



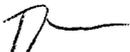
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DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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June 6, 1994

TO: Darron Haddock, Permit Supervisor

FROM: Thomas Munson, Senior Reclamation Hydrologist 

RE: Technical Analysis and Findings for the Gordon Creek #2, #7 & #8 Mining and Reclamation Plan, Mountain Coal Company, ACT/007/016, Folder #2, Carbon County, Utah

Synopsis

The operator submitted on August 6, 1994 a reclamation plan for the Gordon Creek #2, #7 and #8 property. The following technical analysis and findings relates to the reclamation of the Gordon Creek 2, 7, and 8 mine site.

RECLAMATION PLAN

Impoundments

Regulations - R645-301-210 and 356.300

Analysis

The requirements for providing for an adequate pond maintenance plan are spelled out above. The operator has provided for maintenance of the temporary sediment pond during the reclamation phase. It will be reclaimed and the original channel restored when bond release requirements are met for sediment control and vegetation (page 7-33). Per the requirements of **R645-301-880-320** and **R645-301-732-210** and Phase II bond release criteria, the following structures will be affected (Sweet's Canyon Pond, Water Retention Basin for wildlife, and the temporary sediment pond) and as such, a Division of Water Rights permit, a Division of Dam Safety permit and a maintenance agreement for these structures will be



required. The operator has stated how he will comply with the requirements for permanent maintenance including sediment removal if required for the Reconstructed sediment pond on page 7-50 of the plan. Sediment levels are shown as being determined by direct measurement at the outlet riser as shown on plate 7-8 and will be cleaned out when they reach the cleanout level of 7882.0'. The sediment clean out elevation information needs to be updated to jive with the information found on plate 7-14 stating the sediment clean-out elevation of 7882.5' versus 7882.0 and the maximum sediment elevation at 7884.2' versus 7883.0' found on Plate 7-8b. The pond will be inspected quarterly and on an annual basis as required.

The Sweet's Canyon pond will remain and be maintained by the Landowner as stated in the November 17, 1987 letter to Beaver Creek Coal Company from E.E. Peirce (Deceased), posing the question, "is this is still valid?". This letter lacks specifics regarding ultimate use of this facility and what maintenance of this structure will require. A Slope Stability Analysis for the Sweet's Canyon Pond is found in Appendix 3-4 demonstrating a slope stability of 2.35 for saturated conditions. Water Rights Lease and Sale Agreement allocated to the Sweet's Canyon Pond was entered into on the 7th of April, 1993 and is found in Appendix 3-9. This agreement is not accurate now that Mr. Peirce is deceased.

Findings

The permittee has failed to provide the following information and as such a positive finding can not be made regarding any permanent or temporary impoundments. The following permits are still lacking from a State Division of Water Rights and Dam Safety. In addition the following permitting items need to cleared up prior to a positive finding being made.

Sweet's Pond

- 1.) Form 69 filed with the Division of Water Rights (i.e. Mark Page, Price office of DWR).
- 2.) A transfer of Water Rights to the Sweet's Pond from Gordon Creek.
- 3.) A clarification of the use and responsibility for maintenance of the pond now that Mr. E.E.Pierce is deceased.

Water Retention Basin

- 1.) Form 69 filed with the Division of Water Rights.
- 2.) Needs Designs showing the wildlife enhancement features.
- 3.) A clear maintenance agreement is needed.
- 4.) A water right is required for this structure.

Temporary Sediment Pond

- 1.) Needs clarification of sediment clean-out levels and how they will be determined in the field.
- 2.) Clarification of the sediment levels and any discrepancies between the old plan and the new regarding important numbers or calculations for the temporary sediment pond (i.e. Plate 7-8b versus Plate 7-14).
- 3.) Form 69 is required for this structure.

Diversions

Regulations - R645-301-742.300 et. al. and 742.400 thru 743.

Analysis

The plan provides for reclamation of the Right and Left forks of Bryner Canyon using the 100-year 6-hour storm event in accordance with R645-301-742.323. Permanent channels for the ephemeral drainages were designed using the 10-year 6-hour event in accordance with R645-301-742.333. The main channel and the Right Fork of Bryner Canyon were considered intermittent and all others considered ephemeral. The watershed boundaries used to determine precipitation runoff from undisturbed areas within Bryner canyon are shown on plate 7-5A. The locations of all channels showing riprap sizes and slopes are shown on Plate 3-7. All design information for the plan regarding the applicable calculations and methodologies is found in appendix 7-1.

The plan provides for the restoration of the Right Fork of Bryner Canyon to restore premining characteristics of the original stream channel where it meets the old pad fill. Ponding in what is considered a natural depression that appeared to be caused by the presence of the pad and failure to reestablish original grade for the channel has been eliminated.

As a recommendation to the operator, to document any failure of riprap or channels caused by greater than the design storm, the following methodologies will be deemed acceptable to document these failures and release the operator from liability of having properly maintained structures to meet the design storm criteria **1) having a raingage on the reclaimed site(as it is proposed in the plan); and 2) using a known channel cross-section with staff gage (floating cork in a perforated PVC pipe) to calculate flows. This method of measuring the flows is easy and effective and remains as a suggestion only.**

The reclamation of the channel will take place in two phases. The first phase is the reclamation of the entire mine site down to the lower end of the mine yard as shown on Plate 3-7, the natural channels will be reclaimed down to this area. During this phase the No. 7A Sediment Pond will be removed. Also during this phase the No. 2 pond will be enlarged as shown on Plate 3-7 and 7-14. All disturbed and undisturbed drainage above this point will flow to the pond. The road from the gate to the pond will be left in place with a turnaround on the south side of the pond. This will allow access for cleaning and pond maintenance.

Findings

The permittee has failed to obtain the necessary Stream Alteration Permit for the reclaimed stream channel from the Division of Water Rights and as such a positive finding can not be made regarding the Diversions.

Sediment Control Measures

Regulatory Requirements - R645-301-742

Analysis

The permittee has provided details on mulching rates, hydromulch application rates, tackifier amounts and types, and erosion control matting. Commitments to maintain the site from an erosion standpoint have been made in the permit in section 7.2.8.5 Maintenance Plan For Erosion. The plans for all areas not draining to the sediment pond are shown on Plates 3-7, 3-7A, and 3-7B. A summary of the BTCA areas and the runoff they contribute is contained in Table 4-2. The use of silt fences as opposed to land form structures such as berms and swales which can be left in permanently and revegetated is something that the permittee may want to consider if maintenance of silt fences is an issue of concern. A more permanent control such as a berm with a gravel or coarse rock outlet would provide the same level of sediment control with less maintenance. The Division will be willing to provide suggestions for other sediment control alternatives.

Findings

The permittee meets the requirements of the regulations regarding erosion control and control of sediment.

Water Quality Monitoring

Regulations - R645-301-723 and 724.100,200,300

Analysis

The permittee has proposed a plan which monitors 6 stations for the parameters shown in Table 7-18. The sampling program provides information on seasonal flow and water quality on intermittent and ephemeral streams that have potential to be affected by mine discharge and surface disturbance. Discussion of surface water monitoring locations, type, frequency and flow device may be found in Table 7-17. A map of the monitoring locations is provided on Plate 7-2. Analyses will be for parameters listed in Table 7-18. The Post Mining Water Monitoring plan is described on 7-67 of the permit.

Findings

The permittee meets the requirements of the regulations regarding water monitoring.