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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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March 5, 2000

Kenneth E. May, General Manager
Canyon Fuel Company, LLC
SUFCO Mine
397 South 8th West
Salina, Utah 84564

Re: Conditional Approval of the Link Canyon Substation #2, Canyon Fuel Company, LLC, SUFCO Mine, ACT/041/002-AM99G, Outgoing File

Dear Mr. May:

The Division has completed our review of your application to permit the Link Canyon Substation #2 pad. We have determined that you have met all of the requirements and your application is hereby conditionally approved contingent upon consent from the U. S. Forest Service and upon our receipt of the requisite number of clean copies of the submittal. Our Technical Analysis of the project is enclosed for your records.

Please submit 8 clean copies of the submittal, (without redline/strikeout), paginated correctly for insertion to the Mining and Reclamation Plan.

If you have any questions please call.

Sincerely,

A handwritten signature in black ink that reads "Daron R. Haddock".

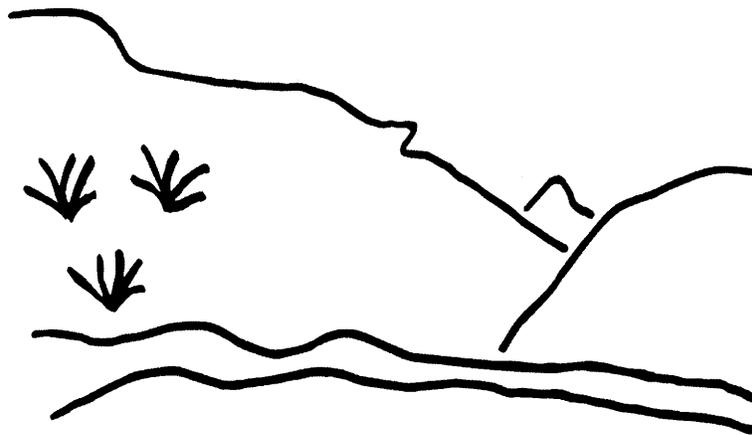
Daron R. Haddock
Permit Supervisor

sm

cc: Joe Wilcox, OSM
Richard Manus, BLM
Jeff Walters, USFS, Price
Rob Mrowka, USFS, Richardfield
Mark Page, Water Rights
Dave Ariotti, DEQ
Derris Jones, Wildlife Resources
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State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

SUFCO
Link Canyon Substation # 2
ACT/041/002 - AM99G
Technical Analysis
March 2, 2000

TABLE OF CONTENTS

INTRODUCTION	1
ENVIRONMENTAL RESOURCE INFORMATION	2
HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION	2
VEGETATION RESOURCE INFORMATION	2
FISH AND WILDLIFE RESOURCE INFORMATION	3
Wildlife Information	3
Threatened or Endangered Species	3
SOILS RESOURCE INFORMATION	4
Prime Farmland Investigation	4
Soil Survey Information	4
Soil Characterization	6
Substitute Topsoil	7
LAND-USE RESOURCE INFORMATION	8
CLIMATOLOGICAL RESOURCE INFORMATION	8
ALLUVIAL VALLEY FLOORS	9
HYDROLOGIC RESOURCE INFORMATION	9
MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION	10
Archeological Site Maps	10
Vegetation Reference Area Maps	10
OPERATION PLAN	11
MINING OPERATIONS AND FACILITIES	11
Management of Mine Openings	11
PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES	11
AIR POLLUTION CONTROL PLAN	12
FISH AND WILDLIFE INFORMATION	12
TOPSOIL AND SUBSOIL	13
Topsoil and Subsoil Removal	13
Topsoil Substitutes and Supplements	14
Topsoil Storage	15
INTERIM REVEGETATION	16
ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES	16
Transportation Facilities	16
Road Specifications	16
Maintenance Plan	16
Commitment to Repair Catastrophic Damage	17
Geotechnical Analysis	17
HYDROLOGIC INFORMATION	17
SUPPORT FACILITIES AND UTILITY INSTALLATIONS	18
MAPS, PLANS, CROSS SECTIONS OF MINING OPERATIONS	19
Mining Facilities Maps	19

TABLE OF CONTENTS

RECLAMATION PLAN	20
POSTMINING LAND USES	20
BACKFILLING AND GRADING	20
Backfilling Plan	20
MINE OPENINGS	21
Final Abandonment of Mine Openings and Disposal Areas	21
TOPSOIL AND SUBSOIL	21
Soil Redistribution	21
Soil Stabilization	22
ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES	22
Roads	22
HYDROLOGIC INFORMATION	23
REVEGETATION	24

INTRODUCTION

INTRODUCTION

The permitting of a new electrical substation in Link Canyon by the SUFCO Mine of Canyon Fuel Company has a history going back to January of 1998. In anticipation of establishing the necessary electrical specifications to implement longwall mining in the Pines Tract lease, the applicant submitted the initial application (ACT/041/002-98A) on January 22, 1998. This application was withdrawn.

On May 20, 1998, a second submittal was received, and the Division determined this would be a significant revision. After various interagency reviews and deficiency responses, the Division approved revision 98-1 on January 11, 1999, and Canyon Fuel subsequently built the substation.

During the underground drilling activities permitted through 98-1, high temperature and pressure zones were encountered, as well as material voids (all due to coal burn) in the upper Hiawatha coal seam. In an attempt to drill in the interburden between the upper and lower Hiawatha coal seams, similarly difficult geologic conditions were encountered. The permittee decided to reclaim the holes and seek a contingency plan.

On October 12, 1999, representatives from the Manti-LaSal National Forest and the Division visited the area where the planned contingency holes would breakout on the surface (.4 miles up canyon from the first substation) and agreed to certain stipulations in order to keep the drilling contractor on site and the project progressing.

The contingency plan received joint interagency approval to proceed. In order to comply with the stipulated permitting requirement mandated within the contingency plan's approval, the applicant submitted ACT/041/002-AM99G, Link Canyon Substation #2, to the UDNR/OGM on December 6, 1999. The Division responded with a technical analysis dated January 19, 2000, and Canyon Fuel responded to the deficiencies in the technical analysis on February 7, 2000.

The interdisciplinary review by the Division for both the December 6, 1999, and February 7, 2000, submittals has been completed, and this document is a compilation of those reviews.

ENVIRONMENTAL RESOURCE INFORMATION

ENVIRONMENTAL RESOURCE INFORMATION

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.12; R645-301-411.

Analysis:

The current mining and reclamation plan includes a copy of a cultural resources survey report done for the previous substation but not for the current proposal. However, the report in the plan references a separate study done by Everett Bassett in 1996 for the State Abandoned Mine Land Reclamation program. This study surveyed the Link Canyon Mine, and the State Historic Preservation Officer (SHPO) concurred with the consultant's recommendation that it was not eligible for listing in the National Register of Historic Places.

The Division requested comments/concurrence from SHPO but has not received them; however, because the Abandoned Mine Land Reclamation Program previously received a clearance for the same area, there should be no concern with disturbing the area.

Findings:

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

VEGETATION RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.19; R645-301-320.

Analysis:

The application contains no new vegetation resource information. The area in Link Canyon that would be disturbed has a pinyon/juniper/mountain mahogany community similar to vegetation near the main facilities in East Spring Canyon. Considering the size of the proposed disturbance, the existing information is considered adequate.

Findings:

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

ENVIRONMENTAL RESOURCE INFORMATION

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21; R645-301-322.

Analysis:

Wildlife Information

The application contains a copy of Plate 3-3 which has been updated through the 1999 raptor survey. Appendix 3-4 contains a copy of data sheets from Wildlife Resources showing the status of each nest in the 1999 survey, and the text has been updated to discuss the history of the raptor nests in Link Canyon. Of the three nests near the proposed substation, two were not found in the 1999 survey and one was inactive. One of the nests, #31, was probably improperly shown on a previous version of Plate 3-3, and it was deleted.

According to information in the existing mining and reclamation plan, Link Canyon contains high priority deer and elk winter range.

The current mining and reclamation plan includes a survey for bats done in Link and Box Canyons and in some adjacent areas. Spotted bats were not heard in Link Canyon, but two species of *Myotis* were mist netted. There may have been a maternal colony of *Myotis lucifugus* under a bridge in the lower part of Link Canyon. Spotted bats and Townsend's big eared bats are classified by the Forest Service as sensitive species.

The survey was done in early October 1997. This is a transitional time for most bat species when they could still be foraging or when they could be starting to hibernate. Since bats were mist-netted and recorded with the ANABAT, it is assumed most were still active.

The bat study did not consider hibernacula. To do so would necessitate a winter survey. However, because of the small size of the disturbance, it is unlikely any would be affected, and additional bat survey work is not required for this project.

Threatened or Endangered Species

According to information in the existing mining and reclamation plan, there are no known occurrences of threatened or endangered species in the permit area.

Findings:

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

ENVIRONMENTAL RESOURCE INFORMATION

SOILS RESOURCE INFORMATION

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

Analysis:

Chapter 2, Soils, has been amended to allow construction of a new proposed substation pad in Link Canyon. The original MRP revision contained provisions for a substation pad and borehole breakout to allow power to be taken into the mine. Permission was granted on January 11, 1999 to construct the substation pad. During the 1999 summer, SUFCO constructed the Substation pad as proposed; however, because of an active burn within the coal seam, the borehole breakout was not possible in the area where SUFCO constructed the substation pad.

The current amendment received on December 6, 1999, contains a proposal to construct a new pad 0.4 miles further up the canyon from the present pad in. On October 15, 1999, SUFCO received approval to move the location of the punch out to the new site. The new punch out site is adjacent to the Link Canyon Road and is located at the intersection of the old tramway bench and the Link Canyon Road.. SUFCO proposes to extend the power line the additional 0.4 miles up the canyon and construct a new substation pad adjacent to the current punch out location.

This Analysis section discusses soil resource information as follows:

- Prime Farmland Investigation
- Soil Survey Information
- Soil Characterization

Prime Farmland Investigation

Appendix 2-1 contains a Prime Farmland determinations for the Quitchupah Lease Tract as performed by the Natural Resource Conservation Service. The Quitchupah Lease Tract includes Link Canyon; therefore, no Prime Farmland exists in Link Canyon.

Soil Survey Information

An Order-2 soil survey was completed for the proposed Link Canyon breakout and substation disturbed area and is included in Appendix 2-2. The soils for this area are classified as Strych Pathead Podo families Rockland complex with 30 to 80 percent slopes. The complex contains 30 percent Strych soils, 30 percent Pathead soils, 15 percent Podo soils, 15 percent Rubbleland and 10 percent rock outcrops and finer textured soils. Strych soils are 47 inches deep with rooting depths from 40 to 60 inches. Pathead soils are 60 inches deep with rooting depths 30 to 60 inches. Podo soils are thin at 11 inches deep with rooting depths 20 inches or less. Map unit descriptions are given with an Order-2 soils survey soils map.

ENVIRONMENTAL RESOURCE INFORMATION

Revised: March 2, 2000

Link Canyon Substation-1

A soil survey was conducted specifically for substation pad number 1 and is included in Appendix 2-6. This soil survey was completed on April 8, 1998 and includes two soil pits with profile descriptions. The investigation was completed by Chris Hansen and Mike Davis of Canyon Fuel Company, LLC and Robert Davidson of the Utah Division of Oil, Gas and Mining. Figure 1 illustrates the Link Canyon soil pit locations (LC-1 and LC-2) for the substation pad area. Both soil pits were hand excavated to 20 inches using a pick and shovel. For this soil survey, the soils were not classified and no soils map for the substation area was generated. From the soils descriptions, the soils from LC-1 and LC-2 appear to be either from the Pathead or Podo family inclusions. However, the pit descriptions supply adequate information for determining the quality and quantity of soil available for salvage.

Link Canyon Substation-2

An Order-1 soil survey was conducted in November 1999 for the Link Canyon Substation number 2 and is included in Appendix 2-6. The survey describes three soil types as follows:

Soil Family	Soil Taxonomic Class	Map Unit
Pathead	Loamy-skeletal, mixed (calcareous), frigid Typic Ustorthents	A, E
Podo	Loamy, mixed (calcareous), frigid Lithic Ustorthents	B
Cabba	Loamy, mixed (calcareous), frigid, shallow Typic Ustorthents	B, C, E

The Order-1 soils map, Soils Map A, is included at the end of the soil survey in Appendix 2-6. Map A shows five different mapping units, A through F, overlain with the proposed substation pad area. The mapping units are described as follows:

ENVIRONMENTAL RESOURCE INFORMATION

Mapping Unit	Map Unit Description
A	Moderately deep, 20" to 40" of soil over shale bedrock. Colluvial and alluvial material derived from sandstone and shale. Thin, dark brown topsoil layer over brown colored subsoils. Pathead Family. 35% to 45% slopes
B	Shallow and very shallow soils over shale, sandstone and some coal. Gravelly to stony loam derived from colluvial and residual materials. Cabba and Podo Families. 40% to 45% slopes.
C	Very shallow soils over shale. Red in color and less stones. Weakly developed and calcareous. Cabba Family. 40% slopes.
D	Disturbed area. Steep, rocky, shallow to moderately deep loamy soils up to 20" thick over sandstone and shale bedrock. Soils are composed of road cut and rocky side cast materials from old tramway. Bedrock exposed in places. 70% to 90% slopes.
E	Surface boulders, 8" to 20" of soil over shale. Pathead and Cabba Families.
F	Disturbed area. Includes old tramway and recent punch out activities. Very shallow to shallow soils composed of mixed sandstone and shale materials.

Soil Characterization

The Mine Reclamation Plan Order-2, Appendix 2-2, soil survey provides map unit descriptors for soil map unit 20, Strych-Pathead-Podo families-Rubbleland complex. Soil family descriptions identify taxonomic classifications, parent material, landscape position, slope, vegetation community, profile descriptions, rooting depths, hydrologic information, plus soil erodibility and hazard.

Link Canyon Substation-1

For the Substation number 1 soil survey, Appendix 2-6, the soil horizons at each sampling location were sampled and characterized according to the State of Utah Division of Oil, Gas and Mining (DOGM) guidelines for topsoil and overburden¹. Sampled parameters included: soil texture; pH; organic matter percent; saturation percent; electrical conductivity; CaCO₃; soluble potassium, magnesium, calcium and sodium; sodium absorption ratio, and extractable selenium and boron. Soils in both pits (LC-1 and LC-2) have very similar characteristics, with all parameters in the DOGM acceptable range. Soil profile descriptions are provided and identify the volume and type of rock on the surface and within the soil profile. The A horizon contains 10% rock, principally pebbles. The C1 horizons contain 40 to 45% rock, principally pebbles and cobbles. The C2 horizon for LC-1 contains 50% rock fragments, predominantly cobbles. The surface has occasional boulders with a veneer of pebbles and cobbles. Approximately 20 inches of soil from the A and C horizons is available for

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.

ENVIRONMENTAL RESOURCE INFORMATION

Revised: March 2, 2000

salvage.

Link Canyon Substation-2

Substation number 2 Order-1 soil survey, Appendix 2-6, includes three soil pits, LCS2-1, LCS2-2 and LCS2-3. Field profile descriptions sheets are provided for each of the pits, including a hand drawn field map showing the location of each soil pit. Pit LCS2-1 is identified as Pathead Family and pit LCS2-3 is identified as Cabba Family. Field profile descriptions include horizon identification, depth, color, texture, structure, consistence, soil reaction to acid, boundary description, % rock fragments, root distribution and pores. In addition, each description sheet includes location, vegetation, parent material, physiography, elevation, slope, aspect, drainage, and surface rock description. Sampled soil horizons were sent to a soils laboratory for analyses.

Laboratory results are discussed in Appendix 2-6, which also includes copies of the lab data sheets. Seven soil samples were obtained from three soil pits as discussed in the EIS report. Analyses indicate that the majority of the can be used as substitute topsoil and growth media. Exceptions include a portion of the LCS2-1 soil profile from 27 to 39 inches which contains elevated levels of selenium (1.4 mg/kg). However, soils will not be salvaged from this depth since salvage calculations are based on an average depth of 24 inches from Soil Unit A.

Analysis of soils from soil pit LCS2-1 indicate that soils within the upper 11-inches of the soil profile have an average water holding capacity of 4.1 % to 4.4 %, less than the 5 % recommended as suitable substitute soil by the Division guidelines. However, this average will be improved as soils are mixed with other soils salvaged at the site that have higher water holding capacity (6 to 10).

Substitute Topsoil

Link Canyon Substation-2

The area where Link Canyon Substation pad #2 will be located was disturbed prior to implementation of SMCRA. As a result, no soil salvage was performed during construction of the old trolley road. According to the Order-1 soil survey, Soil Unit D is composed of road cut and rocky side cast material from the old trolley road, with mixed rock and loamy soil materials up to about 20 inches thick and bedrock exposed in places. Since native topsoil is scarce and salvage of native soils provides very limited topsoil resources available for soil redistribution, these side cast soil materials need to be sampled and characterized for suitability as substitute topsoil.

A soil pit (LCS2-4) was excavated in Soil Unit D on January 28, 2000. The soil pit was logged by Chris Hansen, Environmental Coordinator for Canyon Fuel Company, and Robert Davidson, Reclamation Specialist with the Utah Division of Oil, Gas, and Mining. Two soils were identified, sampled and shipped to IML in Sheridan Wyoming for laboratory analysis. Soil Unit D is described as side cast and cut material from Soil Unit B. A small volume of additional soil has been cast off the side of the trolley road as the result of recent drilling pad construction activities. Since the trolley road side cast material primarily originates from Soil Unit B, SUFCO assumes that these soil materials will be

ENVIRONMENTAL RESOURCE INFORMATION

suitable for reclamation. SUFCO commits that for any reason, the analysis results of the soils indicate they are not suitable for reclamation, they will take steps to remedy the situation.

Two horizons of disturbed soils were identified - overcast soils from the original trolley road construction and overcast soils from recent construction activities. The trolley road overcast rests directly on weathered shale as identified in the soils pit. The soil appears to be four feet deep as measured perpendicularly to the slope. Soils thin to the north toward the intersection of the trolley road and the current Manti-LaSal National Forest road, and to the east toward the Forest road. Soil pit log LCS2-4 is included at the back of Appendix 2-6.

Findings:

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

LAND-USE RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.22; R645-301-411.

Analysis:

The mining and reclamation plan contains land use information about the existing mine, and approved amendment for the Link Canyon No. 1 substation has information about the Forest Service classification of the Link Canyon area. The proposed Link Canyon facilities appear to be in compliance with Forest Service management plans.

Findings:

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

CLIMATOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.18; R645-301-724.

Analysis:

The applicant addresses climatological resource information in the Chapter 7-23 of the MRP. Data is submitted In Appendix 7-5.

ENVIRONMENTAL RESOURCE INFORMATION

Findings:

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

ALLUVIAL VALLEY FLOORS

Regulatory Reference: 30 CFR Sec. 822; R645-302-324.

Analysis:

There are no perennial flows in Link Canyon. A determination has been made that no Alluvial Valley Floors exist in the Link Canyon drainage.

Findings:

The applicant has supplied information to address this section.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

Analysis:

There are no standing or flowing surface water resources in the immediate vicinity of the immediate vicinity of Substation #2 that needs to be monitored or will be impacted. The channel in Link Canyon is ephemeral.

Findings:

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

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Archeological Site Maps

Maps showing the locations of archaeological sites are in the confidential folder of the current mining and reclamation plan. One archaeological survey report is in the Abandoned Mine Land Reclamation program file for the Link Canyon Mine.

Vegetation Reference Area Maps

The current mining and reclamation plan contains a map showing the revegetation reference area.

Findings:

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

OPERATION PLAN

OPERATION PLAN**MINING OPERATIONS AND FACILITIES**

Regulatory Reference: 30 CFR Sec. 784.2, 784.11; R645-301-231, -301-526, -301-528.

Analysis:**Management of Mine Openings**

The connection of the underground works to the #2 substation location will be done by drilling four two inch boreholes from in-Mine to the surface, breaking out just above the tramway bench mentioned earlier. As of the writing of this technical analysis, the communication borehole has been completed and cased. The three remaining holes (high voltage power conductor cable holes) are being drilled, and have experienced difficulties similar to those encountered at the original substation location.

The installation of the electrical substation 0.4 miles up-canyon from the original location will not utilize a portal breakout. There will be no mine opening to manage or regulate.

The Link Canyon substation and power line will create an additional 0.21 acres of disturbance.

Findings:

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

PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES

Regulatory Reference: 30 CFR Sec. 784.17; R645-301-411.

Analysis:

The area contains no known significant cultural resources. The Division requested comments or concurrence from the Division of State History but has not received them. Because the Abandoned Mine Land Reclamation Program previously received a clearance for the same area, however, there should be no concern with disturbing the area.

Findings:

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

OPERATION PLAN

AIR POLLUTION CONTROL PLAN

Regulatory Reference: 30 CFR Sec. 784.26, 817.95; R645-301-244.

Analysis:

The applicant proposes no changes that should affect the Air Quality Approval Order.

Findings:

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

FISH AND WILDLIFE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

Analysis:

Golden eagles are sometimes sensitive to human disturbance during the nesting period, and the Fish and Wildlife Service recommends a one-half mile buffer zone be maintained from January 1 to August 31; however, there is some latitude for local conditions. According to the application, construction was begun in October 1999 with drilling for power cables. Construction of the substation should be started right after the drilling and power cables are completed in February 2000. Because construction activity began before the nesting season started and should continue into the nesting season without interruption, any birds wanting to use the old nests in the area would be able to choose if they can tolerate the disturbance. There would be no disturbance starting in the nesting season that would cause them to abandon a nest. The nests will be monitored to see if they are being used. After the facilities are in place, very little mining activity will occur in the area with only emergency maintenance and monthly electrical inspections required.

These commitments are adequate. Because major activity at the site is not expected to continue past the construction period, and because the nests are not extremely close to the proposed substation, there should be few long-term effects.

Link Canyon also contains high priority deer and elk winter range, and it is preferred that the area not be disturbed from November 1 through May 15. The current plan says surface activities will be curtailed from November 1 through April 1, but it does not say construction will not be done during this period. However, because high priority habitat does not fall within the definition of "habitat of unusually high value," the Division cannot make this a requirement. The applicant should avoid visiting the site as much as possible during the winter, and it would be best to avoid disturbance during the morning and evening hours.

OPERATION PLAN

Revised: March 2, 2000

Findings:

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

TOPSOIL AND SUBSOIL

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

Analysis:

The Analysis section discusses operation information for the proposed, substation and power line borehole in Link Canyon as follows:

- Topsoil and Subsoil Removal
- Topsoil Substitutes and Supplements
- Topsoil Storage

Topsoil and Subsoil Removal*Link Canyon Substation-1*

For the Link Canyon Substation 1 disturbed area, the A and C horizons will be removed together and stored on the pad out slope. The A horizon is between 6 to 8 inches deep with the C horizons extending down to 20 inches. Therefore, topsoil and subsoil will be salvaged together to an average depth of at least 19 inches across the site during construction of the Substation pad and access road. In-situ rock, cobbles and boulders, will be left in and on the surface of the side cast soils as resource protection.

Although the projected disturbed area is 0.28 acres, the actual projected area of soil disturbance is 0.08 acres. Based on a 20 inch topsoil salvage depth, 224 cubic yards of topsoil will be salvaged from the 0.08 acres. As shown on Plate 5-2D, the entire disturbed area is 0.28 acres, and the actual surface disturbance area for cut and fill (ASCAs 1,2, & 3) is 0.18 acres. The 0.08 acres is based on actual cut-slope area with the remainder 0.10 acres as pad and out slope fill. The cut and fill boundary is shown on Plate 5-2D; everything above the line is cut and below the line is fill.

Since the side-cast topsoil will cover the original topsoil surface on a portion of the slope below the pad, the un-salvaged topsoil will be preserved in-place by using a marker layer, or marker flagging, to mark the proximity of the original, undisturbed topsoil surface. During excavation of the stockpiled side-cast topsoil during reclamation, the flagging will help prevent damage of the original topsoil by marking the undisturbed surface. To insure that the original soil surface will be located during reclamation excavation of the side-cast stockpiled topsoil, a 3-inch wide polyethylene underground warning tape marker will be used as flagging and will be placed on eight foot centerline grid pattern.

OPERATION PLAN

Link Canyon Substation-2

Soil salvage depth at Substation number 2 pad is based on Division guidelines and by field observation of root distribution. The Order-1 soil survey in Appendix 2-6 states that suitable soil for plant growth of native species basically exists above weathered and hard bedrock. Topsoil is not well-defined and soil materials are mixed without distinct layers. The presence of roots in the soil above the underlying bedrock indicates no significant restricting zones. As discussed in the amendment, the A and portions of the C horizons will be removed together from the salvage area without segregation. Canyon Fuel commits to salvage and stockpile all available suitable soils encountered during site construction. The amendment states that all actual soil salvage volumes may differ from the total and are dependant upon field conditions found during construction. A person qualified to make soil salvaging determinations will be on site during construction.

As discussed in the Order-1 soil survey and based on root distribution, 51 cubic yards of undisturbed soil are available for salvage from the undisturbed soils. Map Unit D soils, the overcast located on the east side of the old trolley road, will be salvaged prior to construction of the substation pad and will account for 67 cubic yards of soil. As shown in table below, a total of 118 cubic yards of soil is estimated for salvage.

Soil Map Unit	Suitable Soil Thickness (inches)	Average Salvage (inches)	Soil Map Area sq. ft.	Soil Salvage Volume (CY)
A	18 to 30	24	612	24
B	2 to 12	8	579	14
C	4 to 8	6	473	9
D	24 to 48	36	600	67
E	6 to 12	8	28	1
F	0 to 10	5	198	3
Total				118

Topsoil Substitutes and Supplements

Link Canyon Substation-1

Since the topsoil is thin (6 to 8 inches), the C horizon subsoil will be salvaged with the A-horizon topsoil. Based on analysis results for the C horizon subsoils as shown in Table 1 of Appendix 2-6, there are no problems associated with the C horizon subsoils being used as substitute topsoil.

OPERATION PLAN

Link Canyon Substation 2

Soil Unit-D is composed of road cut and rocky side cast material from the old trolley road. According to the Order-1 soil survey, mixed rock and loamy soil materials range up to about 20 inches thick with bedrock exposed in places. Based on limited amounts of native, undisturbed topsoil resources, Unit-D side cast soil materials provide additional substitute topsoil resource material. The salvage area within Unit D is calculated at 600 square feet with an average salvage depth of 36 inches. Therefore, the total volume of soil salvage from Unit D is estimated at 67 CY. This assumption is based on estimated areas and volumes and not on soil suitability since laboratory analysis have not been received from Inter-Mountain Laboratories.

Topsoil Storage*Link Canyon Substation-1*

Soils salvaged from the Link Canyon Substation-1 area will be stored on the pad out slope. The out slope stockpiled soil will be protected by placing berms and/or silt fences at the base of the slope. Additionally, the soil will be seeded with the seed mix specified in Section 3.30 of the MRP.

Topsoil signs will be placed on the Link Canyon Substation-1 pad out slopes identifying the out slopes as "TOPSOIL." Since the Link Canyon Substation-1 disturbed area is located within cattle grazing areas of the U.S. Forest Service, the amendment states that pad out slopes will be fenced to prevent damage from cattle grazing to the stockpiled topsoil. Plate 5-2D, Detail of Link Canyon Surface Facilities, shows the link fence enclosing the topsoil stockpile out slope. An additional link fence shown is placed to protect the substation pad area.

Since the soil survey only describes soils down to 20 inches, the type and quality of residuum or colluvium material in deeper cuts is unknown. Since the topsoil cannot be contaminated from other less desirable cut or fill materials, segregation and placement of the salvaged topsoil will help preserve the topsoil without contamination from the other cut material. The salvaged topsoil will be removed first and placed on the south end of the pad out slope. The remaining excavated materials from the deeper cuts will be used as fill material for the access road and northern end of the substation pad.

Link Canyon Substation-2

The Substation No. 2 stockpile will be placed at the southern end of the pad as shown on Plate 5-2E. The stockpile will be protected with berms and/or silt fences, a three strand barbwire fence, and vegetation to control erosion. The stockpile will not be moved or disturbed until final reclamation.

Findings:

The information provided in the amendment meets the regulatory requirements of this section.

OPERATION PLAN

INTERIM REVEGETATION

Regulatory Reference: R645-301-330, -301-331, -301-332.

Analysis:

The existing mining and reclamation plan contains a plan for interim revegetation of disturbed areas. Grasses and forbs from the final reclamation seed mix will be seeded according to the plan for final revegetation. These species should provide adequate erosion control.

Findings:

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

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

Analysis:

Transportation Facilities

The plan classifies the Link Canyon substation #2 access road as an ancillary road, and the submittal adequately addresses the requirement of R645-301-527.100.

Road Specifications

The length of the access road from the public road to the substation fence is 75 feet. Roadway width is 16 feet. Gradient, and cut and fill calculations are depicted on Plate 5-2E, as is the ditch design for the diversion routing the drainage from the undisturbed watershed LINK NO. 2, ASCA 4 and ASCA 7. The specifications for this ditch are indicated in Table 7-9, (Page 7-75). Page 5-41, paragraph 1 indicates that the access road will have a dirt surface.

The requirements of the R645 rules have been met regarding road specifications.

Maintenance Plan

Page 5-42 of submittal ACT/041/002-99G

On page 5-42, SUFCO has committed to maintaining the Link Canyon substation access road within the limits of the disturbed area perimeter. The USFS maintains the public road in this area. SUFCO has committed to repair damage to the public road in the Link Canyon area from impacts

OPERATION PLAN

Revised: March 2, 2000

associated with mining. The requirements of the R645 rules for a road maintenance plan have been met.

Commitment to Repair Catastrophic Damage

On pages 5-41 and 42 of the submittal, SUFCO commits to repair damage created by catastrophic events for the mine access roads within the permit area. They also have a cooperative agreement with the Sevier County Road Department to repair road damage from any catastrophic event outside of the mine permit area. The requirements of the R645 rules have been met with regard to committing to repair roads both within and outside the mine permit area due to damage caused by catastrophic events.

Geotechnical Analysis

The Link Canyon public access road has been in place for many years. The permittee is not requesting alternative road specifications, nor are steep cut slopes necessary. The requirement of the R645 rules to conduct a geotechnical analysis for the installation of the Link Canyon #2 substation access road is not necessary because alternative road specifications and steep cut slopes have not been requested or designed.

Findings:

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

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

The operator has submitted the hydrologic information in addendums for the MRP. In a meeting held with mine personnel, Mike Davis, Chris Hansen and Gary Taylor on February 4, 2000. Mike Davis explained the routing process planned for the substation. He addressed the deficiency on routing flows across the road.

The disturbed area boundary is 0.21 acres. The undisturbed drainage above the substation is approximately 25.8 acres. An evaluation of the topographic lines above the disturbed reveals that the amount of runoff reaching the undisturbed ditch will be less than proposed, because the undisturbed drainage is smaller than proposed in the Amendment.

OPERATION PLAN

Runoff generated on the undisturbed area above the #2 Substation tends to flow in two directions. A portion will flow south of the substation, where it will collect in the ditch along the road, then flow down the ditch until it encounters a swell or water bar before it crosses the road. Runoff generated on the northern half of the undisturbed area will flow down to the road or undisturbed ditch above the disturbed area. The operator calculated a peak runoff volume of 0.2 cfs from the 25.8 acre undisturbed area above the Substation #2 .

The undisturbed runoff flowing directly down toward the disturbed area will be captured in an undisturbed diversion ditch along with disturbed area runoff from ASCA-4, detailed ditch information is shown in Table 7-9. Flow in this ditch will be treated by a silt fence (which is not shown on Plate 5-2E, but mentioned in the Amendment, Page 7-28) before it flows into the diversion ditch along the inside of edge of the Link Canyon Road. The collected flow will be transported down to the roadway drainage then into the main channel. The runoff will then flows down the ditch until it encounters a existing water bar, where it will cross the road. The undisturbed diversion ditch is sized to transport the runoff from a 10 yr-6 hr precipitation event. A summary of the figures used to calculate the 10 yr- 6 hr precipitation event is shown in Appendix 7-13.

The disturbed area is approximately 0.4 acre. Most of the area will be treated by berms and silt fences. The applicant shows Plate 5-2E, gravel will be placed on the surface of the disturbed area, reducing the potential for erosion. The applicant has submitted information in the amendment indicating that the majority of runoff from the disturbed area will be contained by berms treated with silt fences. A very small portion of the access (approximately 200 square feet) will flow directly into the undisturbed ditch along the road, however the graveled surface of the pad and access will minimize erosion and sediment yield. No adverse conditions or contamination is expected.

Findings

The applicant has submitted sufficient information to address hydrologic conditions at Substation #2. Hydrologic structures have been planned to prevent off site contamination from erosion. No adverse impacts are expected.

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

Regulatory Reference: 30 CFR Sec. 784.30, 817.180, 817.181; R645-301-526

Analysis:

“All utility installations associated with the SUFCO Mine will be removed following mining in accordance with the reclamation plan discussed in Section 5.40.”

Findings:

The submittal adequately addresses the requirement of R645-301-540.

OPERATION PLAN

MAPS, PLANS, CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: R645-301-521.100

Analysis:

Mining Facilities Maps

The applicant has submitted Plate 5-2E, which details the surface area, undisturbed area, disturbed area and cross-sections of the pad, during operations and after regrading for reclamation.

Findings:

The applicant has satisfactorily addressed this section.

RECLAMATION PLAN

RECLAMATION PLAN

POSTMINING LAND USES

Regulatory Reference: 30 CFR Sec. 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

Analysis:

No changes to the postmining land use are proposed, and the reclamation plan appears to be in compliance with the management plan of the Forest Service.

Findings:

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

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Analysis:

Backfilling Plan

Page 5-58 "The regrading plan for the Link Canyon #2 substation facility area will be to reclaim it for its entire length. This substation facility area will be regraded by removing fill from beneath the pad to the natural ground surface and placing the fill against the adjacent cut slope. Following regrading of the substation facility area the site will be revegetated as indicated in Section 3.40 of the permit.

Plate 5-2E, Detail of Link Canyon Surface Facilities shows cross sections A-A', B-B', and C-C' and dirt volumes for cut and fill of 198 and 84 cubic yards respectively. Lines indicate that the reclamation of the substation access road and pad will return this fill to the approximate original contour of the area. Plate 5-2E has been P. E. certified by Mr. Wes Sorensen, (see 542.310).

Findings:

The submittal adequately addresses the requirements of R645-301-542.200.

RECLAMATION PLAN

MINE OPENINGS

Regulatory Reference: R645-301-542.700

Analysis:

Final Abandonment of Mine Openings and Disposal Areas

Page 5-67, SUFCO MRP Section 5.4.2.7.

The permittee has committed to control additional contributions of sediment to the Link Canyon drainage through the utilization of silt fences and/or berms. The permittee has fulfilled the requirements of the R645 regulations with regard to the reclamation plan necessary to reclaim the Link Canyon substation #2 and its associated access road.

Findings:

The reclamation plan for the area adequately addresses the requirements of the R645 rules.

TOPSOIL AND SUBSOIL

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

Analysis:

The Analysis section discusses reclamation information as follows:

- Soil Redistribution
- Soil Stabilization

Soil Redistribution

Link Canyon Substation-1

The un-salvaged topsoil buried beneath the side-cast topsoil will be preserved for later reclamation efforts by placement of marker flagging. The flagging will mark the proximity of the original, undisturbed topsoil surface to help prevent surface damage during reclamation and excavation of the side-cast topsoil and other fill materials. The original soil surface will be located during reclamation excavation of the side-cast stockpiled topsoil and fills. Flags are placed on a 8 foot centerline grid pattern.

Final reclamation of the pad will include the removal of the substation equipment and replacement of the fills and soils stored in the pad area. The plan states that pre-existing slopes will be

RECLAMATION PLAN

restored to AOC using the side-cast fill materials stored in the pad and road out slopes (pp 5-58 and 5-67). Topsoil from the pad out slope topsoil storage area will be redistributed over the newly restored slope. The reclaimed pad, access road, and affected slopes will be fenced with a three strand barbed wire fence to prevent damage from cattle grazing during reclamation.

Link Canyon Substation-2

The area within the disturbed area boundary is 0.21 acres. However, the plan shows that only 0.12 acres will actually be disturbed. Therefore, based on the 118 cubic yards of salvaged topsoil over 0.12 acres, 7.3 inches of redistributed soil cover is available to cover shale and weathered bedrock material. The plan states that the 118 cubic yards is a conservative estimate and additional soils are anticipated to be available.

Soil Stabilization

Link Canyon is a steep canyon area with an average rainfall of only 11 inches. Therefore, the applicant plans to provide additional measures and other soil stabilization techniques (e.g., deep gouging) to help assure reclamation success. As explained in the revision, deep gouging or pocking provides alleviates soil compaction, increases soil stability, and increases water harvesting

Since the reclaimed area is within a USFS grazing unit, the reclaimed slope will be protected from grazing by fencing.

Findings:

The information provided in the amendment meets the regulatory requirements of this section.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

Analysis:

Roads

Page 5-66 and 67 of ACT/041/002-99G

The permittee has committed to the following; "The Link Canyon substation #2 access road will be reclaimed for its entire length." "This road will be closed to traffic following reclamation by virtue of its non-existence", (see 542.610).

RECLAMATION PLAN

Findings:

The submittal's commitment to reclaim the #2 substation access road is adequate to meet the reclamation requirements of the R645 rules.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Analysis:

The applicant has discussed reclamation proceedings. In light of the fact that there are no surface or ground-water sites in the immediate vicinity of the substation, there will be no impacts to standing surface or ground-water resources.

There is no surface or ground-water monitoring sites attached to this site that require monitoring. There are no wells to plug or transfer. There should not be any acid or toxic forming materials excavated during construction.

There will be no mine water discharge or gravity discharged from the mine, or surface water discharged into the mine.

All water quality standards will be met. The applicant describes on Page 5-58, how the site will be backfilled, graded and revegetated. Silt fences placed similar to the locations seen in Plate 5-2E will be erected and maintained until effluent limitations are met from any flow off the disturbed site.

All diversions on the disturbed area will be removed during grading. Road diversions will be left in-place.

Findings:

The information provided in the amendment meets the regulatory requirements of this section.

RECLAMATION PLAN

REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

The current mining and reclamation plan includes plans for vegetating the main mine facilities area, and this plan, including the success standards, is adequate for the proposed Link Canyon facilities. The Division of Wildlife Resources commented the area is big game winter range and that they would like to see revegetation include browse plants. The revegetation plan includes shrubs, and the postmining land use requires that some shrubs be reestablished.

Link Canyon is used to trail cattle to the top of the plateau, and it is anticipated they would graze on vegetation in the reclaimed area. This could reduce vegetation establishment and success, so the Division recommends the applicant fence the reclaimed area

Findings:

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

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