



October 17, 2024

Ed Seymour
Caerus Cross Timbers LLC
143 Diamond Ave
Parachute, CO 81635

RE: Colony Shale Oil Project, Permit No. M-1980-047 , Technical Revision (TR-18), Adequacy Review-1

Dear Mr. Seymour:

The Division of Reclamation, Mining and Safety (Division) is in the process of reviewing the above referenced Technical Revision in order to ensure that it adequately satisfies the requirements of the Colorado Mined Land Reclamation Act (Act) and the associated Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for Hard Rock, Metal, and Designated Mining Operations (Rules). During review of the material submitted, the Division determined that the following issue(s) of concern need to be adequately addressed before the Technical Revision can be considered for approval. Please provide the following:

Reclamation Plan

1. Pursuant to Rule 6.4.5(2)(a) please explicitly state the type(s) of reclamation to be employed for each area. Additionally state why each was chosen, the amount of acreage associated with each, and a general discussion of methods of reclamation as related to the mechanics of earthmoving. Some information may be easily summarized in table form.
2. Similarly, per Rule 6.4.5(2)(b) state the 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.
3. For all areas where revegetation is to occur state within the Reclamation Plan the total number of acres to be seeded and the seeding method by area. Clarify if application of topsoil, fertilizers, mulch or nursery stock will be employed. Explicitly state if areas will require no additional seeding.
 - a. It may be beneficial to include a table summarizing all reclamation information required under Rule 6.4.5(2)(f). Be sure to break it out by area.
4. For all items to be demolished please specify their disposal location / method.



5. Please provide a table summarizing available topsoil stockpile volumes present on site. As well as the various areas to received topsoil and which stockpile the volume will be coming from.
 - a. If topsoil will be imported from an external source clarify the cost to purchase the material per cubic yard, as well as the cost for delivery to site.
6. Will any spot seeding be required in areas where recontouring will not be completed for the purposes of increasing vegetation density? If so, please specify which area(s), how many acres and anticipated methods used.
7. The Time Table provided on page 11 is too vague for site of this magnitude. Please specifically address items (ii) and (iii) of Rule 6.4.5(2)(e).
8. State the anticipated seeding time(s) per Rule 6.4.5(2)(f)(ii). Based on the Time Table it appears that seeding is being preposed in the middle of the summer, rather than the fall.
9. Within the narrative portion of the Reclamation Plan please specify the maximum slopes to remain. May need to be Area specific. Rule 3.1.5(7) and (8)
10. Address how noxious weeds will be managed site wide, Rule 3.1.10(6).

Area 1

11. The narrative portion of the Reclamation Plan refers to Pond 3 being within Area 1. Historically this has been considered Area 4. And Map C11 also shows this pond to be associated with Area 4. Given the vastness of this site please keep references to Areas consistent.
12. Please state the total area and the CY of material anticipated to requiring grading when removing the gate and jersey barriers associated with the alternate access road.
13. How many areas are anticipated to be disturbed and require seeding after removal of features from the alternative access road?
14. How many jersey barriers are located along the alternate access road? Once removed where are they being disposed of?
15. What are the dimensions of the access gate located along the alternate access road? Once removed where is it they being disposed of?

Area 4

16. Only the weather station is mentioned to be removed however the narrative states that any concrete that is exposed will be crushed and buried or removed. Are there additional structures to be removed in Area 4? If so, clarify which.
 - a. Please provide the dimensions and building materials of the weather station building.
 - b. Please state if the weather station is on a foundation. If so, provide the dimensions, including thickness and if the concrete is reinforced.
17. Please state the disposal location/ method for removal of electrical features in Area 4.

Area 5

18. Is there any civil work or reclamation measures to be completed at the southern buildings portion of Area 5?
19. Please provide the dimensions of the water storage tank to be removed and specify its final disposal location.
20. Specify the anticipated total CY of material to be graded out in the scree area.
21. What is the anticipated area that will require reclamation after grading?
22. State the total CY of rocks to be picked and placed around the pull-out area.

Area 19A/B

23. Area 19A is the utility corridor that connects Area 4 to Area 5. There is no mention as to how electrical utilities will be addressed. Clarify the total number of poles and the total LF of power line to be removed. As well as the disposal location.
24. Specify the number of jersey barriers to be removed in Area 19B and the anticipated disposal location.
25. By area, please summarize the average push distance and grade for areas requiring recontouring. Final grade information was provided on the Exhibit F Maps but its is unclear how much material from where is being moved to achieve these final contours.

Area 6

26. Please provide additional details as to what is required to remove the buried electrical associated with the helicopter pad. This includes volume to be excavated and linear feet of wire to be removed.
27. State the total CY of rocks to be picked and placed around the pull-out area.
28. State the total number of cubic yards of topsoil that will be imported to the lower bench. Specify the source location (and cost if applicable) of the topsoil to be imported.
29. The narrative portion states that there is only one portal entrance, there are two portals that require closure located on the mine bench.
30. The Reclamation Plan states, the water discharging from the portal has been sampled and tested. Please provide sampling results to demonstrate water quality. Rule 3.1.6
31. Please state each opening's dimensions that the IMP Bid Spec book closure methods will be applied to.
32. Please state the number of PVC and Rebar monitoring pins that will need to be cut off.
33. What sort of surface reclamation/revegetation will take place on Area 6-Mine Bench. Only the pull-out parking area is mentioned with regards to surface reclamation.

34. Will any additional rock scaling or bolting be required on the highwall face above the portal entrances?

Area 7

35. Please provide documentation which demonstrates that the buried 6' steel pipe may remain post-mining. Further clarify within the narrative that removal of this feature is no longer being considered.

Area 8B

36. Please specify the dimensions of the foundations to be crushed, including thickness and if the concrete is reinforced.
37. Are there foundations or other concrete associated with the weather station and solar panels?
38. The foundations area already at grade. If no additional grading is to occur and the area is to remain flat how will the foundations be buried with a minimum of 3ft below grade?
39. Indicate what portion of this area " is in adequate shape for release". This is not consistent with the observations of the 2023 inspection report. Specifically, "The perimeter of this pad will need to be pulled back to help blend. Anything that is not significantly graded will require decompaction. The Operator also discussed not topsoiling this area given the cost to haul topsoil in. Justification beyond cost and a sound alternative must be provided to ensure reclamation success." Address slope reduction, decompaction and topsoil application prior to seeding.

Area 10B

40. Specify the anticipated total CY of material to be graded around the ponds. Also, what is the material type to be graded, is it overburden or rip-rap? Will importation of topsoil be required?
41. State the estimated acres to require revegetation after contouring is complete.

Area 10D

42. The Division agrees that disturbances to this stockpile should be avoided if possible. Demonstrate through a topsoil stockpile and application table that this stockpile can remain and is not necessary to complete reclamation site wide.

Area 10C

43. See comments under Colony Water Wells section.
44. What is the anticipated area that will require reclamation after the wells are abandoned?

Area 10A and 16B

45. What is the volume of cement required to plug each end of the water line. And what surface work is required at either end?

Area 12 and 14

46. If these two stockpiles will not be disturbed, what is the source of topsoil for reclaiming this project?

Area 16A

47. Please provide information regarding the dimensions of the foundations to be crushed and buried on site.
48. How many jersey barriers require placement prior to burying?
49. How will the well located on site be addressed?
50. If the pad is to be relatively flat will sufficient cover be available to bury the foundations or do, they need to be move to the base of the highwall?
51. If a graveled area will remain as a through road, please address this within the narrative portion.
52. Will the contoured areas be topsoiled or seeded?

Area 17A

53. Specify the anticipated total CY of material to blend stockpiles on site.
54. Rational was provided for not topsoiling areas that have self-reclaimed but explain why no topsoil is anticipated in areas where grading is to occur.
55. What is the anticipated area that will require reclamation after grading?

Area 18A

56. Specify the anticipated total CY of material to which requires grading to remove the perimeter berm and blend it to contour.
57. Why is no topsoil anticipated to be applied to areas where grading is to occur?
58. What is the anticipated area that will require reclamation after grading?
59. Please state the quantity and size to electrical poles to be removed. Additionally, what is the disposal method/location?
60. Are there any foundations associated with the switch yard?
61. What is the anticipated area that will require reclamation after grading?

Area 18C

62. State the total number of cubic yards of topsoil that will be imported. Specify the source location (and cost if applicable) of the topsoil to be imported.
63. What is the anticipated area that will require reclamation after topsoil application?

Area 18D, E, F, and G

64. Please provide information regarding the dimensions of the foundations to be crushed and buried on site.
65. Please state the number of PVC and Rebar monitoring pins that will need to be cut off. What is the estimated volume of concrete necessary per sleeve?
66. Please summarize the total number of cubic yards of material that require grading.
67. No mention of topsoil application stated, please clarify.
68. What is the anticipated area that will require reclamation after grading?
69. Clarify that the main through road will remain in place as is.

ESR

70. Please provide an itemized list of all equipment located at the ESR that requires removal. State the building materials, dimensions, foundations, electrical, etc.
71. What is the disposal location for all equipment to be removed.
72. If all features related to the ESR is to be removed, what is the rational for leaving the road in place beyond the main road of 18F?
73. Specify the anticipated total CY of material to which requires grading or backfill one equipment is removed.
74. Why is no topsoil anticipated to be applied to areas where grading is to occur?
75. What is the anticipated area that will require reclamation after grading?

General Requirements

76. In areas where significant recontouring does not alleviate deep compaction how will this be addressed? Typically, tractor implements are for light subsoiling immediately proceeding seeding. Given that this site has sat contoured for decades, deeper decompaction will be necessary to promote plant growth beyond applying a thin layer of topsoil.
 - a. Please indicate by Area what method(s) of decompaction and soil seedbed preparation will be employed and the number of acres associated with each.
77. Specify by Area the seeding method(s) to be employed and the associated acres with each. Methods proposed are drill seed, hand broadcast or mechanical broadcast.

Existing Building Summary

78. Not all buildings mentioned in the narrative portion of the Reclamation Plan are listed on this table. The table should also include foundations. Specifically include:
 - a. The weather station and Solar Pannels (Area 8B)
 - b. Ventilation shaft house located on the mill bench (Area 6B).
 - c. ESR-all features to be removed

79. Please update this table to indicate which features are to remain post-mining verse which will be removed.

80. Update the table to indicate the buildings L x H x W, not just the square footage.

Colony Water Wells

80. It is unclear from the Colony Well Spreadsheet which wells are currently open and will remain so vs which wells will need to be plugged.

- a. Please clarify the abandonment method(s) for all wells. Rule 5.4.2
- b. Commit to providing any abandonment documentation to the Division within the time frames specified under Rule 5.7(1)
 - i. Note the Division has no abandonment records for any of the water wells listed on this table.
- c. Provide documentation from DWR that wells are permitted for appropriate use post-mining. Per Rule 5.4.5. Until such time as re-permitted has occurred the Division will bond for their abandonment.

81. Permit 18150-F is noted as being unusable and well 18150-F-R replaced that well. Was 18150-F ever abandoned? Provide clarification as to this wells status and documentation as needed.

82. Per the DWR link provided the decree uses listed in the spreadsheet do not match DWR's website.

- d. 18150-F this well's decree use is Industrial and Irrigation. However, the table provided lists additional uses not authorized by DWR.
- e. 18150-F-R this well's decree use is Industrial. However, the table provided lists additional uses not authorized by DWR.

Reclamation Plan Maps

83. All Maps, in general the final reclamation maps should depict the areas after reclamation is completed. Any features (stockpiles, buildings, pipelines, etc.) to be removed as part of reclamation should not be depicted on the map as post-mining they will not remain. For tracking it may be necessary to provide as built of the current site conditions to visually see what changes are required to complete final reclamation.

84. Per Rule 6.4.6(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. Not all maps include contour lines for each area.

- a. It appears that only areas where grading is required has contour lines. The map legend had existing and proposed grade. So regardless of if grading is required include the contour lines.

85. Pursuant to Rule 6.4.6(b) on each map please state the proposed final land use for each portion of the affected lands.

86. Several of the maps rely on drone imagery to convey information however, the drone images are shadowed or unclear. Outdated imagery from other sources may be better convey information. Example, on map C11 the right portion has call outs pointed to nothing. Either update imagery or otherwise outline and improve contrast of features being referenced.
87. Map C14 only references one portal entrance, however there are two portals that need to be closed.
88. No map is provided for the Area 4 alternate access road.
89. Map C16 Area 8B has a weather station currently on site. If this feature is to remain post mining, it needs to be depicted on the map.
90. Map C17 has the area 10D outlined in green, however there is no indication in the legend what green means.
91. C18 indicates that a road to the bottom of the gulch shall remain. This feature is not outlined, and it is difficult to delineate the actual road location given the poor imagery overlay. In general, for all areas where a road is to remain, please clearly outline this feature on all applicable maps.
92. Map C19 Area 17a indicates that stockpiles will be graded to blend however no contour grading lines are proposed on the map and no existing contours are provided in the are with a reference to grading. Ensure that maps accurately depict either current site conditions or proposed final grading.
93. Map C16 Area 10C and Map C23 Area 16A. Any wells that are to remain post-mining need to be depicted on a map(s).

Other

94. Given the significant changes to the Reclamation Plan the current Exhibit L Reclamation Cost also needs to be updated to reflect the changes.
 - a. An overly simple cost summary was provided. Details need to be clarified, and additional reclamation tasks need to be included.
 - b. Inputs should be area specific and include all applicable input factors like regrade volume, regrade slope and push distance, haul volume, haul grade, material types and consistency (swell)

Please submit your response(s) to the above listed issue(s) by Friday, November 1, 2024 in order to allow the Division sufficient time for review. If you cannot address the above issues by November 1, 2024 please request an extension to the decision due date to ensure adequate time for the Division to review materials. A decision due date of **November 9, 2024** has been set. If any adequacy issues remain by the decision due date the Division may deny your request.

10/22/2024

The Division will continue to review your Technical Revision and will contact you if additional information is needed.

If you require additional information, or have questions or concerns, please feel free to contact me.

Sincerely,

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

Amy Yeldell

Environmental Protection Specialist

Ec: Travis Marshall, Senior EPS, DRMS