being a fully supported designated use in Sheep Creek. The mechanisms by which aluminum impacts aquatic life are explained in Section 5.1 (Effects of Excess Aluminum on Beneficial Uses). DEQ has identified aquatic life as the

most sensitive use to excess aluminum, thus by establishing a TMDL to protect aquatic life it is expected that all other designated uses will also be protected. The state's antidegradation policies are discussed in Section 3.3 (Nondegradation Provisions). The magnitudes of applicable aluminum criteria are listed in Table 5-2 and include values for both acute and chronic aquatic life protection. DEQ selected the more stringent of these two, the chronic aquatic life criterion of 87 µg/L dissolved aluminum, as the numeric TMDL target. The duration and frequency components of these criteria are found in Circular DEQ-7 (DEQ, 2019a) and Section 5.4.1 (Aluminum Target) discusses how DEQ interprets the magnitude, duration and frequency components of the aluminum criteria into a metals assessment method (DEQ, 2012a) for CWA 303(d) purposes.

In this TMDL submittal, DEQ has identified natural background as “the most prevalent source of aluminum in the Sheep Creek watershed” (page 5-9) and “the likely reason for the elevated aluminum concentrations” (page 1-3). However, there are human sources in the watershed, therefore it is difficult with the existing information and approach to definitively quantify natural and determine if water quality criteria are exceeded solely due to natural sources. Due in part to the uncertainty attributing the impairment to human sources, DEQ previously considered the Sheep Creek aluminum TMDL a low priority for TMDL development (DEQ, 2012b). That priority status changed in subsequent Integrated Reports after Tintina Montana, Inc. submitted an application for a Mine Operating Permit that included NPDES permitting requirements (Tintina Montana, Inc, 2015). In accordance with state law (MCA 75-5-702 (9)), DEQ must prioritize TMDL development where an application has been submitted for a new individual NPDES permit to discharge to an impaired waterbody. Thus, DEQ subsequently changed the priority status to high and has now established the Sheep Creek aluminum TMDL at a level necessary to attain the applicable water quality standards as required by federal regulations (40 C.F.R §130.7(c)(1)). Through this TMDL process DEQ acknowledges that the state may need to revise or update the numeric aluminum criteria for Sheep Creek as more data and information are collected in the future to better ascertain the natural load (see Section 6.3 Aluminum Water Quality Standard Consideration). If that occurs, a TMDL revision may also be necessary.

Assessment: EPA concludes that DEQ adequately described its applicable water quality standards and numeric water quality targets for this TMDL.

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.

The submittal relies on the mass-balance approach to establish the loading capacity using the target aluminum concentration, a variable flow value and a conversion factor as expressed in Equation 1 and shown in Figure 5-6. The resulting load is the greatest amount of aluminum that Sheep Creek can receive without violating water quality standards.

DEQ used a weight-of-evidence method to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources. This involved synoptic water quality sampling performed by DEQ and Tintina Montana, Inc. that bracketed suspected aluminum sources, an investigation into the effect of suspended sediment and streamflow on aluminum concentrations to determine the influence of sediment-bound aluminum, geographic information system analysis, and literature reviews.

Appendix B contains the full water quality dataset relied upon for the TMDL analysis. The TMDL and allocations are expressed as daily loads in terms of pounds per day. Lastly, DEQ identified the March through June timeframe as critical conditions when aluminum water quality criteria exceedances were most common and related the observation to snowmelt processes.

Assessment: EPA concludes that DEQ’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.

After reviewing the contribution of several nonpoint source categories such as natural background, unpaved roads, a downhill ski area and grazing related erosion in Section 5.5.2 (Potential Sources Contributing Aluminum to Sheep Creek), DEQ established the allowable nonpoint source load as a single composite LA representing both natural and human-caused nonpoint source load.

Conceptually, upstream of the proposed mine discharge, the entire Sheep Creek TMDL is assigned to the LA (see Equation 6). Below the proposed mine discharge, the LA is derived as the load remaining once the WLAs have been subtracted from the TMDL (see pages 5-15 through 5-16).

Assessment: EPA concludes that the LA provided in the TMDL submittal is 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 WQs 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).

There are no existing point sources of aluminum in the project area, however, the submittal assigned two WLAs to allow for the contribution of a future point source, the proposed Tintina Montana, Inc. Copper Mine. Separate WLAs are established for the treated mine wastewater (WLA_{TMW}) and the permitted stormwater runoff (WLA_{STORM}) from the proposed mine.

As described in Section 5.7.2 (Wasteload Allocation Development), the mine's treated wastewater will be discharged to groundwater via a subsurface infiltration system under the alluvial plain adjacent to Sheep Creek and Coon Creek. The groundwater aquifer is hydrologically connected to the creeks so wastewater discharged to the groundwater will enter both surface waters within a short distance (DEQ, 2019b). Coon Creek is not impaired by aluminum therefore it is considered a high-quality water subject to Montana's Tier-2 antidegradation requirements. The result of applying these requirements, using Coon Creek's existing water quality and flow conditions, is a target concentration and WLA_{TMW} based on 13 $\mu\text{g/L}$ dissolved aluminum as expressed in Equation 3. This is sufficiently protective of the most stringent criterion applicable to Sheep Creek (87 $\mu\text{g/L}$) and will ensure the discharge does not cause

significant degradation to Coon Creek’s water quality. The average continuous discharge for this outfall is estimated to be 0.88 cfs, which equates to an WLA_{TMW} of 0.062 lbs/day.

The permitted stormwater runoff WLA_{STORM} represents multiple outfalls that capture stormwater runoff from access roads, haul roads, topsoil stockpiles, berms constructed of non-waste rock materials, and runoff from undisturbed ground on slopes above the facility and associated structures. When stormwater runoff is occurring, the contributed load can be estimated to be 0.34 lbs/day using Equation 4 and an estimated runoff concentration of 69 µg/L, however, the establishment of WLA_{STORM} is not intended to add concentration or load limits to the NPDES permit. Instead, consistent with EPA guidance (EPA, 2014a), the requirements of WLA_{STORM} will be met if the permittee adheres to the existing Best Management Practice (BMP)-based permit requirements described in the permit fact sheet (DEQ, 2019b). These requirements consist of the development, implementation, and maintenance of a Stormwater Pollution Prevention Plan (SWPPP).

Assessment: EPA concludes that DEQ’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 the TMDL using conservative assumptions throughout the TMDL development process as summarized in Section 5.8.1 (Margin of Safety). For example, the choices made when selecting targets and establishing an individual WLA based on a tributary’s antidegradation values contribute to the implicit MOS which is represented as zero in the TMDL equation.

Assessment: EPA concludes that DEQ’s TMDL incorporates an adequate implicit margin of safety. The conservative assumptions described in the TMDL document are adequately explained and reasonable.

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)).

DEQ considered the impacts of seasonality in assessing loading conditions and for developing water quality targets, TMDLs, and allocation schemes as summarized within Section 5.8.2 (Seasonality). DEQ compared aluminum water quality data to streamflow and suspended sediment information in Section 5.5.1 (Data Analysis) and found no clear relationship, however, a seasonal pattern was identified where the highest aluminum concentrations occurred during the March through June timeframe. Even though

these concentrations did not always coincide with high flows or elevated suspended sediment, DEQ attributes the aluminum exceedances to snowmelt and the timing of data collection in relation to snowmelt events. Future restoration and assessment efforts should focus on this critical spring timeframe even though the criteria and TMDL target apply year-round.

Assessment: EPA concludes that 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.

The WLAs are established at levels necessary to implement the applicable water quality standards using aluminum concentration values based on tributary antidegradation criteria (13 µg/L) and expected stormwater runoff quality (69 µg/L). These WLAs will be implemented through existing NPDES permit requirements for Tintina Montana, Inc. and are expected to result in conditions that attain and maintain the most stringent criterion assigned to Sheep Creek (87 µg/L). Nonregulatory, voluntary-based reasonable assurances are provided for the LA where DEQ encourages the adoption of BMPs to address multiple pollutants, including the two causes - aluminum and *E. coli* - identified as impairments to Sheep Creek.

Assessment: EPA considered the reasonable assurances contained in the TMDL submittal and concludes that they are adequate to meet the load allocation reductions. Nonpoint source load reductions are expected to occur as a result implementation of best management practices as described in the incentive and voluntary program plans in place, in progress or planned to begin in the near future. Point sources with NPDES permits require that the effluent limits be consistent with assumptions and requirements of WLAs for the discharge contained in the TMDL.

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.

The Sheep Creek aluminum TMDL is not presented as a phased TMDL. In Section 6.0 (Implementing the Sheep Creek Aluminum TMDL) DEQ states that “Additional water quality sampling of Sheep Creek and its tributaries may aid in further identification of fluctuations in aluminum concentrations and assessment of sources” but does not elaborate further on future monitoring plans. Public comment number seven argued for DEQ’s commitment to continue leading Sheep Creek monitoring activities to which DEQ replied it does not have the resources to simultaneously conduct continual sampling of Sheep Creek and the rest of Montana’s waterbodies. Instead, DEQ explained monitoring assistance opportunities available under the Volunteer Monitoring Support Program and pointed out that DEQ is required by state law to periodically assess waters for which TMDLs have been completed through the TMDL Implementation Evaluation (TIE) process. In addition, as required by their NPDES permit, Tintina Montana, Inc. will monitor for aluminum in effluent discharged to groundwater that is hydrologically connected to Sheep Creek, as well as collect ambient samples from tributaries of Sheep Creek (Coon Creek, Brush Creek, Little Sheep Creek) when stormwater outlets discharge (DEQ, 2020).

Assessment: Monitoring plans are not a required element of EPA’s TMDL review and decision-making process. The TMDL submitted by DEQ does not include a monitoring plan. EPA is taking no action on this review element.

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.

Section 6.0 (Implementing the Sheep Creek Aluminum TMDL) discusses implementation of the Sheep Creek aluminum TMDL in the context of point and nonpoint sources as well as the potential need to consider future revisions to the current aluminum water quality standard. The WLAs were established consistent with the recently issued NPDES permit (MT0031909) and will be implemented through the permitting process. Implementation of the LA is largely dependent on the voluntary adoption of BMPs and the submittal references a previous *E. coli* TMDL developed for Sheep Creek that describes BMPs which could potentially address multiple pollutants (DEQ, 2017).

Natural sources are a major contributor of aluminum to Sheep Creek but the extent to which TMDL targets and water quality criteria are exceeded solely due to natural sources is uncertain at this time. DEQ acknowledges this, correctly describes the existing numeric criteria as the applicable water quality standard that must be protected by the TMDL (40 C.F.R. §130.7(c)(1)), and states that aluminum water quality standards for Sheep Creek may eventually need to be revised or updated as part of a statewide review into the applicability of Montana’s current aluminum criteria.

Assessment: Although not a required element of the TMDL approval, DEQ discussed how information derived from the TMDL analysis process can be used to support implementation of the TMDL. 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 DEQ followed during development of the TMDL document. A draft TMDL report was released for public comment from August 24th, 2020 to September 22nd, 2020 and a virtual public meeting was held September 10th, 2020 via Zoom. The public comment period and public meeting were announced in an August 24th, 2020 press release which was published on DEQ’s website and distributed to multiple media outlets across Montana. A public notice advertising the public comment period and public meeting was published in the following newspapers: Great Fall Tribune, Helena Independent Record, and Meagher County News. In addition, the announcement was distributed to the project’s TMDL watershed advisory group, the Statewide TMDL Advisory Group, and other additional contacts via e-mail.

Two sets of written comments were received during the public comment period; one from Sandfire Resources America, Inc., which operates Tintina Montana, Inc. as a wholly owned subsidiary, and another from Trout Unlimited. In Section 7.2 (Response to Public Comments), DEQ summarized and responded to the comments. The original comment letters are available from DEQ upon request.

DEQ worked to keep stakeholders apprised of project status and solicited input from a TMDL watershed advisory group and the Meagher County Conservation District. This outreach included opportunities to provide comment during the various stages of TMDL development. For the advisory group, DEQ requested participation from the various interest groups defined in state law (MCA 75-5-704) and included local city and county representatives, livestock-oriented and farming-oriented agriculture representatives, mining industry representatives, state and federal land management agencies, and representatives of fishing tourism interests.

Assessment: EPA has reviewed the state's public participation process, the summary of significant comments received and DEQ's responses to those comments. EPA concludes that the state involved the public during the development of the TMDL, provided adequate opportunities for the public to comment on draft documents and provided reasonable responses to the comments received.

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 submitted to EPA through the ATTAINS data system on November 19th, 2020. The letter was signed by Tim Davis, DEQ Water Quality Division Administrator, and dated November 16th, 2020.

Assessment: EPA concludes that the DEQ'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

- DEQ. 2012a. *The Montana Department of Environmental Quality Metals Assessment Method*. WQPBMASSTR-03. Monitoring and Assessment Section, Water Quality Planning Bureau, Montana Department of Environmental Quality, Helena, MT.
- DEQ. 2012b. *Montana 2012 Final Water Quality Integrated Report, Appendix B Waters in Need of TMDLs [303(d) List] and TMDL Priority Schedule*. WQPBITSTR-004f. Watershed Protection Section, Water Protection Bureau, Montana Department of Environmental Quality, Helena, MT.
- DEQ. 2017. *Sheep Creek E. coli TMDL and Water Quality Improvement Plan*. M10-TMDL-01aF. Watershed Protection Section, Water Protection Bureau, Montana Department of Environmental Quality, Helena, MT.
- DEQ. 2018. *Final 2018 Water Quality Integrated Report, Appendix B Waters in Need of TMDLs [303(d) List] and TMDL Priority Schedule*. WQDIMTSIR-07f. Watershed Protection Section, Water Protection Bureau, Montana Department of Environmental Quality, Helena, MT.
- DEQ. 2019a. *Circular DEQ-7 Montana Numeric Water Quality Standards*. Water Quality Standards and Modeling Section, Water Protection Bureau, Montana Department of Environmental Quality, Helena, MT.
- DEQ. 2019b. *Montana Pollutant Discharge Elimination System Permit Fact Sheet - Permit No. MT0031909 Tintina Montana, Inc.* Water Protection Bureau, Water Quality Division, Montana Department of Environmental Quality, Helena, MT.
- DEQ. 2020. *Authorization to Discharge Under the Montana Pollutant Discharge Elimination System - Permit No. MT0031909 Tintina Montana, Inc.* Water Protection Bureau, Water Quality Division, Montana Department of Environmental Quality, Helena, MT.
- Tintina Montana, Inc. 2015. *Mine Operating Permit Application Black Butte Copper Project, Meagher County, MT*. Tintina Montana, Inc., Black Butte Copper Project, White Sulphur Springs, MT.
- 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, U.S. 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, U.S. Environmental Protection Agency, Washington, DC.

USEPA. 2014a. *Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs - Revisions to the November 22, 2002 Memorandum*. Office of Water, Office of Wetlands, Oceans and Watersheds and Office of Wastewater Management, U.S. Environmental Protection Agency, Washington, DC.

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

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