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DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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December 13, 1994

Rick Olsen, President
Soldier Creek Coal Company
P. O. Box 1029
Wellington, Utah 84542

Re: Review of Newly Formatted Plan, Soldier Creek Coal Company, Banning Siding Loadout, ACT/007/034, Folder #3, Carbon County, Utah

Dear Mr. Olsen;

The Division has completed a review on the Banning Siding Reformatted Plans that were submitted on January 18, 1994. While the reformatted plans were accepted as complete, there still remain a few deficiencies that need to be corrected. Please examine the review document carefully, making particular note of the requirement sections. Soldier Creek Coal Company must complete the requirements as indicated, by no later than March 8, 1995.

Please call if you have any questions.

Sincerely,

Daron R. Haddock

Daron R. Haddock
Permit Supervisor

Enclosure
cc: P. Baker
P. Grubaugh-Littig
S. Johnson
J. Smith
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REVIEW OF REFORMATTED PLAN

SOLDIER CREEK COAL COMPANY
BANNING SIDING LOADOUT
ACT/007/034

December 12, 1994

SUMMARY

This document constitutes a review of Soldier Creek Coal Company's newly formatted Operation and Reclamation Plan for the Banning Siding Loadout. Plan deficiencies requiring correction are found at the end of each section under the heading of "Requirements".

REVIEW

R645-301-330 Operation Plan

Analysis:

The plan says Soldier Creek has disturbed only those areas deemed necessary for coal handling. All available support facilities have been hydroseeded and mulched with an interim seed mix.

The plan does not contain a plan for interim revegetation. Components of the final revegetation plan have been used for interim seeding in the past, but the plan should contain specific interim revegetation methods.

Findings:

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

Requirement:

1) The permittee must supply a plan for interim revegetation.

R645-301-341 Revegetation

The plan says the mulch to be applied is 2000 pounds per acre of wood fiber. Mulch will be anchored by crimping. Crimping wood fiber is unusual and may decrease its

effectiveness. Although this may not be a deficiency in the plan, the Division recommends that the operator check this commitment for accuracy.

Under Section R645-301-341.300, the plan says a test plot was installed to evaluate the efficacy of the proposed reclamation methods. The plan references Appendix 3-4 for the test plot information. No Appendix 3-4 was found in the plan. Test plot plans are in Appendix 7. Also, the plan says the test plot was established in November 1988. There may have been a test plot established in 1988, but the current test plot design was implemented in 1991.

In the Fish and Wildlife Habitat Enhancement section, the plan says the sediment pond will be maintained through the life of the operation and bond liability period at which time the pond will be allowed to pass through normal pond succession as allowed by R645-301-733.220. A pond that contains water during dry portions of the year would definitely enhance wildlife habitat in the loadout area, but the plan does not meet regulatory requirements to retain the pond. Chapter 7 of the plan says the pond will be reclaimed. To retain the pond, Soldier Creek would need to demonstrate that the pond would meet the requirements of R645-301-733.220. Otherwise, the operator needs to commit to reclaim the pond.

The plan discusses success standards for cover, woody plant density, and productivity, but it does not mention standards for other requirements contained in R645-301-353, such as diversity, seasonality, effectiveness in controlling erosion, and permanence. The regulations and "Vegetation Information Guidelines" give specific standards for some of the parameters contained in the performance standards of the regulations, but they are not specific in other areas. Therefore, the plan needs to contain standards for success that have been approved by the Division for these other parameters.

The plan states that comparisons of the revegetated area and the reference area will be made using the data obtained from the ninth and tenth year sampling. R645-301-356.232 states that 80% of trees and shrubs used to show the adequacy of stocking and planting arrangements will have been in place for 60% of the liability period and that no trees or shrubs in place for less than two years can be counted toward meeting the standard for success. This requirement necessitates sampling for woody plant density in the fourth and eighth years of the bond liability period.

The previous review indicated that vegetation in the test plots was not doing well. On some of the plots, Gardner saltbush has grown very well this year, and crested wheatgrass is still alive in some of the supplemental plots. In September 1994, Soldier Creek seeded a small area near the substation and the pond. The seed mixture included species from the

primary mixture and from the alternative species shown in Table 3-3. About two inches of rain fell a few days after this seeding, and many of the grasses emerged. Cool weather prevented the soil from drying. If these seedlings can survive the winter, they should provide very good vegetative cover in the spring. Weeds should be outcompeted by the established grasses, but shrubs will probably not be able to become established. Depending on survival of these grasses, this sort of revegetation scheme could be a model for final revegetation. However, it could be necessary to have "artificial precipitation," ie: irrigation.

Findings:

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.

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

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.

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.

Requirements:

1) The permittee must correct references to Appendix 3-4 as the test plot design and provide correct dates for test plot implementation.

2) The Permittee must revise the plan to contain standards for success for diversity, seasonality, and effectiveness in controlling erosion.

3) The Permittee must revise the plan 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. The permittee must provide adequate plans for the retention or the removal of the sediment pond.

R645-301-723 through R645-301-726; 728; 731.200 **Hydrologic Resource Information**

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 7 and in Chapter 6. Reclaimability 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.

R645-301-730, 740, 750 Operational Hydrologic Information

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.

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.

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 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.

Siltation Structures

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 "new" pond and an "old" pond are mentioned in the text, but there is only one set of designs within the MRP. One statement is made saying that the old pond will be maintained until the new one is fully constructed while other statements make it sound like the new pond has been constructed.

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 designed 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 three impoundments locate in the permit area -- a closed basin inside the truck loop, 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 plans the inner-truck loop basins are on Exhibit 7-1. The inner-truck loop basin plans are only the dimensions that can be found on the map of the entire permit area.

Findings:

There are no designs for the culvert that are place in the haul road. These are temporary diversions and should be designed to convey the peak flow for the 2-year, 6-hour storm event. Other diversions are designed for the 25-year, 24-hour storm when they should also convey the 2-year, 6-hour; however, the current designs should exceed the requirements.

SCCC has used the best technology currently available in designing sediment control measures on this permit site; however, alternate sediment control areas are not clearly identified on maps or in the text. Only one pond currently exists with designs. Exhibit 7-1 does not specify if this is the new or the old pond. The retention basin has been regraded. More detailed designs are needed for the inner-truck loop basin, showing that it meets the requirements of impoundments and the impoundment inspections. The designs for the sediment pond that show it is designed to contain the 10-year, 24-hour storm volume, plus adequate sediment storage, are complete and assumed to be for the only existing pond.

Requirements:

1) The Permittee must submit designs for the three haul road culverts.

2) The Permittee must submit information showing that the 25-year, 24-hour storm peak is as large or larger than the required 2-year, 6-hour storm.

3) SCCC must submit amended text and/or maps that clearly show the location, size and measures used on alternate sediment control areas.

4) SCCC must clarify whether the pond in existence now is the "new" pond or "old" pond as they are identified in Section R645-301-732.200 of the MRP. If the new pond has been constructed, all information about the old pond should be removed from the plan. If the new pond is in the planning stages, more information about the pond design in necessary before construction.

5) SCCC must submit information to the Division which would bring the inner-truck loop basin in compliance with all impoundment regulations and showing the regrading of the retention basin.

R645-301-760 Reclaimational Hydrologic Information

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; however, Section R645-301-342.100 says that the pond will not 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 it is not clear when and if the sediment pond will be reclaimed. All other hydrologic structures will be removed.

Requirements:

1) SCCC must submit information that clarifies the reclamation fate of the sediment pond in Sections R645-301-342.100 and R645-301-763. If there is no intention of reclaiming the pond, SCCC must submit information that shows that the pond is suitable as a permanent pond.

R645-301-625 GEOLOGICAL ADDITIONAL INFORMATION

Analysis:

Coal is not mined in the permit area, but is brought from other mines to be stored temporarily and shipped. Acid- or toxic-forming material might be included with coal brought to the plant for storage and shipment, but because coal normally resides at the plant for only a short time, there is limited potential to impact the environment. Coal samples have been and continue to be analyzed for acid- and toxic-forming materials.

When the plan was reformatted to the R645 Rules in 1993, a commitment to install ground water monitoring wells was omitted. That commitment was contingent on coal analyses revealing that acid- or toxic-forming materials are contaminating the ground water.

The plan now contains a commitment to implement ground water monitoring wells if monitoring possible contamination is considered necessary based on coal analyses.

Finding:

The commitment to install ground water monitoring wells if coal analyses indicate they are needed has been placed in Section R645-301-625.

R645-301-800 Bond

Analysis:

The reclamation bond amount was calculated in 1988 to be $197,593.33 and escalated to $211,000 in 1993 dollars. From 1988 to 1993 costs rose 10.4%, while the projected inflation rate was 7.1%. Using the historic inflation rate the reclamation cost in 1993 dollars is $218,000. If the 1988 reclamation costs were projected to 1998 (permit expiration date) the reclamation bond would be $241,000.

The reclamation bond has a 10% contingency and engineering factor. The Division uses a 10% contingency factor and 5% for engineering. The 1988 bond estimate did not include a 5% contract management fee.

The demolition information listed only the structure's total volume. It appears the demolition costs for foundation and footers were not included neither were disposal costs.

The earthwork calculations do not include production rates. Therefore, Division cannot verify the earthwork costs.

The bond amount was determined six years ago. Cost estimates are usually projected for five years periods of five years or less. The next scheduled bond review will be during the permit renewal in October 1998.

Requirement:

1) The Permittee must supply to the Division, additional bonding cost estimate information which will include but not be limited to the following: all structural dimensions and material types, and productivity calculations for all earthwork calculations.