0008

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

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

May 5, 1995

Rick Olsen
Soldier Creek Coal Company
P. O. Box 1209
Wellington, Utah 84542

Re: Newly Formatted Plan Deficiencies, Soldier Creek Coal Company, Banning Siding Loadout, ACT/007/034-94C, Folder #3, Carbon County, Utah

Dear Mr. Olsen:

The Division has completed a review of the Banning Siding reformatted operation and reclamation plan that was submitted on March 29-30, 1995. The enclosed document discusses the results of that review. There are a few remaining items that require your further attention. They have been summarized at the end of the document under the heading of "requirements". Please review them carefully and submit a response by June 5, 1995.

If you have any questions, please call.

Sincerely,

Daron R. Haddock
Permit Supervisor

enclosure
cc: K. Zobell (Utah Fuel Co.)
P. Grubaugh-Littig
P. Baker
W. Western
S. Johnson
tacover.ban

Reformatted Plan

Technical Analysis and Findings

Soldier Creek Coal Company
Banning Siding Loadout
ACT/007/034

May 3, 1995

SYNOPSIS

Soldier Creek Coal Company (SCCC) submitted a reformatted version of their mining and reclamation plan (MRP) as a response to a division order. Changes were made to the reformatted plan and submitted to the Division on March 30, 1995. This document analizes that submittal.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: R645-301.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: R645-301-723 through 726, 728, 731.200

Analysis

Hydrologic resource information is predominately found in Chapter 7 of the Mining and Reclamation Plan. Chapter 7 consists of text enumerated by regulation addressed, eight appendixes, and three plates. The appendixes include documentation, calculation and designs pertinent to hydrology. One plate is a map of the runoff control plan, and the other two are designs of the sediment pond.

The Banning Loadout permit area is located in the Grassy Trail Creek watershed in an unnamed tributary drainage basin. Grassy Trail Creek is classified as an intermittent stream with most of the annual flow occurring during the spring runoff.

Sampling and Analysis

Sampling and analysis information is found in Sections R645-301-723, 724.100, 742.200 and 731.225, and Appendixes 7-1 and 7-2. All sampling will be conducted according to the methodology in the current edition of "Standard Methods for the Examination of Water and Wastewater" or 40 CFR Parts 136 and 434. Results for sampling are found in the appendixes.

Baseline Information

Baseline information is found in the R645-301-724 sections. Surface and ground water baseline information is located in Sections R645-301-724.100 and 724.200, and Appendixes 7-1 and 7-2, respectively. Geologic information is found in section R645-301-721 of Chapter seven and in Chapter 6. Reclamability information is found in Chapters 5 and 6, while climatological information is in Appendix 7-3. This site will not undergo mine; therefore, no survey of renewable resource lands is necessary. Hydrologic and geologic information regarding the baseline cumulative impact area is provided in Chapters 6 and 7

Modeling

No hydrologic models have been use, nor are any planned for this site.

Probable Hydrologic Consequence Determination

The probable hydrologic Consequence determination (PHC) is found in the sections under R645-301-728 in the MRP. Surface and Groundwater resources are addressed in these sections.

Surface water will be protected by designed runoff and sediment control facilities. The Banning Loadout is located in an ephemeral basin that is naturally high in salinity because of the underlying Mancos Shale. This results in background water quality that is poor, and there is no designated beneficial use. The combined naturally poor water quality, no beneficial use and sediment control facilities will minimize impacts to the hydrologic balance.

No mining will take place on this locations, so the primary potential for impacts to groundwater is from leaching metals and hydrocarbons. Potentially toxic metals that leach from coal are normally most mobile in acidic environments, which means the alkaline characteristic of the area will greatly slow the subsurface migration of metals. Hydrocarbon leachate is expected to degrade rather than impact the groundwater. Naturally saline groundwater and low transmissivity will also aid in limiting impacts. No acid-forming or toxic-forming materials are present on site.

Ground-Water Monitoring Plan

Ground-water monitoring has been completed from a sump adjacent to the truck dump. Data is presented in Appendix 7-1 and the applicant will continue to sample the sump on an annual basis during the late fall. The Division will receive data from the samples as they are taken. Ground-water monitoring information is found in Section R645-301-731.210 of the MRP with further information on ground-water protection in Section R645-301-731.110.

Surface-Water Monitoring Plan

Surface-water protection and monitoring is addressed in Sections R645-301-731.120 and 731.220, respectively. Samples will only be collected from straw bales and silt fences along the haulage road and the sedimentation pond, a UPDES discharge point. Samples can only be taken when conditions are wet enough to produce flow through these sampling points. Appendixes 7-2, 7-4 and 7-5 contain sampling data, UPDES information and permit, and discharge data, respectively. Data will be submitted to the Division quarterly, and when analyses show non-compliance with permit conditions SCCC will promptly notify the Division and take immediate remedial actions. Surface water monitoring will go on through the operational and reclamation periods until requirements for phase II bond release are met.

Findings:

The operator has adequately addressed and described the existing hydrology resources in the area of the Banning Loadout permit area. Adequate baseline data is included in the MRP, and the PHC properly finds that the Banning Loadout operations will have a minimal effect to the hydrologic balance. A respectable water sampling plan has been developed and SCCC has committed to report data quarterly.

OPERATION PLAN

Regulatory Reference: R645-301-330

Findings from Previous Review:

1. The operation and reclamation plan needs to contain interim revegetation methods.

Response and Analysis:

1. Interim reclamation will use the seed mix shown in Table 3-3 and the basic final reclamation seeding and mulching techniques. The seed mix in Table 3-3 contains three alternative introduced species that have shown some success in the test plots and which may be necessary for final reclamation. This response satisfies the requirements of the deficiency.

Findings:

This response satisfies the requirements of the deficiency.

REVEGETATION

Regulatory reference: R645-301-341

Findings from Previous Review:

1. References to Appendix 3-4 as the test plot design need to be corrected. Also, the current test plot was implemented in 1991. The 1988 test plot has been superseded.

2. The plan needs to contain standards for success for diversity, seasonality, and effectiveness in controlling erosion.

3. The plan needs to include provisions to sample revegetated areas for woody species density in the fourth and eighth years of the bond liability period.

4. The plan to retain the sediment pond is not approvable in its current form. Soldier Creek would need to adequately address the requirements of R645-301-733.220. However, if the pond would store water during dry parts of the year, retaining it would constitute very useful wildlife habitat enhancement.

Response and Analysis:

On page 3-14, the plan has been modified to say wood fiber mulch will be anchored with a chemical tackifier at the manufacturer's recommended level. This was not a deficiency, but it was recommended that the operator clarify this portion of the plan.

1. The current test plot design has been moved to Appendix 3-4. The plan text now properly references this appendix and the year in which the test plot was implemented.

2. Soldier Creek has committed to comply with the performance standards, including diversity, seasonality, and effectiveness of the vegetation for controlling erosion as outlined in the current R645-301-353 regulations and the Division's "Vegetation Information Guidelines."

   These regulations and guidelines do not contain ways to measure some of the standards for success. They have ways of measuring vegetative cover and woody plant density, but they do not include methods for judging diversity, seasonality, erosion control, or effectiveness for the postmining land use.

   Numerous diversity indices have been developed that could be used for diversity, seasonality, and probably for judging effectiveness for the postmining land use. Another possible method is to compare vegetation to a Natural Resources Conservation Service range site. Other operators have proposed comparing the number of species from different life form categories that have more than a certain percentage of relative cover.

   Measurements of erosion control can be very difficult. Options include use of the Universal Soil Loss Equation, sampling runoff, or using an assessment technique employed by the BLM (Ronnie Clark's Erosion Condition Classification System).

   Without these specific standards, the Division must try to judge whether to release reclamation bond on the basis of elusive standards in the regulations. Establishing them in advance of reclamation and having them specifically approved greatly clarifies the degree of revegetation success the operator must achieve.

3. Soldier Creek has committed to sample woody plant density in the fourth and eighth years of the extended responsibility period. This will allow the Division to make the judgments required by R645-301-356.232 of how long shrubs have been in place.

4. Soldier Creek has removed the plan to retain the sediment pond after reclamation. As mentioned in the previous review, pond retention could have benefitted area wildlife, but the operator would need to have demonstrated the pond would have water in it during a significant part of the year.

Finding:

The plan needs to contain standards for success for diversity, seasonality, erosion control, and effectiveness for the postmining land use.

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:

Hydrologic information on the operational plan is found predominantly in Chapter 7 of the MRP. The technical analysis of surface and ground water monitoring is addressed in the Environmental Resource Information: Hydrologic Resource Information Section of this document. There are no wells, exploration holes, perennial streams, or intermittent streams located within the permit area.

Acid- and Toxic-forming Materials and Underground Development Waste

Information on acid- and toxic-forming materials is found in the sections following R645-731-300 in the MRP. These sections say that there are no acid- and toxic-forming materials on the site, but if such materials are found steps will be taken to protect the drainage from the materials. Such material may be buried beneath 4-feet of clean material or may be stored in a bermed area until it can be buried. Storage and burial will be according to Sections R645-301-521 and 528.350 of Chapter 5.

Water-quality Standards and Effluent Limitations

Water-quality standards and effluent limitations are addressed in Section R645-301-751 of the MRP. This section says that water discharges will meet all Utah and federal water quality laws and regulations. Effluent limitations will be promulgated by the U.S. Environmental Protection Agency (EPA) as set forth in 40 CFR Part 434.

Diversions

Diversions, as ditches and berms, are used at the Banning Loadout to control runoff and route water through sediment control measures. Information in the MRP on diversions is found predominantly in sections R645-301-732.300 and 742.300 of Chapter 7. Exhibit 7-1 is a map of the disturbed area that shows runoff-control measures. The minimum design criteria for berms are found on Figure 7-3 of the MRP. Berms will be routinely inspected and necessary repairs will be made to maintain the integrity of the structures. Diversion design calculations, found in Appendix 7-6, show that the ditches leading to the sedimentation pond have sufficient capacity to pass the peak flow from the 25-year, 24-hour precipitation event. These ditches will be regraded as necessary to maintain the cross sections shown in Figure 7-5. Amended pages show that the 25-year, 24-hour storm event produces peek flows that are larger than the required peak flow.

All diversions are temporary and will be removed when no longer needed or upon final reclamation. However, part of the haul road will be left permanently with three culvert left intact.

Exhibit 5-7 shows the haul road with three culverts. Section R645-301-732.100 says that the culverts will be used throughout the project to route undisturbed water under the road into natural drainages. They will be repaired as needed. Designs for the culverts are presented in Appendix 5-3.

Sediment Control Measures

Sediment control measures are addressed in the MRP in sections following R645-301-732 and 742 in Chapter 7. Figures 7-1 and 7-2 show the typical construction of straw-bale dikes and silt-fence check dams, respectively. Sediment control is achieved by directing all runoff to either silt-fence check dams, straw-bale dikes, sediment pond or a small retention basin. Runoff is diverted away from disturbed areas by a berm to further control sediment production.

Areas treated by sediment control measures other than the sediment pond are described in Section R645-301-732.100 and 732.300 of the MRP. These areas are the area between the embankment and fence line and the substation pad. All alternate sediment control areas are shown on Exhibit 7-1 and the type of measures used are identified.

Two small area exemptions (SAE) are shown on the Map (Exhibit 7-1). The text, Section R645-742.240 describes one SAE south of the substation which produces no runoff so, therefore, needs no treatment. This section refers to Appendix 7-9 for calculations.

Siltation Structures

Sedimentation Ponds.

In the currently approved Mining and Reclamation Plan the sedimentation pond and a retention basin are listed under the sedimentation structures. The retention basin is a depression at the truck loadout that is partially filled. That structure was for the Operator's convenience and not part of the sediment control plan. Reference to the retention basin in the MRP implies that the structure should meet design standards and be inspected on a regular basis. To avoid confusion, the Operator requests that he be allowed to delete all reference to the retention basin in the MRP.

The sediment pond and drainages are designed to handle all runoff independently of the retention basin. The Division does not require the Operator to inspect the retention basin. There is no reason why a description of the retention basin should be included in the MRP.

In the currently approved reclamation plan the sediment pond will be left as a permanent structure. The Operator has proposed to remove the sediment pond as part of the reclamation plan. By removing the sediment pond the reclaimed land would more closely resemble the pre-mining site. The reclamation plan has not been modified to show the removal of the sediment pond.

A sediment pond is used to treat much of the runoff at the Banning Loadout. Information on the sediment pond is found in Sections R645-301-731.100, 732.200, and 742.200. Surface drainage not treated by the sediment pond is treated using a containment berm, straw bales, and silt fence. The haul road drainage will be treated using silt fence and straw bales. Exhibit 7-1 shows some low lying areas the act as catch basins, holding the water on site.

A description of the sediment pond is located in Section R645-301-732.200. Exhibit 7-1 shows the location of the pond, while Exhibits 7-2 and 7-3 show the plans, sections and details of the pond and are certified by a professional engineer. Design calculations are found in Appendix 7-6. It is design to contain the 10-year, 24-hour storm volume plus sediment volume of 0.27 acre-feet. Total containment volume of the pond is 1.45 acre-feet. Figure 7-4 shows the stage-capacity curve for the sediment pond. Two steel stakes, shown on Exhibit 7-2, are used to mark sediment clean-out levels. The pond is equipped with the dewatering device that has a riprap apron at the outlet to prevent erosion (see Appendix 7-7).

The pond has a principal spillway and an emergency spillway. The 25-year, 24-hour storm event should peak above the level of the principal spillway but below the emergency.

A small retention basin is located near the sediment pond as shown on Exhibit 7-1. The basin has a capacity of 12,400 gallons and collects runoff of the 10-year, 24-hour storm event from a small area exemption site of 0.38 acres.

Discharge structures

The sediment pond discharge structures are addressed in the discussion of the pond, Section R645-301-732.200 and 742.200 and in Section R645-301-744. There are two spillways, principal and emergency, and a dewatering device shown on Exhibit 7-2 and designed in Appendices 7-6 and 7-7.

Impoundments

There are two impoundments locate in the permit area -- a small retention basin near the sediment pond, and the sediment pond. The sediment pond and the basin near the sediment pond are addressed in the sections on siltation structures in this document and in the MRP. The inner-truck loop had been considered an impoundment but is now used as a coal storage area. Fill material has been placed in the area to prevent water from impounding.

Findings:

Designs for the culverts place in the haul road are found in Appendix 5-3. This appendix does not show the size storm event that was used in designing the culverts. If the culverts are intended to be left after reclamation, they should each convey the flow of the 100-year, 6-hour storm event.

Appendix 7-9 does not include adequate information to permit the small area exemption discussed in Section R645-742.240. A demonstration must be provided to show that this area will not produce runoff, or sediment, in order to permit this area as a SAE. The map, Exhibit 7.1 shows an area northeast of the substation that had been considered a small area exemption but is no longer considered as such. This delineation should be removed from the map.

The Division agrees with the Operator that references to the retention basin should be removed from the MRP. While the Division agrees that the sediment pond should be removed during final reclamation the Division finds that the Operator did not adequately

address the issue. The Operator must include the removal of the sediment pond in the reclamation plan.

RECLAMATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: R645-301-760

Analysis:

Information on reclamation of hydrology is in Section R645-301-760, Chapter 7 of the MRP, and a detailed reclamation plan can be found in Section R645-301-540 of Chapter 5. All hydrology related controls, except the sedimentation and associated outflow structures, will be removed in the final reclamation grading. Section R645-301-763 says that all siltation structures will be removed after vegetation has been successfully re-established, and Section R645-301-342.100 says that the pond will be reclaimed. The reclamation timetable is shown in Section R645-301-540 (Table 5-2) but does not show when siltation structures will be removed.

No new drainages are planned for reclamation and the water sump will be plugged and natural drainage patterns will be restored. Part of the haul road will be left in place as indicated in Section R645-301-540 (Exhibit 5-6), per agreement with the Bureau of Land Management (BLM). The remaining roads will be reclaimed as outlined in Chapter 5.

Findings:

The MRP meets the hydrologic requirements for reclamation; except, Table 5-2 does not show when the siltation structures will be removed.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

Analysis:

Determination of Bond Amount.

The Operator has submitted a cost estimate for reclaiming the site. Most aspects of the reclamation cost estimates are complete and conform to Division standards. Some areas are incomplete or need clarification and they are:

The Operator needs to identify those structures identified as concrete footings. The calculations must state what items are included in that term, such as the building's floor and foundation and the conveyer footings.

The Operator needs to include the off site landfill fees for the buildings and the coal waste scheduled to be disposed of off-site.

The Operator needs to include support equipment and personnel in the earthwork. Such items include a supervisor and his pickup truck and a water truck.

Findings:

The Operator cost estimates are not complete. The deficiencies are listed in the analysis section above.

REQUIREMENTS

The following additional information is required in the Banning Loadout MRP before it can be considered complete and accurate.

1. Soldier Creek needs to propose revegetation success standards for erosion control, diversity, seasonality, and effectiveness for the postmining land use.

2. Appendix 5-2 should be modified to show the size of the rainfall storm event that was used in designing the culverts. If the culverts are intended as permanent culverts (i.e. they will stay after reclamation is completed) the must be designed to convey the flow resulting from the 100-year, 6-hour event.

3. Table 5-2 should be modified to show the time period that the siltation structures will be removed in final reclamation.

4. The small area exemption discussed in Section R645-301-742.240 should be demonstrated to produce no sediment or a sediment control measure must be designed and implemented on this site.

5. The area on Exhibit 7.1 marked as Small Area Exemption No. 1 and that reports to the sediment pond should be removed from the map.

6. The Operator needs to identify those structures identified as concrete footings. The calculations must state what items are included in that term, such as the building's floor and foundation and the conveyer footings.

7. The Operator needs to include the off site landfill fees for the buildings and the coal waste scheduled to be disposed of off-site.

8. The Operator needs to include support equipment and personnel in the earthwork calculations. Such items include a supervisor and his pickup truck and a water truck.

reformta.ban