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# TECHNICAL MEMORANDUM

## Utah Coal Regulatory Program

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May 31, 2011

TO: Internal File

FROM: James D. Smith, Environmental Scientist III, Team Lead *JDS 06/06/11*

RE: Phase II and III Bond Release for 9<sup>th</sup> East Portal Breakout Area, PacifiCorp, Deer Creek Mine, C0150018, Task ID #3726

**SUMMARY:**

PacifiCorp, the Permittee, has met the regulations of the R645 Utah Coal Rules in regards to both Phase II and III bond release for the Deer Creek Mine 9th East Portal Breakout Area (R645-301-880.310). Through Energy West Mining Company, a subsidiary of PacifiCorp, the Permittee has applied for Phase II and Phase III bond release on approximately .6 acre of land at the 9th East Portal Breakout Area in the Right Fork of Grimes Wash, adjacent to the Cottonwood/Wilberg Mine. (SE1/4 SW1/4 SE1/4 Sec. 22, T. 17 S., R. 7 E). The Permittee has not requested release of any bond money, only release of liability as a result of reclamation work completed. The Division's Bond Release Directive Tech-006 (September 5, 2000) and Utah Regulations R645-301-880.100 through 880.330 provided the guidance for this bond release review.

The Division received the application for Phase II and III bond release on January 11, 2011. The disturbed area included five portals and an access road, and all reclaimed in the fall of 1999. The Permittee received Phase I bond release on this site on July 31, 2007.

The Division can approve Phase II bond release after revegetation has been established in accordance with the approved reclamation plan, and runoff and streamflow from the lands to be released from bond are not contributing excess suspended solids to streamflow or runoff outside the permit area and are in compliance with all Utah and federal water quality laws and regulations (R645-301-880.320).

The Division can approve Phase III bond release - the release of the remaining portion of the bond - after the Permittee successfully completes all surface coal mining and reclamation operations and after the expiration of the period specified in R645-301-357, which is ten years for areas such as Grimes Wash where average annual precipitation 26.0 inches or less.

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**TECHNICAL ANALYSIS:**

**RECLAMATION PLAN**

The Deer Creek Mine 9<sup>th</sup> East Portal Phase II/III Bond release application consists of:

General Information for Bond Release

- Attachment 1: Notarized signature of Ken Fleck, Manager of Geology and Environmental Affairs
- Attachment 2: Draft letters to interested parties
- Attachment 3: Draft newspaper advertisement (public notice)
- Attachment 4: Legal description and site map
- Attachment 5: Reclamation treatments utilized
- Attachment 6: General history of mining and reclamation activities at the 9<sup>th</sup> East Portal site
- Attachment 7: Current total bond amount and incremental amount requested for release

Information for Phase II Bond Release

- Attachment 8: Vegetation analysis (2008/2009 field seasons)
- Attachment 9: Demonstration that area is not contributing suspended solids outside permit area

Information for Phase III Bond Release

- Attachment 10: Demonstration that responsibility period has been met
- Attachment 11: Demonstration that post mining land use has been achieved.

On February 22, 2011 the Division received a hard copy of the affidavit of publication of the Public Notice from the Emery County Progress: the notice was published on January 25, February 1, 8, and 15, 2011. Also on February 22, the Division received an e-mail with attached copies of the Letters to Interested Parties. The letters, mailed on January 21, 2011, were addressed to Mark Stilson – Utah DWtrR, Phil Notoriani – Utah SHPO, Pamela Brown – Manti-LaSal NF, Jerry Kenczka – Price BLM, Erik Larson – Utah DWR, and the Emery County Board of Commissioners.

## POSTMINING LAND USES

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

### Analysis:

This is discussed in Attachment 11. Because of the steep slopes and rocky outcrops, cattle-grazing is not a PMLU and wildlife habitat is the only PMLU identified in the MRP (Volume 3B, Appendix XIV, R645-301-400).

The Permittee states in Attachment 11, "Because the site is relatively small and inaccessible, vegetation establishment will be the only means of demonstrating post mining land use expectations. Since all success standards for vegetation establishment have been met, land uses for wildlife have been met as demonstrated by a successful vegetative stand in that area."

### Findings:

Information presented by the Permittee indicates that the disturbed area has been restored to pre-mining conditions and can support the PMLU.

## 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:

Early operators developed two portals in the Right Fork of Grimes Wash in the 1920's. In June 1977, the three 9th East Breakout Portals were developed for ventilation of the Deer Creek Mine. All portals and the surface access to them were pre-SMRCA disturbance. The 9th East Portal breakout portals were used for intake ventilation of the 4 Deer Creek Mine until 1990, when they were sealed according the MSHA regulations but not backfilled. Final reclamation was completed in December 1999: all the portals, including the two portals that were developed in 1920, were backfilled at that time.

Locations of the reclaimed portals and road are shown on the map 9TH EAST PORTALS PHASE III BOND RELEASE that accompanied the submittal.

### Findings:

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The portals have been sealed in accordance with MSHA regulations and the Coal Mining Rules.

## HYDROLOGIC INFORMATION

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

### Analysis:

#### Hydrologic Reclamation Plan

Before reclamation, sediment control for the 9th East Portal Breakout Area was provided by silt fence at the portal area and a berm along the access road that directed runoff (from approximately 0.2 acre) to the SAE at the Wilberg Fan. The silt fence and berm were removed during initial reclamation; after that, surface roughening was the primary sediment control until vegetation became established. The May 17, 2011 inspection found that the surface roughening has been considerably smoothed because the pocks have trapped sediment as intended, and vegetation and extensive non-living cover - mainly rock fragments - have stabilized the surface. The inspections found no indication of erosion or of sediment transport at the 9th East Portal Breakout Area.

Under the plan in the Cottonwood/Wilberg MRP, the Permittee monitors the Right Fork of Grimes Wash at GWR01, which is upstream of the 9<sup>th</sup> East Portal area; downstream monitoring is at GWR03, below the Cottonwood/Wilberg minesite. Data collected since 1984 show the Right Fork is typically dry, flowing occasionally in response to snowmelt or thunderstorms. Water-quality analysis data are not sufficient to determine whether the reclaimed 9th East Portal Breakout Area is contributing suspended solids to streamflow or runoff outside the permit area in excess of the standards set by state and federal statutes and rules.

The Vegetation Monitoring Reports for the Deer Creek Mine, 9th East Breakout Portal Area in Attachment 8 show that, in comparison to the reference area, the reclaimed area exceeds revegetation success standards for total living cover, woody species density, productivity, and diversity. Erosion and sediment control is best indicated by the cover and density parameters: estimated total living cover for the reclaimed area was 48.38% versus 30.83% for the reference area. Species density estimates show 3,872 total plants per acre for the reclaimed area compared to 742 plants per acre for the reference area. Dense plant cover helps to: 1) protect the soil from raindrop impacts that dislodge soil particles, 2) slow runoff by the shear number of plants within the ground cover, and 3) provide a higher root mass in the soil surface to better hold soil in place.

The Permittee also used RUSLE2 modeling, and the results agree with the conclusions from the vegetation monitoring. Attachment 8 includes RUSLE2 input parameter values for slope length and gradient values for the reference and the reclaimed areas; the Management and Contouring parameters are shown as "Default" for both areas (even though the reclaimed surface was pocked) indicating the same values were used for all other input parameters. The results in Attachment 8 show the modeled soil loss of the reference area to be 4.7 tons/ac/year but only 1.5 tons/ac/year in the reclaimed area. The values probably do not reflect actual sediment yield from the two areas, but they do indicate that soil erosion and loss is probably less on the reclaimed area than on the reference area.

Information presented in the bond release application indicates that offsite impacts have been prevented. Because of the small size of the reclaimed area and the ephemeral nature of flow (both in the channel of the Right Fork of Grimes Wash and overland on the adjacent slopes) water quality on the reclaimed area is not an issue for wildlife grazing.

**Findings:**

The Permittee has successfully completed all surface coal mining and reclamation operations in accordance with the Coal Mining Rules and the Hydrologic Reclamation Plan in the MRP, and the ten year extended liability period has expired.

**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:**

**Final Surface Configuration Maps**

Final surface configuration of the reclaimed area is shown on the map 9TH EAST PORTALS PHASE III BOND RELEASE that accompanied the submittal. The map was certified by John Christensen, PE.

**Findings:**

The map of the reclamation operation that was submitted with the application meets the requirements of the Utah Coal Mining Rules.

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**RECOMMENDATIONS:**

The Division should do a Phase II and Phase III bond release for the portion of the bond as requested by the Permittee.

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