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State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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December 15, 1998

Dan Meadors, General Manager
Canyon Fuel Company, LLC
HC 35 Box 380
Helper, Utah 84526

Re: Waste Rock Expansion Site, Canyon Fuel Company, LLC, Skyline Mine, ACT/007/005-98F,
File #2, Carbon County, Utah

Dear Mr. Meadors:

The referenced amendment has been reviewed by Senior Reclamation Specialists Priscilla Burton, Paul Baker, Mike Suflita, Steve Demczak, and Wayne Western. Their analyses and findings are provided for your review and response by January 14, 1999.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.21, 817.200(c); R645-301-220, -301-411.

Analysis:

The amendment discusses the soil resources within the proposed GOP pile expansion area with an attachment to the appendix volume A-2 for the soils and vegetation section. Relevant soils resource information includes North Facing Slope and AML soils. Published soil survey descriptions and current soil descriptions for topsoil and substitute topsoil are included in the amendment. The Analysis section discusses resource information as follows:

- Soil Survey Information
- Soil Characterization

Soil Survey Information

Soil survey information is presented from three separate sources as follows:

(1) *Natural Resource Conservation Service General, Third Order Soil Survey.* A section

of the regional soils map and relevant portions of the Carbon County soil survey are reproduced from the Carbon County Soil Survey, published by the United States Department of Agriculture, Soil Conservation Service, National Cooperative Soil Survey, issued in June 1988.

(2) *Past Site Specific Soil investigation.* Soil survey as contained in the presently approved Mine Reclamation Plan, Appendix A-2, Soils and Vegetation, "Report of Vegetation and Soils, Proposed Waste Rock Disposal Site, Skyline Mine, November 1981." This soil survey was prepared by Dr. Stanely L. Welsh and Dr. Joseph b. Murdock of Endangered Plants Studies, Inc. with aid from the Soil Conservation Service, Carbon County.

(3) *Current Site Specific Soil Investigation.* A site specific soil investigation was performed for soils within the planned expansion area on August 26, 1998 and prepared by Mr. Chris Hansen, Canyon Fuel, LLC Skyline Mine. Three soil pits were hand dug into the slopes of the expansion area and soil horizons were described (Plate 3.2.8-2).

The current site specific soil investigation covers approximately 0.7 acres of the total 1.39 acres expansion area and includes three separate areas as follows:

- 0.14 acre area - included in the site specific soil investigation is the undisturbed vegetated slope east of the existing pile (pits GPE-1 and GPE-2, Plate 3.2.8-2).
- 0.23 acre area - the expansion area will include a portion of an AML reclaimed slope which is north of the existing gob pile (GPE-3, Plate 3.2.8-2).
- 0.31 acre area - reclaimed slope of the existing gob pile where soil cover is already placed.
- 0.71 acres where no soil investigation was performed - active road right-of-way which is located northwest of the gob pile where soil resources are limited or non-existent.

North Facing Slope

Soil Log field data sheets contain soil descriptions for pits GPE-1 and GPE-2 for the north facing slope east of the existing gob pile. Soil descriptions suggest that these soils resemble the Midfork Family soils; however, the soils are much thinner than those described by the Carbon County Soil Survey. Evidence of a Mollic epipedon is weak based on color, thickness and structure.

The soils logs show an A horizon underlain by a C1 horizon. . Descriptions for the C1 horizons for both GPE-1 and GPE-2 indicate these horizons may actually be a second A horizon and part of a Mollic epipedon, particularly for GPE-2. Since these soils appear to have been disturbed in the past, mixing and thinning of the surface soils will have partially obscured the

Mollic epipedon.

AML Soils

The soils log shows that these soils are imported fill used for reclamation. Therefore, these soils are classified as substitute topsoil. These soils are silty loam with no developed structure and a rock content less than 10 % that consists mainly of pebbles. Vegetation is occasional sage dominated by grasses, including cheat-grass.

Soil Characterization

The soil horizons at each sampling location were sampled according to the State of Utah Division of Oil, Gas and Mining (DOG M) guidelines for topsoil and overburden¹. Characteristics of the topsoil and substitute topsoil are suitable for use in reclamation of the site.

Findings:

The information provided is adequate for the purposes of the regulations.

OPERATION PLAN

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Analysis:

The amendment discusses the proposed GOP pile expansion area with an attachment to the appendix volume A-2 for the soils and vegetation section. Relevant soils resource information is used for projecting soil salvage volumes. The Analysis section discusses resource information as follows:

- Topsoil and Subsoil Removal
- Topsoil Storage

Topsoil and Subsoil Removal

The amendment states that the expanded waste site contains approximately 2,197 yd³ of topsoil and substitute topsoil which will be salvaged for later reclamation. According to the four areas identified in the soil resource section, soil salvage volumes by area are shown as follows for the 1.39 acre expansion area:

¹Leatherwood, J., and Duce, D., 1988. Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining. State of Utah Department of Natural Resources, Division of Oil, Gas and Mining.

- 0.14 acre area - vegetated slope east of the existing pile (345 yd³).
- 0.23 acre area - AML reclaimed slope north of the existing gob pile (1,099 yd³).
- 0.31 acre area - reclaimed slope of the existing gob pile (753 yd³).
- 0.71 acres active road right-of-way - no soil salvage (0 yd³).

The 2,197 cu yds of topsoil will be used to cover 1.39 acres of disturbance, and will amount to a depth of 12 inches of topsoil over the site.

Topsoil Storage

The amendment does not address where the temporary topsoil stockpile will be located, nor does it specify the size and dimensions of the stockpile.

Findings:

The permittee must provide the following, prior to approval, in accordance with the requirements of:

R645-301-234, The amendment must address where the temporary topsoil stockpile will be located, nor does it specify the size and dimensions of the stockpile.

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Coal Mine Waste

The recent submittal has eliminated from the narrative on page 4-90 the enlarged capacity of the waste rock site. Therefore, it is impossible for the Division to calculate the life expectancy of the site. The new submittal has increased the annual volume of waste rock to be deposited at the site to 6,734 CY. This new figure probably takes into account waste generated at Skyline and Dugout Mines.

Regulation R645-301-553.252 requires that *coal mine waste will be covered with a minimum of four feet of the best available, nontoxic and noncombustible material*. The presently approved plan calls for 12 inches of topsoil **and** 16 inches of subsoil cover to be placed over 20 inches of non-toxic, non-acidic waste material (page 4-38a), a total of 50 inches of non-toxic, non-acidic cover over the refuse. As discussed in the section above, one foot of topsoil has been located and designated for salvage during this expansion. To achieve the required depth of cover

over the 1.39 acres of expansion, **2,915 yd³ of subsoil** must be located and designated for salvage. The calculations are as follows:

$$\begin{aligned} 1.39 \text{ acres} \times 43,560 \text{ sq ft/ac} &= 60,548 \text{ sq ft} \\ 16 \text{ inches} &= 1.3 \text{ ft} \\ 1.3 \text{ ft} \times 60,548 \text{ sq ft} &= 78,712 \text{ cubic feet} \\ 78,712 \text{ cu ft divided by } 27 \text{ cu ft/ cu yd} &= 2,915 \text{ cu yd subsoil} \end{aligned}$$

In searching for the subsoil material, the permittee is reminded that although DOGM's topsoil guidelines suitability criteria considers >30% (by volume) rock fragments (for both gravels <3" in size and cobbles 3 to 10" in size) to be unacceptable, and >10% stones and boulders >10" in size to also be unacceptable, the recent standard preference by DOGM is to salvage "**native soils**" with "**intrinsic rock content**". Ultimate site reclaimability using these rocky soils could enhance reclamation success by providing an environment similar to native conditions. Higher rock content soils provide for a more stable reclaimed surface, aid in water harvesting and ultimate water holding capacity of interstitial soils, and create wildlife habitat and niches on the surface where surface boulders and larger cobble sized rocks are placed.

Findings:

The permittee must provide the following, prior to approval, in accordance with the requirements of:

R645-301-536.100, The amendment must provide information on the capacity of the enlarged waste rock site.

R645-301-233 and R645-301-553.252, In addition to the 12 inches of topsoil identified, the amendment must provide for sixteen inches of subsoil cover over the 1.39 acre expansion.

REVEGETATION

Regulatory Reference: R645-301-341

Analysis:

The existing mining and reclamation plan discusses revegetation of the waste rock disposal site. This plan is considered adequate. All but one species in the seed mix were found growing on revegetated portions of the site in a 1998 field visit, and no signs of serious erosion were found.

The plan says the applicant will use the best mulching technology available at the time of reclamation, and the applicant has been using erosion control matting. While this appears to be working properly, the netting has not been deteriorating. In the future, the applicant should use matting with netting that will degrade over time. Existing netting needs to be removed from the site.

Findings:

Information provided in the application is considered adequate to meet the requirements of this section of the regulations. Netting from the erosion control matting has not been deteriorating, and it needs to be removed. In the future, the applicant should use netting that will degrade more quickly.

RECOMMENDATIONS:

Biology and land use sections of the application are considered adequate and can be approved. The Division recommends the applicant use netting that will degrade more quickly than what has been used in the past.

TECHNICAL ANALYSIS:

OPERATION PLAN

MAPS, PLANS, CROSS SECTION

Regulatory Reference: R645-301-512.120, R-645-521.165

Analysis:

Mining Facilities Maps

The permittee has submitted an updated surface facilities map to show the location to the refuse pile, including the expanded area. These maps are P.E. certified as required by the Coal Rules.

Findings:

Surface facilities map has been submitted and is considered adequate to meet this section of the R645-Coal Rules.

MAP, PLANS, CROSS-SECTIONS OF THE MINING OPERATIONS

Regulatory reference: R645-301-512.140

Analysis:

Drainage Maps

The permittee has included an updated drainage map which is certified by a professional engineer. The map meets all the requirements of the Engineering section.

Findings:

The requirements of this section of the regulations are considered adequate in regard to the proposed permit change for the expansion to the waste rock site.

TRANSPORTATION FACILITIES

Regulatory reference: R645-301-527, R645-301512.250

Analysis:

Roads

The permittee has extended its primary road to the refuse pile and it is identified on the map. There are road designs and cross-sections as required by the coal rules. The permittee did get the cross-section drawing 3.2.8-B certified by a professional engineering.

Findings:

Information provided in the proposed amendment is considered adequate to meet the requirements of this section.

RECOMMENDATION:

The Engineering section of the waste rock expansion at Skyline mine is considered to be complete.

TECHNICAL ANALYSIS:

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference R645-301-121.200

Analysis:

There are a number of inconsistencies in the submittal that need correction. These include:

- The map contained on Dwg. 3.2.8-2, Waste Rock Facilities and Drainage Control, appears to be inaccurate. This is due to the Permit Area Boundary symbol simply disappearing on the west side of the map. Further, that boundary appears to connect and run into the Disturbed Area and Drainage symbol on the map on the west side. In addition, the Permit Area Boundary delineates TWO areas, one within the other. The map needs to be redrawn to correctly and completely show the permit area boundary.
- The map contained on Dwg. 4.16.1-1B, Waste Rock Disposal Site Reclamation Plan, also appears inaccurate. This is due to the Permit Area Boundary symbol simply disappearing on the west side of the map. Further, that boundary appears to connect and run into the Disturbed Area and Drainage symbol on the map on the west side. In addition, the Permit Area Boundary delineates TWO areas, one within the other. Also the Sediment Pond Drainage Area symbol shown in the legend changes as it traces the boundary around the designated area. In some places there is one short dash while in other places there are two short dashes. The map needs to be redrawn to correctly and completely show the permit area and drainage boundaries.

Findings:

The information provided in the application is not considered adequate to meet the requirements of this section of the regulations. Prior to approval, the Applicant must provide the following in accordance with the requirements of:

R645-301-121.200, a revised Dwg. 3.2.8-2, Waste Rock Facilities and Drainage Control, and revised Dwg. 4.16.1-1B, Waste Rock Disposal Site Reclamation Plan.

Regulatory Reference R645-301-742.300

Analysis:

Diversion ditches UD-5 and UD-6 are both concrete lined as are the ditches in place today, before the changes to the waste rock pile. They have been performing well and the new ones should do so in the future. UD-5 is a significantly less slope than the channel that feeds into it and this will present a ongoing maintenance issue with deposited sediment.

The other ditches appear to be properly designed with a new DD-16 that flows into the existing and stabilized reach that is rock armored. The two swales in the road appear adequate.

Findings:

The information provided in the application is considered adequate to meet the requirements of this section of the regulations.

Regulatory Reference R645-301-746.320

Analysis:

The riprap at the sediment pond spillway outlet is not adequate. During a site visit there was almost no riprap at all. The current plans do not show the top of the pond embankment as having riprap and this is needed to prevent erosion. The riprap needs to be shown on the drawings.

Findings:

The information provided in the application is not considered adequate to meet the requirements of this section of the regulations. Prior to approval, the Applicant must provide the following in accordance with the requirements of:

R645-301-746.320, provisions to riprap the sediment pond spillway outlet.

Regulatory Reference R645-301-742.221.34

Analysis:

The sediment pond has a locking valve assembly which allows the pond to be decanted after filling with water.

Findings:

The information provided in the application is considered adequate to meet the requirements of this section of the regulations.

Regulatory Reference R645-301-742.240

Analysis:

The plan shows ASCA 24 (a) below the lower end of the access road. This area is to be revegetated and will have sediment fences at the lower end. These lead to a sediment trap at the low point. This appears to be an adequate means to deal with the situation. The plan, pg.4-38 (a), describes how the area will be hydro-seeded and reclaimed immediately after road construction.

Findings:

The information provided in the application is considered adequate to meet the requirements of this section of the regulations.

Regulatory Reference R645-301-742.223

Analysis:

The sediment pond and its associated spillway have been designed to meet or exceed the regulation design events.

Findings:

The information provided in the application is considered adequate to meet the requirements of this section of the regulations.

Regulatory Reference R645-301-733.220

Analysis:

The Dwg. 4.16.1-1B, Waste Rock Disposal Site Reclamation Plan shows the final reclamation configuration of the waste rock site. This indicates that the sediment pond below the site and stock pond above the site will be left after reclamation. These ponds would then be classified as permanent impoundments. Such impoundments cannot be authorized by the Division until the requirements in the above-referenced regulation have been satisfied. There is nothing in the submittal to show that these requirements have been met.

Further, there is confusion in the text as to whether the ponds will be left. The September 18, 1998 submittal, page 4-78, indicates that the lower pond will be observed and "If, over a period of time, it shows that the lower pond hold natural runoff water and is beneficial for livestock and wildlife use, it will not be removed. However, if no beneficial use is determined, it will be reclaimed." The November 12, 1998 submittal has no reference to whether the ponds will be left or not. The plan must clearly indicate the reclamation plan for the ponds.

Until the above-referenced requirements have been met, the plan must show the ponds as being reclaimed. The Applicant can also provide an alternate to reclaiming the ponds indicating they will provide a demonstration as required by the regulations as explained above.

The plan does not address the issue of water rights associated with these ponds. Since the water will not flow into the stream as it did before ponds were constructed, and since stock watering is a beneficial use of the water, there needs to be an associated water right. Obtaining the rights is not necessary to approval of this requested action, however, it will be necessary before final reclamation. If the rights cannot be obtained, the leaving of the ponds will not be possible.

Findings:

The information provided in the application is not considered adequate to meet the requirements of this section of the regulations. Prior to approval, the Applicant must provide the following in accordance with the requirements of:

R645-301-733.220, demonstration of necessary requirements to allow the leaving of permanent impoundments, OR revision of the plan to show reclamation of the two ponds.

RECOMMENDATION

The proposed amendment should not be approved in the present form. The Applicant must provide the information outlined above before approval can be granted.

Analysis:

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

Analysis:

Determination of bond amount.

The reclamation costs for the waste rock disposal facility consist of backfilling and grading, and vegetation. The increase in the waste rock site is 1.39 areas. The total increase to the bond is approximately \$10,000. The current bond amount is for more than \$5,000,000.

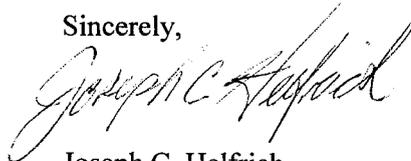
The Division usually does not increase the bond amount unless the reclamation cost increase by 5% of the bond. Since the bond increase is less than 5% of the bond, the Division finds that the current bond amount is adequate.

Findings:

The Permittee has met the minimum requirements of this section.

If you have any questions please call.

Sincerely,



Joseph C. Helfrich
Permit Supervisor