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TO: **Internal File**

THRU: Paul B. Baker, Team Lead *PBB*

FROM: David W. Darby, Reclamation Specialist III *DW*

RE: Miller Canyon Portal Phase III Bond Release, PacifiCorp, Cottonwood / Wilberg Mine, C015019-BR99D-1

**SUMMARY:**

To provide necessary ventilation to the western portion of the Wilberg Mine, entries were developed in 1981 from the 3<sup>rd</sup> South Mains to Miller Canyon. Miller Canyon consisted of three separate breakouts, approximately sixteen feet wide, eight feet high, located on a extremely steep rock ledge typically void of top/subsoil resources. Natural coal outcrops exist throughout the area. The area impacted by the three breakouts was approximately 0.02 acres. Topography in the area is extremely steep and access is limited. The portals have been permanently sealed since 1987.

The breakouts were developed at the outcrop of the Hiawatha coal seam on the north side of Miller Canyon, about 1 mile from Cottonwood Creek. They outcrop at an elevation of 7,360 feet, the lowest level of all the portals at the Cottonwood/Wilberg or Deer Creek Mines. The Cottonwood/Wilberg Mines are developed in the Hiawatha Coal Seam and the Deer Creek Mine is constructed in the Blind Canyon Seam, above the Hiawatha Coal Seam.

PacifiCorp reclaimed the Miller Canyon portals in late June of 1999. They are located on steep rocky outcrops. The total reclaimed acreage of the portals is 0.02 acres, each portal is 8 x 20 ft. Information about the reclamation of the Miller Canyon Portals is presented in Appendix XXII of the MRP. The amount of disturbed runoff and sediment yield is very small. The reclaimed area was pocked to retain any runoff and control erosion.

Text in Volume 9, page 170 indicates the Miller Canyon breakouts are at an elevation of 7,360 feet, the lowest level of all the portals at the or Deer Creek Mines, however Map HS3 shows the Trail Mountain conveyor tube portal is at approximately 7250 feet. The main portals for the Cottonwood/Wilberg Mines lies at 7700 feet in Grimes Wash.

TECHNICAL MEMO

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Miller Creek breakout portals are a UPDES Permit site, UT-0022896-004. PacifiCorp (Utah Power & Light Company) applied for the discharge point (location 004) in 1982 and started reporting in the first quarter of 1983. Discharge from the portals began after portal seals were installed in 1984. Due to the steep topography, a 2" discharge pipe was installed to assist in sample collection. From 1994 to 1996 discharges from the Miller Canyon breakouts averaged less than 20 gpm and steadily decreased to less than 5 gpm.

Discharge from the #1 portal was estimated to be less than 3 gpm. Portal #1 has discharged water in the past, but no significant flows have been measured since July 1996. Field investigations conducted in May 1999 identified minor seeps at portals two and three. Flow from the portal area reaches the canyon floor, but infiltrates within 100 ft.

**TECHNICAL ANALYSIS:**

**RECLAMATION PLAN**

**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:**

**Ground-water Monitoring**

There is no information or evidence that the portal area discharged flows prior to mining or prior to development of the breakouts. Although flows appear to be low at this point in time, a question exists whether the portals can transmit flow after bond release. I talked to Dennis Oakley on October 13, 2000. He stated that flow coming from the portals is unlikely, because the portals are sealed. He stated that the flow currently coming from the portal is caused by seepage from sandstone channels in the facies above the mine. There is seepage in many areas at the same stratigraphic level. Map HS-3 shows the mapped channel sands. There is a high potential that the seeps existed prior to mining.

The Trail Mountain tunnel, consisting of the belt and roadway portal, are lower in elevation and dip than the Miller Canyon portals, Map HM-3. This being the case, water filling the mine voids would tend to flow from this portal first if sections of the mine were filled and not sealed. It is unclear at this point how the Trail Mountain tunnel will be sealed or what function it will take at the time of mine closure, also if this portal will prevent water from backing up against the Miller Canyon seals.

### **Surface-water Monitoring**

Monthly monitoring has taken place at the mine in compliance with provisions of the UPDES permit. The applicant's authorization to discharge expires October 31, 2002.

### **Gravity Discharges**

The three Miller Canyon Portals were temporarily sealed in 1984 following the Wilberg Mine fire and permanently sealed in 1989. A pipe was installed in the seal of the eastern (#1) portal and extended at least 500 feet down the canyon to facilitate the collection of water samples. Initially there was almost no discharge, with only five sporadic discharges, ranging from 4 to 25 gpm, measured between October 1986 and November 1988.

Water started flowing consistently beginning in April 1989, when discharge jumped to 70 gpm. The highest discharge was 78 gpm in August 1989, after which flow-volume trended downward. There were some high flows in the spring of 1991, flow-volumes decreased significantly in 1994, and there has been no reported discharge since July 1996. In May 1999 it was discovered that the pipe had been pinched-off by caving of the portal openings and that water was flowing from the seals, over the rock ledge, and to the canyon floor, where it dissipates within a few hundred feet: flow from portal #1 was estimated at 3 gpm..

It is unknown how long the pipe was pinched-off and what effect this had on the accuracy of flow measurements. Photos taken in June 1999 during backfilling of the portals show water seeping from the top of the Starpoint Sandstone ledge just below the portals: French drains were installed in 1999 in the base of the fill to prevent slope failure due to saturation. (The water-sampling pipe was also removed at that time, and the UPDES monitoring point is now in the stream bed of Miller Canyon near the confluence with Cottonwood Creek).

### **Water Quality Standards and Effluent Limitations**

The combined disturbed area for the portals is .02 acres. The amount of disturbed runoff and sediment yield is very small. The reclaimed area was pocked to retain any runoff and control erosion. The applicant has conformed to UPDES water quality standards in the past, when water was flowing from the discharge pipe. The location of the UPDES monitoring point has been changed and as a result the seeps from the mine area do not reach the monitoring site.

### **Findings:**

The applicant has supplied sufficient information to address this section.

### **MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS**

**TECHNICAL MEMO**

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**Analysis:**

**Affected Area Boundary Maps**

The applicant has supplied the required maps and information to analyze the Miller Canyon portal site. Map HC-3 and Appendix XXII provide the documentation to describe the portal site, extent, reclamation activities and surface configuration of the portal area .

**Findings:**

The operator meets the requirements of this section.

**RECOMMENDATIONS:**

It is recommended that the Phase III Bond release application for the hydrologic sections be approved.

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