



March 24, 2021

Jeremy Deuto
Aggregate Industries – WCR, Inc.
1687 Cole Blvd
Suite 300
Golden, CO 80401

RE: Lyons Quarry, Permit No. M-1977-141, Technical Revision No. 5 (TR-05), Preliminary Adequacy Review

Mr. Deuto:

On March 5, 2021, the Division of Reclamation, Mining and Safety (Division) received your Technical Revision application (TR-05) for the Lyons Quarry, addressing the following:

Update reclamation plan, reclamation plan map, and bond estimate for Reclamation Area 1 (Quarry Area).

After reviewing the materials submitted, the Division has identified the following adequacy items that must be addressed before an approval of TR-05 can be issued:

- 1) On Page 7, under Section 3.1, the text refers to a Figure 5 showing the excavated Fountain Formation slope described in the Kleinfelder report. The Division could not find a Figure 5 that includes this information. Please correct and/or explain this discrepancy.
- 2) On Page 9, under Section 3.2 and on Page 13, under Section 3.5, the text mentions a 24-inch reinforced concrete pipe culvert which will be installed through the swale and scour berm in Quarry 1 and tie into the drainage channel at the toe of the scour berm to direct flow under the site access road to South Saint Vrain Creek. Please provide a figure showing the proposed design for this culvert installation.
- 3) Under Section 3.4, the text repeatedly refers to a Figure 6. However, the Division was unable to find a Figure 6 with the submittal. Please correct and/or explain this discrepancy.
- 4) On Page 12, under Section 3.4, the text discusses an alternative catchment berm alignment which would allow for closer observation of the dacite highwall. While this berm was included for consideration on the preliminary design (submitted to Boulder County), it does not appear to be part of the quarry reclamation plan proposed in this revision. Unless the operator wishes to propose installation of the alternative berm in this revision, please remove any reference to it or depiction of it in figures provided in this revision.



- 5) On Page 12, under Section 3.4, the text mentions installing a chain link fence around a buffer zone to restrict public access to any areas of potential rockfall or fall hazards. Please provide more details in this section on the proposed fencing, including the fence height, approximate linear feet required to be installed, any additional components to be installed (e.g., fabric screen), how many gates will be installed, and what type of locking device will be installed to secure the gate(s).
- 6) On Page 13, under Section 3.6, the text mentions leaving a parking area for future public use. If the operator proposes leaving a parking area for reclamation, please provide more details on this parking area, including its approximate size and whether it will be paved or graveled for reclamation. Please be sure this parking area is shown on the revised reclamation plan map, and that costs to pave or gravel the area are included in the bond estimate.
- 7) On Page 13, under Section 3.7, the text states “Available onsite topsoil sources will be utilized where needed but any additional topsoil and fine sediment material, including those from the floodplain area, would be assessed for utilizing offsite at municipal or State projects”. Please commit to not removing any material from the site that could potentially be used for reclamation of the affected lands until all reclamation earthwork has been completed.
- 8) On Page 16, Table 3 – Estimated Excavate-Fill Quantities lists the estimated fill volumes required for reclaiming the Reclamation Area 1 (quarry area) including for quarry slope grading (125,300 CY), catchment berms (8,250), sedimentation pond fill (2,250), and scour berm and drainage channel riprap (20,000 CY). Please clarify if the volume for quarry slope grading includes all proposed backfill/grading activities in both Quarry 1 and Quarry 2. Additionally, please clarify if the volume for catchment berms includes the proposed 30 foot high swale berm as well as the 12 foot high catchment berm proposed to be constructed in front of the northwestern highwall of Quarry 1.
- 9) On Page 19, under Section 9.2, the text states “The growth medium material will be developed from a blend of any available topsoil stockpiled on site and material available from the excavation and breakdown of the fine-grained sedimentary overburden rock, supplemented as needed by imported topsoil, biosolids, or compost, then blended, scarified, seeded and mulched.” Please identify areas on site where available topsoil exists for reclaiming Reclamation Area 1. Additionally, please provide an estimated volume of topsoil to be imported to the site for reclaiming Reclamation Area 1.
- 10) In Attachment B, on the figure labeled “Final Grading Plan”, please ensure all features shown on the figure are labeled or described in the legend. For example, there are different patterns depicted for the features which do not correlate to the items described in the legend. Additionally, there is a feature depicted with a line and boxes which the Division believes is the proposed chain link fencing. However, this feature is not labeled or described in the legend. Finally, on this figure and/or on the figure labeled “Final Grading Profile, Section & Details”, please show the final proposed gradient of all reclaimed slopes in the Horizontal:Vertical format (including the sections of the highwall proposed to remain as-is after scaling and installation of rock bolts).
- 11) In Attachment C, on the figure labeled “Overall Reclamation Plan & Details”, please ensure all features shown on the figure are labeled or described in the legend. For example, the Division was not able to correlate the pattern shown for the catchment berms to a description in the legend. Additionally,

there is a feature depicted with a line and boxes which the Division believes is the proposed chain link fencing. However, this feature is not labeled on the figure. Finally, this figure appears to show the dacite portions of the highwall which are proposed in this revision to remain as-is (steeper than 2H:1V) to be mulched for reclamation. This contradicts the reclamation plan described in this revision which includes not revegetating these portions of the highwall. Please correct this figure and/or the text accordingly.

- 12) The Division has the following questions/comments on the bond estimate provided in Attachment D:
- a) Does the cost for “Fill and Compaction” (\$311,600) include costs for backfilling/grading both Quarry 1 and Quarry 2?
 - b) Does the cost for “Soil Conditioning” (\$409,200) includes costs for importing topsoil, biosolids, and/or compost? Please provide separate costs for importing topsoil and using topsoil available on site to retopsoil the quarry areas.
 - c) The Exhibit C figure labeled “Overall Reclamation Plan & Details” shows two types of mulch application for the quarry areas depending on the slope gradient, including 25.9 acres to receive regular mulch application and 11.3 acres to receive hydromulch application. Please provide separate costs for each type of mulch application.
- 13) On April 14, 2020, the Division approved the operator’s request for a one-year extension to the five-year deadline for completing reclamation at the site after mining has ceased, per Rule 3.1.3, giving a new reclamation deadline of February 2022. Is the operation still on schedule to complete reclamation by the new deadline? In this revision, the operator listed two permits which must be obtained from Boulder County prior to initiating the reclamation activities (grading permit and floodplain development permit). Has the operator already made application to the county for these permits? How long does the operator anticipate it will take to obtain the necessary permits/approvals from the county in order to commence with reclamation activities at the site?
- 14) Please be informed, Tim Cazier, P.E. with the Division has been asked to review this revision (see enclosed Memorandum – Request for Technical Review, dated March 10, 2021) to determine whether the information presented demonstrates stability of the proposed final highwall configuration through appropriate geotechnical and stability analyses, and that off-site areas will be protected with appropriate factors of safety incorporated into the analysis, in accordance with Rules 6.5(2) and (3), and 3.1.5(3), and Section 30 of the Policies of the Mined Land Reclamation Board. Any adequacy items identified in the application by Tim will be sent to the operator separately. It is up to the operator to decide whether to wait for Tim’s adequacy letter prior to responding to the items identified in this letter.

This completes the Division’s preliminary adequacy review of the materials submitted for TR-05. The decision date for TR-05 is currently set for **April 5, 2021**. If additional time is needed to address the adequacy items, an extension request must be received by our office prior to the decision date.

March 24, 2021
Jeremy Deuto
Aggregate Industries – WCR, Inc.
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If you have any questions, you may contact me by telephone at (303) 866-3567, ext. 8129, or by email at amy.eschberger@state.co.us.

Sincerely,

A handwritten signature in blue ink that reads "Amy Eschberger". The signature is written in a cursive, flowing style.

Amy Eschberger
Environmental Protection Specialist

Encl: Memorandum – Request for Technical Review, dated March 10, 2021

Cc: Travis Snyder, HDR
Chance Allen, Aggregate Industries - WCR, Inc.
Tim Cazier, DRMS
Michael Cunningham, DRMS

MEMORANDUM

Date: March 10, 2021

To: Tim Cazier, P.E., DRMS

From: Amy Eschberger, DRMS

RE: Lyons Quarry, Permit No. M-1977-141, Technical Revision No. 5 (TR-05)
Request for Technical Review

On March 5, 2021, the Division of Reclamation, Mining and Safety (Division) received the Technical Revision No. 5 application (TR-05; see enclosed) from Aggregate Industries – WCR, Inc. for the Lyons Quarry. The purpose of TR-05 is to revise the reclamation plan, reclamation plan map, and bond estimate for Reclamation Area 1 (the quarry area). The proposed reclamation plan for the quarry area includes stabilizing dacite portions of the highwall by scaling and installing rock bolts, rather than by backfilling (as approved in a previous revision). As an additional safety measure, TR-05 proposes installing a rockfall catchment basin and/or berm coupled with restricted access to the toe areas of the highwalls.

While the approved post-mining land use for the site is rangeland, the landowner, Boulder County Parks and Open Space has requested the operator leave as much natural slope variability to the site as possible, including preserving sections of the exposed dacite walls for biological and geological interpretation purposes. The revised reclamation plan proposed in TR-05 is meant to accommodate the landowner's wishes, minimize the amount of blasting and material handling required to backfill the highwall, and also keep reclamation operations within the current footprint of the disturbed mining area. The proposed reclamation plan is based on the analysis and recommendations from the Kleinfelder Summary Report of Engineering Stability Analysis (submitted with TR-05 as Attachment E-1) and the Colorado Rockfall Simulation Program Evaluation Report (submitted with TR-05 as Attachment E-2). The decision date for TR-05 is currently set for April 5, 2021.

I am requesting your technical expertise in reviewing TR-05 to determine whether the information presented demonstrates stability of the proposed final highwall configuration through appropriate geotechnical and stability analyses, and that off-site areas will be protected with appropriate factors of safety incorporated into the analysis, in accordance with Rules 6.5(2) and (3), and 3.1.5(3), and Section 30 of the Policies of the Mined Land Reclamation Board. Please submit your review comments by **March 26, 2021** in the form of a Memorandum on Division letterhead.

Encl: Technical Revision No. 5 (TR-05), received on March 5, 2021

Cc: Michael Cunningham, DRMS

