United States Department of Agriculture
Forest Service
Rio Grande National Forest
Divide Ranger District
13308 West Highway 160
Del Norte, CO 81132
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http://www.fs.fed.us/r2/riogrande

File Code: 2800
Date: November 08, 2023

Rio Grande Silver
Attn: Randy McClure
PO Box 610
Creede, Colorado 81130

Dear Randy McClure:

I received your proposed modification to the 2011 Plan of Operations (POO) amendment for underground exploration at the Bulldog Mine. A review was completed by specialists on the Forest and no concerns were raised with moving the discharge location within Windy Gulch. I have determined that further environmental analysis will not be required, and the scope of the modification was analyzed in the original POO. This letter serves as approval from the Forest Service for the proposed modification as written.

If you have any questions or wish to discuss, please email Daryl Kohut at Daryl.Kohut@usda.gov.

Sincerely,

Patrick J Moran
District Ranger

cc. Daryl Kohut
Lucas West

RIO GRANDE SILVER, INC.

June 30, 2023

Prepared for:

USDA Forest Service
Rio Grande National Forest
Divide Ranger District
13308 West Highway 160
Del Norte, Colorado 81132

Modification to the 2011 Plan of Operations Amendment
Underground Exploration at the Bulldog Mine

Prepared by:

Rio Grande Silver, Inc.
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Creede, Colorado 81130

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LIST OF ATTACHMENTS

1.0 INTRODUCTION

Rio Grande Silver (RGS) has prepared this Modification to the October 2011 approvals from the Forest Service in the 2011 Plan of Operations Amendment – Underground Exploration (2011 POO), section 5.0 GROUNDWATER HANDLING and the 2012 Plan of Operations – Underground Exploration and Development Program (2012 POO), section 6.0 GROUNDWATER HANDLING AND TREATMENT that are part of the 2024 planned water management work in the Bulldog Mine to allow access for rehabilitation, resource confirmation and exploration activities.

2.0 BACKGROUND

The Bulldog underground development has two (2) distinct groundwaters that have to be managed in order to conduct underground work.

1) The Upper Mine Pool (meteoric) in the 9360 Level adit. Pool elevation of 9,382 ft.

2) Lower Mine Pool (submerged zone). Pool elevation of 9,230 ft elevation.

This Modification addresses the Upper Mine Pool only.

The 2011 POO was developed to address underground dewatering, rehabilitation, resource confirmation and exploration work above the Submerged Zone in the 9360 Level development. This work is required and will be the first step in determining if the Bulldog Resource will be economic for future mining and milling.

Homestake Mining Company developed the 9360 Level in the 1960s on a 1% incline to allow surface/meteoric water that infiltrates into the tunnel to drain to the surface. Historically, adit discharge rates ranged from 10 to 30 gpm, with the majority originating from the contact between the Creede and Campbell Mountain Formations approximately 1,000 feet back from the 9360 Level Portal.

During Reclamation activities, Homestake placed a hydraulic plug in the 9360 Level approximately 135 feet from the portal, eliminating discharge to the surface. The surface/meteoric water now backs up behind the hydraulic plug in the 9360 Level, creating the Upper Mine Pool.

RGS constructed a new access to the historic 9360 Level development in 2012/2013. The new access is a -1% decline that starts at an elevation of 9,400 feet and parallels the 9360 Level for 1,700 feet where it intersects with the 9360 Level. The 9400 Level decline was designed so that there is no discharge to the surface and remains dry at all times allowing access to the intersection with the 9360 Level. The surface/meteoric water encountered during the decline construction and to dewater the 9360 Level for a short periods of time in 2013 and 2022 was managed by trucking water to lined holding (evaporation) ponds. Refer to 5.0 GROUNDWATER HANDLING in the 2011 POO Amendment and the approved May 18, 2022 Modification to the 2011 POO.

Currently there is no access to the 9360 Level development beyond the intersection with the 9400 Level Decline as the 9360 Level is full of water beyond the intersection.

3.0 MODIFICATION – Variation to the Approved 2011 Plan of Operations Amendment Underground Exploration at the Bulldog Mine (2011 POO)

In order to access the 9360 Level development for rehabilitation, resource confirmation and exploration, RGS must first dewater the Upper Mine Pool in the 9360 Level adit and maintain the dewatering during these activities. This work is necessary to assess the potential for future mining and milling. Depending on the results of this phase of work RGS will evaluate further exploration and development activities in the lower workings in the Submerged Zone detailed in the 2012 POO.

RGS is proposing to treat and discharge the Bulldog Upper Mine Pool water directly into Windy Gulch to keep the level dry allowing for rehabilitation, resource confirmation and exploration work for an initial 5 years. This will require constructing a 4 inch HDPE surface discharge pipeline.
The discharge pipeline will exit the 9400 Portal and run for approximately 220 feet to the Proposed Discharge Point 001. 175 feet of the proposed discharge pipeline will be on the currently permitted 9400 Waste Rock Storage Area. 45 feet of the proposed discharge pipeline will be on previously disturbed and reclaimed USFS ground. The portion of the pipeline that crosses the 9400 Portal Pad will be buried to allow equipment and activities to occur without damaging the pipeline. The remainder of the pipeline will be on the surface with no new disturbance. The proposed discharge pipeline will convey the treated effluent directly into a buried bypass culvert installed by Homestake Mining Company during reclamation in the mid-1990s. The bypass culvert runs approximately 1,200 feet along the historic waste rock pile, down Windy Gulch, where the treated effluent will then flow to the surface.
See **ATTACHMENT 1 - 9400L Portal Area** and **ATTACHMENT 1A – Discharge Pipeline Engineering (Pending).**

Water treatment and discharge is proposed as an alternative to dewatering by trucking water to the evaporation ponds for two main reasons:

1) Evaporating the water is 100% consumptive and a waste of water that could be conserved. The treated effluent is expected to infiltrate into the ground shortly after being discharged to the surface.
2) Trucking creates safety, traffic control and dust considerations during the summer months and is less feasible during the winter months.

Discharging the treated water into Windy Gulch will have an approximate evaporation loss of 5%, conserving water as determined by the Davis Engineering evaporation test.
See ATTACHMENT 3 – Evaporation Test.

4.0 WATER QUALITY

RGS contracted Water Tectonics to conduct bench testing on the Bulldog Upper Mine Pool water and design a water treatment system to meet the Windy Gulch and Willow Creek site-specific ambient water quality standards. Water Tectonics completed the testing in May 2023. See **ATTACHMENT 4-Bulldog Mine Treatment Summary** (Includes water quality analytical results of final effluent). The final effluent meets all of the Windy Gulch and Willow Creek site-specific ambient water quality standards. Bulldog Upper Mine Pool water quality results prior to treatment are shown in **ATTACHMENT 5-Bulldog Upper Mine Pool WQ Data**.

The SeaCrest Group conducted Whole Effluent Toxicity Testing on the final effluent. The tests concluded there was no statistically significant toxicity to the test species.
See **ATTACHMENT 6-Whole Effluent Toxicity Testing.**

RGS is planning to submit an APPLICATION FOR DISCHARGES ASSOCIATED WITH HARDROCK MINING/MILLING to the Colorado Department of Public Health and Environment. Once the permit is approved, it will be active for 5 years. Water treatment and discharge is expected to begin in 2024 and be continuous throughout the rehabilitation, resource confirmation and exploration work.

The water treatment equipment will be located 1,700 feet underground in the 9400 Level Decline. A pipeline will convey the treated effluent to the Proposed Water Discharge Point 001 directly into Windy gulch. See **ATTACHMENT 2 - Bulldog Site Map**.

Average surface/meteoric inflows into the Bulldog 9360 Level Upper Mine Pool average 12 to 15 gpm with seasonal variability up to 50 gpm. Treated effluent outflow is expected to average the same as the inflow with the same seasonal variability.

Thank you for your review and consideration. Please let me know if you have questions or need additional information.

Regards,

Randy McClure

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