



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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November 17, 1997

TO: File

THRU: Daron Haddock, Permit Supervisor *DH*

FROM: Sharon Falvey, Senior Reclamation Specialist *SFF*

RE: Culvert Extension 97D, Horizon Coal Company, Horizon Mine, ACT/007/020-97D  
10/17/97, Folder #2, Carbon County, Utah

## SYNOPSIS

This amendment, was received on October 17, 1997, as a response to deficiencies noted from an earlier submittal received September 18, 1997 and September 30, 1997. Applicable portions of the Technical Analyses (TA) should incorporated into the next TA update. Although the proposal it's self does not represent a major change to the plan. The change in the disturbed area and contour information will require updates to all applicable maps in the MRP.

## 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.

Additional information on the extension to UC-3 is provided in Appendix 3-9. Culverts UC-1 and UC-3 receive drainage coming from the Jewkes Creek, an intermittent stream, designed to carry the flow from a 100-year, 6-hour event. This extension does not negatively affect the capacity of the existing stream channel culvert.

### **Stream Buffer Zones.**

The permittee must demonstrate that all requirements of 742.300 are met prior to approval and findings of this section (see R645-301-742.322). The permittee is required to provide the stream buffer zones and assure they are adequately marked during the channel construction. The text indicates buffer zone signs will be placed adjacent to Jewkes Creek, a sign must also be placed at the upstream boundary of the buffer zone. This is a performance standard which will be enforced in the field.

The permittee has provided a copy of the stream alteration permit 97-91-08SA for the proposed extension. This permit expires on August 14, 1998.

### **Sediment Control Measures.**

According to the certified letter from Richard White P.E. in appendix 3-9, the additional disturbed area does not increase the runoff volume to the sedimentation pond because the actual disturbed area is less than that determined in the approved plan.

**The division has found the following information has not been adequately presented in the calculated runoff volume (0.56 acre feet) presented in the plan:**

- The undisturbed areas draining to the pond and operational drainag areas have changed.
- It was determined that the method used in averaging the curve number did not provide an acceptable runoff value, based on calculations completed by the Division.
- The maps are not consistent for disturbed areas, and some watershed delineations are not complete.

Based on the submitted drawing, and the watersheds depicted on Plate 7-5, it was determined that there were conflicts between maps and the designs presented in the text making it difficult to verify the work presented by the permittee. Therefore, the division conducted it's own analyses.

The total watershed area presented did result in similar total area draining to the pond. Based on presented information the division obtained runoff volumes varying from a conservative value of 1.08 acre feet to 0.81 acre feet using the SCS method, Type II Storm for the precipitation from the 10-year, 24-hour storm event. However, the total volume in the pond does allow for containment of 1.08 acre feet. With adequate sediment storage at the existing maximum sediment storage of 1.12 acre feet at the 7582 foot elevation. Therefore the pond size is considered adequate.

**Findings:**

Assuming the stage discharge curve for the pond is accurate, the pond appears to have adequate run-off volume. The maps, watershed areas, and operation design calculations are confusing and do not appear to accurately reflect the site conditions, additionally the plan contains a non-conservative estimated runoff volume which could not be verified by the Division.

The permittee must provide the following, in accordance with the requirements of:

**R645-301-731.** Provide maps, descriptions and calculations, containing current information specific to the local hydrologic conditions. Include complete delineation of the disturbed and undisturbed area watersheds, as well as, updated operational drainage designs, and runoff and sedimentation pond designs reflective of current site conditions.

**Recommendation:**

Accurate maps for existing site conditions need to be submitted. The representative for the Horizon Mine has indicated that new maps from an updated survey will be forth coming to respond to N97-45-1-1. This survey information will probably result in a complete re-analyses and review of the drainage plans for this site. It is recommended that the culvert extension be installed to facilitate final site configuration, and to preclude conflicts in review, since, submitted information will require additional review based on these maps. These changes should be coordinated in a schedule with the operator to arrive at an accurate account of final watershed drainages and final operational site configuration. Finally, the pages from each submittal need to be combined, replacing appropriate overlapping sections.