

August 25, 2003

TO: Internal File

THRU: Peter H. Hess, Environmental Scientist III/Engineering, Team Lead

FROM: Gregg A. Galecki, Environmental Scientist III/Hydrologist

RE: Methane Degas Wells G-1, G-2, & G-3, Canyon Fuel Company, LLC, Dugout Mine, C/007/039, Task ID #1642

SUMMARY:

The following review addresses the geology and hydrology sections of a proposed amendment to address the installation of three (3) methane de-gasification wells within the Dugout Mine permit area. The proposed wells would reduce methane gas within the coal seam in advance of the longwall mining operation. The amendment document was submitted as a 'stand-alone' document. The submittal was received by the Division on July 31, 2003, with additional information being submitted on August 13, 2003. The information provided adequately addresses the minimum requirements of the regulations; approval is recommended.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

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

ALLUVIAL VALLEY FLOORS

Regulatory Reference: 30 CFR 785.19; 30 CFR 822; R645-302-320.

TECHNICAL MEMO

Analysis:

Alluvial Valley Floor Determination

Chapter 9 of the submittal adequately provides the necessary information to adequately determine the presence of an alluvial valley floor (AVF). The information illustrates no AVF will be affected by the proposed wells.

Findings:

The information provided adequately addresses the minimum requirements of the Environmental Resources – Alluvial Valley Floors section of the regulations.

GEOLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724.

Analysis:

No new information has been provided with the current submittal. For geologic information the reader is referenced back to the currently approved Mine Reclamation Plan (MRP).

Findings

The information provided adequately addresses the minimum requirements of the Environmental Resources – Geologic Resource Information section of the regulations.

HYDROLOGIC RESOURCE INFORMATION

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

Analysis:

Probable Hydrologic Consequences Determination

Within the current submittal, the Operator has adequately identified any potential impacts to the hydrologic balance and has cited adequate mitigation for those potential impacts. No acid or toxic-forming materials have been identified in the soils or strata at the Dugout Mine and none are anticipated. Any groundwater encountered during drilling will be sealed with drilling

mud to eliminate migration down the hole and into the mine. No hydrocarbons will be stored on site, but should any leak or spill occur, the saturated absorbent materials would be disposed of at a landfill facility.

Findings:

The information provided adequately addresses the minimum requirements of the Environmental Resources – Hydrologic Resource Information section of the regulations.

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

There are no active groundwater monitoring sites within two-miles of any of the drill sites. Well GW-19-1 was only monitored in August and October 1997 and Well GW-24-1 has been blocked since 1998.

Surface Water Monitoring

There are no active surface water monitoring sites within two-miles of any of the drill sites. The streams in the area are ephemeral or are ephemeral in nature. No adverse effects to the surface drainages are anticipated.

Acid- and Toxic-Forming Materials and Underground Development Waste

No acid- or toxic-forming materials have been encountered in the Dugout mine area and none are anticipated.

TECHNICAL MEMO

Discharges Into An Underground Mine

If any water is encountered during drilling, the formation will attempt to be sealed using drilling mud. During completion of the well, solid casing and grout will be used to ensure no water leaks into the mine.

Water-Quality Standards And Effluent Limitations

Section 751 of the Methane Degasification submittal indicates any potential overflow of the mud pit will be pumped into a tank and hauled from the site; indicating no discharges will occur at the site. No viable water resources are located within 2,000-feet of any of the drill holes with the exception of a stock pond located approximately 600-feet of Drill Site G-2. If any excess water is encountered, it is recommended that the water be treated in the pond, and run through a silt fence to be adequately treated then discharged from the site.

Sediment Control Measures

Road Drainage – No diversion ditches are proposed for the primary roads leading to the well sites; however, water bars are to be used at Drill Sites G-1 and G-3 to divert water off roads prior to runoff reaching the drill pads. At Drill Site G-2, the removal of topsoil (24-30 inches deep) from the road does not allow for drainage from the road until the end without disturbing additional ground. It is anticipated that the subsoil is going to be very rocky, and the road will be cut with a little slope to allow drainage to one side. Any flow leaving the road at the end will be diverted to an existing stock pond located immediately downstream of the road.

Drill pads – The drill pads have been designed to minimize erosion and flow of sediment off the pads. A berm will be constructed around the perimeter of the disturbed area and flow will be directed to silt fences. The drill pads will be constructed so that sheet-flow will be directed to areas of ‘cut’ material instead of ‘fill’ material areas to reduce the potential of erosion. During intermediate reclamation, sheet flow will be directed to silt fences discharging to areas of minimal (if any) intermediate reclamation.

In Section 752 – Control Measures of the submittal, the Operator commits that, “All sediment control measures will be located, maintained, constructed, and reclaimed according to plans and designs presented in Section 732, 742, and 760 of this submittal”.

Casing and Sealing of Wells

In Section 542.700 of the Degasification Well amendment the Operator commits to sealing wells in accordance with Federal and State Regulations. At abandonment, the holes will

be plugged at the bottom, and a lean concrete mixture will be poured into the casing until the concrete is within five (5) feet of the surface. The casing will be cut off at ground level and filled to the surface with concrete.

Findings:

The information provided adequately addresses the minimum requirements of the Operation Plan – Hydrologic Information section of the regulations.

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

In Section 722.500 Cross Sections and Maps – Surface Topography of the submittal, a reference to Plate 1-4 has been included. This reference will illustrate the location of all three (3) holes relative to one another and the surface drainage.

Certification Requirements

All drawings of the proposed drill pads have been stamped, signed, and dated by Registered Professional Engineer Layne D. Jensen # 189797 (State of Utah).

Findings:

The information provided adequately addresses the minimum requirements of the Operation Plan – Maps, Plans, and Cross Sections of Mining Operations section of the regulations.

RECOMMENDATIONS:

The amendment can be approved in its current form.