



**Tintina Resources Inc.  
Black Butte Copper Project  
Record of Decision**

April 2020

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## Acronyms and Abbreviations

AMA	Agency Modified Alternative
ARM	Administrative Rules of Montana
DEQ	Department of Environmental Quality
EIS	Environmental Impact Statement
HRMIB	Hard Rock Mining Impact Board
MCA	Montana Code Annotated
MEPA	Montana Environmental Policy Act
MMRA	Metal Mine Reclamation Act
MPDES	Montana Pollutant Discharge Elimination System
Project	Black Butte Copper Project
ROD	Record of Decision
SHPO	State Historic Preservation Office
UIG	Underground Infiltration Gallery
USACE	U.S. Army Corps of Engineers
WQA	Water Quality Act

## **Department of Environmental Quality's Record of Decision Black Butte Copper Project**

### **1. INTRODUCTION**

This document is the Department of Environmental Quality's (DEQ) Record of Decision (ROD) for the mine operating permit application submitted by Tintina Resources Inc. (Tintina) for the Black Butte Copper Project (the Project). Tintina has submitted applications to DEQ for an operating permit under the Metal Mine Reclamation Act (MMRA) ( $\S$  82-4-301, *et seq.*, Montana Code Annotated [MCA]), a Montana Pollutant Discharge Elimination System (MPDES) permit under the Montana Water Quality Act (WQA) ( $\S$  75-5-101, *et seq.*, MCA), and a Montana Air Quality Permit under the Clean Air Act of Montana ( $\S$  75-2-101, *et seq.*, MCA).

DEQ prepared a Draft and Final Environmental Impact Statement (EIS) analyzing, in detail, the potential environmental impacts of three alternatives:

1. No Action Alternative
2. Proposed Action Alternative
3. Agency Modified Alternative: Additional Backfill of Mine Workings

The three alternatives are described in detail in Chapter 2 of the Final EIS.

#### **1.1. PROJECT BACKGROUND**

The site of the proposed Project is located approximately 15 miles north of White Sulphur Springs in Meagher County, Montana (see **Figure 1 at the end of this document**). The Project area would consist of 1,888 acres of privately-owned ranch land under lease to Tintina, with associated buildings and a road network throughout. Tintina proposes to construct, operate, and reclaim a new underground copper mine covering a time period of 19 years and, thereafter, to monitor and close the site. Surface disturbances to private land would total approximately 310.9 acres.

Tintina acquired mineral rights lease agreements to mine the Johnny Lee Deposit via an underground mine in May 2010 and has conducted surface exploration activities under Exploration License No. 00710 since September 2010. Tintina submitted an application to amend its exploration license on November 7, 2012, in order to construct an exploration decline into the upper Johnny Lee zone. DEQ conducted an environmental review related to that exploration license amendment application, issuing a Final Mitigated Environmental Assessment in January 2014. DEQ selected an agency modified alternative following this review. However, Tintina subsequently chose not to construct the exploration decline and withdrew the proposed exploration project.

Tintina submitted to DEQ the application for an operating permit that is subject to this ROD on December 15, 2015. Tintina submitted revisions to the operating permit application on

September 13, 2016 and May 8 and July 14, 2017. Additional Project updates were submitted to DEQ on January 30, 2018, and November 21, 2018.

DEQ determined that Tintina's operating permit application was complete and complied with the substantive requirements of the MMRA on August 14, 2017, resulting in the issuance of a draft operating permit on September 18, 2017. Issuance of the draft permit as a final permit is the proposed state action that is subject to review under the Montana Environmental Policy Act (MEPA). DEQ issued a Draft EIS for the Project on March 11, 2019 and a Final EIS for the Project on March 13, 2020.

## **2. PURPOSE, BENEFIT, AND BASIS OF NEED**

MEPA and its implementing rules (Administrative Rules of Montana [ARM] 17.4.601, *et seq.*) require that EISs prepared by state agencies include a description of the purpose and benefits of the proposed project.

Tintina's purpose of the Project is to mine the Johnny Lee Deposit by underground mining methods, process the copper-enriched rock onsite into a salable copper concentrate, and ship the concentrate for sale. Benefits of the Project include the production of copper to help meet public demand, increased employment, and increased tax revenue in the Project area.

DEQ's purpose and need in conducting the environmental review is to act upon Tintina's applications to obtain state permits authorizing underground mining of the Johnny Lee Deposit at the proposed Black Butte Copper mine site.

## **3. PUBLIC AND AGENCY PARTICIPATION**

### **3.1. PUBLIC PARTICIPATION**

MEPA provides two opportunities for public participation during an agency's environmental review. The first opportunity occurs at the initiation of the environmental review during scoping, assisting the agency in identifying issues related to the proposed action that are likely to involve significant impacts and possible alternatives to be considered. The second opportunity occurs during the public comment period on the environmental impact analysis contained in the Draft EIS.

On August 15, 2017, DEQ issued a press release stating that Tintina's operating permit application was complete and complied with the MMRA and that the environmental review was set to begin. DEQ issued a second release on September 18, 2017, indicating the review had begun under MEPA. Additionally, DEQ issued a press release on October 3, 2017, disclosing the times and locations of three public scoping meetings, as well as information about the EIS and permit application. A fourth press release was issued on October 23, 2017, due to the addition of a fourth and final public scoping meeting. Each of these releases was also submitted via email to national, state, and local news outlets on the respective release dates. Each press release requested public comment on the Project until November 16, 2017.

DEQ established a public comment scoping period from October 2, 2017, to November 16, 2017 (i.e., 46 calendar days). During this time, DEQ received written and oral comments from the public that were submitted via email, mail, or during public meetings. On October 30, 2017, a public meeting was held at the Civic Center in Great Falls, Montana. On November 1, 2017, a second meeting was held at the White Sulphur Springs High School gymnasium in White Sulphur Springs, Montana. The third meeting was held at the Radisson Hotel in Helena, Montana, on November 6, 2017. The final public meeting was held November 7, 2017, in Livingston, Montana, at the Park County High School Gymnasium.

DEQ established a public comment period for the Draft EIS from March 11 to May 10, 2019 (i.e., 60 calendar days). During that time, DEQ received oral and written comments at the public meetings, by mail, and by e-mail. On April 24, 2019, a public meeting was held at the Great Falls High School Fieldhouse in Great Falls, Montana. On April 29, 2019, a second meeting was held at the Park County High School Gymnasium in Livingston, Montana. On April 30, 2019, a third public meeting was held at the White Sulphur Springs High School gymnasium in White Sulphur Springs, Montana. Two online webinar public meetings were also held on May 1 and May 2, 2019.

### **3.2. COMMENTS RECEIVED AND DEQ'S RESPONSE**

Comment letters received from Native American tribes; federal, state, and local agencies; and the public on the Draft EIS are included in Chapter 8 of the Final EIS. DEQ responses are presented alongside each substantive comment.

Substantive comments were those comments that pertained to the analysis and that contained information or suggestions to be carried forward into the Final EIS. Non-substantive comments were identified by DEQ as those (1) outside the scope of the Project analysis; (2) irrelevant to the decisions to be made; (3) conjectural and not supported by scientific or factual evidence; or (4) not allowed for consideration under the authority of MEPA.

Under MEPA, a final EIS must include, “a list of all sources of written and oral comments on the draft EIS, including those obtained at public hearings, and, unless impractical, the text of comments received by the agency (in all cases, a representative sample of comments must be included) and the agency’s responses to substantive comments, including an evaluation of the comments received and disposition of the issues involved” (ARM 17.4.619). On some issues, DEQ organized substantive comments into broad themes (i.e., consolidated responses) to facilitate a response to multiple comments on the same topic. All of the original comments (substantive and non-substantive) on the Draft EIS that DEQ received are available for public inspection at the DEQ address listed in Section 11 of this ROD. DEQ’s response to the substantive comments received on the Draft EIS are set forth in Chapter 8 of the Final EIS.

## **4. ISSUES OF CONCERN**

Thirteen key issues or resource areas were identified during the public and agency scoping process, which are summarized below.

## **4.1. AIR QUALITY**

Commenters suggested that the EIS should evaluate the Project's potential impact on climate change and how this impact could affect local natural resources. Commenters also suggested that fugitive dust and its impacts to natural resources should be evaluated. These air quality issues are discussed in Section 3.2 of the Final EIS.

## **4.2. ALTERNATIVES**

Commenters suggested that the EIS should provide an alternative analysis informed by other tailings impoundments that reduce the risk of environmental impacts, including liner degradation, impoundment location, and design. Commenters also suggested the EIS should evaluate alternatives involving the use of tanks instead of ponds to retain process water, different truck transportation routes, a wetland treatment system for a long-term water treatment solution, backfilling the access tunnels and ventilation shafts, and preventing the discharge of treated mine process water to surface waters of the United States, including wetlands such as those that occur near the alluvial underground infiltration gallery (UIG). These issues are discussed in Chapter 2 of the Final EIS.

## **4.3. AQUATIC SPECIES**

Commenters suggested that fisheries baseline data be collected for Calf Creek, Sheep Creek, the South Fork of Sheep Creek, Coon Creek, Moose Creek, and the Smith River. Commenters also suggested that aquatic species impact analysis should consider climate change, species composition, size distribution, spawning, fish densities, seasonal migration behavior, macroinvertebrates, amphibians, mollusks, waterway physical characteristics, metal concentrations in fish tissue, and impacts from changes to water temperature, flow, and quality. In addition, commenters suggested that potential impacts on the sources of water to streams, rivers, and wetlands should be evaluated. Finally, commenters suggested that potential impacts to fisheries from acid mine drainage should be evaluated. These issues are discussed in Section 3.16 of the Final EIS.

## **4.4. CULTURAL RESOURCES**

Commenters suggested that the EIS should evaluate the impacts on archaeological features of the Smith River and other cultural and archaeological resources and cultural landscapes that could be affected by the Project. These issues are discussed in Section 3.3 of the Final EIS.

## **4.5. CUMULATIVE IMPACTS**

Commenters suggested that cumulative impacts involving water withdrawals from Sheep Creek and the Smith River, truck traffic, multiple mining projects, and fisheries should be evaluated. These issues are discussed in Chapter 4 of the Final EIS.

## **4.6. GEOTECHNICAL STABILITY**

Commenters suggested that the impacts of earthquakes and heavy rains should be studied in relation to geotechnical stability of mine features and that the evaluation and certification of the Cemented Tailings Facility stability should be disclosed in the EIS. These issues are discussed in Section 3.6 of the Final EIS.

## **4.7. LAND USE, RECREATION, AND VISUAL RESOURCES**

Commenters suggested that potential impacts to the scenery along Kings Hill Scenic Byway (U.S. Highway 89), recreational use including that of the Smith River, and agricultural use should be evaluated in the EIS. These issues are discussed in Sections 3.7 and 3.8 of the Final EIS.

## **4.8. NOISE AND VIBRATION**

Commenters suggested noise impacts on people and wildlife in the vicinity of the Smith River should be evaluated in the EIS, including noise impacts on the Little Moose Subdivision located 3 miles from the proposed mine site. These issues are discussed in Section 3.11 of the Final EIS.

## **4.9. SOCIOECONOMICS**

Commenters suggested that population, urban growth, and demographic changes in White Sulphur Springs should be analyzed. This would include impacts resulting from a boom and bust mining cycle, such as the costs of building temporary infrastructure such as schools.

Commenters also suggested the EIS should evaluate the impact on rural life by the introduction of the mine. In addition, commenters suggested the EIS should evaluate the number of jobs that may be created, the loss of state tax revenue if the Smith River is impacted, and the economic impact on Meagher County. Finally, commenters suggested the EIS should include an environmental justice analysis. These issues are discussed in Section 3.9 of the Final EIS.

## **4.10. VEGETATION**

Commenters suggested the EIS should evaluate the spread of weeds on lands adjacent to the Project site and adopt mitigation measures. This issue is discussed in Section 3.13 of the Final EIS.

## **4.11. WATER RESOURCES**

Commenters suggested the EIS should include a review of potential long-term impacts on the Smith River and its watershed, and to impacts on the aquifer and springs located in the Project area. In addition, commenters suggested the EIS should evaluate the durability and longevity of proposed water treatment as well as contingencies. Finally, commenters suggested the EIS should evaluate potential impacts on surface water and groundwater quantity and quality and the potential for acid mine drainage. These issues are discussed in Sections 3.4 and 3.5 of the Final EIS.

## 4.12. WETLANDS

Commenters suggested the EIS should analyze the potential impact resulting from the filling of wetlands on cold-water storage during low-water periods on Sheep Creek. This issue is discussed in Section 3.14 of the Final EIS.

## 4.13. TERRESTRIAL WILDLIFE

Commenters suggested the EIS should disclose details of the wildlife baseline data collection efforts, asserting that the surveys for many species were inadequate. Commenters also suggested the EIS should evaluate potential impacts to wildlife, including migration patterns due to traffic, dust, noise, and increased human populations. These issues are discussed in Section 3.15 of the Final EIS.

# 5. DESCRIPTION OF THE ALTERNATIVES

Chapter 2 of the EIS describes the alternatives screening process, the three alternatives evaluated in detail, and the alternatives that were considered but not analyzed in detail, with an explanation as to why the alternatives were not considered in detail. The potential environmental impacts of the following alternatives were analyzed in detail in Chapter 3 of the EIS.

## 5.1. NO ACTION ALTERNATIVE

Under the No Action Alternative, DEQ would not approve Tintina's applications for an operating permit under the MMRA, an MPDES Permit, nor an Air Quality Permit. Tintina would not be able to construct and operate the proposed mine. Land within the Project area would remain largely as it is today (see Affected Environment sections of Chapter 3 within the Final EIS), with the potential exception of current and additional exploration activity.

## 5.2. PROPOSED ACTION ALTERNATIVE

Tintina proposes to construct, operate, and reclaim a new underground copper mine over 19 years, followed by monitoring and closure of the site. All operations would occur within a permit boundary encompassing approximately 1,888 acres of privately-owned ranch land under lease to the Tintina. Surface disturbances would total 310.9 acres.

The Project's major components include a portal and portal pad, temporary initial mine support facilities on the portal pad, underground mine workings and utilities, and an electrical substation. In addition, mining and milling infrastructure includes a processing plant (including a crusher, grinding mills, a flotation circuit, and tailings thickener), a paste tailings plant, a water treatment plant, a concentrate storage facility, a truck shop, an office complex parking lot, and two construction material laydown areas. Other surface facilities include a process water pond, a cemented tailings facility, a contact water pond, a treated water storage pond, non-contact water reservoir, a wet well, buried pipelines, roads, a waste rock storage pad facility, an ore stockpile, three overburden stockpiles, topsoil stockpiles, powerlines, ditches, and fencing.

The Project would mine approximately 15.3 million tons of copper-enriched rock and waste rock from the Johnny Lee Deposit. Tailings—a fine-grained waste product from the mill—would total approximately 12.9 million tons over the life of the Project. The tailings would be thickened and sent to a paste plant where cement, slag, and/or fly ash would be added as a binder. The resulting product, called cemented paste tailings, would be pumped in pipes either to the underground mine where it would be used to backfill workings, or to a double-lined tailings basin called the cemented tailings facility. Copper concentrate (approximately 1.6 million tons) and waste rock (approximately 779,000 tons) would comprise the remainder of the total amount mined.

The process water pond would store water that is recycled for use in the operation of the mill to minimize consumptive use of water by the Project. The cemented tailings facility would store a portion (about 55 percent) of the fine-grained rock material from the mill (tailings) once copper-enriched minerals have been extracted. The remainder of the tailings (45 percent) would be used operationally and in closure to backfill mine production workings. Both the process water pond and cemented tailings facility would be double-lined. In addition to the liner system, the cemented tailings facility would have an internal drain system to remove any liquids present in the cemented tailings facility for treatment and/or disposal.

The lined contact water pond would be constructed to capture surface water run-off from potentially contaminated constructed facility footprint materials prior to being pumped to the reverse osmosis water treatment plant for treatment and disposal. The contact water pond would also be used to store excess water from the underground mine prior to treatment and disposal. Additionally, a treated water storage pond would be constructed southeast of the water treatment plant. It would store treated water from the water treatment plant, as effluent from the water treatment plant does not meet seasonal effluent limits for total nitrogen (between July 1 to September 30) in the MPDES permit. Treated water from the water treatment plant would be pumped to the lined treated water storage pond for storage during this time.

The non-contact water reservoir would be constructed to store water for stream flow augmentation that the Department of Natural Resources and Conservation may require for water rights mitigations. Surface water would be diverted from Sheep Creek during spring runoff, when flows are greater than 84 cubic feet per second, protecting the total existing appropriated water rights on Sheep Creek downstream of the diversion. Water stored in the non-contact water reservoir would be used to augment flows at several locations, as required, including Sheep Creek (via discharge back through the wet well), Coon Creek, Black Butte Creek, Little Sheep Creek (via seepage through the bottom of the reservoir), and Brush Creek (if indirect impacts to wetlands are observed due to interception of groundwater beneath the cemented tailings facility). Discharges to Coon Creek, Black Butte Creek, and the Brush Creek wetland would likely occur via small UIGs constructed adjacent to the streams so that the transferred water may equilibrate with ground temperatures before entering the streams. Water from the non-contact water reservoir would also partially offset consumptive use of groundwater by the milling and mining operation (about 220 gallons per minute) as per Department of Natural Resources and Conservation requirements.

The mining cycle would consist of advancing mine headings or tunnels by drilling face blast rounds, loading the rounds with explosives, using detonators to blast the rounds, mucking (removing broken material from the round), and then installing ground support so that the next cycle could continue. Production mining proposes to use the drift-and-fill mining method in actual mining stopes to extract copper-enriched rock. This method allows the entire deposit to be mined while incrementally backfilling the mined-out voids between stopes with fine-grained cemented tailings paste. Pumps would remove groundwater via underground sumps to the surface and a portion would be used for makeup water in the mill process circuit and cemented tailings paste plant. The remaining portion of the underground sourced water would be treated with reverse osmosis at the water treatment plant prior to discharge to the alluvial UIG. Grouting to stem the flow of water into the mining access drifts could be completed in major water bearing fractures or faults as they are encountered.

During its life, the Project would mine a total of approximately 14.5 million tons of copper-enriched rock. All copper-enriched rock mined would be hauled either to the mill or to the ore stockpile. In the mill, crushed copper-enriched rock would travel to a surge bin through a series of three grinding mills (a semi-autogenous grinding mill, ball mill, and tower mill) in the processing plant that would progressively reduce the size of the rock. A dust control system would control fugitive dust emissions from the crushing operation. The finely crushed copper-enriched rock would then enter a flotation circuit where copper would be separated from non-copper bearing rock through chemical and physical processes. The flotation circuit also would include a concentrate re-grind mill. The resulting copper concentrate would then be thickened and pressed to remove water and shipped in sealed containers via truck offsite to a railhead.

The tailings would be thickened and sent to a paste plant where cement, slag, and/or fly ash may be added to the tailings as a binder. The product, called cemented paste tailings, would be pumped in pipes either to the underground mine where it is used to backfill workings, or to the cemented tailings facility.

During operations, the process water pond would receive water from direct precipitation and runoff, the cemented tailings facility, the water treatment plant, and the mill.

The reverse osmosis permeate (i.e., water that passes through reverse osmosis membranes or filters for treatment) that meets discharge requirements would be discharged to an alluvial UIG system or reused. The UIG would be functional at the onset of mine development and before the dewatering of mine workings begins. The shallow groundwater alluvial UIG would be located adjacent to Sheep Creek and would receive an average of approximately 398 gallons per minute of treated water from the water treatment plant if the treated water meets the total nitrogen effluent limit. However, if the total nitrogen concentration is greater than the effluent limit, the treated water would be discharged to the treated water storage pond from July 1 to September 30. Starting October 1, the stored water would be routed back to the water treatment plant and blended with the water treatment plant effluent prior to discharge to the alluvial UIG, with an average discharge of 530 gallons per minute. The blended water would be sampled prior to being discharged per the MPDES permit.

It is predicted that an approximate 70 percent reduction would occur in stream base flow in lower Coon Creek. To augment this flow reduction, water from the non-contact water reservoir could be routed to either a direct discharge to Coon Creek, or to the new alluvial UIG adjacent to Coon Creek. Water stored in the non-contact water reservoir would also be used to offset potential hydrologic impacts to wetlands at the head of Brush Creek.

Groundwater monitoring wells would be installed downgradient from water-bearing facilities to allow quarterly sampling of water quality. The results of the sampling would be used to confirm that impacts to groundwater are not occurring. Wetlands would also be monitored in the Project area and at reference wetlands outside of the Project area to compare changes to water levels or vegetation. Air emissions would be monitored for fugitive dust to comply with the Montana Air Quality Permit. Noise levels would be monitored during construction and operations and could be reduced by implementing noise mitigation measures to minimize disruption of humans and wildlife. Additionally, reclamation monitoring would occur to compare the stability and utility of reclaimed areas to pre-mining conditions.

Closure and reclamation would focus on removal of surface infrastructure and exposed liner systems and covering exposed tailings. The reclamation plan requires re-contouring the landscape, subsoil and soil replacement, and revegetating all the disturbance with an approved seed mix. Any reestablished vegetative cover would need to meet county standards for noxious weed control.

All water from the cemented tailings facility, the process water pond, and the contact water pond would be removed, treated, and disposed until the facilities are empty and could be reclaimed. The cemented tailings facility would be capped with a geomembrane and covered with a minimum of 5.2 feet of non-reactive fill material. Grading of the cap system would create a self-draining topographic surface for closure. The treated water storage pond would remain operational during closure until the discharge to the UIG is discontinued. Once storage of treated water is not necessary, the treated water storage pond liner would be removed and hauled offsite for disposal or recycling.

Mine closure would include the backfilling of some primary and secondary access drifts with fine-grained, low permeability, cemented paste tailings. Vent raises are proposed to be closed with non-acid generating excess construction materials from bottom to top, and closure includes a hydraulic plug above the upper sulfide ore zone and one near the surface at the top of the regional water table. The decline access ramp and some primary and secondary mining stope access drifts would not be backfilled. Mine workings would be sequentially flooded by segments based on sulfide content at closure. Prior to the final flooding in a particular segment of the mine, the walls of the workings within that zone would initially be flooded and rinsed with reverse osmosis treated water to remove sulfide oxidation by-products from the mine walls. Rinse water would be collected, pumped, and treated as necessary, and the rinsing process would be performed repeatedly for a particular segment of the mine. The zone would then be flooded with groundwater and a hydraulic barrier would be installed at the top of the segment. In all, 14 hydraulic barriers would be installed. The primary purposes of installing the hydraulic barriers would be to segment the mine workings based upon sulfide content to facilitate rinsing,

minimize flow past the plug and between stratigraphic units, and improve water management and quality in closure.

Tintina would continue to treat water until groundwater nondegradation criteria are attained. The non-contact water reservoir would be used for mitigation of depletion in surface waters during operations and for approximately 20 years after the end of mine dewatering. Once the flow mitigation system is unnecessary, the wet well, intake pipeline into Sheep Creek, and transfer pipeline to the non-contact water reservoir would be removed and reclaimed. Monitoring would continue after closure to ensure no unforeseen impacts were occurring.

A complete description of the Proposed Action Alternative is set forth in Chapter 2 of the Final EIS. The potential environmental impacts of the Proposed Action Alternative are evaluated for each resource in Chapter 3 of the Final EIS.

### **5.3. AGENCY MODIFIED ALTERNATIVE: ADDITIONAL BACKFILL OF MINE WORKINGS**

Under the Agency Modified Alternative, additional mine voids would be backfilled as part of mine closure as compared to the Proposed Action. Mineralized mine voids would be backfilled with a low hydraulic conductivity material consisting of cemented paste tailings generated from mill processing of the stockpiled ore and/or waste rock at the end of operations. The upper section of the access decline and a lower section of the access tunnel would not be backfilled because these units are non-mineralized. Hydraulic plugs would be used to separate the backfilled and open areas of the access decline. This proposed configuration of backfilling is aimed at more effectively separating rock zones that are: (1) mineralized vs. non-mineralized, and (2) more permeable vs. less permeable.

A complete description of the Agency Modified Alternative is set forth in Chapter 2 of the Final EIS. The potential environmental impacts of the Agency Modified Alternative are evaluated for each resource in Chapter 3 of the Final EIS.

### **5.4. ALTERNATIVES CONSIDERED BUT DISMISSED FROM DETAILED ANALYSIS**

DEQ considered the following 12 alternatives, but dismissed them from further analysis. The rationale for not considering these alternatives in detail is set forth in Section 2.3.2 of the Final EIS.

- Alternative Tailings Impoundment Locations
- Source Copper from Another Ore Body
- Retain Process Water in Tanks
- Alternative Truck Transportation Routes to Rail Load Out Site
- Use Wetlands as Part of the Water Treatment System
- Increase Cement Content in Tailings
- Elevate the Cemented Tailings Facility above the Water Table

- Separate Sulfide Prior to Tailings Disposal
- Tunnel Operations: Add Water Source Controls to Limit Oxidation during Operations
- Use Alternative Water Treatment Processes other than Reverse Osmosis
- Construct Two Side-by-Side Declines and Eliminate Ventilation Shafts
- Maintain Wet Tailings in the Cemented Tailings Facility

## 6. DEQ DECISIONS

As Director of DEQ, I have decided to select the Agency Modified Alternative and approve issuance of an operating permit to Tintina subject to the stipulations set forth below. While both the Proposed Action and the Agency Modified Alternatives with the stipulations set forth below provide an acceptable method for accomplishing reclamation as required by the Metal Mine Reclamation Act and are not in conflict with the Montana Air Quality and Water Quality Acts, the Agency Modified Alternative provides additional environmental benefits. By requiring Tintina to completely backfill the mine workings developed within the Upper and Lower Sulfide Zones with cemented paste tailings, the Agency Modified Alternative would return hydraulic parameters within these bedrock zones to conditions similar to the pre-mining state, eliminating the potential for development of new groundwater flow paths through these areas. The additional backfilling would further reduce the potential for groundwater mixing between upper and lower aquifers, and further reduce potential groundwater contamination from exposed underground mine surfaces at closure compared to the Proposed Action.

DEQ may not withhold, deny, or impose conditions on any permit based on MEPA (§ 75-1-201(4), MCA). However, nothing in § 75-1-201(4), MCA, prevents an applicant and an agency from mutually developing measures that may be incorporated into a permit. DEQ developed the Agency Modified Alternative in consultation with Tintina and my selection of the Agency Modified Alternative is made with Tintina's consent.

The following stipulations shall be included in the final permit to address compliance issues as allowed under § 82-4-337(2)(b), MCA. The stipulations pertain to the following phases of construction for the project (See **Tables 1 through 3 below**. All acreages are approximate. An additional 10% should be added to the total acreage for a construction buffer zone.):

**Table 1**  
**Phase 1 Development Construction Activities**

Phase 1 Development Construction Activities	Approximate Disturbance (acres)	Length of Time to Complete Construction
Construct Brine Contact Water Pond impoundment - includes 0.8-acre run-on diversion ditch	9.8	~7 months
Construct portal pad	6.9	
Construct temporary Waste Rock Storage pad	10.2	

Remove some material from Cemented Tailings Facility footprint (as borrow area)	3.1	
Construct facility roads	43.6	
Road from Butte Creek to mill site area		
Road from mill site area to Cemented Tailings Facility area		
Mine access road from SE corner of mill pad to the Brine Contact Water Pond		
Mine access road from the Brine Contact Water Pond to Sheep Creek County Road		
Road from mill site area to stockpiles		
Create topsoil stockpile	29.6	
Create subsoil stockpile		
Create reclamation stockpiles (non-acid generating waste rock from earth clearing)		
Create temporary construction stockpile	2.8	
Construct mill site contractor laydown area	3.1	
Construct borrow area contractor laydown	2.5	

**Table 2**  
**Phase 2 Development Construction Activities**

Phase 2 Development Construction Activities	Approximate Disturbance (Acres)	Length of Time to Complete Construction
Start construction of Non-Contact Water Reservoir impoundment	7.6	~4 months
Start construction of Cemented Tailings Facility	75.2	
Install alluvial Underground Infiltration Gallery	5.4	
Install wet well pipeline	2.4	
Contact water cell pond starts accumulating water	0	
Road from Non-Contact Water Reservoir to Cemented Tailings Facility	13.4	
Construct/install/mobilize Water Treatment Plant (could be temporary plant)	0.12	
Construct portal entrance and first 100 feet of decline	0	
Start constructing the Treated Water Storage Pond	20.2	
Start construction of process water storage pond impoundment	28.7	
Other (temporary powder magazine)	0.4	

**Table 3**  
**Mining Phase Construction Activities**

Mining Phase Construction Activities	Approximate Disturbance (Acres)	Length of Time to Complete Construction
Construct the mill	6.7	

Construct the remainder of the portal (all surface disturbance accounted for in previous stage)	0	~2 years
Develop the remainder of the decline (next 4,900 feet) - this includes 4 vent raises & related access roads	1.6	
Water supply	6.3	
Pumping lines to portal to Process Water Pond	0.1	
Construct copper-enriched rock storage pad	1.9	
Fill ponds with corresponding water (i.e. Non-Contact Water Reservoir, Process Water Pond, Treated Water Storage Pond, foundation drain ponds)	0	
Other (septic system)	0.2	

The following stipulations are included in the final permit:

**Stipulation No. 1.** Prior to conducting any Phase 1 Development Construction Activities, Phase 2 Development Construction Activities, or Mining Phase Construction Activities, Tintina is required to obtain a Montana Pollutant Discharge Elimination System Permit, a Montana Air Quality Permit, a General Construction Storm Water Permit, a 310 Permit, a 318 Permit, a 401 permit, and a 404 permit from the appropriate agencies.

**Stipulation No. 2.** Prior to conducting any Phase 1 Development Construction Activities, Tintina is required to submit a bond in the amount calculated by DEQ under § 82-4-338(1)(a), MCA, to ensure reclamation of the disturbances to be caused by the Phase 1 Development Construction Activities (Incremental Bond 1). Tintina may not proceed with the Phase 1 Development Construction Activities until the bond is in place and has been approved in writing by DEQ.

**Stipulation No. 3.** Prior to conducting any Phase 2 Development Construction Activities or Mining Phase Construction Activities, Tintina is required to obtain from the Department of Natural Resources and Conservation any permit to appropriate water and/or change authorizations needed to mitigate the predicted reduction of flow in Coon Creek.

**Stipulation No. 4.** Prior to conducting any Phase 2 Development Construction Activities or Mining Phase Construction Activities, Tintina is required to submit a bond in the amount calculated by DEQ under § 82-4-338(1)(a), MCA, to ensure reclamation of the disturbances to be caused by the Phase 2 Development Construction Activities and Mining Phase Construction Activities, (Incremental Bond 2). Tintina may not proceed with the Phase 2 Development Construction Activities or Mining Phase Construction Activities until the bond is in place and has been approved in writing by DEQ.

**Stipulation No. 5.** Prior to conducting any Phase 2 Development Construction Activities or Mining Phase Construction Activities, Tintina is required to submit to DEQ detailed final designs consistent with the Agency Modified Alternative evaluated in the Final EIS. The detailed final designs need to address the backfilling of voids with a low hydraulic conductivity material consisting of cemented paste tailings generated from mill processing of the stockpiled ore and/or waste rock at the end of operations. The detailed final designs need to address the scheduling/sequencing of:

- a. the underground mine hydraulic plug installation to address changes necessitated by the Agency Modified Alternative;
- b. the rinsing of mine wall surfaces to address changes necessitated by the Agency Modified Alternative; and
- c. the final backfilling steps to address the changes necessitated by the Agency Modified Alternative.

Should the final designs differ from the Agency Modified Alternative, Tintina would be required to submit an application to amend or revise its operating permit. The final designs should be reviewed as new data and information are gathered. Revisions to the final designs that incorporate the new data and information must be submitted to DEQ, along with appropriate applications, as needed, to amend or revise the operating permit.

## **6.1. MPDES PERMIT**

DEQ's Water Protection Bureau received an MPDES permit application on December 11, 2017. Water Protection Bureau issued a notice of deficiency on January 10, 2018, and Tintina provided an updated application on February 15, 2018. Water Protection Bureau issued a second notice of deficiency on March 16, 2018, and Tintina provided another updated application on April 25, 2018. Water Protection Bureau issued a completeness determination on the MPDES permit (#MT0031909) on May 25, 2018. Tintina submitted an addendum to the permit application on December 11, 2018. The draft MPDES permit was issued, and public comment period opened, on March 29, 2019. The comment period closed on May 28, 2019.

## **6.2. AIR QUALITY PERMIT**

DEQ's Air Quality Bureau issued a preliminary determination on the Montana Air Quality Permit (#5200-00) on June 5, 2018, and issued a supplemental preliminary determination with the draft EIS on March 11, 2019. A minimum of a 30-day comment period was associated with each preliminary determination.

# **7. DEQ RATIONALE FOR DECISIONS**

As DEQ Director, my decisions are based on a thorough review of the Final EIS, review of public and agency concerns received on this project, consultation with agencies having special expertise, and the project record. I considered relevant scientific information, public concerns and opposing viewpoints, scientific uncertainty, and risk, which are discussed in the resource sections in Chapter 3 of the Final EIS. As DEQ Director, my decisions must comply with the Montana Environmental Policy Act, the Metal Mine Reclamation Act, the Montana Water Quality Act, Clean Air Act of Montana, and the administrative rules adopted under these statutory provisions. In making my decision, I am mindful of the importance to the State of the Smith River, in terms of ecological, recreational, and economic values. The Project is located near Sheep Creek approximately 19 river miles from its confluence with the Smith River. During the environmental review, potential environmental impacts on the Smith River were analyzed for

each resource evaluated in the Final EIS. None were identified. Below is the rationale for my decisions, including how the Agency Modified Alternative with the stipulations set forth above comply with state laws.

## **7.1. MONTANA ENVIRONMENTAL POLICY ACT**

MEPA (*§ 75-1-101, et seq.*, MCA) requires state agencies to conduct an environmental review of actions taken by the State of Montana that may significantly affect the quality of the human environment. MEPA and the administrative rules promulgated under MEPA define the process to be followed when conducting an environmental review. The Draft and Final EIS that DEQ prepared concerning Tintina's application for an operating permit under the Metal Mine Reclamation Act comply with the procedural requirements of MEPA.

## **7.2. MONTANA METAL MINE RECLAMATION ACT**

### **Procedural Compliance**

The procedure for DEQ's review of an application for an operating permit is set forth in *§ 82-4-337*, MCA. Pursuant to *§ 82-4-337(1)(d)*, MCA, when DEQ determines that an application is complete and compliant, it is required to declare in writing that the application is complete and compliant and issue a draft permit. Under *§ 82-4-337(1)(f)*, MCA, issuance of the draft permit as a final permit is the proposed state action that is subject to review under MEPA.

After issuance of a draft permit but prior to receiving a final permit, an applicant may propose modifications to the application. If the proposed modifications substantially change the proposed plan of operation or reclamation plan, the department may terminate the draft permit and review the application as modified for completeness and compliance and issuance of a new draft permit (*§ 82-4-337(2)(a)*, MCA). Tintina submitted revisions to the operating permit application on September 13, 2016 and May 8 and July 14, 2017. Additional Project updates were submitted to DEQ on January 30, 2018, and November 21, 2018. These modifications to the application did not substantially change the proposed plan of operations or reclamation plan.

DEQ is required to consult with the applicant before placing stipulations in a draft or final permit. Permit stipulations in a draft or final permit may, unless the applicant consents, address only compliance issues within the substantive requirements of the MMRA or rules adopted pursuant to the MMRA. For a stipulation imposed without the applicant's consent, DEQ is required to provide to the applicant in writing the reason for the stipulation, a citation to the statute or rule that gives DEQ the authority to impose the stipulation, and for a stipulation imposed in the final permit that was not contained in the draft permit, the reason that the stipulation was not contained in the draft permit (*§ 82-4-337(2)(b)*, MCA).

DEQ consulted with Tintina about the need to include the stipulations set forth in Section 6 in the final permit to address substantive requirements of the Metal Mine Reclamation Act. Tintina consented to the stipulations. Therefore, DEQ has complied with *§ 82-4-337(2)(b)*, MCA.

## Substantive Compliance

The Metal Mine Reclamation Act recognizes that mining is a basic and essential activity that contributes to the economy of the state and nation (§ 82-4-301(2), MCA). Although both the need for and the practicality of reclamation control the type and degree of reclamation in any specific instance, the basic objective is to establish, on a continuing basis, the vegetative cover, soil stability, water condition, and safety condition appropriate to any subsequent use of the area (§ 82-4-302(2), MCA). DEQ may not approve a reclamation plan unless it requires disturbed land to be reclaimed consistent with the requirements and standards set forth in Section 82-4-336, MCA.

During the operational phase of the Project, many of the surface facilities, including the cemented tailings facility would be built on top of high-density polyethylene liners and collection sumps to prevent infiltrating water from impacting down-gradient water quality. Any collected water would be diverted to a sump pond and then pumped back into a storage facility prior to treatment at the reverse osmosis water treatment plant.

Through the sequential drift and fill mining method, stopes that have been mined would be backfilled with cemented paste tailings. This approach would limit the exposure of sulfide minerals in the rock faces. The cemented backfill would have a lower permeability than the adjacent bedrock, limiting the potential for groundwater infiltration and reaction in the backfill.

Tintina would place all waste rock and mill tailings not used as backfill in the underground workings in the cemented tailings facility. The cemented tailings facility does not meet the definition of “tailings storage facility” set forth in Section 82-4-303(34), MCA, because it is a facility that would store 50-acre feet or less of free water or process solution. Therefore, the cemented tailings facility is not subject to the provisions of the MMRA applicable to tailings storage facilities set forth in Sections 82-4-376 through 381, MCA. Nonetheless, Tintina submitted design documents for the cemented tailings facility to an independent review panel for review to ensure the safety and stability of the cemented tailings facility.

Simulated stream depletions resulting from groundwater drawdown during mine dewatering for all streams in the area are within 10% of the measured base flows, with the exception of Coon Creek. For Coon Creek, a reduction of approximately 70% is estimated. Water to mitigate this reduction in flow would be pumped from Sheep Creek to the non-contact water reservoir during the high flow season when flow in Sheep Creek exceeds the appropriated water rights in Sheep Creek. Water from the non-contact water reservoir would be pumped into the headwaters of Coon Creek to augment flow within 15% of the average monthly flow determined for baseline conditions. Tintina has submitted applications for a beneficial use permit and six change applications to the Department of Natural Resources and Conservation to implement this mitigation. The Department of Natural Resources and Conservation issued its Preliminary Determination to Grant on March 13, 2020. Stipulation 3 prohibits Tintina from conducting any activity that may result in groundwater drawdown (Phase 2 Development Construction Activities or Mining Phase Construction Activities) prior to obtaining the Department of Natural Resources and Conservation's final approval of the beneficial use permit and change authorizations.

Treated water from the water treatment plant would meet applicable discharge standards (except seasonal total nitrogen criteria) prior to groundwater recharge via an alluvial UIG designated as MPDES Outfall 1. Water from the water treatment plant would be directed to the treated water storage pond rather than the alluvial UIG between July 1 and September 30 when the seasonal standard for nitrogen set for Sheep Creek is in effect to prevent nuisance algal growth in surface water. Water accumulated in the treated water storage pond would then be discharged via the alluvial UIG when the more stringent nutrient criteria are not in effect. The UIG recharge would partially compensate the loss of base flow in Sheep Creek caused by mine dewatering.

Concurrent and following completion of mining, stopes in the underground workings would be backfilled. Treated groundwater would be pumped to flood the workings and be used to rinse oxidized materials from exposed rock surfaces, after which the groundwater table would be allowed to recover to its original elevation. The pH and alkalinity are predicted to be higher, with lower sulfate and metal concentrations, than predicted during operations, as sulfide oxidation would be inhibited in the flooded workings. It is predicted that the mine water would meet Montana groundwater standards and non-degradation criteria post-closure.

Reclamation of surface facilities would include the dewatering and reverse osmosis treatment of water from storage facilities (e.g., process water pond and contact water pond), decommissioning the water storage facilities and foundation drain systems, and removing and disposing of the high-density polyethylene liners. Other components of closure include the removal of all buildings, site-wide re-contouring of disturbance areas to near pre-mining topography for most facilities (except the cemented tailings facility), drainage stabilization and erosion control, redistribution of soils, establishment of long-term vegetative cover, and site-wide reestablishment of conditions that support the approved post-mine land uses of livestock grazing and hay production.

At closure, all water would be pumped out of the cemented tailings facility and treated in the water treatment plant. Cement, fly ash, or slag added to the thickened tailings during operations would solidify the tailings shortly after their deposition and create a stable, non-flowable mass. Shaping of the tailings surface may be required for closure. Shaping may be accomplished by selective tailings deposition near the end of operations or placement of general fill material to create a self-draining topographic surface suitable for capping. The cemented tailings facility would then be covered with a high-density polyethylene geomembrane, capped with non-reactive rock fill and overburden, and graded to control run-off. The capping layer would be a minimum of four feet thick and would serve to provide a stable platform for topsoil/subsoil cover and revegetation. These measures would minimize the amount of precipitation that infiltrates the reclaimed cemented tailings facility and prevent objectionable post-mining ground water discharges from the cemented tailing facility.

Final reclamation would include decommissioning of the foundation drain collection pond for the cemented tailings facility and connecting the buried foundation drain system outlet pipe to a UIG, located immediately downstream of the foundation drain pond. Water collected from the foundation drain system is expected to be un-impacted groundwater, which can be discharged back to the groundwater system during closure without a discharge permit. Water quality of the

foundation drain would be monitored throughout the operation of the facility. If the water quality of the foundation drain system shows an impact compared to baseline monitoring data, mitigation alternatives include passive treatment systems or installation of horizontal well(s) up-gradient of the cemented tailings facility to capture groundwater and discharge it to the infiltration gallery designed for the foundation drain in closure. The foundation drain collection pond would have its liner removed and hauled to an off-site disposal or recycling center. All disturbed ground would be re-contoured and re-vegetated.

No objectionable post-mining ground water discharges are expected from the other proposed mine facilities. The process water pond and its foundation drain pond would remain in place until the milling of all copper-enriched rock is completed. At closure, the water in the process water pond would be treated and discharged to the UIG, or treated and used for rinsing and flooding of the underground workings. The foundation drain pond liner would be cut and placed on top of the process water pond liner. The process water pond liner would be folded in on itself and buried in place. Because the process water pond would be constructed as a cut and fill material balance facility, there would be ample embankment material available to bury the liners to a depth of 30 feet or more below the final reclamation grade and about 25 feet above the regional groundwater table. The perimeter of both the reclaimed process water pond and foundation drain pond areas would be graded to blend with surrounding topography, covered with topsoil / subsoil, and seeded. No objectionable post-mining groundwater discharges are expected.

Tintina would keep the contact water pond open into closure. During this time, it would be used in conjunction with the water treatment plant to treat any water that may accumulate in the sump of the closed cemented tailings facility and to treat the remaining volume of water on the process water pond. Treated water would discharge to the UIG.

Reclamation of the non-contact water reservoir would include removal of the embankment, surface water diversion channel, and the spillway. The area would be then regraded to near original topographic contours. Soil would be placed on the regraded area and seeded with approved reclamation seed mixtures.

As summarized here and more fully set forth in the Final EIS, the Agency Modified Alternative with the stipulations set forth above are consistent with the reclamation requirements and standards set forth in the MMRA.

### **7.3. MONTANA WATER QUALITY ACT**

DEQ administers the Montana WQA and the administrative rules adopted under the WQA, including the MPDES. DEQ may not approve a reclamation plan unless it provides sufficient measures to prevent water pollution. The reclamation bond that a mine operator must submit before DEQ issues a permit or approves a permit amendment must be sufficient to ensure compliance with the WQA, which provides a regulatory framework for protecting, maintaining, restoring, and improving water quality for beneficial uses. Pursuant to the WQA, DEQ has developed water quality classifications and standards, as well as a permit system to control discharges into state waters. Mining operations must comply with Montana's regulations and

standards for surface water and groundwater. The AMA does not allow discharge of mine water into state waters.

MPDES permits regulate point source discharge of pollutants to state surface waters and include effluent limitations, monitoring requirements, nondegradation requirements, and special conditions to protect the beneficial uses of the receiving water bodies. Please see the Fact Sheet, Response to Comments document and final MPDES permit in Appendix A.

#### **7.4. FEDERAL CLEAN WATER ACT – SECTION 401 CERTIFICATION**

Federal permits related to discharges to state waters must also obtain certification from the state that discharges comply with state water quality standards. On January 19, 2017, DEQ certified that the Project would not violate water quality standards under Section 401. On July 3, 2019, DEQ certified that the Project amendment would not violate water quality standards under Section 401.

#### **7.5. CLEAN AIR ACT OF MONTANA**

An Air Quality Permit to construct and operate a new or altered air pollution source cannot be issued unless the source is able to comply with the applicable regulations and requirements of the federal Clean Air Act and the Montana Clean Air Act, as well as any applicable control strategy contained in the Montana State Implementation Plan. The applicant must also demonstrate that the source would not cause or contribute to a violation of a Montana or national ambient air quality standard (NAAQS).

#### **7.6. PRIVATE PROPERTY ASSESSMENT ACT**

Under the Montana Private Property Assessment Act, agencies are required to evaluate the regulatory impacts on private property rights, including whether alternatives that reduce, minimize, or eliminate the regulation of private property rights have been analyzed. This includes alternatives and mitigation measures that are designed to protect environmental, cultural, visual, and social resources, but may also add to the cost of the project. Alternatives and mitigation measures designed to meet minimum environmental standards required by state or federal laws or consented to by a project proponent are excluded from evaluation under the implementing guidelines for the Private Property Assessment Act.

While the Agency Modified Alternative contains additional requirements that are beyond those necessary to meet minimum environmental standards, Tintina has consented to those additional requirements. Thus, selection of the Agency Modified Alternative does not constitute a compensable taking of private property.

#### **7.7. MONTANA HARD ROCK MINING IMPACT ACT**

The Montana Hard Rock Mining Impact Act is overseen by the Hard Rock Mining Impact Board (HRMIB), which is part of the Montana Department of Commerce. The Hard Rock Mining Impact Plan describes how the Project could affect local government services, facilities, costs,

and revenues. The plan specifies the measures the Proponent would undertake to mitigate adverse fiscal impacts on local governments. The HRMIB approved the plan on July 22, 2019.

## **7.8. MONTANA NOXIOUS WEED ACT AND COUNTY WEED CONTROL ACT**

The Meagher County Weed District administers the Montana County Noxious Weed Act (§ 7-22-2101 through 2153, MCA) for any land-disturbing activities within their jurisdiction. The Proponent has a Weed Mitigation and Management Plan, included as Appendix O of the mine operating permit application. DEQ will accept the Meagher County Weed District's decision regarding a Weed Control Plan for the Project.

## **8. PERMITS, LICENSES, AND AUTHORIZATIONS NEEDED TO IMPLEMENT THE DECISIONS**

DEQ is the agency responsible for environmental analysis of the proposed Project. DEQ's actions on the permit applications must be in accordance with applicable state law. The permits that the Proponent is applying for and the governing state laws include (1) an operating permit in compliance with the MMRA, (2) an integrated MPDES permit in compliance with the Montana WQA, and (3) a Montana Air Quality Permit in compliance with the Clean Air Act of Montana.

The Final EIS was prepared to provide a comprehensive analysis of potential environmental impacts. Before construction and operation of the Project could begin, other permits, licenses, or approvals may be required from federal, state, and local agencies. **Table 4** below lists the permits, licenses, and approvals required from each federal, state, and local agency for the Project.

**Table 4**  
**Federal, State, and County Agencies—Potential Requirements**

Potential Permits or Reviews Required (Statutory Reference)	Purpose of Permit or Review
<b>U.S. Army Corps of Engineers</b>	
Clean Water Act, Section 404 Permit (33 Code of Federal Regulations Section 1344) Permit No. NWO-2013-01385-MTH	The U.S. Army Corps of Engineers (USACE) has responsibilities under Section 404 of the Clean Water Act, and has the authority to take reasonable measures to inspect Section 404-permitted activities. Construction of certain Project facilities in Waters of the United States, including wetlands and special aquatic sites, would constitute disposal of dredged or fill materials. The USACE also requires Section 401 certification from DEQ (see below). The Proponent submitted a Section 404 permit application to the USACE for the Project for impacts to Brush Creek and adjacent wetlands. The USACE issued a Department of the Army permit (NWO-2013-01385-MTH) for discharge of fill into Waters of the United States on November 27, 2017.
<b>Montana Department of Environmental Quality</b>	

<b>Potential Permits or Reviews Required (Statutory Reference)</b>	<b>Purpose of Permit or Review</b>
Montana Environmental Policy Act, Analysis of Impacts (§ 75-1-102, MCA)	MEPA requires DEQ to prepare an environmental impact statement prior to taking state action for any projects that significantly affect the quality of the human environment.
Metal Mine Reclamation Act, Operating and Reclamation Plans (§ 82-4-336, MCA)	Mining must comply with state environmental laws and administrative rules. The MMRA has established reclamation standards for lands disturbed by mining, generally requiring that they be reclaimed to comparable stability and utility as that of adjacent areas. Reclamation must provide sufficient measures to ensure public safety and to prevent the pollution of air or water and the degradation of adjacent lands.
Montana Water Quality Act, Montana Pollutant Discharge Elimination System (§ 75-5-101, MCA)	Establishes effluent limits and treatment standards, and regulates point source discharges of pollutants into state surface waters or to groundwater hydrologically connected to state surface waters through MPDES permits. State water quality standards, including the non-degradation standards, specify the allowable changes in surface water or groundwater quality. An MPDES permit may also authorize discharges of construction storm water and would require the development of a storm water pollution prevention plan.
Montana Public Water Supply Act (§ 75-6-101, MCA)	Regulates public water supply and sewer systems that regularly serve at least 25 persons daily for a period of at least 60 calendar days a year. DEQ must approve plans and specifications for water supply wells in addition to water systems or treatment systems and sewer systems.
Federal Clean Water Act, Section 401 (§ 75-5-401, MCA)	Federal permits related to discharges to state waters must also obtain certification from the state that discharges comply with state water quality standards. On January 19, 2017, DEQ certified that the Project would not violate water quality standards under Section 401. On July 3, 2019, DEQ certified that the Project amendment would not violate water quality standards under Section 401.
Clean Air Act of Montana, Air Quality Permit (§ 75-2-Parts 1-4, MCA)	An Air Quality permit is required for the construction, installation, and operation of facilities and equipment that may cause or contribute to air pollution. The Air Quality Bureau intends to make a decision on the application within 30-days after the Final EIS and Record of Decision are released. The permit shall become final on the date stated in the Air Quality Bureau's Decision on this permit, unless an appeal is filed with the Board of Environmental Review.
Montana Hazardous Waste Act (§ 75-10-401, MCA) and the Solid Waste Management Act (§ 75-10-201, MCA)	The acts regulate the storage and disposal of hazardous and solid wastes.
Montana Streambed Preservation Act - 318 Permit (short-term turbidity)	Required by any entity initiating a construction activity that may cause short or temporary violations of state surface water quality standards for turbidity.
<b>Montana Hard Rock Mining Impact Board</b>	

<b>Potential Permits or Reviews Required (Statutory Reference)</b>	<b>Purpose of Permit or Review</b>
Hard Rock Mining Impact Act, Hard Rock Mining Impact Plan, ( $\S$ 90-6-301, MCA)	This Act is overseen by the HRMIB, which is part of the Montana Department of Commerce. The HRMIB consists of five members: (1) a representative of the hard-rock mining industry; (2) a representative of a major financial institution in Montana; (3) a person who, at the time of appointment, is an elected school district trustee; (4) a person who, when appointed, is an elected county commissioner; and (5) a member of the public-at-large. A Hard Rock Mining Impact Plan is submitted to the HRMIB for consideration and approval. If a local government (i.e., city, county, etc.) disagrees with any portion of the Hard Rock Mining Impact Plan, the governing body may file an objection with the HRMIB during a 90-day review period.
<b>Montana Department of Transportation</b>	
Construction Permit ( $\S$ 61-1-1 <i>et seq.</i> , MCA)	The Montana Department of Transportation is responsible for approving road approaches onto state-owned highways. A construction permit may be required for modifying the approach onto U.S. Highway 89 from County Road 119.
Approach Permit ( $\S$ 61-1-1 <i>et seq.</i> , MCA)	The Montana Department of Transportation is responsible for approving road approaches onto state-owned highways. An approach permit may be required for load out areas if accessing them via a highway.
Heavy or Oversize Loads Permit ( $\S$ 61-1-1 <i>et seq.</i> , MCA)	The Montana Department of Transportation is responsible for safe operation of state-owned highways, including U.S. Highway 89 near the Project area and the roadways as part of the proposed haul routes. Appropriate permits for heavy or oversize loads (if any) may be required.
<b>Montana Department of Natural Resources and Conservation</b>	
Montana Water Use Act, Permit to Appropriate Water ( $\S$ 85-2-311, MCA) and Change Authorization	The Montana Department of Natural Resources and Conservation is responsible for administration of various components of the Water Use Act and determines whether or not to issue permits and changes to existing appropriation rights. Permits to Appropriate Water and Change Authorizations would be required before appropriating water for beneficial use or commencing construction of diversion, impoundment, withdrawal, or related distribution works.
<b>Montana Fish, Wildlife &amp; Parks</b>	
NA	Montana Fish, Wildlife & Parks is responsible for protecting fish, wildlife, and natural resources for recreational activities. Montana Fish, Wildlife & Parks would approve and designate a licensed collector for monitoring, mitigation, and transplanting of fish species within the Project area, if necessary.
<b>Montana State Historic Preservation Office</b>	
NA	The State Historic Preservation Office (SHPO) advises state agencies when a project could affect cultural resources that are eligible or potentially eligible for the National Register of Historic Places. Sites that are eligible or potentially eligible to the National Register of Historic Places are considered Historic Properties. After consultation,

Potential Permits or Reviews Required (Statutory Reference)	Purpose of Permit or Review
	SHPO may concur if the Project could have (1) no impact; (2) no adverse impact; or (3) adverse impact on Historic Properties. If SHPO does not concur with DEQ's determination, then DEQ may request the Proponent to conduct additional cultural work. If SHPO concurs that the Project would have no impact or no adverse impact, then the Project could move forward. If DEQ determines and SHPO concurs that the Project could have adverse impacts on Historic Properties, then DEQ would request the Proponent to implement protection, mitigation, and monitoring as approved by SHPO.
<b>Meagher County Conservation District</b>	
Montana Streambed Preservation Act - 310 Permit (work in streams)	Required by any private or non-governmental entity to work in or near a stream on public or private land.

DEQ = Montana Department of Environmental Quality; HRMIB = Hard Rock Mining Impact Board;  
 MCA = Montana Code Annotated; MEPA = Montana Environmental Policy Act; MPDES = Montana Pollutant Discharge Elimination System; MMRA = Metal Mine Reclamation Act; NA = not applicable

## 9. FINANCIAL ASSURANCE

Under § 82-4-337(1)(h)(i), MCA, DEQ may not issue a final permit until the applicant submits sufficient bond under § 82-4-338, MCA. Under § 82-4-338(1)(a), MCA, an applicant for an operating permit is required to file with DEQ a performance bond payable to the state of Montana in the sum determined by DEQ. The bond may not be less than the estimated cost to the state to ensure compliance with the Clean Air Act of Montana, the Montana Water Quality Act, the MMRA, the administrative rules adopted under the MMRA, and the operating permit, including the potential cost of DEQ management, operation, and maintenance of the site upon temporary or permanent operator insolvency or abandonment, until full bond liquidation can be effected. The performance bond may be in the form of a surety bond, a cash deposit, an assignment of a certificate of deposit, an irrevocable letter of credit, or other surety acceptable to DEQ.

DEQ is required to issue its bond determination within 40 days after completion of the environmental review conducted under MEPA (§ 82-4-337(2)(c), MCA).

Under ARM 17.24.140, the total bond amount calculated by DEQ must be in place and accepted by DEQ prior to issuance of the operating permit unless the permit identifies phases or increments of disturbance which may be individually identified and for which individual, incremental bonds may be calculated. The permit must expressly state that the operator may not proceed to the next phase or increment until the bond is in place and has been approved in writing by DEQ. As indicated in Section 6, DEQ's approval of the Agency Modified Alternative with stipulations identifies phases of disturbance for which individual, incremental bonds may be calculated. Based on the authority to accept incremental bonding given to DEQ under ARM 17.24.140, DEQ will be issuing an individual incremental bond determination for Phase 1 Development Activities within 40 days of issuance of this Record of Decision. Pursuant to

Section 82-4-337(1)(h), MCA, DEQ will not issue the final permit until Tintina has submitted sufficient bond that is determined to be acceptable by DEQ under Section 82-4-338, MCA.

As provided in the stipulations, Tintina may not proceed to conduct Phase 2 Development Activities or Mining Phase Activities until DEQ calculates an individual incremental bond for those phases, Tintina submits the incremental bond in the sum calculated by DEQ, and DEQ accepts the incremental bond in writing.

## **10. APPEAL OF DEQ'S DECISION**

Legal actions seeking review of a department decision granting or denying an exploration license or operating permit issued under the MMRA must be filed within 90 days after the decision is made (§ 82-4-349(1), MCA). An action to challenge the issuance of a license or permit pursuant to the MMRA must be brought in the county in which the exploration or permitted activity is to occur (§ 82-4-349(2), MCA).

An applicant for a permit or license or for an amendment or revision to a permit or license may request a hearing on a denial of the application by submitting a written request for a hearing within 30 days of receipt of written notice of the denial. The request must state the reason that the hearing is requested (§ 82-4-353(2), MCA). The hearing must be conducted by the Board of Environmental Review in accordance with the Montana Administrative Procedure Act (§ 82-4-353(3), MCA). A person directly and adversely affected by the DEQ's decision to approve or deny an application under the Montana Air Quality Act may request a hearing before the Board of Environmental Review. The request must be filed within 15 days after DEQ renders its decision. An affidavit setting forth the grounds for the request must be filed within 30 days after DEQ renders its decision. The contested case provisions of the Montana Administrative Procedure Act apply to the hearing before the Board (§ 75-2-211(10), MCA).

Any action or proceeding challenging a final agency decision alleging failure by DEQ to comply with or inadequate compliance with a requirement under MEPA must be brought within 60 days of the action that is the subject of the challenge (§ 75-1-201(5)(a)(ii), MCA).

For additional information concerning these decisions or DEQ's appeal process, contact Craig Jones, Director's Office, DEQ, 1520 East Sixth Avenue, PO Box 200901, Helena, MT 59620-0901, 406-444-0514.

## **11. ADDITIONAL INFORMATION**

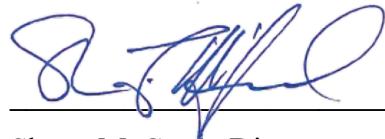
Copies of the proposed Project Final EIS are available for review at the following locations in Montana: the DEQ Lee Metcalf Building in Helena; the Montana State Library in Helena; the Mansfield Library, University of Montana in Missoula; and public libraries in Great Falls, White Sulphur Springs, Livingston, and Helena.

The Final EIS may also be accessed on the Internet at DEQ's website at <http://deq.mt.gov/Mining/hardrock/tintinamines>.

Electronic (on compact disc) copies of this ROD and the Final EIS are available upon request. The supporting Project record is available for review at the DEQ, Hard Rock Mining Bureau at 1520 East Sixth Avenue, PO Box 200901, Helena, MT 59620-0901.

## 12. APPROVALS

This ROD is effective upon signature.



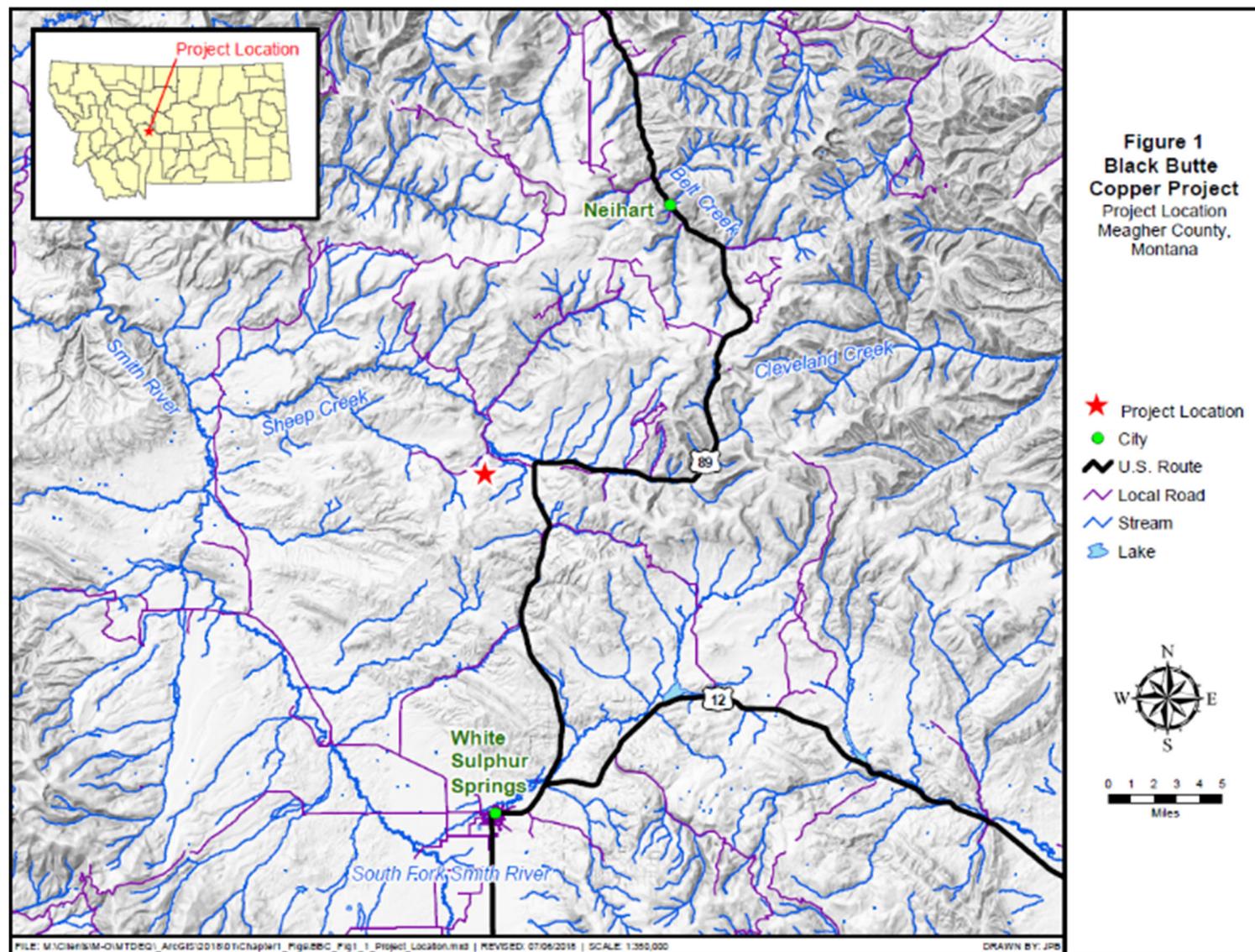
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4/9/2020

Shaun McGrath, Director  
State of Montana  
Department of Environmental Quality

Date

For additional information on the mining, operation, and closure plan; this ROD; or the EIS, please contact Craig Jones, Director's Office, DEQ, 1520 East Sixth Avenue, PO Box 200901, Helena, MT 59620-0901, 406-444-0514.



**Figure 1**  
**Project Location**

## **APPENDICES**

Appendix A: MPDES Permit

# MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

## AUTHORIZATION TO DISCHARGE UNDER THE MONTANA POLLUTANT DISCHARGE ELIMINATION SYSTEM (MPDES)

In compliance with the Federal Water Pollution Control Act (the “Clean Water Act”), 33 U.S.C. § 1251et seq. and Montana Water Quality Act, Title 75, Chapter 5, Montana Code Annotated (MCA).

**Tintina Montana, Inc.**

is authorized to discharge from its **Black Butte Copper Project**

located **15 miles north of White Sulphur Springs, Meagher County, Montana**

to receiving waters named, **Alluvial ground water, Sheep Creek, Coon Creek, Little Sheep Creek, Brush Creek, and an unnamed ephemeral tributary to Little Sheep Creek.**

in accordance with discharge point(s), effluent limitations, monitoring requirements and other conditions set forth herein. Authorization for discharge is limited to those outfalls specifically listed in the permit.

This permit shall become effective on June 1, 2020

This permit and the authorization to discharge shall expire May 31, 2025.

FOR THE MONTANA DEPARTMENT OF  
ENVIRONMENTAL QUALITY



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Jon Kenning, Chief  
Water Protection Bureau  
Water Quality Division

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## 1 AUTHORIZED DISCHARGES AND MIXING ZONES

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under an MPDES permit is a violation of the Montana Water Quality Act and could subject the person(s) responsible for such discharge to penalties under the Act. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge within a reasonable time from first learning of an unauthorized discharge could subject such person to criminal penalties as provided under Montana Water Quality Act, section 75-5-632.

Below is a description of the discharge locations authorized by this permit and any associated mixing zones.

**Table 1. Discharge Locations**

<b>Outfall</b>	<b>Location</b>	<b>Latitude and Longitude</b>	<b>Receiving Water</b>	<b>Mixing Zone</b>
001	End of pipe discharging to underground infiltration galleries	46° 46' 47" N 110° 54' 20" W	Ground Water, Sheep Creek, and Coon Creek	None
002	Storm Water Structure	46° 45' 58.4" N 110° 55' 19.5" W	Coon Creek	None
003	Storm Water Structure	46° 46' 18.9" N 110° 55' 4.5" W	Coon Creek	None
004	Storm Water Structure	46° 46' 8.7" N 110° 54' 35.5" W	Brush Creek	None
005	Storm Water Structure	46° 45' 50.7" N 110° 54' 39.7" W	Brush Creek	None
006	Storm Water Structure	46° 45' 33.9" N 110° 54' 55.2" W	Brush Creek	None
007	Storm Water Structure	46° 45' 35.2" N 110° 54' 36.8" W	Brush Creek	None
008	Storm Water Structure	46° 46' 10.2" N 110° 54' 55.8" W	Coon Creek	None
009	Storm Water Structure	46° 46' 16.1" N 110° 53' 37.3" W	Brush Creek	None
010	Storm Water Structure	46° 46' 10" N 110° 53' 57.7" W	Brush Creek	None
011	Storm Water Structure	46° 46' 17.3" N 110° 53' 14.7" W	Little Sheep Creek	None
012	Storm Water Structure	46° 45' 58.68" N 110° 54' 22.68" W	Brush Creek	None
013	Storm Water Structure	46° 46' 2.28" N 110° 54' 16.92" W	Brush Creek	None
014	Storm Water Structure	46° 45' 47.16" N 110° 53' 46.68" W	Unnamed Ephemeral Tributary of Little Sheep Creek	None

## 2 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Beginning on the effective date and lasting through the term of this permit, the quality of effluent discharged shall, as a minimum, meet the limitations set forth in this Part. All monitoring shall be conducted as specified in this Part and in Part 4 of this permit. If no discharge occurs during an entire reporting period, the permittee shall state "No Discharge" on the Discharge Monitoring Report.

### 2.1 Effluent Limitations and Monitoring Requirements—Outfall 001

The quality of effluent discharged at Outfall 001 shall, at minimum, meet the limitations set forth below. Compliance with these limitations shall be reported on DMR 001-A.

**Table 2. Final Effluent Limitations – Outfall -001**

Parameter	Units	Effluent Limitations	
		Average Monthly	Maximum Daily
pH	s.u.	6.0 to 9.0	
Total Suspended Solids	mg/L	20	30
Aluminum, Dissolved	µg/L	11	21
Antimony, Total Recoverable	µg/L	0.8	0.8
Arsenic, Total Recoverable	µg/L	1.0	1.0
Barium, Total Recoverable	µg/L	150	150
Beryllium, Total Recoverable	µg/L	0.8	0.8
Cadmium, Total Recoverable	µg/L	0.11	0.23
Chromium, Total Recoverable	µg/L	15	15
Copper, Total Recoverable	µg/L	1.4	2.8
Iron, Total Recoverable	µg/L	205	416
Lead, Total Recoverable	µg/L	0.5	1.0
Mercury, Total Recoverable	µg/L	0.0005	0.0005
Nickel, Total Recoverable	µg/L	7.8	15
Selenium, Total Recoverable	µg/L	0.6	1.2
Silver, Total Recoverable	µg/L	0.05	0.10
Strontium, Total Recoverable	µg/L	600	600
Thallium, Total Recoverable	µg/L	0.04	0.04
Uranium	µg/L	0.7	0.7

**Table 2. Final Effluent Limitations – Outfall -001**

<b>Parameter</b>	<b>Units</b>	<b>Effluent Limitations</b>	
		Average Monthly	Maximum Daily
Zinc, Total Recoverable	µg/L	4.6	9.2
Cyanide, Total	µg/L	0.6	0.6
Ammonia, Total	mg/L	0.18	0.37
Nitrate plus Nitrite	mg/L	1.5	1.5
Phosphorus, Total as P <sup>1</sup>	mg/L	0.012	--
	lb/day	0.06	--
Nitrogen, Total, as N <sup>1</sup>	mg/L	0.09	--
	lb/day	0.43	
Temperature Change	°F	- 2.0 <sup>2,3</sup>	1 <sup>3</sup>

Footnotes:

1. Limit effective July 1 through September 30, annually.
2. Minimum Daily
3. Effluent temperature minus upgradient monitoring well temperature.

There shall be no discharge of process wastewater from the mill, except that a discharge may occur under the following conditions:

1. If, as a result of precipitation (rainfall or snowmelt), the facility has an overflow or discharge from the process water pond, a discharge may occur that is equal to the volume of water in excess of the pond capacity under normal operation plus the volume of water and runoff generated from a 10-year 24-hour storm event. The facility (PWP) must be designed, constructed, and maintained to contain the maximum volume of water in the pond during normal operations plus the 10-year 24-hour precipitation event. The design volume must include the facility and all areas contributing runoff to the process water pond. Any discharge resulting from this exception must comply with the final effluent limitations and monitoring requirements applicable to Outfall 001.
2. In the event there is a buildup of contaminants in the recycle water which significantly interferes with the ore recovery process and this interference cannot be eliminated through appropriate treatment of the recycle water, a discharge in an amount necessary to correct the interference may occur after installation of appropriate treatment. The facility shall have the burden of demonstrating to DEQ that the discharge is necessary to eliminate the interference in the ore recovery process and that the interference could not be eliminated through appropriate treatment of the recycle water. The permittee must request the discharge and provide the required justification in writing. The discharge may not occur until DEQ has provided written authorization. Any discharge resulting from this exception must comply with the final effluent limitations and monitoring requirements applicable to Outfall 001.

### ***Monitoring Requirements – Outfall 001***

As a minimum, upon the effective date of this permit, the following constituents shall be monitored at the frequency and with the type of measurement indicated. If no discharge occurs during the entire monitoring period, it shall be stated on the Discharge Monitoring Report that no discharge or overflow occurred.

All analytical procedures, sampling, and preservation methods must comply with the requirements of the methods specified in 40 CFR 136, unless otherwise specified.

Monitoring at Outfall 001 shall occur at the end of pipe, after all treatment processes prior to discharge into the underground infiltration galleries and shall be representative of the volume and nature of the monitored discharge.

The Permittee must provide written notification to DEQ 30 days prior to commencement of discharge at Outfall 001.

Total Nitrogen is either calculated as the sum of total Kjeldahl nitrogen and nitrate plus nitrite or measured via persulfate digestion.

By June 15 of each year, the Permittee must provide written notification to DEQ of intent to either discharge from Outfall 001 or hold wastewater in the Treated Water Storage Pond during the growing season (July – September). The Permittee shall hold wastewater in the Treated Water Storage Pond unless they show, and provide written notice, that they can meet the growing season effluent limitations and receive approval to discharge from DEQ prior to discharging. Monitoring frequency for total nitrogen is increased to daily during the growing season. If total nitrogen exceeds the effluent limitation or if daily sample results indicate the effluent limit will be exceeded, the discharge must be rerouted to the Treated Water Storage Pond for the remainder of the growing season.

**Table 3. Monitoring Requirements - Outfall 001**

Parameter <sup>(1)</sup>	Units	Minimum Monitoring Frequency	Sample Type	Reporting Frequency <sup>(2)</sup>
Effluent Flow Rate	MGD	Continuous	Recording Device	Monthly
pH	s.u.	1/Week	Instantaneous	Monthly
Total Suspended Solids	mg/L	1/Week	Composite	Monthly
Temperature	° F	Continuous	Instantaneous	Monthly
Aluminum, Dissolved	µg/L	1/Week	Composite	Monthly
Antimony, Total Recoverable	µg/L	1/Week	Composite	Monthly
Arsenic, Total Recoverable	µg/L	1/Week	Composite	Monthly
Barium, Total Recoverable	µg/L	1/Week	Composite	Monthly

**Table 3. Monitoring Requirements - Outfall 001**

Parameter <sup>(1)</sup>	Units	Minimum Monitoring Frequency	Sample Type	Reporting Frequency <sup>(2)</sup>
Beryllium, Total Recoverable	µg/L	1/Week	Composite	Monthly
Cadmium, Total Recoverable	µg/L	1/Week	Composite	Monthly
Chromium, Total Recoverable	µg/L	1/Week	Composite	Monthly
Copper, Total Recoverable	µg/L	1/Week	Composite	Monthly
Iron, Total Recoverable	µg/L	1/Week	Composite	Monthly
Lead, Total Recoverable	µg/L	1/Week	Composite	Monthly
Mercury, Total Recoverable	µg/L	1/Week	Composite	Monthly
Nickel, Total Recoverable	µg/L	1/Week	Composite	Monthly
Selenium, Total Recoverable	µg/L	1/Week	Composite	Monthly
Silver, Total Recoverable	µg/L	1/Week	Composite	Monthly
Strontium, Total Recoverable	µg/L	1/Week	Composite	Monthly
Thallium, Total Recoverable	µg/L	1/Week	Composite	Monthly
Uranium, Total Recoverable	µg/L	1/Week	Composite	Monthly
Zinc, Total Recoverable	µg/L	1/Week	Composite	Monthly
Cyanide, Total	µg/L	1/Week	Composite	Monthly
Ammonia, as N	mg/L	1/Week	Composite	Monthly
Nitrate+Nitrite, as N	mg/L	1/Week	Composite	Monthly
Total Nitrogen, as N (Oct. – June)	mg/L	1/Week	Composite	Monthly
Total Nitrogen, as N (Oct. – June)	lbs/day	1/Week	Calculate	Monthly
Total Nitrogen, as N (July – Sept.)	mg/L	1/Day	Composite	Monthly
Total Nitrogen, as N (July – Sept.)	lbs/day	1/Day	Calculate	Monthly
Phosphorus, Total as P	mg/L	1/Week	Composite	Monthly
Phosphorus, Total as P	lb/day	1/Week	Calculate	Monthly
Whole Effluent Toxicity, Chronic 7-day/3 brood, <i>Ceriodaphnia dubia</i> , IC-25	Percent Effluent	1/Quarter	Composite	Quarterly
Whole Effluent Toxicity, 7-day Chronic – <i>Pimephales promelas</i> , IC-25	Percent Effluent	1/Quarter	Composite	Quarterly
Ground Water Temperature upgradient monitoring well Lat: 46.8298133 Long: -110.8999664	°F	Continuous	Instantaneous	Monthly
Footnotes:				
1. All analyses must meet the applicable RRV in the latest version of Department Circular DEQ-7 or DEQ-12A.				
2. Report average monthly and daily maximum values at the required frequency. Each quarterly WET test is reported quarterly.				

The Permittee must monitor the discharge, complete and submit Parts V and VI of U.S. EPA Form 2C, within 6 months of commencing the discharge from Outfall 001. Analytical results are required for all parameters listed in Part V – A, B, and C, including all GC/MS fractions in Table 2C-2. Part D must also be completed as required by the Form 2C instructions.

### Whole Effluent Toxicity – Chronic Testing

Prior to commencement of the discharge at Outfall 001, the Permittee must collect samples of treated wastewater and conduct a two-species chronic WET test on *Ceriodaphnia dubia* and *Pimephales promelas*. The test must include effluent concentrations of 100, 75, 50, 25, and 12.5% effluent, plus a control. Moderately hard reconstituted water (see test methods) may be used for effluent dilutions and the control. The static renewal toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of *Methods for Measuring the Chronic Toxicity of Effluent to Freshwater and Marine Organisms*, EPA-821-R-02-013. The permittee shall conduct a three-brood (seven-day) survival and reproduction static renewal toxicity test using *Ceriodaphnia dubia* (test method 1002.0) and a seven-day growth and survival static renewal toxicity test using *Pimephales promelas* (test method 1000.0). Chronic toxicity occurs when the inhibition concentration to 25% of the test population ( $IC_{25}$ ) is less than or equal to the 100% effluent concentration. Control survival and growth or reproduction must meet the requirements specified in the method.

Should the pre-discharge WET test above result in an  $IC_{25}$  less than or equal to 100 percent effluent, the Permittee must identify the cause of the toxicity, eliminate it, and achieve an  $IC_{25}$  greater than 100% effluent in a follow up test before the discharge may commence.

The discharge to Outfall 001 may commence after the initial, pre-discharge WET test is conducted and passed. Routine two-species WET testing must be conducted quarterly thereafter, as shown in the monitoring table above.

If chronic toxicity occurs in a routine test, an additional test shall be conducted within 14 days of the date of the initial sample. Should chronic toxicity occur in the second test, testing shall occur once a month until further notified by the Department. In all cases, the results of all toxicity tests must be submitted to the Department in accordance with Part 2 of this permit.

The quarterly results from the laboratory shall be reported along with the Discharge Monitoring Report (DMR) form submitted for the end of the reporting calendar quarter (e.g., whole effluent results for the reporting quarter ending March 31 shall be reported with the March DMR due April 28th with the remaining quarterly reports submitted with the June, September, and December DMR's). The format for the laboratory report shall be consistent with the latest revision of Region VIII Guidance for Acute Whole Effluent Reporting, and shall include all chemical and physical data as specified.

If the results for four consecutive quarters of testing indicate no toxicity, the permittee may request a reduction to semi-annual two-species chronic toxicity testing. The Department may approve or deny the request based on test results and other available information without an additional public notice. If the request is approved, the test procedures are to be the same as specified above for the test species.

### **Instream Monitoring in Sheep Creek and Coon Creek**

Temperature monitoring is required in Sheep Creek and Coon Creek upstream and downstream of Outfall 001 as shown in Table 4. Temperature monitoring locations must be marked and used

consistently during each monitoring event. The upstream locations must be upstream of and outside the area of influence of Outfall 001 and the underground infiltration galleries. The downstream location in Sheep Creek must be downstream of and within 100 feet of the confluence of Sheep Creek and Coon Creek and the downstream site on Coon Creek is immediately upstream of the confluence with Sheep Creek. An additional surface water temperature characterization is also required to establish baseline conditions in Sheep Creek, Coon Creek, and in any unnamed tributaries that influence surface water temperatures between the upstream and downstream monitoring locations. See Part 3.2.

**Table 4. Monitoring Requirements in Sheep Creek (RIV-A) and Coon Creek (RIV-B)**

Parameter	Units	Minimum Monitoring Frequency	Sample Type	RRV	Basis
Temperature, upstream of Outfall 001	° F	1/Month	Instantaneous	--	Report Only
Temperature, downstream of Outfall 001	° F	1/Month	Instantaneous	--	Report Only

## **2.2 Effluent Limitations and Monitoring Requirements—**

### **Storm Water Outfalls 002-014**

The shall be no discharge of process wastewaters or mine drainage at Outfalls 002 – 014.

Outfalls 002 – 014 are subject to the BMP requirements for storm water discharges (See Special Conditions). The Permittee must comply with all BMP requirements (see Special Conditions) and develop, implement, and maintain a Storm Water Pollution Prevention Plan (SWPPP) (see Special Conditions) identifying all BMPs selected for storm water control and submit the SWPPP for DEQ review. The permittee must submit the SWPPP at least 90 days prior to the planned construction of Outfalls 002-014 or conversion of the outfalls under the construction permit (MTR107129) to industrial outfalls under this permit. The permittee must receive DEQ written approval of the SWPPP prior to construction or conversion of Outfalls 002-014.

Storm water discharges at Outfalls 002 – 014 must employ the use of detention basins designed to detain the 10-year 24-hour precipitation event or achieve storm water effluent quality equivalent to that achieved after detention of the 10-year 24-hour event.

The Permittee must re-evaluate the SWPPP and adjust or add BMPs when, based on monitoring results, turbidity in the discharge at any Outfall 002-014 exceeds the upstream turbidity of the associated receiving water during each discharge event. The Permittee must adjust or add BMPs before the next storm event if possible or within a maximum timeframe of 14 days of receiving the monitoring results. If it is infeasible to adjust or add BMPs within 14 days the Permittee may request additional from DEQ. The request must be in writing, outline the reasons why the 14 day timeframe is infeasible, and may not exceed a total of 45 days. The extension request must be

approved by DEQ in writing. The Permittee must notify DEQ, in writing, of the amended SWPPP and resulting BMP changes.

#### Outfalls 003, 006, 009, and 011

Up to twice a year during a precipitation event that causes a discharge, the Permittee must conduct additional monitoring for Outfalls 003, 006, 009, and 011. During the same storm events, monitoring must also occur on Brush Creek upstream of Outfall 006, Little Sheep Creek upstream of Outfall 011, and Coon Creek upstream of Outfall 003. The Permittee must re-evaluate the SWPPP and adjust or add BMPs to improve control of the pollutant in the discharge when, based on monitoring results, any parameter in Table 6 in the discharge at Outfalls 003, 006, 009 or 011 exceeds the upstream parameter concentration of the associated receiving water. The Permittee must adjust or add BMPs before the next storm event if possible or within a maximum timeframe of 14 days of receiving the monitoring results. If it is infeasible to adjust or add BMPs within 14 days the Permittee may request additional from DEQ. The request must be in writing, outline the reasons why the 14 day timeframe is infeasible, and may not exceed a total of 45 days. The extension request must be approved by DEQ in writing. The Permittee must notify DEQ, in writing, of the amended SWPPP and resulting BMP changes.

#### ***Monitoring Requirements – Outfall 002 – 014***

As a minimum, upon the effective date of this permit, the following constituents shall be monitored at the frequency and with the type of measurement indicated. If no discharge occurs during the entire monitoring period, it shall be stated on the Discharge Monitoring Report that no discharge or overflow occurred.

All analytical procedures, sampling, and preservation methods must comply with the requirements of the methods specified in 40 CFR 136, unless otherwise specified.

Monitoring at Outfalls 002 - 014 shall occur at the outfall structure, after all BMPs. Samples must be representative of the volume and nature of the monitored discharge.

Attach laboratory reports and analytical results for each monitored storm event to the DMR.

The parameters in Table 5 must be monitored for each storm event that causes a discharge at the storm water outfall.

**Table 5. Monitoring Requirements at Outfalls 002 - 014**

Parameter <sup>(1)</sup>	Units	Minimum Monitoring Frequency	Sample Type	Reporting Frequency <sup>(2)</sup>
Flow Rate	MGD	1/Discharge	Estimate	Quarterly
pH	s.u.	1/Discharge	Grab	Quarterly

**Table 5. Monitoring Requirements at Outfalls 002 - 014**

Parameter <sup>(1)</sup>	Units	Minimum Monitoring Frequency	Sample Type	Reporting Frequency <sup>(2)</sup>
Total Suspended Solids	mg/L	1/Discharge	Grab	Quarterly
Turbidity	NTU	1/Discharge	Grab	Quarterly
Footnotes:				
1. All analyses must achieve the applicable RRV in the latest revision of Department Circular DEQ-7				
2. Report the average of all discharges and the maximum during the monitoring period.				

The parameters in Table 6 must be monitored from one storm event that causes a discharge at the specified outfalls during each semi-annual monitoring period. Monitoring periods are January – June and July – December. Attach the laboratory report and analytical results for each monitored storm event to the DMR.

**Table 6. Additional Monitoring Requirements at Outfalls 003, 006, 009, 011**

Parameter <sup>(1)</sup>	Units	Minimum Monitoring Frequency	Sample Type	Reporting Frequency
Flow Rate	MGD	Twice/Year	Estimate	Twice/Year
Aluminum, Dissolved	µg/L	Twice/Year	Grab	Twice/Year
Antimony, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Arsenic, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Beryllium, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Cadmium, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Copper, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Iron, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Lead, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Mercury, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Nickel, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Selenium, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Silver, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Zinc, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year

**Table 6. Additional Monitoring Requirements at Outfalls 003, 006, 009, 011**

Parameter <sup>(1)</sup>	Units	Minimum Monitoring Frequency	Sample Type	Reporting Frequency
Chemical Oxygen Demand	mg/L	Twice/Year	Calculate	Twice/Year
Total Nitrogen, as N	mg/L	Twice/Year	Calculate or Grab	Twice/Year
Footnotes:				
1. All analyses must achieve the applicable RRV in the latest revision of Department Circular DEQ-7.				

### Instream Monitoring for Storm Water Discharges

Monitoring requirements for storm water receiving waters are shown in the following tables. All parameters must be monitored at the following designated locations for DMR reporting purposes.

- CRK-A: Little Sheep Creek upstream of Outfall 011
- CRK-B: Brush Creek upstream of Outfall 006
- CRK-C: Coon Creek upstream of Outfall 003
- CRK-D: Unnamed drainage upstream of Outfall 014

Attach the laboratory report and analytical results to the DMR.

Monitoring samples for the parameters in Table 7, must be collected during the same storm events as the corresponding discharge samples for Outfalls 002 – 014 in Table 5 above.

**Table 7. Monitoring Requirements CRK-A, CRK-B, CRK-C, CRK-D**

Parameter <sup>(1)</sup>	Units	Minimum Monitoring Frequency	Sample Type	Reporting Frequency <sup>(2)</sup>
pH	s.u.	1/Discharge	Grab	Quarterly
Total Suspended Solids	mg/L	1/Discharge	Grab	Quarterly
Turbidity	NTU	1/Discharge	Grab	Quarterly
Footnotes:				
1. All analyses must achieve the applicable RRV in the latest revision of Department Circular DEQ-7.				
2. Report the average of all samples and the maximum during the monitoring period				

Monitoring samples for the parameters in Table 8, must be collected during the same storm event as the corresponding discharge samples in Table 6 above.

**Table 8. Monitoring Requirements CRK-A, CRK-B, CRK-C**

Parameter <sup>(1)</sup>	Units	Minimum Monitoring Frequency	Sample Type	Reporting Frequency
Aluminum, Dissolved	µg/L	Twice/Year	Grab	Twice/Year
Antimony, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Arsenic, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Beryllium, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Cadmium, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Copper, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Iron, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Lead, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Mercury, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Nickel, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Selenium, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Silver, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Zinc, Total Recoverable	µg/L	Twice/Year	Grab	Twice/Year
Chemical Oxygen Demand	mg/L	Twice/Year	Grab	Twice/Year
Total Nitrogen, as N <sup>2</sup>	mg/L	Twice/Year	Grab	Twice/Year

Footnotes:

1. All analyses must achieve the applicable RRV in the latest revision of Department Circular DEQ-7.
2. Persulfate digestion

## 2.3 Monitoring and Reporting Requirements

In addition to the standard monitoring and reporting requirements given above and in Part 4 of this permit, the permittee shall meet the general monitoring and reporting requirements included below.

### 2.3.1 Mass Load Calculations

Effluent limitations or monitoring requirements that are expressed in terms of load (lb/day), must be based on total mass of the discharge in accordance with the definition of daily discharge in Part 5 of this permit, including days of zero flow. The total mass shall be calculated using the following equations:

$$\text{Load (lb/day)} = \text{Avg. discharge} \times \text{Avg. Monthly} \times 8.34$$

concentration (mg/L)	Flow (MGD)
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Similarly for the maximum daily load, the total mass shall be calculated using the following equation:

$$\text{Load (lb/day)} = \frac{\text{Avg. discharge concentration (mg/L)}}{\text{Highest daily flow (MGD)}} \times 8.34$$

### **2.3.2 Composite Sample**

Composite samples shall, as a minimum, be composed of four or more discrete aliquots (samples) of equal volume and time collected in a 24-hour period. The aliquots shall be combined in a single container for analysis (simple composite). The time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours.

### **2.3.3 Whole Effluent Toxicity Testing**

In addition to the WET requirements in Part 2, the permittee shall conduct whole effluent toxicity sampling and testing in accordance with the following.

*Quality Assurance.* Quality assurance, instructions, and other recommendations and requirements are found in Section 4 of the test method manual previously cited. If either the reference toxicant or effluent toxicity tests do not meet the acceptability criteria in the test method manual, then the permittee must resample and retest within 14 days.

*Reporting of Test Results.* The permittee shall submit a laboratory report for all toxicity testing as an attachment to the DMR for the month in which the toxicity test was conducted.

The format for the laboratory report shall be consistent with the latest revision of Region VIII Acute Whole Effluent Reporting Form and shall include all chemical and physical data as specified. In addition the report shall include a copy of all results for effluent parameters monitored concurrently with the toxicity tests and progress reports on any TRE/TIE investigations required by this permit.

*Notification.* The permittee shall notify the DEQ (Water Protection Bureau) in writing within 14 days of failing a repeat WET test. This notification shall describe the steps the permittee has taken or will take to investigate, identify, and correct the causes of toxicity; the status of actions required by this permit; and schedule for actions not yet completed; or reasons no action has been taken.

### **2.3.4 Monitoring and Reporting Schedule**

Reporting periods begin and end on the first and last days of the calendar month, quarter, semi-annual period, or year. For example, if the reporting periods for a parameter are semiannual, the permittee must report results for monitoring conducted between January 1 and June 30 and between July 1 and December 31.

### **2.3.5 Discharge Monitoring Reports**

All monitoring results shall be summarized and reported on a Discharge Monitoring Report (DMR) form electronically via netDMR no later than the 28th day of the calendar month following the completed reporting period.

If no discharge occurs during the reporting period, the permittee shall report “No Discharge”.

NetDMR submissions and all other reports required herein shall be signed and certified in accordance with the “Signatory Requirement” of this permit (see Standard Conditions in Section 4.), and submitted to the DEQ and at the following addresses:

Montana Department of Environmental Quality  
Water Protection Bureau  
PO Box 200901  
Helena, Montana 59620-0901  
Phone: (406) 444-5546

### **2.3.6 Reporting of Non-quantified Analytical Results**

Compliance with numeric effluent limitations in this permit shall be determined as specified below. At minimum, analytical methods used by the permittee for compliance purposes, must achieve the required reporting value (RRV) specified in this permit. For analytical results which are not quantified, compliance is determined as follows.

(a) *Single values (i.e., instantaneous or a maximum daily limitations for which compliance is determined using a single sample):* For concentration-based limitations, a result of “less than” the RRV is considered in compliance. The discharge also would be considered in compliance with any mass-loading limitation derived from the same concentration-based limitation. The permittee must report the analytical reporting value (RRV) achieved and reported by the laboratory with a less than (“<”) symbol preceding the value. For mass-load limitations, the load should be calculated as given in Section 2.5.2 using the reported analytical value and reported with a less than (“<”) symbol preceding the value. If the permittee has not used a method that meets the specified RRV, the result is considered invalid.

(b) *Average values (i.e., average limitations that are based on multiple samples within a given time period):* For a result of “less than” the RRV, the permittee should calculate the average using the RRV to determine an average concentration or mass discharge and report the average on the Discharge Monitoring Report form with a less than (“<”) symbol. If required, the permittee must also report individual values in addition to the average following the procedures listed above for single values.

## **2.4 Notification Requirements**

Notification shall be provided to the DEQ (Water Protection Bureau) as soon as the permittee knows of, or has reason to believe any of the following conditions are applicable.

(a) That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

One hundred micrograms per liter (100 µg/l);

Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or

The level established by the DEQ in accordance with 40 CFR 122.44(f).

(b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

Five hundred micrograms per liter (500 µg/l);

One milligram per liter (1 mg/l) for antimony;

Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or the level established by the DEQ in accordance with 40 CFR 122.44(f).

### 3 SPECIAL CONDITIONS

The permittee shall comply with the special conditions described below.

#### 3.1 Toxicity Identification Evaluation / Toxicity Reduction Evaluation (TRE/TIE)

If chronic toxicity is confirmed in a repeat WET test required in Part 2, the permittee shall initiate a TRE using as guidance, based on the type of treatment facility, either EPA manual *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants* (EPA/833/B-99/002), 1999 or EPA manual *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070, 1989). In conjunction with the TRE, the permittee shall develop and implement a detailed work plan which shall include: further actions undertaken by the permittee to investigate, identify, and correct the causes of toxicity; actions the permittee will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and a schedule for these actions.

The permittee may initiate a Toxicity Identification Evaluation (TIE) as part of a TRE to identify the causes of toxicity using the same species and test method and as guidance, EPA test method manuals: *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures* (EPA/600/6-91/003, 1991); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); and *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Sampling Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993).

#### 3.2 Ground Water Monitoring for Temperature Limit Compliance

The permittee must design and implement a surface water temperature characterization study to establish baseline temperature relationships in the surface water upstream and downstream of the UIG (Outfall 001). Surface water temperatures must be monitored continuously, at minimum, at the following locations:

- Upstream of Outfall 001 on Sheep Creek and Coon Creek.
- Downstream of Outfall 001 on Sheep Creek and Coon Creek
- 100 feet downstream of the confluence of Sheep Creek and Coon Creek.
- Immediately upstream of any unnamed tributary that contributes flow to Sheep or Coon Creeks between the upstream and downstream monitoring locations on either Sheep or Coon Creeks.
- Immediately downstream of any unnamed tributary that contributes flow to Sheep or Coon Creeks between the upstream and downstream monitoring locations on either Sheep or Coon Creeks.
- Within any tributary that contributes flow to Sheep or Coon Creek between the upstream and downstream monitoring locations on those creeks.

The permittee must submit the monitoring plan at least 60 days prior to planned installation of the temperature monitoring stations and no later than 180 days after the permit effective date. The plan must provide for collection of baseline data to characterize the natural temperature relationship between the upgradient and downgradient temperatures in Sheep and Coon Creeks, prior to commencing any discharge at the UIG. DEQ recommends Tintina collect baseline temperature data prior to the construction and operation of the mine. The monitoring plan must be reviewed and approved by DEQ prior to commencing monitoring. The plan must include

provisions for submission of all monitoring data to DEQ on at least a quarterly basis and must account for seasonal variations in surface water temperature.

### **3.3 Best Management Practices and Pollution Prevention**

#### ***3.3.1 BMPs***

A number of sites and activities found at metal mining facilities require the implementation of BMPs to prevent the contamination of storm water. Implementation of BMPs are required not only for mineral extraction sites and material piles, but for discharges from roads accessing these sites. BMPs must be selected and implemented that address, at a minimum, the following areas:

- Good Housekeeping Practices;
- Minimizing Exposure;
- Erosion and Sediment Control; and
- Management of Runoff and Run-on.

An overview of the BMPs that are applicable to the facility (haul or access roads; pits or quarries; overburden, waste rock, and raw material piles; and reclamation activities) is discussed below. These BMPs are adapted from EPA's *Industrial Stormwater Fact Sheet, Sector G: Metal Mining (Ore Mining and Dressing) Facilities* (EPA-833-F-06-022, December 2006) and must be referenced and incorporated by the permittee into the facility's storm water pollution prevention plan (SWPPP).

EPA has identified a wide variety of BMPs to mitigate discharges of contaminants at mines. These controls to prevent erosion and control sedimentation are the most effective if they are installed at the inception of operations and maintained throughout active operations and reclamation of the site. The following categories describe the BMPs available for reducing pollutants in storm water discharges at metal mining facilities:

#### **Discharge Diversions**

Discharge diversions provide the first line of defense in preventing the contamination of discharges and subsequent contamination of receiving waters. Discharge diversions are temporary or permanent structures installed to divert flow, store flow, or limit storm water run-on and runoff. Diversion dikes, curbs, and berms are temporary or permanent diversion structures that prevent runoff from passing beyond a certain point, and divert runoff away from its intended path. Dikes, curbs, or berms may be used to surround and isolate areas of concern, diverting flow around piles of overburden, waste rock, and storage areas to minimize discharge contact with contaminated materials and to limit discharges of contaminated water from confined areas.

#### **Drainage/Storm Water Conveyance Systems**

Drainage or storm water conveyance systems can provide either a temporary or a permanent management practice which functions to channel water away from eroded or unstabilized areas, convey runoff without causing erosion, and/or carry discharges to more stabilized areas. The use of drainage systems as a permanent measure may be most appropriate in areas with extreme slopes, areas subject to high velocity runoff, and other areas where the establishment of

substantial vegetation is infeasible or impractical. Some examples of drainage/storm water conveyance systems include: channels or gutters; open top box culverts and waterbars; rolling dips and road sloping; roadway surface water deflector; and culverts. Drainage and conveyance systems should be inspected periodically for blockages and erosion. Erosion and/or sedimentation that compromise the ability of these structures to convey storm water should be addressed. Where blockage or erosion occurs, more frequent maintenance of these structures may be required.

### **Runoff Dispersion**

Drainage systems are most effective when used in conjunction with runoff dispersion devices designed to slow the flow of water discharged from a site. These devices also aid storm water infiltration into the soil and flow attenuation. Some examples of velocity dissipation devices include: check dams; rock outlet protection; level spreaders; serrated slopes and benched slopes; contouring; and drop structures.

### **Sediment Control and Collection**

Erosion and sediment controls limit movement and retain sediments, preventing transportation offsite. Several structural collection devices have been developed to remove sediment from runoff before it leaves the site. Several methods of removing sediment from site runoff involve diversion mechanisms previously discussed, supplemented by a trapping or storage device. Structural practices typically involve filtering diffuse storm water flows through temporary structures such as straw bale dikes, silt fences, brush barriers, or vegetated areas. Structural practices are typically low in cost. However, structural practices require periodic removal of sediment to remain functional. Several examples of sediment control and collection BMPs include: gabions, riprap, and native rock retaining walls; biotechnical stabilization; straw bale barrier; vegetated buffer strips; silt fence/filter fence; siltation berms; brush sediment barriers; sediment traps or catch basins; and sediment/settling ponds. Sediment ponds or traps located at final discharge points are designed to detain runoff from a 10-year, 24-hour precipitation event during active mining operations or achieve an effluent quality equivalent to that achieved after retention of the 10-year 24-hour event.

### **Vegetation Practices**

Vegetation practices involve establishing a sustainable ground cover by permanent seeding, mulching, sodding, and other such practices. A vegetative cover reduces the potential for erosion of a site by: absorbing the kinetic energy of raindrops which would otherwise impact soil; intercepting water so it can infiltrate into the ground instead of running off and carrying contaminated discharges; and by slowing the velocity of runoff to promote on-site deposition of sediment. These practices include: topsoiling; broadcast seeding and drill seeding; willow cutting establishment; plastic matting, plastic netting and erosion control blankets; mulch-straw or wood chips; and compaction. Given the limited capacity to accept large volumes of runoff and potential erosion problems associated with large concentrated flows, vegetative controls should typically be used in combination with other management practices. Reclaimed vegetative cover must be similar to pre-mining vegetative cover. Permanent vegetation cover appropriate for the site typically is established by the end of the third growing season following initial seeding, although the reclaimed plant community will continue to develop. From a hydrologic perspective the objective is 75 percent cover, including litter, which defines "good" hydrologic condition for runoff and sediment modeling purposes.

### **Capping**

Capping or sealing of waste materials is designed to prevent infiltration, as well as to limit contact between discharges and potential sources of contamination. Ultimately, capping should reduce or eliminate the contaminants in discharges. In addition, by reducing infiltration, the potential for seepage and leachate generation may also be lessened.

### **Treatment**

In some cases (e.g., low pH and/or high metals concentrations), BMPs and sediment and erosion controls may not be adequate to produce an acceptable quality of storm water discharge. Under those circumstances additional physical or chemical treatment systems may be necessary to protect the receiving waters. Treatment practices are those methods of control which normally are thought of as being applied at the "end of the pipe" to reduce the concentration of pollutants in storm water before it is discharged. This is in contrast to many BMPs, where the emphasis is on keeping the water from becoming contaminated. Treatment practices may be required where flows are currently being affected by exposed materials and other BMPs are insufficient to meet discharge goals. These practices are usually the most resource intensive as they often require significant construction costs and monitoring and maintenance on a frequent and regular basis.

### **Haul Roads and/or Access Roads**

Placement of haul roads or access roads should occur as far as possible from natural drainage areas, lakes, ponds, wetlands, or floodplains where soil will naturally be less stable for heavy vehicle traffic. If a haul road must be constructed near water, as little vegetation as possible should be removed from between the road and the waterway as vegetation is a useful buffer against erosion and is an efficient sediment collection mechanism. The width and grade of haul or access roads should be minimal and designed to match natural contours of the area. Construction of haul roads should be supplemented by BMPs that divert runoff from road surfaces, minimize erosion, and direct flow to appropriate channels for discharge to treatment areas or other well-stabilized areas.

### **Equipment/Vehicle Fueling and Maintenance**

Fueling and maintenance activities should be conducted indoors or under cover on an impermeable surface. Berms, curbs, or similar means should be used to ensure that storm water runoff from other parts of the facility does not flow over maintenance and fueling areas. Runoff from fueling and maintenance areas should be collected and treated or recycled. Proper waste management and spill prevention and response procedures must be implemented. Select good housekeeping procedures to minimize the amount of contaminated runoff generated (e.g. use dry cleanup methods, use drip pans, and drain parts of fluids before disposal). Conduct inspections of fueling areas to prevent problems before they occur.

### **Overburden, Waste Rock, and Raw Material Piles**

Overburden, topsoil, and waste rock, as well as raw material and intermediate and final product stockpiles, should be located away from surface waters, other sources of water, and from geologically unstable areas. In addition surface waters and storm water should be diverted around the piles. As many piles as possible should be revegetated (even if only on a temporary basis). At closure, remaining piles should be reclaimed.

### **Reclamation Activities**

When a mineral deposit is depleted and operations cease, a mine site must be reclaimed according to appropriate state or federal standards. Closure activities typically include restabilization of disturbed areas such as access or haul roads, pits or quarries, sedimentation ponds or work-out pits, and remaining waste piles. Overburden and topsoil stockpiles may be used to fill in a pit or quarry (where practical). Recontouring and revegetation should be performed to stabilize soils and prevent erosion. Major reclamation activities such as recontouring roads and filling in a pit or quarry can only be performed after operations have ceased. However, reclamation activities such as stabilization of banks, reseeding, and revegetation should be implemented in mined out portions or inactive areas of a site as active mining moves to new areas.

A combination of preventive and treatment BMPs will yield the most effective storm water management for minimizing the discharge of pollutants via storm water runoff. BMPs must also address preventive maintenance records or logbooks, regular facility inspections, spill prevention and response, and employee training. All BMPs require regular maintenance to function as intended. Some management measures have simple maintenance requirements, others are quite involved. BMPs must be regularly inspected to ensure they are operating properly, including during runoff events. As soon as a problem is found, action to resolve it should be initiated immediately.

The categories discussed above are not an exhaustive list of BMPs. The permittee may identify and implement any additional BMPs that minimize and/or eliminate the generation of pollutants and the potential discharge of pollutants into state waters through normal operations and ancillary activities. Additional guidance on BMPs is available in EPA's *Guidance Manual for Developing Best Management Practices* (EPA 833-B-93-004, October 1993) and the Forest Service's *National Best Management Practices for Water Quality Management on National Forest System Lands* (USDA, Forest Service, FS-990a, April 2012).

### ***3.3.2 Storm Water Management***

The permittee must develop, maintain, and implement a Storm Water Pollution Prevention Plan (SWPPP) that describes the facility, BMPs, control measures, and monitoring procedures that will ensure compliance with the terms and conditions of the MPDES permit. The BMPs implemented at the facility may be structural or non-structural in nature. The permittee must submit the SWPPP at least 90 days prior to the planned construction of Outfalls 002-014 or conversion of the outfalls under the construction permit (MTR107129) to industrial outfalls under this permit. The permittee must receive DEQ written approval of the SWPPP prior to construction or conversion of Outfalls 002-014. SWPPPs are intended to be maintained such that they are updated and adjusted to reflect current conditions, activities, and any storm water issues identified at the facility. The SWPPP and any updates must be maintained onsite. Periodic evaluation of the SWPPP (once per year minimum) and the ongoing improvements to the facility, as documented in the SWPPP, will serve to improve the quality of storm water runoff.

The SWPPP must contain a narrative evaluation of the appropriateness of storm water management practices that divert, infiltrate, reuse, or otherwise manage storm water runoff such as to reduce the discharge of pollutants. The SWPPP must document, at minimum, the following:

#### **Storm Water Pollution Prevention Team and SWPPP Administrator**

The permittee must identify the staff members that comprise the facility's storm water pollution prevention team, as well as their individual responsibilities. This team must include, and the SWPPP specify, a "SWPPP Administrator." The SWPPP Administrator is the lead responsible person for ensuring the development, implementation, and maintenance of the SWPPP. The SWPPP Administrator also serves as the primary contact person regarding the SWPPP. The facility's storm water pollution prevention team is responsible for assisting the facility manager in developing and revising the facility's SWPPP as well as maintaining control measures and taking corrective actions where required. Each member of the storm water pollution prevention team must have ready access to this permit and the SWPPP.

#### **Site Description**

The SWPPP must provide a description of the nature of the industrial activities at the facility. The SWPPP must document the mining and associated activities with the potential to impact the storm water discharges covered by this permit.

#### **Site Map**

The SWPPP must include a legible map(s) of sufficient scale which clearly shows current conditions including the following:

- Map scale;
- North arrow;
- The site boundaries for the facility or activity;
- Locations of all receiving waters in the immediate vicinity of the facility;
- The location and extent of structures and impervious surfaces;
- Directions of storm water flow (use arrows);
- Locations of all existing structural storm water control measures;
- Locations of all storm water conveyances including ditches, pipes, and swales;
- Locations of all storm water outfall and monitoring points;

- Locations of storm water inlets and outfalls, with a unique identification code for each outfall;
- Locations of potential pollutant sources;
- Locations where spills or leaks have occurred;
- Locations and descriptions of all non-storm water discharges;
- Locations and sources of run-on to the facility from adjacent property that contains pollutants; and
- Locations of the following activities where such activities are exposed to precipitation:
  - Fueling stations;
  - Vehicle and equipment maintenance and/or cleaning areas;
  - Loading/unloading areas;
  - Locations used for the treatment, storage, or disposal of wastes;
  - Liquid storage tanks;
  - Processing and storage areas;
  - Immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility;
  - Major permanent facility structures; transfer areas for substances in bulk; and
  - Machinery.

In addition to the above items, the SWPPP must document the locations of the following (as appropriate):

- Mining or milling site boundaries;
- Access and haul roads;
- Outline of the drainage areas of each storm water outfall within the facility with indications of the types of discharges from the drainage areas;
- Location(s) of all permitted discharges covered under an individual MPDES permit;
- Outdoor equipment storage, fueling, and maintenance areas;
- Materials handling areas;
- Outdoor manufacturing, outdoor storage, and material disposal areas;
- Outdoor chemicals and explosives storage areas;
- Overburden, materials, soils, or waste storage areas;
- Location of mine drainage (where water leaves the mine) or other process water;
- Tailings piles and ponds (including proposed ones);
- Heap leach pads; off-site points of discharge for mine drainage and process water;
- Surface waters;
- Boundary of tributary areas that are subject to effluent limitations guidelines; and
- Location(s) of reclaimed areas.

### **Summary of any Potential Pollutant Sources**

The permittee must document in the SWPPP areas at the facility where industrial materials or activities are exposed to storm water and from which allowable non-storm water discharges are released. Industrial materials or activities include, but are not limited to: material handling equipment or activities; industrial machinery; raw materials; industrial production and processes; and intermediate products, byproducts, final products, and waste products. Material handling activities include, but are not limited to: the storage, loading and unloading, transportation,

disposal, or conveyance of any raw material, intermediate product, final product or waste product. For each area identified, the description must include:

- A list of the industrial activities exposed to storm water (e.g., material storage; equipment fueling, maintenance, and cleaning);
- A list of the pollutant(s) or pollutant constituents (e.g. crankcase oil, zinc, sulfuric acid, and/or cleaning solvents) associated with each identified activity. The pollutant list must include materials that have been handled, treated, stored, or disposed, and that have been exposed to storm water in the 3 years prior to the date of the SWPPP; and
- Documentation of where potential spills and leaks may occur that might contribute pollutants to storm water discharges, and the corresponding outfall(s) potentially affected by such spills and leaks. The permittee must document spills and leaks of oil or toxic or hazardous pollutants that actually occurred at exposed areas or that drained to a storm water conveyance, in the 3 years prior to the date of the SWPPP.

Each facility component or system must be examined for its waste minimization opportunities and its potential for discharge to state waters due to equipment failure, improper operation, and natural phenomena. This examination must include, at a minimum, all normal operations and ancillary activities including (as appropriate) material storage areas, plant site runoff, in-plant transfer, process and material handling areas, loading or unloading operations, spillage or leaks, sludge and waste disposal, or drainage from raw material storage.

### **Description of Control Measures and BMPs**

The permittee must document in the SWPPP the location and types of control measures installed and implemented at the facility and describe how the control measure selection and design considerations were addressed. This documentation must describe how the control measures address both the pollutant sources identified and any storm water run-on that commingles with any discharges covered under this permit. Documentation of control measures must include design and maintenance criteria for permanent and temporary structural control measures (i.e. plans, detail drawings, cross-sections, specifications, narrative description, etc.) and an appropriate maintenance schedule. The selection, design, installation, and implementation of these control measures must be in accordance with good engineering practices and/or manufacturer's specifications, and the SWPPP should reference all source(s) used in BMP design, installation, implementation, and maintenance specifications (i.e. EPA, Montana Department of Transportation, or other BMP manuals). Note that the permittee may deviate from such manufacturer's specifications as long as the permittee provides justification for any deviation and includes documentation of the rationale in the part of the SWPPP that describes control measures. In addition, any other requirements for other programs or permitting activities which would meet the SWPPP requirements may be incorporated. If the permittee finds that any control measures are not achieving their intended effect of minimizing pollutant discharges, then the permittee must modify these control measures as expeditiously as practicable.

Control measures that must be documented in the SWPPP and implemented by the permittee must, at a minimum, include:

- Good Housekeeping Procedures. Keep clean all exposed areas that are potential sources of pollutants using such measures as sweeping at regular intervals, keeping materials orderly and labeled, and storing materials in appropriate containers.
- Maintenance. Regularly inspect, test, maintain, and repair all industrial equipment and systems to avoid situations that may result in leaks, spills, and other releases of pollutants in storm water discharged to receiving waters. All control measures that are used to achieve the effluent limits required by this permit must be maintained in effective operating condition. Non-structural control measures must also be diligently maintained (e.g., spill response supplies available and personnel appropriately trained). If control measures need to be replaced or repaired, then the permittee must make the necessary repairs or modifications before the next storm event.
- Spill Prevention and Response Procedures. Minimize the potential for leaks, spills and other releases that may be exposed to storm water and develop plans for effective response to such spills if or when they occur. At a minimum, the SWPPP must document and the permittee must implement the following:
  - Procedures for plainly labeling containers (e.g., “Used Oil,” “Spent Solvents,” “Fertilizers and Pesticides,” etc.) that may be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;
  - Preventative measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling;
  - Procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. Employees who may cause, detect, or respond to a spill or leak must be trained in these procedures and have necessary spill response equipment available; and
  - Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies.
- Erosion and Sediment Controls. The permittee must stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants. Among other actions, flow velocity dissipation devices must be placed at discharge locations and within outfall channels where necessary to reduce erosion and/or settle out pollutants. In selecting, designing, installing, and implementing appropriate control measures, the permittee is encouraged to consult with available guidance resources relating to BMPs for erosion and sedimentation, including industrial sector-specific information.
- Management of Runoff. The permittee must divert, infiltrate, reuse, contain, or otherwise reduce storm water runoff, to minimize pollutants in any discharges. In selecting, designing, installing, and implementing appropriate control measures, the permittee is encouraged to consult with available guidance resources relating to storm water BMPs for runoff management, including industrial sector-specific information.

Additionally, the permittee must address and implement the following in their SWPPP:

- The number and quantity of pollutants and the toxicity of effluent generated, discharged, or potentially discharged at the facility must be minimized by the permittee to the extent feasible by managing each influent waste stream in the most appropriate manner;
- Storm water control measures must be designed, operated, and maintained to maximize the chemical and/or physical processes that reduce or eliminate the discharge of any pollutants to state surface waters;

- Sediment ponds must be clearly staked to indicate sediment accumulation;
- The permittee must ensure proper operation and maintenance of any control and/or discharge structures;
- To the maximum extent possible, 100-foot setbacks or 35-foot vegetated buffer strips between roads and/or other impervious surfaces and any downgradient surface waters or other conduits to surface waters will be established and/or maintained;
- Where experience indicates a reasonable potential for equipment failure (e.g., a tank overflow or leakage), natural condition (e.g., precipitation), or other circumstances that may result in significant amounts of pollutants reaching state waters, the SWPPP should include a prediction of the direction, rate of flow and total quantity of pollutants that could be discharged from the facility as a result of each condition or circumstance;
- The permittee must take into account and control sediment from snow plowed or sediment removed from the mine, ancillary facilities, and roads;
- The permittee must avoid the sidecasting of soils or snow. The sidecasting of road material is prohibited on road segments within or abutting Riparian Habitat Conservation Areas in priority watersheds; and
- Discharges to frozen or snow-covered ground must be minimized or eliminated.

### **Any Schedules and/or Standard Operating Procedures**

The SWPPP must document any control measure inspections, routine maintenance, and/or procedures that impact the potential generation and/or discharge of pollutants by the facility. The permittee must conduct a facility inspection once every 30 days and within 24 hours of a significant precipitation event of 0.5 inches or greater. At a minimum, the documentation of each routine facility inspection must include the following:

- The inspection date and time;
- The name(s) and signature(s) of the inspector(s);
- Weather information;
- A description of any discharges occurring at the time of the inspection;
- Any previously unidentified discharges of pollutants from the site;
- Any observations of obvious indicators of storm water pollution;
- Any control measures needing maintenance or repairs;
- Any failed control measures that need replacement;
- Any incidents of noncompliance observed; and
- Any additional control measures needed to comply with the permit requirements.

An inspection for a significant storm event may also be used and credited towards one of the monthly inspections.

### **Corrective Actions**

If any of the following conditions occur, the permittee must review and revise the selection, design, installation, implementation, and maintenance of the facility's control measures to ensure that the condition is eliminated and will not be repeated in the future:

- An unauthorized release or discharge (e.g., spill, leak, or discharge of non-storm water not authorized by this or another MPDES permit) occurs at the facility;

- The permittee become aware, or DEQ determines, that the control measures are not stringent enough for the discharge to meet applicable water quality standards;
- An inspection or evaluation of the facility by a DEQ representative determines that modifications to the control measures are necessary to meet the non-numeric effluent limits in this permit; or
- An inspection finds that the control measures are not being properly operated and maintained.

### **Corrective Action Deadlines**

If an inspection or other observation identifies storm water pollution or control measures needing repair or replacement, the permittee must document these conditions within 24 hours of making such discovery. Subsequently, within 14 days of such discovery, the permittee must document any corrective actions taken or needed, any further investigation of the deficiency, or the basis for determining that no further action is needed. If the permittee determines that any changes are necessary following the review, any modifications to the control measures must be made before the next storm event if possible, or as soon as practicable following that storm event. The permittee must document the following:

- A summary of any corrective actions taken;
- Notice of whether any SWPPP modifications are required;
- The date any corrective action was initiated; and
- The date that the corrective action was completed.

These time intervals are not grace periods but are schedules considered reasonable for documenting any findings and for making necessary repairs and improvements. They are included in this permit to ensure that the conditions prompting the need for these repairs and improvements are not allowed to persist indefinitely.

### **Effect of Corrective Action**

If the event triggering the corrective action review is a permit violation then correcting it does not remove the original violation. Additionally, failing to take corrective action in accordance with this section is an additional permit violation. DEQ will consider the appropriateness and promptness of corrective action in determining potential enforcement responses to permit violations.

### **Employee Training**

The SWPPP Administrator must ensure all employees receive in-house training, including all members of the pollution prevention team who work in areas where industrial materials or activities are exposed to storm water, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel). Training must cover both the specific control measures used to achieve the effluent limits in this permit and the monitoring, inspection, planning, reporting, and documentation requirements in other parts of this permit. Training must be conducted at least annually at a minimum and the date of the training and employees in attendance must be documented.

## **SWPPP Modifications and Updates**

The SWPPP must be maintained and kept up-to-date to reflect current site conditions. If construction or a change in the design, operation, or maintenance at the facility either changes the nature of pollutants discharged in storm water from the facility, or increases the quantity of pollutants discharged, then the permittee must review the selection, design, installation, implementation, and maintenance of the facility's control measures to determine if any modifications to the SWPPP are necessary. Any SWPPP modification or update must be signed by a responsible corporate official as specified in ARM 17.30.1323.

The permittee is required to operate, build, and maintain the facility and storm water practices as identified in their SWPPP. The permittee may adjust or change the control measures used to improve storm water retention and treatment. This flexibility allows the permittee to adjust practices as necessary to ensure continued compliance with the permit. The SWPPP must be kept up-to-date to document any changes in BMPs, control measures, or corrective actions. Any changes to the SWPPP must be submitted to DEQ within 30 days for review. The approved SWPPP must be publicly available on the company's website.

### **3.4 Permit Modifications**

If necessary, this permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedules in accordance with the provisions of ARM 17.30.1361. Specific causes for reopening and modifying this permit include those described below.

#### ***3.4.1 Toxic Pollutants***

This permit may be reopened and modified if a toxic standard or prohibition is established under Clean Water Act section 307(a) for a toxic pollutant that is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit.

#### ***3.4.2 TIE/TRE Results***

Based on the results of whole effluent toxicity testing and a toxicity identification evaluation (TIE) / toxicity reduction evaluation (TRE) conducted by the permittee, this permit may be reopened and modified to incorporate any additional WET or parameter-specific numeric limitations, a modified compliance schedule for WET limitations, if judged necessary by the DEQ, or a modified whole effluent toxicity protocol.

## **4 STANDARD CONDITIONS**

The permittee shall meet the following standard conditions.

### **4.1 Duty to Comply**

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Montana Water Quality Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

The Montana Water Quality Act at MCA 75-5-631 provides that in an action initiated by the DEQ to collect civil penalties against a person who is found to have violated a permit condition, the person is subject to a civil penalty not to exceed \$25,000. Each day of violation constitutes a separate violation.

MCA 75-5-632 provides that any person who willfully or negligently violates a prohibition or permit condition is subject, upon conviction, to criminal penalties not to exceed \$25,000 per day or one year in prison, or both, for the first conviction, and \$50,000 per day of violation or by imprisonment for not more than two years, or both, for subsequent convictions.

MCA 75-5-611(9)(a) also provides for administrative penalties not to exceed \$10,000 for each day of violation and up to a maximum not to exceed \$100,000 for any related series of violations

### **4.2 Duty to Reapply**

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must first apply for and obtain a new permit. In accordance with ARM 17.30.1322(4), the application must be submitted at least 180 days before the expiration date of this permit.

### **4.3 Need to Halt or Reduce Activity Not a Defense**

It may not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

### **4.4 Duty to Mitigate**

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

#### **4.5 Proper Operation and Maintenance**

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

#### **4.6 Permit Actions**

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

#### **4.7 Property Rights**

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.

#### **4.8 Duty to Provide Information**

The permittee shall furnish to the DEQ, within a reasonable time, any information that the DEQ may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the DEQ, upon request, copies of records required to be kept by this permit.

#### **4.9 Inspection and Entry**

The permittee shall allow the head of the DEQ, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

- (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit.
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.
- (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.
- (d) Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Montana Water Quality Act, any substances or parameters at any location.

#### **4.10 Monitoring and Records**

The permittee shall comply with the following conditions.

#### ***4.10.1 Representative Sample***

Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity.

#### ***4.10.2 Retention of Records***

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application.

#### ***4.10.3 Records Contents***

Records of monitoring information must include:

- (a) The date, exact place, and time of sampling or measurements.
- (b) The individual(s) who performed the sampling or measurements.
- (c) The date(s) analyses were performed.
- (d) The individual(s) who performed the analyses.
- (e) The analytical techniques or methods used.
- (f) The results of such analyses.

#### ***4.10.4 Test Procedures***

Monitoring must be conducted according to test procedures approved under Title 40 of the Code of Federal Regulations (40 CFR) Part 136, unless other test procedures have been specified in this permit.

#### ***4.10.5 Falsification and Tampering***

The Montana Water Quality Act at MCA 75-5-633 provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$25,000, or by imprisonment for not more than six months, or by both.

### **4.11 Signatory Requirement**

All applications, reports or information submitted to the DEQ shall be signed and certified. (See ARM 17.30.1323.)

- (a) For a corporation, the application must be signed by a responsible corporate officer, which means: a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or, the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980

dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

- (b) For a partnership or sole proprietorship, by a general partner or the proprietor, respectively.
- (c) For a municipality, state, federal, or other public agency, by either a principal executive officer or ranking elected official. A principal executive office of a federal agency includes: the chief executive officer of the agency; or, a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

**Authorized representatives.** All reports required by the permit and other information requested by the DEQ shall be signed by a person described above or by a duly authorized representative of that person. A person is considered a duly authorized representative only if:

- (a) The authorization is made in writing by a person described above.
- (b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters (a duly authorized representative may thus be either a named individual or an individual occupying a named position).
- (c) The written authorization is submitted to the DEQ.

**Changes to authorization.** If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements above must be submitted to the DEQ prior to or together with any reports, information, or applications to be signed by an authorized representative.

**Certification.** Any person signing a document under this section shall make the following certification:

*"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

## 4.12 Reporting Requirements

The permittee shall comply with the reporting requirements identified in this Section.

#### ***4.12.1 Planned Changes***

The permittee shall give notice to the DEQ as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

- (a) The alteration or addition to the permitted facility may meet one of the criteria for determining whether a facility is a new source under ARM 17.30.1340(2).
- (b) The alteration or addition could significantly change the nature or increase the quantity of pollutant discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements under ARM 17.30.1343(1)(a).

#### ***4.12.2 Anticipated Noncompliance***

The permittee shall give advance notice to the DEQ of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

#### ***4.12.3 Transfers***

This permit is not transferable to any person except after notice to the DEQ. The DEQ may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Montana Water Quality Act. (See ARM 17.30.1360; in some cases, modification or revocation and reissuance is mandatory.)

In accordance with ARM 17.30.1360(2), this permit may be automatically transferred to a new permittee if:

- (a) The current permittee notifies the DEQ at least 30 days in advance of the proposed transfer date.
- (b) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them.
- (c) The DEQ does not notify the existing permittee and the proposed new permittee of an intent to revoke or modify and reissue the permit. A modification may also be a minor modification under ARM 17.30.1362. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned above.

#### ***4.12.4 Monitoring Reports***

Monitoring results shall be reported at the intervals specified in this permit.

Monitoring results must be reported on a Discharge Monitoring Report (DMR) form via netDMR.

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report.

Calculations for all limitations that require averaging of measurements must use an arithmetic mean unless otherwise specified by the DEQ in the permit.

#### ***4.12.5 Compliance Schedules***

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be postmarked no later than 14 days following each schedule date.

#### ***4.12.6 Twenty-four Hour Reporting***

The permittee shall report any noncompliance that might endanger health or the environment. Any information must be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:

- (a) A description of the noncompliance and its cause;
- (b) The period of noncompliance, including exact dates and times;
- (c) The estimated time noncompliance is expected to continue if it has not been corrected.
- (d) Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The following are included as information that must be reported within 24 hours under this provision:

- (a) Any unanticipated bypass that exceeds any effluent limitation in the permit of this permit (see ARM 17.30.1342(7) and “Bypass” below);
- (b) Any upset that exceeds any effluent limitation in the permit (see “Upset” below).
- (c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the DEQ in this permit to be reported within 24 hours (see ARM 17.30.1344 and 40 CFR 122.44(g)).

**Oral notification.** The report shall be made orally to the Water Protection Bureau at (406) 444-5546.

**Waiver of written notification requirement.** The DEQ may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Water Protection Bureau, by phone, (406) 444-5546. Written reports shall be submitted to the following address:

Montana Department of Environmental Quality  
Water Protection Bureau  
PO Box 200901  
Helena, Montana 59620-0901

#### **4.12.7 Other Noncompliance**

Instances of noncompliance not required to be reported within 24 hours shall be reported at the time monitoring reports are submitted. The reports shall contain the information listed above for written submissions under “Reporting Requirements—Twenty-four Hour Reporting.”

#### **4.12.8 Other Information**

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the DEQ, it shall promptly submit such facts or information.

### **4.13 Bypass**

#### **Definitions.**

- a) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.
- b) *Severe property damage* means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent damage to natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

**Bypass Not Exceeding Limitations.** The permittee may allow any bypass to occur that does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions under “Notice” and “Prohibition of Bypass” below.

#### **Notice.**

- (a) *Anticipated Bypass:* If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of the bypass.
- (b) *Unanticipated Bypass.* The permittee shall submit notice of an unanticipated bypass as required under “Reporting Requirements—Twenty-four Hour Reporting” above.

**Prohibition of Bypass.** Bypass is prohibited and the DEQ may take enforcement action against a permittee for a bypass, unless:

- (a) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage.
- (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance.
- (c) The permittee submitted notices as required above.

#### 4.14 Upset

**Definition.** *Upset* means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

**Effect of an upset.** An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements outlined below under “Conditions Necessary for Demonstration of an Upset” below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

**Conditions Necessary for a Demonstration of Upset.** A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- An upset occurred and that the permittee can identify the cause(s) of the upset;
- The permitted facility was at the time being properly operated;
- The permittee submitted notice of the upset as required under “Reporting Requirements—Twenty-four Hour Reporting” above and
- The permittee complied with any remedial measures required under “Duty to Mitigate” above.

**Burden of proof.** In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

#### 4.15 Fees

The permittee is required to submit payment of an annual fee as set forth in ARM 17.30.201

## 5 DEFINITIONS AND ABBREVIATIONS

The following definitions and abbreviations apply to terms used in this permit.

### 5.1 General Definitions and Abbreviations

“Act” means the Montana Water Quality Act, Title 75, chapter 5, MCA.

“Arithmetic mean” or “arithmetic average” for any set of related values means the summation of the individual values divided by the number of individual values.

“Average monthly limitation” means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

“BOD<sub>5</sub>” means the five-day measure of pollutant parameter biochemical oxygen demand.

“CBOD<sub>5</sub>” means the five-day measure of pollutant parameter carbonaceous biochemical oxygen demand.

“CFR” means the Code of Federal Regulations.

“Chronic toxicity” occurs when, during a chronic toxicity test, the 25% inhibition concentration (IC<sub>25</sub>) for any tested species is less than or equal to the percent effluent represented by the effluent concentration in the receiving water after accounting for any allowable mixing zone.

“Clean Water Act” means the federal legislation at 33 USC 1251, et seq.

“Composite samples” means a sample composed of two or more discrete aliquots.

“Daily discharge” means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the day.

“Department” means the Montana Department of Environmental Quality (MDEQ). Established by 2-15-3501, MCA.

“Director” means the Director of the Montana Department of Environmental Quality.

“Discharge” means the discharge of a pollutant.

“Discharge of a pollutant” and “discharge of pollutants” each means any additional of any pollutant or combination of pollutants into state waters from any point source. This definition includes additions of pollutants into water of the state from: surface runoff which is collected or

channeled by man; discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other person which do not lead to a treatment works. This term does not include an addition of pollutants by any "indirect discharger."

"EPA" or "USEPA" means the United States Environmental Protection Agency.

"Grab sample" means a sample that is taken from a waste stream on a one-time basis without consideration of flow rate of the effluent or without consideration for time.

"Instantaneous measurement" means a single reading, observation, or measurement.

"Lethal Concentration, 50 Percent (LC50) means the toxic or effluent concentration that would cause death in 50 percent of the test organisms over a specified period of time.

"Maximum Daily Limit" means the highest allowable discharge of a pollutant during a calendar day. Expressed as units of mass, the daily discharge is cumulative mass discharged over the course of the day. Expressed as a concentration, it is the arithmetic average of all measurements taken that day.

"Method Detection Level" (MDL) is defined at 40 CFR 136, Appendix B.

"Minimum Level" (ML) of quantitation means the lowest level at which the entire analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all method specific sample weights, volumes and processing step have been followed. The ML may be equivalent to the Required Reporting Value (RRV) unless otherwise specified in the permit.

"Mixing zone" means a limited area or volume of a water body where initial dilution of a discharge takes place and where certain numeric water quality standards may be exceeded.

"Outfall" means the place where a point source discharges effluent into the receiving water. For each outfall, there typically is at least one monitoring location. Although the monitoring location might or might not be at the actual point of discharge, samples taken at the monitoring location should be representative of the discharge.

"Process Wastewater" means water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by product, or waste product.

"State Waters" is defined at 75-5-103, MCA.

"Toxicity Identification Evaluation" (TIE) is a set of site-specific procedures used to identify the specific chemical(s) causing effluent toxicity.

"TMDL" means the total maximum daily load limitation of a parameter, representing the estimated assimilative capacity for a water body before other designated uses are adversely

affected. Mathematically, it is the sum of wasteload allocations for point sources, load allocations for non-point and natural background sources, and a margin of safety.

“Toxicity Reduction Evaluation” (TRE) means a site-specific study conducted in a step-wise process to identify the causative agents of effluent toxicity, isolate the source of the toxicity, evaluate the effectiveness of the toxicity control options, and then confirm the reduction in effluent toxicity after the control measures are put in place.

“TSS” means the pollutant parameter total suspended solids.

“Whole Effluent Toxicity” (WET) means the aggregate toxicity of an effluent measured by a toxicity test.

## **5.2 Specialized Definitions and Abbreviations**

“Active mining area” is a place where work or other activity related to the extraction, removal, or recovery of metal ore is being conducted, except, with respect to surface mines, any area of land on or in which grading has been completed to return the earth to desired contour and reclamation work has begun.

“Annual precipitation” and “annual evaporation” are the mean annual precipitation and mean annual lake evaporation, respectively., as established by the U.S. Department of Commerce, Environmental Science Services Administration, Environmental Data Services, or equivalent regional rainfall and evaporation data.

“Appropriate treatment of the recycle water” includes but is not limited to pH adjustment, settling and pH adjustment, settling, and mixed media filtration.

“Mill” is a preparation facility within which the metal ore is cleaned, concentrate, or otherwise processed before it is shipped to the customer, refiner, smelter, or manufacturer. A mill includes all ancillary operations and structures necessary to clean, concentrate or otherwise process metal ore, such as ore and gangue storage areas and loading facilities.

“Mine” is an active mining area, including all land and property placed under, or above the surface of such land, used in or resulting from the work of extracting metal ore or minerals from their natural deposits by and means or method, including secondary recovery of metal ore from refuse or other storage piles, wastes, or rock dumps and mill tailings derived from the mining, cleaning, or concentration of metal ores.

“Mine Drainage” means any water drained, pumped, or siphoned from a mine.

“Ten (10)-year, 24-hour precipitation event” is the maximum 24-hour precipitation event with a probable recurrence interval of once in 10 years as established by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, or equivalent regional rainfall probability information.