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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Henry Sauer, Reclamation Soils Specialist *HS*

RE: Initial Completeness Review and Technical Deficiency for the Five-Year Permit Renewal, Co-Op Mining Company, Bear Canyon Mine, ACT/015/025, Folder #2, Emery County, Utah

Synopsis

The following review is an attempt to summarize the major technical deficiencies found in the Bear Canyon Mine Permit Application Package (PAP). Many of the deficiencies forthcoming are of such magnitude that addressing them will require substantial time and effort, Division consultation and field work. Therefore, enumerated issues will be broad in scope and require discussion regarding technical details between the operator and the Division staff.

Additionally, an editorial section will be included in this memo. Regulations will not be cited so as to avoid redundancy and verbosity.

Editorial

Page 2A-3 NOV 89-32-4-1 is not included on the violation list.

Page 3-44 is missing.

Plate 3-1 According to cross section D-D, the Bear Canyon Coal Seam will remain exposed after reclamation. This is unacceptable, in accordance with the statutes set forth by the Mine Safety and Health Administration and R614-553.300.

Page 3-45 The operator employs the phrase "...relative undisturbed areas"... Please describe this, and how and where this will affect topsoil removal.

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- Page 3D-3 The last paragraph is fragmented and contradictory. Please rewrite said paragraph to clearly describe the operator's intent.
- Page 3-37 The operator states "Once operations cease, the disturbed area will be scarified." The sentence should read "Once operations cease, the backfilled and regraded disturbed areas will be scarified."
- Page 3-58 The operator states that "All reclaimed areas will be maintained for the entire 10 year responsibility period." This sentence should state "...maintained during the liability period for at least 10 years."

The operator must clearly commit to salvaging all topsoil prior to surface disturbance. This may be accomplished by amending the following sentences on pages 3-62 and 8-19. Prior to the start of all new construction, topsoil will be analyzed (i.e., constituents found in the Division Guidelines for Management of Topsoil and Overburden, Table 1) in accordance with Division recommendations to determine the extent and depth of suitable plant growth medium and will be separately salvaged and stockpiled.

The following discrepancies refer to the return of disturbed area surface to the approximate original contour.

- Fig. 3.6-2 depicts total highwall reclamation, Plate 3-1 indicates highwall retention, and minimal backfilling. Please amend said discrepancy.
- Page 3-75 "...postmining land use achieved without return to Approximate Original Contour".
- Page 3-47 "...the purpose of these operations is to return disturbed area to approximate original makeup and contour."
- Page 3-68 "...restore disturbed land and surface areas to their approximate premining conditions."
- Page 3D-2 "...redistribution of road cut material to (the) approximate original contour of (the) surface."
- Page 4-12 "...Operational benches will not be removed."

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- Page 4-15 "The proposed surface contour plan would allow the side hill cuts and operational benches at the mine site to be reduced so that they provide stable drainages and conform to natural contours."
- Page 3-64 The sentence "...the establishment of noxious plant series (should be "species") will be prevented." Please change "series" to "species".
- Page 3-75 Please describe what a "3:1 safety factor" means.
- Page 3A-3 Refers to reclamation in 2012, page 3-85 refers to reclamation in 2033...please amend discrepancy.
- Plate 3-2 indicates that above the Lamphouse a highwall will be retained; however, this highwall is outside the "bonded area", as depicted on Plate 2-4. Please amend discrepancy.
- Page 4-13 The operator states that "operational areas will be scarified to reduce compaction...". The sentence should read "Operational areas will be scarified after backfilling and grading and prior to topsoil redistribution."

Additionally, the operator eludes to "operation testing of soil to determine that moisture retention is necessary." Please describe operation testing and how and where it will be employed.

The exact same paragraph regarding ripping spoil material appears on pages 3-64 and 3-65 as on pages 3-78 and 3-79. Please rectify this redundancy.

- Page 8-24 The sentence regarding mining impacts on the soil resource should indicate that the coverage of soil by land fills "occurred pre-SMCRA" (P.L. 95-87). Additionally, the sentence regarding fertilizer applications should read as follows: "All necessary fertilizers and/or neutralizing compounds will be applied according to the results of the soil sampling and analysis program approved by the Division."

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Page 8D-2 The revegetation test plots are not depicted on Plate 2-4 as indicated. However, subsequent to NOV 90-32-3-1 test plots on this site will not be forthcoming until downcast material along the upper access road is stabilized. Please delete statement regarding test plot locations and amend Appendix 8-D and other sections describing the test plots.

Initial Completeness Review

R614-301-221. Prime Farmland Investigation-(HS)

The operator must obtain written verification from the State Soil Scientist (Soil Conservation Service) regarding negative prime farmland determination for the lands within Section T.16S., R7E, SLM. Section 13, W1/2.

R614-301-222 Soil Survey-(HS)

On page 8-1, statements are made which indicate that the entire area encompassed by the original soil survey "...had been disturbed from previous mining activities." This statement is only partially true. Therefore, as an aid in determining the present extent of disturbance at the Bear Canyon Mine and fulfilling Division requirements, the operator must submit an Order I Soil Survey (U.S.D.A./Soil Survey Manual, Title 430) of the "bonded area" as depicted on Plate 2-4. All soil surveys shall be conducted on or approved by a qualified professional soil scientist.

Technical Deficiencies

R614-232. Topsoil and Subsoil Removal-(HS)

232.100. On page 3-8 the operator states that "...topsoil removed as needed." This is not acceptable (R614-232.100) and should be deleted.

233. **Topsoil Substitutes and Supplements** The proposal to utilize downcast material along the upper access road as a plant growth medium for final reclamation (Appendix 8-D) is unacceptable. The material in question is not stable and consideration as a plant growth medium cannot be heeded until the operator can demonstrate its stability.

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Additionally, topsoil medium within the Ballpark Storage area is of marginal quality and has not shown revegetation potential. Furthermore, soil surveys conducted adjacent to the disturbed area indicate pre-disturbance topsoil depth (A horizons) of 10-16 inches. Therefore, it is the concerted opinion of the Division that the plans for redistribution of 6 inches of topsoil do not closely parallel the premining soil conditions and will not be consistent with the approved postmining land use.

Thus, the operator must fulfill the requirement of this section and demonstrate that adequate quantities of good quality topsoil material exist.

234. Topsoil Storage The as-built survey (Plate 8-2) of the topsoil stockpile adjacent to the scale house is incorrect and must be revised (i.e., resurveyed). The survey indicates a concentric pile which has equal slope length on the east and west sides. Through field observation and preliminary surveys, it was determined that the pile has been placed on an incline and the east side of the pile is substantially shorter than the west side of the pile.

R614-242. Soil Redistribution-(HS)

242.110. Page 3D-3 describes the redistribution of one foot of topsoil material upon the "road system". This is not consistent with the mass balance calculations or any other designs or plans. Please revise in accordance with the new topsoil mass balance criteria (R614-301-233).

The operator states on page 3-65 that redistributed topsoil will be allowed to lie undisturbed for 10 days to attain equilibrium with its natural environment. Equilibrium within redistributed soil, depending on the moisture regime, may require tens of years. Therefore, delete this sentence.

On page 3D-2, the operator states that "...clump planting of adjacent vegetation (placed) on recontoured surface." If live shrub transplants are employed, then specific plans to identify such transplants, areas disturbed during said operations, and specific success criteria must be specified (i.e., designs and PAP plans) and approved by the Division.

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242.200. The operator eludes (page 3-59) to scarifying regraded spoils "where physically possible". This statement must be deleted and replaced by specific criteria which would warrant a variance from the scarifying requirements. Additionally, the operator states on page 3-46 "...compaction will help the returned soil remain in place." This is incorrect and must be deleted.

R614-520 Operational Plan-(HS)

521. General. On pages 2-9 and 3-10, the operator indicates 12 acres of disturbance. During the Mid-Permit Review (spring of 1989), the operator indicated 10 acres of disturbance. Please explain this discrepancy.

The applicant must depict on a properly scaled surface facilities map the areal extent of the disturbed acreage. Additionally, all pre-law (i.e., Surface Mine Control and Reclamation Act, page 95-87) disturbances must be depicted and a demonstration of the pre-law nature of the disturbance be substantiated. As one option, the applicant may choose to create a buffer zone of undisturbed land surrounding all disturbed areas. Thus minor, adjacent disturbances during operations and reclamation, while required to meet applicable state and federal regulations, would not have to undergo bond revisions (R614-301-800).

521.100. Cross Sections and Maps. The operator must commit to covering all concrete, asphalt, excess spoil, acid- and/or toxic-forming material with four feet of suitable material. At this time, reasonable volume estimates of the above referenced material and cover for said material (confirmed by appropriate cross sections) must be made. Specific designs must be generated by the operator to identify particular sites of disposal of said material and areas where highwalls will be retained or reclaimed. All cut and fill calculations must be specific and include sufficient narratives, maps and plans to confirm feasibility of the backfilling and regrading plans.

The following PAP references should be unnecessary and deleted when the above technical deficiency is resolved.

Page 3-46 "To the maximum extent practical surface areas will be backfilled."

"...(according to) local conditions, large scale backfilling will not be possible."

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- Page 3D-D "...no alternative other than disturbance."
- Page 3-75 "...material used for recontouring will be taken from side or other existing embankments within the disturbed area....taken from side slopes or embankments close enough to allow for pushing into place."
- Page 3-75 "Upon abandonment slopes will only be reduced to the amount physically possible."
- Page 3-76 "...highwalls reduced to the extent practical."
"Only those highwalls that can be lessened by reaching with a backhoe will be reduced."
"Highwalls greater than 20 feet in height will be left in place."
- Page 4-12 "Side hill cuts will be reduced to the maximum extent physically possible. The cuts, which are already physically stable will not be reduced."

R614-535.100 Disposal of Excess Spoil-(HS)

All excess spoil must be disposed of in a controlled manner, in a designated area(s) within the permit area. All solid waste mentioned in the PAP must be identified (i.e., non-coal waste, excess spoil, development waste, etc.). References to removing waste (pages 3-39, 3-60, 3-70, 3-72 and 4-12) must be deleted and proper disposal sites and disposal practices must be identified (R614-521.).

djh
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