



COLORADO
Division of Reclamation,
Mining and Safety
Department of Natural Resources
1313 Sherman Street, Room 215
Denver, Colorado 80203

September 17, 2021

Ms. Kate Garufi via email
Katherine.Garufi@HDRInc.com

Re: Second Review of a 112 Construction Materials Reclamation Permit Amendment Application Package AM07, Aggregate Industries – Morrison Quarry, Permit M1973-021

Ms. Garufi,

The Division of Reclamation, Mining, and Safety has completed its preliminary adequacy review of your 112 construction materials reclamation permit amendment application. The application was called complete for review on November 13, 2020. All comment and review periods began on November 13, 2020. **The decision date for this application is currently set for October 15, 2021. 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 Division will deny this application. In order to allow the Division adequate time to review your responses to any adequacy issues, please submit your adequacy responses to the Division no later than one week prior to the decision date (October 8, 2021).**

Please note that any changes or additions to the application on file in our office must also be reflected in the public review copy, which has been placed with the Jefferson County Clerk and Recorder.

The review consisted of comparing the application content with specific requirements of Rule 6.1, 6.2, 6.4 and 6.5 of the Minerals Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials. As with most applications, there are items that will require clarification of the existing information. Any Exhibit inadequacies are identified under the respective exhibit heading and numbered for ease of reference.

APPLICATION FORM:

Please have authorized permittee representative acknowledge and properly initial “Responsibilities as a Permittee” statements on pages 5 and 6 of the application form.

Application Signature Page:

The Applicant/Operator or Company Name provided on the signature page must match exactly with the Applicant/Operator or company name given on Item 1 of Page 1 of the application form.

Signature Page of application form is required to be sealed by the Corporate Secretary or Equivalent.



6.2 GENERAL REQUIREMENTS OF EXHIBITS

6.2.1 General Requirements

(1) This Rule provides for the guidelines for, and information requirements of, each Exhibit required to be submitted with the permit application, as specified according to Section 6.1.

(2) Maps and Exhibits Maps, except the index map, must conform to the following criteria:

- (a) show name of Applicant;
- (b) must be prepared and signed by a registered land surveyor, professional engineer, or other qualified person;
- (c) give date prepared;
- (d) identify and outline the area which corresponds with the application;
- (e) with the exception of the map of the affected lands required in Section 34-32.5-112(2)(d), C.R.S. 1984, as amended, shall be prepared at a scale that is appropriate to clearly show all elements that are required to be delineated by the Act and these Rules. The acceptable range of map scales shall not be larger than 1 inch = 50 feet nor smaller than 1 inch = 660 feet. Also, that a map scale, appropriate legend, map title, date and a north arrow shall be included.

Verify that all Exhibit Maps submitted comply with the above requirements of 6.2.1(2)

EXHIBIT A - Legal Description (Rule 6.4.1): The legal description must identify all affected land and be wholly adequate for field location of the property. It can be in the form of metes and bounds survey or a description by reference to township, range and section to at least the nearest quarter/quarter section. Where applicable, the street address or lot numbers may be used.

Adequate as submitted

EXHIBIT B - Index Map (Rule 6.4.2): An index map showing the regional location of all affected land and all roads and other access to the area. A standard U.S. Geological Survey topographic quadrangle or equivalent is acceptable. Scale criteria need not be followed for this map.

Adequate as submitted

EXHIBIT C - Pre-mining and Mining Plan Map(s) of Affected Lands (Rule 6.4.3): One or more maps may be necessary to legibly portray the following information:

- (a) all immediately adjacent surface owners of record;
- (b) the name and location of all creeks, roads, buildings, oil and gas wells and lines, and power and communication lines on the area of affected land and within two hundred (200) feet of all boundaries of such area
- (c) the existing topography of the area with contour lines of sufficient detail to portray the direction and rate of slope of the affected land;

1) Please depict the existing bench configurations (40H-40V, 40H-60V, or whatever is correct) on the existing conditions map.

- (d) the total area to be involved in the operation, including the area to be mined and the area of affected lands (see definition of "Affected Land");
- (e) the type of present vegetation covering the affected lands; and

- (f) in conjunction with Exhibit G - Water Information, Subsection 6.4.7, if required by the Office, further water resources information will be presented on a map in this section.
- (g) Show the owner's name, type of structures, and location of all permanent or man-made structures contained on the area of affected land and within two hundred (200) feet of the affected land.
- (h) In conjunction with Exhibit I - Soils Information, Subsection 6.4.9, soils information may be presented on a map in this section;
- (i) Aerial photos, if available, may be included in this section.

Modify Exhibit C as needed when addressing comments for Exhibit D.

2) The contour line spacing on the provided Phase III mining plan map does not appear to change between the South and West Quarry areas, despite the proposed bench configuration changing from 40H-40V to 40H-80V. Please provide accurate contour data with appropriate contour intervals to accurately depict the proposed plan – This comment applies to reclamation maps as well...

3) Please provide cross-sections of the proposed mining bench configuration(s) for Phase III through the Quarry areas.

EXHIBIT D - Mining Plan (Rule 6.4.4): The mining plan shall supply the following information, correlated with the affected lands, map(s) and timetables:

- (a) description of the method(s) of mining to be employed in each stage of the operation as related to any surface disturbance on affected lands;
- (b) earthmoving;
- (c) all water diversions and impoundments; and
- (d) the size of area(s) to be worked at any one time.
- (e) An approximate timetable to describe the mining operation. The timetable is for the purpose of establishing the relationship between mining and reclamation during the different phases of a mining operation. You will not be required to meet specific dates for initiation, or completion of mining in a phase as may be identified in the timetable. This does not exempt you from complying with the performance standards of Section 3.1. Such timetable should include:
 - (i) an estimate of the periods of time which will be required for the various stages or phases of the operation;
 - (ii) a description of the size and location of each area to be worked during each phase; and
 - (iii) outlining the sequence in which each stage or phase of the operation will be carried out. (Timetables need not be separate and distinct from the mining plan, but may be incorporated therein.)
- (f) A map (in Exhibit C - Pre-Mining and Mining Plan Maps(s) of Affected Lands, Subsection 6.4.3) may be used along with a narrative to present the following information:
 - (i) nature, depth and thickness of the ore body or deposit to be mined and the thickness and type of overburden to be removed (may be marked "CONFIDENTIAL," as per Paragraph 1.3(3)); and
 - (ii) nature of the stratum immediately beneath the material to be mined in sedimentary deposits.
- (g) Identify the primary and secondary commodities to be mined/extracted and describe the intended use; and

(h) name and describe the intended use of all expected incidental products to be mined/extracted by the proposed operation.

4) In the mining (and reclamation) plans provided for AM07 discuss/highlight areas of the plan(s) where AM07 proposes changes from the currently approved plan(s), and what the changes consist of. This is especially critical for proposed mining slope configurations and final reclamation slope configurations.

5) Due to its conceptual nature, DRMS will require that all reference to a future “Phase IV” be removed from this Amendment submittal and that AI simply commit to not exposing groundwater during mining activity. DRMS acknowledges that future mining may progress beyond Phase III into saturated material, when and if the appropriate “Phase IV” permit Amendment materials are submitted to, and approved by, DRMS. Until that time - no groundwater may be exposed by mining activity.

6) The mining plan should specifically address how the operator will insure that groundwater is not exposed during Phase III activities.

7) The “temporary” processing plant and stockpiles currently located at the entrance to the South Quarry for the last several years has not been adequately addressed in either the existing conditions, mining plan, or reclamation plan – Please make the appropriate modifications to the mining and reclamations plans and reclamation estimates to account for it. Please also provide some detail as to what it’s function is and how long it will remain on site and in operation.

8) At what point will the drainage diversion from Unnamed Drainage (UD) #1 to UD #2 be installed?

9) Please provide details regarding the “Observational Method” mentioned as it will be employed in the South/West Quarry mining and stability monitoring plan in this submittal. At a minimum please address the following: who will be conducting the observations and at what frequency; what will be the parameters/features/criteria to be observed and how will they be documented; what operational decisions will be made based on these observations and what are the criteria for the decision process.

10) Will the bench configuration proposed/utilized for Phase III mining be based on the “Maximum Bench Configuration” figure provided in the GEI geotechnical stability exhibit? If so, this figure should also be made part of the mining plan. Future changes, if needed, to the proposed bench configurations approved in this amendment may be made through the Technical Revision process.

11) On page 16 of the provided adequacy response the statement is made that - 40H-40V benches will be utilized in areas of thick sillimanitic gneiss (less than 5 feet)... Do you mean more than 5 feet? Please clarify or correct as needed.

12) In the next statement, the proposed bench configuration of 2H:1V is also given as the maximum bench configuration in areas where foliations or fractures are steeply dipping into the excavation and strike is parallel to the bench face... Please provide all proposed bench configurations as “feet H- feet V”.

13) Any deviations from the approved specifications for the West Quarry Haul Road provided in TR07 will need to be approved by DRMS prior to construction and use – please acknowledge.

EXHIBIT E - Reclamation Plan (Rule 6.4.5):

(1) In preparing the Reclamation Plan, you should be specific in terms of addressing such items as final grading (including drainage), seeding, fertilizing, revegetation (trees, shrubs, etc.), and topsoiling. You are encouraged to allow flexibility in your plans by committing to ranges of numbers (e.g., 6"-12" of topsoil) rather than specific figures.

(2) The Reclamation Plan shall include provisions for, or satisfactory explanation of, all general requirements for the type of reclamation proposed to be implemented by you. Reclamation shall be required on all the affected land. The Reclamation Plans shall include:

(a) A description of the type(s) of reclamation you propose to achieve in the reclamation of the affected land, why each was chosen, the amount of acreage accorded to each, and a general discussion of methods of reclamation as related to the mechanics of earthmoving;

(b) A comparison of the proposed post-mining land use to other land uses in the vicinity and to adopted state and local land use plans and programs. In those instances where the post-mining land use is for industrial, residential, or commercial purposes and such use is not reasonably assured, a plan for revegetation shall be submitted. Appropriate evidence supporting such reasonable assurance shall be submitted;

(c) A description of how the Reclamation Plan will be implemented to meet each applicable requirement of Section 3.1;

(d) Where applicable, plans for topsoil segregation, preservation, and replacement; for stabilization, compaction, and grading of spoil; and for revegetation. The revegetation plan shall contain a list of the preferred species of grass, legumes, forbs, shrubs or trees to be planted, the method and rates of seeding and planting, the estimated availability of viable seeds in sufficient quantities of the species proposed to be used, and the proposed time of seeding and planting;

(e) A plan or schedule indicating how and when reclamation will be implemented. Such plan or schedule shall not be tied to any specific date but shall be tied to implementation or completion of different stages of the mining operation as described in Subparagraph 6.4.4(1)(e). The plan or schedule shall include:

(i) An estimate of the periods of time which will be required for the various stages or phases of reclamation;

(ii) A description of the size and location of each area to be reclaimed during each phase; and

(iii) An outline of the sequence in which each stage or phase of reclamation will be carried out.

(The schedule need not be separate and distinct from the Reclamation Plan, but may be incorporated therein.)

(f) A description of each of the following:

(i) Final grading - specify maximum anticipated slope gradient or expected ranges thereof;

(ii) Seeding - specify types, mixtures, quantities, and expected time(s) of seeding and planting;

(iii) Fertilization - if applicable, specify types, mixtures, quantities and time of application;

(iv) Revegetation - specify types of trees, shrubs, etc., quantities, size and location; and

(v) Topsoiling - specify anticipated minimum depth or range of depths for those areas where topsoil will be replaced.

13) As previously stated, the scope of this amendment should be limited to Phase III mining and reclamation as no exposure of groundwater is currently approved. As such, the Reclamation Plan provided should specifically address reclamation as if mining activity were to end with the completion of Phase III. This will need to include the design, specifications, and installation costs for the completion of a long-term drainage structure for the South Quarry. This drainage feature is mentioned only conceptually in the provided response.

14) What are the “specified densities” for the reclamation backfill as discussed in the second, third and fourth paragraphs of Section 8.0 and how will these be verified?

15) Locations and density of tree and shrub plantings should be provided in detail within the text and/or reclamation map(s).

EXHIBIT F - Reclamation Plan Map (Rule 6.4.6): The map(s) of the proposed affected land, by all phases of the total scope of the mining operation, shall indicate the following:

- (a) The expected physical appearance of the area of the affected land, correlated to the proposed mining and reclamation timetables. The map must show proposed topography of the area with contour lines of sufficient detail to portray the direction and rate of slope of all reclaimed lands; and
- (b) Portrayal of the proposed final land use for each portion of the affected lands.

16) Contour information for all affected areas will need to be revised to sufficiently address 6.4.6(a).

17) Figure F.1 states orange areas will be 30H-70V, but all other maps state 40H-80V for these areas – please correct as needed.

18) Insufficient information has been provided to determine how the figures presented on F.4 relate to the areas shown on F.1 and F.2. Also, scale and slope ratios for some of the items presented in F.4 appear to be incorrect. Please edit or revise as needed. Provide plan and cross section views to depict the final reclamation for areas of varying mined/final slopes.

19) Please provide a cross-section of the proposed final reclamation slope configuration through the Quarry areas and areas of differing mined bench configuration.

20) DRMS has observed that it can be very difficult to reclaim 1:1 slopes sufficiently before erosion creates significant damage. This is especially true for slopes of extended length (over 100 feet). The reclamation plan provided appears to show significant areas of 1:1 backfilled reclamation sloping. How does AI intend to insure that the slopes proposed remain stable during and after reclamation, and prevent loss of growth medium to downslope erosion on extended areas of 1:1 slopes?

21) The reclamation plan/maps do not appear to show any reclamation for areas impacted by the West Haul Road which lie outside the mined areas – please address.

EXHIBIT G - Water Information (Rule 6.4.7):

- (1) If the operation is not expected to directly affect surface or groundwater systems, a statement of that expectation shall be submitted.
- (2) If the operation is expected to directly affect surface or groundwater systems, you shall:
 - (a) Locate on the map (in Exhibit C) tributary water courses, wells, springs, stock water ponds, reservoirs, and ditches on the affected land and on adjacent lands where such structures may be affected by the proposed mining operations;
 - (b) Identify all known aquifers; and
 - (c) Submit a brief statement or plan showing how water from dewatering operations or from runoff from disturbed areas, piled material and operating surfaces will be managed to protect against pollution of either surface or groundwater (and, where applicable, control pollution in a manner that is consistent with water quality discharge permits), both during and after the operation.
- (3) You must provide an estimate of the project water requirements including flow rates and annual volumes for the development, mining and reclamation phases of the project.
- (4) You must indicate the projected amount from each of the sources of water to supply the project water requirements for the mining operation and reclamation.
- (5) You must affirmatively state that the Operator/Applicant has acquired (or has applied for) a National Pollutant Discharge Elimination System (NPDES) permit from the Water Quality Control Division at the Colorado Department of Health, if necessary.

As previously stated, no exposure of groundwater is currently allowed for any approved mining activity at this site. Otherwise, adequate as submitted.

EXHIBIT H - Wildlife Information (Rule 6.4.8):

- (1) In developing the wildlife information, you may wish to contact the local wildlife conservation officer. You must include in this Exhibit, a description of the game and non-game resources on and in the vicinity of the application area, including:
 - (a) a description of the significant wildlife resources on the affected land;
 - (b) seasonal use of the area;
 - (c) the presence and estimated population of threatened or endangered species from either federal or state lists; and
 - (d) a description of the general effect during and after the proposed operation on the existing wildlife of the area, including but not limited to temporary and permanent loss of food and habitat, interference with migratory routes, and the general effect on the wildlife from increased human activity, including noise.

Adequate as submitted.

EXHIBIT I - Soils Information (Rule 6.4.9): In consultation with the Soil Conservation Service or other qualified person, you must indicate on a map (in Exhibit C) or by a statement, the general type, thickness and distribution of soil over the affected land. Such description will address suitability of topsoil (or other material) for establishment and maintenance of plant growth. The above information shall satisfy "completeness" requirements for purposes of determination of date of filing.

Adequate as submitted.

EXHIBIT J - Vegetation Information (Rule 6.4.10):

- (1) You must include in this Exhibit a narrative of the following items:
- (a) descriptions of present vegetation types, which include quantitative estimates of cover and height for the principal species in each life-form represented (i.e., trees, tall shrubs, low shrubs, grasses, forbs);
 - (b) the relationship of present vegetation types to soil types, or alternatively, the information may be presented on a map; and
 - (c) estimates of average annual production for hay meadows and croplands, and carrying capacity for range lands on or in the vicinity of the affected land, if the choice of reclamation is for range or agriculture.
- (2) You must show the relation of the types of vegetation to existing topography on a map in Exhibit C. In providing such information, you may want to contact the local Soil Conservation District.

Adequate as submitted.

EXHIBIT K - Climate (Rule 6.4.11): Provide a description of the significant climatological factors for the locality.

Adequate as submitted.

EXHIBIT L - Reclamation Costs (Rule 6.4.12): All information necessary to calculate the costs of reclamation must be submitted and broken down into the various major phases of reclamation. You must provide sufficient information to calculate the cost of reclamation that would be incurred by the state.

22) DRMS will not allow the \$425K “offset” proposed from the sale of processing equipment included in the submitted reclamation estimate – please adjust the reclamation estimate accordingly.

23) The reclamation estimate will need to be modified as necessary to accurately reflect any changes made in the reclamation plan.

DRMS will evaluate the reclamation bond calculation when the other adequacy issues have been sufficiently resolved. The estimate provided should break down costs by major areas/mining configurations on site (north quarry, central quarry, south quarry, plant area, etc.) and then detail the tasks and costs for reclamation within those areas (road removal, structure demolition/removal, regrading, fill, topsoil replacement, construction of reclamation features, revegetation, etc.). Consider and prepare this breakdown as if you were preparing a request for proposal to complete all the reclamation work described in the reclamation plan. Feel free to include additional maps as necessary.

EXHIBIT M - Other Permits and Licenses (Rule 6.4.13): A statement identifying which of the following permits, licenses and approvals the Operator/Applicant holds or will be seeking in order to conduct the proposed mining and reclamation operations: effluent discharge permits, air quality emissions permits, radioactive source material licenses, the State Historic Preservation Office clearance, disposal of dredge and fill material (404) permits, permit to construct a dam, well permits, 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.

24) Who issued the “chemical storage permit” listed as Item 9, and what types/quantities of chemicals are addressed?

EXHIBIT N - Source of Legal Right to Enter (Rule 6.4.14): You must provide the source of your legal right to enter and initiate a mining operation on the affected land.

25) As the permittee, AI may simply demonstrate that they are the owner of record for property they own within the permit area.

26) Please provide an executed appropriate right-of-entry agreement for Town of Morrison property within the permit area.

27) Please provide the executed easement agreement for the access road to be included in the permit area.

EXHIBIT O - Owner(s) of Record of Affected Land (Surface Area) and Owners of Substance to be Mined (Rule 6.4.15): Please submit a complete list of all owners or show the owners on your map in Exhibit C.
Adequate as submitted.

EXHIBIT P - Municipalities Within Two Miles (Rule 6.4.16): Please list any municipality(s) within two miles of the proposed mining operation and address of the general office of each municipality.
Adequate as submitted.

EXHIBIT Q - Proof of Mailing of Notices to County Commissioners and Soil Conservation District (Rule 6.4.17): Please submit proof of actual delivery or proof of mailing by Certified Mail, return receipt requested, of Notice of the Application to the local Board of County Commissioners and, if the mining operation is within the boundaries of a Soil Conservation District, to the Board of Supervisors of the Soil Conservation District.
Adequate as submitted.

EXHIBIT R - Proof of Filing with County Clerk and Recorder (Rule 6.4.18): You must submit an affidavit or receipt indicating the date on which the application was placed with the local County Clerk and Recorder.

28) Please provide proof that all adequacy responses have been added to the public file for review with Jefferson County.

EXHIBIT S - Permanent Man-Made Structures (Rule 6.4.19): Please note that roadways and above-ground or underground utilities (if present) within 200 feet of the proposed affected area are considered permanent man-made structures. In accordance with Rule 6.4.19, when mining operations will adversely affect the stability of any significant, valuable and permanent man-made structure located within 200 feet of the affected area, the applicant may either:

- (a) Provide a notarized agreement between the applicant and the person(s) having an interest in the structure, that the applicant is to provide compensation for any damage to the structure;
- or
- (b) Where such an agreement cannot be reached, the applicant shall provide an appropriate engineering evaluation that demonstrates that such structure shall not be damaged by activities occurring at the mining operation.

Please provide evidence (certified letter to structure owners) that a notarized agreement between the structure owners and the applicant was pursued.

If an agreement is unable to be reached a geotechnical assessment may be provided to demonstrate that the structures shall not be damaged.

You must provide information sufficient to demonstrate that the stability of any structures located within two hundred (200) feet of the operation or affected land will not be adversely affected.

29) DRMS notes that structure agreements have been provided to the listed structure owners. Please provide a brief geotechnical assessment demonstrating that the listed structures within 200' of affected lands will not be adversely impacted.

Additional Information:

DRMS notes that you have provided the Division with proof of notice publication as well as proof of notice to surrounding property owners within 200' of the permit.

Outstanding Permit Stipulations:

DRMS will terminate existing stipulations 2, 3, 6 and 7 at this time based on the information provided. **Please note that stipulations 4, 5, 9 and 10 remain active and in effect.**

Appendix A – Geotechnical Stability Exhibit: *The Division is still reviewing the materials submitted and will provide adequacy comments for this exhibit, if necessary, as a follow up document.*

This concludes the Division's preliminary adequacy review of this application. This letter shall not be construed to mean that there are no other technical deficiencies in your application. Other issues may arise as additional information is supplied. Please remember that the decision date for this amendment application is October 15, 2021. 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 will be denied. If you have any questions, please contact me at (303) 229-9414.

Sincerely,

A handwritten signature in blue ink, appearing to read "Eric Scott".

Eric Scott – Environmental Protection Specialist