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

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September 24, 2002

TO: Internal File

THRU: Mike J. Suflita, Senior Reclamation Specialist/Team Lead

FROM: Priscilla W. Burton, Senior Reclamation Specialist/Soils

RE: James Canyon Road, Canyon Fuel Company, LLC, Skyline Mine, C/007/005-AM01K-1

SUMMARY:

In-mine flooding created an urgent need for dewatering wells in James Canyon. Two wells were drilled in August of 2001 in James Canyon for this purpose (page 2-63a). In October 2001, the Permittee provided the Division with sketchy submittals for the emergency construction and implementation of the dewatering well site (AM01H and IB01I). Although the information was not complete, the Division approved of the activity in letters dated September 28, 2001 (AM01H) and October 23, 2001 (IB01I). An "as built," submittal containing information for the burial of cable and pipeline and development of the well site, 9.65 acres in all was received on November 15, 2001.

The information updated sections in chapters two Skyline Mining and Reclamation Plan to include

- Permanent burial of a sixteen-inch diameter poly pipe for a distance of 3,000 feet from a well site in James Canyon (within the permit area) down to Electric Lake. The buried pipeline discharges groundwater to Electric Lake at a rate of 2,470 GPM. The trail in which the pipe is buried has been reclaimed and at final reclamation, the only disturbance will be to plug both ends of the pipe with cement (see also AM01H).

- Permanent burial of power cables along the Forest Service Road, FDR-018, from the Questar Gas building to the permit boundary in James Canyon (2.95 acres) and down James Canyon Road to the well site (0.3 acres) as shown on DWG. No.: 1.6-3, Skyline Mines Permit Area (see also IB01I-1).

- Topsoil salvage and storage during construction of the well site.

A second application was received on July 8, 2002 responding to deficiencies in the application as noted in the Technical Analysis dated April 1, 2002.

TECHNICAL ANAYLSIS:

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

The James Canyon drill pad and pipeline are located in Section 35, T.13S, R6E (pp 2-63 (a), 2-120 (f) and Soil Resource Evaluation Report of Appendix A2). The powerline is in Sections 25 and 36, T13S, R6E. The pipeline was buried and reclaimed from the drill site in James Canyon to the mouth of the canyon (Electric Lake) and the power cable was buried in the road from the head of the canyon to the drill site (p 2-63(b).

Plate 3.4-1 indicates that the permit and disturbed area boundaries for the length of the James Canyon Road. The permit area is also shown on Drawing No. 1.6-3. Most of the road is within the permit area and a "cherry-stem" has been drawn to include a portion of the road extending outwards from the permit area.

Findings:

Information provided with the submittal is accurate with the exception of a deficiency written under R645-301-230.

REPORTING OF TECHNICAL DATA

Regulatory Reference: 30 CFR 777.13; R645-301-130.

Analysis:

Soils analyses and field report of the James Canyon area were conducted after disturbance on the topsoil stored and on the berms along the roadways. Mr. Daniel Larsen, Soil Scientist with Environmental Industrial Services of Helper, Utah, conducted a soil survey in September 2001. Inter-Mountain Laboratories of Sheridan, WY analyzed the soil samples.

Findings:

The information meets the requirements of the Regulations.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783. et.al.

GENERAL

Regulatory Reference: 30 CFR 783.12; R645-301-411, -301-521, -301-721.

Analysis:

During construction of Electric Lake, the James Canyon County road was constructed. The road was reclaimed in 1972 and included construction of water bars every one hundred fifty feet (page 2-63b and 2-120i). The road was vegetated with grasses, rabbit brush and sagebrush. According to the soils report in Appendix A2, the route of the buried pipeline in James Canyon is mostly southern exposure from 9,600 feet down to about 8,560 feet elevation.

The site was redisturbed during August of 2001 for construction of the drill site, burial of power cable to the drill site and burial of water pipeline from the drill site to Electric Lake. The power cable originates from the Questar (gas) property at the head of Boardinghouse Canyon and continues along the Monument Peak Road to the head of James Canyon.

Vegetation and soils analysis of the site were conducted after the disturbance to evaluate the condition of the adjacent land and make presumptions about the disturbed area. Both vegetation and soils reports are in Appendix A2.

Findings:

The information provided is adequate for the General Environmental Resources Information section of the Regulations.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Analysis:

In a telephone conversation on October 5, 2001, with Gary Taylor, Environmental Coordinator for the Skyline Mine, I verified that for the stretch of Forest Service road outside of the mine's disturbed area boundary and to the well site:

1. There was no topsoil.
2. There was no topsoil salvage.
3. There was no topsoil redistribution.

Consequently, soil survey information provided in Appendix 2 of Chapter 2 is for the half-mile section of reclaimed road in James Canyon where the 16-inch poly pipe has been buried and for the well site. Mr. Dan Larsen, Soil Scientist, with EIS Environmental and Engineering Consultants, Helper, Utah, September 2001, has provided a soil description and field notes for the well site location, and brief notes for the rest of the reclaimed road, supported by hand-dug excavations. Laboratory analysis was conducted on five composite samples collected from soil representing each of the identified soil types and the stockpiled topsoil and subsoil at the well site.

The survey indicates that soils supporting the Aspen/Grass/Forb vegetation type (A) had a topsoil layer that was 16 – 24 inches in depth, very dark brown color and a texture of sandy loam or loam with a granular structure. The subsoil had 15 – 30 percent rock fragments in the fravel and cobble size and was brown to yellowish brown in color, 20 – 40 inches thick. Below this, a dark grayish-brown to brown clay loam soil with blocky structure was encountered. These are Pachic Palecryolls and Pachic Haplocryolls.

Soils supporting sagebrush (S) were found at the lower elevations and were generally loam soils with a brown topsoil horizon of 6 – 12 inches in thickness. The soils were formed from sandstone and shale with deeper subsoils (to forty inches) forming in the colluvial deposits. Generally, these soils are more shallow than the soils that support aspen growth.

An inclusion of calcareous tufa (T) was identified for a 100 feet along the pipeline route, near a spring, approximately ¼ southwest of the drill pad. The Tufa soils had the following characteristics: a 7 – 12 inch dark brown surface layer overlying white subsoil grading to rock at about 20 – 24 inches.

Findings:

The information provided is adequate for the Environmental Soil Resources Information section of the Regulations.

ALLUVIAL VALLEY FLOORS

Regulatory Reference: 30 CFR 785.19; 30 CFR 822; R645-302-320.

Analysis:

Alluvial valley floor determination

The Division's March 1984 Technical Analysis written for the Valley Camp Mine (ACT/007/001) provides a summation of the history of the alluvial valley floor determination. In 1984, the Division stated that Whisky Canyon and Pleasant Valley above the Utah No. 2 facilities (White Oak Load Out) were observed by the Office of Surface Mining in August of 1983 to be too narrow for flood irrigation or subirrigation agricultural activities. Also in 1984, it was noted that the pastures below the Utah No. 2 Mine (White Oak Loadout) are flood irrigated and the grasses on the valley bottom may be subirrigated. Map R645-301-411.100 Premining Land Use Map shows the land use down stream of the Belina Mine Complex. Shown on this map, are two pastures along Mud Creek in Pleasant valley below the Utah No. 2 Mine (White Oak Load Out).

Skyline Mine discharge waters empty into Eccles Creek and then into Mud Creek. Mud Creek flows through Pleasant Valley, an alluvial valley floor. Section 23, Volume 5 relates the comments of Ray Jensen, Range Specialist for the Bureau of Land Management (BLM). Mr. Jensen describes the area as sub-irrigated, grazed land with an historical yield of 4000-6000 pounds/acre. The predominant vegetation type is grass.

Cost of leasing the land from the BLM ranged from $10 to $20/acre/month. A table in Section 23 Volume 5 shows a total of 219 acres of sub-irrigated, grazed land. The four landowners are shown on Drawing 1.6-1 Surface Ownership.

In the "Response to Technical Analysis Deficiencies" accompanying this submittal (page 4), the Permittee indicates that Observation of the grazed property in July revealed 20 cattle and 4 horses on the 78 acre Rodakovich parcel; 65 cattle and 2 horses on the 45 acre Jensen parcel; and 25 cattle on the 75 acre Utahna Pace Jones parcel. Inquiries were not made directly of the surface owners.

The Permittee indicates that should grazing be impeded due to high flows along Mud Creek, the BLM has other grazing available for lease in the vicinity of Pleasant Valley.

No permit or permit change application for coal mining and reclamation operations in Utah will be approved (R645-302-323.100) unless the Division finds in writing, on the basis of the information set forth in the application that (R645-302-232.120) the proposed operations would not materially damage the quantity and quality of water in surface and underground water systems that supply those alluvial valley floors which are outside the permit area of an existing or proposed coal mining and reclamation operation (R645-302-323.122). The significance of the impact to farming will be based upon loss of production and income (R645-302-323.200). Material damage to the quality of waters will be determined by concentration of total dissolved solids (R645-302-323.310) and reduction in the area available to agriculture as a result of flooding or increased saturation of the root zone (R645-302-323.324).

Coal mining may interrupt farming on an alluvial valley floor where the acreage

impacted is so small as to be negligible to the farm's total agricultural production (R645-302-324.222)

The Permittee has deferred response to the deficiencies written in April 2002, until completion of the EarthFax report. The Information from the EarthFax report must be included in the submittal for review by the Division. The deficiencies to be addressed by the EarthFax report are reprinted below, exactly as before on April 3, 2002.

Findings:

In accordance with R645-302-321.300, the Division finds that Eccles Creek does not lie within the Alluvial Valley Floor, but that Mud Creek does. Furthermore, the Division finds as per R645-302-322.100 that the sustained high flows in Mud Creek most probably affects the alluvial valley floor downstream of the White Oak Loadout.

Consequently this application must provide the information required under R645-301-322, Application Contents for Operations Affecting Designated Alluvial Valley Floors, such that the Division will be able to make the findings required by R645-302-323.122, a determination that the Skyline mining operation will not interrupt, discontinue or preclude farming in Pleasant Valley downstream of the mining activity and outside of the permit area or that the impact is negligible to a farm's total agricultural production (R645-302-324.222).

Therefore, the Division requests the following in accordance with:

R645-301-322.360, A map showing farm fields in Pleasant Valley that could be affected by the high flows in Mud Creek, including information on ownership, size of the operation, the crop grown, the historical yield of that crop and the value of the crop, relationship of the acreage in Pleasant Valley to the total farm acreage as defined by R645-302-323.400.

R645-302-322.421, A description of the characteristics of Mud Creek including roughness, slope and vegetation of the channel, and the physical and chemical properties of the subsoil that will endure sustained high water flows.

R645-302-322.431, The geometry and physical character of Pleasant Valley, expressed in terms of the longitudinal profile and slope of the Valley and the channel, the sinuosity of the channel, the cross-section, slopes and proportions of the channels, flood plains and low terraces, the nature and stability of the stream banks and the vegetation established in the channels and along the stream banks and flood plains.

R645-302-322.432, The historical nature of surface flows of Mud Creek as shown by the frequency and duration of flows of representative magnitude including low flows and floods.

R645-302-433, contributions to base flow in Mud Creek from the subsurface.

R645-302-324.300, **(1)** A monitoring plan for stream bank erosion control in Mud Creek and 2) Monitoring of the flows in Mud Creek for quantity and quality and at adequate frequency to determine seasonal trends that could affect farming in Pleasant Valley.

OPERATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

Drill Site

Drawing #1.6-3 shows the site location. Plate #3.4-1 shows the location of the well site and topsoil storage pile along the road.

Development of the well site is described on page 3-63 (a). The site includes a drill pad (100' X 200'), sediment pond, undisturbed drainage ditch and 18 inch culvert. Two water wells were drilled, JC-1 and JC-2. Topsoil was removed to a depth of 6.5 inches (on the average) from the drill pad area (page 2-120 (f).

The soil survey (Appendix 2) reports that in the vicinity of the well site, the topsoil is between 16 and 24 inches in depth (Aspen soil). For the 20,000 square foot area of the well site, there would have been approximately 30,000 to 40,000 cubic feet of available topsoil or approximately 1,000 cubic yards of topsoil salvaged and stored on site.

The plan reports that 100 yards of topsoil is stored at the staging area in a pile that is 50'x 11'x 5'deep (page 2-120 f). Given the fact that 6.5 inches of topsoil was salvaged from the 20,000 sq ft area shown on Plate 3.4-1, there should be a pile that contains 400 cu yds of topsoil. By the Division's calculations, there was an average of 0.12 inches removed from the 20,000 sq ft drill site to create a pile that contains 100 cu yds. Indeed, the plan describes the replacement of 1.65 inches of salvaged topsoil to the site (Section 4-20, page 4-30 (a)).

The Permittee explains that the reduction in material is due to the previous disturbance of the site (pp 2-120 (f). The Division's opinion is that the available topsoil material was squandered during construction of the site.

Pipeline

The 16-inch polypipe is buried for a distance of about a half mile along the James Canyon road from the drill site to the dewatering site at Electric Lake in Section 35, T.13S, R6E.

For polypipe burial, the plan indicates that the top few inches of soil on the flat portions of the road (page 2-120 j) were salvaged and the subsoil was removed to a depth of three feet and replaced. A contradictory statement is found in the plan on page 4-30 (b) where a statement is made that "no topsoil existed therefore none was removed during construction [of the pipeline]."

Power Cable

The power cable is buried in the road in James Canyon in the SW1/4 SE1/4 of Section 25, T13 South R6 East. The present configuration of the road is 19 feet wide with ditches on both sides. The ditches have 1:1 side slopes. There is four inches of road base on the roads (IB01I-1). The power line was buried 30 – 40 inches deep, in an eight inch wide trench (page 2-120 j). Power cable was laid in the bottom of the trench and the trench was backfilled.

The buried power line runs from the power pole for a distance of 4,400 feet along the James Canyon road (page 3-63a)) to the well site (a total distance of approximately 1.2 miles). DWG 1.6-3 indicates that a portion of the James Canyon road was not initially in the permit area, but was incorporated into the permit area as a result of this activity.

Stipulations were placed on the power cable installation and burial by the U.S. Forest Service in a letter to Mary Ann Wright of the Division, dated October 15, 2001, signed by Elaine Zieroth, Forest Supervisor. For the portion of the power cable burial falling within the mine permit boundary, the following soils issues were stipulated by the Forest Service:

- Typical details showing the depth of burial and trench relative to the road
- Plan for protecting the topsoil berm an the outer edge of the road and
- Seeding of the topsoil berm and cutslope of the road prior to winter.

The submittal describes the trench on pages 3-28 (b) through 3-28 (e). Page 4-30 states, "soil was removed from the road surface and pushed to the side for use as a temporary berm." The topsoil was stored in a berm approximately 2 feet four inches high (as shown in cross-sections on pages 3-63 c –f) along the outslope of the road. As described on page 2-120 (f) and 2-63 (b), the outslope of the road was protected from erosion by reseeding with the seed mix shown on page 2-63 (e). During reclamation of the road (page 4.30a) the berm will become the topsoil, so protection during operations is quite critical.

Findings:

Information provided with the submittal is not adequate for the purposes of Operations Topsoil and Subsoil handling requirements of the Regulations. Prior to approval, the Permittee

must provide the following information in accordance with:

R645-301-230, 1) Correct the discrepancy between statements made on pages 4-30(b) and 2-120 (j) concerning the amount of topsoil removed from the pipeline disturbance. **2)** The plan reports an average of 6.5 inches salvaged from the 20,000 sq ft drill pad on page 2-120 (f). This should have created a pile containing 400 cu yds, but the plan reports a 100 cu yd of topsoil stored. Correct the statement on page 2-120 (f) to reflect that an average of one inch of topsoil was salvaged from the site. Provide an explanation for the limited amount of topsoil stored for reclamation of the site and develop a reclamation plan to reduce compaction and enhance the drill site pad with organic matter amendments since very little topsoil was salvaged from the site.

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:

Impounding structures

A sediment pond was constructed at the drill site. The pond served to capture the drilling fluids produced during well development. Before reclamation of the site, the sediments in the pond will be sampled and analyzed using methods outlined on Table 6 of the Division's Approved Soil and Overburden Handling Guidelines, dated 1988. Table 6 includes the following parameters: pH; Electrical Conductivity; Saturation Percentage; Particle Size Analysis; Soluble calcium, magnesium, and sodium; Sodium Adsorption Ratio; Selenium; Total Nitrogen; Nitrate-Nitrogen; Boron; Maximum Acid Potential; Neutralization Potential; Organic Carbon; Exchangeable Sodium; Available Water Capacity; and Rock Fragments.

Findings:

Information provided with the submittal is adequate for the purposes of Operations Spoil and Waste Materials handling requirements of the Regulations.

RECLAMATION PLAN

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333,

-301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

As per the (undated) Addition to the U.S. Department of Agriculture Forest Service Special Use Permit dated October 21, 1976, the road surface from well site to Electric Lake was restored to its pre-trench condition. During final reclamation, the trench will be excavated for a distance of 100 feet (at both ends) and the pipe will be plugged at both ends with cement. Soil excavated from the trench will be replaced so that the surface soil is on top again.[1]

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

Redistribution

The reclamation plan for the James Canyon Road and Drill Pad is outlined on page 4-30a:

- The topsoil (berm) will be "set aside."
- The gravel road surface will be pushed to the inside of the road cut.
- The road outslope of the road will be pulled up onto the road.

The average depth of topsoil and subsoil replacement is as follows (page 4-30 (a) & (b):

Drill pad = 1/65 inches

Pipeline = 0

Powerline = use road berm

Staging area (topsoil pile location) = 2.6 inches

There is very little topsoil being replaced at the site, although the area was rich with topsoil prior to disturbance (see Appendix A-2). The Permittee must provide for no compaction in the upper four feet of the root zone and for some organic amendment to the site to replace the squandered topsoil (see deficiency under R645-301-230, #2)

Findings:

Information provided with the submittal is not adequate for the purposes of Operations Topsoil and Subsoil handling requirements of the Regulations. Prior to approval, the Permittee must

provide the following information in accordance with:

R645-301-240, The plan must indicate that the top four feet of reclaim surface will not be compacted.

STABILIZATION OF SURFACE AREAS

Regulatory Reference: 30 CFR Sec. 817.95; R645-301-244.

Analysis:

Page 2-120 (j) states that the James Canyon road was roughened from the drill site down to Electric Lake with gouges made by a track hoe. Water bars were re-constructed and silt fences were positioned at the outflow of each water bar (page 3-63 b). According to the Permittee, the road was re-seeded by September 14, 2001 (page 4-30 (b). However, the seed mixture shown on page 2-63(e) and identified on page 2-63 (b) as being used at the site was not developed until October 15, 2001, according to Division documents.

The James Canyon road disturbance is considered ASCA #34 and 35 (page 3-72 C). Silt fences will be maintained three times a year until vegetation is adequate to control erosion (page 3-64).

Findings:

Information provided with the submittal is not adequate for the purposes of Reclamation Plan Stabilization requirements of the Regulations. Another reviewer has commented on the inappropriate use of water bars and the Division's preference for gouging. Prior to approval, the Permittee must provide the following information in accordance with:

R645-301-244, The Plan indicates on page 2-63(b) that reclamation work was completed by September 14, 2001. The seed mix was not developed for the site until October 15, 2001. If the seeding was accomplished by September 14, 2001, please indicate what seed was used in reclamation of the site. If the seed mix described on page 2-63(e) was used, please indicate the correct date of seeding.

RECOMMENDATION:

Further information is requested prior to incorporating the submittal into the MRP.