



GARY R. HERBERT  
Governor  
GREG BELL  
Lieutenant Governor

**State of Utah**  
DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

**Division of Oil, Gas and Mining**

JOHN R. BAZA  
Division Director

**Technical Analysis and Findings**

**Utah Coal Regulatory Program**

July 27, 2015

**PID:** C0250005  
**TaskID:** 4951  
**Mine Name:** COAL HOLLOW  
**Title:** PIPELINE FROM PIT 10 TO SED POND 3

**Environmental Resource Information**

**Probable Hydrologic Consequences Determination**

*Analysis:*

**Analysis:**  
The application does not meet the minimum hydrologic requirements by providing an analysis and commitments of how mine water discharge may affect or alter streamflow in Lower Robinson Creek. Additionally, pre-flow documentation of the channel (overlapping photos along the channel length) is necessary to identify future scour caused by sustained mine water discharge flows within Lower Robinson creek.

*Deficiencies Details:*

R645-301-724.320 and R645-301-728.333. The application does not meet the minimum hydrologic requirements by providing an analysis and commitments of how mine water discharge may affect or alter streamflow in Lower Robinson Creek. Additionally, pre-flow documentation of the channel (overlapping photos along the channel length) is necessary to identify future scour caused by sustained mine water discharge flows within Lower Robinson creek.

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**Operation Plan**

**Hydrologic Impoundments**

*Analysis:*

**Analysis:**  
The application does not meet the minimum hydrology requirements of the State's Coal Mine Permitting rules. The storage volume computations found in the Drawing 5-28 table labeled 'Sediment Impoundment Pond 1 STORAGE VOLUME COMPUTATIONS' are incorrect. Correct calculations of the storage size of Pond 1 are needed in order to insure the pond meets the minimum 10-year 24-hour design storm requirements.  
R645-301-733.130. The supporting narratives of Pond 1 in Volume 7 pg. 7-65, Appendix 5-2, etc. need to be updated to reflect the correct pond size.

**Analysis:**  
The application does not meet the minimum hydrologic requirements by providing a justification and calculations for preventing erosion at the outlet of the mine water discharge pipe. A non-erosive apron is necessary at the outlet of the mine water discharge pipe flowing into Pond 3. Prior experience has shown rip-rap does not adequately stabilize and protect

water conveyance structures (ditches, inlets, outlets, etc.) from eroding. Therefore, additional stabilization of the rip-rap apron is necessary. Possible stabilization designs include but are not limited to: a gravel or fabric filter under the rip-rap or a grouted rip-rap curtain that will aid in stabilizing the extremely erosive soil base of the apron.

**Analysis:**

The application does not meet the minimum hydrologic requirements by providing a narrative and calculations showing the outlet of Sediment Pond 3 decant pipe is stable and will not erode.

**Analysis:**

Deficiencies addressed in this document will require the Pond 3 design drawing 5-30 to be updated. Sediment Pond 3 Drawing 5-30 needs to be updated showing the mine water discharge pipe and the apron at its base, and the stabilized outlet design of the decant pipe.

**Analysis:**

The application does not meet the minimum hydrology requirements by showing Sediment Pond 3 will contain and treat a 10-year 24-hour precipitation event. The application states mine water discharge will potentially be 100 gpm, which will keep the static water level in Pond 3 at the height of the decant pipe or an elevation of 6,808'. This leaves only 4.98 ac/ft of storage before the pond discharges through the emergency spillway at 6,011'. Thus, Sediment Pond 3 no longer meets the 100 year 24 hour design storm. The calculations, tables, and narratives in Appendix 5-2 and Volume 7 need to be updated to show the pond will meet the requirement of treating a 10-year 24-hour runoff event.

**Analysis:**

The application does not meet the minimum hydrology requirements by providing designs for the water impounding structure in the bottom of Pit 10. During a discussion with Tain Curtis of the Price MSHA field office, I was informed that the Permittee will need to provide MSHA with evacuation procedures for Pit 10 in the event the water impounding berm fails. This water impounding structure is a safety hazard and will need to be properly designed and inspected to insure it will not cause harm to personnel at the mine site.

*Deficiencies Details:*

R645-301-742.220. The storage volume computations found in the Drawing 5-28 table labeled 'Sediment Impoundment Pond 1 STORAGE VOLUME COMPUTATIONS' are incorrect. Correct calculations of the storage size of Pond 1 are needed.

R645-301-733.130. The supporting narratives of Pond 1 in Volume 7 pg. 7-65, Appendix 5-2, etc. need to be updated to reflect the correct pond size.

R645-301-746.221: A non-erosive apron is necessary at the outlet of the mine water discharge pipe flowing into Pond 3. Prior experience has shown rip-rap does not adequately stabilize and protect water conveyance structures (ditches, inlets, outlets, etc.) from eroding. Therefore, additional stabilization of the rip-rap apron is necessary. Possible stabilization designs include, but are not limited to: a gravel or fabric filter under the rip-rap or a grouted rip-rap curtain that will aid in stabilizing the extremely erosive soil base of the apron.

R645-301-743.131.1 -- Sediment Pond 3's discharge spillway for the decant pipe does not meet the minimum requirement to carry sustained flows.

R645-301-733.120: Sediment Pond 3 Drawing 5-30 needs to be updated showing the mine water discharge pipe and the apron at its base, and the stabilized outlet design of the decant pipe.

R645-301-742.221.33: In the event of continuous mine water discharge to Pond 3, the static water level will leave only 3' of freeboard from the decant pipe inlet to the emergency spillway, or only 4.98 ac/ft of storage. Thus, Sediment Pond 3 no longer meets the 100 year 24 hour design storm. The calculations, tables and narratives in Appendix 5-2 and Volume 7 need to be updated to show the pond will meet the requirement of treating a 10-year 24-hour runoff event.

R645-301-733. The application needs to provide engineered drawings of the water impoundment structure in the base of Pit 10.