



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

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July 18, 2000

TO: Internal File
THRU: Robert Davidson, Team Lead *RAD*
FROM: Wayne H. Western, Reclamation Specialist *WtW*
RE: Wild Horse Ridge Addition, Co-Op Mining Company, Bear Canyon Mine ACT/015/025-SR98-3

SUMMARY:

I reviewed the engineering and bond sections for Wild Horse Ridge amendment for the Bear Canyon Mine. Since the plan is deficient, I did not reviewed bond section in detail. The bond will be calculated when the reclamation plan is completed.

ENVIRONMENTAL RESOURCE INFORMATION

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

GENERAL

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

Analysis:

Analysis of the existing, pre-mining environmental resources within the permit and adjacent area that may be affected or impacted by the proposed underground mining activities are discussed under other headings in this TA

Findings:

The permittee met the minimum requirements of this section.

PERMIT AREA

Regulatory Requirements: 30 CFR Sec. 783.12; R645-301-521.

The only existing structure in the Wild Horse Ridge area mentioned by the permittee is a hunting cabin and the access road. Both are shown on Plate 2-4G and Plate 3-7G. The hunting cabin is not labeled on Plate 3-7G, but an outline of the building is shown.

Existing Surface Configuration Maps

Plate 3-7F and Plate 3-7G, show the existing surface topography. The hunting cabin is not labeled but an outline of the building is shown on Plate 3-7G.

Mine Workings Maps

The permittee gave the Division maps that show the mine workings in the Blind Canyon Seam, Plate 3-4A, and the Tank Seam, Plate 3-4C. The mine maps show the areas of past and future mining.

Permit Area Boundary Maps

Plate 2-1, Permit Area, and other maps show the permit boundaries. The Division checked the proposed permit addition with the legal description. The permit boundary map appears to be accurate.

Plate 3-4A does not show the correct permit boundaries. The permittee must update that map.

Surface and Subsurface Ownership Maps

Plate 2-2 shows the surface ownership with the permit boundaries for the Wild Horse Ridge area. Plate 2-3 shows the subsurface ownership with the permit boundaries for the Wild Horse Ridge area.

Contour Maps

The permittee gave the Division detailed contour maps for the proposed premining disturbed areas. Those maps are labeled Plate 3-7F and Plate 3-7G.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the permittee must provide the following in accordance with:

R645-301-521.140, The permittee will show the correct permit boundaries on Plate 3-4A.

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OPERATION PLAN

MINING OPERATIONS AND FACILITIES

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

Analysis:

General

In Section 3.4 the permittee states "Co-Op started its mining operating through an existing mine in the Blind Canyon Seam and later extended into the Hiawatha seam below. Access to the Hiawatha Seam was made in the summer of 1986 through two new portals in the outcrop, and through a rock slope tunnel from the Blind Canyon seam. In 1995, Co-Op extended operations into the Tank Seam, located above the Blind Canyon seam. In 1999, Co-Op plans to extend operations into the Blind Canyon and Tank Seams East of the Bear Canyon Fault. The four main seams in the Bear Canyon property are, the Tank Seam, the Bear Canyon seam, Blind Canyon seam and Hiawatha seam. The permittee does not plan to mine the upper Bear Canyon seam due to the proximity of the seam to the Blind Canyon Seam (0.30 feet interburden). Nor do they plan to mine the Hiawatha Seam in Wild Horse Ridge due to the thinning of the seam. Mining plan, sequence and projected development for the Bear Canyon, Hiawatha and Tank seams are shown on Plate 3-4A, 3-4B and 3-4C respectively."

Type and Method of Mining Operations

In Section 3.4.1.2 the permittee states "The mining at the Bear Canyon complex is done by continuous miners. The miners discharge into shuttle cars (diesel or electric) which carry the coal to a feeder breaker. The feeder breaker discharges the coal onto the belt conveyor where it is taken out of the mine." The mining methods are consistent with the proposed surface facilities expansion.

Facilities and Structures

A list of new structures associated with the Wild Horse Ridge is given in Appendix 3A. The new structures are shown on Table 3A-1, in Appendix 3A. The new structures include a conveyor belt, substation, shop building, water tank and fuel tank. The proposed structures were included in the bond calculations.

Findings:

The permittee met the minimum requirements of this section.

EXISTING STRUCTURES

Regulatory Reference: 30 CFR Sec. 784.12; R645-301-526.

Analysis:

The permittee states that the only existing structure in the minable portion of the permit area is an existing hunting lodge and access road. The hunting cabin is shown on Plate 2-4G.

Findings:

The permittee met the minimum requirements of this section.

RELOCATION OR USE OF PUBLIC ROADS

Regulatory Reference: 30 CFR Sec. 784.18; R645-301-521, -301-526.

Analysis:

No public roads exist in the Wild Horse Ridge area. However, the Bear Canyon haul road and the No. 3 Mine Access road are also used by customers of Sportsman's Hunting to access a hunting cabin that exists in the right fork of Bear Canyon. Hunters will use the road primarily from May to November, typically 2-3 times per week.

A road can be defined as a public road if there is more than incidental use by the public. The term incidental use is not defined but is left to the discretion of the Division. The Division found that the use of a road 2-3 times per week for seven months is incidental. Therefore, none of the roads associated with the Wild Horse Ridge project are considered public roads. The permittee will not relocate or use a public road as part of the Wild Horse Ridge project.

Findings:

The permittee met the minimum requirements of this section.

COAL RECOVERY

Regulatory Reference: 30 CFR Sec. 817.59; R645-301-522.

Analysis:

The permittee gave the Division a general commitment to maximize coal recovery. Most of the information in the R2P2 is contained in the MRP. The permittee plans to mine the coal using room-and-pillar methods. The projected coal recovery rate is between 70% to 80%. The Division reviewed the mine maps and other information in the PAP about coal recovery. The Division found that the permittee is planning to maximize coal recovery.

Before the permittee can begin mining, the mining plan must be approved by the BLM. One

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item that the BLM reviewed is the maximum economic coal recovery plan. Thus, the coal recovery plan is reviewed by state and federal agencies.

Findings:

The permittee met the minimum regulatory requirements of this section.

SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR Sec. 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

Analysis:**Renewable Resources Survey**

The permittee and the Division found that renewable resources exist within the Wild Horse Ridge mining unit. The Division is concerned that subsidence could: impact ground and surface water, create large subsidence cracks similar to those that occurred on Bear Canyon ridge could also occur in the Wild Horse Ridge area, could cause escarpment failure and damage to eagle nests. Since renewable resources were found in the area, the permittee must develop a subsidence control plan.

Subsidence Control Plan

- The permittee proposes to use room-and-pillar mining to extract all the coal in the Bear Canyon complex. The permittee expects to recover 75% of the coal in full extraction areas and 50% in first mining areas. The sequence and timing of mining is shown on the mine maps 3-4A, Blind Canyon Seam (lower), and 3-4C, Tank Seam (upper). Note: no mining is scheduled for the Hiawatha Seam in the Wild Horse Ridge project. The mine plan is typical for this area.
- The permittee shows the underground workings for the Blind Canyon Seam (lower) on Plate 3-4A and the Tank Seam (upper) on Plate 3-4C. Plate 3-3 shows the projected subsidence for the Wild Horse Ridge project.

Plate 3-3, Subsidence Map, shows the subsidence protection areas that include escapement areas. Plate 3-3 does not clearly identify the areas that will be subsided. The permittee did not identify the areas of subsidence in the legend. Other information appears inconsistent.

- The words "area of influence" which the Division assumes means area where subsidence will occur are in areas identified by hatching as a subsidence protection zones on Plate 3-3.
- The words "angle of draw" is also shown in areas that are not clearly marked as subsidence zones on Plate 3-3.
- The permittee needs to show the subsidence zones on Plate 3-3.

- The permittee needs to clarify what is meant by the buffer zone on Plate 3-3.

The permittee shows where full extraction will occur on the mine maps. Areas marked panel or development will be first mined only. Areas that will be fully extracted are identified as pillar and development.

- The descriptions of the physical conditions that affect the likelihood or extent of subsidence are addressed in the geologic section of the TA.
- The permittee described the monitoring program in Appendix 3C in Section 5 of the amendment. The permittee committed to installing 26 monitoring points to the Wild Horse Ridge area. The stations will be monitored yearly plus they will conduct an annual on the ground survey to look for subsidence effects. The subsidence monitoring program is similar to the existing program. The existing program seems adequate.
- The permittee proposes to protect sensitive surface features from subsidence by first mining only. The protected areas are marked on the Plate 3-3. The pillars in the subsidence protection zones have safety factors of 1.5. The permittee quoted references that state subsidence should not occur if the pillar safety factor is at least 1.5. The reference is a NIOSH publication to which the Division does not have access. Therefore, the permittee should include a copy of the reference in the MRP.
- The estimated amount of subsidence in the Blind Canyon Seam is 3.2 feet and subsidence in the Tank Seam is 4.1 feet. The maximum amount of subsidence in the Wild Horse Ridge area is 7.3 feet.
- The permittee described the measures that will be taken to mitigate or remedy any subsidence-related damage. The main item of concern is water replacement. The permittee committed to purchase either water rights to replace damaged water right or repair damage to existing rights. Subsidence cracks are filled in to the extent practical.

Performance Standards for Subsidence Control

The permittee is required to meet the performance standards for subsidence control.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the permittee must provide the following in accordance with:

R645-301-121.200, The permittee must clearly show the subsidence area boundaries on Plate 3-3 and clarify what areas are included in the angle of draw and area of influence. The term buffer zone must also be defined.

R645-301-122, The permittee must include a copy of the paper that they sited for pillar

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stability and ground control, Analysis of Retreat Mining Pillar Stability (ARMPS). Paper in Proceedings on New Technology for Ground Control in Retreat Mining, 1997, NIOSH pub. 97-133, pp 17-34.

SLIDES AND OTHER DAMAGE

Regulatory Reference: 30 CFR Sec. 817.99; R645-301-515.

Analysis:

In case of a slide or other damage, the permittee committed to notify the Division by the fastest possible method. The permittee will repair the damage. If the permittee is unable to determine the best way of repairing the damage, they will wait for the Division to recommend a repair plan.

Findings:

The permittee met the minimum requirements of this section.

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:

Road Classification System

The roads associated with the Wild Horse Ridge project are all classified as primary roads. Those roads are the existing Wild Horse Ridge road, the extension of the Wild Horse Ridge road to the portal area and the two new conveyor access roads. Note the extension of the Wild Horse Ridge road is referred to in the PAP as the No. 3 Mine Portal Access Road and the extension of the road to the portal area is called the No. 3 Mine Portals and Pad Area..

The No. 3 Mine Portal Access Road is an existing road 4,850 feet long. The road has an average grade of 10.5% with the steepest grade being 18%. The road was in existed prior to mining and will be retained for the post-mining land use. The Division agrees with those classifications.

The conveyor access roads will provide access to the areas where the conveyor system will be built, operated and reclaimed. The lower road is approximately 600 feet long and has an average grade of 10%. The upper road is approximately 590 feet long and has an average grade of 19.5%. Those two roads will be reclaimed after mining is completed.

The Division has concerns about the steep grades. However, the Division does not have standards that require gentler grades. For road designs the Division relies heavy on the judgement of the engineer that designed as certified the roads.

The Division does not consider the No. 3 Mine Portals and Pad Area a road. The Division considers that area as a pad area. Therefore, detailed road designs are not required.

Road Systems

- Plate 3-5D and cross sections in Appendix 3-O show the roads widths and drainages. The roads slope at 2% to ditches that parallel the roads to direct runoff. The cross sections are on 100 foot centers and show cut and fill requirements for both construction and reclamation.. The Division will use that information to bond calculations.
- In Appendix 3-O the permittee shows a detailed plan for the construction and reclamation of the roads. In Section 3.6.12 of the amendment the permittee gives a detailed reclamation plan for the roads in the Wild Horse Ridge site. Since no material will be down cast all fill material will either be haul back to the site or excavated from the fill areas. Because the native material contain large boulders (3' to 5' in diameter) the lifts will be a maximum of 36". The fill will be compacted with earthmoving equipment. The permittee and their consultant do not believe that conventional compaction equipment will work at the site. The Division does not believe that 36" lifts can be adequately compacted. Therefore, the Division needs the permittee to demonstrate that 36" lifts can be compacted adequately or they must develop another compaction plan.
- The designs for the main haul road in the No. 3 Mine Portals and Pad Area are in Appendix 3-O. Most of the cut slopes the area will be reclaimed. Since some cut slopes do exist in the area total elimination of cut slopes may not be possible.

Performance standards

- The roads will be constructed of in-place material and/or road base. Similar material was used to construct other mine roads and have been adequate. The Division does have concerns about the road base. Soil samples show that some material has high selenium levels. See Page 3-7 of PAP
- The permittee committed to repair road damage caused by a catastrophic event as soon as practical.
- In addition to the above, primary roads will meet the following requirements:
 - Primary No.3 Mine Access Road is the main road to the portal area. Certified maps showing the road are Plate 3-5D Road-Details and Plate 2-4G, 2-4F Surface Facilities.

Primary Conveyor Access Road No.1 is the lower conveyor access road and is shown on Plate 3-5D Road-Details and Plate 2-4F Surface Facilities.

Primary Conveyor Access Road No.2 is the upper conveyor access road and is shown on Plate 3-5D Road-Details and Plate 2-4G Surface Facilities.

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The cross sections show the road width and drainage. The roads slope at 2% slope and have parallel ditches that direct runoff. The cross sections are insufficient to show cut and fill requirements. That information is needed to determine reclamability. The permittee must give the Division detailed cross section of the road. The cross section must show the operational and reclamational cuts and fills. If the permittee proposes to leave cut slopes then they must meet the requirements of R645-301-527.250.

- Appendix 3-O-6 contains the slope stability study conducted by Dames & Moore. The consultant outlined the soil and rock sampling, procedures and testing. The stability analysis was described. All slopes had a minimum safety factor of 1.6, and the minimum required safety factor is 1.3.
- Most of Primary No.3 Mine Access Road will be constructed on an existing dirt road. By upgrading the existing dirt road the permittee will be minimizing erosion. Since the roads must be constructed in a narrow canyon, the permittee has limited options about where to place the road. The Division reviewed the road designs and concluded that the erosion will be minimized and that the roads are located on the most stable available surface.
- The permittee does not propose to construct fords in any perennial or intermittent streams.

Primary road certification

The designs submitted by the permittee were certified.

Other Transportation Facilities

The conveyor system goes from the coal bin near the portals to the tipple facilities then to the coal storage pad. The conveyor system will be inclosed to fugitive coal dust. The R645 rules have few design specifications for conveyor systems. The Division reviewed the conveyor plans and found that they meet the minimum engineering requirements. See Appendix 7K Page13 for information of dust control.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the permittee must provide the following in accordance with:

R645-301-553.100-R645-302-553.150: The permittee must either show that lift 36" thick can adequately compacted or develop another backfilling and regrading plan for reclaiming the roads.

R645-301-534.120: The permittee must show that they will use only nonacid- or nontoxic forming substances for road surfaces. The Division is concerned about the high levels of selenium in some soils near the No. 3 Mine Portal Area.

R645-301-521.190: The permittee must show the location of the cross sections used to calculate the cut and fill volumes (cross section in Appendix 3-O) on the detailed topographic maps (Plate 3-7F, Plate 3-7G, Plate 3-2F and Plate 3-2G)

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:

Disposal of Noncoal Waste

Noncoal waste will be placed in metal dumpsters that are on the property. A local trash collector is contracted to replace these bins when they are near capacity. This is standard procedure for most coal mines.

Coal Mine Waste

The approved MRP allows the permittee to dispose of coal mine waste underground. In the past that plan has been adequate.

The Division concern is that the permittee could encounter burnt or weather coal near the outcrops. If such conditions exist then the permittee would have to dispose of that material. The Division has had several problems involving mines that did not have disposal plans for coal mine waste based on assumptions that no coal mine waste would be brought to the surface. Often that assumption is wrong and then permittee has no plan for disposal of coal mine waste. To avoid such problems the Division needs the permittee to have a contingency plan for handling coal processing waste.

Refuse Piles

The permittee does not propose to construct a refuse pile. Without a refuse pile the permittee has no other choice than to dispose of the coal mine waste underground.

Impounding Structures

The permittee does not propose constructing an impoundment out of coal mine waste.

Burning and Burned Waste Utilization

The permittee did not address burning and burned waste utilization. See R645-301-528.323

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Return of Coal Processing Waste to Abandoned Underground Workings

The permittee has approval for disposing of coal mine waste underground. The plan is mainly for small amounts of roof material. The Division is concerned that when the Wild Horse Ridge is developed large amounts of burned or weather coal could be encountered near the outcrops. If such conditions exist the permittee may not be able to dispose of the coal development waste underground. Therefore, the Division encourages the permittee to develop a contingency plan for disposal of coal mine waste.

Excess Spoil

The permittee does not plan on generating any excess spoil.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the permittee must provide the following in accordance with:

R645-301-528.323.1, The permittee must address how burning and burned waste material will be handled. Note: R645-301-528.323.1 does not make exceptions for temporary storage piles.

R645-301-536, The permittee must address how coal mine waste from the Wild Horse Ridge project will be handled if the material must be brought to the surface and if the material cannot be returned underground. The Division concern is that coal near the outcrops may be burnt or weathered. If so then the permittee may not be able to dispose of the material underground. Should such a scenario occur then the permittee would need to find an alternative disposal site for the mine development waste. If the permittee does not want to have an alternative disposal site (refuse pile) then they should show that if burnt or weather coal is encountered that MSHA will allow that material to be placed underground.

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, -300-147, -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:

Discharges Into an Underground Mine

The permittee did not propose to discharge water into an underground mine.

Gravity Discharges

The permittee did not propose to use gravity discharge.

Impoundments

- Pond D is not an MSHA pond, therefore special MSHA requirements do not apply to the pond.
- The plans for the pond have been certified by a professional engineer, see Plate 7-11 and Appendix 3-O.
- The pond has a static safety factor of at least 1.44. The minimum standard is a safety factor of 1.3.
- Foundations and abutments for an impounding structure shall be stable during all phases of construction and operation and shall be designed based on adequate and accurate information on the foundation conditions. The Division will monitor the construction of the pond to make sure that the foundations are installed correctly.
- The permittee did not address how the slopes will be protected against sudden drawdown. Sudden drawdown failure happens when pore pressure in the embankment causes failure.
- No highwalls are associated with the Pond D.
- Inspections. The Division will verify that the inspections were done during critical construction stages.

Ponds, impoundments, banks, dams, and embankments

Each application shall include a general plan for each proposed sedimentation pond, water impoundment, and coal processing waste bank, dam, or embankment within the proposed permit area. Each general plan shall:

- The plans for sediment Pond D were prepared by a professional engineer.
- Plate 7-11 shows the plans and the cross sections for Pond D.
- Contain preliminary hydrologic and geologic information required to assess the hydrologic impact of the structure. This information will be checked by the Division hydrologist and geologist.

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- Contain a survey describing the potential effect on the structure from subsidence of the subsurface strata resulting from past underground mining operations if underground mining has occurred. The location of Pond D is not shown on Plate 3-3 Subsidence Map. The Division needs to have the location of the Wild Horse Ridge strictures shown on Plate 3-3 so we can evaluate subsidence effects. See R645-301-525.213.
- The Division does not require any additional plans for Pond D.

Each detailed design plan for a structure that does not meet the size or other criteria of 30 CFR Section 77.216(a) shall:

- The plans for sediment Pond D were prepared by a professional engineer.
- Plate 7-11 and Appendix 3-O shows the plans and cross sections for Pond D.
- Describe the operation and maintenance requirements for each structure. The Division hydrologist will address this issue.
- Due to the remoteness of the area, Pond D will be removed during the initial backfilling and grading to avoid any future re-disturbance.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the permittee must provide the following in accordance with:

R645-301-533.300, The permittee must show that Pond D will not fail during sudden drawdown. Sudden drawdown involves failure due to pore pressure in the impoundment during, after large amounts of water have been discharged from the pond. Sudden draw on cannot be prevented or controlled by erosion control methods. The effects of sudden draw on were not included in the Dames and Moores letter dated July, 23, 1999.

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

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

Analysis:

The permittee did not address the requirements of R645-301-526.200 through R645-301-526.222. Those requirements state that the permittee will comply with State and federal regulations.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the permittee must provide the following in accordance with:

R645-301-526.200 through R645-301-526.222, The permittee must address these sections. They must describe how support facilities will be installed and operated. They must also make specific commitments to the Division about the facilities.

SIGNS AND MARKERS

Regulatory Reference: 30 CFR Sec. 817.11; R645-301-521.

Analysis:

The current MRP and the Wild Horse Ridge Amendment do not specifically address the signs and markers requirements listed in R645-301-521.

Findings:

R645-301-521.200, The permittee must address the signs and markers requirements as listed in this section. The information is not listed in the MRP or the Wild Horse Ridge amendment.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Affected Area Maps

Several maps show the permit boundaries and proposed mining areas. Those maps are considered adequate to serve as the affected area map.

Mining Facilities Maps

Plate 2-4G and other maps show the mining facilities.

Mine Workings Maps

The mine maps for the two seams in the Wild Horse Ridge project are Plate 3-4A Bear Canyon seam (lower) and Plate 3-4C Tank seam (upper).

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Findings:

The permittee met the minimum requirements of this section.

RECLAMATION PLAN

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-270, -301-271, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

Analysis:

The amendment does provide detailed contour maps and cross sections that show the pre-existing, operational and reclaimed topography. The approximate original contour issues associated with the Wild Horse Ridge project are highwall elimination and cut slope retention. The permittee proposes to eliminate all highwalls during final reclamation. Some cut slopes may be left. The cut slope issue will be discussed in the Backfilling and Grading section of this TA.

The amendment did not include a variance from the approximate original contour requirements; therefore, the Division assumes that the plan is to restore the site to AOC.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the permittee must provide the following in accordance with:

R645-301-553.110, The amendment must show that the reclamation plan will comply with the approximate original contours and include description of any highwall or cut slopes to be retained.

Findings:

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:

The permittee must give the Division detailed cross sections that show: how the highwalls will be eliminated, what cut slopes will be left and how the coal seams will be backfilled. The cross sections

in Appendix 3-O do not show the location of those features.

The permittee needs to clarify the slope stability analysis for the reclaimed slopes. The cross sections in Attachment A Slope Stability Analysis, the report submitted by Dames and Moore dated October 7, 1996 show the cross sections used for the slope stability analysis. The cross sections are not labeled but they may be for the operational slopes not the reclaimed slopes. The permittee needs to clarify this issue. The Division needs slope stability analysis for both the operational and reclaimed slopes.

The permittee states that no coal mine waste will be brought to the surface from the Wild Horse Ridge project. The Division concern is that during development of the Wild Horse Ridge project the permittee may have to dispose of unexpected coal mine waste that contains large amounts of coal. If that were to happen, the current coal mine waste disposal plan would be inadequate.

The current plan for coal mine waste disposal is approved by both MSHA and the Division. The plan is based on the need for limited amounts of rock materials to be disposed underground. If large amounts of coal materials were encountered during mine development then the approved plan would no longer be valid.

The Division major concerns about underground disposal of coal mine waste involves water quality issues. MSHA deals with safety issues. The coal in the mine development waste could be a safety issue. Prior to the permit being issued the permittee must show that MSHA would approve the placement of coal mine waste that contains significant amounts of coal underground.

The permittee states that no spoil will be generated in the Wild Horse Ridge project. The permittee also states that terraces will not be used. The Division reviewed the proposed reclaimed slopes and agreed with the permittee on those issues.

Previously mined areas

No previously mined areas exist in the Wild Horse Ridge project.

Backfilling and grading on steep slopes

The permittee does not propose to mine on steep slopes (mountain top removal).

Special provisions for steep slope mining

This section deals mostly with mountain top removal that will not be done at the Wild Horse Ridge site.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the permittee must provide the following in accordance

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with:

R645-301-542.730, The permittee must show that MSHA has approved the disposal of large amounts of coal material underground. The current coal mine waste plan is based on limited amounts of rock material being placed in abandoned underground workings. **The Division needs assurances that MSHA will allow the permittee to dispose of large amounts of coal mine waste underground should the need arise.**

R645-301-553.100 and R645-301-542.200, The permittee must give the Division detailed cross sections that show the reclamation of each highwall, what cut slopes if any will be retained and how the coal seams will be backfilled. The cross sections in Appendix 3-O do not show the location of the highwalls, cut slopes or coal seams. The highwalls, cut slopes and coal seams must clearly be shown on the cross sections. Without that information the Division is unable to make a finding about highwall elimination.

R645-301-553.130, The permittee must show that all reclaimed slopes will have a safety factor of at least 1.3. The safety factor analysis in the amendment appears to deal only with the slopes in the operational phase. The permittee reply to this deficiency was that a reference had been added to Page 3-118 to reference the slope stability factor information. Slope stability analyses are contained in Appendix 3-O. **The slope stability analyses (cross sections) may not be for the reclaimed slopes, rather the operational.** The permittee needs to clarify this issue. If the slope stability analysis is for the operational phase then they must also include slope stability analysis for the reclamation phase.

Findings:

MINE OPENINGS

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

Analysis:

The mine opening closure plan is given in Section 3.6.3.1 of the approved MRP. The plan is adequate for the mine openings at the Wild Horse Ridge.

Findings:

The permittee met the minimum 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:

Reclamation

In Section 3.6.12 of the Wild Horse Ridge amendment, the permittee states that the portal pad access road will be backfilled. As fill material is placed on the access road, it will result in narrowing the road width, while backfilling the cut slope. Large diameter rocks will be incorporated into the outslope created by filling to aid in surface stability. This procedure will be followed until most of the cuts are backfilled and the road has been narrowed to a "pilot cut" which will still allow the equipment access to the area. The pilot cut will then be reclaimed in the same manner as the Tank Seam Access Road described in Section 3.6.11.

In Section 3.6.3.3 the permittee states the following:

The mine access road below the No. 3 Mine Access Road will be regraded and fitted with post-mining diversion structures as shown on Plate 3-2. Diversion designs are shown in Appendix 7-H. Asphalt road surfacing material from the scalehouse pad will be excavated and disposed of at the Nielson Construction Landfill in Emery County. All roads that are to be reclaimed will be closed to traffic during reclamation. The reclaimed road design will be the same as the operational design, and is shown on Plate 3-5.

As backfilling and grading is completed, operational areas will be scarified by gouging to a depth of approximately 8 inches with a trackhoe. This will reduce compaction and prevent topsoil slippage, and improve soil retention and vegetation establishment in the gouges.

The road reclamation plan adequately addresses the requirements to close the roads to the public during reclamation, describes how the culverts will be reclaimed and disposal of road surface materials.

The permittee did not address road closure during reclamation, or how the roads that provide access to the conveyors would be reclaimed, or the condition that the main access road will be left in and how the road surface material will be disposed and how the road will be scarified.

Retention

The permittee states that those sections of the road that will be retained as part of the post mining land use will have the same design as the roads during operations.

Findings:

The permittee met the minimum requirements of this section.

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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:**Discharges into an underground mine**

The permittee does not plan to discharge water into the underground mine after final reclamation.

Gravity discharges

The permittee does not plan to have any gravity discharges from the mine after final reclamation.

Sedimentation ponds

Sediment Pond "C" will be removed during the backfilling and grading of the Shower House Pad to avoid redistributing areas following reclamation.

Impoundments

Sediment Pond "C" will be removed during the backfilling and grading of the Shower House Pad to avoid redistributing areas following reclamation.

Casing and sealing of wells

The permittee did not include the sediment pond removal in the detailed reclamation timetable. The Division needs this information to ensure adequate sediment controls will be kept during reclamation.

Findings:

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

R645-301-542.500 The permittee must include the removal of the sediment pond in the reclamation timetable.

CONTEMPORANEOUS RECLAMATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.100; R645-301-352, -301-553, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

On Page 3-61 the permittee states:

Following the construction of the Wild Horse Ridge expansion area, the topsoil storage area, the Wild Horse Ridge Blind Canyon Seam portal pad, any road out slopes where fill is placed will receive interim reclamation.

Findings:

The permittee met the minimum requirements of this section.

CESSATION OF OPERATIONS

Regulatory Reference: 30 CFR Sec. 817.131, 817.132; R645-301-515, -301-541.

Analysis:

The plan for cessation of the operation is part of the approved MRP.

Findings:

The permittee met the minimum requirements of this section.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Analysis:

Reclamation backfilling and grading maps

The permittee must give the Division detailed maps that show how the backfilling and grading requirements will be met. The specific items missing from maps and cross sections are: the location of the highwalls, cut slopes and coal seams

Reclamation facilities maps

The permittee gave the Division detailed maps of all reclaimed facilities including but not limited to the access road.

Final surface configuration maps

The permittee gave the Division detailed maps and cross sections that show the final surface

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configuration.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the permittee must provide the following in accordance with:

R645-301-542.200, The permittee must give the Division detailed maps and cross sections that show the location of the highwalls, cut slopes and coal seams.

BONDING AND INSURANCE REQUIREMENTS

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

Analysis:**Determination of bond amount**

The Division will evaluate the bond amount when the reclamation plan has been approved.

Findings:

The Division will evaluate the bond amount when the reclamation plan has been approved.

RECOMMENDATIONS:

The Division should deny the Wild Horse Ridge amendment until the permittee corrects the deficiencies.

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