

# TECHNICAL MEMORANDUM

## Utah Coal Regulatory Program

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July 25, 2006

TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor *pgl*  
*SM* Pete Hess, Team Lead

FROM: *sc* Steve Christensen, Environmental Scientist

RE: UC-6 Inlet As-built, Task No. 2465, Canyon Fuel Company, L.L.C., Dugout Mine, C0070039

### SUMMARY:

On March 28<sup>th</sup>, 2006, the Division of Oil, Gas and Mining (the Division) received as-built drawings for a culvert modification at the Dugout Mine.

Culvert UC-6 (as depicted on Plate 7-5) was modified in order to minimize the loss of inflow capacity due to debris and material clogging the opening to the drop inlet. The culvert conveys undisturbed runoff from the drainage located directly adjacent to the Dugout Mine's substation pad to culvert UC-5. The modification to the inlet was prompted by repeated incidents of material, rocks, debris etc...becoming dislodged from the adjacent slope and clogging the drop inlet to the culvert. The slope conveying the undisturbed drainage to the culvert is approximately 1 to 1, as such, during larger rainfall events and extended snowmelt periods, the culvert's drop inlet would become clogged due to material being deposited by the runoff. As the capacity of the inlet decreased due to the clogging, the runoff was circumventing the culvert and running onto the substation pad located immediately adjacent to the culvert.

The modifications to culvert UC-6 included the installation of two trash rack structures at the inlet, the excavation of a small sediment basin upstream of the inlet and the construction of a berm downstream of the culvert. The modifications will greatly improve the drop inlet's inflow capacity and minimize the potential for clogging and flooding of the substation pad. The drainage area contributing runoff to the culvert has not changed. The 10-year 24-hour runoff of 1.02 cubic feet per second (cfs) utilized in the sizing calculations for the culvert and cited in Appendix 7-9 of the MRP, is still applicable.

The hydrologic information provided in the submittal meets the requirements of the Coal Mining Rules. The submitted as-builts for culvert UC-6's inlet modification should be approved and incorporated into Appendix 7-9 of the MRP.

**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:**

**Diversions: General**

Culvert UC-6 (as depicted on Plate 7-5) was modified in order to minimize the loss of inflow capacity due to debris and material clogging the opening to the drop inlet. The culvert conveys undisturbed runoff from the drainage located directly adjacent to the Dugout Mine's power substation pad to culvert UC-5. The modification to the inlet was prompted by repeated incidents of material, rocks, debris etc...becoming dislodged from the adjacent slope and clogging the drop inlet to the culvert. The slope conveying the undisturbed drainage to the culvert is approximately 1 to 1, as such, during larger rainfall events and extended snowmelt periods, the culvert's drop inlet would become clogged due to material being deposited by the runoff. As the capacity of the inlet decreased due to the clogging, the runoff was circumventing the culvert and running onto the power substation pad located immediately adjacent to the culvert.

The modifications to culvert UC-6 included the installation of two trash rack structures at the inlet, the excavation of a small sediment basin upstream of the inlet and the construction of a berm downstream of the culvert. The modifications will greatly improve the drop inlet's inflow capacity and minimize the potential for clogging and flooding of the power substation pad. The drainage area contributing runoff to the culvert has not changed. The 10-year 24-hour runoff of 1.02 cubic feet per second (cfs) utilized in the sizing calculations of the culvert and cited in Appendix 7-9 of the MRP, is still applicable.

The modifications to the inlet of culvert UC-6 will minimize adverse effects to the hydrologic balance by insuring that the undisturbed runoff is diverted around the substation pad (disturbed area) and routed to culvert UC-5 prior to its discharge into Dugout Creek.

In addition, the culvert modifications will provide protection against flooding and the resultant damage that could occur if the overflow of water were to reach the power substation.

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**Findings:**

The information provided meets the Hydrologic Resource Information requirements of the State regulations.

**RECOMMENDATIONS:**

They hydrologic information provided meets the requirements of the Coal Mining Rules. The proposed amendment should be approved and incorporated into the MRP.

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