Copperstone Gold Mine
Aquifer Protection Permit No. P-106172
Place ID 138107, LTF No. 94768
Significant Amendment

I. Introduction:

The Arizona Department of Environmental Quality (ADEQ) proposes to issue an Aquifer Protection Permit (APP) for the subject facility that covers the life of the facility, including operational, closure, and post-closure periods unless suspended or revoked pursuant to Arizona Administrative Code (A.A.C.) R18-9-A213. The requirements contained in this permit will allow the permittee to comply with the two key requirements of the Aquifer Protection Program: 1) meet Aquifer Water Quality Standards (AWQS) at the Point of Compliance (POC); and 2) demonstrate Best Available Demonstrated Control Technology (BADCT). BADCT's purpose is to employ engineering controls, processes, operating methods or other alternatives, including site-specific characteristics (i.e., the local subsurface geology), to reduce discharge of pollutants to the greatest degree achievable before they reach the aquifer or to prevent pollutants from reaching the aquifer.

II. Permittee

Bonanza Explorations Inc.

III. Facility Name & Location:

Copperstone Gold Mine
Arizona Route 95N, Milepost 121.5
Quartzsite, Arizona 85346
La Paz County

IV. Facility Description:

Bonanza Exploration Inc. (Bonanza) will operate the Copperstone Mine as an underground mining operation. The proposed operations will be within the limits of the previous mine operations by Cyprus Minerals, and will not extend onto areas of undisturbed land, and the existing facilities previously operated by Cyprus Minerals will remained closed.

The proposed project will use conventional underground mining techniques and will utilize the existing open decline located near the bottom of the open pit. Ore will be milled then processed in a whole ore leaching process which includes cyanide leach and gold, copper and silver recovery processes conducted completely within tanks. The new Evaporation/Infiltration Basin will receive direct precipitation as well as water pumped from the underground mine workings which recirculates the water between the basin and the mine dewatering operation

V. Amendment Description:

ADEQ has reviewed and approved the following under the significant amendment:

- Addition of Table of Contents
- Addition of Table of Tables
- Update of Table numbers throughout the permit

- Addition of a new Point of Compliance, 18-18A-01, and associated compliance monitoring tables 16 and 17
- Revision of Table 2: Points of Compliance (POC) to reflect current and planned POCs.
- Revision of Fluoride AQLs based on results of long-term monitoring
- Correction of Ethylbenzene standards listed in the permit Tables 13 and 15
- Addition of permit sections 2.5.4.2 through 2.5.4.5 regarding alert level calculations
- Addition of Compliance Schedule Items 3.4 through 3.6
- Addition of Table 16 and 17 to references of compliance monitoring throughout the permit
- Formatting adjustments
- Removal of double-space artifacts from original permit
- Update of permittee address
- Update of site contact information
- Removal of original CSI #3.3 based on Parker Basin Fluoride Study received August 2021
- Insertion of CSI #3.3 regarding the ambient monitoring required at the new POC, 18-18A-01

VI. Regulatory Status

The facility was most recently inspected in June of 2022, during which discrepancies were found in the facility's recordkeeping and in the site's lined impoundment at the tailings storage facility. Data gaps and past non-submittals of sample data were caused by unknown factors at the facility including staff turnover. All data since June of 2018 has been submitted to ADEQ. A breach in the liner was found during the June 2022 inspection. The breach was repaired by the permittee and the associated NOV was closed on April 17, 2023.

VII. Best Available Demonstrated Control Technology (BADCT):

The BADCT demonstrations for the existing facilities at the site were previously approved and will not change in Section 4.1, Table 8. The discharge from the new whole ore leach process will be treated prior to discharge to the tailings impoundment to decrease the sodium cyanide (NaCN) concentration to no more than 50 ppm. The high density polyethylene (HDPE) liner material used to construct the tailings impoundment is compatible with NaCN.

VIII. Compliance with Aquifer Water Quality Standards (AWQS):

The facility has demonstrated that potential pollutants discharged from the discharging facilities in Sections 2.1.1, 2.1.2, 2.1.3, 2.1.4 or 2.1.5 of the permit will not cause or contribute to a violation of the AWQS at the applicable POC and that no pollutants discharged will further degrade at the applicable POC the quality of any aquifer that at the time of issuance of this amendment violates the aquifer quality standard for that pollutant.

Two (2) POC wells are currently installed at the facility, but ongoing monitoring has indicated a change in the direction of the groundwater gradient. 18-18A-01 lies in an area unable to facilitate well installation, but the open borehole yields sufficient flow for sample collection and is located

downgradient of discharging facilities based on piezometric data submitted with the amendment application.

Well Number	Location Description	Latitude	Longitude	ADWR #	Screen Interval
Current[1]					
POC-1	Approximately 1400 ft. south of the proposed infiltration basin	33° 51' 55.62" N	114° 17' 44.39" W	55-221264	520-550 ft. bgs
POC-2	Approximately 1100 ft. SE of the proposed infiltration basin	33° 52' 07.40" N	114° 17' 23.78" W	55-221265	520-550 ft. bgs
New					
18-18A-01	Approximately 800 ft. North of Waste Rock Disposal Area #1	33° 52’ 39.811” N	114° 17’ 57.621” W	None	None; Open borehole

1 – Wells POC-1 and POC-2 will be removed upon completion of ambient groundwater monitoring at 18-18A-01 and calculation of ALs and AQLs.

Quarterly, semi-annual and biennial sampling of constituents are required to be monitored at the POC wells per Section 4.2, Tables 12 through 17 of the permit.