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Green Permit Binder

March 19, 1997

Chuck Semborski, Environmental Supervisor
Energy West
P. O. Box 310
Huntington, Utah 84528

Re: Completion of the Midterm Review, PacifiCorp, Cottonwood/Wilberg Mine, ACT/015/019, Folder #3, Emery County, Utah

Dear Mr. Semborski:

As discussed in our letter to you dated February 7, 1997, the Division has conducted a mid-term permit review for the Cottonwood/Wilberg Mine. The review identified two major areas of concern. These are: 1) deficiencies in the reclamation plan for the Cottonwood Fan Portal and 2) improper calculation in the bond cost estimate.

The enclosed Technical Analysis and Findings document discusses the concerns in more detail and outlines the deficiencies that will need to be corrected. Please review the document carefully. It is imperative that the deficiencies be corrected by no later than May 16, 1997. If you have any questions regarding the mid-term permit review, please don't hesitate to call.

Sincerely,

Daron R. Haddock

Daron R. Haddock
Permit Supervisor

enclosure
cc: W. Malencik

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State of Utah
Division of Oil, Gas and Mining
Utah Coal Regulatory Program

Technical Analysis and Findings
Cottonwood Fan Portal Reclamation
Midterm Review
March 19, 1997

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ENVIRONMENTAL RESOURCE INFORMATION

SOILS RESOURCE INFORMATION

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

Analysis:

The Mine Reclamation Plan (MRP) contains soils' survey information for the Cottonwood Fan Portal area. However, the soil survey is inadequate to determine the depth and quality of salvaged material. Field notes and technical data is nonexistent; the names of persons, organizations and credentials need to be provided. In addition, the soil survey map is illegible and does not contain discernable information to decipher which soils were affected by the surface disturbance. Information presented is disjointed and unorganized.

Findings:

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

R645-301-222, R645-301-223, R645-301-120 and R645-301-130, Provide adequate soil survey information to determine the depth and quality of salvaged material. Include field notes and technical data and the names of persons, organizations and credentials. The soil survey map needs to be legible and contain discernable information to decipher which soils were affected by the surface disturbance. Present information in an organized, clear and concise manner.

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference R645-301-411.

Analysis:

The Old Johnson Mine is located directly across the canyon from the Trail Mountain Mine surface facilities and directly adjacent to the Cottonwood Fan Portal area (Appendix III, page 5 and Plate 3-16A). The Old Johnson Mine site has been recorded as a historic resource and provided with the Smithsonian registration number 42Em1633. An analysis of the site by F.R. Hauck of AERC, concluded that this mine is of historic significance and has

the potential for nomination to the National Register. The Johnson Mine site includes two walled-in portals, a mine terrace associated with the portals, road, the remnants of a coal slide or shute, a storage area under a rock walled boulder, an outhouse, and the old weigh house structure. The site is justified to the National Register Status as significant because it is an integral unit.

A rough sketch of the Old Johnson Mine is given in the original 1983 site survey in Chapter 2 Attachment 6. Portals and "cabin" of the Old Johnson Mine are identified on Plate 3-16A. However, Plate 3-16A does not show the Cottonwood Fan Portal Area and the disturbed area associated with it. It is assumed that a portion of the Old Johnson Mine Road was and will be used to access the fan portal area. The importance of the road as an integral part of the site is not discussed. The reclamation of this road in the area of the fan must be discussed and a Historian and land owner must be consulted as to the disposition of the road.

In section Protection of Public Parks and Historic Places (page 4-40) of the permit or elsewhere in the permit, no protection measures for the Johnson Mine are described. The permit must include a description of the measures used to protect the site during operation and reclamation of the Cottonwood Fan and Conveyor Portal.

Findings:

The permittee must provide the following in accordance with the requirements of:

R645-301-411.141, The permit must include a map which shows the existing and intended disturbance associated with the reclamation of the Cottonwood Fan Portal and the area which is considered the historic resource of the Johnson Mine site.

R645-301-411.142, The permit must describe the protection measures used during reclamation to protect the Johnson Mine site.

R645-301-411.143, The permit must contain an evaluation of the Old Johnson Mine Site and the road associated with the site. The evaluation must be a coordinated review with input from the State Historic Preservation Officer, the land owner and the Division. The evaluation must determine the extent of the road that is considered part of the historic resource and how or if the road should be reclaimed and to what condition.

FISH AND WILDLIFE RESOURCE INFORMATION

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

Analysis:

Much of the information concerning the raptors and threatened and endangered species in the permit (pages 2-168 through 2-175) is outdated. Numerous raptor nests are located within a mile radius of the fan portal. A Peregrine Falcon pair were observed adjacent to the area in 1996 displaying courtship activities. Raptor monitoring information on Map 2-19A must be updated prior to any site disturbing activities associated with the Cottonwood Fan Portal if the activities will occur during nest or rearing of young. The permit must included the current status of these birds and reference the potential for nesting of Peregrines adjacent to or within the permit area.

The permit states that no threatened or endangered species occur on the site property (1976) (page 2-172). The USFWS considers no findings statements only valid for six months. The Division requires a new statement of findings by qualified persons every five years or sooner if conditions change or new activity occurs (i.e. reclamation activities).

Findings:

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

R645-301-121.100 and R645-301-322, The permit must contain current information concerning the status and presence of threatened and endangered species within or adjacent to the permit area. Map 2-19A, Raptor Nesting Location & Habitat Map, with a current legend and information must be updated. For the purposes of this review the required information must be submitted only if construction work is done during critical time periods of the birds.

OPERATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

The Operation Plan section lacks information concerning soil salvage. The MRP needs to have specific and detailed discussion to the exact areas affected by soil savage, depth of

salvage, soil volumes, and soil segregation. Information concerning soil salvage is vague and nonexistent. Stockpiled materials need to be selectively place on a stable site and protected from contamination and erosion. The MRP needs specific and detailed discussion and maps concerning stockpile locations, physical dimensions, volumes and efforts to protect the soil resource. Mass balance information needs to detail affected acreage, depths and volumes of salvaged topsoil, subsoils, and substitute topsoils.

Insufficient map detail is provided to ascertain the areas of actual disturbance, including pad areas, access roads, and soil storage areas.

If substitute topsoil as fills are salvaged, then the MRP needs information concerning suitability of topsoil substitutes as determined on the thickness of soil horizons, physical attributes and chemical characteristics. The current stockpiled soils and fills need to be characterized for reclamation suitability, particularly the soil exposed to road salts and other contaminants.

Findings:

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

R645-301-230, Provide information concerning soil salvage. Specific and detailed discussion should focus on the exact areas affected by soil savage, depth of salvage, soil volumes, and soil segregation. Provide specific and detailed discussion concerning stockpile locations, physical dimensions, volumes and efforts used to protect the soil resource. Provide mass balance information detailing the affected acreage, depths and volumes of salvaged topsoil, subsoils, and substitute topsoils. Provide sufficient map detail to ascertain the areas of actual disturbance, including pad areas, access roads, and soil storage areas. Provide information concerning suitability of topsoil substitutes based on soil horizons, physical attributes and chemical characteristics. Characterize the current stockpiled soils and fills for reclamation suitability, particularly the soil exposed to road salts and other contaminants.

RECLAMATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

The MRP contains dispersed and nonspecific information concerning soil redistribution, uses of soil nutrients and amendments, and stabilization of soils. Soil replacement methods need to be discussed in detail on how the soil will be salvaged from the stockpile area, methods of soil transport and soil placement techniques. The MRP needs to detail and discuss the protection and reclamation of the soil stockpile area after soil removal. Reclamation methods need specifically to detail methods for protecting the soil resources against excess compaction and erosion before and after seeding. Acreage, soil depth, and volumes for soil replacement need to be detailed with mass balance calculations. Both the fan portal area and stockpile area reclamation needs specificity concerning soil nutrients and amendments and soil stabilization. Soil stabilization practices and methods need special consideration; detailed soil stabilization discussion should focus on soil erosive characteristics, slopes, rock content and placement, erosion protection blankets and materials, mulch and other practices.

Findings:

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

R645-301-240 and R645-301-120, Provide specific, clear and concise information concerning soil redistribution, soil amendments, and soils stabilization methods. Soil replacement methods need to be discussed in detail on how the soil will be salvaged from the stockpile area, methods of soil transport and soil placement techniques. Detail and discuss the protection and reclamation of the soil stockpile areas after soil removal. Discuss specific reclamation methods for protecting the soil resources against excess compaction and erosion before and after seeding. Provide reclamation acreage, soil replacement depth and volumes. Provide current information concerning soil nutrients, fertilizer recommendations. Based on soil physical and chemical characteristics, discuss soil amendments and soil stabilization methods to be deployed during reclamation. Soil stabilization practices and methods need special consideration; detailed soil stabilization discussion should focus on soil erosive characteristics, slopes, rock content and placement, erosion protection blankets and materials, mulch and other practices.

LAND-USE RESOURCE INFORMATION

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

Analysis:

The stated premining and hence postmining land use is range forage and wildlife habitat. The land in the Cottonwood portal area is used primarily for spring and winter range forage, wildlife habitat and mineral mining. It seems doubtful that cattle would ever use the steep slopes of the revegetated disturbed areas in the Cottonwood fan portal area. If the permittee desires, the requirement to return the site to a grazing land use may be revised. By eliminating this land use the requirement for a production success standard is also eliminated.

No comments could be found in the permit from the surface land owner concerning the proposed reclamation and post mining land use. The L.D.S. Church is shown as the land owner.

Findings:

The permittee must provide the following in accordance with the requirements of :

R645-301-412.200, A copy of the comments from the land owner concerning the proposed reclamation and the post mining land use must be included in the permit.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: R645-301-320.

Analysis:

The Cottonwood Fan Portal Reference area was measured for vegetative cover and shrub density, the date and methods of measurement are not reported. The total living cover was estimated to be 42.75 percent and 624 individual tree and/or shrubs per acre. Productivity was estimated at 1,800 pounds forage per acre based on the reference area in October 1989 (page 2-158.1).

Findings:

The permit is in compliance with the requirements of this section.

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:

General Requirements

The seed mixture to be used for final revegetation on the disturbance associated with the Cottonwood Fan Portal (page 4-19) will be broadcast seeded by hand or with a hydromulcher. The seed mixture contains several introduced species. In this area numerous native species are available and are known to support the postmining land uses. The mixture must be revised to eliminate all introduced species. The Division should be contacted if assistance is desired in building a revised seed mixture. The results of the Trail Canyon test plots removed in 1991(?) should be reviewed when determining which species to use in the mixture. The operator proposes to use containerized tree and shrub transplants to establish the woody species component of the vegetation. The Operator and the Division have extensive experience in planting woody species from seed and the Operator may want to modify the plan. The proposed planting plan meets the requirements of the regulations however, a more cost effective plan could also be proposed.

Mulching and Other Soil Stabilizing Practices

Seeded areas will be covered with hay mulch and netting or erosion control mulch blanket. If the seed is hydroseeded then a hydromulch is proposed for use. The use of hydromulch on slopes steeper than 3:1 is not approved and the operator must propose another method to provide for surface stabilization for seeding establishment. The detail provided on maps of the proposed reclaimed surface is not sufficient to identify those areas which will be reclaimed to slopes more or less than a 3:1 steepness.

Standards for Success.

Insufficient map detail is provided to ascertain the areas of actual disturbance. Some "interim" revegetation has already occurred that may or may not need to be reseeded to meet the success standards for bond release. The plan or maps do not clearly show the areas which will be revegetated. A general disturbed area boundary line is shown on some maps but not all of the area has been disturbed. The operator must provide a map and description of the area which will be revegetated. The operator must describe and/or show on the map the area of previous seeding and the disposition of that area during current reclamation activities.

Findings:

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

R645-301-353.120, The seed mixture must be revised to exclude all introduce species. Sufficient native species are available for seeding to meet the approved postmining land use.

R645-301-355, The permittee must provide maps of the post disturbance topography which allow sufficient information and detail to review mulching and success standards of the proposed reclamation work.

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Analysis:

The plan does not provide for returning the Cottonwood Fan Portal area to approximate original contour (AOC). Plate 4-7--Reclamation Cross Sections, which actually consists of 8 sheets, shows many areas where vertical and near-vertical cuts and long man-made slopes are to be left as they are, completely unreclaimed, despite the presence of large volumes of stockpiled material.

Findings:

The plan does not fulfill the requirements of this section.

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

R645-301-553.110, The permittee must revise the plan to provide for returning the Cottonwood Fan Portal area to approximate original contour (AOC). The revised plan must provide for the elimination of all cuts and the backfilling of all other areas, using all reasonably available spoil, so that their final configuration is as close as possible to the original.

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:

As discussed under **APPROXIMATE ORIGINAL CONTOUR RESTORATION** above, the plan does not provide for the restoration of the Cottonwood Fan Portal area to approximate original contour (AOC).

According to the surveyed cross sections of Plate 4-7--Reclamation Cross Sections, almost 50,000 cubic yards of material was stockpiled from this area and is available for its reclamation. However, the backfilling and grading plan, as represented on Plate 4-7, will use only about 8,000 cubic yards--about 15%--of this material.

Furthermore, according to a stability analysis done in 1980 by the consulting firm of Rollins, Brown & Gunnell, Inc., which is referenced on page 4-4.1 of the plan, the reclaimed slopes in the Cottonwood Fan Portal area can be restored to a slope of almost 1.3h:1v and still achieve a static stability safety factor of 1.5. According to the cross sections of Plate 4-7, most of the original slope is less than 1.3h:1v.

There is clearly room for improvement of the backfilling and grading plan so that all of the available material will be used and the area will be restored to a configuration which is closer to the original.

Findings:

The plan does not fulfill the requirements of this section. The permittee must provide the following, prior to approval, in accordance with the requirements of:

R645-301-553.100, The permittee must revise the backfilling and grading plan to provide for complete reclamation of the Cottonwood Fan Portal area. The revised backfilling and grading plan must take into account all of the material available, the static stability constraint set forth in the Rollins, Brown & Gunnell analysis, which is part of the approved plan, and the possibility of achieving the original slope.

HYDROLOGIC RECLAMATION 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.

Ground-water Monitoring

No ground water monitoring plan was presented for the Cottonwood fan portal area. No groundwater monitoring is specifically tied to reclamation of this area. It is unclear whether discharge may occur from outcrops following reclamation at this site. A monitoring plan may be necessary for gravity discharge from the portal. See the discussion under Gravity Discharge in this T.A.

Surface-water Monitoring

In appendix 3 the monitoring plan states that water monitoring will be conducted at the cottonwood fan portal above and below the sedimentation ponds during the reclamation phase. However, no parameters or sampling frequency were identified. Additionally, the information presented in appendix V conflicts with this information.

The Cottonwood Canyon Creek USGS flume downstream of the fan portal will continue to be monitored in accordance with established guidelines during reclamation.

Acid And Toxic-forming Materials

The plan states that all acid and toxic forming materials will be buried with at least four feet of material. No location was identified as needing four feet of cover material.

Transfer Of Wells

No transfer of wells are proposed associated with the reclamation of the Cottonwood fan portal area.

Discharges Into An Underground Mine

No discharges into the underground mine should occur as the proposed backfill and grading is designed to slope and redirect water away from the portal at the Cottonwood Wilburg fan site. Maximum slopes used in designs for stability are 1.5H:1V. Construction of all slopes are stated to be 67%.

Gravity Discharges

On page 4-1 in the plan it is stated that the Cottonwood fan portal will require drains or, special hydrological containment seals. Hydrologic consequences identified in the PHC, include a statement that water in the Deer Creek Mine workings will migrate down to the cottonwood workings. The plan does not make it clear that no entry was developed at the fan portal site. It is not clear whether a gravity discharge may occur at this site.

Water Quality Standards And Effluent Limitations

The permittee will be required to show that ground and surface water at the site meet the requirements of the R645 regulations prior to bond release.

Diversions

The diversion ditch located above the fan portal is proposed to be backfilled using material present on the outer shoulder and berm. Nine water bars are proposed to be constructed at locations as indicated on Drawing CM-10828-CP. They will extend diagonally from the uphill slope to the brow of the down-hill slope across the reclaimed ditch and down the face of the slope.

The contour maps and cross section details presented do not provide adequate site specific information to allow a determination on whether the proposed design is adequate. No designs were presented to demonstrate that the water bar diversions meet the minimum requirements of R645-301-742. Water bar diversions are probably not a good design for reclamation as they require maintenance over time. The drainage plan may better meet the regulatory requirements by providing grading plan that distributes the flow over the slopes blending with the uphill terrain.

Stream Buffer Zones

No stream buffer zone information specific to this mining activity was found. However, the site appears to be within 100 feet of the original stream channel in some areas. The adjacent Trail Mountain Mine diverted the Cottonwood Creek into a culvert thus,

diverting the stream. Should the reclamation of this site be conducted following reclamation at the Trail Mountain Mine a specific buffer zone variance would be necessary.

Sediment Control Measures

The plan states that final grading and preparation of overburden will be conducted along the contour to minimize erosion. If grading along the contour is hazardous to equipment operators, grading will be conducted in a direction other than parallel to the contours.

Areas of potential concentrated overland flow are proposed to be protected with erosion control matting placed beneath rock riprap. These areas were not identified on a reclamation map.

The contour maps and cross section details do not provide adequate site specific information to allow a determination on whether the proposed sediment control measures are adequate.

Siltation Structures

Other than the Alternate Sediment Control Measure in place in Area 3-7, the sedimentation ponds will be retained to treat runoff from the site during the reclamation phase. The grading plan does not provide information which shows how all disturbed areas will be treated during reclamation. The contour maps and cross section details presented do not provide site specific information which allows the division to make a finding that the existing sedimentation ponds are designed to meet the regulatory requirements for treating the disturbed area through the reclamation period.

Sedimentation Ponds

Once the bonding period is complete and revegetation is satisfactory the sedimentation ponds will be backfilled and graded. This determination is made by the Division following a request from the permittee at Phase II bond release.

Other Treatment Facilities

No other treatment facilities are associated with the Cottonwood fan portal area.

Siltation Structure Exemptions

No exemption from using siltation structures were granted associated with reclamation of the cottonwood fan portal area.

Discharge Structures

No discharge structures are proposed for retention as permanent structures. The contour maps and cross section details presented do not provide adequate site specific information to determine whether the existing sedimentation ponds are designed to meet the regulatory requirements for treating the disturbed area through the reclamation period.

Impoundments

No impoundments are proposed to be retained as permanent structures at the reclaimed cottonwood fan portal site.

Casing And Sealing Of Wells

No casing and sealing of wells are directly associated with the cottonwood mine portal reclamation.

Findings:

The permittee has not met the requirements of this section. The permittee must provide the following in accordance with:

R645-301-730, Provide a surface and ground water monitoring plan that relates to the suitability of the postmining land use, that will demonstrate that the waters meet all applicable state and federal water quality laws, which is based on the PHC and, is clearly presented in the plan, for the reclamation phase through bond release.

R645-301-120, Provide information in the plan that clarifies the existing configuration and the applicable requirements necessary to complete R645-301-731.500 as it relates to the potential for gravity reclamation as it relates to the entry to the cottonwood fan portal.

R645-742.300, Provide site specific design information to show that the diversions meet design criteria required by R645-742.300 for reclamation configuration at the fan Portal.

R645-732.210, Provide site specific design information to show the sedimentation ponds meet the design criteria required by R645-303-732.210 for the reclamation configuration at the fan Portal.

BONDING AND INSURANCE REQUIREMENTS

Analysis:

When the Division reviewed the bond calculations for the Cottonwood Wilberg, it was discovered that parts of the bond calculations were done improperly. The Permittee must modify the reclamation plan so that it conforms with the Division's policies.

In the remarks column of the surface facilities removal estimates, the Permittee states that steel beams and equipment will be salvaged. Since there are no costs associated with the removal or disposal of those items we assume that the salvage value of those items will be used to pay for their removal costs. Because the Division does not allow salvage value, the Permittee must include the costs for removing and disposing of all structure and equipment.

The Permittee also states that another division of the parent company will do the removal of the 69 kV power line. The Division's policy requires that all cost estimates must be based on the assumption that a third party does the work.

The Permittee states in the MRP in the Structure Removal section of the Reclamation Plan that once mining has ceased . . . the surface facilities will be dismantled and removed from the permit area. There are no costs associated with the transportation and disposal of the demolition debris. Since the cost of debris disposal is often equal to or greater than the demolition cost the Permittee must address debris disposal. If the debris will be disposed of off site, it must be done in an approved facility. Such facilities usually consist of a permitted landfill. Steel items can be disposed of at a remelt facility if they assume no salvage value.

The demolition costs were based on equipment and labor costs. There was no reference to the crew's productivity in the bond calculations. They must include this information.

The earthwork calculations were based on equipment and labor costs and a stated production rate. The Permittee did not included productivity calculations in the MRP. Therefore, the Division has no way of verifying the productivity rate. For some earthwork projects in the reclamation plan the productivity rate for a bulldozer is 80%. Usually the

productivity rate for bulldozers is 40% to 60%. The Permittee needs to verify the productivity calculations.

Findings:

The permittee has not met the requirements of this section. The permittee must provide the following in accordance with:

R645-301-830.100,. revise the bond calculations so they included transportation and disposal costs for the demolition debris and so that they document the productivity rates.