



December 23, 2020

Stevan O'Brian
Environment, Inc.
7985 Vance Drive
Arvada, CO 80003

RE: Barkley Pit (Permit No. M-2020-053)
New Permit Application
Adequacy Review #1

Dear Mr. O'Brian:

On November 5, 2020, the Division of Reclamation, Mining and Safety received your 112 Construction Materials Reclamation Application package for the Barkley Pit, File No. M-2020-053. The following questions address adequacy issues and missing information that is needed to complete the 112c application. This information needs to be addressed and/or received before the Division can approve the application.

Rule 6.2.1(2) Maps and Exhibits - Adequate as submitted.

Rule 6.4 - Specific Exhibit Requirements - 112 Reclamation Operation

6.4.1 EXHIBIT A - Legal Description - Adequate as submitted.

6.4.2 EXHIBIT B - Index Map - Adequate as submitted.

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

6.4.4 EXHIBIT D - Mining Plan

1. On page D-2, 3rd paragraph, it states that the only structures are the fence owned by Barkley on the west side and along CR 10. Map Exhibit C and Google Earth show a fence along the southern border. This fenceline is on the property boundary with the adjacent landowner, Brekel. Please update the text in this section to include the fenceline as a structure.
2. Western wheatgrass is proposed as a cover crop on topsoil stockpiles. It's the Division's experience that western wheatgrass is slow to establish and does not create an even cover on topsoil piles. It is suggested that other species be included to protect the piles: a sterile oats or triticale as a first year cover crop and alfalfa which can establish faster than wheatgrass and can last several years. Alfalfa has the added benefit of fixing nitrogen helping to maintain the topsoil.

6.4.5 EXHIBIT E - Reclamation Plan

3. Rule 3.1.5(7) states that slopes shall be compatible with the selected land use. The final graded



slopes of the pit walls are proposed to be 3h:1v. Is this slope configuration appropriate for cropland? Please clarify that this slope is compatible with the activities associated with cropland such as cultivating, seeding and harvesting. Will large farm equipment like combines, be able to operate on this slope? Is the landowner aware that this slope will remain through the middle of the field?

4. The mining plan proposes to salvage and replace 6" of topsoil and no other material is needed prior to replacing the topsoil (page E-1). The rooting depth of the crops grown on the land prior to mining (millet and wheat, page D-1) ranges from 24"-36". Six inches of topsoil does not seem adequate to support the crops that were previously grown on this site. Please address the following concerns:
 - a. The material being mined will be used to maintain gravel roads in the area. So the final material of the pit floor will be the same material. When this material is compacted by farm machinery it will most likely become a hardpan that roots won't be able to penetrate. The Division believes subsoil will need to be replaced in the pit bottom.
 - b. The depth of topsoil may be inadequate depending on the cultivation equipment and how deep cultivation is required to break up compaction. If cultivation is deeper than 6", the quality of the topsoil will quickly degrade as it is mixed with pit floor material.
5. The floor of the pit will become a compacted hardpan during the mining process from equipment driving on it. The hardpan will prevent water percolation through the soil and can hinder crop root development. The Division suggests that the pit floor be ripped prior to any soil replacement.

6.4.6 EXHIBIT F - Reclamation Plan Map - Adequate as submitted.

6.4.7 EXHIBIT G - Water Information - Adequate as submitted.

6.4.8 EXHIBIT H - Wildlife Information - Adequate as submitted.

6.4.9 EXHIBIT I - Soils Information - Adequate as submitted.

6.4.10 EXHIBIT J - Vegetation Information - Adequate as submitted.

6.4.11 EXHIBIT K - Climate- Adequate as submitted.

6.4.12 EXHIBIT L - Reclamation Costs - Adequate as submitted

6.4.13 EXHIBIT M - Other Permits and Licenses (Statement Req'd) - Adequate as submitted.

6.4.14 EXHIBIT N - Source of Legal Right to Enter - Adequate as submitted.

6.4.15 EXHIBIT O - Owner(s) of Record of Affected Land and Substance to be Mined - Adequate as submitted.

6.4.16 EXHIBIT P - Municipalities Within Two Miles - Adequate as submitted.

6.4.17 EXHIBIT Q - Proof of Mailing of Notices to Board of County - Adequate as submitted.

6.4.18 EXHIBIT R - Proof of Filing with County Clerk and Recorder - Adequate as submitted.

6.4.19 EXHIBIT S - Permanent Man-made Structures -

6. The ownership of the fence on the southern boundary of the permit area was not addressed. Please

clarify who owns this fence and if a structure agreement needs to be obtained for the fence.

Please note that the decision date for this application is February 13, 2021. 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. Also, the comment period for this application is still open and any comments or objections received may initiate new adequacy questions.

All corrected pages must also be provided to Logan County Clerk & Recorder.

If you have any questions, please contact me at (720) 774-0040 or brock.bowles@state.co.us.

Sincerely,



Brock Bowles
Environmental Protection Specialist

CC: Michael Cunningham, DRMS