Exhibit B Site Description

The Gold Hill Mill is a milling facility designed to treat gold-silver telluride mineralization characteristic of the historical Gold Hill mining district, located within a mile of Gold Hill, CO. Originally part of the Cash Mine permit, it was separated out into its own permit in 1994. It consists of a mill area and a water pipeline area. Mill facilities such as the mill building and the tailings storage facility have been in place and operating since the 1970s, with improvements in the 1980s and 1990s. The mill facilities sit atop a ridge along the south side of Sunshine Canyon Road while the water pipeline easement runs from the north side of Sunshine Canyon Road downhill, further north, to Left Hand Creek. The water pipeline is accessible via Lick Skillet Road. The water pipeline's uphill end enters the Times-Wynona Mine via a portal on the north side of Sunshine Canyon Drive. The Times-Wynona Mine extends beneath Sunshine Canyon Road and the mill area. The Times-Wynona is connected to the mill via the Wynona Shaft and Times Drillhole.

The total permit and affected area is 9.20 (9.187) acres. All disturbance associated with the operation has already taken place. No new surface disturbance is proposed as part of this 2022 110D permit.

Map E-1 shows the permit area and ownership. Map E-2 shows the extent of operations. Map E-3 details the reclamation plan. Map E-4 shows the Times-Wynona Mine. Map E-5 shows details of the tailings storage facility. All maps can be found in Exhibit E.

1. Geology

The Gold Mill Hill sits atop a ridge immediately east of Gold Hill, CO at an elevation of roughly 8400' (Figure B-1). Situated within the Colorado Mineral belt, the mill operation was historically fed from restored underground workings in one of the historical mining operations in the immediate vicinity of the mill. These historical mining operations produced gold and silver from narrow, high-grade gold-silver telluride mineralized epithermal quartz veins hosted within the Precambrian Boulder Creek Granodiorite. Mineralization is related to a series of much younger, shallow Tertiary intrusives that occur within this area, near the northern extremity of the Colorado Mineral Belt. The Gold Hill Mill is located in the heart of the Gold Hill district of the Boulder County gold-silver telluride belt, a world-class mineralized district of historical significance.

The Boulder County, Colorado telluride belt is located at the northeastern end of the Colorado Mineral Belt and contains the Gold Hill, Central, Jamestown, Magnolia and Sugarloaf mining districts. The telluride belt is part of a broad, north-trending area of mineralization encompassing about 50 square miles. The predominant country rocks are Precambrian granites, gneisses and schists which are bounded on the east by Paleozoic and Mesozoic sediments which form the foothills west of Boulder. The Precambrian rocks have been intruded by Early Tertiary stocks and dikes that range in composition from diorite to sodic granite. Gold-silver telluride mineralization is a product of hydrothermal activity related to these Tertiary intrusives and is both temporally and spatially related to them.

The telluride belt is cut by a strong system of northwest-trending faults, locally called breccia reefs or dikes, which exerted a significant influence on the distribution of the mineralized quartz veins. Three of these northwest-trending breccia reefs, the Maxwell, Hoosier and Livingston, are nearly parallel, spaced about 1.5 to 2.5 miles apart, and can be traced for 15 to 20 miles. Two other breccia reefs, the Poorman and Fortune, have a more westerly trend and cut across the Maxwell to the Hoosier reefs.

The mineralized quartz veins of the telluride belt fill fault fissures are contemporaneous with and younger than the faults themselves. Most of the historically productive veins strike northeast at almost right angles to the reefs and dip steeply to the northwest. They can be traced on the surface for more than half a mile, and average between one to five feet wide.

Although the Boulder County telluride deposits are widely scattered over a broad northeast trending belt, most of the production has come from a few highly concentrated centers which exhibit a strong structural control. The largest and most productive precious metal mining district in the Boulder County telluride belt is the Gold Hill Mining District which comprises about 12 square miles and contains most of the important mines. One of the most productive centers of mineralization in the Gold Hill District is located near the town of Gold Hill, within an area of about four-square miles. This area has produced more gold and silver than any other productive center of similar size in the district or the telluride belt. It encompasses the area between Left Hand Creek on the north and the village of Summerville on the south, and includes the important Slide, Prussian, Klondike, Cold Spring, Red Cloud, Gold Ring, Alamakee, Horsfal, Columbus, St. Joe, Parallel, White Cloud, Cash, Freiberg, Who Do, Black Cloud, Victoria and Rex veins.

Map E-1B shows the geologic mapping for the area encompassing Gold Hill Mill and the Town of Gold Hill.

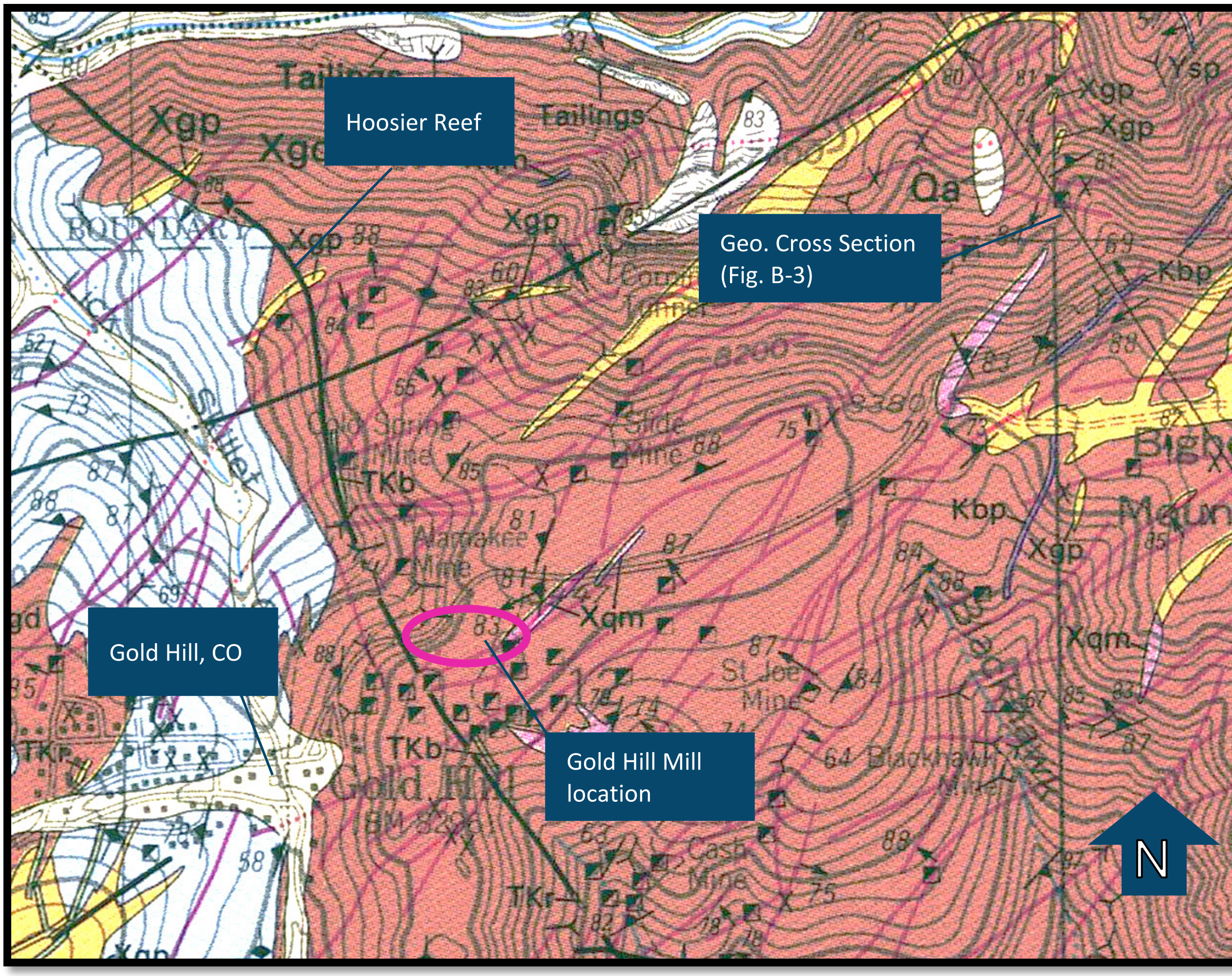


Figure B-1. USGS Geologic Map of Gold Hill, CO and Gold Hill Mill[1]

Xgd BOULDER CREEK GRANODIORITE (PRECAMBRIAN X)—Gray, pinkish-gray to black and white, medium-grained to very coarse grained, locally porphyritic rock with feldspar crystals several centimeters in length and well alined. Composed of microcline, plagioclase, and quartz, and lesser amounts of biotite and hornblende. The accessories include ores (chiefly magnetite, ilmenite, hematite, pyrite), allanite, and sphene. Granodiorite in border area of the Boulder Creek batholith and lenses of granodiorite in metasediments are well foliated and gneissic. Granodiorites in the interior of the batholith and larger plutons are gneissic to massive. Locally profuse mafic clots and lenses occur in the granodiorite of the batholith, especially east and south of Gold Hill. Rubidium-strontium dates place the Boulder Creek Granodiorite on the same 1,700-m.y. isochron as associated quartz monzonite (Xqm) (Peterman, Hedge, and Braddock, 1968)

Figure B-2. Gold Hill Bedrock

[1] Geologic map of the Gold Hill quadrangle, Boulder County. Gable, D.J. USGS. 1980

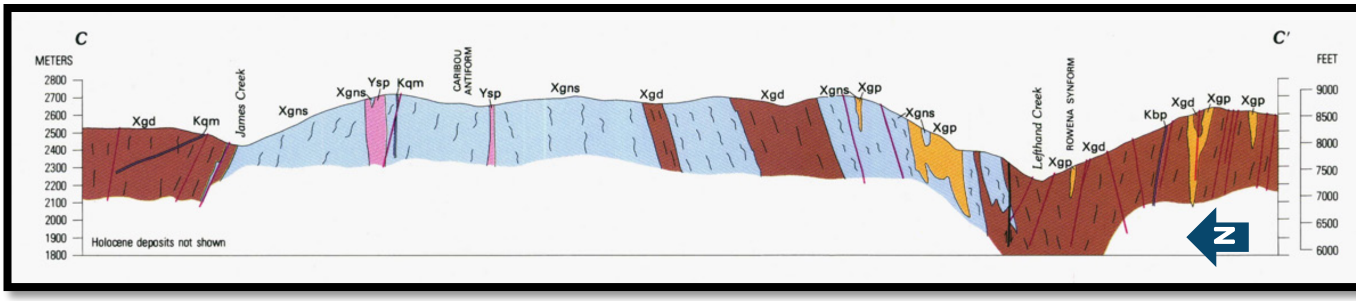


Figure B-3. Geological Cross Section Roughly 2000 ft East of Gold Hill Mill

The Gold Hill Mill is a processing facility only, and no subsurface development is proposed. The detailed geology of the Gold Hill Mill surroundings is more applicable to the gold mines of the area and is covered in greater detail in permits such as the Cash Mine's (M-1983-141). It is included here for general reference.

Two mine shafts and one set of old workings can be found within the Gold Hill Mill affected area. The shafts are the Times Drillhole and Wynona Shaft, which have been used historically to reach the Times-Wynona Mine. The Times-Wynona Mine has not been active in many decades and has been used as a water storage for the entire life of the Gold Hill Mill permit. Details on this water storage can be found in Exhibit C.

No mining is proposed as part of this 110D permit.

2. Vegetative Cover and Soils Description

2.1. Vegetation

The native vegetation found in the area is mainly Ponderosa pine, Douglas fir, Blue spruce, and Rocky Mountain juniper trees, which are growing along with scattered scrubs and a sparse understory of grasses. Area soils have a rapid permeability, a low available water capacity, and a shallow effective rooting depth.

No rare, threatened, or endangered plant species have been identified on or near to any of the Permit Area(s) or in the Gold Hill area in general. The existing vegetation has been classified as a coniferous forest consisting of mixed cone-bearing trees of the pine family, including various species of pines (pinus), and Douglas fir (pseudotsuga). These trees are resinous evergreens, with a straight axis and a narrow crown, and are characteristically present in acidic soils, often sprouting after fire. The coniferous forest is widespread and extensive throughout the general area, and can be found throughout the general area, and can be found at elevations between 6,000 and 10,000 feet. It encompasses the lower and upper montane zones and includes Lodgepole and Ponderosa pine. Engelmann and Blue spruce, Douglas fir, and thickets of broad-leaved trees (i.e., aspen, alder, and maple) and shrubs along stream banks. These zones are often referred to as the transitional zone between the foothill and sub-alpine zones. These zones overlap and telescope into each other, and one zone may be present on a south slope while another will be found across the valley on the opposite (north) slope at the same elevation. Plants that are characteristically found in one zone can sometimes be found in favorable areas in the neighboring zone above or below their usual habitat.

Douglas fir, Lodgepole pine, and Engelmann spruce are found at higher elevations, while Ponderosa pine are generally found at lower elevations scattered stands of pure and mixed trees. Douglas fir is considered the climax or original forest type present in this area before the boom days of mining in the 1870s, when the trees were either extensively cut or destroyed by forest fire. The present stands of Ponderosa and Lodgepole pine as well as the Engelmann and Blue spruce generally came in after 1900. The pine trees in this area are greatly overgrown, with as many as five and six hundred Ponderosa and Lodgepole pine trees per acre on most of the southern hillsides of Left Hand Creek.

Limber pine and Blue spruce are also present in isolated trees or in small stands. Scattered stands Rocky Mountain juniper and Quaking Aspen can be found in the areas between Left Hand Creek and the Times/Wynona Mine. Quaking Aspen, Narrowleaf cottonwood, Mountain Alder, and Rocky Mountain maple are found along the banks of Left Hand Creek and Akins (Lick Skillet) Gulch.

In addition to the trees found in this area of the Gold Hill Mining District, various species of grasses are present, including Slender Wheat-grass, Mountain Mulhy, Parry Oat-grass, and Thurber fescue. The present surface vegetation at or near the Gold Hill Mill pipeline route is relatively undisturbed, aside from several relatively small areas where trees have been cut for forestry management near the access road to the Alamakee Mine, and light disturbance from historic pipeline installation.

2.2. Soils

The U.S. Department of Agriculture's Soil Conservation Service has mapped this area predominantly as Junget-Rock Outcrop Complex (JrF) and Fern Cliff-Allens Park-Rock Outcrop Complex (FcF). A detailed description of the Juget-Rock Complex and the Peyton and Allens Park soils is contained within the NRCS Soil Survey for the area, attached as Appendix B-1.

Soil depth in JrF areas is 6-11 inches while soil depth in FcF areas is 26-80 inches. FcF depth is dependent primarily on whether it is the Fern Cliff of Allens Park soil component that is predominate in an area. Given the presence of frequent rock outcrop within the area, the primary controller of soil depth will be topography: drainages channel bottoms can be expected to contain deeper soils than upland flats. The area around the mill building has historically seen soil depths in the 12-36” range, however, most of this was disturbed many years ago.

3. Description of Water Resources

3.1. Surface Water Resources

The surface water drainage on the affected lands is generally ephemeral, consisting almost entirely of runoff originating as rainfall and/or melting snow which flows into Akins (Lick Skillet)

Gulch. Most of the year this flow is intermittent, and it only reaches Left Hand Creek during the spring runoff and periods of high precipitation. There is a difference in altitude of over 700 feet between the Times-Wynona Mine portal and Left Hand Creek. Any intermittent surface water flowing from the Times-Wynona Mine area must progress of over 4500 feet to reach Left Hand Creek.

Left Hand Creek is the only significant perennial water feature in the Gold Hill area. Gold Run Gulch runs south of the Gold Hill Mill but does not flow year around.

Drainage patterns around the mill and tailings storage facility are simple, as both entities sit atop the local ridge. Almost no undisturbed drainage area exists uphill of the mill or tailings storage facility. Almost all of the ground in question has been disturbed for over 50 years. The maps in Exhibit E show drainage patterns around the mill at different stages in operation.

3.2. Groundwater Resources

Groundwater present in the Gold Hill area of Boulder County is typified by fracture zone, joint, and void occurrences. The granite/granodiorite is essentially impermeable. Due to the crystalline nature of the Boulder Creek granite, groundwater is found only in bedrock areas where the granite has been fractured. Generally, the openings of these fractures, joints, and faults decrease in size with increasing depth, and the probability of encountering significant water bearing zones is greatly reduced at depths generally in excess of 300 feet. Typical wells in the area show static water levels in the granite well below the surface (80'+) and low yields (<10 gpm) from pumping. This is to be expected with wells in the granite system. Nearby wells are shown on Map E-1. Map E-1B shows a potentiometric map of the groundwater in the town of Gold Hill and at Gold Hill Mill based on well data. Additionally, depth to water level recorded in these wells is shown on the geologic cross section on Map E-1B.

The crystalline bedrock has a very limited storage capacity, and most of the water that is received through precipitation is returned to the atmosphere through evapotranspiration. Soil depth is low outside of channel bottoms such as Lick Skillet Gulch, preventing much infiltration in the mill area. The groundwater that is present within the Boulder Creek granite tends to migrate downward and laterally through a northeast to southwest trending fracture system towards the general area north of Akins (Lick Skillet) Gulch. The majority of area wells are located hundreds of feet below the mill area near the residences of Gold Hill, CO to the west. The wells in the town of Gold Hill nearest the mill have static water levels recorded over 80 feet below the ground level.

The Gold Hill Mill monitoring well water levels shown on Map E-1B in the geologic cross section are the maximum and minimum levels recorded by personnel at the mill as part of quarterly water sampling from these wells. It should be noted that these wells show depth disparities of tens of feet between them despite being near each other in both elevation and spacing. For example, in June 2022, W1 measured 38.4 feet deep to groundwater and W2 measured 47.8 feet deep to groundwater. These wells are roughly 50 feet apart horizontally and at the same elevation. Similar discrepancies in depth (and head) can also be seen in wells W3 and W4 which are similarly adjacent to each other (Table B-1). The discrepancies in depth are to be expected in the Precambrian Boulder Creek granodiorite that the wells are installed as this igneous rock has very low intrinsic hydraulic conductivity (10^{-9} cm/s or 2.83 x 10^{-6} ft/day or 950.3 yrs/ft). The only water pathways that exist are local fractures that the well intercepts; this is why these monitoring wells are installed downhill from the mill and tailings facility: if hydrologic pathways exist and if either the mill or the tailings storage facility were leaking into the subsurface, it would show up in these wells. The Town of Gold Hill wells in the same granodiorite draw from localized fractures as their immediate vicinity, and similar disparities in head can be observed in those wells (Table B-2). Any hydrologic connections that exist between individual wells are small and very localized, if present at all.

Table B-1. June 2022 Example Groundwater Depth in GHM Monitoring Wells

Locations ID	Date	Depth	Head (AMSL)
W-1	06/13/22	38.4	8331.4
W-2	06/13/22	47.8	8321.4
W-3	06/13/22	28	8349
W-4	06/13/22	32.5	8343.1

Table B-2. Town of Gold Hill Wells Nearest Mill

Locations ID	Depth	Head (AMSL)
9573-A	150	8173.7
133510	120	8322
289897-A	80	8207.8
167125	61	8234.7
316765	0	8265.7
126539-A	30	8221

In addition to the limitations on groundwater flow imposed by the overall rock mass, a large barrier exists between the Gold Hill Mill affected area and the Town of Gold Hill wells: the Hoosier Reef. This structure can be seen on Map E-1B as well. As described in a 1985 hydrologic evaluation conducted by Ted Zorick & Associates for the owners of Gold hill Mill and submitted to CDRMS:

> *"An important geologic feature of the area is the Hoosier Reef that runs from the southeast to the northwest between the mill and tailings pond location, and the Town of Gold Hill. The impermeable Hoosier Reef ranges from approximately 10 to 80 feet wide and is well over 1,000 feet deep as determined through discussions with a geologist employed by Gold Hill Ventures…*
>
> *Due to the existence of the Hoosier Reef and the general direction of the fractures in the crystalline rock, it is our opinion that groundwater would move in a northeasterly direction into the Left Hand Creek Drainage. The fractures trend from the southwest to the northeast, but the impermeable Hoosier Reef at the southwest end of the fractures prevents groundwater movement in this direction."*

- 1985 TZA Hydrologic Evaluation (M-1983-141, Laserfiche file#: REV62591)

Finally, the Times-Wynona Mine has contained water from the Left Hand Creek diversion since the 1980s without a known decline in water level below the Times adit. If hydrologic routes existed that would facilitate water movement from the mill area to neighboring wells the Times-Wynona Mine would have drained out through such a pathway years ago.

Based on these hydrologic conditions, groundwater in the area cannot be assumed to exist in a single common aquifer. Map E-1B shows a potentiometric surface for the wells and water data available around the mill and the Town of Gold Hill. Given the geologic and hydrologic conditions that exist, these potentiometric surface maps do not extend very far.

3.3. Groundwater Chemistry

Groundwater monitoring has taken place downhill from the mill area to the south. The results of this monitoring can be found in Appendix B-2. Data from the late 1990s through to 2023 is included Appendix B-2, although only data collection since 2013 has been consistent. Maximums, mean, and median of the parameters of concern from 2013 to 2023 are summarized in tables for CDRMS's benefit. Histograms of parameters are also included, from data going back to the 1990s.

To be conservative, for statistical analysis any lab test result that was listed as below the detection limit has been set at the detection limit. This assumes that there is always some analyte present in the groundwater, even if it is undetectable.

3.3.1. Times/Wynona Mine and Monitoring Wells

The Times/Wynona well has not been sampled frequently in the past as it is a storage vessel for water pumped from Left-Hand Creek and said water is used to exhaustion in the Gold Hill Mill. Water in the monitoring wells within the mill area (W-1-W-4, MW-1) have been sampled on a quarterly basis for many years. Based on available data, there is only one time when Times/Wynona water and quarterly monitoring well data area close enough in time to compare their chemistry. This is June-July 2021. The quarterly data was sampled in June 2021 and the Times/Wynona well was sampled in July 2021. Table B-3 shows a comparison of the sample results from these locations at that time. All values are in mg/L. Wells W-1-W-4 have parameter values distinctly different than Times/Wynona. MW-1 has similar manganese, sulfate, and TDS values. Water level data is not available for all of the same timeframes, but depth data for July 2020 and June 2022/23 are available for the Times/Wynona and monitoring wells respectively. Monitoring wells MW-1, W-1, and W-2 are those nearest the Times-Wynona Mine (see Map E-1B). According to the TW pool elevation data available (Appendix C-7), the water level in the TW mine peaks at some point in June-July. This peak is well above the water levels measured in all monitoring wells and at least 65-ft above the nearest well, MW-1. Since the wells and Times/Wynona Mine are all installed in competent Boulder granodiorite, which shows throughout water and geologic data to lack transmissivity, strictly Darcy flow between Times/Wynona Mine and the monitoring wells cannot be assumed. Comparison of water quality shows that only the MW-1 well is similar.

Table B-3. Times/Wynona Mine Water and Monitoring Wells (Summer 2021)

Parameters	Times Wynona Well	MW1	W1	W2	W3	W4
Antimony	0					
Arsenic, dissolved	0.0029	0	0	0	0	0
Barium	0.0232					
Beryllium, dissolved	0					
Bicarbonate	224.4					
Cadmium, dissolved	0.0009	0	0.0002	0.0004	0	0
Calcium	312.4					
Carbonate	0					
Chloride	4.81					
Chromium, total	0					
Cobalt	0.0007					
Copper, dissolved	0.0123					
Hydroxide	0					
Iron, dissolved	1.623					
Lead, dissolved	0.0097					
Magnesium	77.71					
Manganese, dissolved	0.3562	0.3525	0.0014	0.0012	0.024	0.0146
Mercury, dissolved	0					
Nickel, dissolved	0.0107					
Potassium	4.8					
Selenium, dissolved	0.0015					
Silica (as Si)	7					
Silver	0					
Sodium	8.4					
Strontium	0.689					
Sulfate	926.88	888.31	112.25	135.87	79.81	49.5
TDS	1737	1409	275	300	264	217
Thallium	0					
Total Alkalinity	224.4					
TSS	12					
Vanadium, dissolved	0.002					
Zinc, dissolved	0.654	0.002	0.03	0.064	0.004	0.004
Surface Elev. (ft)	8450	8370	8370	8369	8377	8375
Water Elev. Date	**Avg. July Level**	**Avg. June Level**				
Water Elev. (ft)	8379	8310	8353	8333	8358	8346

A comparison of the water levels in TW Mine over a year to the water levels in the MW-1 well shows that the Times/Wynona Mine varies in water level (27-ft) while MW-1 barely changes at all (5.5-ft range) (Figure B-1. Times/Wynona & MW-1 Water Level During Year). Were the Times/Wynona Mine and MW-1 well strongly linked hydrologically, there water level would vary in tandem. Furthermore, if the surrounding rock were a path of water flow, groundwater seeps or springs would appear above the MW-1 collar during the spring when Times/Wynona Mine levels would be high as the highest levels measured in the TW Mine have been greater than the top of the MW-1 well. The subsurface hydraulic conditions at Gold Hill Mill and the water data available do not support a hydraulic connection between the Times/Wynona Mine and the monitoring wells onsite. The similarity in water chemistry between the

Times/Wynona Mine sample and a MW-1 sample are most likely reflective of the similar geology that the well and Times/Wynona Mine exist in.

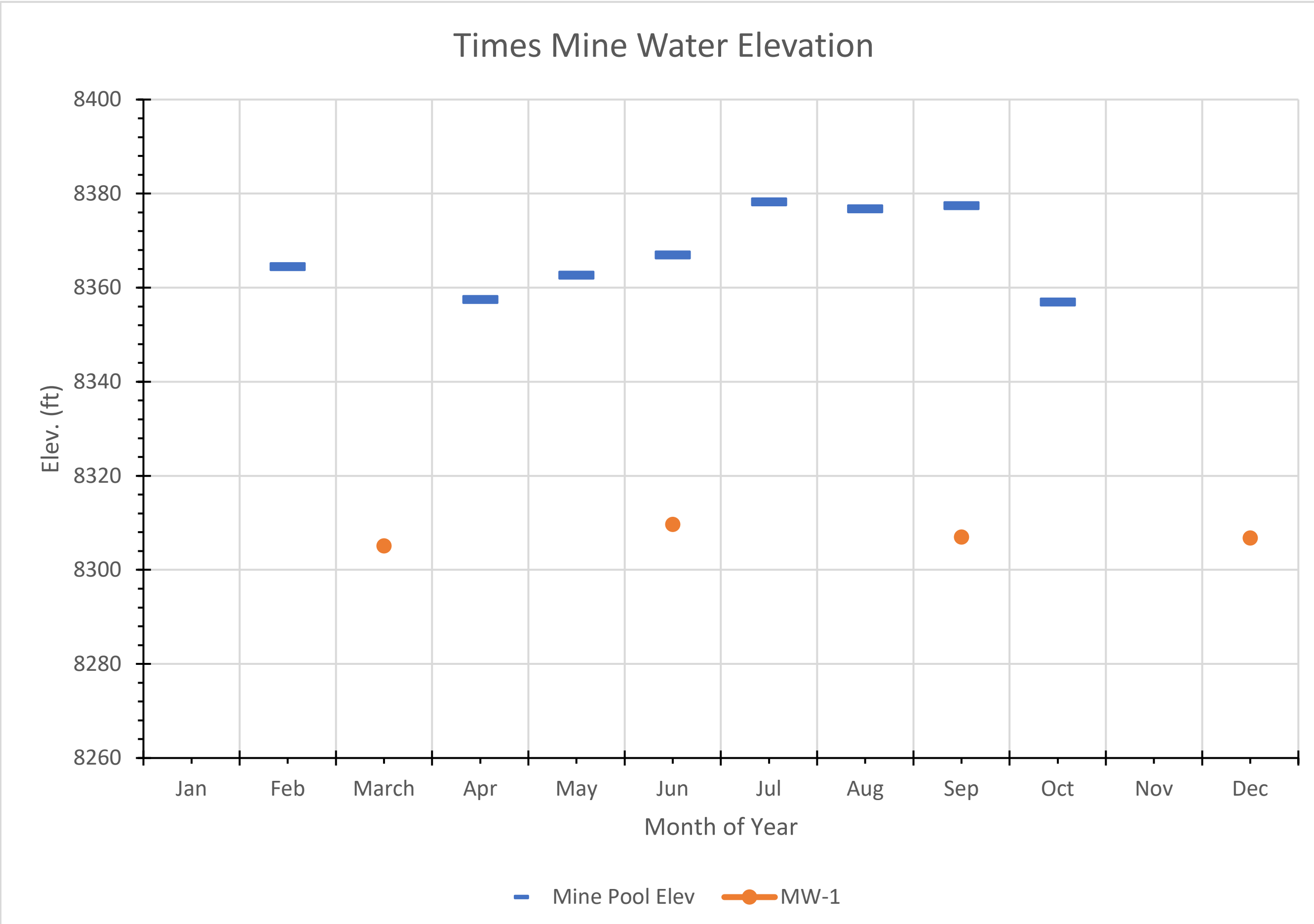


Figure B-1. Times/Wynona & MW-1 Water Level During Year

Groundwater monitoring proposed by this permit includes regular sampling of the Times/Wynona Mine via the Wynona Shaft.

4. Wildlife Habitat and Species

No rare, threatened, or endangered wildlife species have been identified in the surrounding area. The major wildlife habitat in the general area is that of a coniferous forest wildlife habitat. The most common mammalian species that can be observed in the area are mule deer, cottontail rabbits, squirrels, and chipmunks. Raccoons, skunks, foxes, black bear, mountain lions, and bobcats are also known to inhabit the Gold Hill area. The occurrence of these species is generally year-round, with some seasonal migration of mule deer down from the mountainous areas during periods of heavy snowfall accumulation. No species migration corridor has been identified through the affected area. Lists of the mammal and bird species that have been identified in the Gold Hill area were included in the previously submitted Cash and Who Do Mine Permit Application No. M-1983-141, which was approved by the Mined Land Reclamation Board on September 26, 1985.

The general effect of the proposed operations on the existing wildlife in the area is not expected to be significant or permanent. The coniferous forest wildlife habitat is widespread and extensive throughout the general area, and none of the wildlife presently inhabiting the areas where the Pump Station, Gold Hill Mill Pipeline, and Times-Wynona Mine portal will be located are expected to suffer a permanent loss of food or habitat. All Gold Mill Hill facilities have been in place since at least the 1970s. No new disturbance areas are proposed in this application. All activity is confined to affected areas that have seen human activity since the 1970s or earlier.

5. Climate Data

The following climate information is presented for Gold Hill Mill. The data available was collected at the Gross Reservoir, CO COOP station operated by the Western Regional Climate Center. The Gold Hill Mill is located at an average elevation of 8445', while the Gross Reservoir weather station is at an elevation of 7970'. Gross Reservoir is roughly 15 miles south of Gold Hill. Closer COOP stations are present at the Niwot Ridge study area, but are nearly 1500'+ higher in elevation and are almost 15 miles away. Similarly, the nearest station to the east (~12 miles), in Boulder, is roughly 3000' lower in elevation. Based on WRCC mapping, Gold Hill is in a similar temperature and precipitation band as Gross Reservoir, and thus its climate data is an effective proxy for Gold Hill.

The following data was calculated based on the past five years (2017-2023) of data collected at the Gross Reservoir COOP station as reported on the NOWData – NOAA Online Weather Data tool. The wettest year on record at the Gross Reservoir occurred in September of 2013 with 6.07 inches of precipitation.

Table B-4. Gross Reservoir, CO Weather Station Data (2017-2023)

	Average Max. Temperature (F)	Average Min. Temperature (F)	Average Total Precipitation (in.)	Average Total Snowfall (in.)	Average Snow (in.)
Jan	55.8	-0.8	0.9	15.9	8.3
Feb	56.8	-9.7	1.0	14.1	6.9
Mar	62.5	7.2	2.2	18.2	10.7
Apr	73.7	13.0	1.5	14.5	6.8
May	76.5	28.8	3.5	5.2	4.7
Jun	86.3	36.2	2.6	0.0	0.0
Jul	90.5	43.8	1.7	0.0	0.0
Aug	86.3	41.0	1.7	0.0	0.0
Sep	87.8	31.2	1.1	0.9	0.9
Oct	73.7	11.5	1.1	4.8	3.9
Nov	64.7	8.2	0.8	10.4	8.3
Dec	58.0	0.0	0.4	7.2	6.2
Annual	90.7	-12.5	18.5	76.7	15.7

The following maps depict the precipitation and temperature patterns across Colorado, showing that that despite the Gross Reservoir weather station being further than other stations, it most accurately captures the most similar climate data to the Gold Hill Mill.

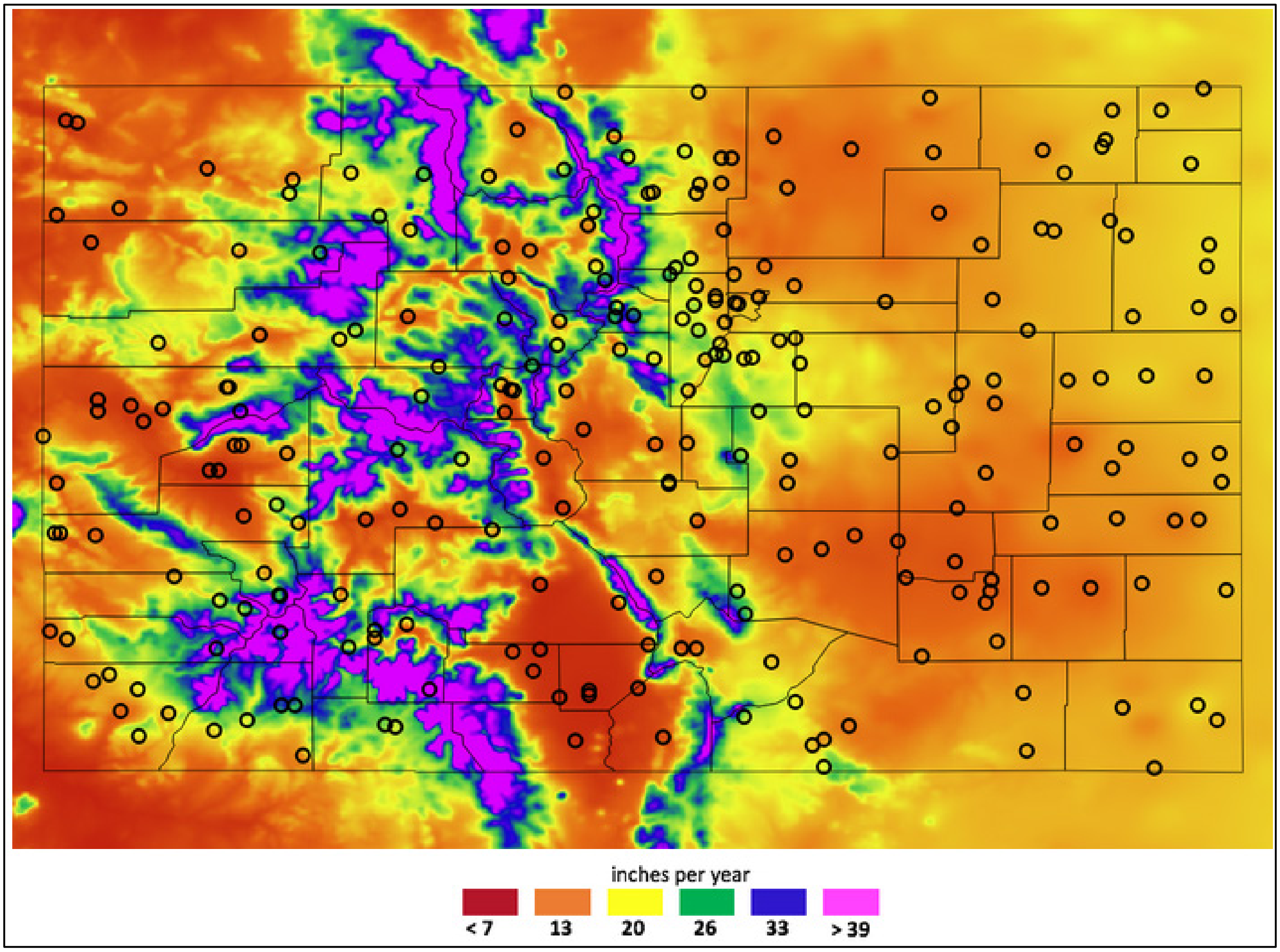


Figure B-4. Colorado Annual Precipitation Map from CSU Climate Center

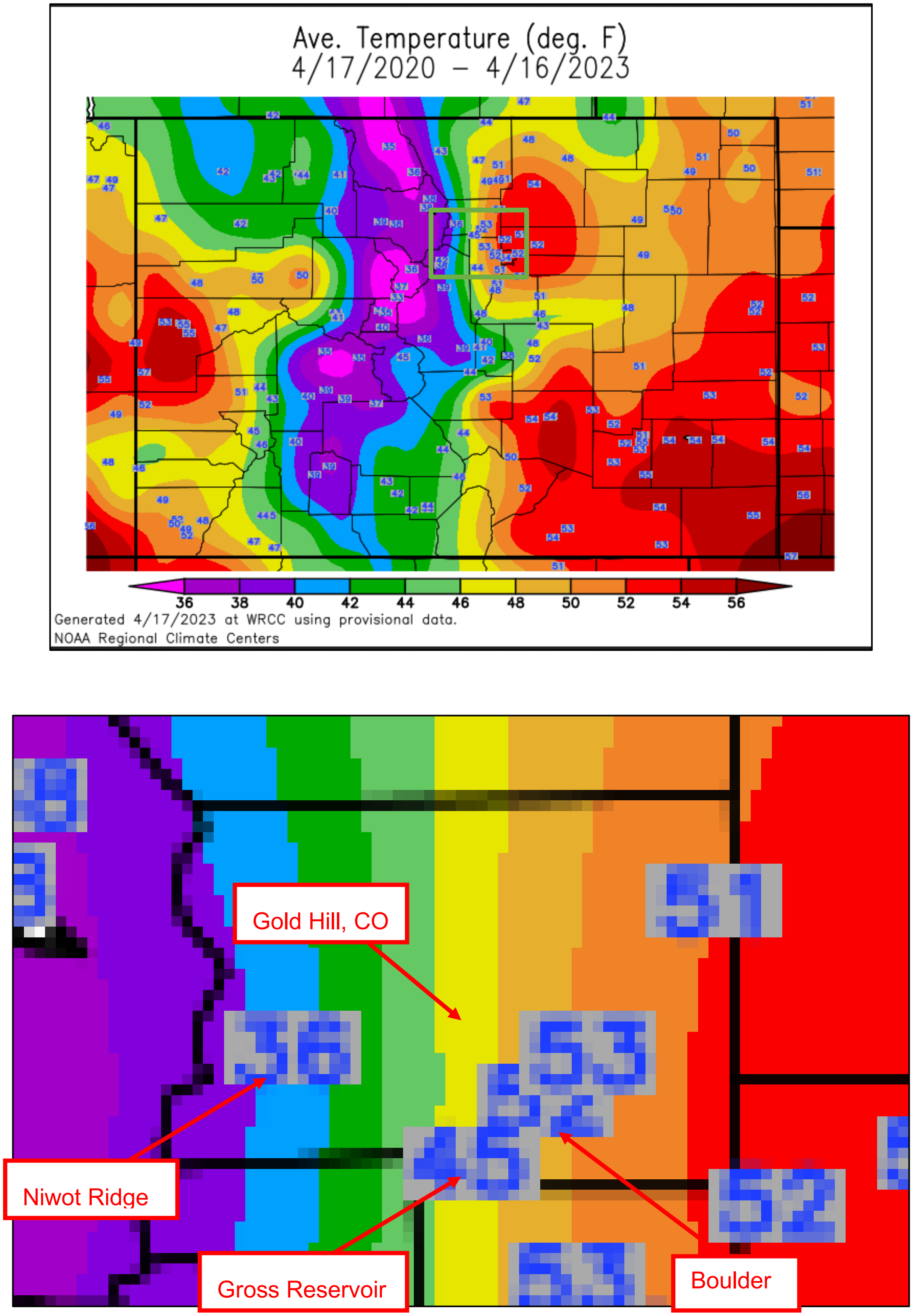


Figure B-5. Recent Average Temperatures Across Colorado and Boulder County

5.1. Water Balance

The approximate specific evaporation per year from NOAA[2] data is 35 inches per acre per year. The average annual precipitation from the last five years is 18.5 inches. The average annual snowfall over that same period is 76.1 inches, which is an average snow water equivalent of 38.5 inches. The Tailings Storage Facility (TSF) maintains a freeboard of 2-ft (24 inches). Similarly, the outside reagent storage has a 2-ft vertical wall to contain stormwater and/or designated chemicals.

According to research conducted at Niwot Ridge by the University of Colorado, the average sublimation rate range from 0.4 to 0.7 mm/day, or roughly 0.016 to 0.028 inches/day. Conservatively assuming snow presence from October 15 to May 15 each winter (213 days), average annual sublimation is 4.7 inches.

Based on the climate data described above, the water balance each year is:

$$Freeboard + Evaporation + Sublimation - Avg.AnnualSnowfall(SWE) - Avg.AnnualPrecipitation = NetWaterStorageDepth = 24inches + 35inches + 4.7inches - 38.5\ inches - 18.5\ inches = \mathbf{6.7\ inches\ of\ net\ storage\ depth}$$

There is sufficient available storage depth within the TSF to accommodate rainfall and snow depth.

5.1.1. Monthly Water Balance

The monthly water balance at Gold Hill Mill is estimated using the monthly average precipitation data from NOAA, sublimation rates from Niwot Ridge, and evaporation data from the Western Regional Climate Center. Since Gold Hill Mill does not have a nearby evaporation measurement station, data from stations in similar climate conditions was used to create an approximate monthly distribution of evaporation. Stations with similar annual evaporation at a similar elevation to Gold Hill (~35-inches/year, 8400-ft) were selected to determine a typical water year (Oct-Oct) evaporation cycle. These stations are located at Grand Lake (8300-ft), Lake George (8500-ft), and Wagon Wheel Gap. (8500-ft). The evaporation rates (avg. inches/month) are shown below.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
GRAND LAKE 6 SSW	0	0	0	0	4.82	7.75	7.81	6.79	5.24	3.1	0	0	35.51
LAKE GEORGE 8 SW	0	0	0	0	5.15	8.26	7.39	6.02	5.72	0	0	0	32.54
WAGON WHEEL GAP 3 N	0	0	0	0	6.69	7.9	7.15	5.81	5.3	2.61	0	0	35.46

The average of these three stations is used to estimate evaporation at Gold Hill Mill. Since the evaporation measured is pan evaporation, a correction factor of 0.7 is applied to adjust for the slightly increased evaporation experienced in pan evaporation versus free water surface evaporation. Using the resulting calculated evaporation rates for each month, an approximate water balance for Gold Hill is generated.

[2] NOAA Technical Report NWS-33, Evaporation Atlas for the Contiguous 48 United States

The resulting water balance is shown in Figure B-2. Each column shows the result of *Precipitation +Snow – Evaporation – Sublimation* for that month.

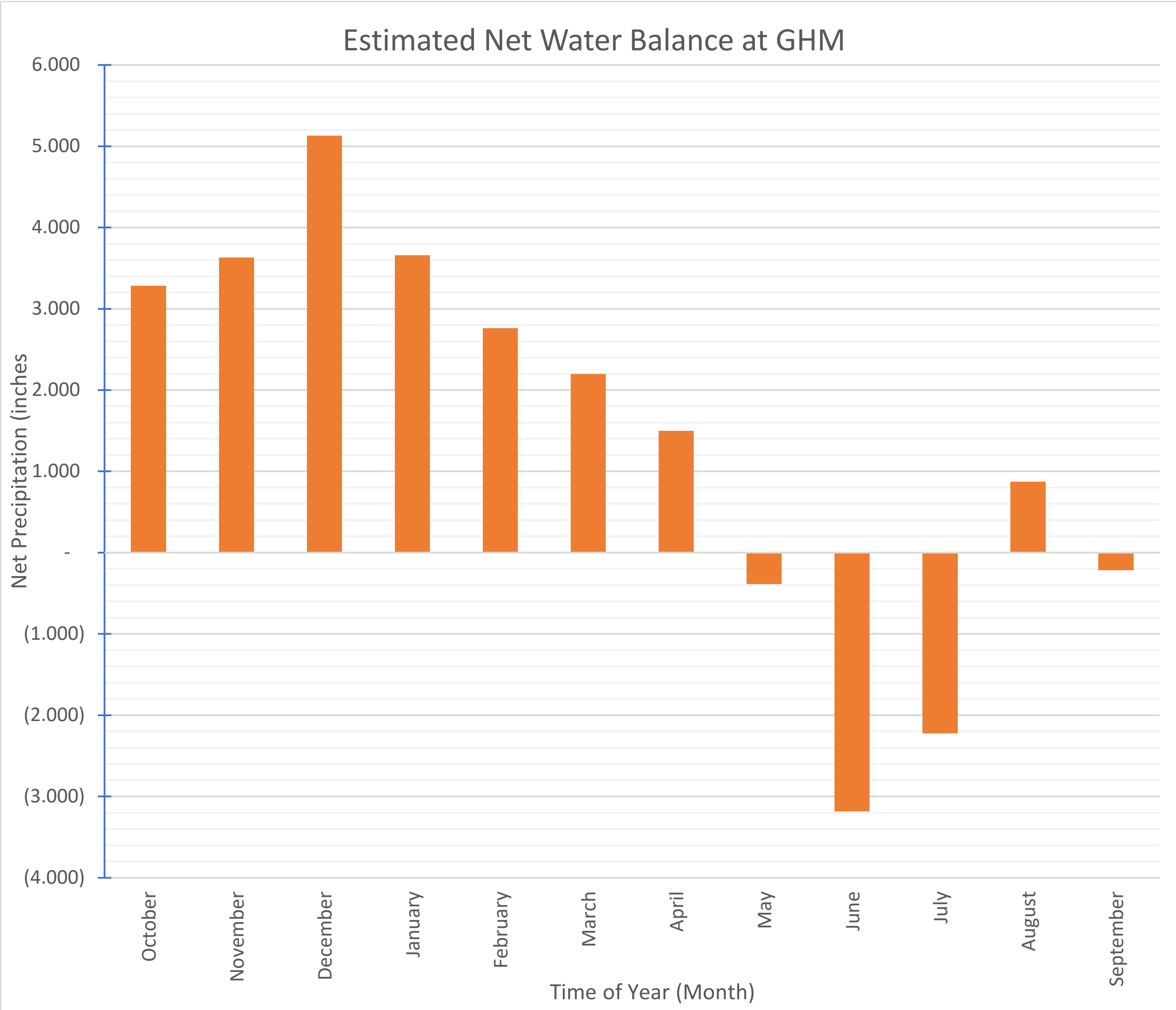


Figure B-2. Monthly Net Water Balance At GHM .

Appendix B-1 NRCS Soil Survey

Appendix B-2 Groundwater Monitoring Data

Groundwater reports from the last five quarters is attached to this appendix. Water data used for statistical analysis can be found in existing CDRMS records.

Table B2-1. Maximum Groundwater Results

Analyte	W1	Date	W2	Date	W3	Date	W4	Date	Lowest App. Standard
Arsenic, dissolved	0.008	10/01/04	0.003	06/13/22	0.002	10/01/05	0.0025	10/1/08	0.01
Cadmium, dissolved	0.002	07/01/98	0.0026	04/01/09	0.002	10/1/10	0.0011	10/1/06	0.005
Conductivity (uS/cm)	632	03/20/17	778	03/20/17	746	03/20/17	923	06/16/20	
Copper, dissolved	0.02	07/01/98	0.344	10/6/13	0.0325	N/A	0.0195	10/1/06	0.2
Fluoride	0.4	03/30/13	0.2	Multiple	<0.1	N/A	<0.1	N/A	2
Iron, dissolved	0.39	10/6/13	0.9	10/6/13	8.15	10/6/13	0.66	10/01/05	0.3
Lead, dissolved	0.02	10/6/13	0.001	10/6/13	0.001	06/23/13	0.002	10/01/05	0.05
Manganese, dissolved	0.178	01/01/11	0.3673	06/13/22	1.49	10/06/13	1.03	12/5/22	0.05
Mercury, dissolved	0.005	01/01/98	<0.0002	N/A	<0.0002	N/A	<0.0002	N/A	0.002
Nickel, dissolved	0.02	04/01/08	0.06	10/6/13	0.06	01/01/11	0.02	N/A	0.1
Nitrate/Nitrite as N	2.9	06/23/13	3.78	06/23/13	3.01	06/23/13	0.49	06/23/13	10
pH	8.43	06/16/20	8.08	06/16/20	7.9	06/23/13	9.9	09/22/20	6-9
Total Dissolved Solids (TDS)	476	12/30/14	864.57	06/13/22	518	03/19/15	526	09/06/22	1800
Sulfate	230	09/28/14	1452	06/13/22	224	03/19/15	200.52	12/15/22	250
Vanadium, dissolved	0.007	01/01/08	0.007	01/01/11	0.009	10/1/10	0.009	01/01/11	0.1
Zinc, dissolved	0.13	06/21/17	0.45	03/20/17	0.13	03/24/19	0.081	09/06/22	2

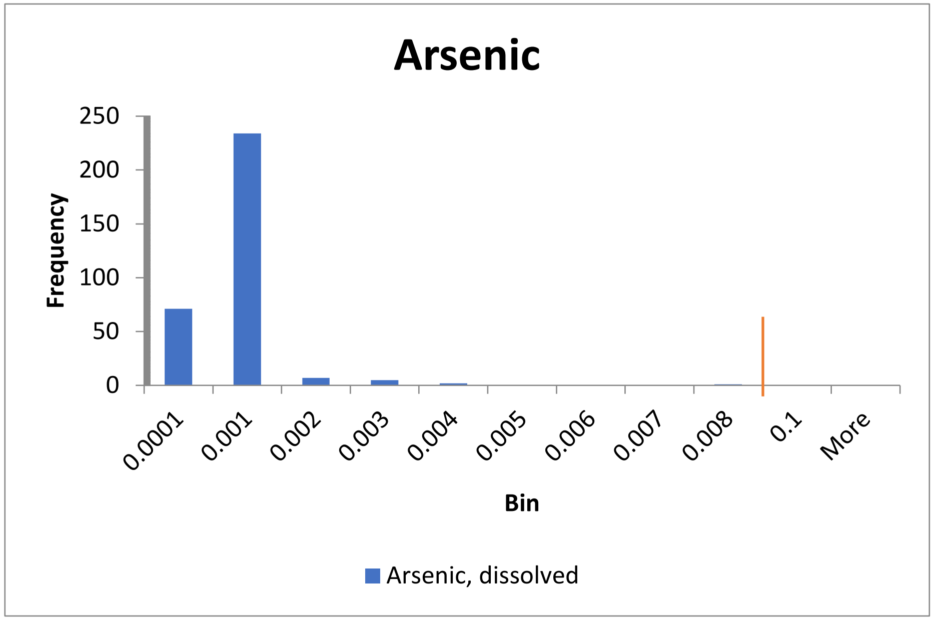
Groundwater data in the above table is the highest sample result value for each analyte from all quarterly sampling from Q1 1998-Q4 2023. Units are mg/L unless otherwise specified. Values marked “<” are cases where the analyte was never measured above the listed detection limit.

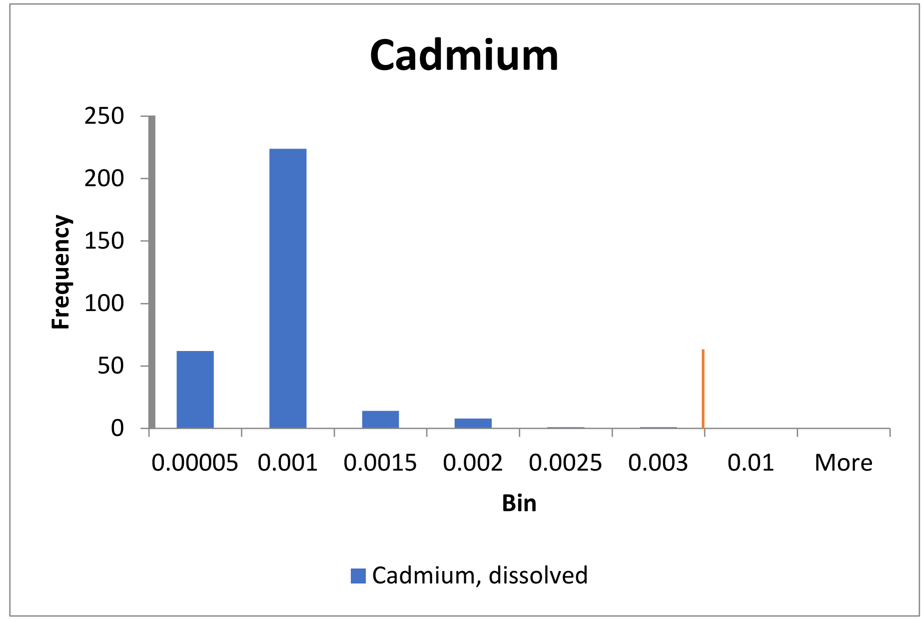
Table B2-2. Mean & Median Groundwater Results

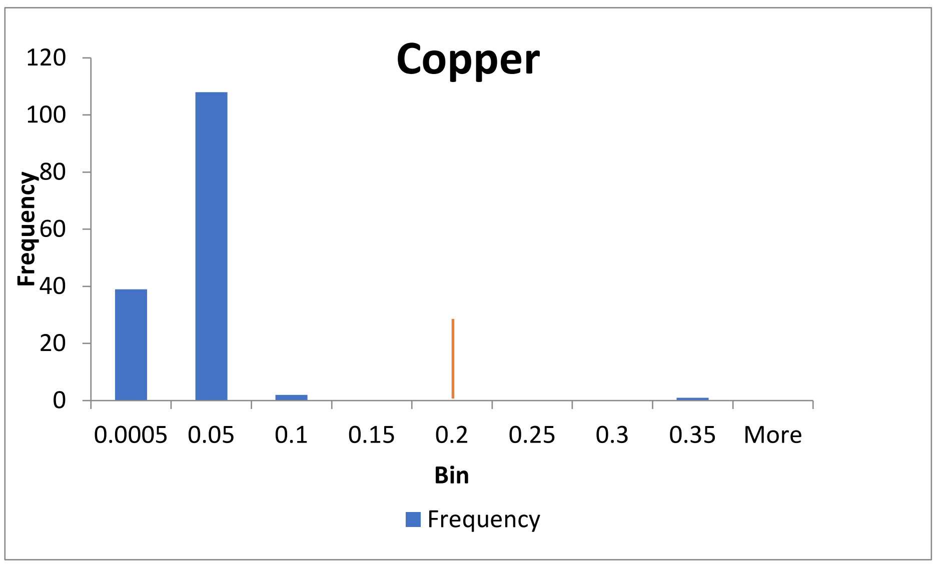
Analyte	W1		W2		W3		W4		Lowest App. Standard
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	
Arsenic, dissolved	0.0008	0.0041	0.0006	0.0016	0.0006	0.0006	0.0002	0.0011	0.01
Cadmium, dissolved	0.0003	0.00105	0.0006	0.00135	0.0003	0.0003	0.0001	0.00015	0.005
Conductivity (uS/cm)	450	414	583	503	619	619	665	661	
Copper, dissolved	0.0054	0.01025	0.0273	0.17225	0.0097	0.0096	0.0023	0.01	0.2
Fluoride	0.3000	0.3	0.2000	0.2	0.1000	0.1000	0.0000	0.1	2
Iron, dissolved	0.0513	0.2	0.0827	0.455	0.3843	0.3589	0.0430	0.21	0.3
Lead, dissolved	0.0010	0.01005	0.0003	0.00055	0.0003	0.0002	0.0002	0.0001	0.05
Manganese, dissolved	0.0109	0.0894	0.0119	0.18405	0.0536	0.0389	0.1509	0.5175	0.05
Mercury, dissolved	0.0004	0.00255	0.0002	0.00015	0.0002	0.0002	0.0000	0.0002	0.002
Nickel, dissolved	0.0100	0.0101	0.0200	0.035	0.0191	0.0191	0.0022	0.01	0.1
Nitrate/Nitrite as N	2.9	2.9	3.78	3.78	3.0	3.01	0.49	0.49	10
pH	7.9	7.915	7.6	7.6	7.4	7.46	7.4	8.36	6-9
Total Dissolved Solids (TDS)	294	296	209	456	393	390.6000	384	371.5	1800
Sulfate	132	131	422	808	153	151	127	121.56	250
Vanadium, dissolved	0.0049	0.00355	0.0051	0.006	0.0054	0.0054	0.0008	0.005	0.1
Zinc, dissolved	0.0231	0.0675	0.1569	0.226	0.0203	0.0166	0.0083	0.0415	2

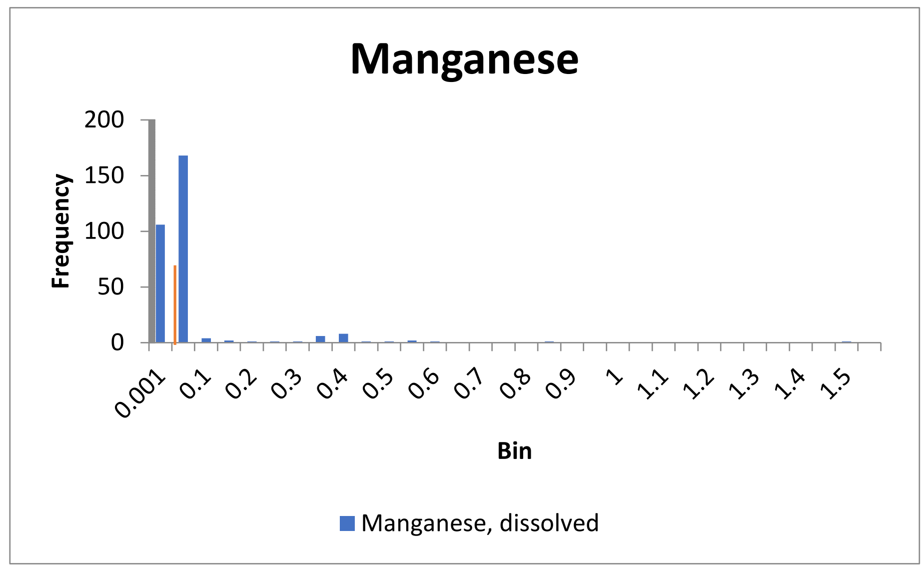
Groundwater data in the above table is the arithmetic mean and median sample result value for each analyte from all sampling from Q1 1998-Q1 2023. All sample results with Non-Detect values were replaced with the Detection Limit value and then the mean and median were calculated. This leads to a conservative over-estimate of each analyte. Units are mg/L unless otherwise specified. Histograms of select parameters are shown below.

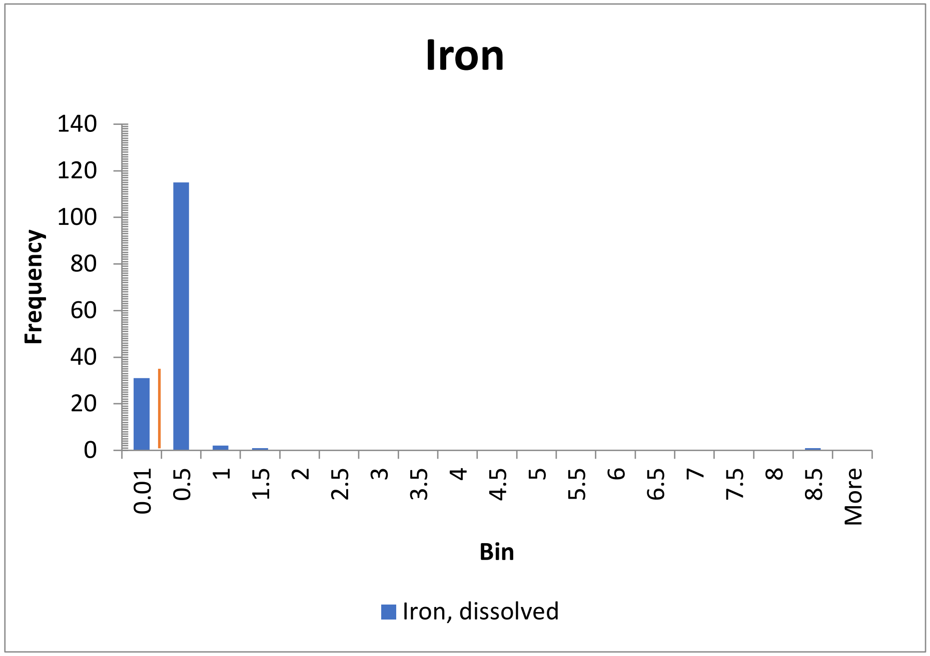
Histograms of Parameters of Concern (redline is strictest applicable CDPHE standard)

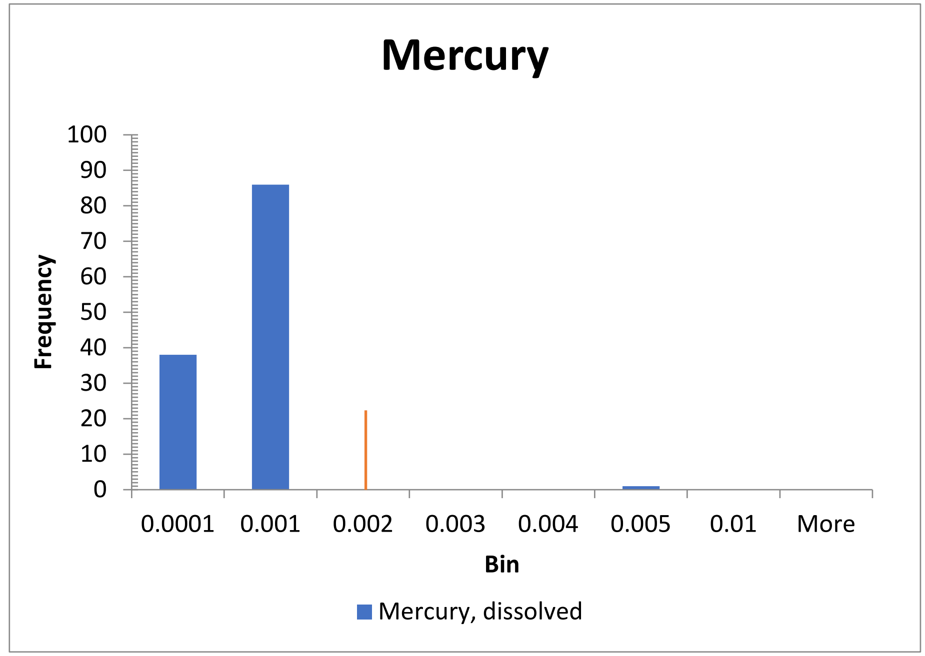









Iron
140
120
100
80
60
40
20
0
Frequency
0.01
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
6.5
7
7.5
8
8.5
More
Bin
Iron, dissolved


Mercury
100
90
80
70
60
50
40
30
20
10
0
Frequency
0.0001
0.001
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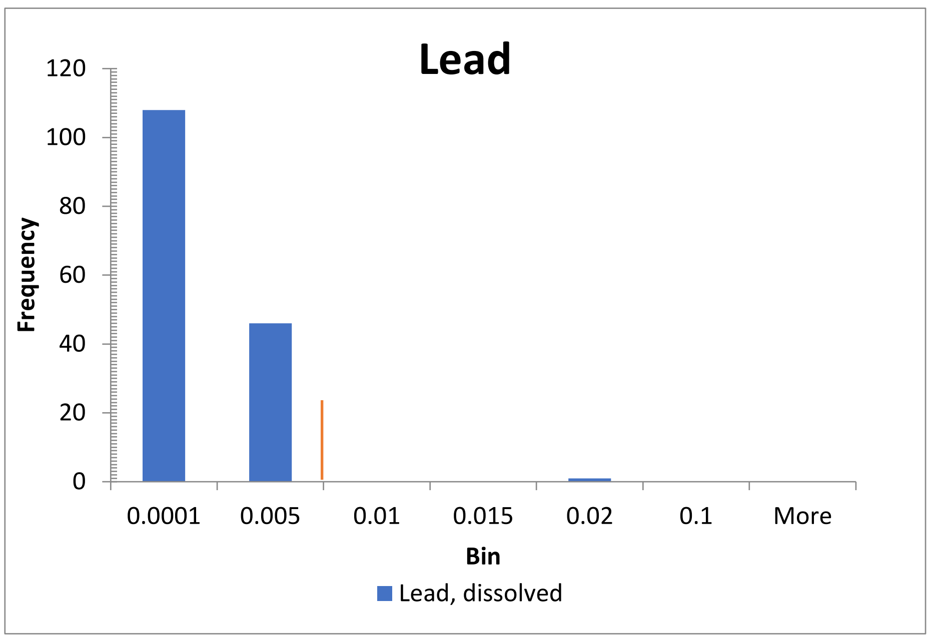
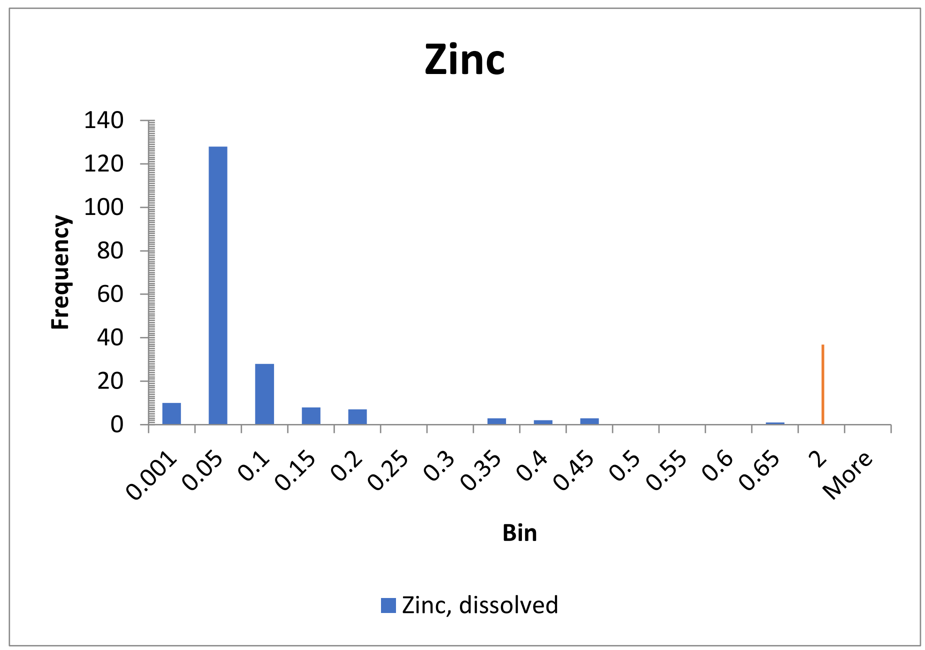
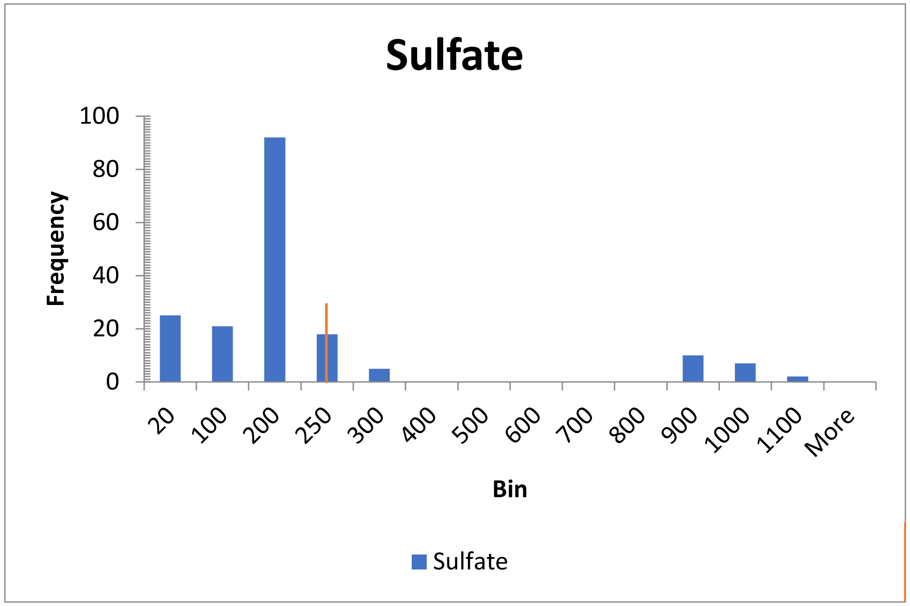
More
Bin
Mercury, dissolved


Lead
120
100
80
60
40
20
0
Frequency
0.0001
0.005
0.01
0.015
0.02
0.1
More
Bin
Lead, dissolved


Zinc
140
120
100
80
60
40
20
0
Frequency
0.001
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.55
0.6
0.65
2
More
Bin
Zinc, dissolved


Sulfate
Frequency
100
80
60
40
20
0
20
100
200
250
300
400
500
600
700
800
900
1000
1100
More
Bin
Sulfate

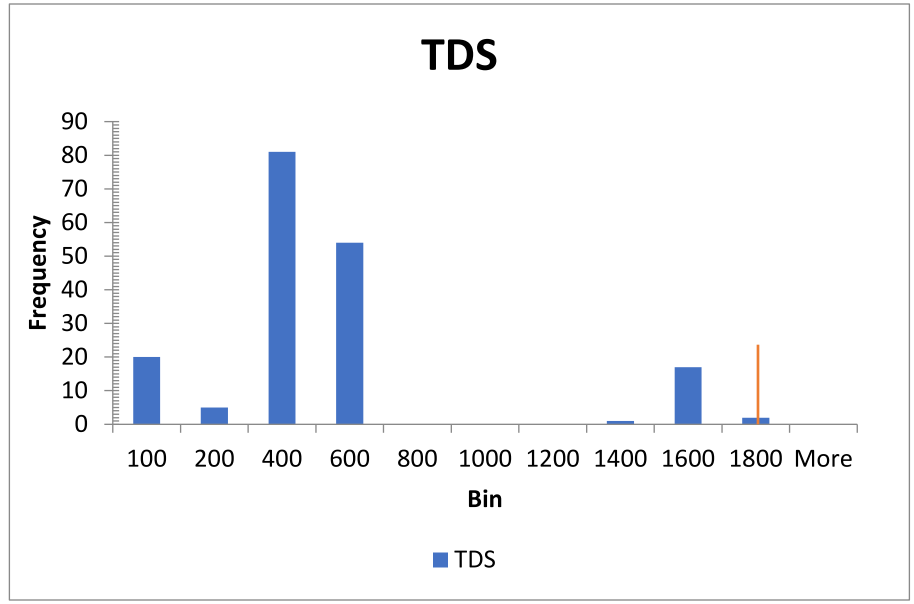

TDS
Frequency
90
80
70
60
50
40
30
20
10
0
100
200
400
600
800
1000
1200
1400
1600
1800
More
Bin
TDS

Exhibit C Mining Plan

The Gold Hill Mill is designed specifically to process gold-silver telluride mineralization characteristic of the historical Gold Hill gold-silver telluride district. No mining will take place within the affected area. This mining plan addresses specifics of the processing (milling) operation, the tailings storage facility, the water pipeline from Left Hand Creek, and the Times-Wynona Mine water storage. Milling will place within a permanent steel structure located onsite. Tailings produced by the mill will be stored in the tailings storage facility, which is a permanent tailings destination. Concentrate will be shipped offsite for smelting and refining. Water for mill operations is supplied by a water pipeline from Left Hand Creek via the Times-Wynona Mine. Mill operations aggressively recycle water to limit water intake needs, but evaporation necessitates make-up intake water from Left Hand Creek.

1. MINING/MILLING PLAN

The existing mill facilities were approved originally in M-1994-117. Amendment 01 approved the addition of the waterline down to Left Hand Creek. This conversion incorporates reagents into the mill as required for a Designated Mining Operation.

No additional disturbance or site development is needed to bring the Gold Hill Mill online.

Milling at the Gold Hill Mill consists of two primary processes: gravity separation and froth floatation. These processes are described in detail in Exhibit U, section 2.

1.1. Period of Mining/Milling

Operations at Gold Hill Mill will begin upon approval of all necessary permits and completion of the water pipeline and improved Times-Wynona Mine bulkhead. Ultimate project life will be dependent upon precious metal prices and the supply of raw material.

1.2. Topsoil Management Plan

No additional topsoil stripping will take place during operations at the Gold Hill Mill. All ground disturbance has already taken place. A topsoil stockpile from previous disturbance can be seen on Map E-2.

There are no areas containing appreciable amounts of topsoil that will be disturbed during the installation of the Left Hand Creek Pump Station, the Gold Hill Mill Pipeline, or the use of the Times Mine adit portal. The CONEX containing the pump and generator will not disturb the land surface on the South side of Left Hand Creek, because it will be resting on the surface of the ground, which is composed entirely of gravel deposited by the fluvial action of the creek. The Gold Hill Mill Pipeline will also be resting on the surface of the land along the length of the Pipeline Easement, except for a few areas where it will be buried to permit foot traffic on historic mine access roads. The topsoil in these areas will be replaced following installation of the pipeline. There is no topsoil present in the area in front of the Times Mine portal.

1.3. Overburden/Waste Rock Management Plan

No overburden or waste rock will be excavated at the existing mill site. All ground disturbance has already taken place. No overburden or waste rock excavation is needed to install the water pipeline or the improved bulkhead.

1.4. Thickness of the Deposit to be Mined

No mining will take place on the affected area of the Gold Hill Mill.

1.5. Site Disturbance and Facilities

All disturbance areas are shown on Map E-2. All facilities that will be used onsite are shown on Map E-2. All roads at the Gold Hill Mill are already developed and shown on Map E-2.

There will not be any significant surface disturbances associated with the installation of the Left Hand Creek Pump Station, the Gold Hill Mill Pipeline, or the use of the Times Mine adit portal. Existing roadways will be maintained in their current configuration.

1.6. Existing and Proposed Roadways

As stated above, the installation of the Gold Hill Mill Waterline will be carried out using existing historic mine access roads which will be maintained in their current configuration to accommodate the installation, maintenance, replacement and operation of the Left Hand Creek Pump Station, the Gold Hill Mill Pipeline, and the use of the Times Mine adit portal.

1.7. Water Consumption

The Gold Hill Mill will use water in processing of ore. It has been determined that 4-7 acre-ft of input water will be needed each year to maintain operations. The water court decree calculates the amount of water consumed by milling operations to be 4.17 ac-ft per year. The modern mill model accounts for water uses in each portion of the process, the quantity of water that is recyclable, and thus determines how much fresh water is needed as input water. The decree calculates water usage using a simple percentage. The modern mill model is likely more accurate. Regardless of the water model used, the amount of input water available is limited by approved water court rulings (Table C-1). There is more water available via the water court decree than is needed for water input, even in dry years.

Table C-1. Gold Hill Mill Water Balance

	Left Hand Creek Diversion Right (ac-ft)	Annual Input Water Required (ac-ft)	Water Decree Mill Consumption (ac-ft)
Dry Year	10.4	4-7	4.17
Wet Year	22.5	4-7	4.17

All water for processing will be pumped from Left Hand Creek under the No. 85CW117 decree. See Appendix C-3 for a discussion of the decree and its application. Water will be stored in the Times-Wynona Mine behind the approved bulkhead. Said water will be pumped from the Times-Wynona mine for usage as make up water in the mill. The permittee will maintain accounting of the amount of water pumped from Left Hand Creek and the amount pumped from the Times/Wynona Mine storage to demonstrate compliance with the water court decree. Mill water will not be returned to Left Hand Creek.

Gold Hill Mill will not pump more input water into the mill than is allowed under decree Case No. 85CW117. Water will be diverted only within the allowed season of April 1 to October 31 each year and at a maximum rate of 50 gallons per minute.

1.7.1. Water Pipeline

The water pipeline consists of over 4500 feet of pipe extending the water take off at Left Hand Creek up Lick Skillet Gulch to the Times/Wynona tunnel and bulkhead. The pipeline consists of steel and plastic (HDPE/PVC) segments welded together.

The plastic pipe segment welds will be field tested using compressed air and an air pressure gauge to determine if the welds were performed properly. This will be done as each 1,000-foot length of the pipeline is installed. Any leaks detected by this test work will be addressed by the workers installing the pipeline by repairing the welded segments before any water is pumped up from Left Hand Creek. At the conclusion of the installation of the Gold Hill Mill Pipeline, when water is first pumped from the creek, the pipeline will be inspected along its entire length for any water leaking from the welded segments. Inspections will be conducted to ensure that the Gold Hill Mill Pipeline is not leaking water, and repairs will be made according to the manufacturers' guidelines for this activity.

Plastic pipe will be used for 200-400 psi requirements. For pressure requirements above that, steel pipe will be used. Five (5) check valves will be placed along the length of the Pipeline. These will be located every one-thousand (1000) feet along the length of the Pipeline. An anti-siphon valve will be installed in the pipeline inside the Times Mine adit to relieve air pressure when the pump is pushing the water column up from Left Hand Creek. Check valves are installed along the pipeline at appropriate locations to facilitate pipeline maintenance. A check valve will be maintained within the Times adit as well.

Additional valves, fittings, and other pipe components will be installed and maintained as needed to ensure the pipeline functions properly. The only place where the Pipeline will be buried is where it crosses roads and trails. It will be incased in a steel pipe and buried at these locations at a maximum depth of three (3) feet for a length of approximately fifteen (15) feet.

The pump will have a water pressure sensitive automatic shut-off valve installed to ensure that the pump does not continue to operate in the event there is a loss of water pressure or a failure of the Gold Hill Mill Pipeline. The pump house and associated CONEX container will be maintained outside the FEMA 500-YR floodplain for the area. See Map E-2.

A few trees may need to be removed to install the Pipeline. The Boulder County Parks and Open Space Department will be consulted regarding this activity. The installation of the new pipeline will follow the old waterline, where trees were cut and cleared when the old pipeline was installed. Pipeline installation work will be conducted in a manner that tree removal emphasizes dead trees and avoids live trees as much as possible.

The only infrastructure that will be placed directly in Left Hand Creek will be a metal sump with trash screens at the pipe inlet. A pipe will be used to extract water from Left Hand Creek. A submersible pump may be used as a charge-pump for the pump house if needed. A diesel tank and diesel generator will be maintained at the pump station near Left Hand Creek to power the pump. The generator and diesel tank will both be placed within secondary containment capable of holding 150% of their volume. All pumping infrastructure will be located outside of the 500-YR and 100-YR floodplain.

The access paths to the pipeline easement can be seen on Map E-1. Easements and access agreements can be found in Exhibit G.

An evaluation of the risk associated with the water pipeline to nearby structures can be found in Appendix C-4

1.8. Groundwater and Surface Water

The Gold Hill Mill sits along the top of a ridge and therefore there is no major uphill drainage area or basin that drains surface water from storm runoff through the Gold Hill Mill. As shown on Map E-2, surface water runoff is from the immediate area only. Site grading will contain surface water runoff on most of the site with stormwater berms acting as containment in areas that are not graded internally. All surface water from runoff will be collected in sumps where it will evaporate. Runoff values can be found on Map E-2 for both milling and reclaimed conditions. Surface water that drains into the tailings storage facility will be contained within and evaporate. A diversion ditch will be maintained uphill of the tailings storage facility to redirect runoff from undisturbed ground uphill of the tailings facility offsite. See Exhibit D for reclamation details.

All surface water from precipitation that is intercepted and detained onsite will depart the site within 72 hours via evaporation or infiltration. Any out-of-priority depletions will be covered by replacements under a substitute water supply plan or augmentation plan.

Due to the disturbed area of the mine being at the top of a ridge there is no uphill location to monitor for surface water. No surface water monitoring point exists for the Gold Hill Mill as it does not discharge surface water and there are no nearby receiving waters to analyze. Monitoring upstream and downstream of the mill on nearby waterways such as Gold Run or Fourmile Creek is not effective due to the presence of numerous other drainages that empty into those waterways. Surface water quality is analyzed at the tailings surface facility for any water within the tailings facility. Map E-2 shows all water sampling points.

No subsurface mining or milling will take place at the Gold Hill Mill and no water discharges will take place. The only subsurface water interaction that occurs is the pumping of Left Hand Creek water into the Times-Wynona Mine for storage and then use in the mill; this is surface water being stored in an approved underground storage system, not groundwater. This water is necessary to maintain sufficient water within mill processes as the mill is a net water consumer. Therefore there is no groundwater discharge from the Gold Hill Mill. All pumping infrastructure from the Times-Wynona Mine into the Gold Hill Mill will be one-way to prevent any pumping of mill water into the Times-Wynona Mine.

Appendix C-1 shows the surface water hydrology calculations. Map E-2 lists design volumes and flow rates compared to designed capacities. A complete water monitoring plan can be found in Appendix C-2.

1.8.1. Times-Winona Mine Water Storage

Water is stored in the Times/Wynona Mine for use in the mill. The Times mine adit is situated at an elevation of 8,355 feet. The Times Mine Cross-Cut extends 395 feet in a southeasterly direction towards the Times-Wynona Mine, where it was driven 190 feet along the Times vein. The Times Mine is connected with the Times-Wynona Mine's First Level workings by way of a 50 foot deep winze. The Wynona Mine shaft is collared at an elevation of 8,445 feet and is 210 feet deep. It has total of four levels, with two main working levels that extend 1,500 feet towards the northeast and the southwest. These two levels were driven along the Wynona vein at a depth of 100 feet and 205 feet below the Wynona Mine shaft's collar. The water that will be stored behind the Times-Wynona Mine bulkhead will fill down to the Second Level of the Wynona Mine by way of the 50 foot winze and the 210 foot shaft. The elevation of the bottom the Wynona shaft is 8,230 feet. Map E-4 shows the Times-Wynona Mine extents as they are known.

Milling operations water demand will provide a regular draw-down on the stored water level in the Times-Wynona Mines. The water levels will be monitored by periodic manual measurements in the Wynona Mine shaft well casing. The Times-Wynona Mine water will be sampled on a quarterly basis when the operation begins using water in the mine and when the Gold Hill Mill is in operation. It will be sampled for the same parameters as the groundwater monitoring wells. At least 60 days prior to the start of operations, a grab sample will be taken from the Times-Wynona Mine and the results provided to CDRMS. The water within the Times-Wynona Mine currently is from pumping the 1980s. Initial water pumped from the Times-Wynona Mine will be measured to ensure that it is less than the total water right available from Left Hand Creek water right Colorado Milling Company owns. This will ensure that the initial water used is only that which was pumped into the Times-Wynona Mine last time the waterline was functioning.

Because of the crystalline nature of the of the Boulder Creek granite where these underground historical mine workings are located, the ground water that is found in this area is only present where the granite has been fractured. Generally, the openings of these fractures (joints and faults) decrease in size with increasing depth, and the chances of obtaining groundwater in any volume is significantly reduced below a depth of 300 feet. The water recharge is by seepage through small joints and voids and intergranular spaces in a diffuse groundwater system; these pathways for groundwater flow are small and infrequent. The movement of water in these granitic rocks is very slow and shows little response to changes in precipitation. The groundwater that is present in these rocks probably migrates downward and laterally through a northeast-southwest trending fracture system. All of the veins near the Times and Wynona Mines are particularly narrow and tight, and contained within very competent wall rock that are nearly impervious. Water has been stored behind the Times-Wynona Mine bulkhead for over 30 years. The historic use of these underground mine workings for water storage has not disturbed the prevailing hydrologic balance of the surrounding area over those 31 years. The quality of the fresh water pumped from Left Hand Creek behind the Times Mine bulkhead is not anticipated to introduce any adverse impacts on the quality of the groundwater found in any mine workings in this area. The elevation and location of the underground mine workings of the Times and Wynona Mines, and the impermeable nature of the wall rock, ensures that there will be no disturbance to the groundwater system.

1.8.2. Pipeline

Groundwater impacts are not anticipated by the installation and use of the Left-Hand Creek Pump Station, the Gold Hill Mill Pipeline, or the use of theTimes Mine adit portal.

Surface water impacts are anticipated to be negligible, since these have already been mitigated by the use of culverts and berming on existing roads near any areas affected by the installation of the Gold Hill Mill Waterline.

2. Water Rights

Water rights for the Gold Hill Mill were obtained by the purchase of 20 shares of stock in the Left Hand Ditch Company, which entitles the Colorado Milling Company to a pro-rata share of the water available from Left Hand Creek. Based upon the historic diversions associated with these water shares, the milling complex will be entitled to a minimum of 10.4-acre feet of water per year in a dry year, and a maximum of 22.53 acre feet of water in a wet year. The Left Hand Ditch Company determines whether it is a wet or dry year. Milling operations will likely consume 4-7 acre-feet per year.

The Colorado Milling Company, LLC will divert the water associated with its shares from a point of diversion located on the South bank of Left Hand Creek, on property that it owns for this purpose. These diversions will be made at a maximum rate of 50 gallons per minute during the irrigation season, which extends from April 1 to October 31. A continuous measuring device will be installed at the point of diversion. Access will be granted to the Left Hand Creek Ditch Company's representatives to enable them to monitor the amount of water being diverted for milling operations.

2.1.1. Times/Wynona Water Storage

The total volume of water that can be stored in the underground mine workings of the Times and Wynona Mines is in excess of 1,400,000 gallons of water (4.3 ac-ft). The underground mine workings in the Times-Wynona Mine were mapped by A.E. Reardon in 1934 and confirmed by Russell R. McLellan in 1947. Map E-4 shows the known extents of the Times-Wynona Mine.

Water will be pumped into the Times-Wynona Mine by way of a pipeline through the mine bulkhead. A check valve will be maintained to prevent water stored behind the bulkhead from flowing out of the Times Mine. An anti-siphon valve will be maintained in this line to release air pressure ahead of the column of water that is being pushed up the Gold Hill Mill Waterline from the Left Hand Creek Pump Station.

Mill water will be pumped from the Times/Wynona Mine via a water well drillhole in the Wynona Shaft. As the Times-Wynona Mines are being utilized for underground water storage, inflows will be monitored at the Left Hand Creek pump location; and withdrawals will be monitored where the water is pumped into the Gold Hill Mill from the Wynona wellhead. An operational balance is required in order to sustain milling operations. Operations will require a net inflow of make up water of roughly 6 gpm. Mill operations will recycle water in order to minimize fresh water needs. This inflow of make up water calculates to 4-7 acre-ft per year. This is well below the dry-year maximum volume of water that could be withdrawn from Left Hand Creek during the irrigation season, which is 10.4 ac-ft of water.

The quantity of water that may be pumped from Left Hand Creek and the quantity of water needed in a season by the mill are both in excess of the storage capacity of the Times-Wynona Mine. However, since inflow and outflow will frequently be happening in parallel, the total storage capacity of the Times-Wynona Mine need not accommodate either the entire seasonal inflow quantity or seasonal outflow quantity.

The water levels in the Wynona Mine will be monitored on a weekly basis when the Gold Hill Mill begins processing ore. This will help CMC determine the frequency and duration of pumping operations from Left Hand Creek to replenish the water being consumed in the Gold Hill Mill. Once the milling operation determines the rate of water consumption from mineral processing, the frequency of monitoring the water levels in the Times-Wynona Mine may decrease to monthly. CMC will maintain the monitoring records on site for review during inspections.

Water currently stored behind the Times-Wynona bulkhead has been there since the last pumping took place roughly 30 years ago. This water is from the Left Hand Creek shares owned by Colorado Milling Company and exercised according to the water court decree governing them. Appendix C-3 contains a summary of the water rights as well as a copy of the decree. Monitoring of inflow and outflow from the Times-Wynona Mine during operations ensures that only CMC's level water right is used to supply the mill and thus there is no risk to area well owners. Map E-2 shows the nearest wells in the area, all of which are the monitoring wells installed by CMC. Appendix C-7 shows the measurement of water levels within the Times-Wynona Mine over a roughly one-year period in 2019-2020. The variations in the water level over that timeframe show that some groundwater inflow above the Times-Wynona bulkhead level leads to an increase in the water level to above the existing bulkhead design level. The water level then declines back to below the bulkhead design level. This rise and fall based on groundwater is entirely consistent with the analysis of the existing bulkhead by Schnabel Engineering as part of TR-11: seepage around the existing bulkhead is expected due to a lack of grouting around the bulkhead interface. As water follows the path of least resistance, groundwater from infiltration through limited fractures in the granodiorite rock departs via the seepage path around the existing bulkhead or other seepage paths above the mine water pool. Water within the Times-Wynona Mine pool has not been measured at any level below the existing bulkhead, indicating a lack of a groundwater discharge path from the Times-Wynona Mine below the existing bulkhead. In summary: minor groundwater inflows to the Times-Wynona Mine above the existing bulkhead discharge via the ungrouted seepage path around the bulkhead. Water stored below the bulkhead is all from Left Hand Creek pumping in the past.

The closest non-CMC well(s) are in Gold Hill, CO roughly 1000 feet to the west on the other side of Hoosier Reef. The presence of the Times-Wynona Mine and its usage as a water storage vessel for over 30 years has not caused any known disruption of area wells or any other negative impact to the prevailing hydrologic balance in the area. Tracking of water inflow (LHC pumping) and outflow (mill usage) will ensure this remains the case.

The Times-Wynona Mine water storage is secured behind a bulkhead in the Times Mine adit. The location of the bulkhead is shown on Map E-4. A revised bulkhead design has been approved by

CDRMS and is included in Appendix C-6. This improved bulkhead will add to the storage capacity of the Times-Wynona Mine by adding head above the current bulkhead.

3. Refuse, Acid, or Toxic Producing Materials

No refuse, acid, or toxic producing materials will be mined or exposed during operations at the Gold Hill Mill as the site is not an active mine. Reagents stored within the mill may be a source of acids or toxic materials if mishandled. Reagent handling plans can be found in Exhibit U. Ore brought to the mill from permitted area mines will be sampled according to the Gold Hill Mill ore sampling plan at a rate of one sample every 5000 tons of material brought to the mill. Ore will be stored on a lined ore pad regardless of sampling results. The ore pad can be seen on Map E-2 and its design on Map E-2A.

There will be no refuse, acid, or toxic producing materials associated with the installation and operation of the Gold Hill Mill Waterline. No waste rock, vein material (ore), wall rock material, or toxic materials are expected to be disturbed as a result of the installation, operation, maintenance, or future replacement of any segment of the Gold Hill Mill Waterline.

4. Ore Processing

The Gold Hill Mill (MLRD Permit No. M-1994-117) is currently permitted to process gold and silver ores from the Cash and Who Do Mines (MLRD Permit No. M-1983-141).

The currently permitted mine dumps located at the Cash and Who Do mines and the mill stockpile contain a minimum of 92,000 tons of material that are available for processing in the Gold Hill Mill. Based upon a 50 ton per day operation at 260 days of operation per year, there are at least seven years of mine dump production available from this source of feed for the mill. Ore for the mill will be stockpiled at the ore pad in the Stockpile Yard shown on Map E-2.

Stockpiles of material intended for milling at the Gold Hill Mill are present to the south and west of the mill building. These piles of material will be processed by the mill as ore upon mill restart as they came from the Cash Mine. The volume and location of these stockpiles can be seen on Map E-2.

Subject to the requisite exploration work and documentation of mineralized zones delineated, there remains the potential to develop economically viable gold-silver resources that could be recovered by selective underground mining at other permitted operations. It is not possible at this time to comment upon the size or grade of these potential zones or the time it would take to develop and mine them. Likewise, it does not include the potential that may remain below and along strike of a number of historical mining operations in the immediate area, including the historical Rex, Tammany, Victoria, Black Cloud, Who Do, Prussian, and Slide mines, or the many historical mine dumps in the area that might contain enough residual gold and silver to justify processing at the Gold Hill mill. Any of these activities would extend the life of the operation beyond that discussed above. Any source of economically viable gold-silver mineralized zones outside the Gold Hill Mill would require proof of permits with the Colorado Division of Reclamation, Mining, and Safety prior to shipping of mined material along with SPLP test and ABA test results of ore demonstrating geochemical consistency compatible with the metallurgical characteristics of mineralized material the mill is designed process. Mineralization characteristic of the Boulder Country deposits is not generally acid producing (i.e. low in sulfides) and no toxic producing mineralized material will be accepted at the Gold Hill Mill. Prior to accepting such material from a mine, a notification would be provided to CDRMS.

Ore brought to the Gold Hill Mill will be stored on the ore pad. All processing will take place within the mill building.

CDRMS will be provided the following information, at a minimum, regarding any ore imported to Gold Hill Mill:

- Mine location
- Mine permittee
- Quantity of material
- Mine CDRMS permit number
- Testing results
- Time frame of import

4.1. Ore Storage

Future ore brought to the Gold Hill Mill will be stored on a lined pad shown on Map E-2A. This pad will be installed following excavation and processing of the existing stockpiled material onsite and removed during reclamation. No additional ore will be brought to the Gold Hill Mill prior to the installation of the ore pad. Precipitation that lands on the ore pad will be retained within it by the liner.

Ore will be taken from the ore pad and deposited into the crusher feed bins at the mill building by loader.

4.2. Milling

The Gold Hill Mill ore processing facilities are contained within the mill building presently onsite.

Ore will be screened on the ore pad in preparation for processing within the mill building. A mobile screen unit will be used for this purpose. A front-end loader and dozer will be used onsite for ore handling. Prepped ore will be transported via loader into the ore bins connected to the mill.

Within the mill, ore goes through two processes to separate and concentrate the gold-silver minerals: gravity separation and flotation. These processes liberate and separate the target gold-silver mineralization from the host rock material and thus concentrate it. The resulting output is referred to as "concentrate", ready for further processing first at a smelter and then at a refinery. What remains behind is non-mineralized ground up rock, known as tailings. The tailings slurry is chemically inert, as shown in the 2009 tests contained found in Exhibit U, section 9. Tailings slurry is run through a thickener and filters before being pumped into the tailings storage facility. In the TSF, tailings dewater further to a final "dry" state. Water can be decanted from the TSF for recycling in the mill if it does not evaporate. Figure C-1 shows a diagram of the milling process. Map E-2B details the path of material through the mill, including tailings.

Step by step material and water flow through the mill is described in Exhibit U, section 2.

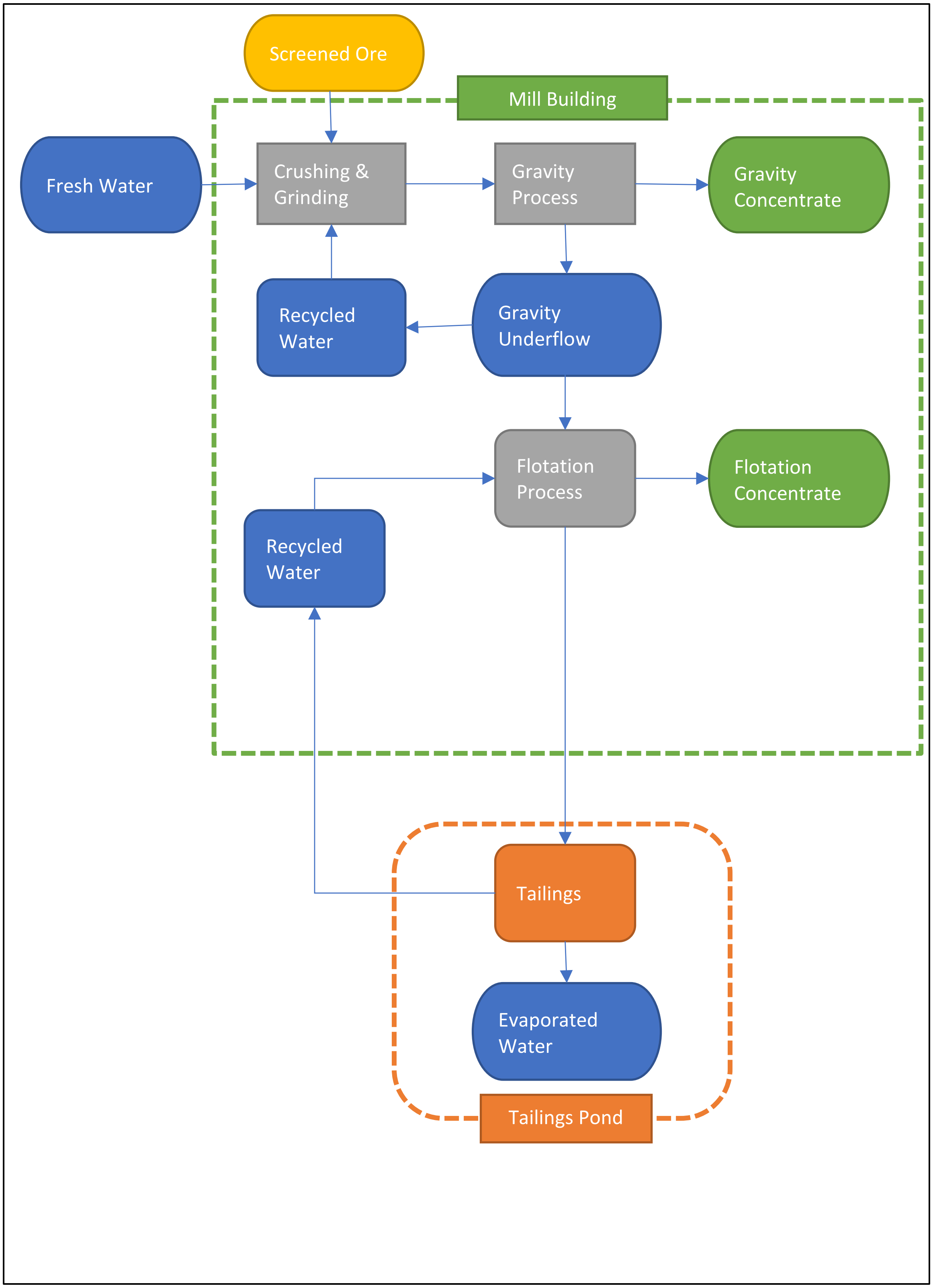


Figure C-1. Mill Diagram

4.3. Tailings Storage Facility

All process tailings will be stored in the tailings storage facility located immediately adjacent to the mill building. Maps E-2 & E-5 show the plan view of the mill and tailings storage facility. The tailings storage facility consists of a lined storage area 3.9 acres in size. The available tailings capacity in the existing impoundment as of January 2022 is estimated at 5,000 tons. Based upon milling operations at 50 tons per day, the mill can operate at full capacity for one-hundred (100) days before available capacity is filled. **No processing will take place within the mill without either adequate capacity in the tailings storage facility or an approved offsite disposal/storage location.**

Off-site disposal and storage of tailings will be to a certified hazardous waste facility such as Clean Harbors facility to the south. A technical revision detailing the acceptance of the tailings material by a hazardous waste facility will be provided to CDRMS before any tailings material is taken off site.

The TSF liner is an HDPE liner installed within an excavated depression. On the uphill side is the anchor trench for the liner. The entire liner perimeter is buried. The tailings storage facility is shown in detail on Map E-5. Precipitation that falls on to the tailings storage facility will be entrapped for evaporation as the required two-foot of freeboard is maintained. As-builts from the facilities construction can be found in Appendix C-5 and Map E-6.

Reclamation of the tailings storage facility is discussed in Exhibit D.

4.3.1. Tailings Storage Facility Maintenance and Monitoring

The condition of the tailings storage liner will be checked annually. Downhill monitoring of groundwater via wells MW-1, W1, W2, & W3 will be conducted quarterly. Liner integrity checks will include a visual inspection of the liner for wear or weathering and patching of any damaged sections. Tailings will be sampled quarterly (SPLP). Embankment slopes will be inspected monthly.

5. Primary Commodities

The Gold Hill Mill will process gold and silver ores from mines situated in the Boulder County Telluride Belt and mines located in the Gold Hill Mining District.

6. Explosives Use

Explosives will not be used during the installation, operation, or maintenance of the Gold Hill Mill.

7. Maps and Plans

All maps and plans can be found in Exhibit E.

Appendix C-1 Surface Water Hydrology

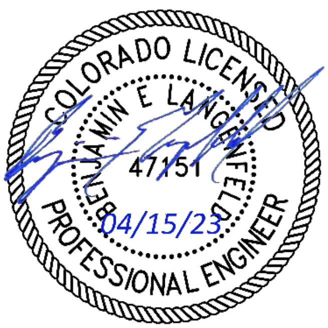
Drainage basin numbers on the following analyses correspond to basins outlined on Map E-2.

Basin	Description
1	Uphill of the Tailings Storage Facility
2	Stockpile Yard
3	Tailings Storage Facility

All stormwater designs are based on the 10-YR & 100-YR 24-HR storm event for this area of Colorado. Runoff modelling is conducted for both operating and reclaimed conditions. Calculations of runoff, both in terms of volume and flow, are according to the US Dept. of Agriculture, Natural Resource Conservation Service TR-55 model. Curve numbers are derived from the ground cover type and hydrologic soil groups for each soil mapped according to the NRCS. NCRS soil map is found in Appendix B-1.

Cover Description	Hydro Soil Group	Curve Number
Oak-Aspen & mountain brush mixture (>70% cover)	D	48[3]
Tailings Storage Facility	N/A (liner present; assume elev. runoff)	90
Disturbed ground	N/A	89

Stormwater control measures at the Gold Hill Mill have been designed or evaluated for sufficiency by a professional engineer licensed in the State of Colorado.



[3] Table 2-2d in TR-55

Appendix C-2 Sampling Plan

1. General

Ground water and surface water will be monitored at the Gold Hill Mill to ensure compliance with Rules 3.1.6, 3.1.7, 6.3.3, and 6.4.21 of the Hard Rock Rules and Regulations. Given that the Gold Hill Mill is a processing facility only and does not involve any mining or mine development, water sampling and analyses typical of an underground metal mine is of no value. There are no mine water discharges to receiving waters nor any groundwater interactions via the extraction or ore or development of ore access. All facilities are already built and have been in place for many decades.

Ore and tailings sampling will be conducted at Gold Hill Mill as well.

The focus of water monitoring is related to the mill tailings storage facility.

Prior to processing of ore at the Gold Hill Mill, five quarters of sampling data from wells W1-W4 and the TSF will be provided to CDRMS as a “pre-operations” data set. Non-processing work, such as EPF installation and other onsite construction will take place during this sampling. Only ore processing will be delayed.

2. Water Sample Locations

Eight sample locations will be used throughout the life of the Gold Hill Mill. All of these sample locations have been sampled in the past as part of existing water monitoring. No new groundwater wells will be established to conduct sampling. Locations can be seen on Figure 1.

Table 1. Water Monitoring Sample Locations

ID	Location	Water Type	Purpose
TSF	Tailings storage facility	Surface	Monitor the quality of evaporating/recycling water in the tailings
LHC	Left-Hand Creek intake	Surface (stream)	Monitor background stream water quality
WS	Wynona Shaft	Surface/Ground	Monitor quality of CMC’s mill water in Times-Wynona Mine
W1	Downhill of mill	Ground	Monitor for impacts to groundwater from mill activity
W2	Downhill of mill	Ground	Monitor for impacts to groundwater from mill activity
W3	Downhill of TSF	Ground	Monitor for impacts to groundwater from TSF
W4	Downhill of TSF	Ground	Monitor for impacts to groundwater from TSF
MW1	Downhill of mill	Ground	Mill groundwater compliance point

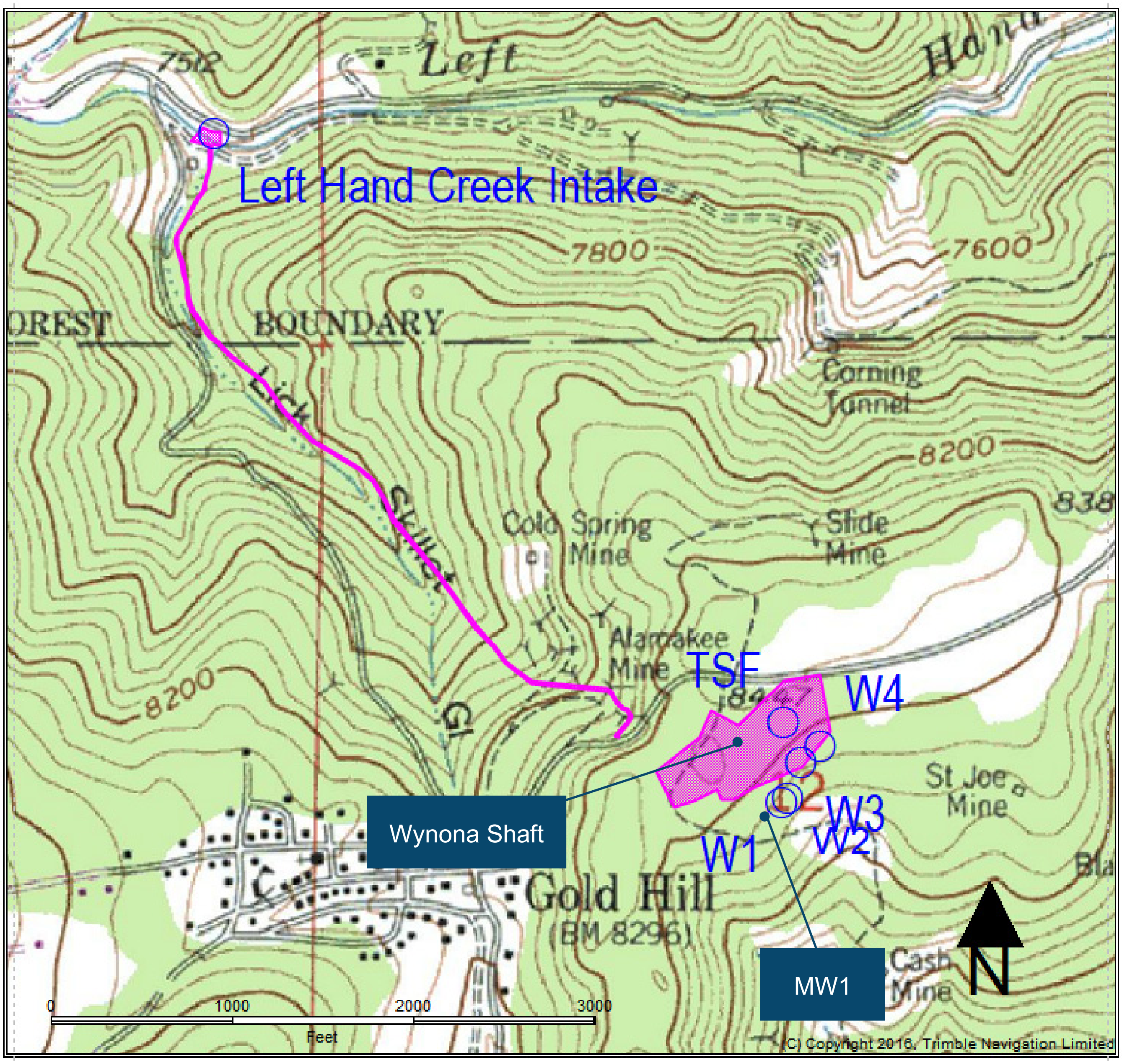


Figure 1. Water Sampling Locations

3. Monitoring Parameters

Table 2 below shows each parameter from the CDPHE Regulation 41 list, whether the parameter will be included in future sampling at Gold Hill Mill, and what sampling has been conducted in the past. For a number of parameters, such as asbestos, they are listed as Not Applicable at Gold Hill Mill. These are parameters that **are** not logically to be found or potentially affected by activity at the mill. There is no asbestos in any of the structures onsite and those would be the only possible source. No radioactive materials are present or will be brought onsite. Phenol, chloropenol, corrosivity, odor, color, and foaming agents are all related to industrial chemical processing such as herbicide production or plastics manufacturing. None of these activities have or will take place at Gold Hill Mill.

Other excluded parameters such as mercury, aluminum, nickel, etc. have been sampled for numerous times in the history of Gold Hill Mill. With so much sampling data gathered and submitted to CDRMS in the past, the presence or lack of presence (in the case of mercury) has been well established and documented (see permit file document 2013-09-23_Revision – M1994117, for example). Sampling for these parameters is redundant and unnecessary. The exception is the Times/Wynona shaft. Since it has not been as thoroughly sampled as the other locations onsite, it will be sampled according to broader parameter list, shown in Table 5.

Table 3 lists the parameters monitored for at Gold Hill Mill at the TSF and the monitoring wells MW-1, W-1, W-2, W-3, and W-4. This list is based on the Colorado Water Quality Control Commissions Regulation 41 groundwater tables 1-4. From the Reg. 41 list, parameters were eliminated from sampling based on two criteria: inapplicability of a parameter to Gold Hill Mill or sufficient existing sampling of a parameter to establish background water quality. Parameters retained from the Reg 41 list are a combination of any previously unsampled parameters and those currently sampled under the Gold Hill Mill permit. This leads to the parameters listed in Table 3. Sampling from the groundwater wells and the TSF will be conducted quarterly. Left Hand Creek will also be sampled (Table 4) with a full suite to track local natural surface water conditions and to inform the mill of the quality of water bring pumped to the mill.

Table 2. Potential Sample Parameters

CDPHE List for Groundwater Sampling	Part of Gold Hill Mill Sampling	Count of Past Samples Taken
pH Field (pH unit)	YES	147
TDS	YES	>150
Antimony – Dissolved	YES	0
Arsenic – Dissolved	YES	427
Barium – Dissolved	YES	0
Cadmium – Dissolved	YES	430
Copper – Dissolved	YES	160
Iron – Dissolved	YES	159
Lead – Dissolved	YES	160
Manganese – Dissolved	YES	504
Molybdenum – Dissolved	YES	0
Nitrate (NO3)	YES	0
Nitrite (NO2)	YES	0
Silver – Dissolved	YES	0
Sulfate – Total	YES	358
Thallium – Dissolved	YES	0
Uranium – Dissolved	YES	0
Zinc – Dissolved	YES	362
Coliforms, Total (30 day ave)	NO	N/A
Asbestos	NO	N/A
Chlorophenol	NO	N/A
Color	NO	N/A
Corrosivity	NO	N/A
Foaming Agents	NO	N/A
Odor	NO	N/A
Phenol	NO	N/A
Aluminum – Dissolved	NO	133
Beryllium – Dissolved	NO	11
Boron – Dissolved	NO	9
Chromium – Dissolved	NO	138
Cobalt – Dissolved	NO	109
Cyanide – Free	NO	N/A
Fluoride – Total F	NO	17
Lithium – Dissolved	NO	110
Mercury – Dissolved	NO	133
Nickel – Dissolved	NO	128

CDPHE List for Groundwater Sampling	Part of Gold Hill Mill Sampling	Count of Past Samples Taken
Nitrite + Nitrate as Nitrogen	NO	9
Selenium – Dissolved	NO	139
Vanadium – Dissolved	NO	111
Beta and Photon emitters	NO	N/A
Gross Alpha	NO	N/A

Table 3. Water Monitoring Parameters & Limits

Wells (MW-1, W-1-W-4) and TSF Parameters	Lowest CDPHE Groundwater Limit (mg/L)
pH Field (pH unit)	6-8
TDS	Varies (see Reg 41)
Antimony – Dissolved	0.0066
Arsenic – Dissolved	0.01
Barium – Dissolved	2
Cadmium – Dissolved	0.005
Copper – Dissolved	0.2
Iron – Dissolved	0.3
Lead – Dissolved	0.05
Manganese – Dissolved	0.05
Molybdenum – Dissolved	0.21
Nitrate (NO3)	10
Nitrite (NO2)	1.0
Silver – Dissolved	0.05
Sulfate – Total	250
Thallium – Dissolved	0.002
Uranium – Dissolved	0.0168
Zinc – Dissolved	2

Table 4. Left Hand Creek Sampling Parameters

LHC Parameters	
Aluminum, dissolved	Magnesium, dissolved
Aluminum, total	Manganese, dissolved
Antimony, dissolved	Manganese, total
Arsenic, dissolved	Mercury, dissolved
Arsenic, total	Mercury, total
Barium, dissolved	Molybdenum, dissolved
Beryllium, dissolved	Molybdenum, total
Bicarbonate as CaCO3	Nickel, dissolved
Boron, dissolved	Nitrate/Nitrite as N
Cadmium, dissolved	Nitrogen, ammonia
Cadmium, total	Phosphorus, ortho dissolved
Calcium, dissolved	Potassium, dissolved
Carbonate as CaCO3	Residue, Filterable (TDS) @180C
Cation-Anion Balance	Residue, Non-Filterable (TSS) @105C
Chloride	Selenium, dissolved
Chromium, total	Silica, dissolved
Chromium, Trivalent Total	Silver, dissolved
Conductivity @25C	Sodium, dissolved
Copper, dissolved	Sulfate
Copper, total	Sulfide as S
Cyanide, total	Sum of Anions
Cyanide, WAD	Sum of Cations
Dissolved Chromium, Hexavalent	Thallium, dissolved
Field Conductivity @25C	Total Alkalinity
Field Dissolved Oxygen	Uranium, dissolved
Field pH	Vanadium, dissolved
Field Temperature	Zinc, dissolved
Field Turbidity	Zinc, total
Fluoride	
Hardness as CaCO3 (dissolved)	
Hydroxide as CaCO3	
Iron, dissolved	
Iron, total	
Lead, dissolved	
Lead, total	

Table 5. Times/Wynona Shaft Sampling Parameters

Times/Wynona Shaft Sampling Parameters	
pH Field (pH unit)	Aluminum – Dissolved
TDS	Beryllium – Dissolved
Antimony – Dissolved	Boron – Dissolved
Arsenic – Dissolved	Chromium – Dissolved
Barium – Dissolved	Cobalt – Dissolved
Cadmium – Dissolved	Cyanide – Free
Copper – Dissolved	Fluoride – Total F
Iron – Dissolved	Lithium – Dissolved
Lead – Dissolved	Mercury – Dissolved
Manganese – Dissolved	Nickel – Dissolved
Molybdenum – Dissolved	Nitrite + Nitrate as Nitrogen
Nitrate (NO3)	Selenium – Dissolved
Nitrite (NO2)	Vanadium – Dissolved
Silver – Dissolved	
Sulfate – Total	
Thallium - Dissolved	
Uranium - Dissolved	
Zinc - Dissolved	

4. Water Sampling Protocol

Water sampling will be conducted each quarter at Gold Hill Mill. Sampling will be conducted in the same manner as that approved for the Cash and Who-Do Mines. The standard operating procedures are attached.

5. Ore and Tailings Monitoring Parameters

Ore and tailings will be sampled for the parameters listed below via SPLP and acid-base analyses. These parameters are similar to those sampled for in the groundwater sampling that has been conducted at Gold Hill Mill for decades. As both the ore and the tailings will be kept within zero-discharge facilities, there are no applicable limits to compare the results to. The data from ore and tailings sampling will be used to compare to groundwater samples downgradient to confirm whether any tailings or ore material is somehow leaving the lined ore pad or the lined tailings storage facility.

Table 6. Ore and Tailings Parameters

Parameter	Lowest CDPHE Groundwater Limit (mg/L)
Arsenic, dissolved	0.01
Cadmium, dissolved	0.005
Conductivity	N/A
Copper, dissolved	0.05
Fluoride	2
Iron, dissolved	0.3
Lead, dissolved	0.05
Manganese, dissolved	0.05
Mercury, dissolved	0.002
Nickel, dissolved	0.1
Nitrate/Nitrite as N	10
pH	6-9
Total Dissolved Solids (TDS)	1800
Sulfate	250
Vanadium, dissolved	0.1
Zinc, dissolved	2
Acid-Base Accounting (ore only)	N/A

6. Ore and Tailings Sampling Protocol

EPA soil sampling procedures, as outline below, will be followed for ore and tailings:

- A clean pair of new, non-powdered, disposable gloves will be worn each time a different location is sampled, and the gloves should be donned immediately prior to sampling. The gloves should not contact the media being sampled and should be changed any time during sample collection when their cleanliness is compromised.
- Special care must be taken not to contaminate samples. This includes storing samples in a secure location to preclude conditions which could alter the properties of the sample.
- Samples shall be custody sealed during long-term storage or shipment.
- Always sample from the anticipated cleanest, i.e., least contaminated location, to the most contaminated location. This minimizes the opportunity for cross-contamination to occur during sampling.
- Collected samples must remain in the custody of the sampler or sample custodian until the samples are relinquished to another party.

- If samples are transported by the sampler, they will remain under his/her custody or be secured until they are relinquished.
- Shipped samples shall conform to all U.S. Department of Transportation (DOT) rules of shipment found in Title 49 of the Code of Federal Regulations (49 CFR parts 171 to 179), and/or International Air Transportation Association (IATA) hazardous materials shipping requirements found in the current edition of IATA's Dangerous Goods Regulations.
- Documentation of field sampling is done in a bound logbook.
- Chain-of-custody documents shall be filled out and remain with the samples until custody is relinquished. CoC document copies will be maintained at the Gold Hill Mill.
- Sampling equipment shall be decontaminated:
    1. Wash equipment thoroughly with Luminox® detergent and hot tap water using a brush or scrub pad to remove any particulate matter or surface film.
    2. Rinse equipment thoroughly with hot tap water.
    3. Allow to air dry for at least 24 hours.
    4. Wrap equipment in one layer of aluminum foil. Roll edges of foil into a "tab" to allow for easy removal. Seal the foil wrapped equipment in plastic and label.
- All ore/tailings samples must be thoroughly mixed to ensure that the sample is as representative as possible of the sample media.
- Place the sample into appropriate, labeled containers.
- All samples requiring preservation must be preserved as soon as practically possible, ideally immediately at the time of sample collection. Preservatives will be provided by the sampling lab to ensure appropriate amounts.
- Ore/tailings samples will be collected by a small steel shove, long armed dipper, or similar.
- During sample collection, if transferring the sample from a collection device, make sure that the device does not contact the sample containers.
- At least once every 5 years, provide a duplicate sample of both tailings and ore to the lab for a QA/QC check.

7. Standard Operating Procedures – Ore/Tailing Sampling

1) Ensure the appropriate equipment has been acquired and prepared
2) Prepare a work area for sampling equipment and sample containers
3) Use required safety and health equipment, including PPE, as required
4) Fill out field data sheet with the following information: date and time of sample, name of sample, and sample location
5) Prepare sample containers with lab instructions
    a. Site name
    b. Sample ID/location
    c. Date and time of sampling
    d. Analyses requested (if lab requires)
    e. Type of preservative (if any)
    f. Initials of sampler
6) For ore, collect at least 50 pounds of ore from within the ore pad.
    a. Screen ore to lab required size limit
    b. Place ore sample into a clean container for transport.
    c. Secure the samples with packing material and ship to laboratory.
    d. Place all disposable sampling materials (plastic sheeting, disposable samplers, and health and safety equipment) in appropriately labeled containers.
7) For tailings, collect at least 1 gallon of tailings from discharge fan within the Tailings Storage Facility
    a. Tailings must be sampled from the tailings pipe discharge into the Tailings Storage Facility only
    b. Use a long-handled dipper or similar device to retrieve tailings samples
    c. Place tailings sample into a clean container for transport
    d. Leave roughly 10% of the container volume as freeboard
    e. Secure the samples with packing material and ship to laboratory
    f. Place all disposable sampling materials (plastic sheeting, disposable samplers, and health and safety equipment) in appropriately labeled containers.
8) Quality Assurance
    a. Field-derived quality assurance blanks or duplicates will be collected once every ten samples.

8. Ore and Tailings Reporting Schedule

Ore and tailings will be sampled and tested once every 5000 tons of ore processed. Sample results will be reported to CDRMS within 60 days of sampling to account for lab processing time.

Appendix C-3 Water Rights Summary

Appendix C-4 Waterline Stability Memo

Appendix C-5 Tailings Storage Facility As-Built

Appendix C-6 Dewatering Plan & Bulkhead Design

Included upon approval of TR-11

Appendix C-7 Times-Wynona Mine Pool Level

Exhibit D Reclamation Plan

1. RECLAMATION PLAN

The post milling land use of the site is forestry and rangeland. The mill building and roads will be maintained following reclamation. Revegetation will take place over stockpiles yard areas and the tailings storage facility.

1.1. Mill Building

At the conclusion of operations, the mill building will be maintained onsite as a general-purpose structure. A building permit is in place with Boulder County for the structure. Parking associated with the mill building will also be maintained for post mine land use. Roads in place onsite will remain following reclamation.

After processing operations have finally ceased at the Gold Hill Mill, all of the metal storage containers will be removed from the site, unless they are being used to store tools and equipment needed for reclaiming the Gold Hill Mill site. All of the equipment and machinery that is stored outside the mill building will be removed or relocated inside the Gold Hill Mill. The ore stockpile storage area will be used by a local contractor or excavator to store equipment and machinery. This will help ensure that the Gold Hill Mill site does not become an attractive nuisance and magnet for vandals

Map E-3 shows the reclaimed condition of the site.

1.2. Existing Dumps and Stockpiles

All material contained within the disturbance area in dumps or stockpiles will be processed through the mill and the underlying footprint reclaimed in the same manner as surrounding disturbed ground. The ore pad and its liner will be removed and disposed of within the tailings storage facility.

1.3. Tailings Storage Facility

The tailings pond reclamation will be conducted over four phases.

1. Field tests of tailings
2. Tailings capping
3. Topsoiling of capped tailings
4. Revegetation of capped tailings

1.3.2. Tailings Testing

Prior to capping tailings will be sampled in three locations evenly distributed across the surface of the tailings storage facility from the southwest to the northeast. These samples will be analyzed at a certified lab using the Synthetic Precipitation Leaching Procedure (SPLP) protocol to determine potential long term leachates. Depending on the results of the SPLPs, capping material will be selected.

At the time of capping, a technical revision will be submitted with the SPLP results and the capping material selected.

1.3.3. Tailings Capping

The final tailings pond will be capped with material based on the results of SPLP testing of the tailings. Possible tailings cap material includes, but is not limited to: crushed limestone, clean sand, compacted clay, or other materials. The goal of the capping material will be to provide a structural and, if necessary, hydrologic barrier between the fine tailings material and topsoil. The type of capping material and its thickness will be determined at the end of the tailings ponds usable lifespan.

As the tailings material may take time to settle and all tailings water to evaporate a tailings consolidation step will take place before capping. During this period of tailings consolidation, a wood fiber mulch will be applied to the dried areas on the top of the tailings to prevent water erosion and to control dust. The revegetation of the tailings pond can be started as soon as the tailings can support the weight of a small conventional tractor. This will probably be within the first two or three years of the cessation of tailings deposition. Once the former tailings pond area has physically stabilized, the surface will be leveled by grading it with a small tractor prior to capping.

For the purpose of bond calculations, it is assumed that the tailings material testing shows leaching metals that will necessitate an impermeable layer and drainage layer below topsoil.

1.3.4. Topsoiling of Tailings

Following capping, the tailings will be topsoiled with an average of eight inches of topsoil. NRCS soil mapping of the area is a rock complex consisting of 50% soil, 30% rock outcrop, and 20% minor components. Based on the soil thickness outlined in the NRCS soil report (Appendix B-1) of 0 to 11 inches of gravelly loam/sand, an eight-inch replacement thickness is more than sufficient. Table D-1 outlines the quantity of soil needed to reclaim the top of the tailings pond.

1.3.5. Revegetation of Tailings

No trees of brush will be introduced onto the tailings pond revegetation to prevent puncture of the liner. Native species will be used in the reclamation of the tailings pond. All revegetated areas on the tailings pond will be mulched. All seeding on the tailings pond will be either broadcast seed or hydroseed, no drill seeding will occur on the pond footprint. Table D-2 lists the species used in seeding and planting at Gold Hill Mill.

Between 30 and 40 Ponderosa pine and Aspen trees ranging in height from 3 to 6 feet will be planted along the southeastern face of the embankment. This tree planting will take place past the edge of the liner. These trees will be transplanted from other locations onsite, since the property has abundant trees.

1.4. Mine Shafts

No active mine shafts are present onsite or proposed. The Wynona Shaft is only maintained for a water line and pump, not personnel entry. Existing closed shafts will be fenced and secured with heavy steel doors to prevent future unauthorized entries.

1.5. Left Hand Creek Pump Station

The Left Hand Creek Pump Station will consist of a metal "CONEX" containing the pump and the generator to power the pump. Both of these structures can be moved with a fork lift and transported on a flatbed truck or trailer. Neither of these structures will be placed on a permanent concrete foundation, so there will not be any excavation involved in the final reclamation of this site.

1.6. Gold Hill Mill Pipeline

Removing the Gold Hill Mill Pipeline will involve two workers cutting the two (2) inch pipeline into manageable lengths and hauling these sections to a vehicle for removal to a licensed disposal site.

1.7. Times/Wynona Mine Adit Portal

At the end of milling, the Times/Wynona Mine will be closed to use as a water storage system. The Wynona Shaft well will be disconnected from the mill. The Times/Wynona Mine accesses will be maintained for landowner access in order to monitor the bulkhead.

The Times Mine adit portal culvert has a secure metal door that will be locked as part of reclamation to prevent access. The five (5) foot diameter galvanized steel culvert will not collapse from the weight of the overlying material, and the mine workings do not produce any acid-mine drainage. When the Gold Hill Mill Waterline is decommissioned the pipeline into the Times Mine adit will have its valve removed and be left open to permanently depressurize the bulkhead.

Upon completion of processing in the final season of milling, no additional water will be pumped into the Times-Wynona Mine. The last run of mill processing will use up the water within the Times-Wynona Mine to reduce the head behind the bulkhead to the minimum amount possible. This head level will be documented in a mine closure report.

1.7.1. Times/Wynona Mine Water Sampling – Reclamation

Upon closure of the Times/Wynona Mine for use as storage, the discharging natural water from the Times/Wynona Mine will be sampled according to the sampling plan laid out for groundwater in Appendix C-2. This sampling plan will be conducted for a minimum of five quarters. Based on this sampling, the permittee will determine if the Times/Wynona Mine can continue to freely drain natural groundwater inflows, or if the discharge pipes need to be sealed and water contained within the approved storage structure.

1.8. Topsoil Replacement & Revegetation

The entire disturbance area, excluding the roads, is assumed to be topsoiled and revegetated. The post mine land use will be forestry and rangeland. The existing topsoil stockpile northeast of the tailings storage facility will be put to use (8000 CY) in reclamation. Topsoil will be replaced over all areas designated on Map E-3 to a depth of eight inches. Quantities of topsoil required to achieve reclamation can be seen in Table D-1. Based on these calculated volumes there is more than enough topsoil in the current stockpile to cover the site as needed in reclamation.

Table D-1. Topsoil Replacement Requirements

Portion of Site	Area (acres)	Topsoil Thickness (inches)	Topsoil Quantity (CY)
Stockpile Yard	3.1	8	3335
Tailings Storage Facility	1.9	8	2299
Total	5.0		5,634

Seeding will be conducted during the fall, prior to anticipated snowfall for the year.

Revegetation will consist of seeding using the mix outlined in Table D-2. Mulch will be applied at a rate of 2000 lbs/acre. Said mulch will either be imported or produced via chipping and mulching of felled timber and shrubs onsite.

Table D-2. Grass/Forb Seed Mix

Species	Application Rate (lbs pure live seed/acre)
Mountain Muhly	2
Slender Wheatgrass	8
Thurbur Fescue	3
Smooth brome	5
Orchard grass	6
Timothy grass	2
Hard fescue	4
Intermediate wheatgrass	8
Red Fescue	2
Total	40

Note: All seed rates listed are drill seed. Broadcast seed will be at twice the listed rate

The time of the year when tailings deposition finally ceases will determine the season that these grass species are planted on the tailings retention structure. These grasses will be planted in either the late fall or early spring months; depending upon how much time is available for ground preparation following the cessation of milling operations.

A sprinkler irrigation system may be used to avoid dehydration of the seedbeds during each of the grass seed germination periods. Some additional fertilizer will also be applied during the first two or three years following the revegetation of each part of the tailings storage facility. When these fertilizer treatments are discontinued after the vegetation has been effectively established, it is expected that the native grasses will successfully compete with the introduced grass species.

Voluntary revegetation is also expected to occur as native seeds from adjacent forest areas germinate and grow in the improved soil of the reclaimed tailings storage facility. The only area where no vegetation will be established on the tailings retention structure is on the upper portion of the tailings pond, where the pond was excavated in solid granite. This slope is too steep to support any soil or the establishment of any vegetation and will remain as bare rock. Any exposed bedrock steeper than 3H:1V will not be revegetated.

Approximately 20 trees ranging from 3 to 6 feet in height will be planted every 10 to 15 feet over the southwest disturbed area of the mill site. Part of the Reclamation Plan for this site will involve encouraging the growth of the existing trees and shrubs that have covered this area since the Wynona

Mine was last worked. This will be accomplished by applying appropriate soil amendments and fertilizers to the larger trees and shrubs, and by transplanting the smaller trees to the reclaimed areas of the Stockpile Yard.

Fertilizer and amendments will be selected following test of stockpiled soil present onsite.

1.9. Water Monitoring

Groundwater monitoring will continue at the Gold Hill Mill for five quarters following final reclamation. Each well will be reclaimed in the following manner:

1. Fill the well to the static water level with clean sand or clean gravel.
2. Between the static water level and the ground surface, the borehole must be filled with clean native clays, cement, drill cuttings, or high solid bentonite grout to the ground surface.
3. The uppermost five (5) feet of casing must be filled with grout or a permanent watertight cover must be installed at the top of the casing. If casing is removed, the hole must be filled as described above to within five (5) feet of the ground surface. The top five (5) feet of the hole must be filled with materials that are not more permeable than the surrounding soils that are adequately compacted to prevent settling.

The monitoring wells will be plugged and abandoned according to Department of Water Resources *2 CCR 402-2 Rules and Regulations for Water Well Construction, Pump Installation, Cistern Installation, and Monitoring and Observation Hole/Well Construction.* The operator will submit a summary report describing the monitoring well abandonment process along with any relevant DWR documentation.

1.10. Reclamation Cost Estimate

The reclamation cost estimate below is based on the following condition of the site:

- Water pipeline needs to be removed
- Times-Wynona Mine inlet and outlet pipes sealed
- Pump station and CONEX to be removed
- Times-Wynona mine adit and shaft closed and locked
- Stockpile Yard topsoiled and seeded
- Tailings storage facility capped, topsoiled, and seeded.

As the Gold Hill Mill does not contain any active mining, no slope stabilization or high wall grading will be needed. The mill building, roads, and power lines will remain following reclamation.

Table D-3. Gold Hill Mill Reclamation Cost Estimate

Left Hand Creek Pump Station Reclamation Cost

Task	Cost
Forklift rental $350/day x 1 day	$350
Bed/Trailer Rental $50/hour x 8 hours/day x 1 day	$400
Operator $65/hour x 8 hours/day x 1 day	$520
2 Laborers $18/hour/laborer x 8 hours	$288
Total	**$1558**

Gold Hill Mill Pipeline Removal

Task	Cost
2 Laborers - $18/hour/laborer x 8 hours/day x 5 days	$1,440
Bed/Trailer Rental - $50/hour x 8 hours/day x 5 days	$2000
Operator - $20/hour x 8 hours/day x 3 days	$480
Landfill Disposal Charges - $150/load x 12 loads	$1,800
Total	**$5720**

Times Mine Water Bulkhead Closure

Task	Cost
1 Miner $40/hour x 5 hours	$200
1 Laborer $18/hour x 5 hours	$90
Supplies – Cement to Close 3 PVC Pipes	$30
Adit and shaft closure: Steel door and lock to prevent entry $65/hour x 8 hours & $500 for doors	$1020
Total	**$**1,340

Tailings Storage Facility

Task	Cost
Soil bedding layer. 18 inch thick, 2100 CY @ $1.50/CY	$3150
Compaction of soil bedding layer with dozer. 1.9 acres @ $375/acre	$712.5
40 mil HDPE geomembrane across entire pond. 1.9 acres @ $ 3500/acre	$6650
Drainage layer: 10 MESH to 3/8” material. 12 inch thick. 1400 CY @ $10/CY	$14,000
Topsoil placement to a depth of 8-inches. 2300 CY @ $1.50/CY	$3450
Seed with approved seed mix over 1.9 acres @ $400/acre and assuming 50% seed failure rate.	$1,140
Mulch applied over 1.9 acres (2000 lbs/acre) @ $800/acre	$1520
40 trees planted @ $100/tree	$4,000
Total	**$**34,623

Storage Yard

Task	Cost
Topsoil placement to a depth of 8-inches over 3.1 acres. 3335 CY @ $1.50/CY	$5002
Seed with approved seed mix over 3.1 acres @ $400/acre and assuming 50% seed failure rate.	$1860
Mulch applied over 3.1 acres (2000 lbs/acre) @ $800/acre	$2480
20 trees @ $350/tree	$7000
Monitoring well plugging and abandonment ($1500/well)	$9000
Total	**$**25,342

Final Total

Tasks	Cost
Left Hand Creek Pump Station	$1558
Water Pipeline Removal	$5720
Times-Wynona Mine Bulkhead Closure	$1340
Tailings Storage Facility	$34623
Storage Yard	$43,241
Subtotal	$86,482
DRMS Administrative Cost Factor: 28%	$24,215
Grand Total	$**110,697**

Exhibit E Maps

The following exhibits (maps) are provided as part of this Application for a conversion to the Gold Hill Mill, Boulder County, Colorado-MLRD Limited Impact 110(2) Permit No. M-1994-117.

Map E-1: Current Conditions

Map E-1A: Regional Hydrology

Map E-1B: Geology Map

Map E-2: Mill Extents

Map E-2A: Ore Pad

Map E-2B: Mill Layout

Map E-3: Reclamation Plan

Map E-4: Times-Wynona Mine

Map E-5: Tailings Storage Facility

Map E-6: Tailings Storage Facility As-Built

Map E-7: Reagent Storage

Map E-8: Monitoring Well

All maps for this application are organized in this exhibit. These maps satisfy any map requirements of CDRMS Hard Rock Rule 6 – Permit Application Exhibit Requirements.

1. OWNERS OF RECORD

The owners of record for the affected area are listed below. These owners are shown on Map E-1.

1	Patented Oscar Lode, No. 17992	Colorado Milling Company, LLC 50 West 100 South Moab, Utah 80342
1	Patented Good Enough Lode, No. 15838	
1	Patented Eugene Lode, No. 101	
1	Patented Thorndyke Lode, No. 5159	
1	Patented Chicago Lode, No. 623	
1	Patented Scott Lode, No. 622	
1	Patented Lillie of the West Lode, No. 327	
1	Patented White Cloud Lode, No. 107	
1	Patented Wynona Lode, No. 112	
1	Patented Trumbo Lode, No. 589	
1	Patented Hercules Lode, No. 5604	
1	Patented Fitzsimmon Lode, No. 16075	
1	Patented John G Lode, No. 15825	
1	Patented Hazel A Lode, No. 15825	
1	Patented Franklin Lode, No. 15825	
1	Patented Cy Eaton Lode, No. 15825	
1	Patented Time Lode, No. 6034	
1	Patented Comet Lode, MS 318	
1	Unpatented JoAnne Lode, No. 115088	
1	Gold View No. 2 unpatented lode mining claim CMC-209848	
1	Gold Gulch No. 1 unpatented lode mining claim CMC-210863	
1	Gold Gulch No. 2 unpatented lode mining claim, CMC-210864	
1	Gold Gulch No. 3 unpatented lode mining claim CMC-210865.	

With the exception Gold Gulch No. 3 lode mining claim, all of the unpatented mining claims are located on U.S. Bureau of Land Management property. The Gold Gulch No. 3 is located on U.S. Forest Service land managed by U.S. Bureau of Land Management.

2	Patented Golden Gate Lode, MS No. 5149-A	

2	Paris Lode, MS No. 5149-A	Boulder County Parks and Open Space Department 5201 St. Vrain Road Longmont, Colorado 80503
2	Mucha Lode, MS No. 5149-A	
2	Minnie Lode, MS No. 466	
2	Sadie Lode, MS No.18056	
2	Lillie Lode, MS No. 18056	
2	Cold Spring Lode, MS No. 363-A	
2	Mystic Lode, MS No. 317	
2	Gay Deceiver Millsite, MS No. 6336-B	
2	Hog Back Lode, MS No. 4559-E	
2	and the Alamakee Lode, MS No. 111.	

3	Patented Keystone Millsite, MS 69B, and New Discovery Millsite, MS585B.	James and Julie Rouse 6861 South Clayton Way Centennial, Colorado 80122
4	Patented Mammoth Millsite, MS No. 17576	James K. Macumber Amy Fortunato 4891 Lick Skillet Road, Boulder, Colorado 80455
5	Patented Eureka Millsite, MS No. 601 B, and Paris Millsite, MS No.5149B	Gene Sapp & Dene Sapp 4801 Lick Skillet Road Boulder Colorado 80455
6	Patented Iron Lode, MS No. 390, and Cohen Lode, MS No. 300	Finlandia Minerals, LLC960 Pine Street Gold Hill, Colorado 80302
7	U.S. Bureau of Land Management property	U.S. Department of the Interior Bureau of Land Management Royal Gorge Field Office 3028 East Main Street Canon City, Colorado 81212
8	Alamakee Lode MS 111; Comet Lode MS 318; Star Lode MS 4559A	Rene Murphy 3914 Orchard Court Boulder, Colorado 80304

US Bureau of Land Management property noted under (7) is distinct from unpatented claims managed by the BLM, including the USFS. However, as is common with mining claims and can be seen on Map E-1, overlap occurs.

Exhibit U Environmental Protection Plan

An Environmental Protection Plan is being submitted because the project is classified as a Designated Mining Operation. This classification results from the current DRMS definition of Designated Mining Operations that includes a “mining operation at which toxic or acid-forming materials will be exposed or disturbed as a result of mining operations.” While the Gold Hill Mill does not strictly meet the definition of a Designated Mining Operation (it does not mine any ore), CMC has agreed to convert the permit to a DMO at CDRMS request. The Environmental Protection Plan addresses the handling of reagents the CDRMS believes makes the Gold Hill Mill qualify as a DMO. The waste produced by the mill is a neutral sludge that is roughly >70% moisture and contains minimal concentrations of sulfides. These tailings will be stored in the tailings storage facility to allow dewatering and then stored in a permanent embankment onsite. Tailings storage and pond details can be found in Exhibit D, E, and G.

1.1. Water Baseline Data and Monitoring

Groundwater data that has been collected can be found in Appendix B-2. There is no surface water sample regime for the Gold Hill Mill, as it is impractical and has no value. No uphill surface water sample point is available as the mill sits at the top of area topography and the only downhill locations for sampling collect water from numerous other areas that prevent such a location from being a useful downstream sampling point. This section, section 3 of Exhibit B, and section 1.8 of Exhibit C, address Rule 6.4.21(8)(e).

The nearest flowing waterways are Gold Run Gulch and Left Hand Creek. Gold Run Gulch is half a mile to the south with many tributary drainages between it and the mill. Left Hand Creek is 4500 feet to the north, with a large independent drainage (Lick Skillet Gulch) contributing surface water between it and the mill. The Gold Hill Mill area is a non-discharging surface area due to berms and grading. For these reasons, surface water sampling along either creek for this DMO is ineffective for either pre-mine analysis or compliance monitoring. The compliance monitoring point for water at Gold Hill Mill is exclusively groundwater based.

Map E-1A shows wells, streams, reservoirs, stock ponds, and other water structures within two miles of Gold Hill Mill. Map E-1B shows the geology and hydrology present around Gold Hill Mill. Hydrogeologic conditions in the area are discussed in Exhibit B, section 3.2. No identified aquifers exist within two miles of the Gold Hill Mill; fractures in the Precambrian Boulder Creek granodiorite can collect water in limited areas and these are used as the main source of water for wells in nearby Gold Hill. The presence of the Hoosier Reef west of the Gold Hill Mill separates the wells of town residents from any groundwater influence by the mill. To the north, south, and east there are various wells located within the granodiorite that produce water from intercepted fractures. These wells are low producing and are all a significant distance horizontally and vertically from the Gold Hill Mill. Well locations can be seen on Map E-1A. Flow from wells within the Boulder granodiorite east of the Hoosier Reef (where the Mill is) have flow rates of 0 to 5 gallons per minute depending on the well. Current and future groundwater uses beyond the mill but within two miles are domestic supply.

A complete geologic description can be found in Exhibit B, section 1. The Gold Mill Hill is underlain exclusively by Boulder granodiorite. Map E-1B shows the area geology and groundwater hydrology

Groundwater monitoring around the mill is conducted via existing wells shown on Map E-2 and Figure U-1. Groundwater data for multiple years has been collected onsite and can be found within CDRMS's own permit files. A summary of the results, and reports for the last five quarters, can be found in Appendix B-2.

Figure U-1. Groundwater Monitoring Well Locations

Water from each well is tested for the parameters listed in Appendix C-2.

Appendix B-2 contains a summary of all monitoring results to date. These monitoring results have been filed with the Division on a regular basis, so individual sample reports are available for review in Division records. As summarized, groundwater quality has been consistently good for many years. Well MW1 will be the compliance point for groundwater around the mill.

During operations the groundwater wells will be sampled once a quarter and reported according to the schedule in Appendix C-2.

1.2. Groundwater – Ambient Standard

Groundwater sample data from many years of sampling has been compiled and then analyzed to determine what is the ambient level of each major analyte of concern. The 90th percentile and maximum records value for each analyte is listed in Table U-1 as a comparison point versus groundwater standards. Most parameters have never had an exceedance value of either the CDPHE drinking water standard or the agricultural water standard. Almost all of the samples have tested below the CDPHE standards for all parameters except manganese and sulfate.

As can be seen in Appendix B-2, well MW1 has tested above the CDPHE standards for manganese since its installation in 2013. No ore has been processed through the mill since before 2013 and the tailings facility has been in place since 1998. Given the lack of mill activity onsite, the manganese values seen in the wells since 2013 cannot be attributed to milling activity. Manganese is clearly present in the natural geology around the mill facility. Similarly, the presence of elevated sulfate in MW1 while no milling is taking place shows that the geology around MW1 clearly produces elevated sulfates naturally.

Gold Hill Mill will use an ambient standard for manganese and sulfate. Based on sampling data from well MW1, a 90th percentile-based ambient standard would be more appropriate for MW1 than the CDPHE table value standards. The ambient standard of the 90th percentile of manganese and sulfate will be applied at MW1.

The monitoring compliance point is MW1; see Appendix C-2 the sampling plan for details.

Table U-1. Groundwater Parameters (MW1 90th Percentile, mg/L)

Analyte	MW1 90th Percentile	MW1 Max. Value	Ag Standard	Drinking Standard
Arsenic, dissolved	0.0007	0.001	0.1	-
Cadmium, dissolved	0.0006	0.001	0.01	-
Copper, dissolved	0.001	0.01	0.2	1.0
Iron, dissolved	0.005	0.15	5	0.3
Lead, dissolved	0.0004	0.0004	0.1	-
Manganese, dissolved	0.52	0.59	0.2	0.05
Mercury, dissolved	0.0002	0.0002	0.01	-
Zinc, dissolved	0.09	0.61	2	5
Sulfate	996	1100	-	250
TDS	1590	1630	2000	2000

Note: Standards are from the Colo. Water Quality Commission Regulation 41, Table Value Standards for Groundwater

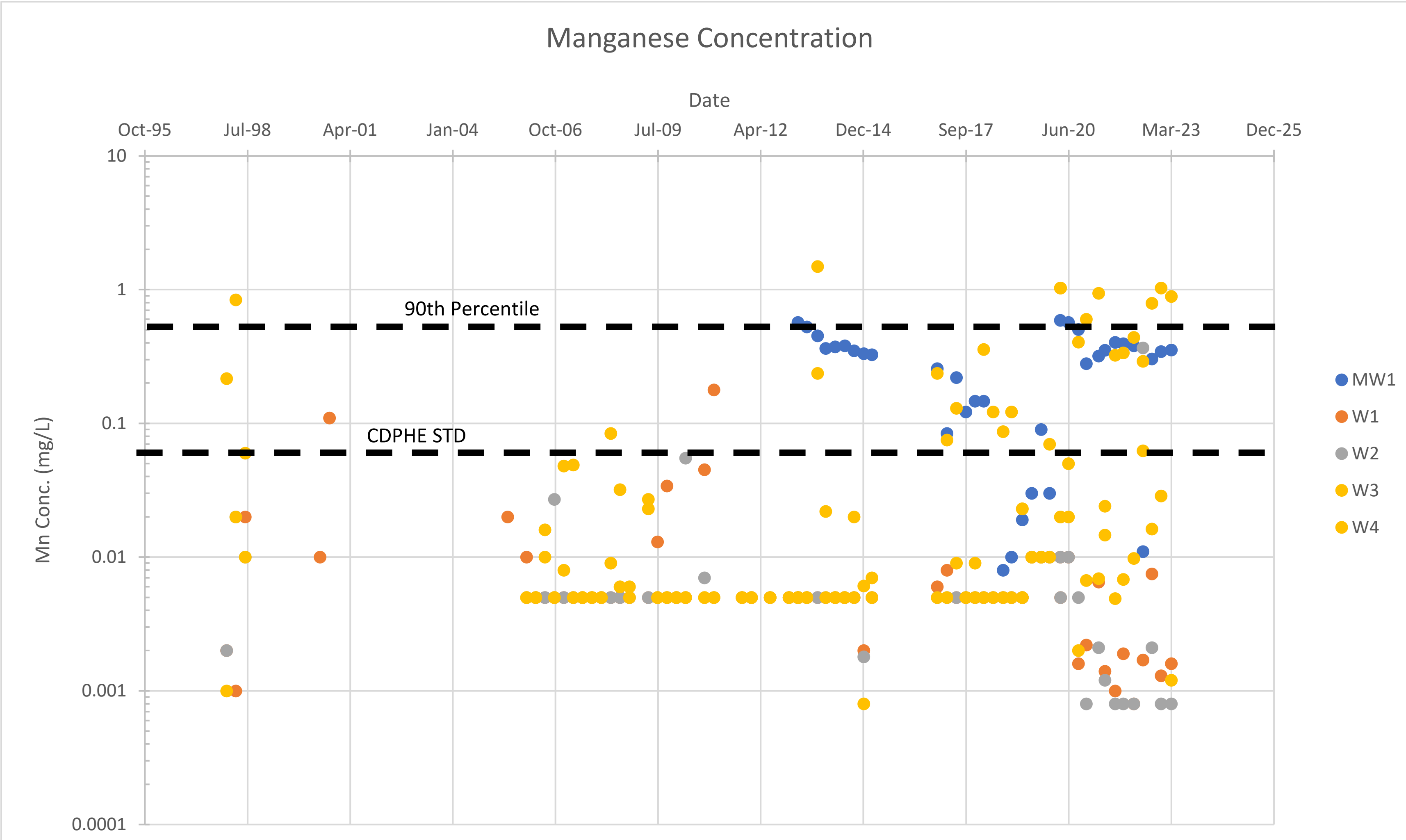


Figure U-2. Manganese Sample Results at Monitoring Wells (logarithmic scale)

Black dashed line is the CDPHE Drinking Water Standard

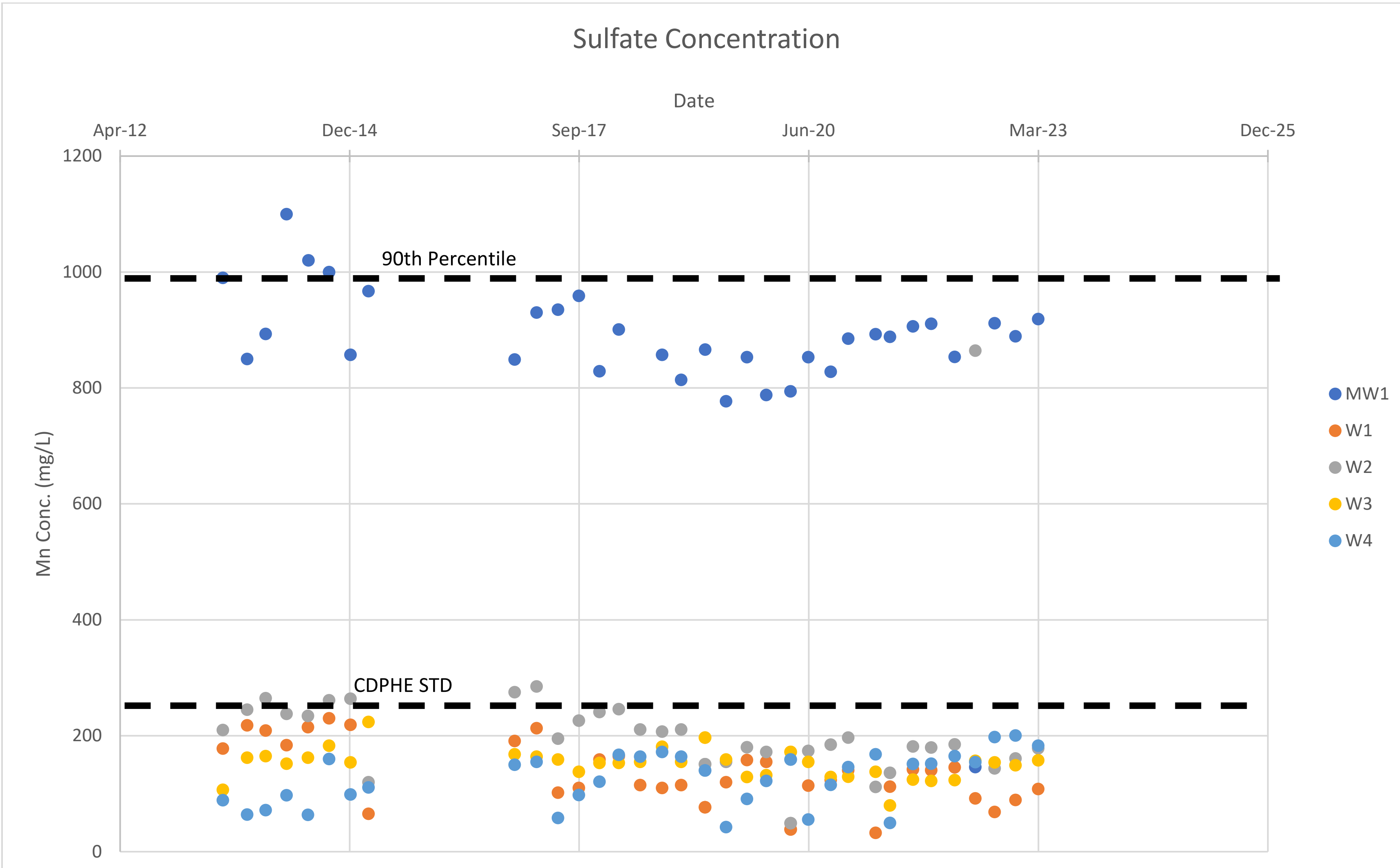


Figure U-3. Sulfate Concentration

Black dashed line is the CDPHE Drinking Water Standard

1.3. Groundwater - Point of Compliance Well (GWPOC Well)

The GWPOC (MW1) was installed onsite in 2013. Data from sample at this well has been reported to CDRMS since 2019. Water data is also sampled and reported from four other wells (W1-4) on a quarterly basis. All of these wells are hydrologically downgradient of the TSF and mill facilities. Due to the limited and disconnected nature of the ground water around Gold Hill Mill additional compliance wells would not be useful. See Exhibit B, section 3 for a detailed discussion of the groundwater regime around Gold Hill Mill.

The GWPOC (MW1) will be sampled and tested according to the approved list of parameters found in Appendix C-2, the sampling plan.

1.4. Environmental Protection Facilities

The facilities, structures, and mine elements listed below are environmental protection facilities (EPF):

- All monitoring wells
- All waste impoundments (including associated liner systems and caps)
- Chemical storage (including unloading areas)
- All collection and diversion ditches
- The mill building
- Ore pad
- Tailings transport equipment
- Times-Wynona bulkhead

Rule 6.4.21(7) information on these facilities can be found throughout this document. A guide to the locations of different information required by the rule is found in Table U-2.

All EPFs will be certified by CDRMS according to a standard *design-construction-as-built-certification* process. Each EPF will have a detailed design, construction schedule, and QA/QC program submitted to CDRMS as a technical revision. Upon approval of the design, the EPF will then be constructed and an as-built and construction report will be provided to CDRMS. The as-built will be stamped and signed by a Colorado registered Professional Engineer. Assuming the as-built is acceptable, CDRMS will then certify the EPF for use.

All EPFs have a red label on the maps for ease of identification.

Table U-2. Environmental Protection Facilities

Facility	Maps & Figures	Environmental Risk	Protection Measure	Status	Construction Schedule	Supporting Documents & Details
Mill building	Map E-2B	Discharge of tailings, ore, or chemicals to surface water	Building walls, steel containment structures (thickener and other equipment)	Built	N/A	Exhibit U, Section 2
Chemical storage	Map E-2B, E-7	Spill and discharge of chemicals	Plastic liners for containment	Designed	2024	Exhibit U, Sections 3 & 7, Appendix U-1
Surface water control measures	Map E-2	Stormwater mixing with tailings	Diversion ditch	Built	N/A	Appendix C-1
Monitoring wells	Map E-2, E-8	None-serves as monitoring device	Groundwater wells for monitoring other EPF	Built	N/A	Appendix C-2
Tailings Storage Facility	Map E-5, E-6	Tailings discharge to surface water	Constructed and lined pond structure	Built	N/A	Exhibit C, Section 5; Appendix C-5
Tailings transport systems	Map E-5, E-6	Tailings discharge to surface water	Double-walled plastic or steel pipe	Designed	2024	Exhibit U, Section 2
Times-Wynona bulkhead	Map E-4	Stored water discharge to surface water	Engineered bulkhead	Designed	2024	Appendix C-6
Ore pad	Map E-2A	Discharge of ore/water that has contacted ore to surface water	Plastic lined pad with isolation trench	Designed	2024	Exhibit C, Section 4; Exhibit U, Section 9; Appendix U-3

1.4.1. EPF Certification Minimum Requirements

Prior to use, each EPF will be certified via a technical revision with the minimum requirements outlined below.

Mill Facility: As the Mill Facility is already constructed, its EPF certification technical revision shall include a proposed list of upgrades needed to bring the mill into production, detailed designed drawings including the proposed upgrades, detailed information regarding the dosing per ton of each reagent, proposed construction schedule including stop lock testing, and test runs. Additionally, an updated comprehensive volumetric demonstration of containment capacity as compared to operational volumes of Designated Chemicals, ore, water, slurry and Tailings will be included in the design.

Reagent Storage Area: Though the Reagent Storage Area exists within the Mill Building, and partially outside of the mill building, for all intents and purposes it will be considered a separate EPF. This EPF certification shall include finalized volumes of reagents to be stored in each separated area within the facility, dosing, mixing and delivery into the mill system information.

Tailings Storage Facility: The TSF EPF certification will consist of a recertification of the TSF. The recertification will include confirmation of liner integrity, embankment condition and material stability evaluation, determination of available storage volume, diversion ditch capacity and maintenance schedule, updated water balance, and a TSF standard operating procedure manual.

The TSF recertification will be submitted to CDRMS in the 2024 calendar year. If the TSF cannot be recertified or insufficient capacity remains for further use, closure will take place.

Tailings Delivery Line: The EPF certification for the Tailings delivery line shall include all maps and drawing related to the upgrading of the delivery line, including specifications for the sections requiring double walled piping. Also details including flow rate and deposition location within the TSF.

Surface Ore Stockpile Facility: This EPF certification shall include all maps and drawings of the proposed facility, detailed information regarding subgrade preparation and dirt work, liner specifications and installation as well as all finish grading and compaction testing as needed.

1.5. EPF Construction

For all EPFs that have not been built at the time of this application, it is anticipated that they will be built in the summer of 2024, when weather facilitates construction. As-builts for new facilities certified by a professional engineer will be provided to CDRMS following construction. Minimum standard construction steps for liners and pipes installed at Gold Hill Mill are outlined below. These are applicable to any new liner or pipe installation at Gold Hill Mill.

1.5.1. Liner Construction – Minimum Standards

Prepare subgrade by excavating to the depth required for base material as required on design details. Place base material as required by designs. Install liner over the designated area, according to liner manufacturer specifications. Anchor liners as required by the manufacturer.

Inspection of liner construction will occur at the following steps: subgrade preparation, base material installation, liner placement and welding, and liner anchoring.

1.5.2. Pipe Installation – Minimum Standards

Clear pipe path to ensure positive flow from end to end. Support pipe sections as required to ensure positive flow. Weld pipe sections according to manufacturer specifications. Inspect welds and connections prior to charging pipe with fluid. Inspection of pipe installation will occur at the following steps: route clearance, support installation, pipe joining, and pipe leak testing, and final fluid charging.

2. Ore Processing

Map E-2B shows the layout of the mill and the processing equipment. Numerical references [#] in this section are to the locations indicated on Map E-2B. A general mill flow sheet is also shown on Figure C-1. All mill processing described occurs within the mill building.

Gold bearing Telluride ores are processed at the mill. The Gold Hill Mill process operations include crushing [5], grinding [9], gravity concentration [10], froth flotation concentration [14], and dewatering and packaging of precious metal mineral products [11, 12, 15, & 16]. Tailings from the gravity concentration process becomes feedstock for the flotation process [10-12-14]. Tailing from the flotation process is delivered to the tailing storage facility (TSF [24]). Fresh water from the Times-Wynona Mine [25] is introduced into processing as needed [4] to support any given processing steps operations.

[1-7] Mill feedstock is crushed to approximately ½ inch and then ground [8] to an ultimate fineness of a nominal 105-micron (140 mesh). The gravity concentration process [9-11] extracts relatively coarse, high specific gravity minerals from an intermediate grind loop (approximately 400-microns or 35 to 65 mesh) and the flotation process [12-16] treats the final grinding product. A nominal mill feed capacity of 50 tons per day is anticipated.

2.1. Crushing

Coarse ore (pre-screened at six inches) is delivered to the mill by front end loader and is alternately deposited into one of two coarse ore bins [1] that can each hold 75 tons of six-inch material. Coarse ore is withdrawn from the bins by reciprocating plate feeders, one under each bin, and delivered to a central belt conveyor which feeds a primary 15 inch by 24-inch jaw crusher. The jaw crusher reduces coarse ore to approximately 2 inches [3].

The discharge from the jaw crusher is conveyed to a 2’x 4’, double-deck vibrating screen for sizing [6]. The screen oversize is fed to a two-foot diameter standard Symons cone crusher [5]. The cone crusher operates in closed circuit with the screen. Undersize (nominally minus ½ inch in size) from the screen is transferred to the fine ore bin [7].

The fine ore bin has a capacity of 150 tons. The crushing plant is intended to be a day-shift-only operation but can be operated on a 24/7 basis if necessary. Subsequent mill unit operations will be scheduled for three-shifts per day. Material is moved through the crushing circuit via conveyor belt [2].

2.2. Grinding, Gravity Separation, and Classification

The grinding circuit consists of a 5-foot by 4-foot Marcy overflow ball mill [8] that operates in closed circuit with a 24” x 15’, Wemco spiral classifier [9]. The ball mill feed belt is variable speed and includes a belt scale. Soda ash is added to the ball mill feed belt to regulate the alkalinity (pH) of the process water.

Ball mill discharge is directed to the gravity concentration process where coarse, heavy minerals are extracted from the ore. Gravity concentration is achieved in two stages: by spirals [9] and by shaking table [10]. Concentrate from the shaking table is dewatered and packaged for shipment to a smelter or refinery [11]. Approximately five to seven percent of the raw mill feed becomes gravity concentrate.

Gravity process “tailings” are delivered to the spiral rake classifier [9] where the ore particles of the desired 105-micron “fineness” are separated. The spiral rake returns the underflow (coarse material) to the ball mill where it is combined with new mill feed. Spiral rake classifier overflow (the finely ground product) flows to a thickener [12] where water is recovered and returned to the grinding process and gravity concentration circuit [8-10]. The thickened underflow fines are discharged to the froth flotation circuit [13-16] for the next precious metals recovery step.

2.3. Froth Flotation

The thickener underflow contains gold and silver-bearing minerals that could not be recovered by gravity concentration. This is either due to the minerals having insufficient density or that the ore particles are too fine to be efficiently captured and concentrated by washing in the gravity concentration units. These remaining economic minerals will be recovered by the froth flotation concentration process.

In the flotation process, underflow from the gravity process thickener is pumped to the conditioning tank [13] where several reagents are intensely mixed into the mineral-bearing slurry. The reagents include soda ash for pH adjustment; active reagents (promotors and collectors) that adhere to the desirable gold, telluride, and sulfide minerals; or depressants to de-activate unwanted minerals. The reagents to be utilized are itemized in Table U-4. Conditioned ore is then diluted with process water and pumped to the flotation circuit [14].

The flotation circuit consists of 10 flotation cells that are arranged in what is called a rougher-cleaner-scavenger configuration. The flotation cells are supplied with air through an external blower. The air creates a froth: activated minerals adhere to the bubble surfaces while waste minerals remain de-activated and do not adhere to the bubble surfaces. The gold-laden froth is skimmed from the top of the flotation cells and is then pumped to a thickener [15] to begin the concentrate dewatering operation.

2.4. Flotation Process Water Recovery

Once sufficient gold concentrate is collected in the flotation process thickener, the concentrate is further dewatered using a filter [16]. The dewatered concentrate is discharged and collected in bags and stored for shipment to a smelter or refinery [21]. The filtrate is collected and stored with the concentrate thickener overflow water and with the water that is returned to the tailing storage facility [24].

The water recovered from the flotation circuit is segregated in its own collection system so that the chemical reagents are not comingled with the relatively clean process water from the gravity unit operations. This water is conditioned for reuse in the flotation circuit [14]. Fresh water is added to the flotation circuit as needed.

2.5. Tailings Output and Storage

The de-activated minerals (tailings) from the flotation circuit are pumped [17] to the tailing storage facility. Water yielded from decanted tailings is returned to the flotation water tank in the mill if possible, but is typically evaporated at the TSF. Evaporation is achieved by natural processes or aspirated, as necessary, to limit the water level in the tailings pond. Water lost to evaporation must be made up from fresh water from the Times-Wynona Mine. The tailings pipe will be a double walled slurry pipe running from the mill tailings output to the tailings storage facility. Using a double walled pipe will protect against a discharge of tailings slurry in the event of the main internal pipe failing.

The tailings storage facility has been constructed to hold roughly 15,000 tons of tailings material according to the designs found in Appendix C-5. It is lined to ensure long term containment of the tailings. While tailings are brought into the pond as a thickened slurry with a high (>70%) moisture content, the water will evaporate and be recycled leaving behind dry tailings for permanent storage. Removal of water from the tailings will be accelerated via filters, thickeners of other systems either in the mill or the tailings storage facility as needed. Two key operational rules will always be adhered to with regards to tailings handling: all tailings' solids will be stored in the tailings storage facility and not be removed for disposal anywhere other than a certified hazardous waste facility and all tailings water that is decanted will be recycled into the mill. No water will discharge from the tailings storage facility Two feet of freeboard will be maintained within the tailings storage facility.

2.5.1. Off-site Tailings Recovery Plan

In the event that tailings material leaves the TSF due to wind or water, a recovery action will be undertaken. Recovery will consist of the following steps:

1. Identify the extent and location of the off-site tailings with GPS and photographs.
2. Report the off-site location, extent, and quality to CDRMS within 24-hours of identification.
3. If tailings deposition is fresh and does not have vegetation established within it, excavate the tailings down to 6-inches into the natural ground or to bedrock, which ever is shallower.
4. Dispose of excavated tailings and extraneous natural material in TSF.
5. If tailings deposition is not fresh and has established vegetation, take at least one grab sample of material and conduct SPLP and ABA analysis. More grab samples may be needed depending on the off-site tailings' extent. Provide sampling results to Division.
    a. If material is inert according to SPLP and ABA values and the Division concurs, leave the off-site tailings material in place. Place six-inches of topsoil over tailings and seed with reclamation seed mix.
    b. If material is not inert according to SPLP and ABA values and the Division concurs, remove the tailings material in the same manner as if it were fresh material (step 3).
6. Document the extent of the recovery effort with GPS and photographs and report the results to the Division.

2.6. Ancillary equipment and Structures

Ancillary equipment in the mill includes water storage tanks, overhead crane, office area, and space to repair equipment. The water storage tanks include a freshwater system that feeds the grinding and gravity circuit and a process water system that is used for the flotation area.

The Mill Building is 120 ft long, 70 ft wide and 30 ft high, with three separate working levels. The mill building includes a 5-ton overhead crane that has access to most of the area and sized large enough to handle the major components of the mechanical equipment. Map E-2B shows the internal and external layout of the mill and the route of material/water through it.

2.7. Processing Containment

Containment of materials occurs throughout the milling process. Ore bins [1 & 7] contain all ore materials as they pass through crushing processes along with all dust control water used during crushing. Failure of either ore bin would lead to fracture ore material falling onto the floor of the mill at angle of repose and being contained within the mill building. Considering the mill building footprint of 11,000 square feet and at least 20 foot tall walls in all areas, the total volumetric capacity of the mill is over 200,000 cubic feet or over 17,000 tons of ore, or three times the ore pad capacity. Ore slurry is generated at the end of the gravity concentration stage as part of the outflow to the thickener [12]. The thickener has a volume of roughly 65,000 gallons (8800 cubic feet) while leaving a foot of freeboard. Assuming a slurry mixture of 30% solids-70% liquid and a tailings density from testing of 100 lbs/cf. (Table 1, TSF As-Built, Appendix C-5), roughly 440 tons of tailings can be contained within the thickener at any one time. Considering the limitations of the grinding circuit and water rights, the mill cannot physically process more than 50 tons per day as such the thickener can contain 8 days of tailings if needed more than sufficient in an emergency. 500-ft of slurry lines are assumed within the mill for calculation purposes. Reagent storage capacity is discussed in section 3 of this exhibit. Table U-3 outlines the size of tanks within the mill in relation to the total mill capacity.

Table U-3. Mill Tank Volumes and Mill Capacity

Tank	Volume (CF)
Slurry lines (~500-ft total length)	400
Main Thickener	8800
Water Holding Tanks (combined)	1700
Concentrate thickener	570
Floatation cells	750
Total	*12,220*
Mill Capacity	**200,000**

3. Processing Chemicals Stored on Site

Various chemicals will be stored on site for use in the milling operation. Most of these chemicals will be stored within the designated storage area of the process building that will have sufficient volume to contain 110% of the total chemical volume. This will be accomplished with a minimum 3-inch vertical lip tray around the designated chemical storage area and a fluid barrier. The storage and usage of all chemicals on site will be controlled by the Materials Containment Plan and Spill Prevention, Control and Containment Plan. These can be found in Appendix U-1 and U-2 respectively. Table U-4 lists reagents and maximum on-site stored quantities. Maximum storage capacity in either indoor or outdoor storage areas (Map C-7) are also listed; these maximum capacities are based on the volume of a single indoor reagent cell (725 gallons) or the entire outdoor storage cell (4500 gallons).

The chemical list for the mill operation is enclosed below. All chemicals are listed in the estimated amount used per ton of ore processed. Subsection 7.0 discusses which chemicals are designated.

Table U-4. Chemicals Stored On-Site

Reagent	Purpose	Quantity	Max. Storage Capacity (indoors)	Max. Storage Capacity (outdoors)	Dosage (per ton ore)
Quicklime	pH adjustment	2000 lbs	20,000 lbs	124,000 lbs	Varies dependent on pH of froth mixture
Soda Ash (sodium carbonate/bicarbonate)	pH adjustment	10,000 lbs	15,000 lbs	93,000 lbs	10-15 lbs
Sodium Di-isobutyl Di-thiophosphate	Collector	3000 lbs	30,000 lbs	186,000 lbs	0.4 lbs
Sodium isopropyl xanthate	Collector	3000 lbs	30,000 lbs	186,000 lbs	0.4 lbs
Sodium Di-ethyl Di-thiophosphate	Collector	3000 lbs	30,000 lbs	186,000 lbs	0.4 lbs
MIBC (Methyl Isobutyl Carbinol)	Frother	1750 lbs	4900 lbs	30,380 lbs	50-100 grams
Mild acid (ex: muriatic acid)	pH adjustment	100 gallons	720 gallons	4,464 gallons	Varies dependent on pH of froth mixture
Copper/Lead sulfate	Activator for telluride minerals	3000 lbs	21,600 lbs	133,920 lbs	0.4 lbs

Highway trucks will deliver the chemicals to the site, to the processing facility and designated storage areas at the mill.

MSDS will be kept onsite with the Material Containment Plan.

4. Other Agency Environmental Protection Measures

4.1. Local Agencies

No Boulder County permits or land use approvals are required for operation of the Gold Hill Mill.

4.2. Federal Agencies

Four areas of unpatented BLM claims are located within the Gold Hill Mill permit area. Therefore a BLM Plan of Operations will be in place prior to operations commencing at the mill. Proof of PoO approval will be provided to CDRMS. A USFS permit for a portion of the pipeline crossing is also required; proof of its approval will be provided to CDRMS.

A Spill Prevention, Control and Countermeasure (SPCC) Plan will be prepared in conformance with the U.S. Environmental Protection Agency's (EPA's) regulations for aboveground storage of more than 1,320 gallons of petroleum products. This plan will provide measures for properly storing and handling petroleum products and responding to, and reporting, spills. Normally, the SPCC Plan covers only petroleum-based chemicals but the SPCC Plan for this site will have inspection and reporting requirements for the chemicals stored at the processing facility. A Material Containment Plan will also be developed that provides guidance for the storage, use, cleanup, training, and reporting associated with the use of mill chemicals on site. The SPCC Plan also addresses response actions in the event of a site emergency.

4.3. Other State Agencies

The Colorado Department of Public Health and the Environment (CDPHE) will require permits covering applicable water handling and air quality control. These permits will be in place prior to any disturbance.

A Stormwater Management Plan (SWMP) will be kept on site. If the mine plan and stormwater controls are revised, the SWMP plan may be revised. This plan will address all stormwater controls and best management practices regarding the handling and discharge of stormwater from the site.

5. Other Agency Permits

Other permits required for this operation that will include environmental protection measures are listed below. All of these permits will be in place prior to milling operations.

1. CDPHE Fugitive Particulate Emission Permit with the Air Pollution Control Division
2. CDPHE Water Discharge Permit with the Water Quality Control Division
3. EPA Spill Prevention Control and Countermeasures Plan (SPCC)
4. Mine Safety Health Administration, Mine Number
5. BLM Plan of Operations

6. Designated Chemical Evaluation

The full list of chemicals to be used in the mill for ore processing is shown in Section 3.0 of this Exhibit. The MCP details the safe storage and handling of these chemicals. This plan can be found in Appendix U-1. The layout drawings in the MCP show the layout of processing facilities and chemical storage. Magnesium chloride may be used for dust control on the access road but will be brought in by a contractor and not stored on site. Diesel fuel, small amounts of oils, and antifreeze will be used in the mobile equipment. Storage and use of these products is discussed in the SPCC Plan.

7. Designated Chemicals and Materials Handling

The MCP located in Appendix U-2 addresses the handling and storage of specific chemicals on site. This subsection pertains specifically to the designated chemicals stored on site.

Temporary shutdown of the mill will include removing any designated chemicals from the mill and removing them from the site. Process water already mixed with reagents within equipment and waterlines will be drained and disposed of within the TSF. All water within the mill system at shut down is considered process water, and as such both gravity circuit water and flotation circuit water will be pumped to the TSF during a shutdown. It is estimated that the mill will have 3600 gallons of process water to discharge to the TSF during a shutdown. All chemical storage will be inspected daily during operations.

All reagents will be dosed into the milling process within the mill building. Reagent dosing may be by hand deliver or by electronic control and pump. Mixing and preparing of reagents will take place within the reagent storage area within the mill building. No reagent mixing will take place outside the mill building. No reagent dosing will take place outside of the mill building. As chemical treatment of mill feed may interfere with gravity separation, all reagent dosing will take place at the flotation stage of processing.

7.1. Quicklime

Quicklime should be stored in a dry, cool, well-ventilated place. Store in the original container away from moisture. Quicklime reacts violently with water, releasing heat which can ignite combustibles. Long-term storage in aluminum containers is not recommended, as calcium oxide may corrode aluminum over long periods of time.

Quicklime is considered to be stable. It reacts with water, acid, reactive fluorinates and brominates, aluminum powder, reactive phosphorous, interhalogenates, and nitro-organic compounds.

Quicklime can cause eye damage, skin irritation, and respiratory irrigation. Prolonged exposure can lead to permanent lung damage. Quicklime reacts vigorously with water, releasing substantial heat, and thus can cause combustion. Quicklime exposure may lead to cancer through inhalation. Because of the high pH of quicklime, it would be expected to produce eco toxicity upon exposure to aquatic organisms and systems in high concentrations.

Quicklime is used to precipitate metal precipitation following flotation. It is introduced to the flotation circuit tailings outflow slurry. It's ultimate fate is in mill tailings.

7.2. Sodium isopropyl xanthate – Powder

Sodium isopropyl xanthate should be stored in a dry, cool, ventilated place. It should be kept away from heat, and moisture. It should be stored between 50 degrees and 90 degrees F. It should not be allowed to age as aging, as well as heat and moisture can cause some decomposition.

Large quantities of undiluted product should not be mixed with acids, since evolution of toxic and explosive hydrogen sulphide gas could result. In particular, precautions must be taken to avoid the accidental discharge of large volumes of the product in acid storage tanks or any tank containment containing acidic materials. This precaution does not, of course, apply to the addition of this product to flotation pulps in amounts customarily used in flotation, were the product amounts are small and instantly diluted to concentrations well below the solubility limits.

Sodium isopropyl xanthate is considered to be stable. It begins to decompose above 267 degrees F and can auto-ignite. It is incompatible with moisture, strong oxidizing agents, acidic material and high temperatures. The storage containers should be kept closed when not in use. When it decomposes, it produced carbon disulfide, carbon monoxide, carbon dioxide, oxides of sulfur and hydrogen sulfide.

Xanthate is an irritant to the eyes, skin, and respiratory tract. Long term exposure at high levels can lead to nervous system damage, cardiovascular damage, and eye damage. Xanthates is expected to cause eco toxicity with high concentrations exposed to aquatic organisms and systems.

Xanthate is used as a collector in the flotation cells and is thus introduced at the inflow point of the flotation cells via small dosing equipment. It is dissolved in the flotation feed slurry. It breaks down with exposure to lime during slurry treatment.

7.3. Sodium Di-isobutyl Di-thiophosphate

Sodium Di-isobutyl Di-thiophosphate should be stored in a dry, cool, ventilated place. It should be kept away from heat, and moisture. It should be stored between 50 degrees and 90 degrees F. It should not be allowed to age as aging, as well as heat and moisture can cause some decomposition.

Large quantities of undiluted product should not be mixed with acids, since evolution of toxic and explosive hydrogen sulphide gas could result. In particular, precautions must be taken to avoid the accidental discharge of large volumes of the product in acid storage tanks or any tank containment containing acidic materials. This precaution does not, of course, apply to the addition of this product to flotation pulps in amounts customarily used in flotation, where the product amounts are small and instantly diluted to concentrations well below the solubility limits.

Sodium Di-isobutyl Di-thiophosphate is considered to be stable. It begins to decompose above 660 degrees F and can auto-ignite. It is incompatible with moisture, strong oxidizing agents, acidic material and high temperatures. The storage containers should be kept closed when not in use. When it decomposes, it produced phosphorus oxides, carbon dioxide, oxides of sulfur and hydrogen sulfide.

Thiophosphate can cause skin, eye, and respiratory irritation. Thiophosphate is used as a collector in the flotation cells and is thus introduced at the inflow point of the flotation cells via small dosing equipment. It is dissolved in the flotation feed slurry. It breaks down with exposure to lime during slurry treatment.

7.4. Copper Sulfate – Granular

Copper Sulfate should be stored in tightly closed containers in a cool, dry, well-ventilated area away from incompatible substances. It should be protected from moisture.

Copper Sulfate is considered to be stable at room temperatures in closed containers. High temperatures, dust generations and exposure to moist air or water should be avoided. It is incompatible with strong bases, hydroxylamine, and magnesium. Decomposition may produce oxides of sulfur and copper fumes.

Copper sulfate is an irritant to the eyes, skin, and if ingested. Long term exposure at high levels can lead to nervous system damage, cardiovascular damage, and eye damage. Copper sulfate is expected to cause eco toxicity when exposed to aquatic organisms and systems.

Copper sulfate is used as an activator in the flotation cells and is thus introduced at the inflow point of the flotation cells via small dosing equipment. It is dissolved in the flotation feed slurry. It is consumed in the flotation process via concentrate float, with excess discharging as underflow as part of the tailings.

7.5. Sodium Di-ethyl Di-thiophosphate

Sodium Di-ethyl Di-thiophosphate should be stored in a dry, cool, ventilated place. It should be kept away from heat, and moisture. It should be stored between 50 degrees and 90 degrees F. It should not be allowed to age as aging, as well as heat and moisture can cause some decomposition.

Large quantities of undiluted product should not be mixed with acids, since evolution of toxic and explosive hydrogen sulphide gas could result. In particular, precautions must be taken to avoid the accidental discharge of large volumes of the product in acid storage tanks or any tank containment containing acidic materials. This precaution does not, of course, apply to the addition of this product to flotation pulps in amounts customarily used in flotation, were the product amounts are small and instantly diluted to concentrations well below the solubility limits.

Sodium Di-ethyl Di-thiophosphate is considered to be stable. It begins to decompose above 660 degrees F and can auto-ignite. It is incompatible with moisture, strong oxidizing agents, acidic material and high temperatures. The storage containers should be kept closed when not in use. When it decomposes, it produced phosphorus oxides, carbon dioxide, oxides of sulfur and hydrogen sulfide.

Thiophosphate can cause skin, eye, and respiratory irritation. It is not known to be toxic to wildlife or plant life as it is does not readily oxidize in the environment (a strong oxidizer is needed). Thiophosphate is used as a collector in the flotation cells and is thus introduced at the inflow point of the flotation cells via small dosing equipment. It is dissolved in the flotation feed slurry. It breaks down with exposure to lime during slurry treatment.

7.6. Mild Acid

Mild acids (ex: muriatic acid) should be stored in a dry, cool, well-ventilated place. Store in the original container away from moisture. Avoid direct sunlight.

Mild acid is considered to be stable at room temperature and pressure. Avoid mixing with strong oxidizing agents, bases, and metals. Acids will be stored in a separate cell at the Gold Hill Mill in an “acid cabinet” to prevent spills and accidental mixing with any other chemicals.

Mild acid is an irritant to the skin and eye and stomach if ingested. Mild acids are eco toxic if released into aquatic systems in significant volumes. Mild acids are used to adjust the pH of the flotation inflow and outflow and is introduced at either the flotation inflow or the tailings thickener inflow. Mild acids are consumed in the pH balancing process of concentrate and tailings treatment.

7.7. Methyl Isobutyl Carbinol (MIBC)

Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up. Keep only in the original container in a cool, well ventilated place away from : Heat sources, Ignition sources, Incompatible materials.

MIBC is considered to be stable at room temperature and pressure. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Keep away from strong bases or acids.

MIBC acid is a mild irritant to the skin, eye, lungs, and stomach if ingested. No long term exposure symptoms are known. It is not considered dangerous to the environment as it rapidly decomposes when exposed to sunlight and air.

7.8. Designated Chemical Quantities

A list of designated chemicals and the maximum quantities to be stored on the site at any given time can be seen in Table U-5. Most totes or barrels of reagents are in 300-500 lbs per container depending on the chemical leading to 6-10 containers per reagent stored onsite at a maximum.

All chemicals will be delivered to Gold Hill Mill via licensed contractor. Chemicals will be unloaded directly into the outdoor reagent storage area shown on Map E-2B. Chemicals will be loaded from the outdoor reagent storage to the indoor reagent storage by mill personnel. Acids will be off-loaded directly to the acid storage cabinet inside the mill. All designated chemicals will be stored in lined reagent storage areas at all times. Each reagent storage area will be able to contain 110% of the volume of chemicals stored within; at no point will more reagents be loaded into a storage area than its chemical capacity.

Table U-5. Maximum Designated Chemical Storage

Reagent	Purpose	Quantity	Volume
Quicklime	pH adjustment	2000 lbs	72 gals
MIBC	Frother	1750 lbs	<100 gals
Sodium Di-isobutyl Di-thiophosphate	Collector	3000 lbs	~100 gals
Sodium isopropyl xanthate	Collector	3000 lbs	~100 gals
Sodium Di-ethyl Di-thiophosphate	Collector	3000 lbs	~100 gals
Mild acid (ex: muriatic acid)	pH adjustment	100 gallons	100 gals
Copper or lead sulfate	Activator for telluride minerals	3000 lbs	~100 gals

8. Facilities Evaluation

Map E-2B shows the general arrangement of processing equipment, the storage locations for processing chemicals, and the general size of the facility. The layout is general and does not necessarily reflect day-to-day operations as equipment is re-arranged and adjusted during operations.

The facility's general position is shown on Map E-2. Map E-2B shows the arrangement of the processing equipment in the plan view. Almost all mineral processing takes place within this mill building.

The mill will operate in line with the hours of mining operations that feed it ore. The reagent storage areas outside of the building will be caged to protect from theft, vandalism, and wildlife. Electrical power for the mill operations will be from nearby line power.

All EPFs are governed by the Emergency Response Plan and the Materials Containment Plan for the operation. Capacity demonstration for designated chemicals and tailings storage facility in accordance with Rule 6.4.21(7)(f) can be found in Section 2 of this exhibit. Below is a discussion of the efficacy of each individual EPF at Gold Hill Mill and necessary specifics. Additional information can be found in Exhibits C and earlier in this Exhibit. Table U-2 lists all EPFs and identifies the location of designs and further discussion.

Prior to processing of ore or generation of tailings, each EPF will be built or refurbished as needed to meet MSHA standards and to function effectively as an EPF. All EPFs will be built or refurbished in the following manner:

1) Designs for the EPF will be developed.
2) A technical revision will be submitted to CDRMS containing the designs and a construction plan.
3) The construction plan will contain a detailed schedule of construction, inspection stages, and QA/QC checks.
4) Upon successful construction, a Colorado registered professional engineer will certify the EPF and certify an as-built that will be submitted to CDRMS.
5) Upon CDRMS approval of the professional engineer certification and as-built, the EPF will be considered active. The as-built will document any changes to the approved design and demonstrate that said changes will not hinder the efficacy of the EPF.

No ore processing will take place at Gold Hill Mill until all EPFs are certified with CDRMS and a Colorado registered professional engineer.

8.1. Mill building

The mill building will be an effective container for ore, concentrate, and tailings that pass through it. The steel structure has a significant containment capacity and has been purpose built for this use. As delineated on E-2 Maps, there will be sufficient storage capacity within the mill building and immediately adjacent to it to store all designated chemicals. Ore that enters the mill building will all be processed prior to departing either as concentrate or tailings.

There are no geological or geochemical conditions that the operation of the mill building will affect or that will affect its efficacy as an EPF.

There are no monitoring systems specific to the mill building as an EPF. The mill building will be inspected daily prior to operations to ensure its integrity.

8.2. Chemical storage

Chemical storage within and without of the mill building will effectively contain all designated chemicals. Volume comparisons and capacity demonstrations are located elsewhere in this exhibit and on the Exhibit E maps.

There are no geological or geochemical conditions that the operation of the chemical storage will affect or that will affect its efficacy as an EPF.

8.3. Surface water control measures

Surface water control measures at Gold Hill will effectively either reroute water from undisturbed areas around the site or collect and store disturbed area runoff within appropriate detention structures to facilitate evaporation.

There are no geological or geochemical conditions that the operation of the surface water control measures will affect or that will affect its efficacy as an EPF.

8.4. Monitoring wells

Monitoring wells at Gold Hill will effectively facilitate the monitoring of groundwater conditions in the vicinity of the mill. These wells are already installed, listed earlier in this exhibit, with locations and designs shown on Exhibit E maps.

There are no geological or geochemical conditions that the operation of the monitoring wells will affect or that will affect its efficacy as an EPF. The wells are a passive monitoring system and have been installed properly.

8.5. Tailings Storage Facility

The tailings storage facility (TSF) at Gold Hill will effectively contain tailings from the milling operations. It has done this since both its original installation and its expansion in 1998. All tailings are placed in the TSF. All designated chemicals that ultimately become part of the tailings will be stored in the TSF. The TSF has sufficient capacity for the tailings and no production will take place without sufficient capacity in the TSF.

There are no geological or geochemical conditions that the operation of the TSF will affect or that will affect its efficacy as an EPF.

Monitoring systems for the TSF are discussed elsewhere in this exhibit, particularly Section 2. The monitoring wells in place are the primary monitoring system.

8.6. Tailings transport systems

Tailings transport systems at Gold Hill will effectively carry tailings from the mill building to the TSF.

There are no geological or geochemical conditions that the operation of the tailings transport system will affect or that will affect its efficacy as an EPF.

8.7. Times-Wynona bulkhead

The Times-Winona bulkhead at Gold Hill will effectively contain water for processing in the Times-Winona Mine in accordance with its design.

The Times-Winona bulkhead will enhance the ability of the immediate geology to store process water from Left Hand Creek for use in the mill. As all water stored in the Times-Winona Mine will be from Left Hand Creek, a natural water source, and the Times-Winona Mine has been used for this purpose for some time, there are no impacts to the geochemistry in the mill area to be expected from the presence of the bulkhead. The installation of the bulkhead will involve increased grouting of the local bedrock, enhancing its stability and reducing its permeability.

8.8. Ore pad

The ore pad at Gold Hill will effectively contain ore for processing within the mill. It will also contain stormwater runoff that falls upon it for evaporation.

There are no geological or geochemical conditions that the operation of the ore pad will affect or that will affect its efficacy as an EPF.

8.9. Reagent Storage

Reagents will be stored in two locations at the mill: outside of the mill on a lined and sided storage pad and inside in a lined storage basin. Each of these areas will be built to hold at least 110% of the total reagent volume that is stored in them at any one time. Separate storage cells will be used with the two storage areas to keep separate reagents that may react to each other to produce toxic products. For example, acids will be stored within a cell completely separated from strong oxidizing agents, bases, or metals. Map E-7 shows a layout of the reagent storage areas at the mill.

9. Geochemical Data and Analysis

The ore being processed at the Gold Hill Mill is blasted and ground telluride ore from the Boulder granite/granodiorite. This will be crushed, ground to a very fines size (~150-micron) before gravity and flotation separation. All ore that is brought to the Gold Hill Mill will be stored on the ore pad prior to processing in the mill.

Ore and tailings materials have been tested in the past under SPLP, TCLP, and Acid-Base Accounting. In 2009, operator Mount Royale Ventures tested ores and tailings in these three manners. In 1998, Hazen Research conducted analysis on the ore samples from the Cash Mine, which has been the main historic feed of the Gold Hill Mill. A copy of the Hazen results is included in Appendix U-3, with the pertinent components quoted in Table U-6. The Mountain Royale Ventures analysis is quote in Table U-7, with the source document available on CDRMS files[4].

According to the test results of ore from both 1998 and 2009, the acid base accounting in both cases is <0. According to the EPA Office of Solid Waste, ABA between -20 and 20 the potential to form acid is difficult to predict from just the ABA test. EPA and industry practice is that an ABA<0 means that there is some acid-producing potential. Given the Hazen and Mount Royale results, the incoming ores at the Gold Hill Mill will be considered to have potential to generate acid. Tailings analysis shows ABA>20, indicating that the tailings material is not potentially acid producing. Both ore and tailings will be stored at lined storage locations regardless of the results of any ABA testing throughout the life of the Gold Hill Mill.

Ore and tailings will be sampled as part of process quality control, with periodic results being provided to DRMS. Tests will be conducted on tailings material every 5000 tons of tailings generated and reported to the Division. Sampling and testing of ore will be conducted on a similar schedule (one test every 5000 tons).

[4] Laserfiche file 2009-02-06_REVISION – M1994117

Table U-6. 1998 Hazen Ore Test Results

Table 3. TCLP and SPLP Extract Analyses, Cash Mine Dump Rock - Whole Ore

Element	Analysis, mg/l		
	TCLP	SPLP[1]	Regulatory Level
Arsenic	<0.28	<0.28	5.0
Barium	0.78	<0.51	100.0
Cadmium	0.13	0.082	1.0
Chromium	<0.061	<0.061	5.0
Lead	1.3	<0.26	5.0
Mercury	<0.0002	<0.0002	0.2
Selenium	<0.42	<0.42	1.0
Silver	<0.51	<0.51	5.0

[1] SPLP extraction procedure using the "west of the Mississippi" fluid.

Table 4. Solids Analysis, Cash Mine Dump Rock - Whole Ore

Parameter	Units	Analysis
Antimony	ppm	<50
Bismuth	ppm	5.7
Mercury	ppm	0.3
Tellurium	ppm	18
Thorium	ppm	5
Tungsten	ppm	<50
Uranium	ppm	7
Radioactivity		
Radium 226	pCi/g	2.2 ± 0.8
Gross Alpha	pCi/g	27 ± 12
Gross Beta	pCi/g	31 ± 8
Paste pH		6.1
Potential Acidity	Tons $CaCO_3$/1,000-ton Sample	7.3
Neutralization Potential	Tons $CaCO_3$/1,000-ton Sample	8.2
Overall Acid-base Potential[1]	Tons $CaCO_3$/1,000-ton Sample	-0.9
Forms of Sulfur (As-received Basis)		
Moisture	%	0.85
Sulfate	%	0.61
Pyritic	%	0.19
Organic	%	0.21
Total	%	1.01

Table 5. TCLP Extract Analysis, Flotation Tailings Solids

Element	Analysis, mg/l	
	Tailings Solids	Regulatory Level
Arsenic	<0.24	5.0
Barium	0.78	100.0
Cadmium	<0.013	1.0
Chromium	<0.051	5.0
Lead	<0.29	5.0
Mercury	<0.0002	0.2
Selenium	<0.65	1.0
Silver	<0.013	5.0
Copper	0.023	NA
Iron	9.4	NA
Manganese	8.2	NA

NA Not applicable.

Table 6. Flotation Tailings Water Analysis, Cash Mine Dump

Parameter	Analysis, mg/l
Arsenic	<0.001
Barium	<0.001
Cadmium	<0.001
Chromium	<0.01
Lead	<0.001
Mercury	<0.0001
Selenium	<0.001
Silver	0.0003
Copper	<0.01
Iron	<0.03
Manganese	2.41
Total Dissolved Solids	2,020
pH (Units)	8.25

Table U-7. 2009 Mount Royale Ventures Ore Test Results

Table 7.2 - SPLP & TCLP Comparison

Tailings, Ore and Waste Rock Characterization by SPLP and TCLP

				Cross Mine Tails				Cash Mine Tails	Cash Mine Ore	Cash Mine O/B		
			Sample ID	TG-1	TG-2	TG-3	TCLP-1	D68-1	Average of 5 Samples	Average of 2 Samples		
			Medium	Tailings	Tailings	Tailings	Tailings	Bulk Flot Tails	Ore	Waste		
			Analysis	SPLP	SPLP	SPLP	TCLP	TCLP	TCLP	TCLP		
ANALYTE	UNITS	MDL	PQL								METHOD CALAIS	METHOD MRV
Acid Generation Potential (calc (	t CaCO3/K	1	5	4 B	4 B	4 B	-		18	0.5	M600/2-78-054 1.3	M600/2-78-054 1.3
Acid Neutralization Potential	t CaCO3/K	1	5	30	31	31	-		13	35	M600/2-78-054 1.3	M600/2-78-054 1.3
Acid-Base Potential (calc on S t(	t CaCO3/K	1	5	26	27	27	-		-5	35	M600/2-78-054 1.3	M600/2-78-054 1.3
Neutralization Potential as CaC(	%	0.1	0.5	3.0	3.1	3.1	-		1.34	3.5	M600/2-78-054 3.2.3	M600/2-78-054 3.2.3
pH	units	0.1	0.1	9.0	9.1	9.0	-		NA	NA	M9045C/M9040B	
pH measured at	C	0.1	0.1	20.1	20.1	20.1	-		NA	NA	M9045C/M9040B	
Sulfur Organic Residual	%	0.01	0.1	0.05 B	0.05 B	0.04 B	-		0.09	0.02	M600/2-78-054 3.2.4	M600/2-78-054 3.2.4
Sulfur Pyritic Sulfide	%	0.01	0.1	0.05 B	0.05 B	0.06 B	-		0.45	0.02	M600/2-78-054 3.2.4	M600/2-78-054 3.2.4
Sulfur Sulfate	%	0.01	0.1	0.03 B	0.02 B	0.02 B	-		0.06	0.01	M600/2-78-054 3.2.4	M600/2-78-054 3.2.4
Sulfur Total	%	0.01	0.1	0.13	0.12	0.12	-		0.59	0.03	M600/2-78-054 3.2.4	M600/2-78-054 3.2.4
Total Sulfur minus Sulfate	%	0.01	0.1	0.10	0.10	0.10	-		0.54	0.03	M600/2-78-054 3.2.4	M600/2-78-054 3.2.4
Chloride (1312)	mg/L	1	5	2 B	2 B	1 B	-		NA	NA	SM4500Cl-E	
Chromium, Hexavalent (3060)	mg/Kg	6	20	U	U	U	-		0	0.2	M7196A	M7196A
Cyanide, total (1312)	mg/L	0.005	0.03	UH	UH	UH	-		NA	NA	M9012A - Colorimetri	
Fluoride (1312)	mg/L	0.1	0.5	U	U	U	-		NA	NA	SM4500F-C	
Nitrate (1312-DI)	mg/L	0.02	0.1	UH	0.03 BH	UH	-		NA	NA	Calculation: NO3NO2	
Nitrate/Nitrite as N (1312-DI)	mg/L	0.02	0.1	UH	0.03 BH	UH	-		NA	NA	M353.2 - Automated C	
Nitrite as N (1312-DI)	mg/L	0.01	0.05	UH	UH	UH	-		NA	NA	M353.2 - Automated C	
Nitrogen, ammonia (1312-DI)	mg/L	0.5	3	U	U	U	-		NA	NA	M350.1 - Automated P	
Residue, Filterable (TDS) @180	mg/L	10	20	30 H	40 H	40 H	-		NA	NA	SM2540C	
Residue, Non-Filter (TSS) @18(	mg/L	5	20	UH	UH	UH	-		NA	NA	SM2540D	
Sulfate (1312 DI)	mg/L	1	5	11	10	12	-		NA	NA	375.4 - Turbidimetri	
Arsenic (TCLP)	mg/L	0.04	0.2	-	-	-	U	<0.24			M6010B ICP	40 CFR 251.24
Barium (TCLP)	mg/L	0.003	0.02	-	-	-	1.570	0.78			M6010B ICP	40 CFR 251.24
Cadmium (TCLP)	mg/L	0.005	0.02	-	-	-	0.066	<0.013			M6010B ICP	40 CFR 251.24
Chromium (TCLP)	mg/L	0.01	0.05	-	-	-	U	<0.051			M6010B ICP	40 CFR 251.24
Lead (TCLP)	mg/L	0.04	0.2	-	-	-	[illegible]	<0.29	*1627 mg/kg	*5 mg/kg	M6010B ICP	40 CFR 251.24/M6010B ICP
Mercury (TCLP)	mg/L	2E-04	0.001	-	-	-	U	<0.0002			M7470 CVAA	40 CFR 251.24
Selenium (TCLP)	mg/L	0.04	0.2	-	-	-	U	<0.65			M6010B ICP	40 CFR 251.24
Silver (TCLP)	mg/L	0.01	0.03	-	-	-	0.02 B	<0.013			M6010B ICP	40 CFR 251.24
pH	units	0.1	0.1	-	-	-	8.4	NA			M9045C/M9040B	40 CFR 251.24
pH measured at	C	0.1	0.1	-	-	-	21.3	NA			M9045C/M9040B	

Qualifiers

- B Analyte concentration detected at a value between MDL and PQL.
- H Analysis exceeded method hold time.
- U Analyte was analyzed for but not detected at the indicated MDL.
- NA Not Analyzed

Cross Mine
Tailings and Waste Rock Characterization by SPLP and TCLP
Sampled March and April 2008
ACZ Laboratories, Inc. June 19, 2008

			Sample ID	TG-1	TG-2	TG-3	TCLP-1	WR-QM-1	WR-QM-2	WR-PG-1	WR-RB-1	
			Medium	Tailings	Tailings	Tailings	Tailings	Waste Rock - Quartz Monzonite from new Decline	Waste Rock - Quartz Monzonite from new Decline	Waste Rock - Precambrian Gneiss from new Decline	Waste Rock - Existing for New Road Base	
			Analysis	SPLP	SPLP	SPLP	TCLP	SPLP	SPLP	SPLP	SPLP	
ANALYTE	UNITS	MDL	PQL									METHOD
Aluminum (1312)	mg/L	0.03	0.2	U	U	0.03 B	-	0.77	0.81	0.33	0.53	M6010B ICP
Antimony (1312)	mg/L	0.0008	0.004	0.0009 B	0.0009 B	0.0008 B	-	U	U	U	U	M6020 ICP-MS
Arsenic (1312)	mg/L	0.04	0.2	U	U	U	-	U	U	U	U	M6010B ICP
Barium (1312)	mg/L	0.003	0.02	0.253	0.274	0.249	-	U	U	0.023	0.205	M6010B ICP
Beryllium (1312)	mg/L	0.0002	0.001	U	U	U	-	U	U	U	U	M6020 ICP-MS
Boron (1312)	mg/L	0.01	0.05	U	U	U	-	U	U	U	U	M6010B ICP
Cadmium (1312)	mg/L	0.0002	0.001	U	U	U	-	U	U	U	U	M6020 ICP-MS
Copper (1312)	mg/L	0.001	0.005	0.003 B	0.003 B	0.003 B	-	0.002 B	0.003 B	0.002 B	0.006	M6020 ICP-MS
Iron (1312)	mg/L	0.02	0.05	U	U	U	-	0.09	0.12	0.09	0.04 B	M6010B ICP
Lead (1312)	mg/L	0.0002	0.001	0.0124	0.0123	0.0100	-	0.0003 B	0.0008 B	U	0.0005 B	M6020 ICP-MS
Manganese (1312)	mg/L	0.005	0.03	U	U	U	-	U	U	U	U	M6010B ICP
Mercury (1312)	mg/L	0.0002	0.001	U	U	U	-	UH	UH	UH	UH	M7470A CVAA
Molybdenum (1312)	mg/L	0.001	0.005	0.363	0.383	0.363	-	0.002 B	0.002 B	0.006	0.004 B	M6020 ICP-MS
Nickel (1312)	mg/L	0.01	0.05	U	U	U	-	U	U	U	U	M6010B ICP
Selenium (1312)	mg/L	0.0002	0.001	0.0008 B	0.0007 B	0.0007 B	-	U	U	U	U	M6020 ICP-MS
Silica (1312)	mg/L	0.4	2	1.8 B	1.6 B	1.6 B	-	4.8	5.2	3.3	4.3	M6010B ICP
Silver (1312)	mg/L	0.0001	0.0005	0.0006	0.0009	0.0003 B	-	U	U	U	U	M6020 ICP-MS
Thallium (1312)	mg/L	0.0002	0.001	U	U	U	-	U	U	0.0008 B	U	M6020 ICP-MS
Uranium (1312)	mg/L	0.0002	0.001	U	U	U	-	U	U	U	0.0003 B	M6020 ICP-MS
Zinc (1312)	mg/L	0.01	0.05	0.02 B	0.03 B	0.02 B	-	0.03 B	0.04 B	0.02 B	0.02 B	M6010B ICP
Gross Alpha (1312)	pCi/L			0.67	0.47	1.4	-	0.17	1.2	0.59	0.48	M9310
Gross Beta (1312)	pCi/L			3.4	3.9	4.5	-	11	4.8	3.9	5	M9310
Acid Generation Potential (calc on S total)	t CaCO3/Kt	1	5	4 B	4 B	4 B	-	U	1 B	2 B	3 B	M600/2-78-054 1.3
Acid Neutralization Potential	t CaCO3/Kt	1	5	30	31	31	-	39	35	21	49	M600/2-78-054 1.3
Acid-Base Potential (calc on S total)	t CaCO3/Kt	1	5	26	27	27	-	39	34	19	47	M600/2-78-054 1.3
Neutralization Potential as $CaCO_3$	%	0.1	0.5	3.0	3.1	3.1	-	3.9	3.5	2.1	4.9	M600/2-78-054 3.2.3
pH	units	0.1	0.1	9.0	9.1	9.0	-	9.5	9.6	8.9	9.5	M9045C/M9040B
pH measured at	C	0.1	0.1	20.1	20.1	20.1	-	20.1	20.1	20.1	20.1	M9045C/M9040B
Sulfur Organic Residual	%	0.01	0.1	0.05 B	0.05 B	0.04 B	-	U	0.02 B	0.03 B	0.04 B	M600/2-78-054 3.2.4
Sulfur Pyritic Sulfide	%	0.01	0.1	0.05 B	0.05 B	0.06 B	-	0.01 B	U	0.02 B	0.03 B	M600/2-78-054 3.2.4
Sulfur Sulfate	%	0.01	0.1	0.03 B	0.02 B	0.02 B	-	0.01 B	0.02 B	U	0.01 B	M600/2-78-054 3.2.4
Sulfur Total	%	0.01	0.1	0.13	0.12	0.12	-	0.02 B	0.04 B	0.05 B	0.08 B	M600/2-78-054 3.2.4
Total Sulfur minus Sulfate	%	0.01	0.1	0.10	0.10	0.10	-	0.01 B	0.02 B	0.05 B	0.07 B	M600/2-78-054 3.2.4
Chloride (1312)	mg/L	1	5	2 B	2 B	1 B	-	2 BH	1 BH	2 BH	1 BH	SM4500Cl-E
Chromium, Hexavalent (3060)	mg/Kg	6	20	U	U	U	-	U	U	U	U	M7196A
Cyanide, total (1312)	mg/L	0.005	0.03	UH	UH	UH	-	UH	UH	UH	UH	M9012A - Colorimetri
Fluoride (1312)	mg/L	0.1	0.5	U	U	U	-	UH	UH	0.1 BH	UH	SM4500F-C
Nitrate (1312-DI)	mg/L	0.02	0.1	UH	0.03 BH	UH	-	0.44	0.07 B	0.49 H	UH	Calculation: NO3NO2
Nitrate/Nitrite as N (1312-DI)	mg/L	0.02	0.1	UH	0.03 BH	UH	-	0.44 H	0.07 BH	0.49 H	UH	M353.2 - Automated C
Nitrite as N (1312-DI)	mg/L	0.01	0.05	UH	UH	UH	-	UH	UH	UH	UH	M353.2 - Automated C
Nitrogen, ammonia (1312-DI)	mg/L	0.5	3	U	U	U	-	UH	UH	UH	UH	M350.1 - Automated P
Residue, Filterable (TDS) @180C (1312)	mg/L	10	20	30 H	40 H	40 H	-	20 H	30 H	30 H	30 H	SM2540C
Residue, Non-Filter (TSS) @180C (1312)	mg/L	5	20	UH	UH	UH	-	UH	UH	UH	UH	SM2540D
Sulfate (1312 DI)	mg/L	1	5	11	10	12	-	UH	UH	UH	UH	375.4 - Turbidimetri
Arsenic (TCLP)	mg/L	0.04	0.2	-	-	-	U	-	-	-	-	M6010B ICP
Barium (TCLP)	mg/L	0.003	0.02	-	-	-	1.570	-	-	-	-	M6010B ICP
Cadmium (TCLP)	mg/L	0.005	0.02	-	-	-	0.066	-	-	-	-	M6010B ICP
Chromium (TCLP)	mg/L	0.01	0.05	-	-	-	U	-	-	-	-	M6010B ICP
Lead (TCLP)	mg/L	0.04	0.2	-	-	-	67.50	-	-	-	-	M6010B ICP
Mercury (TCLP)	mg/L	0.0002	0.001	-	-	-	U	-	-	-	-	M7470 CVAA
Selenium (TCLP)	mg/L	0.04	0.2	-	-	-	U	-	-	-	-	M6010B ICP
Silver (TCLP)	mg/L	0.01	0.03	-	-	-	0.02 B	-	-	-	-	M6010B ICP
pH	units	0.1	0.1	-	-	-	8.4	-	-	-	-	M9045C/M9040B
pH measured at	C	0.1	0.1	-	-	-	21.3	-	-	-	-	M9045C/M9040B

9.1. Water and Waste Sampling

Ground water from wells, surface water from the tailings storage facility, and the processing facility tailings will all be sampled and tested according to the procedures outlined in Appendix C-2.

9.2. Wildlife Protection

Most of the land in the permit area has been previously disturbed by historical activity. Since the processing facility is an enclosed structure, all potentially hazardous chemicals are stored within appropriate structures, the risks to wildlife are minimal.

Fencing will be maintained around the tailings pond to ensure wildlife cannot access the tailings pond.

Appendix U-1 Materials Containment Plan

Appendix U-2 SPCC Plan

Appendix U-3 Ore and Tailings Analysis