

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

October 20, 2006

TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor *PL*

FROM: James D. Smith, Environmental Scientist, Team Lead *JS 10/20/06*

RE: Revised Volume 9 - Hydrologic Section, Task ID #2661, PacifiCorp, Deer Creek Mine, C/015/0018

SUMMARY:

This proposed change to Appendix A of Volume 9 adds spring UJV 213 to the water-monitoring plan. This addition is the result of a deficiency identified during the Division's technical review of the Mill Fork West Extension LBA/Federal Lease amendment (Task No. 2544).

TECHNICAL ANALYSIS:

OPERATION PLAN

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:

General

Ground-water samples collected in and near the Joes Valley Fault at the Crandall Canyon Mine indicated a mean residence time of 2,000 to 5,000 years, although one sample contained a small amount of tritium, suggesting some modern water infiltrates from the surface and mixes with older water stored in fractures. The Permittee states that mining near Joes Valley Fault could intercept modern water recharged from the surface, but the so-called active zone near the fault will also yield deeper, older water. Data also indicate that surface- and ground-water

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systems are not hydraulically connected, so no impacts to surface waters are anticipated from dewatering of saturated systems in the coal seams and adjacent strata (Volume 12, Section R645-301-624; Section R645-301-700, Appendix B). New information indicating Joes Valley Fault is several hundred feet farther to the west than previously thought does not establish any reason to alter these conclusions, and mining in the Mill Fork West Extension, with the mandated buffer zone, should not damage surface- and ground-water systems or water supplies in and adjacent to Joes Valley.

Groundwater Monitoring

The detailed Hydrologic Monitoring Program in Volume 9 identifies monitoring locations adjacent to the Mill Fork West Extension LBA, the monitoring schedule, and water-quality analysis parameters. This amendment adds spring UJV 213 to the monitoring schedule.

The USFS holds water right 93-1576 (change a21560) on spring UJV 213, which lies within the no-second mining buffer zone (Drawings MFU1825D and MFS1832D). Although the thick overburden (Drawing MFS1825D) makes surface impacts from subsidence unlikely, this state-appropriated water supply is located in an area where the potential for surface cracking is greatest: Drawing MFS1866D shows it is within the zone of potential subsidence from mining the Hiawatha Seam, located near both the end of a longwall panel and the projected limit of subsidence.

Mining in the vicinity of this spring isn't projected to begin until 2011 (MFU1840D). Baseline flow and temperature data were collected at UJV 213 in 2001, with no data collected since. Operational monitoring of springs is done in July, August, September, and October, so monitoring of this spring may not begin until 2007, but this will still provide several years of baseline information for comparison when evaluating impacts of mining on the spring.

Findings:

Information provided in the plan meets the Operational Hydrologic Information requirements of the regulations.

RECOMMENDATION:

Approval of the proposed amendment is recommended.