

#3946

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TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

December 14, 2011

TO: Internal File

THRU: Steve Christensen, Mine Lead SKC

FROM: Amanda Daniels, Environmental Scientist AD

RE: Revision to Chapter 7 Water Monitoring, Canyon Fuel Company, LLC, Dugout Canyon Mine, C/007/0039, Task ID# 3946

SUMMARY:

On October 25, 2011, the Division of Oil, Gas and Mining (the Division) received an application from Canyon Fuel Company, LLC (the Permittee) to revise the Dugout Canyon Mine mining and reclamation plan.

The Permittee proposes to eliminate a number of water monitoring points. The application should not be approved at this time. The following deficiencies must be addressed prior to Division approval of the application:

R645-301-731.210: The Permittee must provide additional justification for eliminating monitoring well GW-11-2. As the well is completed within the Price River Formation, the Permittee must discuss how potential mining induced impacts to groundwater resources within that formation would be detected in the absence of GW-11-2.

R645-301-731.210 and -220: The Permittee must provide a more thorough explanation/justification for eliminating the proposed water monitoring sites. The additional narrative must take into account and/or reference data that identifies:

- 1) Proximity of the monitoring sites to future mining activity.
- 2) Proximity of the monitoring sites to mining activity that has already occurred and the date that mining activity was completed.
- 3) Survey data that would indicate that areas within the projected subsidence impact zone are stable and/or that potential subsidence related impacts to hydrologic resources are minimal.

R645-301-731.210 and -220: The Permittee must provide a commitment that in the late spring/early summer of 2012 (as weather and accessibility permit) an additional spring/seep survey will be conducted in the areas identified for future mining activity (See Plate 5-7). The survey will be done in consultation with the Division of Water Rights (DWRi) and the Division in an effort to identify potential hydrologic resources that may require monitoring prior to coal mining activity in the area.

R645-301-731.210 and -220: The Permittee must provide a commitment that if mining activity was to be expanded towards the water monitoring sites that are designated for elimination, water monitoring activity at those sites would be reinitiated no less than one year prior.

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:

Groundwater Monitoring

The application proposes to drop springs monitoring sites 321, 322, 200, 227, and 259. as well as water monitoring well GW-11-2.

Springs 321 and 322 are outside the Dugout permit area. The justification for eliminating these springs from the groundwater monitoring program is that they are now outside of the area of influence for future mining.

The justification provided in the application for eliminating springs 200, 227, and 259 from the groundwater monitoring plan is that they have produced measurable flows very few times over the last 13 years of monitoring.

Based on a discussion with a Dugout Mine representative, the Division indicated that additional information/discussion is needed in order to approve the elimination of the proposed springs. The Permittee must provide a more thorough explanation/justification for eliminating the proposed spring monitoring sites. The additional narrative must take into account and reference data that identifies:

- 1) Proximity of the monitoring sites to future mining activity.
- 2) Proximity of the monitoring sites to mining activity that has already occurred and the date that mining activity was completed.
- 3) Survey data that would indicate that areas within the projected subsidence impact zone are stable and/or that potential subsidence related impacts to hydrologic resources are minimal.

Monitoring well GW-11-2 is north of the disturbed area for the Dugout mine. The application discusses how this monitoring well has not registered a water level since the spring of 2008. The application states that they have assumed the well has caved in or been sheared.

TECHNICAL MEMO

In order for the Division to approve the elimination of monitoring well GW-11-2 additional information/discussion is needed. Monitoring well GW-11-2 is completed within the Price River geologic formation. The Permittee must provide additional justification for eliminating monitoring well GW-11-2. As the well is completed within the Price River Formation, the Permittee must discuss how potential mining induced impacts to groundwater resources within that formation would be detected in the absence of GW-11-2.

Based on a discussion with a Dugout representative future mining expansion will be west of the current mine works as depicted on Plate 5-7, *Proposed Mine Sequence and Planned Subsidence Boundary*. It was agreed the Permittee must provide a commitment that in the late spring/early summer of 2012 (as weather and accessibility permit) an additional spring/seep survey will be conducted in the areas identified for future mining activity (See Plate 5-7). The survey will be done in consultation with the Division of Water Rights (DWRi) and the Division in an effort to identify potential hydrologic resources that may require monitoring prior to coal mining activity in the area.

Based on discussions of the chapter 7 revisions with a Dugout representative, the Permittee must provide a commitment that if mining activity was to be expanded towards the water monitoring sites that are designated for elimination, water monitoring activity at those sites would be reinitiated no less than one year prior.

Surface Water Monitoring

The application proposes to drop stream monitoring at site 323. The application has stated that the expanded mining area closest to the site was sealed off. As with the groundwater monitoring sites (See Above), additional information/discussion is required. The Permittee must provide a more thorough explanation/justification for eliminating the proposed surface water monitoring sites. The additional narrative must take into account and reference data that identifies:

- 1) Proximity of the monitoring sites to future mining activity.
- 2) Proximity of the monitoring sites to mining activity that has already occurred and the date that mining activity was completed.
- 3) Survey data that would indicate that areas within the projected subsidence impact zone are stable and/or that potential subsidence related impacts to hydrologic resources are minimal.

Findings:

The application does not meet the water monitoring requirements of the State of Utah R645-Coal Mining Rules. The following deficiencies must be addressed prior to the Division approval of the application:

R645-301-731.210: The Permittee must provide additional justification for eliminating monitoring well GW-11-2. As the well is completed within the Price River Formation, the Permittee must discuss how potential mining induced impacts to groundwater resources within that formation would be detected in the absence of GW-11-2.

R645-301-731.210 and -220: The Permittee must provide a more thorough explanation/justification for eliminating the proposed water monitoring sites. The additional narrative must take into account and reference data that identifies:

- 1) Proximity of the monitoring sites to future mining activity.
- 2) Proximity of the monitoring sites to mining activity that has already occurred and the date that mining activity was completed.
- 3) Survey data that would indicate that areas within the projected subsidence impact zone are stable and/or that potential subsidence related impacts to hydrologic resources are minimal.

R645-301-731.210 and -220: The Permittee must provide a commitment that in the late spring/early summer of 2012 (as weather and accessibility permit) an additional spring/seep survey will be conducted in the areas identified for future mining activity (See Plate 5-7). The survey will be done in consultation with the Division of Water Rights (DWRi) and the Division in an effort to identify potential hydrologic resources that may require monitoring prior to coal mining activity in the area.

R645-301-731.210 and -220: The Permittee must provide a commitment that if mining activity was to be expanded towards the water monitoring sites that are designated for elimination, water monitoring activity at those sites would be reinitiated no less than one year prior.

RECOMMENDATIONS:

The application should not be approved at this time.