STATE OF COLORADO

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M2024023, Brown Quarry Application, Initial Adequacy Review

Simmons - DNR, Leigh <leigh.simmons@state.co.us> Wed, Oct 16, 2024 at 4:24 PM
To: Robert Congdon <defiancestone11@gmail.com>
Cc: Ben Langenfeld <benl@lewicki.biz>, Jessica King <jess@lewicki.biz>, Amy Eschberger - DNR <amy.eschberger@state.co.us>

Mr Congdon,

Please find the Division's initial adequacy review letter of the Brown Quarry application attached.

Leigh Simmons
Environmental Protection Specialist

COLORADO
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COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

Robert Congdon
Defiance Stone Company LLC.
1929 Dolores Way
Carbondale, CO, 81623

October 16, 2024

Re: Brown Quarry Application (M-2024-023)
Initial Adequacy Review

Dear Mr. Congdon,

The Division has completed an initial review of the materials submitted with the Brown Quarry 110c application. Comments are organized by rule citation. Please review the following comments and address the numbered items in bold.

Rule 6.3.1 Exhibit A - Legal Description and Location Map

1. Exhibit A gives three distinct legal descriptions: The Yard (0.43 acres), Brown Quarry (1.52 acres), and Peachblow Quarry (1.66 acres). Peachblow Quarry is not referred to anywhere else in the application packet.

   The General Location Map given with Exhibit A (which is the only map showing the permit boundary) was georeferenced using the projected section lines. The permit boundary was digitized and measured at approximately 9.24 acres. Labels on the map are indistinct, but "Brown Quarry" can be made out. "The Yard" and "Peachblow Quarry" labels are not visible. (See Figure 1)

   a. **Please revise Exhibit A so that the text and the map agree; presumably the reference to Peachblow Quarry should be removed. (Keep in mind that for a 110c permit the permit area and the affected area are equivalent.)**

   b. **Please update Exhibit A to specify coordinates of latitude and longitude of the entrance to the site in degrees, minutes and seconds, or in decimal degrees to an accuracy of at least five (5) decimal places.**

   c. **Please ensure that all areas referred to in the text are labelled on the map.**

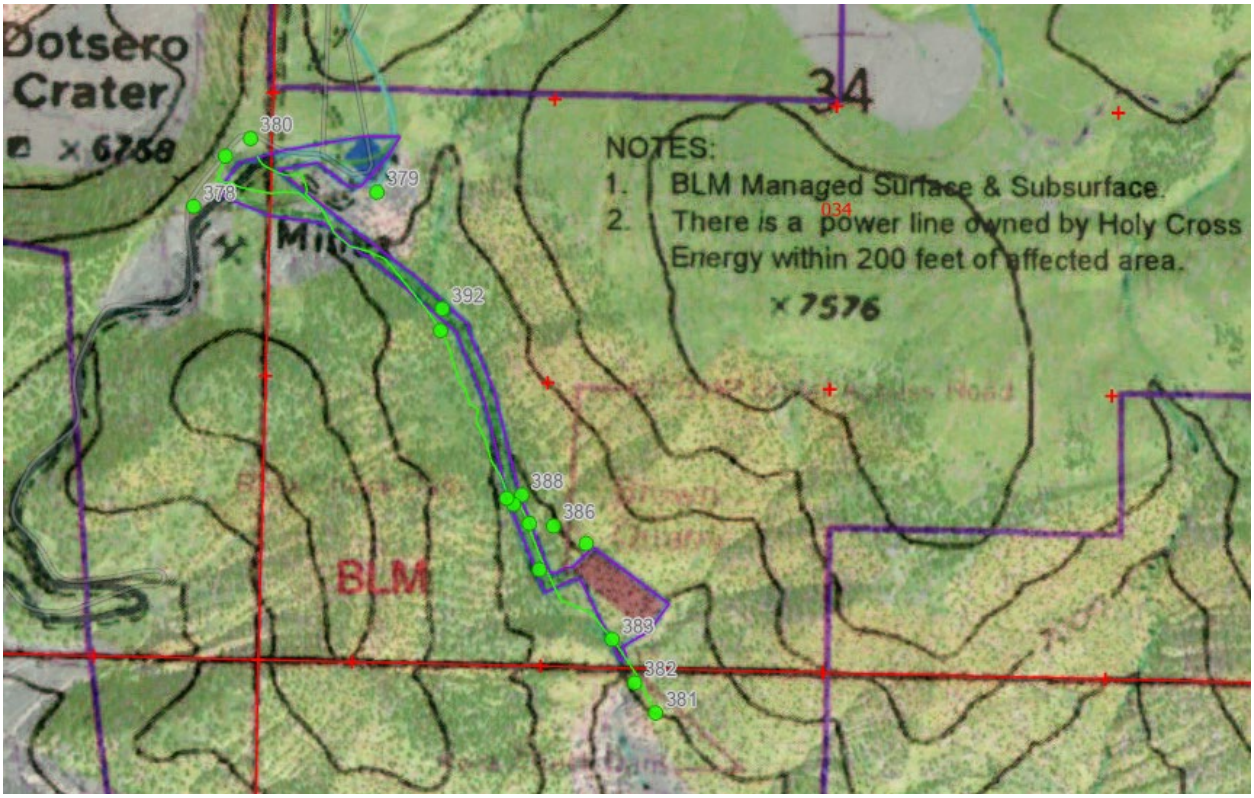

Figure 1: Screenshot of the General Location Map, georeferenced by section lines (red), with inspection features (green) and digitized permit boundary (purple)

Rule 6.3.2 Exhibit B - Site Description

2. Two soil types are described in the application: the Torriorthents-Rock outcrop complex, (45-95% slopes); and the Earsman-Rock outcrop complex, (12-65% slopes). Soil Survey data for the Earsman-Rock outcrop complex has been provided, but not for the Torriorthents-Rock complex. The description of the native vegetation accords with observations made during the pre-op inspection.

   Please update Exhibit B with soil survey data for the Torriorthents-Rock complex.

3. Exhibit B (c) states "There are no streams, springs, lakes, stock water ponds, ditches, reservoirs or aquifers that would [receive] drainage directly from the affected areas." It was obvious from the pre-op inspection that the two-track access to the proposed quarry is in the bed of an ephemeral stream for part of its length. Furthermore, the proposed quarry itself would drain directly into the ephemeral stream channel. The ephemeral stream is shown on the USGS topo map used in Exhibit A.

Please update Exhibit B with a description of the ephemeral stream. Please give details of the width and gradient of the channel, any available historic flow data, and the distance to the Eagle River.

4. No wildlife statement has been included in the application packet.

   [Comments from CPW are anticipated; this item is a placeholder for now]

Rule 6.3.3 Exhibit C - Mining Plan

5. Exhibit C (a) states "This is a new application for a limestone mining operation located in Eagle County"

   Please clarify – is the proposed operation to mine limestone or sandstone (as stated on the application form)?

6. Exhibit C (a) states "Mining operations will commence in the first or second quarter of 2020 subject to permit approval"

   Please revise the paragraph to give a realistic date range for the commencement of operations.

7. Exhibit C (b) describes the handling of topsoil and subsoil at the site. The depth of topsoil is given as 6 inches, and subsoil as 0 inches.

   Please add to the text to explain how soil depths were determined.

8. Rule 3.1.9(2) states: "Where practicable, woody vegetation present at the site shall be removed from or appropriately incorporated into the existing topsoil prior to excavation within the affected areas. The Operator should make a reasonable effort to ensure that existing vegetation is put to a beneficial use such as firewood, mulching, lumber, etc."

   Please add to the text of Exhibit C (b) to describe how woody vegetation at the site will be handled prior to topsoil stripping.

9. In Exhibit A slopes are described as 45%-95% in the Brown Quarry area. Given the steepness of the slope it seems unfeasible for topsoil to be temporarily stockpiled above the bench to be mined.

Please reconsider the topsoil handling aspect of the mine plan and update Exhibit C (b) and the Mine Plan Map accordingly.

10. Exhibit C (c) states that "No overburden stockpiles or waste rock fills will be required", but Exhibit C (a) states that 4,000 bank cubic yards of waste will be used for reclamation.

    Please revise the text of Exhibit C (c) to clarify how much waste will be generated and how it will be stored prior to reclamation.

11. Exhibit C (d) states that "The Quarry will mine approx. eight feet of *limestone* steps", but on the Mine Plan Map, section view, the label shows that *sandstone* blocks will be 400' long, 15' wide, and 4-6' deep.

    Please revise the text of Exhibit C (d) to clarify the material to be mined and the dimensions of the benches to be mined.

12. Exhibit C (e) lists major components of the mining operation.

    a. **The phrase "will include but not be limited to" is not acceptable in a permit application. Please revise the text to give a complete list of all equipment and facilities that may be used.**
    b. **Will electrical power or water be used at the Quarry? IF so, how will they be supplied?**
    c. **Will fuel or other fluids be stored at or transported to the Quarry?**
    d. **No fence is listed at the Quarry, how will the Quarry be secured from public access?**
    e. **At the Yard what are the dimensions of the Mobile office/security guard trailer? How will it be brought to and removed from the site? What sort of foundation will it require?**
    f. **What will be the size and construction of the fence? Will it be gated? How will the gate be secured?**
    g. **How will electricity be supplied to the Yard?**
    h. **What will be the volume and quantity of water storage tanks at the Yard?**
    i. **How will fuel and other fluids be handled and stored at the Yard?**
    j. **How will the public be protected from the risks associated with drilling, cutting, sawing, hammering and splitting equipment at both the Quarry and the Yard (please consider all hazards, including noise, dust and flying debris)?**

13. Exhibit C (f) gives a table showing the disturbed acreage, broken down to the Quarry and the Yard. Exhibit C (g) describes roads that will be used and improved at the site. A single culvert is proposed, to be placed at the end of the Quarry Access Road.

    Please give the complete dimensions and material of the culvert and specify how it will be placed (depth of cover, slope, etc.). Please show the culvert on the Mine Plan Map.

14. Exhibit C (g) gives the length and width of roads to be used in the proposed operation. Only the Brown Quarry Road is described as upgraded in the text and table, however a section of upgraded road is shown at the yard on Map Exhibit C-1.

    Please clarify in the text that the Yard Entrance Roads will be upgraded.

15. Exhibit C (h) describes the use of water at the site. All water will be imported to the site. Water consumption will be up to 15,000 gallons per day, for dust suppression and as a coolant for diamond saws. The text states that sawing water will be contained and reused.

    Please expand Exhibit C (h) to describe how sawing water will be contained and reused, with diagrams if possible. Please also describe how wet fines generated from the saw will be handled and disposed of.

16. Exhibit C (i) states that "Groundwater will not be encountered in this operation".

    Please justify the assertion that groundwater will not be encountered with additional information, (at minimum give the approximate depth to the water table, and the maximum depth of mining).

17. Exhibit C (i) also describes surface water at the site. Two natural drainages are described but are not shown on any map. A plan to control runoff from the Quarry is described, where water will be diverted towards the two natural drainages and filtered through "straw bales or other sediment trapping mechanisms" before flowing to the ephemeral channel below. A rock check dam is proposed to be constructed in the ephemeral channel down-gradient of the Quarry. Details of the rock check dam are given in Exhibit C-2, including dimensions. No upland diversion is proposed, so the entire watershed is proposed to be treated as disturbed area run-off.

    a. **Please show the natural drainages on a map**
    b. **Please show all surface water control features on a map**

c. **Please provide design criteria for the rock check dam (What is the statistical precipitation event it is designed to contain? What is the size of the watershed reporting to it? What is the up-gradient channel length and gradient? What size rip-rap will be used?)**
d. **Please revise the text Of Exhibit C (i) to include a description of surface water control structures at the Yard**

18. Exhibit C (l) discusses disturbance to the hydrologic balance. The text refers to Exhibit C (i), the measures described there refer to treatment of surface run-off during active mining. No post-mining surface water control is proposed. The text states that reclaiming the Quarry to approximate original contour will create areas suitable for recreation and wildlife habitat.

    The slopes in the area are very steep (45% to 95%, per Exhibit A), the natural soil is fragile, and native vegetation on the steep slopes is almost exclusively slow-growing woody shrubs. If the native soil is stripped and later replaced on an equivalent slope, as proposed, but all of the natural woody vegetation has been removed, it is reasonable to expect that the surface will quickly be eroded and washed into the ephemeral stream channel below the Quarry unless a considerable effort is made to prevent it.

    Please expand Exhibit C (l) considerably. Please contemplate how erosion will be controlled during operations and following reclamation of the site. Short-term and long-term stabilization of slopes of 45%-95% in this environment will be extremely challenging, and the mining and reclamation plans will need to reflect that.

19. Exhibit C (m) states "The Limestone mined will have limited processing on site. (palletizing and sizing)"

    Please revise Exhibit C (m) to clarify the material and to describe all of the processing steps that will be carried out on site, (see Item 12 above).

20. Exhibit C (n) states that the commodity to be mined is dimensional limestone.

    Please revise Exhibit C (n).

21. Exhibit C (p) states that explosives will be used, and that blasting will be conducted by a certified blasting contractor approximately once per week. Pursuant to Rule 6.5(4), a Geotechnical Stability Exhibit has been included with the application.

Please expand Exhibit C (p) to include a detailed blasting plan, including how and where explosive will be stored, how explosives will be used at the site, where records be kept, and how the public will be notified of and protected from blasting operation.

22. Pursuant to Rule 6.5(4), a Geotechnical Stability Exhibit has been included with the application.

    Please expand the Geotechnical Stability Exhibit considerably to include:

    a. **An analysis of the likely impacts of the blasting plan described in Exhibit C (p) on loose natural rock on the steep slopes surrounding the Quarry;**
    b. **A demonstration through appropriate blasting, vibration, geotechnical and structural engineering analyses that off-site areas will not be adversely affected by blasting;**
    c. **An engineering stability analysis of the slopes in the quarry during the proposed operations and following reclamation.**

    Note that the Geotechnical Stability Exhibit should be completed and certified by a Professional Engineer.

Rule 6.3.4 Exhibit D – Reclamation Plan

23. Exhibit D refers throughout to Limestone rather than Sandstone.

    Please clarify the material of interest.

24. Under the heading "Replace Overburden", Exhibit D (1) (a) states that waste [limestone] will remain in the pits, and that no overburden will be replaced. A swell factor of 1.6 is assumed (bank to loose), and the statement is made that "the swelled waste sandstone will equal the volume of dimensional limestone removed from the quarry. Therefore, the final contours will nearly equal the original contours."

    There are several problems with this part of the plan. Firstly, the assumption that the loose waste sandstone will not be compacted is unreasonable. Backfilled material will need to be compacted as it is placed, which means that a swell factor of 1.3 is more appropriate.
    Secondly, based on the mining plan described in Exhibit C where 75% of the mined material is exported and 25% is waste to be backfilled, even using the excessive swell factor of 1.6 the swelled waste would not equal the volume of dimensional material removed.

Please expand the Reclamation Plan considerably to address how waste will be backfilled and compacted and how the shortfall in material volume will be accounted for.

25. Exhibit D (1) (b) discusses the gradient of reclaimed slopes.

    Please clarify the gradient of reclaimed slopes at the Yard.

26. Exhibit D (1) (c) discusses re-vegetation of the site

    [This item is a placeholder for now, further comments on the re-vegetation plan and success criteria will be made later in the adequacy review process following anticipated input from CPW]

27. A cost estimate is provided in Exhibit D (2)

    [This item is a placeholder for now, further comments on the cost estimate will be made later in the adequacy review process following clarification on aspects of the Mining and Reclamation Plans]

Rule 6.3(5) Exhibit E – Maps

28. Five map exhibits were provided with the application

    Please revise the Mine Plan Map and Reclamation Plan Map to show changes to the plans discussed in items (9, 11, 12, 13, 17 and 24). Please also include the following features on the maps:

    - **The permit boundary**
    - **Topographic contour lines**
    - **Topsoil storage piles**
    - **Surface water control structures**
    - **Existing and improved roads, including BLM Roads 8460, 8466, the BLM designated administrative access road, and the Yard Entrance Road**
    - **All facilities described in Exhibit C (e)**

Rule 6.3(6) Exhibit F - Other permits

29. Rule 6.3(6) states "Provide a statement identifying which of the following permits, licenses and approvals which are held or will be sought in order to conduct the proposed mining and reclamation operations: effluent discharge permits, air quality emissions permits, radioactive source materials licenses, disposal of dredge and fill material (404) permits, permit to construct a dam, well permits, explosives permits, State Historic Preservation Office clearance, highway access permits, U.S. Forest Service permits, Bureau of Land Management permits, county zoning and land use permits, and city zoning and land use permits.

    Please review and update Exhibit F

Rule 6.3(7) Exhibit G – Source of Legal Right to Enter

30. Exhibit G provides a BLM categorical exclusion number and a Serial number as the source of Legal Right to Enter

    Please provide additional documentation associated with the references given in Exhibit G that demonstrate a Legal Right to Enter. This may include a copy of a lease, deed, abstract of title, a current tax receipt, or a signed statement by the Landowner(s) and acknowledged by a Notary Public stating that the Operator/Applicant has legal right to enter to conducting mining and reclamation.

Rule 6.3(9) Exhibit I – Proof of Filing with County Clerk

31. **Please provide an affidavit or receipt indicating the date on which the application was placed with the local County Clerk and Recorder for public review, pursuant to Rule 1.6.2(1)(c).**

Rule 6.3(12) Exhibit L – Permanent Man-Made Structures

32. **Pursuant to Rule 6.3(9)(c), please provide a notarized letter, on Holy Cross Energy letterhead, from the owners of Holy Cross Energy that the mining and reclamation activities, as proposed, will have "no negative effect" on their utility.**

The decision due date for the Brown Quarry application is October 25, 2024. Please request an extension to this date that will give you sufficient time to respond to this adequacy review, and for the Division to review your response.

Sincerely,

Leigh Simmons
Environmental Protection Specialist

cc: Ben Langenfeld; benl@lewicki.biz