



November 6, 2023

Jason Eckman
Caerus Cross Timbers, LLC
143 Diamond Ave
Parachute, CO 81635

RE: Colony Shale Oil Project, Permit No. M-1980-047, Financial Warranty Figures-Adequacy Review 1

Dear Mr. Eckman:

On September 20, 2023, the Division of Reclamation, Mining and Safety (Division) received the updated reclamation task/ cost estimating information requested in the Division's June 20, 2023, letter. Based on a review of the information received the Division will require additional information in order to perform its own independent reclamation cost estimate. In order to assist the Division in its calculations, please clarify:

General/ Site Wide:

1. For several areas there are comments stating Colony may elect to revise the permit at a later date to allow a specific feature or land configuration to remain as is rather than reclaiming as specified based on the current conditions. As noted in the October 23, 2023, inspection report, the Reclamation Plan needs to be updated. For the sake of efficiency, the Division would request that any changes to be proposed during this bond recalculation cycle be requested prior to the Divisions calculation rather than part way through.
2. Under AM-8 adequacy response dated 12/11/1984 Exxon (the then Operator) committed to providing specific plans to the MLRB prior to the start of field grading activities. Staff has reviewed the file and no specific grading plans appear to have ever been submitted. Now as the site looks towards final reclamation this would be an appropriate time to clarify details and submit such plans. Please submit in the form of a Technical Revision a grading plan, both narrative and maps for each specific area. The maps should depict the post mine land configuration. The narrative should explicitly describe the current land configuration and measures necessary to achieve final reclamation. Additionally given that this site has blended post mine land use, please state the specific land use goal for each area so that reclamation is appropriately evaluated.



3. The Division has provided a draft of its internal spreadsheet to track input into CIRCES (cost estimating program). In order to accurately calculate a bond, the Division requires the following information: equipment selection (and attachments) material type, material consistency, material volume, haul/push distance, haul/push grade, road surface for haul, ripping length and depth, dimensions and building material types for demo, disposal location(s), revegetation (seed mix, mulch type, fertilizers, nursery stock, weed management and failure rate).
 - a. Please specify the equipment size/type/fleet quantities anticipated to be used for the various tasks associated with reclaiming the Colony site. Necessary tasks are Grading, Ripping, Hauling of Overburden and Topsoil and Revegetation.
4. On Table L-2, 527 ac of affected lands remains permitted however 14 acres are listed released. Please clarify this discrepancy. These areas are 10A, 16B and 19B.
5. Page 4 "Basis for Earthwork Quantities in this Review" states that earthwork volumes are based on previously submitted figures and that several areas are based on a 3,430 CY per acre to remove the generally flat lying expanse. However, several earthwork volumes have changed from Table 2 of SR-1 and do not match up with the 3,430 CY per acre assumption. Please provide the inputs for earthwork volumes to justify the overall change.
 - a. Area 17A Coarse Ore Stockpile is 0 CY, previously 192,080 CY
 - b. Area 17B Guard Pond is 17,150 CY, previously 34,300 CY much more than the 3,430 CY per Ac
 - c. Area 18A Switch Yard is 30,870 CY, previously 65,170 CY much more than the 3,430 CY per Ac
 - d. Area 18C Gondola is 0 CY, previously 30,870 CY and 6,860 CY
 - e. Area 18D North Valley Fill is 0 CY, previously 123,480 CY.
 - f. Area 18G Stripped but not graded is 164,640 CY, previously 329,280 CY which is the 3,430 CY per AC
6. 314 ac of the total 527 ac are classified as mild and shall receive topsoil. 314 ac at 9" deep is 379,940 cy of topsoil not 338,139. Why if sufficient topsoil was stripped will it not be applied?
 - a. Clarify the specific areas where less topsoil will be applied.
7. Specify by area what tasks are associated with the "Other Cost, incl demolition" column on Table L-2. Provide details such as building materials, dimensions, disposal location, etc.
8. Please provide the estimated volume of each topsoil stockpile.
9. After the October 23, 2023, inspection several areas were noted as being eligible to remain as is given that they had self-reclaimed. Please provide an updated table L-2 stating the acreages of "reclaimed" areas needed no additional work if the entire area is not eligible for release.
10. Were any vent shafts other than the one from the decline ever installed? If so, give the location and describe the closure methods for these features.

11. Provide an updated table summarizing all wells constructed and if they have been abandoned. For all open wells please describe the P&A measures required.

Area 4

12. On page 6 it is specified that foundations in area 4 will not be removed, rather they will be buried in place. How many CY of material will I be required to sufficiently cover the foundations and blend with surrounding topography? What is the source of this backfill material (distance away and location)? Is the backfill for the foundations included within the 15,800 CY of material for Area 4?
13. 5 ac at 3,430 CY an acre is 17,150. That is less than the proposed 15,800 CY of material to be graded in Area 4. Area that will not be sufficiently graded to alleviate compaction will also require topsoiling prior to revegetation. Please explain what grading is covered under the 15,800 CY and/or how many acres of land will require ripping for decompaction.
14. Clarify if any of the buildings are to remain post reclamation. Documentation demonstrating compliance with County building requirements will be required in order for any buildings to remain post-mining. Provide details such as building materials, dimensions, disposal location, etc. for all structures.

Area 5A

15. Clarify if any of the buildings are to remain post reclamation. Provide details such as building materials, dimensions, disposal location, etc. for all structures. Documentation demonstrating compliance with County building requirements will be required in order for any buildings to remain post-mining.

Area 6

16. Provide the excavated channel and culvert details for Area 6B. This includes depth of current culvert and estimated CY of material and type needed to be excavated for removal. Volume or L x W of culvert to be removed. Backfill volume and material type to be replaced.
 - a. Specifications of the channel to be constructed (typically the design storm event may be the two (2) year, 24-hour storm event up to the Probable Maximum Precipitation (PMP) event plus the ten (10) year, 24-hour storm event per Rule 7.3(3))
 - b. 196,000 CY is slated for grading in area 6B. Is that the volume to be grade flat after installing the channel or the total volume of material to be handled throughout excavation and installation?

- c. Note that during the October 23, 2023, inspection it was discussed that the channel may be impractical and instead leaving the culvert may be the best option. Provide an engineered demonstration/certification that the culvert is functional and that is a viable option. The Reclamation Plan will need to be revised to address this modification.
17. Provide details regarding the costs and methodologies for closing the two portals and the lower vent shaft/secondary escape way.
18. The various mine bench pads are largely still gravel. No decompaction, topsoil or revegetation costs/ inputs are provided for these areas. All affected lands, unless otherwise specified, are to be revegetated. Please provide information accordingly.

Area 7

19. With regards to Area 7, what is meant by "Revegetation costs. And only in small persistent cheatgrass areas"? \$2,481 is allocated to this area, describe the reclamation measures that amount is supposed to cover? Clarify how many acres or what additional revegetation measures are necessary beyond weed spraying of the cheatgrass.

Area 8B

20. Please describe the reclamation of the foundations in 8B. Will they be buried or removed of and disposed of offsite. Provide back fill quantities required or distance to disposal location.
21. Please describe the reclamation of the weather station.
22. Does the contour in place volume of 20,580 CY include pulling of the slopes and general shaping of the pad or is that just general decompaction?

Area 9

23. Davis Gulch Dam Site on L-2 is only 22 ac. However, all previous revisions note that the area is 26 acres. The missing 4 acres appear to be the roads. Please ensure consistent accounting of land throughout all revisions.
24. The narrative states that the Davidson Gulch Dam will not be removed, and no reclamation is to take place however Table L-2 allocated nearly \$240K to its removal/reclamation. Please clarify what activities will take place. If reclamation will take place, provide additional information including specific tasks and volumes associated with each step.
 - a. Davis Gulch Dam Site, Area 9. The last paragraph mentions dams may remain if an agreement for another party to utilize and assume responsibility for them. Please either provide sufficient documentation to demonstrate that reclamation is not necessary or provide reclamation costs for Area 9.

- b. Please provide the Division with the referenced NPH Dam (no public hazard) documentation from the State Engineer's Office.
- c. Please provide documentation that the Operator has the mentioned water rights to impound water in Davis Gulch for dust suppression and wildlife.

Area 10

- 25. Page 10 states that Davis Gulch Topsoil Stockpile Area 10D is the source for the Coarse Ore Valley (area 17A). However, Table L-2 states 17A's topsoil source is the Ridgetop stockpile (Area 12). Please clarify the topsoil source for Area 17A.
 - a. What are the estimated CY of incidental grading for the Davis Gulch Topsoil Stockpile Area 10D after the most topsoil is removed?
 - b. What are the estimated CY of incidental grading for the Dam material stockpile Area 10B after the miscellaneous rock is removed?
 - c. What is the new exposed stockpile surface area that will require revegetation after hauling/removal is complete?
- 26. Given the slope configuration this stockpile may prove difficult to reclaim, the Division would advise against disturbing this area if sufficient quantities are available from other stockpile locations.

Area 12

- 27. What is the estimated CY of topsoil that will need grading to a 3H: 1V after removing topsoil from Area 12.
- 28. What are the CY of incidental grading to shape the stockpile after removal is complete?
- 29. What is the new exposed stockpile surface of Area 12 after hauling/ removal is complete. The total stockpile is 48 ac.

Area 14

- 30. Why will this topsoil pile not be utilized, it was salvaged for a purpose.
- 31. If it is to remain, has it been sufficiently slope to blend?

Area 15

- 32. The comment text for Area 15A and B is cut off on Table L-2. Please provide the complete comment.
- 33. Page 10 states that the road is 2.5 acres, and the stripped topsoil area is 37.5 ac for areas 15 A and B. However, Table L-2 states 15A is 9 ac and the stockpile areas is 31 acres. Please clarify the number of acres associated with each area and more specifically the number of acres that will be ripped, topsoiled, and seeded vs the number of acres that are too steep that will only be hydroseeded.

34. Topsoil volumes (1,025 CY for 15A and 1,944 CY for 15B) is less than 9" for 2.5 ac of the reclaimed road. Please justify why less topsoil than required by the approved reclamation plan is being applied.

Area 16A

35. For the La Sal Laydown Yard, Area 16a, what is the estimated CY of materials at the outer edge that will be required to be pulled back? Does this volume include in the 17,500 CY of material to be graded with a dozer recontour?
36. Describe the reclamation measures for the remaining foundations.

Area 17

37. The first paragraph of "Coarse Ore Gulch, Area 17A" appears to contain a typo stating that Area 17B is 15 acres. The rest of the document and table L-2 states that Area 17B is 5 acres. Please confirm the number of acres associated with Area 17B.
38. The acreage doesn't add up. Area 17 was 71 ac total. 17A is 56 ac, 17B is 5, 17C is 5 (released). 15 acres of 17B was released with AR-1 but that is not reflected on Table L-2. Please clearly track the original permitted acreage versus the remaining reclamation liabilities by area.
39. How much topsoil is anticipated to be needed from the Ridgetop Stockpile (Area 12) vs the Dam Materials Stockpile (Area 10B). Note Table L-2 states all topsoil is coming from Area 12 which is contradictory to the narrative.
40. Why does area 17B Guard Pond require no topsoil? If the entire 5 ac is going to be graded mild and can be drill seeded it should also have topsoil applied prior to revegetation.

Area 18

41. If the Gondola Site (Area 18C) is too steep to topsoil, why does table L-2 show 10,890 CY (9 ac @ 9") to be applied?
42. Will there be any contouring for the mild slope of area 18C? Some form of shaping is likely necessary. This and the previous question should coincide.
43. The first paragraph of "Plant Site, Area 18" states that only 52 ac are flat and have dozer work contouring (creating hummocks no ripping required). However, all areas with a mild grade (half of 18G) for 117 ac uses the 3,430 CY per acre grading assumption. Please clearly identify which areas (52 ac total) are receiving the dozer push to remove flat topography vs which areas have additional grading and likely also need to be decompacted.
44. Page 12 states that areas 18 C and D are 49 acres. Based on Table L-2 they are 47 acres. Additionally, the narrative states that it all is too steep to apply topsoil, however the table identifies 2 acres of 18C as mild grade.

45. Include a cost to remove the substation equipment in Area 18A.

Area 19A

46. Who owns the electrical poles associated with Area 19A (Colony or the Utility)? Provide details on power lines in place. Pole quantity, size, cross arm length or width for H), electrical service type, any transformers (PCB?) or capacitors. Provide all costs associated with the removal of these features. This comment applies to all utilities, not just those located in Area 19A.

Post ESP Areas

47. Describe how the research facility will be used in the future. Or if any tasks are required to put it into 'hibernation' until utilized next.

If you have any questions, please contact me at 303-866-3567 Ext 8183 or amy.yeldell@state.co.us.

Sincerely,



Amy Yeldell
Environmental Protection Specialist

Enclosure: DRMS Bonding Input Spreadsheet

EC: Travis Marshall, DRMS
Ed Seymour, Caerus