



State of Utah

DEPARTMENT OF NATURAL RESOURCES

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Technical Analysis and Findings

Utah Coal Regulatory Program

March 30, 2015

PID: C0250005
TaskID: 4814
Mine Name: COAL HOLLOW
Title: UNDERGROUND MINING

Summary

The narrative and drawing 5-10 have been revised to show on a single map the use of three mining methods simultaneously: open pit mining, highwall mining and future underground mining. Dwg 5-10 mining sequence is consistent with Division staff observations (February 2015 Insp. Rpt #4101). Both topsoil and overburden removal will be completed within the permit area in 2015 (Dwg 5-2 and Dwg 5-16). The excess spoil pile has been reduced to half its original size (Dwg 5-3) with a temporary spoil pile on the east half of the original footprint.

Underground portals will be developed into fee coal from the 140 ft. highwall of Pit 10 (Dwg 5-3B). The average depth of overburden in the underground mining area is 240 ft. and the average coal seam thickness is 16 ft. An estimated 725,000 tons of coal will be recovered based on 45% recovery from the underground mine (Dwg 5-9). The location of the underground mine in relation to springs and wells is shown on Figure 2 of Appendix 7-15 Probable Hydrologic Consequences of Underground Coal Mining.

For the purpose of R645-501-513.700, a supplemental drawing was included with the cover letter to show the perimeter of a 500 ft radius circle around the underground portals. The Permittee understands that surface mining and reclamation activity cannot occur within this perimeter without the approval of both DOGM and MSHA (R645-301-523.220).

There is no exemption from the backfilling and grading requirements of R645-301-553. In accordance with R645-301-112.800, the Permittee states that there is potential to extend the underground operations northward into the adjacent federal LB lands shown on Dwg 1-2. However, the lease has not yet been acquire. Once the lease is acquired, ehe Permittee may file an amendment to the MRP to expand the permit area and alter the reclamation plan.

Deficiencies Details:

None

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General Contents

Right of Entry

Analysis:

Findings:

Underground mining will take place in fee coal located in T39S, R 5 W Sec 20, S/12 SW1/4 owned by C. Burton Pugh, Roger M. Pugh and Margaret Moyers (Exhibits 1, 3, and 4 in Appendix 1-2 Confidential folder). Burton Pugh's lease dated 9/10/2014 grants "the right to conduct mining activities using all available methods for the extraction, mining and removal of the coal" (Article 1, Sec. 1.01(ii)). Similar language is found in the lease agreements with Roger Pugh and Margaret Moyers. This information meets the requirements of the R645 Rules.

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Permit Term

Analysis:

Findings:

Disturbed acreage is listed by mining phase in Section 116 of the MRP. The reduction in acreage reported in Section 116 was revised with Task 4776, approved January 16, 2015. The reduction in acreage reflects the difference in disturbed area from the original mine plan to the existing mining plan as shown on Dwg 5-2. A total disturbed area of 342 acres is listed in Section 116 by phase as follows:

Phase 1 = 250 acres

Phase 2 = 54 acres

Phase 3 = 38 acres.

All drawings submitted with this application correctly identify the new shape of the disturbed area and the total disturbed area of 342 acres.

In accordance with R645-301-112.800, the Permittee suggests a potential to extend the underground operations northward in to the adjacent federal LBA lands shown on Dwg 1-2. At that time, an amendment to the MRP may expand the permit area and alter the reclamation plans.

The permit term is not extended by this application beyond 2017 at which time Pit 10 will be reclaimed at the completion of mining within the permit area.

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Environmental Resource Information

Historic and Archeological Resource Information

Analysis:

The Cultural and Historic Use information in chapter 4 of the current MRP has been revised to include a statement relevant to underground mining to denote that mining activities are not just limited to the surface mining of the coal resource.

Paragraph 1, sentence 1 on page 4-5 of chapter 4 has been revised to include the following or similar text.

Procedures for ground disturbing activity from surface and underground mining activities as described in sections 521 and 523 and shown on drawing 5-10 of the MRP will follow the Cultural Resources Data Recovery Plan for the Alton Coal LLC, Coal Hollow Project in Kane County.

jhelfric

Fish and Wildlife Resource Information

Analysis:

The current monitoring plan (most recent sage grouse monitoring report) for vegetation and bird use has been revised to include the proposed underground mining development area. Chapter 3, Appendix 3-5, page 21 of the application includes a commitment to monitor the vegetation and sage grouse occupancy in accordance with the approved sage grouse monitoring plan and mitigate any impacts to the grouse or their habitat for each of the four panel areas. The MRP has also been revised to include a commitment to collect base line noise levels near the portal area.

Land Use Resource Information

Analysis:

The Land Use information in chapter 4 of the current MRP includes a statement relevant to underground mining to denote that mining activities are not just limited to the surface mining of the coal resource. Paragraph 2, sentence 2 on page 4-1 of chapter 4 has been revised to include the following or similar text. Surface and underground mining activities as described in sections 521 and 523 and shown on drawing 5-10 of the MRP will be conducted on and beneath lands that are lands mainly used for grazing and native wildlife habitat.

jhelfric

Operation Plan

Mining Operations and Facilities

Analysis:

The Permittee updated the current MRP sections 521 and 523 with the addition of underground mining operations. Such additions include items like detailing the new underground miner required for underground mining operations. Drawings 5-3 through 44 which detail the mine facilities, coal recovery, overburden handling and reclamation have been updated to reflect the addition of underground mining as well.

R645-301-515.311 Text was added to the MRP to include the monitoring and maintain the portals to the underground operations during temporary cessation. The operator provided updated section 521 of the original MRP operation plan to include underground operations by an underground miner as a third alternative to coal recovery operations.

Section R645-301-521.142 was added to address the regulations regarding subsidence mining and identified that subsidence will be prevented. The application shows the updated mine facilities to include the underground mining facilities show in Drawing 5-3 B. Section 515.321 was added to address the procedure for temporary cessation operations for a period of 30 days or more. The minimum requirements of R645-301-526, -528 have been met.

cparker

Air Pollution Control Plan

Analysis:

Final approval of the application will include a stipulation that requires the approval order for the revised air pollution control plan (Chapter 4, Appendix 4-5) from the Division of Air Quality.

jhelfric

Coal Recovery

Analysis:

The application shows the updated quantity tables to include the underground operations and adjusted surface operations. The application shows the updated produced tons table with underground operations for years four through six. The application meets the minimum requirements of R645-301-522.

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Subsidence Control Plan Subsidence

Analysis:

The Permittee added section 521.142 to the MRP detailing how Drawing 5-10 illustrates the extent of the current underground mining operations. The text also details how all underground coal mining at the site will be first mining only and will prevent subsidence by following engineered recommendations outlined in Appendix 5-9.

The Permittee also added section 525 detailing how walkovers of each of the four developed panels will be completed within

60 days of the completion of mining in those areas. Any cracks will be documented and sent to the Division.

cparker

Subsidence Control Plan Slides and Other Damage

Analysis:

The application included discussion that all monitoring actives will continue in the event of temporary cessation, meeting the minimum requirements of R645-301-515.

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Topsoil and Subsoil

Analysis:

Findings:

There have been no changes to the topsoil and subsoil handling plans with this amendment. Dwg 2-2 shows topsoil handling by year and the location of the topsoil stockpiles. Dwg 2-2 also shows the former locations of topsoil stockpiles consumed in reclamation work. Topsoil pile #5 was consumed in 2014. Topsoil pile #4 lies within the 500 ft. radius of the underground portals and will be consumed in 2015 reclamation in the locations shown on Dwg 5-38, as will the estimated 207,000 cubic yards of subsoil pile #2 and the entire excess spoils pile shown on Dwg 5-3.

Dwg 5-2 illustrates the last remaining area to be disturbed in 2015. This area is a grassy meadow along ditch 1 on the eastern disturbed area boundary which is to be disturbed for the construction of High Wall Trench 3 (HWT 3). Dwg 5-16 illustrates the location of overburden recovery in 2015. These areas correspond to Pit 20 and HWT 3 locations as shown on Dwg 5-10.

The mining plan describes stabilization of stockpiles and reclaimed areas in MRP Sections 231.400 and Section 244.100. The disturbed area around Pit #10 (laid-back alluvial slopes) will require stabilization under the mining plan, MRP Section 534.150.

Under the alternate reclamation scenario, there will likely be a need to re-vise the reclamation plan to include re-mining of the Excess Spoils pile. The requirement to provide this information has been deferred and is expected with response to DO 15.

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Road Systems Classification

Analysis:

The following sections that are relevant to roads with the MRP were edited to add the new haul road out of Pit 10 for underground mining operations: 521.123, 521.170, 527.100, 527.200, and 534.100-200. This section meets the minimum requirements of R645-301-521, -527, and-534.

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Road System Plans and Drawings

Analysis:

Drawing 5-3B and 5-22 were updated to show the new underground access road which will function as the eighth primary haul road on the site. This section meets the minimum requirements of R645-301-521, -527, and-534.

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Road System Certification

Analysis:

The Permittee edited the relevant sections in the MRP: 521.123, 521.170, 527.100, 527.200, and 534.100-200 to address the addition of the eighth primary haul road for the underground operations. This section meets the minimum requirements of R645-301-521, -527, and-534.

Spoil Waste Excess Spoil

Analysis:

The application states that waste from the underground mine operations will not be placed underground. The application included new text describing the mining operations and phases in operations in section 528. No changes were made in this application to the placement of spoil within the excess spoil pile. Any waste encountered in the underground mining operations will be placed in the manner described previously at the excess spoil site. The application meets the minimum requirements of R645-301-512, -513, -514, -521, -526, -528, -535, -536, -542, and -553.

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Hydrologic General

Analysis:

Background:

The prior Underground Amendment, Task #4786, had three deficiencies that did not meet the minimum hydrologic requirements as per R645-301-700. These deficiencies required the Permittee to:

- 1) provide a detailed water management plan in Pit 10 during temporary cessation
- 2) provide certified drawings and supporting narrative of the proposed water conveyance system from Pit 10 to Sediment Pond 3
- 3) provide certified drawings and a narrative of the proposed supplemental containment and settlement pond(s) to be built on an as-needed basis

The Division made the recommendation, with regard to the 2nd and 3rd deficiencies, to remove the vague narratives in the application if the Permittee will not be submitting certified drawings and clear narratives with the application.

Analysis:

The Permittee has re-submitted the Underground Mining Amendment to the Division addressing the deficiencies found in Task #4786. The Division has assigned Task #4814 to the current amendment.

The Permittee has provided a Pit 10 water management plan during temporary cessation that meets the Division's minimum requirements as per R645-301-731.111. The Permittee outlines how the bottom of Pit 10 will be graded to route water to a collection sump, which will be used for dust control within the Permit Area.

The Permittee has met the minimum hydrologic requirements as per R645-301-731.720, R645-301-732.100, and R645-301-732.210 by removing the vague narrative of the water conveyance system and settling pond(s). The Permittee will not pump water from Pit 10 to Sediment Pond 3. Instead, all the water from underground workings, surface runoff, and groundwater discharge to Pit 10 will be consumed by underground mining operations and dust control. Additionally, the Permittee will not build additional settlement ponds at the site and has removed the unclear narrative from the amendment.

Findings:

The Underground Mining Amendment has met the minimum hydrologic requirements as per R645-301-731.111, R645-301-731.720, R645-301-732.100, and R645-301-732.210.

kstorar

Support Facilities and Utility Installations

Analysis:

The application included the updated Drawing 5-3B which shows the relevant support facilities required for the underground operations. Sections 521.170 describes the support facilities as being an additional 48" wide wheel mounted stacking conveyor to transfer coal from the underground conveyor system that will be approximately 125 feet in length. Two concrete pads will be poured as foundations to support the fan and generator for the ventilation system of the underground operations as well. The application meets the minimum requirements of R645-301-526.

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Maps Affected Area

Analysis:

The application included an updated Drawing 5-3 detailing the disturbed area. The application meets the minimum requirements of R645-301-512, -521, and -542.

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Maps Facilities

Analysis:

The application included an updated Drawing 5-3B, 5-22, 5-25, 5-26, and 5-30 detailing the various mining and support facilities within the disturbed area. The application meets the minimum requirements of R645-301-512, -521, and -542.

cparker

Maps Mine Workings

Analysis:

The application included an updated Drawing 5-9, 5-10, 5-15-17, 5-35-37A, and 5-38 detailing the mine working and operations within the disturbed area. The application meets the minimum requirements of R645-301-512, -521, and -542.

cparker

Maps Monitoring and Sampling Locations

Analysis:

The application does not change any of the previously described monitoring point or locations detailed in the MRP. The application meets the minimum requirements of R645-301-512, -521, and -542.

cparker

Maps Certification Requirements

Analysis:

The Permittee has committed to provide P.E. certified drawings to the Division and the application is recommended for conditional approval, pending receipt of all certified drawings.

cparker

Reclamation Plan

Approximate Original Contour Restoration

Analysis:

No changes were made to the variance of the ACD with the excess spoil with this amendment. Approximate Original Contour, elimination of dual reclamation scenarios, and related bonding information will be provided in response to the Division Order 15A by March 31, 2015.

cparker

Backfill and Grading General

Analysis:

The application includes text additions to Section 542 to include the underground operations within the operation plan and that Pit 10 along with portions of Pit 9, Hightwall trench 1-3 will also remain open. Pit 10 will remain open for access to the underground portals past the 2017 reclamation date of the majority of the rest of the permitted area. The section meets the minimum requirements of R645-301-537, -552, and -533.

cparker

Mine Openings

Analysis:

The application includes text describing how when mine openings are no longer needed they will be reclaimed to MSHA Standards. Sections 540 was updated to include the reclamation of Pit 10 and the portal area of the underground operations. The section meets the minimum requirements of R645-301-513, -529, and -551.

cparker

Topsoil and Subsoil

Analysis:

Findings:

MRP Section 231.300 remains unchanged with this amendment and describes fertility testing of topsoil for N:P:K values.

The subsoil handling plan is found in Section 232.500 outlines a program of subsoil sampling during initial mining. This process was amended to states that at a minimum, areas of salt accumulation will be sampled for SAR values. This testing should be conducted prior to topsoil application to ensure that topsoil is not placed in areas where it will be degraded by capillary action from the soil beneath. Section 232.500 may conditionally be approved, but the language must be understood to mean that the subsoil will be tested prior to topsoil application in areas of salt accumulation.

MRP Section 244.200 describes mulching and seeding. Recent reclamation events have resulted in practical changes to the sequence of mulching and seeding.

Drawing 5-38 shows the reclamation to be completed annually. Dwg 5-38 shows the entire disturbed area will be reclaimed by 2017.

Drawing 3-7 shows the reclamation treatments and seed mix for each vegetation community reclaimed.

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Road System Reclamation

Analysis:

The application made no changes to the four roads that are to be reconstructed post mining. The new haul road associated with the underground mining will be reclaimed during the reclamation and backfilling of Pit 10.

cparker

Cessation of Operations

Analysis:

The application included the addition of text to section 541 and test that includes the commitments to seal the underground area and maintain any monitoring requirements during cessation. The section meets the minimum requirements of R645-301-515, -541.

cparker

Maps Affected Area Boundary

Analysis:

The application included an updated Drawing 5-3 detailing the disturbed area. The application meets the minimum requirements of R645-301-512, -521, and -542.

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Maps Bonded Area

Analysis:

The application included an updated Drawing 5-3 detailing the disturbed area and bonded area. The application meets the minimum requirements of R645-301-512, -521, and -542.

cparker

Maps Reclamation BackFilling and Grading

Analysis:

The application included an updated Drawings 5-35 through 5-38 detailing the regarding and reclamation of the disturbed areas. The application meets the minimum requirements of R645-301-512, -521, and -542

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Maps Reclamation Final Surface Configuration

Analysis:

The application included an updated Drawings 5-35 through 5-37A detailing the various scenario's final surface configuration. The application meets the minimum requirements of R645-301-512, -521, and -542.

cparker

Maps Reclamation Certification Requirments

Analysis:

The Permittee has committed to provide P.E. certified drawings to the Division and the application is recommended for conditional approval, pending receipt of all certified drawings. The application meets the minimum requirements of R645-301-512, -521, and -542.

cparker

Bonding and Insurance General

Analysis:

The Permittee currently holds a surety bond of \$127,750,000 for the reclamation Coal Hollow Mine. In accordance with Division Order, DO-15A, the Permittee will continue to work with the Division to determine the adequate reclamation bond amount required for the site.

cparker

Bonding Determination of Amount

Analysis:

The application includes text within the MRP stating that due to the location of the underground operations being located completely within Pit 10, no additional bond amount is required. The backfill and grading of Pit 10 is accounted for in the current bond estimate. The Division approves of the determination asserted by ACD.

cparker