



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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## Memorandum

To: Joseph Helfrich, Permit Supervisor *Jch*

From: David Darby, Reclamation Specialist *[Signature]*

DATE: February 12, 1998

RE: Amendment, Culvert in Right Fork of Bryner Canyon,  
Gordon Creek # 2 Mine, Mountain Coal Company,  
ACT/007/016AM-98A, Carbon County, Utah

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### SUMMARY

Mountain Coal Company submitted plans to leave a 48 inch diameter culvert in the Right Fork of Bryner Canyon for a post mining land use of protecting the stream channel from subsidence.

The culvert was installed in 1979 after the channel subsided into an entryway 28 feet below the surface. The subsidence hole was backfilled and compacted. The culvert was installed to protect the channel. Runoff flows through the culvert instead of seeping into the fill area. The 80 foot long culvert has been operational for the past 17 years.

### Analysis

The analysis of this amendment considered the advantages and disadvantages of leaving the culvert in place. The main issue in doing so was to decide what structure best protects the channel beyond the bond period. Ultimately, the mandate the regulations has to be considered and followed according to the reclamation standards.

R645-301-761 requires that all temporary structures be removed. Considering the situation, could the culvert be considered a permanent structure? R645-301-100 specifies temporary and permanent hydrologic structures as diversions and impoundments, not mentioning culverts. The definitions of diversions and impoundments also appears to give the Division

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some latitude in approving permanent and temporary structures for post mining land use.

R645-301-542.620 requires removal of bridges and culverts unless approved for post mining land use. Clearly, any structure would have to have a designated need for being considered for post mining land use. In this case the culvert is needed to ensure that further subsidence of the channel does not take place. Its functional use would have to be at least equal to any alternative reclamation procedure. In this case, would removing the culvert and replacing it with a riprap channel provide the channel with the protection that the culvert provides?

### **Findings**

The primary goal in classifying the culvert as either temporary or permanent is to ensure the channel is functional and stable through the bond release interim and into the future. Two factors determine if the culvert is suitable for classifying the culvert as permanent. One is its structural stability and the second is its intended and functional use in the future. Designs have been submitted to show that the culvert can pass large storm events. Its existence and function have been proven over the past 17 years.

However, culverts have a life expectancy and can become nonfunctional over time. Culverts need maintenance. Collapse, clogging or corrosion of the culvert render it non-functional. A damaged culvert can cause severe damage within the channel and allow flow to saturate the fill of the caved area. Therefore, this culvert cannot be considered a permanent structure.

This amendment is not recommended for approval. The culvert should be removed from the channel. The channel should be reconstructed and stabilized to protect the caved area and pass all flows.

cc. Mary Ann Wright  
Daron Haddock  
Jesse Kelley