



Eschberger - DNR, Amy <amy.eschberger@state.co.us>

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1 message

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**Mark Steen** <goldtontine@gmail.com>

Sun, Sep 15, 2019 at 6:48 PM

To: "amy.eschberger@state.co.us" <amy.eschberger@state.co.us>

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**COLORADO MILLING COMPANY, LLC**  
**P.O. Box 1523**  
**Longmont, Colorado 80502**

Colorado Division of Reclamation, Mining and Safety  
Attention: Amy Eschberger  
1313 Sherman Street – Room 215  
Denver, Colorado 80203

September 15, 2019

**RE: Gold Hill Mill, Permit No. M-1994-117, Amendment Application  
(Revision No. AM-01), Adequacy Review No. 5**

Attention: Amy Eschberger:

This is the Colorado Milling Company, LLC's Response Letter to the items listed in Amy Eschberger's July 23, 2019 Adequacy Review No. 5 of the Application for an Amendment to the Gold Hill Mill Limited Impact 110 (2) Permit No. M-1994-117, to formally add the previously permitted Left Hand Creek Pump Station, Gold Hill Mill Pipeline, and the Times Mine adit portal to the affected land boundary of the Gold Hill Mill Permit. These three features are collectively referred to as the Gold Hill Mill Waterline in this Response Letter. In order to ensure that the responses to the Division of Reclamation, Mining and Safety's request for additional information and clarification can be properly reviewed, the responses are set out below each of Amy Eschberger's Adequacy Review comments.

**Exhibit C – Mining Plan (Rule 6.3.3):**

1) The operator's response to Item no. 1(a) states the requested mine pool drawdown plan cannot be developed and submitted to the Division until a pumping test has been conducted at the site. Therefore, the Division has the following comments regarding this item:

a. Please provide a pumping test plan detailing the proposed procedures. This plan should include a detailed description of how water pumped from the workings will be managed during testing, and whether a discharge permit will be required from the CDPHE, WQCD.

**CMC Response:** The Times and Wynona Mines pump test has been designed to determine the mine pool volume above the collar of the winze that connects the Times Mine with the Wynona Mine workings. To perform this evaluation, mine pool drawdown data from a pumping test needs to be acquired. The pump test involves the following activity:

1. Measure and record static water levels in the Times Mine well and the Wynona Mine shaft.
2. Start the Gould's Model 85GS pump currently installed in the Wynona Mine shaft.
3. Establish a steady water flow rate from this pump.
4. Measure and record water flow rates, totalized volumes and water levels in both the Times Mine well and the Wynona Mine shaft well every five (5) minutes and document these flow rates, totalized volumes, and water levels.
5. The data from the pump test would then be used to create a mine pool elevation to capacity curve. Along with the pump test data, this curve would be used to develop a mine drawdown plan.
6. The pumping test should help establish the elevation of the Wynona Mine 100 Foot Level, which will assist in determining the water volume above the Times Mine workings.
7. Water pumped from the Wynona Mine shaft well will be pumped into the two steady head tanks located inside the Gold Hill Mill, where a totalizing flow meter will be installed to measure the discharge from the Wynona Mine shaft well.
8. All of the mine water collected in the two steady head tanks will be contained in the large thickener tank located on the Flotation Level inside the Gold Hill Mill, which has the capacity to hold more than 50,000 gallons of water.
9. The Times Mine Bulkhead pressure gauge will be monitored on a predetermined basis to determine the effects of different water levels in the Times and Wynona Mines on the bulkhead pressure. The results obtained from these observations will help determine the actual amount of water that needs to be pumped from the underground mine workings to control the bulkhead pressure.
10. No mine water will be discharged during the pump test. Therefore, a discharge permit from the CDPHE and the WQCD will not be required to conduct this pump test.

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b. Because the site is still under a Temporary Suspension by the BLM, please commit to demonstrating to the Division, prior to initiating the pumping test, that the BLM has authorized this activity to occur at the site.

**CMC Response:** CMC commits to demonstrating to the DRMS, prior to initiating the pumping test, that the BLM has authorized this activity at the Gold Hill Millsite. Based upon previous communications between CMC and the BLM, it does not appear that the BLM will not authorize this pumping test, since all of the underground mine workings where water is stored are located on patented mining claims owned by CMC.

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c. Please be advised, submittal of the requested mine pool drawdown plan will be a stipulation of AM01 approval, requiring this plan be submitted in the form of a Technical Revision for Division review and approval, prior to mill operations commencing at the site. Please acknowledge your acceptance of this stipulation.

**CMC Response:** CMC acknowledges that a mine pool drawdown plan will be a stipulation of Revision AM 01 approval, requiring that this plan be submitted in the form of a Technical Revision for DRMS review and approval, prior to milling operations commencing at the Gold Hill Millsite.

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2) The operator's response to Item no. 1(d) states the operator is awaiting the results of the Deere & Ault's mine pool control plan and monitoring plan to determine if it is necessary to maintain the water levels in the mine workings below the design standard for the Times Mine Bulkhead.

Please be advised, until the Division has reviewed and approved the new engineer bulkhead evaluation based on the results of the proposed pumping test, and including different recommendations than those included in the evaluation submitted to the Division on May 17, 2019, the operator must commit to maintaining water levels in the mine workings below the design standard for the bulkhead, 17.6 feet of head or an elevation of 8,360 feet during operations, including weekly monitoring of water levels.

**CMC Response:** CMC commits to maintaining water levels in the mine workings at an elevation of 8,360 feet during operations until the DRMS has reviewed and approved the new bulkhead evaluation based on the results of the proposed pumping test, which may include different recommendations than those included in the Deere & Ault Consultants evaluation of the Times Mine Bulkhead submitted on May 17, 2019. CMC commits to conduct weekly monitoring of water levels during operations.

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3) The operator's response to Item no. 1(e) states the operator is awaiting the results of the Deere & Ault's mine pool control plan and monitoring plan to determine the actual Times Mine Bulkhead pressure and the effects of different water levels in the Times and Wynona Mines on the bulkhead pressure.

Please be advised, until the Division has reviewed and approved the new engineer bulkhead evaluation based on the results of the proposed pumping test, and including different recommendations than those included in the evaluation submitted to the Division on May 17, 2019, the operator must commit to maintaining the bulkhead pressure below the design standard for the bulkhead, 7.6 psi (with 17.6 feet of head) during operations, including weekly monitoring of bulkhead pressure.

**CMC Response:** CMC commits to maintaining the Times Mine Bulkhead pressure below 7.6 psi (with 17.6 feet of head) during operations until the DRMS has reviewed and approved the new bulkhead evaluation based on the results of the proposed pumping test, which may include different recommendations than those included in the Deere & Ault Consultants evaluation of the Times Mine Bulkhead submitted on May 17, 2019. CMC commits to conduct weekly monitoring of the Times Mine Bulkhead pressure during operations.

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4) The operator's response to Item no. 1(f) states the operator is awaiting the results of the Deere & Ault's mine pool control plan and monitoring plan to determine the frequency of the inspection of the Times Mine bulkhead.

Please be advised, until the Division has reviewed and approved the new engineer bulkhead evaluation based on the results of the proposed pumping test, and including different recommendations than those included in the evaluation submitted to the Division on May 17, 2019, the operator must commit to inspecting the bulkhead on a weekly basis during operations to document conditions, including any increases in seepage or the development of any concentrated areas of flow.

**CMC Response:** CMC commits to inspecting the Times Mine Bulkhead to document conditions, including any increases in seepage or the development of any concentrated areas of flow on a weekly basis during operations, until DRMS has reviewed and approved the new bulkhead evaluation based on the results of the proposed pumping test, which may include different recommendations than those included in the Deere & Ault Consultants evaluation of the Times Mine Bulkhead submitted on May 17, 2019.

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5) The operator's response to Item no. 1(g) states the operator has discussed the potential for concrete degradation of the Times Mine Bulkhead with Deere & Ault and prefer to let them address the need to sample the water quality on a quarterly basis to evaluate the potential for concrete degradation of the bulkhead.

Please be advised, until the Division has reviewed and approved the new engineer bulkhead evaluation based on the results of the proposed pumping test, and including different recommendations than those included in the evaluation submitted to the Division on May 17, 2019, the operator must commit to monitoring water quality in the Times Mine on a quarterly basis (for the sampling parameters approved in AM-01) to evaluate potential concrete degradation of the bulkhead, and submitting these results to the Division in the quarterly groundwater monitoring report.

**CMC Response:** CMC commits to monitoring water quality in the Times Mine on a quarterly basis (for the sampling parameters approved in Revision No. AM-01) to evaluate potential concrete degradation of the Times Mine Bulkhead, and to submitting these results to the DRMS in the quarterly groundwater monitoring reports. Once the DRMS has reviewed and approved the new bulkhead evaluation based on the results of the proposed pumping test, which may include

different recommendations than those included in the Deere & Ault Consultants evaluation of the Times Mine Bulkhead submitted on May 17, 2019.

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6) The operator's response to Item No. 2 states the operation will be limited to processing no more than 5,000 tons of ore at this time (due to limited capacity of the tailings impoundment), and will therefore, require a total of 5,000 tons of water with mill recycling (assuming 1 ton water/1 ton ore) or 20,000 tons of water without mill recycling (assuming 4 tons water/1 ton ore). Please specify how much water will be used in conjunction with the operation in units of volume (gallons), not units of weight (tons), so the Division can easily compare this value to the amount of water the operator is authorized (per Water Court Decree) to withdraw from Left Hand Creek, which is also given in units of volume (3,388,850 gallons during irrigation season). Please be sure the estimated volume in gallons has been properly converted from tons using the appropriate conversion factor, and not a 1 ton water = 1 gallon water conversion, which is incorrect.

**CMC Response:** According to the Denver Equipment Index, one short ton of water equals 239.65 gallons of water. (This is usually rounded up to equal 240.00 gallons of water.) If CMC processes 5,000 tons of ore in the Gold Hill Mill, it will require a total of 5,000 tons of water which equals 1,198,264 gallons of water by recycling the water used in the grinding, classification, and gravity concentration circuits. (Rounded up it equals 1,200,000 gallons of water.) The DRMS can easily compare this value to the amount of water the operator is authorized (per Water Court Decree) to withdraw from Left Hand Creek, which is also given as 10.40 acre feet (One acre feet equals 325,851 gallons of water.) in a dry year, which equals 3,388,854 gallons, and 22.53 acre feet in a wet year, which equals 7,341,432 gallons. The State Water Engineer and the Left Hand Ditch company determine if it is a dry or wet year, and that governs how much water can be withdrawn from Left Hand Creek for processing ore in the Gold Hill Mill.

The original, Mined Land Reclamation Board approved Limited Impact Permit for the Gold Hill Mill included the following description of how much water would be used in conjunction with the operation of the gravity and flotation circuits in the milling facility:

“This milling complex has been designed to maintain a stable water balance throughout the ore processing and tailings impoundment system. The milling operation will require 4 tons of water for every ton of ore processed in the gravity and flotation concentration circuits. Fresh water will be introduced into the milling process in the grinding circuit. Most of the water that will be used in grinding and classification, and in the gravity concentration circuit, will be recycled from the thickener tank overflow launder back to the ball mill. Fresh water will also be added to the thickened pulp as it passes from the thickener tank underflow to the flotation concentration circuit.” The operative word in this description of the Gold Hill Mill's gravity and flotation concentration circuits is **recycled**. By recycling most of the water that will be used in the grinding and gravity concentration circuits through the proper use of the large thickener tank (35 feet in diameter by 10 feet high with a water storage capacity of 52,870 gallons of process water) CMC will only need to add about one (1) ton of fresh water (**240 gallons**) to the flotation concentration circuit for every ton of ore that is being processed. Only the water from the flotation circuit is discharged into the tailings retention pond, while most of the water used in the grinding, classification and gravity circuits is **recycled**. In other words, when the Gold Hill Mill is operated according to its original mineral processing flowchart, the amount of water actually consumed will

be less than one fourth of the water that is pumped from the underground water storage pool into the mill.

The original approved Gold Hill Mill Permit further states: “The water consumed in the milling process and lost in evaporation from the tailings pond is not expected to exceed 20 percent of the water used in the mill. The water consumed in the milling process will mainly result from water entrapped in the gravity and flotation concentrates and in the unconsolidated tailings. Because of the altitude and limited size of the tailings pond, only a relatively small amount of water is expected to be lost due to evaporation. Recycling the mill water will reduce the amount of fresh water needed in the milling process, and decrease the quantity of water pumped from Left Hand Creek.” The operative word in this description of the milling process is **consumed**. This calculation estimated that the amount of water **consumed** in the milling process would be **6,350 gallons** of water per day when the Gold Hill Mill was processing 50 tons of ore per 24 hour day. Actual mineral processing operations in the Gold Hill Mill demonstrated that the volume of water **consumed** was approximately **4,500 gallons** of water per day, which amounts to **1,170,000 gallons** per year. This is well below the **3,388,850 gallons** of water that can be pumped from Left Hand Creek in a dry year, and far below the **7,341,432 gallons** of water that can be pumped from Left Hand Creek in a wet year.

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#### **Exhibit E – Map (Rule 6.3.5):**

7) The operator’s response to Item no. 3(a) regarding the Mining Plan Maps, included a legal description and revised Figure E-1 for the proposed permit area near Left Hand Creek. These documents show the proposed permit area near the creek to consist of 0.218 acres. This acreage varies from what was proposed in the application for this area (0.256 acres) and from what was shown in this area on the previous E-1 map (0.035 acres + 0.218 acres = 0.253 acres). Please correct and/or explain this discrepancy in the proposed permit area near the creek. Does the operator still request a total permit area increase of 0.797 acres in AM-01, as initially proposed? Or has this value changed since the most recent survey was completed?

**CMC Response:** The original E-1 Mine Plan Map submitted by CMC included an area on the North side of Left Hand Creek that was 0.035 acres in size. This parcel of land was included in the proposed permit area to provide access to the foot bridge that was going to be used to access the Left Hand Creek Pump Station. This was addressed by CMC in its January 4, 2019 Response Letter to the DRMS’s Adequacy Review Letter No. 2, when it stated that the foot bridge would not be installed as part of this Permit Amendment. A field survey of this area disclosed a gap between the Mammoth Millsite MS No. 17576 and the Paris Lode MS No. 5149A that will provide access to the Pumphouse from Lickskillet Road. This open area is located entirely on the CMC owned Gold Gulch unpatented lode mining claim. It is shown on **Map E-1A Mining Plan Map for Permit Area Near Left Hand Creek** attached to this Response Letter. It has been calculated to contain 0.009 acres of surface land. The new area for the Left Hand Creek Pump Station is 0.227, which is a reduction of the total proposed permit area of 0.026 acres.

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8) Please submit a revised Figure E-1 which conforms to the following criteria required by Rule 6.2.1(2):

a. Show name of Applicant.

**CMC Response:** The name of the Applicant is shown on the bottom of the map.

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b. Must be prepared and signed by a registered land surveyor, professional engineer, or other qualified person.

**CMC Response:** This map was prepared and signed by Carl G. Swift, Colorado Registered Professional Land Surveyor No. 26391, doing business as: Mountain Surveying, LLC., P.O. Box 783, Nederland, Colorado 80466.

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c. Give date prepared.

**CMC Response:** This map was prepared on September 12, 2019.

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d. Identify and outline the proposed permit boundary, as also required by Rule 6.3.5(2)(a). The revised map does not adequately identify the proposed permit boundary. Two potential methods for properly identifying the permit boundary include using a unique outline and an appropriate legend to describe what the outline represents, or using arrows and text to indicate the location of the permit boundary. Please be sure all portions of the permit boundary shown on the map are identified (pump station area and waterline area).

**CMC Response:** The proposed permit boundary has a unique, bold outline and an appropriate legend to describe what the outline represents, and arrows and a text have been added to the map to indicate the location of the permit boundary. All portions of the permit boundary in this area near Left Hand Creek have been identified, including the location of the Left Hand Creek Pump Station the Water Line Easement.

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e. Include an appropriate map title. The revised map is titled “E-1A Permit Area”, which does not appropriately indicate the type of map. The Division suggests revising the title to “E-1A Mining Plan Map for Permit Area near Left Hand Creek”, or at a minimum “E-1A Mining Plan Map”.

**CMC Response:** The map has been titled **E-1A MINING PLAN MAP FOR PERMIT AREA NEAR LEFT HAND CREEK**. It is attached to this Response Letter along with a Legal Description of the Permit Parcel for this area near Left Hand Creek.

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9) The operator's response to Item no. 3(b) regarding the Reclamation Plan Maps states that none of the requested features have ever been shown on any of the Reclamation Plan Maps that have been submitted to the DRMS. Further down, the operator refers to Rule 1.10(2) which states the Applicant will not be required to submit any information which duplicates applicable previous submittals. The Division agrees with the operator's statement that none of the requested features have been shown on previous Reclamation Plan Maps for the site. Therefore, the Reclamation Plan Map must be a stand-alone comprehensive map that portrays all components of the reclamation plan for the affected lands shown on the map. The Division will not approve AM-01 without an updated Reclamation Plan Map that conforms to the requirements of Rules 6.2.1 and 6.3.5.

**CMC Response:** Actually, the operator's response to Item No. 3 (b) stated: "CMC has submitted numerous Reclamation Plan Map(s) (Figure E-5) during the course of this Permit Amendment Application. This is the first time that the DRMS has requested that this specific information be included on the Reclamation Plan Maps (Figure E-5). In fact, all of the requested features were shown on the original Reclamation Plan Map filed with the Amendment to the Cash Mine Permit No. M-1983-141 on July 20, 1985, between the pages 26 and 27 of that Amendment to the Cash Mine Permit. The Reclamation Plan Map for the Gold Hill Millsite and Tailings Pond shows the gradient of all reclaimed slopes (horizontal : vertical) sufficient to describe the post mine topography; and the accompanying text indicates where vegetation will not be established and the general area(s) for shrub or tree planting; and it states the average thickness of replaced overburden by reclamation area or phase."

The Rules and Regulations of the Mined Land Reclamation Act in effect in 1985, required a Reclamation Plan Map for the Gold Hill Millsite and Tailings Pond, and one was included between pages 26 and 27 in the Amendment to the Cash Mine Permit No. M-1983-141 filed on July 20, 1985.

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Please submit a revised Reclamation Plan Map (Figure E-5) which includes the following information required by Rule 6.3.5(3):

a. Show the gradient of all reclaimed slopes (horizontal:vertical) sufficient to describe the post mine topography.

**CMC Response:** According to the previously approved Reclamation Plan for the tailings retention structure, the interior of the tailings pond will be leveled by grading with a small tractor, creating the flat surface shown on the Mill Pond Reclamation Map attached to this Response Letter. This map shows that the post mine topography inside the tailings pond will be essentially level. Nothing will be done to alter the downslope tailings retention structure. The post mine topography will remain as it has been shown on every Reclamation Plan Map submitted with this Application for an Amendment to the Gold Hill Mill Limited Impact Permit.

b. Indicate where vegetation will not be established and the general area(s) for shrub or tree planting.

**CMC Response:** Vegetation will not be established on the upper portion of the tailings retention structure, because it was excavated in solid granodiorite and it is too steep to support the establishment of any vegetation. According to the previously approved Reclamation Plan for the interior of the tailings retention pond, several varieties of shrubs and trees that are common to this area will be planted in the interior of the leveled tailings pond, which is 316 feet long by 162 feet wide at its largest dimensions.

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c. State the average thickness of replaced overburden by reclamation area or phase.

**CMC Response:** According to the previously approved Reclamation Plan for the interior of the tailings retention structure, a two foot thick rock capillary barrier will be placed on top of the leveled mill tailings before the salvaged, stockpiled and any imported topsoil is placed over this rock capillary barrier.

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d. State the average thickness of replaced topsoil by reclamation area or phase.

**CMC Response:** The average thickness of the replaced topsoil for the interior of the tailings retention structure area will be between 3 and 4 inches.

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**CMC Response:** CMC is submitting a revised **Reclamation Plan Map** (Figure E-5A). It is attached to this Response Letter. In addition, CMC has included the approved Reclamation Plan for the Gold Hill Mill's Tailings Pond to this Response Letter. It is shown below as **Exhibit A**.

## **EXHIBIT A**

### **RECLAMATION PLAN FOR THE GOLD HILL MILL TAILINGS POND**

The mill tailings consist of compacted, fine-grained, light-colored, siliceous, sandy material that has very few of the essential chemical elements or physical properties needed for plant growth. Therefore, special reclamation techniques will be employed to establish a permanent, self-sustaining, and diverse cover of vegetation on the land surface affected by the impoundment of the mill tailings. Because the tailings retention structure will have three sloping sides and a relatively flat surface, the species selection, site preparation, and planting methods for these two areas will address their different physical characteristics. The tailings impoundment area will be reclaimed

in a manner that establishes a growth of trees and low shrubs along with a cover of native grasses over the tailings embankment, and a meadow of grasses and scattered trees and shrubs on the flat surface of the former tailings pond.

The revegetation part of the Reclamation Plan for the tailings impoundment area will be implemented over a period of several years and will involve four separate phases. These four phases have been planned to coincide with the physical stabilization and consolidation of the mill tailings, which will depend on the rate of the tailings deposition. The first phase will be centered around field tests; the second phase will be concentrate on establishing a cover of stabilizing vegetation on the sloping sides of the tailings embankment; the third phase will focus on developing an effective growth of grasses on the former tailings pond; and the fourth phase will be directed towards creating a diverse cover of trees and shrubs on the reclaimed tailings pond.

Within two years of the commencement of sustained milling operations, the first phase of the Reclamation Plan will be started. A field test site will be developed below the lowest area of the mill building. Field tests will be conducted on consolidated mill tailings to determine the best soil conditions for establishing vegetation, and to assist in selecting the proper grass species for revegetating the tailings retention area. These field tests will provide useful information regarding soil amendments, seed mixtures, and grass yields at this elevation during a two year study period under actual climatic conditions.

The second stage of the Reclamation Plan will be the revegetation of the tailings embankment. It will commence during the first year after tailings deposition has finally ended. 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. Approximately 40 shrubs will be planted between the trees. These shrubs will be Serviceberry, Common Gooseberry and Kinnikinnick. Native species, either collected from the area or purchased from a nursery, will be transplanted at the reclamation site.

The third phase of the Reclamation Plan for the tailings impoundment area that will be implemented is the revegetation of the tailings pond. Since the tailings pond will be the last part of the tailings retention structure to consolidate, the revegetation of this area will begin at a later date than the three sloping sides of the tailings embankment. During this period of tailings consolidation, a wood fiber mulch will be applied to the dried areas on the top of the tailings retention structure 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. Then the graded surface will have a two foot rock capillary barrier placed on top of the mill tailings. This material will come from the mine dump screening operation that will provide mill feed to the Gold Hill Mill. Next, the salvaged and stockpiled topsoil, and any imported topsoil, will be placed over this rock capillary barrier to a depth of between 3 and 4 inches. The same seed mixture of both native and introduced species that will be planted on the three sides of the tailings retention embankment will be used on the former tailings pond. The seed mixture will be planted at the rate of about 40 pounds per acre by hydroseeding. A Brillion grass seeder may also be used on this part of the tailings impoundment area. A wood fiber mulch may be used to protect the seedbed from wind and water erosion, and to promote better root growth.

A list of the native and introduced grass species, and the quantities of these grasses that will be planted on the reclaimed tailings impoundment area is given below. Some of the grass species on this list may be deleted or substituted following the completion of the field tests that will be conducted on consolidated mill tailings.

| <u>Native Grass Species</u>     | <u>Application Rate: Pounds Per Acre</u> |
|---------------------------------|--|
| Mountain Mhuly                  | 2  |
| Slender Wheat-grass             | 8  |
| Thurber Fescue                  | 3  |
| <u>Introduced Grass Species</u> |  |
| Hard Fescue                     | 4  |
| Intermediate Wheat-grass        | 8  |
| Orchard grass                   | 6  |
| Red Fescue                      | 2  |
| Smooth Brome                    | 5  |
| Timothy                         | 2  |

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. The optimum season for seeding the prepared mill tailings is in the late fall, so that seed germination will take place in the following spring. However, if the grass seeds are planted in the early spring, they will have ample time for growth prior to the ground freezing, and the grasses will benefit from several months of precipitation.

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 retention structure. 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 impoundment area.

In order to create a diverse community on the reclaimed tailings retention structure, the fourth and final phase of the revegetation plan will involve transplanting indigenous trees and shrubs onto the surface of the former tailings pond. This last part of the revegetation program will be started during the third or fourth year after the cessation of tailings deposition. Between 20 and 30 Ponderosa

pine and Engelmann spruce trees ranging in height from 2 to 4 feet will be planted in specially prepared soil in scattered locations on the restored tailings pond. Serviceberry, Common Gooseberry, Kinnikinnick and Common Juniper shrubs will be planted at irregular intervals among the transplanted trees. These secondary species will encourage voluntary revegetation, and they will enhance the potential for wildlife habitation on this site.

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 Boulder Creek granite. This slope is too steep to support any soil or the establishment of any vegetation and no attempt to revegetate this relatively small portion of the Gold Hill Mill's tailings pond will be attempted.

CMC has also included the approved Reclamation Plan for the Gold Hill Millsite to this Response Letter. It is shown below as **Exhibit B**.

## **EXHIBIT B**

### **RECLAMATION PLAN FOR THE GOLD HILL MILLSITE**

The Reclamation Plan for the Gold Hill Millsite was approved when the Cash Mine Permit No. M-1983-141 was Amended to include the Gold Hill Millsite and Tailings Impoundment Area. This Permit Amendment was approved by the Colorado Mined Land Reclamation Board on September 25, 1985.

When the Gold Hill Mill was constructed, the area that has become the Cash Mine Dump Stockpile was cleared of all of the native trees and shrubs that were growing in this location. Because this area was situated in very solid Boulder Creek granite, there was almost no topsoil located where the ramp to the coarse ore bins was constructed and where a large portion of the Cash Mine Dump was transported and stockpiled. No vegetation will be established in this area once it is no longer being used to stockpile and process mine dumps. The very shallow depth to bedrock and the poorly developed soil profile that is present around the Wynona and White Cloud Mines precludes the possibility of establishing vegetation in most of this area.

The best sites for locating new vegetation in this area are the prospect pits and trenches in the southwest part of the permit boundary. Approximately 20 trees ranging from 3 to 6 feet in height will be planted every 10 to 15 feet in these prospect pits, which will be filled with specially treated and improved soil transported to the reclamation 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 and white Cloud Mines were 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 prospect pits.

A wood fiber mulch and appropriate soil amendments and fertilizers will be applied to the reworked White Cloud Mine dump. The mulch will decrease erosion and help to hold water near the root systems of the trees and shrubs. Once the evergreen trees and shrubs have recovered from being transplanted to these prospect pits, organic fertilizer will be added to the revegetated areas. Other supplements may be added to adjust the acidity of these revegetated areas, and to add nutrients to the imported soil. These reclamation techniques will help ensure that a long-lasting vegetation cover will be established on the southwest portion of the affected lands and prepare this ground for voluntary revegetation.

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 Millsite. 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 Millsite does not become an attractive nuisance and magnet for vandals.

Upon the completion of this Reclamation Plan, the land surface affected by the milling activities at the Gold Hill Mill will be restored to a forest environment with an enhanced suitability for wildlife habitation.

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**Additional Item(s):**

10) Please remember that, pursuant to Rule 1.6.2(1)(c), any changes or additions to the application on file in our office must also be reflected in the public review copy which was placed with the County Clerk and Recorder. Pursuant to Rule 6.4.18, you must provide our office with an affidavit or receipt indicating the date this was done.

**CMC Response:** CMC will provide the DRMS with a file stamped receipt or an affidavit from the Boulder County Clerk and Recorder's Office.

This concludes the Colorado Milling Company, LLC's Response Letter to the items listed in the DRMS's Adequacy Review No. 5 to the Application for an Amendment to the Gold Hill Mill Limited Impact 110 (2) Permit No. M-1004-117. It is being transmitted electronically as well as hand delivered to the DRMS.

If you have any questions, you may contact me by email at [goldtontine@gmail.com](mailto:goldtontine@gmail.com).

Sincerely,

Mark A. Steen  
Colorado Milling Company, LLC

Cc: Mike Bynum  
Colorado Milling Company, LLC  
50 West 100 South Street  
Moab, Utah 80342

Cc: John R. Henderson  
Attorney at Law

Cc: Cynthia T. Kennedy  
Attorney at Law

Cc: Christoph M. Goss, P. E.  
Deere & Ault Consultants, Inc.

Cc: Victor G. deWolfe, P. E.  
Deere & Ault Consultants, Inc.

Cc: James M. Beck, P. E.  
J. M. Beck & Associates

Cc: Jeff Pillus, P.E.  
SET Engineering, LLC

Carl Swift  
Mountain Surveying, LLC



STATE OF  
COLORADO

Eschberger - DNR, Amy <amy.eschberger@state.co.us>

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## E-1A MAP LEGAL 9\_12\_2019[21145]

1 message

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**Mark Steen via Adobe Document Cloud** <noreply@acrobat.com>  
Reply-To: goldhillbooks@yahoo.com  
To: amy.eschberger@state.co.us

Sun, Sep 15, 2019 at 6:50 PM



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LEGAL DESCRIPTION-PERMIT PARCEL  
GOLD HILL MILL PERMIT NO.M-1994-117

STATE OF COLORADO DIVISION OF RECLAMATION MINING AND SAFETY  
PERMIT AREA FOR COLORADO MILLING COMPANY, LLC, GOLD HILL MILL  
PERMIT NO. M-1994-117, A PERMIT PARCEL UPON THE GOLD GULCH NO.3  
UNPATENTED MINING CLAIM LOCATED IN THE SE 1/4 SECTION 2,  
TOWNSHIP-1-NORTH, RANGE-72-WEST OF THE SIXTH P.M., COUNTY OF  
BOULDER, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS  
FOLLOWS:

COMMENCING AT CORNER 1 OF THE MAMMOTH MILLSITE MS 17576B ALSO  
BEING CORNER 6 OF THE NEW DISCOVERY MILLSITE MS 585B FROM WHICH  
POINT SE CORNER SEC 2 BEARS S 27°55' E A DISTANCE OF 1377 FEET;

THENCE ALONG THE RECORD BEARING  
S 41°37'00" W A DISTANCE OF 152.3 FEET,  
TO THE SOUTHERLY EMBANKMENT OF LEFT HAND CREEK MORE OR LESS,  
AND TO THE TRUE POINT OF BEGINNING;  
THENCE ALONG THE RECORD BEARING  
S 41°37'00" W A DISTANCE OF 95.10 FEET,  
AND ALONG LINE 1-2 TO CORNER 2 OF  
SAID MAMMOTH MILLSITE MS 17576B;  
THENCE S 81°44'33" E A DISTANCE OF 165.64 FEET,  
TO LINE 5-6 KEYSTONE MILLSITE MS 69B;  
THENCE ALONG THE RECORD BEARING NORTH (N 00°00" E) A DISTANCE OF  
68.38 FEET ALONG LINE 5-6 OF KEYSTONE MILLSITE MS 69B AND LINE 5-  
6 OF SAID NEW DISCOVERY MILLSITE MS 585B  
TO THE SOUTHERLY EMBANKMENT OF LEFT HAND CREEK;  
THENCE S 89°43'08" W A DISTANCE OF 24.60 FEET,  
ALONG SOUTHERLY EMBANKMENT OF LEFT HAND CREEK;  
THENCE N 75°58'21" W A DISTANCE OF 49.49 FEET,  
ALONG SOUTHERLY EMBANKMENT OF LEFT HAND CREEK;  
THENCE N 62°31'55" W A DISTANCE OF 31.73 FEET  
ALONG SOUTHERLY EMBANKMENT OF LEFT HAND CREEK  
TO LINE 1-2 OF SAID MAMMOTH MILLSITE MS 17576B,  
AND TO THE TRUE POINT OF BEGINNING.

THIS PERMIT PARCEL CONTAINS 0.218 ACRES MORE OR LESS.

LEGAL DESCRIPTION-FOOT PATH AREA  
GOLD HILL MILL PERMIT NO.M-1994-117

STATE OF COLORADO DIVISION OF RECLAMATION MINING AND SAFETY  
PERMIT AREA FOR COLORADO MILLING COMPANY, LLC, GOLD HILL MILL  
PERMIT NO. M-1994-117, A PATHWAY AREA UPON THE GOLD GULCH NO.3  
UNPATENTED MINING CLAIM LOCATED IN THE SE 1/4 SECTION 2,  
TOWNSHIP-1-NORTH, RANGE-72-WEST OF THE SIXTH P.M., COUNTY OF  
BOULDER, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS  
FOLLOWS:

COMMENCING AT CORNER 1 OF THE MAMMOTH MILLSITE MS 17576B ALSO  
BEING CORNER 6 OF THE NEW DISCOVERY MILLSITE MS 585B FROM WHICH  
POINT SE CORNER SEC 2 BEARS S 27°55' E A DISTANCE OF 1377 FEET;

THENCE S 41°37'00" W A DISTANCE OF 246.82 FEET  
AND ALONG LINE 1-2 TO CORNER 2 OF  
SAID MAMMOTH MILLSITE MS 17576B;  
THENCE S 81°44'33" E A DISTANCE OF 4.62 FEET,  
TO THE TRUE POINT OF BEGINNING;  
THENCE S 81°44'33" E A DISTANCE OF 5.61 FEET;  
THENCE S 65°57'19" W A DISTANCE OF 14.61 FEET;  
THENCE N 46°58'44" W A DISTANCE OF 100.34 FEET;  
THENCE N 88°05'31" W A DISTANCE OF 19.44 FEET;  
THENCE N 01°54'29" E A DISTANCE OF 3.00 FEET;  
THENCE S 88°05'31" E A DISTANCE OF 20.56 FEET;  
THENCE S 46°58'44" E A DISTANCE OF 99.47 FEET;  
THENCE N 65°57'19" E A DISTANCE OF 7.87 FEET;  
AND TO THE TRUE POINT OF BEGINNING.

THIS FOOT PATH AREA CONTAINS 0.009 ACRES MORE OR LESS.



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## Millpond\_Colorado Milling2019E-5A[21141]

1 message

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**Mark Steen via Adobe Document Cloud** <noreply@acrobat.com>  
Reply-To: goldhillbooks@yahoo.com  
To: amy.eschberger@state.co.us

Sun, Sep 15, 2019 at 6:51 PM



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E-1A MINING PLAN MAP FOR PERMIT AREA NEAR LEFT HAND CREEK  
COLORADO MILLING CO. LLC.-GOLD HILL MILL WATERLINE  
LOCATED IN SE/4 SECTION 2, T-1-N, R-72-W OF THE SIXTH P.M.,  
COUNTY OF BOULDER, STATE OF COLORADO

POINT OF COMMENCEMENT  
CORNER 1 MAMMOTH MILLSITE  
LAT: 40.07487  
LONG: 105.41332

GOLD GULCH NO.3 (UNPAT.)

MAMMOTH MILLSITE  
MS 17576B

LEFTHAND CANYON DRIVE

NEW DISCOVER  
MS 585B

POINT OF BEGINNING

PERMIT AREA 0.218 ACRES

CORNER 5  
CORNER 6

KEYSTONE MILL:

CORNER 5



0 50' 100'

SCALE: 1" = 50'

DATED: 09/12/2019

PUMP STATION AREA ON EASEMENT

8x10 PUMP STATION (E-3 TO BE REMOVED)

300 GAL. FUEL TANK 8x10 (E-3 TO BE REMOVED)

APPLICANT: COLORADO MILLING CO. LLC. GOLD HILL PERMIT NO. M-1994-117

PREPARED BY: MTN. SURVEYING LLC P.O. BOX 783 NEDERLAND COLORADO 80466

