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

October 28, 2020

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

RE: Lyons Quarry, Permit No. M-1977-141, Technical Revision No. 4 (TR-04), Preliminary Adequacy Review

Mr. Deuto:

On October 16, 2020, the Division of Reclamation, Mining and Safety (Division) received your Technical Revision application (TR-04) for the Lyons Quarry, addressing the following:

Update reclamation plan, reclamation plan map, and bond estimate to address Reclamation Area 2.

After reviewing the materials submitted, the Division has identified the following adequacy items that must be addressed before an approval of TR-04 can be issued:

1) On Page 1, under Section 1.1, the Lyons Quarry is referred to as a "112d Reclamation Permit". However, this operation is not considered a Designated Mining Operation (DMO) for which the permit would be referred to as a 112d. This operation is considered a 112 Construction Materials operation for which the permit can be referred to as a 112c. While this is a minor error, it could lead someone to believe this is a DMO permit which has more stringent requirements. Therefore, please change "112d" to "112c" on this page.

2) On Page 1, under Section 1.2, the permit history timeline provided has an error and also does not include two revisions approved for this permit. For consistency, the Division recommends the following revisions be made to the timeline:

   a) The entry of "2016 – Permit Amendment Approved for Quarry Reclamation" is not accurate as there has only been one permit Amendment approved for this operation (AM-01), which was approved on June 11, 2003. However, on June 1, 2016, the Division did approve Technical Revision No. 1 (TR-01) for this operation to include a weed control plan. Please revise this entry accordingly.

   b) The Division approved Technical Revision No. 2 (TR-02) for this operation on May 19, 2017 to include a final grading plan and highwall configuration for the quarry area. Please add this entry to the timeline.

c) The Division approved Technical Revision No. 3 (TR-03) for this operation on July 27, 2018 for the importation and placement of fill material into the quarry area from the Resilient St. Vrain Project. Please add this entry to the timeline.

3) On Page 4, in Table 1 – Lyons Quarry Reclamation Areas 2-5, the total acreage estimated for all four disturbance areas is 2.78 acres. This does not correlate with the acreages shown on Figures C-2 and C-3 Reclamation Plan Maps which show the four disturbance areas to total 5.9 acres, of which, 5.6 acres will be reclaimed with Type V Soil Riprap with staked in coir matting at slopes of 3H:1V or flatter, and 0.3 acres will be reclaimed with Type M Riprap at slopes of 2H:1V - 3H:1V. Please clarify and/or correct this discrepancy. Additionally, if any of the acreages are revised in Table 1, please ensure the associated volumes are revised accordingly.

4) On Page 6, in the 1st paragraph, the text states "In areas where crusher fines are removed below the grade of the floodplain, clean fill will be brought in either from the vegetated berm (LQRA3) or from areas within the quarry that provide suitable backfill material characteristics. This fill material will be combined with riprap to create a soil riprap mixture." Additional details are needed for these tasks in order for the Division to calculate the required financial warranty for the proposed reclamation plan. Firstly, please specify the reclamation areas which will require crusher fines to be removed below the grade of the floodplain. Secondly, please explain where the riprap will be derived for the soil riprap mixture (sorted from on-site material and/or imported). Lastly, please describe the type of equipment which will be used for transporting backfill material from LQRA3 (or elsewhere on site) to the areas requiring backfilling, and for mixing and placing the soil riprap mixture into these areas.

5) On Page 6, in the 2nd paragraph, the text states "The reclaimed areas will have slopes of at least 3H:1V with the exception of areas adjacent to South St. Vrain Creek which will be 1.5H:1V". The proposed 1.5H:1V slope for areas adjacent to the channel does not correlate with Figures C-2 and C-3 Reclamation Plan Maps, which show the areas adjacent to the channel (0.3 acres) will have slopes of 2H:1V – 3H:1V. Please clarify and/or correct this discrepancy.

6) On Page 6, in the 4th paragraph, the text states "The subgrade of the reclamation areas will be prepared and then covered with a layer of growth medium materials comprised of a blend of available onsite topsoil, the soil materials developed from excavation and breakdown of the weathered fine-grained sedimentary overburden rock, and from imported topsoil, biosolids, or compost." Additional details are needed for these tasks in order for the Division to calculate the required financial warranty for the proposed reclamation plan. Firstly, please provide an estimated depth of growth medium replacement on reclamation areas. Secondly, please describe the anticipated location(s) on site from which topsoil will be derived (at a minimum, the Division requires an estimated average haul or push distance for its calculation). Thirdly, if enough topsoil is not available on site to reclaim these areas, please ensure the Exhibit L Reclamation Costs includes costs for importing additional growth media for reclamation. Lastly, please describe the type of equipment which will be used to extract and/or transport topsoil from its anticipated location(s) on site to the reclamation areas.

7) On Page 9, under Item 8.2 – Soil Conditioning, it is estimated that 3.5 acres in Reclamation Area 2 will require growth medium replacement. This acreage does not correlate with Table 1 – Lyons

Quarry Reclamation Areas 2-5 (on Page 4) which estimates the four disturbance areas to total 2.78 acres, or with Figures C-2 and C-3 Reclamation Plan Maps which show the four disturbance areas to total 5.9 acres. Please clarify and/or correct this discrepancy.

8) On Page 10, under Item c at the bottom of the page, the text states "It is assumed mulching and crimping will be applied to slopes flatter than 3H:1V or unless prohibited by access or topography. The slope analysis indicates approximately 18.3 acres are in this slope range." This acreage does not correlate with Table 1 – Lyons Quarry Reclamation Areas 2-5 (on Page 4) which estimates the four disturbance areas to total 2.78 acres, or with Figures C-2 and C-3 Reclamation Plan Maps which show the four disturbance areas to total 5.9 acres. Please clarify and/or correct this discrepancy.

9) On Figure C-3 – Reclamation Plan Map, the labels for reclamation areas LQRA 4 and 5 appear to be switched, as the text refers to LQRA4 as the crusher fines deposit within the staging area, and LQRA5 as the crusher fines deposit across the creek channel. Please correct these labels.

10) On Figure C-3 – Reclamation Plan Map, the reclamation area located north of the creek channel (labeled as LQRA4 on the map – but should be LQRA5 as mentioned above) appears to be located near an existing building which is not shown on this map, but is shown on Figures 1.2 and 1.3 included with the revision. Please describe any anticipated impacts to this structure by the proposed reclamation plan. What is the approximate distance between this structure and the nearest reclamation area?

11) Please ensure Figures C-2 and C-3 Reclamation Plan Maps are updated as needed to include the correct volumes for the reclamation areas and to ensure the acreages provided in the map legend correlate with the acreages provided in the revision text.

12) Please ensure Figures B-1 and B-2 Grading Plan are updated as needed to reflect the correct labels (e.g., LQRA4, LQRA5) and volumes for the reclamation areas.

13) In the Exhibit L – Reclamation Costs, additional details are needed in order for the Division to calculate the required financial warranty for the proposed reclamation plan. Please provide the following additional information:

    a) Please provide more details for the Mobilization/Demobilization task, including the anticipated type and number of equipment to be mobilized/demobilized for reclamation, and the approximate distance to the nearest location where such equipment can be obtained.

    b) For the Excavation task, please ensure the volume (16,200 cy) is accurate based on any revisions made to the reclamation area acreages and incorporates areas to be over-excavated by 18 inches. Additionally, please describe the anticipated type of equipment to be used for this task.

    c) Please provide a task item for transporting and placing excavated material from the floodplain reclamation areas into Quarry Pit #2, including a description of the anticipated type of equipment to be used for this task.

d) Please provide more details for the Backfill and Compaction task, including an explanation of how the volume (7,900 cy) was derived, a description of the backfill material, and the anticipated type of equipment to be used for this task.

e) Please provide a task item for grading all reclamation areas to the proposed slope gradient. Please be sure to include a description of the anticipated type of equipment to be used for this task.

f) Please provide a task item for placing riprap along the specified portions of the reclamation areas adjacent to the creek channel.

g) Please provide a task item for creating the soil riprap material and placing it into the reclamation areas requiring backfill. Please be sure to include a description of the anticipated type of equipment to be used for this task.

h) Please provide more details for the Soil Conditioning task, including an explanation of how the acreage (3.5 acres) was derived, an approximate depth of placement, the estimated haul/push distance from the location where growth medium will be derived, and the anticipated type of equipment to be used for this task.

i) Please provide a task item for importing topsoil, biosolids, and/or compost to the site if required for reclamation.

j) Please provide more details for the Revegetation task, including an explanation of how the acreage (3.5 acres) was derived, and itemized costs for all proposed revegetation activities such as seeding, fertilizing, scarifying, and mulching.

14) For the Geotechnical Stability Exhibit, please address the following:

a) The 1st sentence refers to Technical Revision #3. However, this submittal is considered Technical Revision No. 4. To reduce any confusion this error may cause, please correct the Technical Revision number in this sentence.

b) In the 4th paragraph, the text states "Any impacts to the existing channel slope (in areas LQRA4 and LQRA5) will be restored at a maximum slope of 2.5H:1V with Type M (D50 = 12 in) riprap". This slope gradient does not correlate with the 1.5H:1V slope gradient proposed for these areas in the text (on Page 6) or with the slope gradient shown for these areas on Figures C-2 and C-3 Reclamation Plan Maps, which is 2H:1V – 3H:1V. Please clarify and/or correct this discrepancy.

15) For the Grading Plan Verification Letter, please address the following:

a) The header and the 1st paragraph (in two places) refers to Technical Revision No. 3. However, this submittal is considered Technical Revision No. 4. To reduce any confusion this error may cause, please correct the Technical Revision number throughout this letter.

b) In the last paragraph, the text states that over-excavated areas will be backfilled with soil riprap with a maximum finished grade of 4H:1V. This slope gradient does not correlate with the 3H:1V slope gradient proposed for these areas in the text (on Page 6) or with the slope gradient shown for these areas on Figures C-2 and C-3 Reclamation Plan Maps, which is > 3H:1V. Please clarify and/or correct this discrepancy.

c) In the last paragraph, the text states that any grading impacts to the existing channel slope will be restored at a maximum slope of 2.5H:1V with loose riprap armoring. This slope gradient does not correlate with the 1.5H:1V slope gradient proposed for these areas in the text (on Page 6) or with the slope gradient shown for these areas on Figures C-2 and C-3 Reclamation Plan Maps, which is 2H:1V – 3H:1V. Please clarify and/or correct this discrepancy.

This completes the Division's preliminary adequacy review of the materials submitted for TR-04. The decision date for TR-04 is currently set for **November 16, 2020**. If additional time is needed to address the adequacy items, an extension request must be received by our office prior to the decision date.

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,

Amy Eschberger

Amy Eschberger
Environmental Protection Specialist

Cc: Chance Allen, Aggregate Industries - WCR, Inc.
Michael Cunningham, DRMS