

# TECHNICAL MEMORANDUM

## Utah Coal Regulatory Program

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September 8, 2006

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TO: Internal File

THRU:  D. Wayne Hedberg, Permit Supervisor   
Joe Helfrich, Environmental Scientist III, Team Lead

FROM:  Steve Christensen, Environmental Scientist II

RE: Lease Addition U-024316, U-46484, U-61048 and U-61049, Task ID #2597, CO-OP Mining Company, C/015/0025

### SUMMARY:

On July 21<sup>st</sup>, 2005, COOP Mining Company (the Permittee) submitted an application to extend the Bear Canyon Permit boundary by adding 60 acres to lease U024316, 2,196.09 acres to lease U-61409, 1,400 acres to lease U-46484, 1,108.27 acres to U-61048 and 2,740.00 acres of private property (Mohrland Addition). The application is considered a major revision to the current MRP due to the extensive size of the proposed area additions (approximately 7,504 acres).

The Division of Oil, Gas and Mining (the Division) performed a technical analysis of the submittal and a letter outlining the deficiencies of the application was sent to the Permittee on February 1<sup>st</sup>, 2006 (Task ID# 2292). On May 21<sup>st</sup>, 2006, the Division received the Permittee's response to the deficiency letter. The Division performed a subsequent second round of technical analysis and a letter outlining the outstanding deficiencies was sent to the Permittee on July 13, 2006 (Task ID #2526). The Permittee responded to the second round of deficiencies on August 9<sup>th</sup>, 2006. The Division review of that response has been identified as Task ID #2597.

The following memo is the 3<sup>rd</sup> round of hydrologic analysis for the Bear Canyon Lease Expansion as it relates to the hydrology discipline of the R645 State of Utah Coal Mining Rules.

Hydrologic information provided in the application does not meet the requirements of the Coal Mining Rules. The proposed amendment should not be approved until the following deficiencies are addressed:

#### **R645-301-724.100, -724.200: State Appropriated Water Rights**

- The Permittee needs to modify Plate 7-12 to accurately depict the location and ID# for all state appropriated water rights located in the lease expansion area. (See State Appropriated Water Rights section for detailed information).

- The Permittee should provide additional state appropriated water right information. Per a conversation with Marc Stillson, Price, UT Water Rights Division Office and Mark Reynolds, C.O.P., it was agreed that: priority date, place of use, point of diversion and nature of use associated with each state appropriated water right located on the proposed lease expansion would be included in the MRP.

**R645-301-724, -724.100, -724.200, -731.210 and -731.220: (Baseline Information and Ground Water and Surface Water Monitoring –Operational Plan)**

- The Permittee should provide a written description in the pertinent text sections (i.e. Ground and Surface Water sections in the Baseline Environmental Description; 724.100 and 724.200, as well as in the Ground and Surface Water Monitoring sections in the Operational Plan; 731.210 and 731.220) clearly outlining what year specific ground and surface water sites will begin to be monitored as mining activity approaches their location (i.e. 3 years prior to undermining). In addition, the Permittee should provide a written explanation as to why the sites are being slated for future monitoring as opposed to immediate operational monitoring in each of the aforementioned sections. (See Ground and Surface Water Monitoring sections for further comments on proposed monitoring plan.)

**R645-301-728: Probable Hydrologic Consequences**

- The application does not meet the hydrology Probable Hydrologic Consequences Determination requirements as provided in R645-301-728. Page 7-60 makes a brief reference to water mitigation efforts in the event that mining activity impacts either the Left or Right Fork of Fish Creek. The Permittee should remove mitigation language from this section and discuss the proposed plan in the Replacement of State Appropriated Water Supply in the Operational Plan section.

**R645-301-722, -731: Maps, Plans and Cross Sections**

- The Permittee needs to modify Plate 7-12 to accurately depict the location and ID# for all state appropriated water rights located in the lease expansion area. In addition, the title of Plate 7-12 should be changed to Water Rights. (See State Appropriated Water Rights section for detailed information).
- The Permittee should update Plate 7-4 to reflect water monitoring and mine plan changes as brought about by recent site visits and meetings with the Division, water users and the USDA Forest Service. (See the Maps, Plans and Cross Sections of Mining Operations in the Operational Plan section, R645-301-731, of this memo for specific comments).
- The Permittee needs to clarify which Plate 7-4 is the correct as the digital version depicts an area of concern on the Right Fork of Fish Creek, yet the hard copy version submitted to the Division does not depict this area of concern.

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**R645-301-731.210, -731.220: Surface and Groundwater Monitoring**

- Page 7-48 of the MRP states, “A recommended water monitoring program is included in Appendix 7-J, Section 10.0”. The Permittee should make clear which monitoring program is to be followed i.e. the program outlined in Appendix 7-J or the program outlined in Chapter of 7 of the MRP, as they are different.
- The Permittee should provide a written commitment to begin sampling sites FC-2, FC-3, FC-4, SBC-18, and SBC-20 beginning the 1<sup>st</sup> quarter of 2007. A start date of 2007 is listed on Table 7-14 for the aforementioned ground and surface water sites, but there is no specification in the text of the MRP that states when in 2007.
- Plate 5-1B, Hiawatha Seam Workings, does not depict a start date for (presumably) long wall panels 5 and 6. The Permittee needs to clarify in the MRP when these areas are to be mined in order to adequately identify the 3-year baseline collection/water monitoring commencement date for the hydrologic resources identified in this area: SCC-5, WR-2, WR-3 and WR-4. The sites have a water monitoring start date of 2013 according to Table 7-14, yet Plate 5-1B does not support this.
- The Permittee needs to provide a more detailed monitoring program to access potential impacts to the Left and Right Forks of Fish Creek, as they have been identified as perennial in Appendix 7-J (See the Operational Plan Surface and Groundwater Monitoring section for more comments).

**R645-301-731.210: Groundwater Monitoring**

- The Permittee will need to amend Table 7-14, Plate 7-4 and related text portions of chapter 7 Groundwater Monitoring, to reflect recent changes to the mine plan as well as the alteration of the water-monitoring program. (See Groundwater Monitoring section, R645-301-731.210, for details and specific deficiencies).

**R645-301-731.220: Surface Water Monitoring**

- Surface water site FC-4 is depicted on Plate 7-4, however it is not listed on Table 7-14. The Permittee should update the table and the text on page 7-57 to reflect the addition of this surface water site on the upper reach of the Left Fork of Fish Creek.
- Cedar Creek surface water-monitoring sites CK-1 and CK-2 have a monitoring start date of 2010 as listed on Table 7-14. However, according to Plate 5-1B, a rock tunnel is to be constructed in this area in 2010. In order for 3 years of baseline to be collected prior to mining activity, the two surface water sites would need to be monitored starting in 2007. In addition, the sites were depicted on previously submitted submittals as active

monitoring sites. The Permittee needs to address this discrepancy in the text and on Plate 7-4 and Table 7-14.

**R645-301-731.50: State-Appropriated Water Replacement**

- The Permittee must provide a description of the measures to be taken to replace adversely affected state-appropriated water supplies or to mitigate or remedy any subsidence-related material damage to the land and protected structures.
- The Permittee should commit to replacing any water resource that has been materially damaged as a result of mining activity, as well as delete the language connecting water replacement efforts directly to an impacted state appropriated water right on pages 5C-9 and 7-48.

**R645-301-729: Cumulative Hydrologic Impact Assessment (CHIA)**

- The Permittee needs to address the hydrologic deficiencies listed in this technical memo (Task ID#2526) before the Division can update the Gentry Mountain Cumulative Hydrologic Impact Area with information regarding the addition of the proposed lease expansion.

**TECHNICAL ANALYSIS:**

**ENVIRONMENTAL RESOURCE INFORMATION**

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

**HYDROLOGIC RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

**Analysis:**

**Baseline Information**

The application does not meet the hydrology Environmental Description for Baseline Information requirements as provided in **R645-301-724**.

Page 7-49 and Page 7-57 state, "Monitoring will begin 3 years prior to mining in the area." A narrative description listing the sites and corresponding dates to begin monitoring those sites should be included in the text. It is noted that table 7-14 Water Monitoring Matrix:

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Operational Phase of Mining lists a starting date for monitoring to begin at the various points, however a written commitment should be made by the Permittee in the pertinent text sections (i.e. Ground and Surface Water sections in the Baseline Environmental Description; 724.100 and 724.200, as well as in the Ground and Surface Water Monitoring sections in the Operational Plan; 731.210 and 731.220) clearly outlining what year specific ground and surface water sites will begin to be monitored as mining activity approaches their location. In addition, the Permittee should provide a written explanation as to why the sites are being slated for future monitoring as opposed to immediate operational monitoring in each of the aforementioned sections.

See Ground and Surface Water Monitoring in the Operational Plan section for further comments on monitoring dates for respective sites.

### **State Appropriated Water Rights**

The application does not meet the hydrology requirements for Environmental Description of State Appropriated Water Rights as provided in **R645-301-724.100 and -724.200**. Water rights #93-251 and #93-316 are mislabeled in Table 7-6 and on Plate 7-12. According to the water rights database, they are water rights #91-251 and #91-316 respectively; located in T16S R8E Sect. 8. In addition, water rights #93-1426 and 93-1425 are depicted in Section 20 of T16S R8E. Water rights #93-1426 and #93-1425 are listed in the water rights database as being located in Section 21.

Per a conversation with Marc Stillson of the Price, UT Water Rights Division office and Mark Reynolds of C.O.P., the Permittee should provide the priority date, place of use, point of diversion and nature of use associated with each water right located on the proposed lease expansion by supplementing Table 7-6 and Plate 7-12 as needed.

### **Probable Hydrologic Consequences Determination**

The application does not meet the hydrology Probable Hydrologic Consequences Determination requirements as provided in **R645-301-728**. Page 7-60 makes a brief reference to water mitigation efforts in the event that mining impacts either the Left or Right Fork of Fish Creek. The Permittee should remove mitigation language from this section and discuss such efforts in the Replacement of State Appropriated Supply in the Operational Plan section.

### **Groundwater Monitoring Plan**

The application does not meet the hydrology Environmental Description for Groundwater Monitoring requirements as provided in **R645-301-724.100**. See Baseline Information Comments R645-301-724.

### **Surface-Water Monitoring Plan**

The application does not meet the hydrology Environmental Description for Groundwater Monitoring requirements as provided in **R645-301-724.200**. See Baseline Information Comments R645-301-724.

**Findings:**

Hydrologic information for the Environmental Resource Information requirements does not meet the minimum requirements of the Coal Mining Rules. Before the application can be approved, the following deficiencies should be addressed:

**R645-301-724, 724.100 and -724.200:** The Permittee should provide a written description in the pertinent text sections (i.e. Ground and Surface Water sections in the Baseline Environmental Description; 724.100 and 724.200, as well as in the Ground and Surface Water Monitoring sections in the Operational Plan; 731.210 and 731.220) clearly outlining what year specific ground and surface water sites will begin to be monitored as mining activity approaches their location (i.e. 3 years prior to undermining). In addition, the Permittee should provide a written explanation as to why the sites are being slated for future monitoring as opposed to immediate operational monitoring in each of the aforementioned sections.

**R645-301-724.100 and -724.200:** The Permittee needs to modify Plate 7-12 to accurately depict the location and ID# for all state appropriated water rights located in the lease expansion area. See State Appropriated Water Rights section for detailed information.

**R645-301-724.100 and -724.200:** The Permittee should provide additional state appropriated water right information. Per a conversation with Marc Stillson, Price, UT Water Rights Division Office and Mark Reynolds, C.O.P., it was agreed that: priority date, place of use, point of diversion and nature of use associated with each state appropriated water right located on the proposed lease expansion would be included in the MRP.

**MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

**Analysis:**

**Monitoring and Sampling Location Maps**

The application meets the hydrology requirements for Maps, Plans and Cross Sections of Resource Information for Monitoring and Sampling Location maps as provided in **R645-301-722** and -731. Plate 7N-2 depicts water-sampling locations utilized in acquiring baseline data. In addition Plate 7-4 depicts historic monitoring points that were also utilized in the collection of baseline data for the proposed lease expansion area.

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### Subsurface Water Resource Maps

The application does not meet the hydrology requirements for Maps, Plans and Cross Sections of Resource Information as provided in **R645-301-722**. Plate 7-12 depicts state appropriated water rights, yet is labeled "Water Monitoring". Plate 7-4 is also titled "Water Monitoring". In addition, two state appropriated water rights are not accurately depicted on Plate 7-12. Water rights #93-251 and #93-316 are mislabeled in Table 7-6 and on Plate 7-12. According to the water rights database, they are water rights #91-251 and #91-316 respectively; located in T16S R8E Sect. 8. In addition, water rights #93-1426 and 93-1425 are depicted in Section 20 of T16S R8E. Water rights #93-1426 and #93-1425 are listed in the water rights database as being located in Section 21.

### Surface Water Resource Maps

The application does not meet the hydrology requirements for Maps, Plans and Cross Sections of Resource Information as provided in **R645-301-722**. Plate 7-12 depicts state appropriated water rights, yet is labeled "Water Monitoring". Plate 7-4 is also titled "Water Monitoring". In addition, two state appropriated water rights are not accurately depicted on Plate 7-12. Water rights #93-251 and #93-316 are mislabeled in Table 7-6 and on Plate 7-12. According to the water rights database, they are water rights #91-251 and #91-316 respectively; located in T16S R8E Sect. 8. In addition, water rights #93-1426 and 93-1425 are depicted in Section 20 of T16S R8E. Water rights #93-1426 and #93-1425 are listed in the water rights database as being located in Section 21.

### Findings:

Hydrologic information for the Maps, Plans and Cross Sections of Resource Information regulations does not meet the minimum requirements of the Coal Mining Rules. Before the application can be approved, the following deficiencies should be addressed:

**R645-301-722:** The Permittee needs to modify Plate 7-12 to accurately depict the location and ID# for all state appropriated water rights located in the lease expansion area. In addition, the title of Plate 7-12 should be changed to Water Rights. (See State Appropriated Water Rights section for detailed information).

## 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:

### Surface and Groundwater Monitoring

The application does not meet the hydrology Operation Plan requirements for Surface and Groundwater Monitoring as provided in **R645-301-731.210 and -731.220**.

Page 7-48 of the MRP states, "A recommended water monitoring program is included in Appendix 7-J, Section 10.0". The Permittee should make clear which monitoring program is to be followed i.e. the program outlined in Appendix 7-J or the program outlined in Chapter of 7 of the MRP, as they are different.

The Permittee should provide a written commitment to begin sampling sites FC-2, FC-3, FC-4, SBC-18, and SBC-20 beginning the 1<sup>st</sup> quarter of 2007. A start date of 2007 is listed on Table 7-14 for the aforementioned ground and surface water sites, but there is no specification in the text of the MRP that states when in 2007.

Plate 5-1B, Hiawatha Seam Workings, does not depict a start date for (presumably) long wall panels 5 and 6. The Permittee needs to clarify in the MRP when these areas are to be mined in order to adequately identify the 3-year baseline collection/water monitoring commencement date for the hydrologic resources identified in this area: SCC-5, WR-2, WR-3 and WR-4. The sites have a water monitoring start date of 2013 according to Table 7-14, yet Plate 5-1B does not support this.

In the previous technical analysis, it was determined that a monitoring program would need to be established as mining activity proceeded under the Left and Right Forks of Fish Creek. Page 7-60 of the most recent submittal states, "The flow and vertical displacement of Fish Creek will be monitored weekly, if accessible, while long-wall retreat mining is crossing under it". The Permittee needs to provide a more detailed monitoring program to assess potential impacts to the Left and Right Forks of Fish Creek, as they have been identified as perennial in Appendix 7-J. The program will need to incorporate procedures for obtaining data before, during and after longwall retreat mining occurs in the area in order to accurately assess whether or not impacts due to subsidence have impacted these drainages. The Division will accompany USDA Forest Service, C.O.P. and BLM representatives into the field to determine the areas of the Left and Right Forks of Fish Creek that will need to be monitored.

### Groundwater Monitoring

The application does not meet the hydrology Operation Plan requirements for Groundwater Monitoring as provided in **R645-301-731.210**.

On August 22<sup>nd</sup>, 2006, representatives from the Bureau of Land Management (BLM), the Division, Huntington, Cleveland Irrigation Company (HCIC), USDA Forest Service, State of Utah Water Rights Division (Water Rights) and C.O.P. performed a field inspection at several

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areas of concern that had been identified by HCIC members. Several springs were located that had not been previously identified in the material submitted by the Permittee. It was determined during the field visit that these springs would be added to the Permittee's monitoring plan. The springs to be added to the groundwater-monitoring program are Wild Horse Spring (T16S R7E Sect 13 SE1/4), springs SBC-16A and SBC-16B (T16S R8E Sect 19 NE1/4 NW1/4) and Bear Canyon Spring (T16S R7E Sect 12 NW1/4 of SE1/4). The Permittee will need to add these points to the relevant text sections within Chapter 7 as well as on Plate 7-4, Water Monitoring.

In addition, at the August 31<sup>st</sup> meeting with Division, C.O.P. and USDA Forest Service representatives, it was determined that the Hiawatha seams located in the northwestern portions of the proposed expansion area will not be mined. In light of this mine plan change, several springs will no longer be required for monitoring. A previous deficiency identified on page 7M-13 of the MRP had required the Permittee to change the language regarding springs FBC-8 through FBC-11 and their subsequent monitoring 3 years prior to mining activity. In light of the Hiawatha coal seam being removed from the mine plan modification, and upon recent discussions with USDA Forest Service representatives, the Division and C.O.P., sites FBC-8 through FBC-11 will no longer be required in the MRP's monitoring program. The Permittee will need to modify Table 7-14 Water Monitoring Matrix: Operational Phase of Mining to reflect the removal of these monitoring sites and change text references to these sites in supporting appendices.

A deficiency was identified during the previous round of technical analysis regarding springs SCC-4, SCC-6 and SCC-7. Mark Reynolds from C.O.P. had previously stated the sites were wrongly identified on Plate 7-4 as "historic monitoring sites" and that they were in fact, slated for operational monitoring. The recent submittal from the Permittee does not address this deficiency and springs SCC-4, SCC-6 and SCC-7 are still depicted as "historic monitoring sites" on Plate 7-4 and not listed in Table 7-14. The Permittee needs to address this discrepancy.

Spring SCC-1 is depicted as an active monitoring site on Plate 7-4, however Table 7-14 lists the start date for monitoring this site as 2010. In addition, Spring SCC-2 is depicted as an active monitoring site on Plate 7-4, however Table 7-14 lists the start date for monitoring this site as 2012. The Permittee needs to reconcile this discrepancy.

The Mohrland Portal discharge (SCC-3) was identified as an active monitoring site in previous submittals, however it's now depicted as a future water-monitoring site (start date 2010). It was the understanding of the Division, that the Mohrland discharge would be monitored. The Permittee needs to address this discrepancy.

Table 7-14 shows a monitoring start date of 2016 for springs SMH-1, SMH-2, SMH-3 and SMH-4. It is the understanding of the Division that these will remain active monitoring sites. The Permittee should change the start date on table 7-14 to reflect their on-going current monitoring status.

Spring site SBC-12 is depicted on Plate 7-4 as an active monitoring site, yet it is not listed on Table 7-14. The Permittee needs to update Table 7-14 to reflect the status of SBC-12.

### **Surface Water Monitoring**

The application does not meet the hydrology Operation Plan requirements for Surface Water Monitoring as provided in **R645-301-731.220**.

Surface water site FC-4 is depicted on Plate 7-4, however it is not listed on Table 7-14. The Permittee should update the table and the text on page 7-57 to reflect the addition of this surface water site on the upper reach of the Left Fork of Fish Creek.

Cedar Creek surface water-monitoring sites CK-1 and CK-2 have a monitoring start date of 2010 as listed on Table 7-14. However, according to Plate 5-1B, a rock tunnel is to be constructed in this area in 2010. In order for 3 years of baseline to be collected prior to mining activity, the two surface water sites would need to be monitored starting in 2007. In addition, the sites were depicted on previously submitted submittals as active monitoring sites. The Permittee needs to address this discrepancy in the text and on Plate 7-4 and Table 7-14.

### **Replacement of State Appropriated Water Supply**

The submittal does not adequately address the replacement of state appropriated water supply as required by **R645-301-525.480** and **R645-301-731.530**. The Permittee must provide a description of the measures to be taken to replace adversely affected state-appropriated water supplies or to mitigate or remedy any subsidence-related material damage to the land and protected structures. Page 7-48 of the most recent submittal contains language stating, "If any state appropriated water rights are impacted in the future, C.W. Mining will meet with the water right holder and the Division and develop a site specific water replacement plan". Page 5C-9 also contains language associating water replacement and mitigation efforts in connection with a state appropriated water right. However, upon site visits to the proposed lease expansion, several hydrologic features were identified that do not have a water right associated with it according to the Water Rights Database. Upon conversations with Marc Stillson of the State of Utah Water Rights Division, an addendum process will take place to add these unidentified water rights to the state records. In light of this, the Permittee should commit to replacing any water resource that has been materially damaged as a result of mining activity and delete the language connecting water replacement efforts directly to an impacted state appropriated water right.

### **Findings:**

Hydrologic information for the Operational Plan regulations does not meet the minimum requirements of the Coal Mining Rules. Before the application can be approved, the following deficiencies should be addressed:

**R645-301-731.210, -731.220: Surface and Groundwater Monitoring:** The Permittee should make clear which monitoring program is to be followed i.e. the program outlined in Appendix 7-J or the program outlined on page 7-48 in Chapter of 7 of the MRP, as they are different.

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The Permittee should provide a written commitment to begin sampling sites FC-2, FC-3, FC-4, SBC-18, and SBC-20 beginning the 1<sup>st</sup> quarter of 2007. A start date of 2007 is listed on Table 7-14 for the aforementioned ground and surface water sites, but there is no specification in the text of the MRP that detail when in 2007.

Plate 5-1B, Hiawatha Seam Workings, does not depict a start date for (presumably) long wall panels 5 and 6. The Permittee needs to clarify in the MRP when these areas are to be mined in order to adequately identify the 3-year baseline collection/water monitoring commencement date for the hydrologic resources identified in this area: SCC-5, WR-2, WR-3 and WR-4. The sites have water monitoring start date of 2013 according to Table 7-14, yet Plate 5-1B does not support this.

The Permittee needs to provide a more detailed monitoring program to access potential impacts to the Left and Right Forks of Fish Creek, as they have been identified as perennial in Appendix 7-J (See Surface and Groundwater Monitoring Section R645-301-731.210, -731.220 for more detail).

**R645-301-731.210 Groundwater Monitoring:** The Permittee will need to amend Table 7-14, Plate 7-4 and related text portions of chapter 7, Groundwater Monitoring, to reflect recent changes to the mine plan as well as the alteration of the water-monitoring program. (See Groundwater Monitoring section, R645-301-731.210 for details and specific deficiencies).

**R645-301-731.220 Surface Water Monitoring:** Surface water site FC-4 is depicted on Plate 7-4, however it is not listed on Table 7-14. The Permittee should update the table and the text on page 7-57 to reflect the addition of this surface water site on the upper reach of the Left Fork of Fish Creek.

Cedar Creek surface water-monitoring sites CK-1 and CK-2 have a monitoring start date of 2010 as listed on Table 7-14. However, according to Plate 5-1B, a rock tunnel is to be constructed in this area in 2010. In order for 3 years of baseline to be collected prior to mining activity, the two surface water sites would need to be monitored starting in 2007. In addition, the sites were depicted on previously submitted submittals as active monitoring sites. The Permittee needs to address this discrepancy in the text and on Plate 7-4 and Table 7-14.

**R645-301-731.50: Replacement of State Appropriated Water Supply:** The Permittee must provide a description of the measures to be taken to replace adversely affected state-appropriated water supplies or to mitigate or remedy any subsidence-related material damage to the land and protected structures.

The Permittee should commit to replacing any water resource that has been materially damaged as a result of mining activity, and delete the language connecting water replacement efforts directly to an impacted state appropriated water right.

## MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

### **Analysis:**

#### **Monitoring and Sampling Location Maps**

The application does not meet the hydrology requirements for Maps, Plans and Cross Sections of Mining Operations for Monitoring and Sampling Location maps as provided in R645-301-731.

Due to site visits, mine plan modifications and meetings during the course of the permitting process, the number and locations of various monitoring and sampling locations has changed. The Hiawatha coal seams located in the northwestern areas of the lease expansion are no longer slated for monitoring. As such, several sites will no longer be monitored in this area (namely FBC-8, FBC-9, FBC-10 and FBC-11). However, upon conversations with C.O.P. and USDA Forest Service representatives, it was agreed that sites MH-1, SMH-1, SMH-2, SMH-3 and SMH-4 would remain operational monitoring sites. The sites are currently monitored and will remain as such.

In addition, during an August 22<sup>nd</sup>, 2006 site visit to the proposed lease expansion, several hydrologic resources were identified as areas to be monitored. These areas include: Wild Horse Spring (T16S R7E Sect 13 SE1/4), two springs identified in the field as SBC-16A and SBC-16B (T16S R8E Sect 19 NE1/4 NW1/4) and the spring located in T16S R7E Sect 12 NW1/4 SE1/4.

Still deficient from the 2<sup>nd</sup> round of analysis is the explanation of sites SCC-4, SCC-6 and SCC-7. Mark Reynolds from C.O.P. stated the sites were wrongly identified on Plate 7-4 as historic monitoring sites. Mr. Reynolds stated that the sites were to be monitored as part of the MRP's Operational Plan. The Permittee should clarify whether or not these sites are to be actively monitored.

Plate 7-12 depicts state appropriated water rights, yet is labeled "Water Monitoring". Plate 7-12 was labeled "Water Rights" in the previous submittal. The Permittee needs to change the name of Plate 7-12 back to "Water Rights".

The Hiawatha seams that will no longer be mined should be removed from Plate 7-4 as well as any other plates where they are depicted.

It appears that there are variances between the digital and hard copies of Plate 7-4. The red rectangular boxes depicting "Area of Concern" on the Left and Right Forks of Fish Creek are an example. The Permittee needs to clarify which Plate 7-4 is the correct as the digital version depicts an area of concern on the Right Fork of Fish Creek, yet the hard copy version submitted to the Division does not depict this area of concern.

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**Findings:**

Hydrologic information for the Maps, Plans and Cross Sections of Resource Information regulations does not meet the minimum requirements of the Coal Mining Rules. Before the application can be approved, the following deficiencies should be addressed:

**R645-301-731:** The Permittee should update Plate 7-4 to reflect water monitoring and mine plan changes as brought about by recent site visits and meetings with the Division, water users and the USDA Forest Service. In addition, Plate 7-12 should be called Water Rights. (See the Maps, Plans and Cross Sections of Mining Operations in the Operational Plan section, R645-301-731, of this memo for specific comments).

The Permittee needs to clarify which Plate 7-4 is the correct as the digital version depicts an area of concern on the Right Fork of Fish Creek, yet the hard copy version submitted to the Division does not depict this area of concern.

## 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:**

#### Hydrologic Reclamation Plan

The application meets the Reclamation Plan for the Hydrologic Reclamation Plan as provided in **R645-301-731.600**. No update to the existing hydrologic reclamation plan was submitted because no new surface disturbance is planned for the proposed lease expansion area.

**Findings:**

The information provided meets the minimum hydrology requirements for the Reclamation Plan of the State regulations.

## CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-729.

**Analysis:**

**TECHNICAL MEMO**

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The application does not meet the requirements of the Cumulative Hydrologic Impact Assessment (CHIA) as provided in **R645-301-729**. The hydrologic information provided in the application is not adequate to update the CHIA. The hydrologic deficiencies listed in this technical memo need to be addressed by the Permittee before the CHIA can be updated.

**Findings:**

The Cumulative Hydrologic Impact Assessment information does not meet the minimum requirements of the Coal Mining Rules. Before the application can be approved, the following deficiencies should be addressed:

**R645-301-729**, The Permittee needs to address the hydrologic deficiencies listed in this technical memo (Task ID #2292) before the Division can update the Gentry Mountain Cumulative Hydrologic Impact Area with information regarding the proposed lease additions.

**RECOMMENDATIONS:**

Hydrologic information provided in the application does not meet the requirements of the Coal Mining Rules. The proposed amendment should not be at this time.