

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

July 6, 2006

TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Wayne Western, Team Lead

RE: Phase I Bond Release for Reclaimed Areas, Task No. 2513, PacifiCorp, Des-Bee-Dove Mine, C/015/0017

SUMMARY:

The Division received a request for Phase I bond release for portions of the Des-Bee-Dove Mine on January 3, 2006. On May 1, 2006, the Division received additional information.

The Permittee designated the Little Dove and Beehive Mines area as Phase 1 reclamation and the Deseret Mine, bathhouse, and tipple areas as Phase 2 reclamation. The bond release application did not include the sedimentation pond, or remote portals.

Note: the Permittee uses the terms Phase 1, Phase 2 and Phase 3 to mean reclaimed subareas of the disturbed area. Those terms should not be confused with Phase I, Phase II and Phase III bond release.

TECHNICAL ANALYSIS:

RECLAMATION PLAN

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

Analysis:

The Permittee met the general requirements for bond release on the following area.

- Phase 1 Area: Little Dove and Beehive Mines.
- Phase 2 Area: Bathhouse, and tipple areas.
- Pumphouse Area: Pumphouse near the turnaround.

Other Areas associated with the Des-Bee-Dove Mine for which bond release is not being sought in this submittal.

- Phase 3 Area: The sediment pond area, which contains approximately 9 acres.
- Remove Portals: The Permittee reclaimed two remote portals in 2000. There was no money in the bond specifically marked to reclaim the portals. The portals were breakouts from the mine and did not involve any surface disturbance.
- County Road: Area granted Phase III bond release in 1997.

Chronology

- 1997: PacifiCorp submitted notice of intent to reclaim all areas.
- 1997: Haul road was taken over by Emery County and Phase III bond release for the road granted. Bond amount was not reduced because of the Phase III bond release.
- 1998: Pumphouse area consisting of 1.6 acres was reclaimed.
- 1999: Surface facilities of the upper and lower mine site were removed.
- 2000: Remote portals were reclaimed.
- 2002: Upper mine site was reclaimed.
- 2003: Lower mine site and access road were reclaimed.
- 2005: Work on Phase 3 area (sediment pond) began.

Findings:

The information provided in the bond release application is considered adequate to meet the minimum requirements of the regulations.

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -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 Permittee has met the requirements for restoring the Phase 1 area, Phase 2 area and the Pumphouse area to the approximate original contours (AOC.) The requirements to achieve

TECHNICAL MEMO

approximate original contour restoration are couched in the requirements for backfilling and grading, hydrology, postmining land use and revegetation. Specific requirements include:

Final Surface Configuration

The R645-Rules require that the disturbed areas be restored to the approximate original contours with limited exemptions. Restoration to AOC means that the final surface configuration shall closely resemble the general surface configuration of the land before mining. To meet the AOC requirements the land does not have to be restore to pre-mining elevations. Rather the land must blend into the surrounding area, with slopes that are similar in length and steepness to the adjacent topography. Since the area was disturbed before the passage of the Surface Mining Control and Reclamation Act of 1977 (SMCRA), there are no pre-disturbed topographic maps. Therefore, the Permittee has no reference as to the pre-disturbed topography of the area. Therefore, the Division main concern is that the mine site blend into the surrounding undisturbed areas.

Phase 1 Area

The Permittee showed the Phase 1 area on Map 3, Des-Bee-Dove Mines Phase 1 Reclamation Plan View & Cross Sections. The Permittee restored the slopes in the area to either 1.25:1V or 2H: 1V depending on the topography. See page 9 of the engineering section of Appendix XIV for additional design specification. The Division noticed during reclamation that the reclaimed slopes are similar to slopes in the surrounding undisturbed areas.

Phase 2 Area

The Permittee showed the Phase 2 area on Map 1, Des-Bee-Dove Mines Area of Bond Release Phases 1 & 2 & Pumphouse Area at a scale of 1 inch equals 100 feet. The cross sections are shown on Map 2, Des-Bee-Dove Mines Phase 2 Reclamation Cross Sections. The Permittee restored the slopes in the area to either 1.25:1V or 2H: 1V depending on the topography. See pages 13- 19 of the engineering section of Appendix XV for additional design specification.

Pumphouse Area

The Permittee showed the Pumphouse area on Drawing 1 of the bond release package. The Division found that the Permittee restored the site to AOC. The Pumphouse area is relatively flat. Many of the areas surrounding the Pumphouse site were disturbed pre-SMCRA and reclaimed by AML. The Pumphouse area blends into the surrounding landscape.

Eliminate All Spoil Piles

No spoil was generated during the construction or mining operations for the Des-Bee-Dove Mine.

Eliminate All Highwalls

R645-301-553.120 requires that all highwalls be eliminated except as provided for in R645-301-553.500 through R645-301-553.540. The exception apply to previously and continuously mined areas where there is insufficient fill material to reclaim the highwalls.

Phase 1 Area

The portals in the Phase 1 area were developed for the Beehive Mine and the Little Dove Mine. The locations of the portals are shown on several maps including CD1660B, Des-Bee-Dove Surface Facilities Map Highwall Survey and Drawing CD1817C, Des-Bee-Dove Mines Phase 1 Reclamation Plan View & Cross Sections.

The Beehive Mine portals were constructed in 1974 and therefore the portals are pre-SMCRA. Drawing CS1817C shows that there were two portals associated with the Beehive Mine and one vertical shaft used for return air. On page 13 in the engineering section of Appendix XIV, the Permittee states that the intake entries to the Beehive Mine were directly below a sandstone channel and that no excavation was needed. The return entry used a short vertical shaft to access the coal seam.

Sheet 3 of the bond release package shows a cross section for the reclaimed Beehive Mine portals. The Permittee placed seals 25 feet inside the mine and then backfilled to the surface. Since the portals were constructed in a natural cliff, there was no excavation above the portal height. Therefore, the highwalls were reclaimed when the portals were backfilled.

Photographs of the site before reclamation are in Appendix XVI Appendix A. Photo #11 shows the portal locations for the Beehive Mine. The portals were constructed at or near the base of a cliff; therefore no highwalls were associated with the portals. The return shaft was constructed on a slope. During interim reclamation, the Permittee reclaimed the shaft area.

Little Dove Mine portals were constructed in April 1977 and therefore are pre-SMCRA. On page 13 of the engineering section of Appendix XIV, the Permittee states "Development of the Little Dove Mine included several cuts along the contour along with highwalls for the individual portals." The Permittee later states "Due to restricted site configuration, reconstruction of the drainages will dictate the actual extents of the fills. Slopes constructed will not exceed 1.25H: 1V."

TECHNICAL MEMO

Sheet 3 of the bond release package shows cross sections for the area where the reclaimed Little Dove Mine portals are located. Cross Sections 1+00, 2+00 and 3+00 show the areas where the portals are located. The as-built drawings show that the Permittee reclaimed most of the highwalls. The Permittee reclaimed the highwalls using a combination of rock fills that did not exceed 1.25V: 1H slope and fill slopes that did not exceed 2H: 1V slopes.

Because the Little Dove Mine site was constructed pre-SMCRA, there are no accurate premining topographic maps of the area. Without the maps, the Permittee and Division were unable to determine if there was sufficient fill material to totally reclaim the highwalls. Photo #10 in Appendix XVI Appendix A shows portal location before final reclamation. The portals were constructed along cutslopes that were used to access the area.

R645-301-553.600, allows highwall remnants to remain at previously mined or continuously mined site if there is insufficient fill material. In addition to insufficient fill material, the Division allows highwall remnants to remain if highwall reclamation would conflict with another regulation, such as establishing drainages.

During reclamation, the Permittee and the Division continually re-evaluated the project. Both parties determined that the highwalls at the Little Dove Mine could not be eliminated because:

- There was insufficient fill at the site to reclaim the highwalls and maintain a safety factor of 1.3. The slope stability report in Appendix XIV, Appendix C, states that slopes constructed from fill must not exceed 2H: 1V slope. The Permittee could have placed more material against the highwall but the slopes would not have the minimum safety factor of 1.3.
- The drainages were redesigned during reclamation to take advantage of natural drainage patterns that had been buried and to ensure long-term stability of the drainages. Placing additional fill material along the Little Dove portals would have prevented the drainages from being restored.

The Permittee reestablished the cattle trail for access to East Mountain by implementing partial reclamation in certain areas of the access road dugways, as well as along the mine site access roads. The trail is small enough to blend into the surrounding area.

Phase 2 Area

The portals in the Phase 2 area were developed for the Deseret Mine. On page 14 of the engineering section of Appendix XV, the Permittee states “Dozers will be used to position the fill to eliminate (as practical) the associated highwalls and cuts.” The Permittee also references information in Appendix XIV Appendix, Highwall Survey: March 1997.

The Permittee excavated material above the bedrock outcrops that overlay the Deseret portals to create energy dissipation drops. The Permittee also placed large boulders along the highwalls in the drainage flow paths. See hydrology section for more details.

There are no highwall remnants associated with the Deseret Mine. All highwalls were reclaimed during reclamation.

Pumphouse Area

There are no portals in the pumphouse area.

Restore Drainages and Sediment Control

The Division considers that all AOC requirements associated with the restoration of drainages and sediment control are met when all of the reclamation hydrology requirements have been met.

Post Mining Land Use

The Division considers that all post mining land use requirements associated with the AOC requirements are met when all of the reclamation post mining land use requirements have been met.

Findings:

The information provided in the bond release application is considered adequate to meet the minimum requirements 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:

General

The Permittee has met the backfilling and grading requirements needed for Phase I bond release in the Phase 1, Phase 2 and Pumphouse area. The general backfilling and grading requirements are:

TECHNICAL MEMO

- Achieve the approximate original contours.
- Eliminate all highwalls, spoil piles, and depressions.
- Achieve a postmining slope that does not exceed either the angle or repose or such lesser slope as is necessary to achieve a minimum long-term static safety factor of 1.3 and to prevent slides.
- Minimize erosion and water pollution both on and off the site.
- Support the approved postmining land use.

Achieve the Approximate Original Contours

The Division addressed the all the AOC issues in the AOC section of the TA.

Eliminate all Highwalls, Spoil Piles and Depressions

The Division discussed how all highwalls were reclaimed in the AOC in the AOC section of the TA. There are no spoil piles in the areas for which the Permittee seeks Phase I bond release. The Permittee eliminated all depressions except for small pocks that were implemented to control erosion and provide microhabitats for vegetation.

Slope Stability

Phase I Area

The Beehive and Little Dove Mine areas were reclaimed so that all slopes would be stable and are less than the angle of repose. In Appendix C of Appendix XVI contains a slope stability report prepared by RB&G Engineering. The slope designs were as follows:

- Earth filled slopes should not exceed 2H: 1V slopes.
- Rock filled slopes should not exceed 1.25H: 1V slopes.
- The slope stability calculations were done using the assumption that no pore pressure would be present. Therefore, the slopes should have rock fill or drain fill place beneath the earth.

The engineering report states that slopes constructed to the design specification will have a safety factor of at least 1.3

Some cut slopes were left because:

- There was either not enough fill to reclaim the cutslopes.
- The reclaimed cutslopes would interfere with drainages.
- The reclaimed cutslopes would not meet the safety factor requirements.

Phase 2 Area

The Permittee reclaimed the Deseret Mine area so that all slopes would be stable and are less than the angle of repose. In Appendix XVI Appendix C contains a slope stability report prepared by RB&G Engineering. The slope designs were as follows:

- Earth filled slopes should not exceed 2H: 1V slopes.
- Rock filled slopes should not exceed 1.25H: 1V slopes.
- The slope stability calculations were done using the assumption that no pore pressure would be present. Therefore, the slopes should have rock fill or drain fill place beneath the earth.

The engineering report states that slopes constructed to the design specification will have a safety factor of at least 1.3

Some cut slopes were left because:

- There was either not enough fill to reclaim the cutslopes.
- The reclaimed cutslopes would interfere with drainages.
- The reclaimed cutslopes would not meet the safety factor requirements.

The Permittee needs to include in the narrative information about the coal material that was removed from the site and the modifications to the reclamation plan.

Pumphouse Area

The pumphouse area is relatively flat and none of the slopes approach 2V: 1H.

Previously Mined Areas

The highwalls were constructed pre-SMCRA. The Division addressed those issues in the AOC section of the TA.

Findings:

The information provided in the bond release application is considered adequate to meet the minimum requirements of the regulations.

MINE OPENINGS

TECHNICAL MEMO

Analysis:

The Permittee met the requirements for closing all portals.

Phase 1

On page 12 of the engineering section of Appendix XIV, the Permittee states that they sealed the portals in November 1987 and were backfilled in the fall of 2000. On page 33 of the hydrology section of Appendix XIV, the Permittee states that there are no wells within the Phase 1 area.

Phase 2

On page 20 of the engineering section of Appendix XV, the Permittee states that they sealed the portals in November 1987 and were backfilled in the fall of 2000. On page 33 of the hydrology section of Appendix XV, the Permittee states that there are no wells within the Phase 2 area.

Pumphouse

There are no mine openings at the pumphouse site.

The only shaft associated with the Des-Bee-Dove Mine was the fan entry to the Beehive Mine. The Permittee closed the shaft in 1987 by placing concrete debris and native rock.

Findings:

The information provided in the bond release application is considered adequate to meet the minimum requirements of the regulations.

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

The Permittee reclaimed all of the roads within the Phase 1, and Phase 2 areas, either completely or in part. As previously noted, a cattle trail was established through the reclaim area connecting to a previously established trail that provides access to the top of East Mountain. The

road accessing the pumphouse area was completely reclaimed. Where roads were completely removed, the roadbeds were scarified and ripped before reestablishing the final contours.

Retention

The Permittee established a cattle trail along the parts of the main access road and through the mine site area by utilizing portions of the portal access dugways. Thus, only partial reclamation of these roads (this was comprised of narrowing the road width to approximately six feet) was achieved. This established trail connected to an existing cattle trail above the mine. The Division does not consider the reclaimed cattle trail to be a road because it is not capable of handling automobile or truck traffic.

A full description of the cattle trail is on page 19 of the engineering section of Appendix XV.

Findings:

The Permittee met the requirements for the road systems and other transportation facilities section of the R645-Rules.

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:

Affected Area Boundary Maps

The affected (permit) boundaries will not change because of Phase I bond release. Therefore, the Permittee does not have to provide updated maps.

Bonded Area Map

The disturbed areas are shown Drawing 3 of the bond release package.

Reclamation Backfilling And Grading Maps

The Permittee met the requirements for showing the as-built reclamation and grading maps.

TECHNICAL MEMO

Phase 1 Area

The Permittee showed the as-built topography and cross sections on Drawing #3 of the bond release package of the Phase 1 area.

Phase 2 Area.

The Permittee showed the as-built topography and cross sections on Drawing #1 and Drawing #2 of the bond release package of the Phase 1 area.

Pumphouse Area

The Permittee showed the as-built topography on Drawing #1 of the Pumphouse area.

Final Surface Configuration Maps

The Permittee met the requirements for showing the as-built reclamation and grading maps.

Phase 1 Area

The Permittee showed the as-built topography and cross sections on Drawing #3 of the bond release package of the Phase 1 area.

Phase 2 Area

The Permittee showed the as-built topography and cross sections on Drawing #1 and Drawing #2 of the bond release package of the Phase 1 area.

Pumphouse Area

The Permittee showed the as-built topography on Drawing #1 of the Pumphouse area.

Reclamation Surface And Subsurface Manmade Features Maps

The Permittee met the requirement of showing surface and subsurface manmade features. The only surface or subsurface manmade feature at the Phase 1, Phase 2 or Pumphouse area is the cattle trail. The cattle trail is shown on Drawing #1 of the bond release package.

Certification Requirements.

The Permittee met the requirements for map certification by having Drawing 1, Drawing 2 and Drawing 3 of the bond release package certified.

Findings:

The information provided in the bond release application is considered adequate to meet the minimum requirements of the regulations.

BONDING AND INSURANCE REQUIREMENTS

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

Analysis:

Determination of Bond Amount

The Division reviewed the Permittee's request for Phase I bond release. The information is summarized in the table below.

Area	Acres	Bond Amount	Percent Bond Release	Bond Release	Bond Remaining
Phase 1	4.6				
Phase 2	23.3				
Pumphouse	1.6				
Subtotal	29.5	\$1,113,324	60%	\$ 667,994	\$ 445,330
Phase 3	9.0	\$ 133,054	0%	\$ 0	\$ 133,054
County Road Granted Phase III Bond Release 1997	NA	\$ 591,334	0%	\$ 0	\$ 591,334
Total	38.5	\$1,837,712		\$ 667,994	\$1,169,718

Findings:

The information provided in the bond release application is considered adequate to meet the minimum requirements of the regulations.

TECHNICAL MEMO

RECOMMENDATIONS:

The Division should approve the Permittee's request for Phase I bond.

O:\015017.DBD\FINAL\WG2513\whw2513.doc