



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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July 5, 1996

TO: File  
THRU: Joe Helfrich, Permit Supervisor *JH*  
FROM: Steven M. Johnson, Reclamation Hydrologist *SMJ*  
RE: Tank Seam As-Built, Bear Canyon Mine, CO-OP Mining Company, ACT/015/025-96A, File #2, Carbon County, Utah

**SYNOPSIS:**

The Division has received an amendment to the Mining and Reclamation Plan (MRP) for Bear Canyon Mine. The amendment is the as-builts for the Tank Seam facilities area. This memorandum address the hydrologic design and construction as shown in the as-builts. The as-builts have been analyzed assuming that the sight inspector, Mr. Peter Hess, has accepted the information as being true to the site condition. The hydrology has been analyzed only for regulatory adequacy.

**OPERATIONAL HYDROLOGY**

R645-301-742

**Analysis:**

The as-builts show several changes over the originally approved designs. These changes predominately reflect modification made in the field which resulted in the removal of a culvert and the combination of a few watersheds. Plate 7-1B, C and E shows the hydrologic conditions as constructed in the Tank Seem project. Tables 7.2-9, 10 and 11 show the resulting watershed criteria, diversion calculations, and culvert characteristics, respectively. Appendix 7-G includes the diversion calculations.

The channels and culverts have been constructed with conservative dimensions. Most channels are allowed 0.2 feet to 1 foot of freeboard. Almost all culverts are designed to run less than 50-percent of capacity.



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**Findings:**

Co-Op, though making some significant changes to the facilities designs, has met the requirements of the regulations. The diversions are adequately designed according to the as-builts. This analysis includes a comparison of the as-builts to the regulations only.

**RECOMMENDATION:**

The hydrologic as-builts are adequate to be approved as part of the MRP. This analysis includes a comparison of the as-builts to the regulations, only. The comparison of the as-built to field conditions should be made by the site inspector.

cc: Pete Hess (PFO)  
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