



State of Utah

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DIVISION OF OIL, GAS AND MINING

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November 13, 1995

TO: Joe Helfrich, Permit Supervisor *JH*
FROM: Steven M. Johnson, Reclamation Hydrologist *SMJ*
RE: Draft Review, Willow Creek Field Adjustments, Castle Gate Mine, AMAX Coal Company, ACT/007/004-95F, Working File, Carbon County, Utah

#2 FILE AMAX

SYNOPSIS

As a result of a preconstruction site visit between the Division, the operator and contractors, AMAX Coal has submitted an amendment to the Castle Gate Mine plan for the Willow Creek Refuse Removal Project. This amendment is intended to insure compliance with all applicable coal regulations. Further amended pages were issued to the Division on November 7, 1995. This memorandum includes review of the November 7 changes and supersedes the memorandum dated October 20, 1995 on the same subject.

ANALYSIS

OPERATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: R645-301-730, 740, 750

Analysis:

Diversions: Perennial and Intermittent Flows.

The culvert for Willow Creek will be replaced with a larger culvert. The new culvert has been designed to convey the 100-year, 6-hour storm event (Appendix 12-7-4). It will be 8 feet in diameter and 190 feet in length. The gradient will allow velocities which are slow enough that fish can safely travel through the culvert. Additionally, two sky lights will provide light for the fish. There is no stream alteration permit at this time.

Diversions: Miscellaneous Flows.

Water collected from the road will be routed into sediment traps by swales in the road. The swales are show on Exhibit 12-5-1. The designs for each swale are included in

Appendix 12-7-2. UD-4 routes water out of Sediment Trap 3 and runoff from undisturbed areas past the topsoil pile containment berm. The designed diversion ends at the disturbed area boundary and flow goes into a small natural drainage. Since UD-4 convey only a very small amount of runoff there should not be any erosional affects in the natural drainage.

Stream Buffer Zones.

The stream buffer zones are shown on Exhibit 12-5-1. The new 190-foot long culvert for Willow Creek extends outside of the delineated buffer zone.

Sediment Control

The topsoil pile is afforded sediment control by a containment berm design to protect the topsoil pile from losses due to water erosion. The topsoil containment berm is designed for both the 100-year, 6-hour event.

Siltation Structures: Sedimentation Ponds.

Section 12.7.3.2.2 says that there are two sediment ponds, four sediment traps and a containment berm around the topsoil pile designed as sediment ponds. This is a change from the previous plan. One of the sediment ponds was called a sediment trap and the berm around the topsoil pile was added to the sediment pond design list.

Designs for the Sediment Pond 1 and taps are located in Appendix 12-7-2. Sediment Pond 2 designs are in Appendix 12-7-4. Pond 1 is designed to contain the 25-year, 24-hour storm event with no spillway. Pond 2 and Sediment Trap 3 contain the 10-year, 24-hour storm runoff and passes the 25-year, 6-hour storm event through an open spillway. Sediment Traps 1, 2 and 4 contain the 25-year, 24-hour runoff with no spillways.

Discharge Structures.

Discharge spillways are designed for Sediment Pond 2 and Sediment Trap 3. These have both been designed for the 25-year, 6-hour storm events. The designs are found in Appendix 12-7-4 and Appendix 12-7-2, respectively. The remaining sediment control facilities are designed as total containment structures.

Findings:

Exhibit 12-5-1 shows the 190-foot culvert for Willow Creek blanketed by the stream buffer zone. All mining related work and facilities will be excluded from the stream buffer zone.

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AMAX Coal Company and the Division of Water Right are in the process of permitting the culvert work. AMAX Coal Company must have this permit before the new culvert can be installed.

RECOMMENDATION

This amendment should be approved. Work to install the 190-foot culvert in Willow Creek cannot proceed until the Division of Water Right or the Army Corps of Engineers has issued a stream alteration permit.

WCRRUPD2.SJ