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

February 20, 2020

Mr. Jerald Schnabel
Castle Aggregate
549 E Cucharras Street
Colorado Springs, CO 80903

Re: Pikeview Quarry, Permit No. M-1977-211; Fourth Adequacy Review for 112 Construction Materials Reclamation Permit Amendment Application (AM-04)

Dear Mr. Schnabel:

The Division of Reclamation, Mining and Safety (DRMS) has reviewed your February 7, 2020 responses to our January 23, 2020 third adequacy review (TAR) letter for Pikeview Quarry Permit Amendment Application (AM-04), Permit No. M-1977-211. The current approved decision date for this application is March 6, 2020. Please be advised that if you are unable to satisfactorily address any concerns identified in this review before the decision date, **it will be your responsibility to request an extension of the review period.** If there are outstanding issues that have not been adequately addressed prior to the end of the review period, and no extension has been requested, the DRMS may deny this application.

The following comments are based on the DRMS's review of your responses to the TAR and must be addressed by the applicant in order to satisfy the requirements of C.R.S. 34-32.5-101 et seq. and the Mineral Rules and Regulations of the Mined Land Reclamation Board. The numbering sequence is consistent with previous adequacy letters. Gaps in the numbering sequence indicate those items have been resolved to the DRMS's satisfaction in the first two response letters.

APPLICATION

2. Items 6 and 7, p. 2: The response is adequate.

6.4 SPECIFIC EXHIBIT REQUIREMENTS – REGULAR 112 OPERATIONS

6.4.3 EXHIBIT C - Pre-mining and Mining Plan Map(s) of Affected Lands

6. Exhibits C-1 and C-2 Involved Area: The response is adequate.

6.4.4 EXHIBIT D – Mining Plan

9. Fill Compaction, p. D-4 Follow-up:
    a. Provide a compaction specification… The response is not adequate, additional clarification is required. The provided specifications reference ASTM 4343-18. Please confirm this should be ASTM 4943-18.
    b. Describe moisture conditioning… The response is adequate.
    c. Provide a minimum density testing frequency… The response is adequate.
    d. Describe screening for deleterious/putrescible material… The response is adequate.
    e. Describe how complying with these specifications… The response is adequate.
    f. Clarify how the granite material… The response is adequate.
    g. Discuss how the area backfilled to date… The response is adequate.
    h. During the December 2019 site visit… The response is adequate.
10. ~~Fill~~ Slide Monitoring, p. D-3:
    a. Slide monitoring … The response is adequate.
    b. Criteria related to observed movement … The response is adequate.
    c. Map with locations of existing prism locations. The response is adequate.

6.4.5 EXHIBIT E – Reclamation Plan

12. Topsoil Importation:
    a. An estimated volume of available topsoil… The response indicates about half the necessary topsoil is available onsite, leaving approximately 56,000 CY of topsoil that must be imported. The DRMS requires a cost estimate of topsoil importation including possible source(s) and unit price.
    b. If this volume involves the additional borrow area… The response is adequate.
    c. If growth media is to be "manufactured"… The response is adequate. *Note the DRMS will include topsoil importation in the reclamation cost estimate*.
    d. Describe what soil testing… The response is adequate.
    e. Is topsoil screened before it is imported to the site? The response is adequate.
    f. If new topsoil stockpiles… The response is adequate.

6.4.6 EXHIBIT G – Water Information

17. Drainage Features: Additional comments are provided under Comment No. 33.

6.4.12 EXHIBIT L – Reclamation Costs

20. Imported Material: The response is adequate.

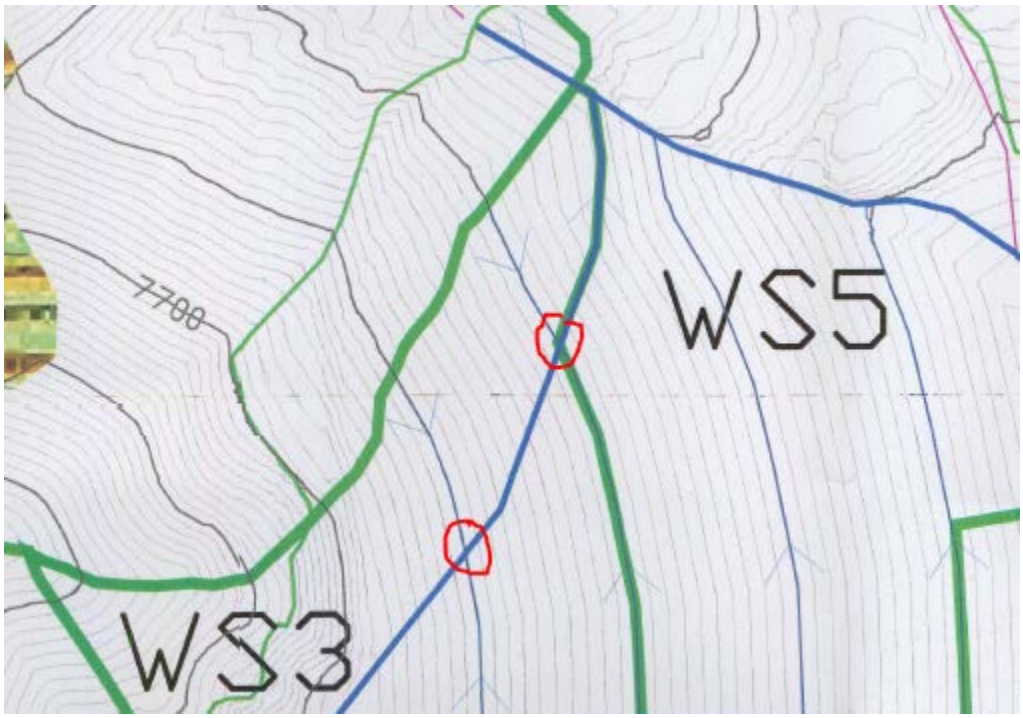
[*The DRMS is revising a detailed cost estimate based on the responses to date. Additional comments on Exhibit L may require responses as this effort continues*]

6.4.14 EXHIBIT N – Source of Legal Right to Enter

25. Clarification may be required: The response is adequate.

ADDITIONAL COMMENTS BASED ON RESPONSES TO THE DRMS SAR

33. Stormwater management: Please provide the following:
    a. Freeboard clarification: The response is adequate.
    b. Table G-3: The response is not adequate, additional information is required. Please address the following:
        i. The Lower South Channel, WS-9 should be 20 ft wide to be consistent with the SEDCAD model output in the response.
        ii. Based on the channel profiles on Exhibit G-3, there are four engineered channel segment not addressed: 1) WS-4 at 2% slope, 2) Outlet Channel WS-11 at 7% slope, 3) Upper most WS-3 cross channel (WS-1 flows?) at 6% slope, 4) lower WS-3 cross channel at 2% slope. Please include these in Table G-3.
    c. Channel Transition Design: The response is not adequate. The comment was misunderstood. The comment is meant to address the cross channel intersection with south-flowing terrace channels (see below), not the intersection with WS-4.



The hydraulic performance at the intersection of the WS-3 Cross Channel and south flowing terrace channel is of concern to the DRMS. Higher flows and velocity in the cross channel may cause interference/backwater/reverse flow conditions in the terrace channel at these junctions, leading to overtopping and/or potential for significant erosion and significant water infiltration. Please provide design details for these critical junctions.

d. Exhibit G-1 with the following:
   i. Larger scale… The response is adequate.
   ii. A means to indicate the design gradient… The response is adequate.
   iii. A means to indicate which design peak flow… The response is adequate.
   iv. Culverts … The response is adequate.
   v. Location of the three french drains… The response is adequate.

e. Water Capture Structure Details: The response is not adequate. The comment was misunderstood. The comment is meant to address the transition from native ground to engineered channels in fill material. How will the transition ensure runoff will not seep into the fill below the engineered channel? For example will cutoff walls be installed?

f. Record Drawings: The response is adequate.

g. Stormwater diversion during reclamation: The response is adequate.

34. Benched vs Backfilled Highwalls: The response is not adequate, additional clarification is required. Of the 1.79 acres to be left as highwalls on Exhibit F-2, will this be benched. If so, what are the expected bench heights? If not, what is the slope?

35. Revegetation Timing: Please address the following:

a. Topsoil protection: How will topsoil be stabilized… The response is not adequate, additional information is required. The response indicates the slopes may be too steep to apply tackifier and that wood fiber mulch should be applied. The last bullet discusses broadcast seeding and mechanical techniques to rip/gouge the soil. The ripping or gouging the soil is good for seed bed preparation and retaining moisture, but it does little to stabilize the soil while waiting for vegetation to get established. What equipment do you propose for the wood mulch application (is there a power mulcher or other equipment that can reach these areas?) and how will seed be broadcast – by hand or do you have other equipment in mind?). Are erosion control blankets more appropriate?

b. Grass seeding: The response is adequate.

c. Tree planting: The response is not adequate. The response indicates tree watering is enhanced reclamation. The DRMS position is tree watering will significantly reduce the failure rate for planted trees. If watering is not to be part of the reclamation plan, the reclamation cost estimate should include a significant failure rate for trees,

requiring replanting as much as 100 percent unless CMC has evidence the success rate in this area is higher without watering. Please confirm whether the DRMS should bond for 100 % tree failure or supply the following:

i. What equipment is planned for watering the trees?

ii. How much water is required?

iii. What is the source of water? .

36. Weed Control: The response is adequate.

37. Tree Survival Criteria: The response is adequate.

38. Tree and Shrub Specifics:

a. Ponderosa vs. Lodgepole pines: The response is adequate.

b. Pine diversity: The response is adequate.

c. Pinyon vs. juniper: The response is adequate.

d. Shrub plugs vs seeds: The response is adequate.

e. Shrub diversity: The response is adequate.

f. Seeding clarification: The response is adequate.

39. Exponent Report: Section 3.1 in Exhibit 6.5 references a 2011 "Investigation of the Pikeview Quarry" by Exponent Failure Analysis Associates and Core logs for drill holes EXC-1 to EXC-4. The DRMS does not have the Exponent report or the core logs in our record. Both are referenced again for AM-04. In addition, there is a reference to a clay bed in Table 3.2. Please provide the following:

a. A copy of the Exponent report. The response is adequate.

b. The Core logs for holes EXC-1 to EXC-4 The response is adequate., and

c. Investigations and/or reports… The response is adequate.

40. Seismic Coefficient: The response is adequate.

41. Structure Demolition: The response is adequate.

42. Haul road reclamation: The response is adequate.

43. Onsite backfill: The response is adequate.

44. Existing Scarp: The response is adequate.

ADDITIONAL COMMENTS BASED ON THE DRMS GEOTECHNICAL REVIEW

45. The DRMS engineering group reviewed the slope stability analyses. Please respond to the two comments in the attached DRMS memo from Zach Trujillo, dated February 19, 2020.

Please remember that the extended decision date for this application is March 6, 2020. As previously mentioned if you are unable to provide satisfactory responses to any inadequacies prior to this date, it will be your responsibility to request an extension of time to allow for continued review of this application. If there are still unresolved issues when the decision date arrives and no extension has been requested, the application may be denied. If you have any questions, please contact me at (303) 866-3567, ext. 8169.

Sincerely,

Timothy A. Cazier, P.E.
Environmental Protection Specialist

Enclosure

ec: Michael Cunningham, DRMS
Russ Means, DRMS
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DRMS file
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