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PERMIT CHANGE TRACKING FORM

DATE RECEIVED		PERMIT NUMBER	ACT / 007 / 034
Title of Proposal:	Newly Formatted Plan	PERMIT CHANGE #	94 C
Description:		PERMITTEE	Soldier Creek Coal Co.
		MINE NAME	Banning Loadout

<input type="checkbox"/> 15 DAY INITIAL RESPONSE TO PERMIT CHANGE APPLICATION <input type="checkbox"/> Notice of Review Status of proposed permit change sent to the Permittee. <input type="checkbox"/> Request additional review copies prior to Division/Other Agency review. <input type="checkbox"/> Notice of Approval of Publication. (If change is a Significant Revision.) <input type="checkbox"/> Notice of request to modify proposed permit change prior to approval.	DATE DUE	DATE DONE	RESULT
			<input type="checkbox"/> ACCEPTED <input type="checkbox"/> REJECTED Permit Change Classification <input type="checkbox"/> Significant Permit Revision <input type="checkbox"/> Permit Amendment <input type="checkbox"/> Incidental Boundary Change

REVIEW TRACKING	INITIAL REVIEW		MODIFIED REVIEW		FINAL REVIEW AND FINDINGS	
DOGM REVIEWER	DUE	DONE	DUE	DONE	DUE	DONE
<input type="checkbox"/> Administrative <u>PB</u>			4/28	Not previously reviewed.		
<input type="checkbox"/> Biology <u>PB</u>			4/28	4/26		
<input type="checkbox"/> Engineering <u>WW</u>			4/28			
<input type="checkbox"/> Geology XS			4/28			
<input type="checkbox"/> Soils <u>---</u>						
<input type="checkbox"/> Hydrology <u>SJ</u>			4/28			
<input type="checkbox"/> Bonding <u>WW</u>			4/28			
<input type="checkbox"/> AVS Check <u>---</u>						

COORDINATED REVIEWS	DUE	DONE	DUE	DONE	DUE	DONE
<input type="checkbox"/> OSMRE						
<input type="checkbox"/> US Forest Service						
<input type="checkbox"/> Bureau of Land Management						
<input type="checkbox"/> US Fish and Wildlife Service						
<input type="checkbox"/> US National Parks Service						
<input type="checkbox"/> UT Environmental Quality						
<input type="checkbox"/> UT Water Resources						
<input type="checkbox"/> UT Water Rights						
<input type="checkbox"/> UT Wildlife Resources						
<input type="checkbox"/> UT State History						
<input type="checkbox"/> Other						

<input type="checkbox"/> Public Notice/Comment/Hearing Complete (If the permit change is a Significant Revision)	<input type="checkbox"/> Permit Change Approval Form signed and approved effective as of this date. <input type="checkbox"/> Permit Change Denied.
<input type="checkbox"/> Copies of permit change marked and ready for MRP.	<input type="checkbox"/> Notice of <input type="checkbox"/> Approval <input type="checkbox"/> Denial to Permittee.
<input type="checkbox"/> Special Conditions/Stipulations written for approval.	<input type="checkbox"/> Copy of Approved Permit Change to File.
<input type="checkbox"/> TA and CHIA modified as required.	<input type="checkbox"/> Copy of Approved Permit Change to Permittee.
<input type="checkbox"/> Permit Change Approval Form ready for approval.	<input type="checkbox"/> Copies to Other Agencies and Price Field Office.



Coastal
The Energy People

March 29, 1995

Mr. Daron R. Haddock
Permit Supervisor
Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

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

Dear Mr. Haddock:

Your letter to Rick Olsen dated December 13, 1994, contained deficiencies found during the Division's review of the above referenced permit. The following are responses to those deficiencies. Some of these responses consist of revised pages of the permit. In order to facilitate your review of the revised pages proposed deletions are marked by "strikeouts" and additions are shaded. Once approval is received for the revisions the strikeout marked text will be deleted and the shading of added text will be removed resulting in "clean" revisions which will be resubmitted for actual insertion into the permit.

R645-301-330 Operation Plan

Deficiency 1) The permittee must supply a plan for interim vegetation.

Response Page 3-6 of the permit has been revised to include a description of interim vegetation practices. Also minor changes have been made to Table 3-3 on Page 3-11 in this regard.

R645-301-341 Revegetation

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

Response Page 3-15 has been revised to show the correct date of test plot implementation. Also references in Appendix 3-4 to Appendix 7 have been corrected.

Utah Fuel Company

A SUBSIDIARY OF THE COASTAL CORPORATION
P.O. BOX 719 • HELPER UT 84526-0719 • 801/637-7925 • FAX 801/637-7929 • SALT LAKE 801 596-7111

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

Response Page 3-17 have been revised to include a commitment to meet performance standards.

Deficiency 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.

Response Page 3-17 has been revised to include a commitment to sample for woody species density in the fourth and eighth years of the bond liability period.

Deficiency 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.

Response Page 3-15 has been revised to state that the sediment pond will be reclaimed. Additional response to the sediment pond issue is presented below.

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

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

Response Designs for the haul road and culverts were submitted to the Division in January 28, 1993, and were subsequently approved. However, it is hereby proposed that the culvert designs be inserted into the permit as Appendix 5-3. To facilitate this page 5-58 has been revised to refer to Appendix 5-3, the table of contents for Chapter 5 Exhibits and Appendices has been revised to include Appendix 5-3, and a copy of the culvert design calculations are attached hereto.

Deficiency 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.

Response An example using the SCS TR-55 method has been attached to show that the 25-year, 24-hour storm will produce a greater peak flow at the Banning site than a 2-year, 6-hour storm. Actual rainfall values for 25-year, 24-hour and 2-year, 6-hour storms and soil curve number for the Banning area were used. In this example peak flow produced by a 25-year, 24-hour storm would be 8.33 cfs. The peak flow produced by a 2-year, 6-hour storm would be 1.04 cfs. The diversions at the Banning site are adequate to convey the runoff generated by a 2-year, 6-hour storm. Since this conclusion is obvious from the attached example it is proposed that the example not be included in the permit document.

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

Response Exhibit 7-1 has been revised to clearly show the locations and sizes of the alternate sediment control areas and the measures to treat runoff from these areas. Also pages 7-39 and 7-39a have been revised to include discussions of the alternate sediment control areas. Exhibit 7-1 and page 7-45 have been revised to show and discuss a small area exemption (SAE). Field examination has shown that the previously approved SAE area No. 1 is actually tributary to the sedimentation pond. The calculations for the prior SAE should be removed from the M&RP. We have established a new SAE area No. 1 which is adjacent to the original SAE. We have included a text revision and calculations for the new area. The calculations indicate that the hydraulic length for this area is so short that no runoff is generated, therefore, it is demonstrated that no alternate sediment controls are needed.

Deficiency 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 is necessary before construction.

Response The current pond at the Banning site has been in existence for several years and the designs in the permit are for this pond. References to the "old" and "new" ponds are from an outdated version of the permit and were inadvertently included in the current submission. Pages 5-44, 7-26, 7-28, 7-29, 7-30, and 7-31 have been revised to eliminate references to "old", "new", or "proposed" ponds.

Deficiency 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.

Response In the past SCCC has used the truck loop for coal storage and it is intended to continue to use this area for storage. To implement this, fill material has been placed in the truck loop. During early March the truck loop was surveyed and Exhibit 7-1 has been revised to show the results of that survey and to correctly identify the truck loop as a coal storage area rather than an impoundment. At this time coal is being stored in this area. The addition of fill material, coal base, and coal in this area effectively eliminates it as an impoundment. Pages 5-7, 5-23, 5-53, 5-54, 5-56, 7-33, and 7-41 have been revised to eliminate references to the truck loop as an impoundment.

R645-301-760 Reclamation Hydrologic Information

Deficiency 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.

Response Rather than submit additional information to show that the pond is suitable as a permanent pond, SCCC will reclaim the pond. Pages 3-15, 5-54, 5-71, 7-30, 7-35, 7-36, and 7-37 have been revised to eliminate references to the sediment pond as a permanent feature and to indicate that the pond will be reclaimed.

R645-301-800 Bond

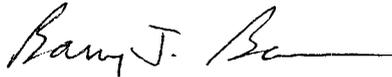
Daron R. Haddock
March 29, 1994
Page 5

Deficiency 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.

Response Reclamation cost estimates have been recalculated based on current (1995) costs using the OSM format. The new estimated cost of reclamation is \$279,304 compared to a current bonding amount of \$211,000. Table 5-3, pages 5-75 through 5-82 should be replaced with revised Table 5-3, pages 5-75 through 5-82a attached hereto. After the Division reviews these cost estimates and determines a revised bond amount, an appropriate bond will be installed.

Daron, we appreciate the time extension granted to us to prepare this response. If there are any questions please contact us.

Very truly yours,



Barry J. Barnum

R645-301-323.300 Each facility to be used to protect and enhance fish and wildlife and related environmental values; and

See Exhibit 3-1

R645-301-323.400 If required, each vegetative type and plant community, including sample locations. Sufficient adjacent areas will be included to allow evaluation of vegetation as important habitat for fish and wildlife for those species identified under R645.301.322.

See Exhibit 3-1

R645-301-330 Operation Plan.

Each application will contain a plan for protection of vegetation, fish and wildlife resources throughout the life of the mine. The plan will provide:

R645-301-331 A description of the measures taken to disturb the smallest practicable area at any one time and through prompt establishment and maintenance of vegetation for interim stabilization of disturbed areas to minimize surface erosion. This may include part or all of the plan for final revegetation as described in R645-301-341.100 and R645-301-341.200;

Soldier Creek has disturbed only those areas deemed necessary for the handling of coal. All available support facilities (example: sediment pond, embankments, berms,) have been hydroseeded and mulched with an interim seed mix. Interim reclamation will use the seed mix shown on Table 3-3 and the basic seeding and mulching techniques outlined in Section R645-301-341 of this M&RP. Changes in interim seedings may be submitted to the Division for approval on an "as needed basis".

R645-301-332. For the purposes of UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES a description of the anticipated impacts of subsidence or renewable resource lands identified in R645-301-320, and how such impact will be mitigated;

Subsidence on this facility will not be a factor, as no underground mining will be conducted at this coal preparation and loadout facility.

R645-301-333. A description of how, to the extent possible, using the best technology currently available, the operator will minimize disturbances and adverse impacts to fish and wildlife and related environmental values during coal mining and reclamation operations, including compliance with the Endangered Species Act of 1973 during coal mining and reclamation operations, including the location and operation of

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haul and access roads and support facilities so as to avoid or minimize impacts on important fish and wildlife species or other species protected by state or federal law; and how enhancement of these resources will be achieved, where practicable. This Description will:

R645-301-333.100. Be consistent with the requirements of R645-301-358;

R645-301-333.200. Apply, at a minimum, to species and habitats identified under R645-301-322; and

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TABLE 3-3
SEED MIX FOR BANNING LOADOUT

SPECIES

<u>Common Name</u>	<u>Scientific Name</u>	<u>Rate</u> <u>lbs. PLS/Acre</u>
<u>Shrubs</u>		
Schadscale	Atriplex Confertifolia	4.6
Gardner Saltbrush	Atriplex gardneri	2.3
Fourwing Saltbrush	Atriplex canescens	4.06
Fringed Sagebrush	Artemisia frigida	1.1
Winter Fat	Eurotia lanata	2.3
<u>Grass</u>		
Indian Ricegrass	Stip hymenoides	2.3
Squirrel tail	Sitanion hystrix	2.3
Sand Dropseed	Sporobolus Cryptandrus	0.6
Great Basin Wildrye	Elymus cinereus	2.3
<u>Forbs</u>		
Scarlet Globemallow	Sphaeralcea coccinea	1.1
Gooseberry Leaf	grossulariaefolia	
Yellow Sweetclover	Melilotus officinalis	1.1
		24.6 lbs/Ac*
<u>Alternative Species</u>		
<u>Grasses</u>		
Hycrest Crested Wheatgrass	Agropyron cristatum	13.1 lbs/Ac
Tall Weatgrass	Agropyron elongatum	6.4 lbs/Ac
Russian Wildrye	Elymus junceus	6.4 lbs/Ac
		25.9 lbs/Ac*

* During the seeding of the test plots, under the supervision of DOGM, the seeding quantities was inadvertently increased by a factor of approximately two (2).

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anchored by chemical taciifier used at the manufacturers recommended level. ~~erimping. Crimping will be completed by using discs traversing the mulched area. No additional anchoring methods will be used on the site. An optional method will be to hydromulch the site with 2000 lbs. per acre wood fiber mulch in combination with 60 lbs. per acre of a dry based taciifying agent.~~

R645-301-341.240. Irrigation, if appropriate, and pest and disease control measures, if any;

There will be no irrigation or supplementary water used during or after the revegetation of the area. There are no planned pest or disease control measures for the loadout reclamation. Pest or disease control measures may be included in this plan if results from the test plot and/or reference area indicate a need. The measures will be consistent with proper rangeland and wildlife management.

R645-301-341.250. Measures proposed to be used to determine the success of revegetation as required in R645-301-356.

The reference area for Banning Loadout was established adjacent to the existing facilities during the summer of 1987 (Exhibit 3-1) The reference area was chosen with the help of DOGM in an area which represents the natural premining conditions of the permit area. This reference area will facilitate the determination of successful revegetation and the resultant final bond release for the Applicant.

Comparisons of the revegetated area and the reference area will be made using the data obtained from the ninth and tenth year sampling. This data will be used to

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obtain statistical information that will show the site meets the requirements for bond release. The requirements for cover, productivity and woody plant density are, at

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least 90% of the cover, woody plant density and productivity of the reference area with 90% statistical adequacy. The site will be sampled in a manner similar to the method used to sample the reference area during 1987.

R645-301-341.300. *The Division may require greenhouse studies, field trials, or equivalent methods of testing proposed or potential revegetation materials and methods to demonstrate that revegetation is feasible pursuant to R645-300-133.710.*

In consultation with the DOGM, a test plot was established during ~~late November, 1988~~ 1991 at a location ~~along the south side of the loadout area,~~ near the railroad tracks (Appendix 3-4). The seed mix described in ~~Table 3-3~~ Appendix 3-4 was used at this test plot to evaluate the efficacy of the proposed reclamation methods described.

R645-301-342. Fish and Wildlife. *Each application will contain a fish and wildlife plan for the reclamation and postmining phase of operation consistent with R645-301-330, the performance standards of R645-301-358 and include the following:*

R645-301-342.100. *Enhancement measures that will be used during the reclamation and postmining phase of operation to develop aquatic and terrestrial habitat. Such measures may include restoration of streams and other wetlands, retention of ponds and impoundments, establishment of vegetation for wildlife food and cover, and the replacement of perches and nest boxes. Where the plan does not include enhancement measures, a statement will be given explaining why enhancement is not practicable.*

The sediment pond will be maintained through the life of the operation and bond liability period, at which time the pond will be ~~reclaimed.~~ ~~allowed to pass through normal pond succession as allowed by R645 301 733.220.~~ ~~The presence of free water on this historically dry site will serve as a major enhancement feature.~~ No riparian or wet lands were in evidence at this site.

R645-301-342.200. *Where fish and wildlife habitat is to be a postmining land use, the plant species to be used on reclaimed areas will be selected on the basis of the following criteria:*

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R645.301.342.210. Their proven nutritional value for fish or wildlife;
and

R645-301-342.220. Their use as cover for fish or wildlife; and

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postmining land use, a vegetative cover that is in accordance with the approved permit and reclamation plan. Any and all evidence of erosion greater than 6 inches in depth or width will be repaired to the original grade at the site, and will follow all requirements thus forth set out.

R645-301-353.100. The vegetative cover will be:

R645-301-353.110. Diverse, effective, and permanent;

R645-301-353.120. Comprised of species native to the area, or of introduced species where desirable and necessary to achieve the approved postmining land use and approved by the Division;

R645-301-353.130. At least equal in extent of cover to the natural vegetation of the area; and

R645-301-353.140. Capable of stabilizing the soil surface from erosion.

R645-301-353.200. The reestablished plant species will:

R645-301-353.210. Be compatible with the approved postmining land use;

Soldier Creek Coal is committed to comply with all applicable performance standards R645-301-353.210 through R645-301-358.530. and will meet the performance standards for diversity, seasonality, and effectiveness in controlling erosion and permanence as outlined in the current R645-301-353 regulations and current Division "Vegetation Information Guidelines".

R645-301-356.

The permittee will meet the standards for success as outlined in this section and will sample revegetated areas for woody species density in the fourth and eighth years of the bond liability period.

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Test Plots

In consultation with DOGM, a test plot was established during late November, 1988 at a location along the south side of the loadout area, near the railroad tracks (Exhibit 5.2-1). The seed mix described in Table 7.2-5 was used at this test plot to evaluate the efficacy of the proposed reclamation methods described in the approved MRP.

However, the monitoring of this test plot showed the vegetation growth to be insufficient for demonstrating reclaimability of the site. It should also be noted that the Carbon County area has been experiencing drought conditions since the establishment of the test plot in 1988. The drought has not only affected the vegetation in the area, but also the wildlife. Regardless of the drought, a Division Order was issued on August 26, 1991, requiring Soldier Creek Coal Company (SC³) to establish a new test plot and develop new methods for demonstrating the reclaimability of the site. Therefore, a new location (Exhibit 5.2-1) and seed mixes (Table 7.2.5a) was selected for the new test plot.

Test Plot Design

The following design will be used in the construction of the new test plots, whereby, if the vegetation growth is sufficient to prove reclaimability of the site, then all relevant techniques, amendments and seed species will be utilized in amending the existing site preparation and seeding procedure in the approved MRP.

The treatments and non-treatments are as follows:

1. Organic matter (7" of cow manure) in addition with gouging.
2. 60 T/ac of saw dust with 420 lb nitrogen/acre [2000 lb (NH₄)₂SO₄/acre] and 80 lbs/ac of phosphorus [178 lbs of treble superphosphate Ca(H₂ PO₄)₂ per acre].
3. 200 lbs nitrogen/acre (as 952 lbs of ammonium sulfate/ac) and 80 lbs of phosphorus/acre (as 178 lbs of treble superphosphate).
4. Control (no treatment other than physical ripping and gouging and seeding).
5. Blank (no treatment other than physical ripping and gouging to determine the success of reclamation without seeding).

Gouging is a water harvesting technique where pits, approximately 10 inches deep by 18 inches wide by 25 inches long are dug by a backhoe or other piece of equipment. Gouging has many beneficial effects, including decreasing erosion and increasing the amount of water available at the bottom of the pits.

Table 3-4
Seed Mix for Banning Test Plots

<u>Species</u> Common Name	Scientific Name	<u>Rate</u> lbs PLS/Acre
<u>Shrubs</u>		
Shadscale	Atriplex confertifolia	4.6
Gardner Saltbrush	Atriplex gardneri	2.3
Fourwing Saltbrush	Atriplex canescens	4.6
Fringed Sagebrush	Artemisia frigida	1.1
Winter Fat	Eurotia lanata	2.3
<u>Grass</u>		
Indian Ricegrass	Stip hymenoides	2.3
Squirrel tail	Sitanion hystrix	2.3
Sand Dropseed	Sporobolus Cryptandrus	0.6
Great Basin Wildrye	Elymus cinereus	2.3
<u>Forbs</u>		
Scarlet Globemallow	Sphaeralcea coccinea	1.1
Yellow Sweetclover	Melilotus officinalis	1.1
		<hr/> 24.6 lbs/Ac*
<u>Supplemental Test Plots</u>		
<u>Grasses</u>		
Hycrest Crested Wheatgrass	Agropyron cristatum	13.1 lbs/Ac
Tall Wheatgrass	Agropyron elongatum	6.4 lbs/Ac
Russian Wildrye	Elymus junceus	6.4 lbs/Ac
		<hr/> 25.9 lbs/Ac*

* During the seeding of the test plots, under the supervision of DOGM, the seeding quantities was inadvertently increased by a factor of approximately two (2).

registered professional engineer or other qualified professional specialist under the direction of the professional engineer.

R645-310-514.100 Excess Spoil The professional engineer or specialist will be experienced in the construction of earth and rock fills and will periodically inspect the fill during construction. Regular inspections will also be conducted during placement and compaction of fill materials.

N/A There are no plans to construct earth or rock fills at this operation.

R645-301-514.110, R645-301-514.111, R645-301-514.112, R645-301-514.113, R645-301-514.114, R645-301-514.120, R645-301-514.130, R645-301-514.131, R645-301-514.132, R645-301-514.133 and R645-301-514.140

N/A There are no plans to construct earth or rock fills at this operation.

R645-301-514.200 Refuse Piles

N/A There are no plans for refuse piles at this operation.

R645-301-514.210, R645-301-514.220, R645-301-514.221, R645-301-514.222, R645-301-514.223, R645-301-514.224, R645-301-514.230, R645-301-514.240 and R645-301-514.250

N/A

R645-301-514.300 Impoundments

~~There are 2 impoundments associated with this operation— one sediment pond and a small retention basin. The only impoundment associated with this operation is the sediment pond.~~

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R645-301-514.310 Certified Inspection

The professional engineer or specialist experienced in the construction of impoundments will inspect the impoundment.

and 5-2. There are no wells or pipelines within or adjacent to the permit area.

R645-301-521.123 Each public road located in or within 100 feet of the proposed permit area;

The haulage road used to transport coal to the site splits off of U.S. Highway 6-50 just after the Sunnyside Junction. The road parallels the highway for approximately 1200 feet, then curves toward the loadout facilities. Parts of the permit area lie within 100 feet of the U.S. Highway 6-50 Right-of-Way. Location of the permit and U.S. Highway 6-50 are shown on Exhibit 5-1. There are no other public roads within 100 feet of the permit area.

R645-301-521.124 The location and size of existing areas of spoil, waste, coal development waste, and noncoal waste disposal, dams, embankments, other impoundments, and water treatment and air pollution control facilities within the proposed permit area. The map will be prepared and certified according to R645-301-512; and

All other facilities are shown on Exhibit 5-2. This map is prepared and certified according to R645-301-512.

R645-301-521.125 The location of each sedimentation pond, permanent water impoundment, coal processing waste bank and coal processing waste dam and embankment in accordance with R645-301-512.100, R645-301-512.230, R645-301-521.143, R645-301-521.169, R645-301-528.340, R645-301-531, R645-301-533.600, R645-301-533.700, R645-301-535.140 through R645-301--535.152, R645-301-536.600, R645-301-536.800, R645-301-542.500, R645-301-732.210, and R645-301-733.100.

The location of the sediment pond and ~~retention basin~~ is shown on Exhibit 7-1.

There are no permanent water impoundment, coal processing waste banks or coal processing waste dams or embankments associated with this operation.

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Drainage control devices at the loadout will be maintained as fully intact as possible during construction to prevent, to the extent possible, any additional contribution of sediment to streamflow or runoff outside the permit area. There may be times during construction when it is impracticable to control all the surface runoff during an isolated storm event. In order to alleviate this problem, the Applicant will try to schedule construction in such a manner as to expedite the process.

The ~~proposed~~ sedimentation pond and other drainage control structures at Banning Loadout have been prepared by or under the direction of a professional engineer. Maps, cross-sections and details of the structures are contained in Chapter 7. Each designed structure meets or exceeds all regulatory criteria. The drainage control structures will be inspected routinely throughout the life of the operation.

R645-301-526.400 *For SURFACE COAL MINING AND RECLAMATION ACTIVITIES, air pollution control facilities.*

N/A This is a surface loadout for an underground coal mine. Air pollution control facilities are not required. An air pollution control plan is discussed under Section R645-301-521.

R645-301-527 *Transportation Facilities*

Transportation Facilities are shown on Exhibits 5-1, 5-2 and 5-7.

R645-301-527.100 *The plan must classify each road.*

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R645-301-531 *General.* Each permit application will include a general plan for each proposed sediment pond, water impoundment, and coal processing waste bank, dam or embankment within the proposed permit area. Each general plan will describe the potential effect on the structure from subsidence of the subsurface strata resulting from past underground mining operations, if underground mining has occurred.

Plans for sediment ponds ~~and impoundments~~ are described in Sections R645-301-732 and 733 of Chapter 7. There are no coal processing waste banks, dams or embankments within the permit area. No underground mining has occurred at this site; therefore, no subsidence effects are anticipated.

R645-301-532 *Sediment Control.* The permit application will describe designs for sediment control. Sediment control measures include practices carried out within and adjacent to the disturbed area. The sedimentation storage capacity of practices in and downstream from the disturbed areas will reflect the degree to which successful mining and reclamation techniques are applied to reduce erosion and control sediment. Sediment control measures consist of the utilization of proper mining and sediment control practices, singly or in combination. Sediment control methods include but are not limited to:

Sediment control is described in detail in Section R645-301-732 of Chapter 7.

R645-301-532.100 *Disturbing the smallest practicable area at any one time during the mining operation through progressive backfilling, grading, and prompt revegetation as required in R645-301-353.200; and*

Reclamation efforts of all lands disturbed by the Applicant's operation will occur as contemporaneously as practical with the operations. This will minimize the amount of disturbed area at any one time during the operation.

R645-301-532.200 *Stabilizing the backfilled material to promote a reduction of the rate and volume of runoff in accordance with the requirements of R645-301-537.200, R645-301-552 through R645-301-553.230, R645-301-553.260, through R645-301-553.420, R645-301-553.600, and R645-301-553.900.*

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N/A There are no plans for contemporaneous backfilling during operations. Backfilling and regrading will occur during final reclamation as described under Section R645-301-540.

R645-301-533 Impoundments

There is only one sediment pond associated with this operation. ~~The truck dump contains a closed basin for direct precipitation only. It has no provisions for inflow or outflow. In addition, there is a small retention basin located south of the pond. This basin is used as a final treatment for runoff from a B.T.C.A. area on the south side of the site.~~

R645-301-533.100 An impoundment meeting the size or other criteria of 30 CFR 77.216(a) or located where failure would be expected to cause loss of life or serious property damage will have a minimum static safety factor of 1.5 for a normal pool with steady state seepage saturation conditions, and a seismic safety factor of at least 1.2. Impoundments not meeting the size or other criteria of 30 FCR 77.216(a), except for coal mine waste impounding structure, and located where failure would not be expected to cause loss of life or serious property damage will have a minimum static safety factor of 1.3 for normal pool with steady state seepage saturation conditions or meet the requirements of R645-301-733.210.

There are no impoundments meeting the size or other criteria of 30 CFR 77.216(a) or located where failure would be expected to cause loss of life or serious property damage.

Impoundments are designed to meet the requirements of R645-301-733.210, as described in that section of Chapter 7.

R645-301-533.200 Foundation for temporary and permanent impoundments must be designed so that:

All impoundments, ~~the exception of the sediment pond,~~ are temporary, and will be removed upon final reclamation.

R03/28/95

MSHA under 30 CFR 77.216 will also be submitted to the Division as part of the permit application.

N/A There are no impoundments meeting the size or other criteria of MSHA 30 CFR 77.216(a) at this site.

R645-301-533.610 Each detailed design plan for a structure that meets or exceeds the size or other criteria of MSHA, 30 CFR 77.216 (a) will include any geotechnical investigation, design, and construction requirements for the structure. The operation and maintenance requirements for each structure will be described.

N/A

R645-301-533.620 If the structure is 20 feet or higher or impounds more than 20 acre-feet, each plan under R645-301-536.800, R645-301-732.210, and R645-301-733.210 will include a stability analysis of each structure. The stability analysis will include, but not be limited to, strength parameters, pore pressures, and long-term seepage conditions. The plan will also contain a description of each engineering design assumption and calculation with a discussion of each alternative considered in selecting the specific design parameters and construction methods.

N/A

R645-301-533.700 Each detailed design plan for a structure that does not meet the size or other criteria of MSHA, 30 CFR 77.216(a) will include any design and construction requirements for the structure, including any required geotechnical information. The operation and maintenance requirements for each structure will be described.

Complete design plans for the impoundments are provided in Section R645-301-733 of Chapter 7.

R645-301-534 Roads. The permit application will describe designs for roads.

Roads are discussed in detail under Section R645-301-527 of this Chapter.

R645-301-534.100 Roads will be located, designed, constructed, reconstructed, used, maintained, and reclaimed so as to:

Roads are located, designed, constructed, reconstructed, used, maintained and will be reclaimed so as to:

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This is a low relief area, and all roads are located on the most stable, available surfaces as shown on Exhibits 5-1 and 5-2.

R645-301-534.320 Be surfaced with rock, crushed gravel, asphalt, or other material approved by the Division as being sufficiently durable for the anticipated volume of traffic and the weight and speed of vehicles using the road;

All roads are surfaced with gravel or asphalt as shown on Exhibit 5-7.

R645-301-534.330 Be routinely maintained to include repairs to the road surface, blading, filling potholes and adding replacement gravel or asphalt. It will also include revegetation, brush removal, and minor reconstruction of road segments as necessary; and

Roads are routinely maintained by blading or resurfacing as necessary. Drainage and drainage controls along the road are also routinely maintained by cleaning or replacement as needed.

R645-301-534.340 Have culverts that are designed, installed, and maintained to sustain the vertical soil pressure, the passive resistance of the foundation, and the weight of vehicles using the road.

Culverts are designed, installed and maintained to sustain the vertical soil pressure, the passive resistance of the foundation and the weight of vehicles using the road. Culvert installation on the haulage road was done per BLM specifications. Culvert sizing calculations are shown in Appendix 5-3.

R645-301-535 Spoil. The permit application will describe designs for spoil placement and disposal.

N/A This is an area of low relief, and no excess spoil has been, or will be, generated by this operation. There are no plans for spoil placement or disposal.

R645-301-535.100 Through R645-301-535.500

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period, completion of Phase II, when the revegetated area exhibits statistical adequacy with the approved reference area. The remaining 15% of the bond will be released at the completion of Phase III, the removal of all remaining sediment controls and revegetation of these small areas.

R645-301-542.500 A timetable, and plans to remove each proposed sedimentation pond, water impoundment, and coal processing waste bank, dam, or embankment, if appropriate.

The sediment pond will ~~not~~ be removed.

R645-301-542.600 Roads. A road not to be retained for use under an approved postmining land use will be reclaimed immediately after it is no longer needed for mining and reclamation operations, including;

All roads will be removed and reclaimed, except for a portion of the haulage road which will be left as a permanent structure per requirements of the B.L.M. Right-of-Way.

R645-301-542.610 Closing the road to traffic;

All roads to be reclaimed will be closed to traffic prior to reclamation activities

R645-301-542.620 Removing all bridges and culverts; unless approved as part of the postmining land use.

All drainage controls will be removed on reclaimed roads. The culverts along the permanent portion of the haul road will be left in place and maintained throughout the bond liability period.

R645-301-542.630 Scarifying or ripping of the roadbed and replacing topsoil and revegetating disturbed surfaces in accordance with R645-301-232.100 through R645-301-232.600, R645-301-234, R645-301-242, R645-301-243, R645-301-244.200 and R645-301-353 through R645-301-357.

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TABLE 5-3

OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT
BOND AMOUNT COMPUTATION

Applicant Soldier Creek Coal Company - Banning Loadout

Permit Number ACT/007/034

Date 30 March 1995

Number of Acres 21.4

Type of Operation Train - Coal Loading Facility

Location Banning Siding, Carbon County, Utah

Prepared by Gary E. Taylor

TABLE 5-3 CONT.

Project Banning
Date _____

WORKSHEET NO. 2

STRUCTURE DEMOLITION AND DISPOSAL COST SUMMARY

Listing of Buildings to be Demolished:

<u>Item</u>	<u>Type of Construction Material</u>	<u>Volume (cubic feet)</u>	<u>Unit Cost Basis</u>	<u>Demolition Cost</u>
1) Conveyor Structure	Steel	60,075	\$ 0.21	12,616
2) Multi-Plate Arches	Steel	39,150	\$ 0.21	8,222
3) Tank, Bins, etc.	Steel	8,910	\$ 0.21	1,871
4) Buildings	Mix	4,590	\$ 0.23	1,056
5) Fence	Chain Link	3,900 ft.	\$ 2.29	8,931

Total Cost = \$ 32,696

Other Items to be Demolished:

Concrete Footing	Concrete	290 Cu.Yd.	\$212.00	\$61,480
Asphalt Removal		4,444 Sq.Yd.	\$ 6.60	\$29,333

Debris Handling and Disposal Costs:

Concrete Disposal		290 Cu.Yd.	\$ 6.40	\$ 1,856
Asphalt Disposal		749 Cu.Yd.	\$ 6.40	\$ 4,736

TOTAL DEMOLITION AND DISPOSAL COST = \$ 130,101

Data Sources:

TABLE 5-3 CONT.

Project Banning

Date _____

WORKSHEET NO. 5

PRODUCTIVITY AND HOURS REQUIRED FOR DOZER USE

Earthmoving Activity:

Coal Removal

Characterization of Dozer Used (type, size, etc.):

Caterpillar Bulldozer - D8L - 400 LCY/Hr.

Description of Dozer Use (origin, destination, grade, haul distance, material, etc.):

200 ft. + 0% Effective Grade - Material - Coal

Productivity Calculations:

$$\begin{aligned} \text{Operating Adjustment Factor} &= \frac{.75}{\text{operator factor}} \times \frac{.80}{\text{material factor}} \times \frac{.83}{\text{work hour factor}} \times \frac{1.0}{\text{grade factor}} \times \frac{.83}{\text{weight correction factor}} \times \frac{1.0}{\text{production method/blade factor}} \\ &= \frac{.80}{\text{visibility}} \times \frac{1.0}{\text{elevation}} \times \frac{.8}{\text{direct drive transmission}} = \underline{0.26} \end{aligned}$$

$$\text{Net Hourly Production} = \frac{400}{\text{normal hourly production}} \text{ yd}^3/\text{hr} \times \frac{0.26}{\text{operating adjustment factor}} = \underline{105.82} \text{ yd}^3/\text{hr}$$

$$\text{Hours Required} = \frac{12,100}{\text{volume to be moved}} \text{ yd}^3 \div \frac{105.82}{\text{net hourly production}} \text{ yd}^3/\text{hr} = \underline{114.35} \text{ hrs}$$

6" of Coal

$$\frac{15 \text{ Ac.} \times 43,560 \text{ Sq.Ft./Ac.} \times .5 \text{ ft}}{27 \text{ Cu.ft./ Cu.Yd.}} = 12,100 \text{ Cu.Yd.}$$

Data Sources:

Caterpillar Performance Handbook, Edition 21

TABLE 5.3 CONT.

Project Banning

Date _____

WORKSHEET NO. 7

PRODUCTIVITY AND HOURS REQUIRED FOR RIPPER-EQUIPPED DOZER USE

Ripping Activity:

Rip surface area of 21.4 acres for backfilling and grading and mix soil prior to seedbed preparation.

Characterization of Dozer and Ripper Used:

Caterpillar D8L with U Blade, with Triple-Shank ripper.

Description of Ripping (ripping depth, cut spacing, cut length, and material to be ripped):

Dozer will rip surface area of 932,188 sq. ft. The average cut length is 200 ft, ripping depth 1.5 feet, and ripping width is 8.08 ft.

Productivity Calculations:

$$\text{Cycle time} = \left(\frac{200 \text{ ft}}{\text{cut length}} \div \frac{88 \text{ fpm}}{\text{speed}} \right) + \frac{0.3}{\text{turn time}} = \underline{2.57} \text{ min/pass}$$

$$\text{Passes/hour} = \frac{50 \text{ min/hr}}{\text{work hour factor}} \div \frac{2.57 \text{ min/pass}}{\text{cycle time}} = \underline{19.46} \text{ passes/hr}$$

$$\text{Volume cut per pass} = \left(\frac{1.5 \text{ ft}}{\text{tool penetration}} \times \frac{8.08 \text{ ft}}{\text{cut spacing}} \times \frac{200 \text{ ft}}{\text{cut length}} \right) \div \frac{27 \text{ ft}^3}{\text{yd}^3} = \underline{89.78} \text{ bank yd}^3/\text{pass}$$

$$\text{Ripping Production} = \underline{89.78} \text{ bank yd}^3/\text{pass} \times \underline{19.46} \text{ passes/hr} = \underline{1747} \text{ bank yd}^3/\text{hr}$$

$$\text{Hours Required} = \frac{51,788 \text{ bank yd}^3}{\text{volume to be ripped}} \div \frac{1747 \text{ bank yd}^3/\text{hr}}{\text{hourly production}} = \underline{29.64} \text{ hrs}$$

Calculate separate dozer hauling of ripped material in each lift on Worksheet No. 5, using material factor to account for swell.

Data Sources:

Caterpillar Performance Handbook, Edition 21

TABLE 5-3 CONT.

Project Banning

Date _____

WORKSHEET NO. 8

PRODUCTIVITY AND HOURS REQUIRED FOR LOADER USE

Earthmoving Activity:

Coal Removal

Characterization of Loader Used (type, size, etc.):

Caterpillar, 988 B Loader

Description of Loader Use (origin, destination, grade, haul distance, etc.):

Productivity Calculations:

$$\text{Cycle time} = \frac{.20}{\substack{\text{haul time} \\ \text{(loaded)}}} + \frac{.20}{\substack{\text{return time} \\ \text{(empty)}}} + \frac{.62}{\substack{\text{basic} \\ \text{cycle time}}} = \underline{1.02} \text{ min}$$

$$\text{Net Bucket Capacity} = \frac{8.0}{\substack{\text{heaped bucket} \\ \text{capacity}}} \text{ yd}^3 \times \frac{.95}{\substack{\text{bucket fill} \\ \text{factor}}} = \underline{7.60} \text{ yd}^3$$

$$\text{Net Hourly Production} = \frac{7.60}{\substack{\text{net bucket} \\ \text{capacity}}} \text{ yd}^3 \div \frac{1.02}{\substack{\text{cycle time}}} \text{ min} \times \frac{50 \text{ min/hr}}{\substack{\text{work hour} \\ \text{factor}}} = \underline{372.55} \text{ yd}^3/\text{hr}$$

$$\text{Hours Required} = \frac{12,100}{\substack{\text{volume to be} \\ \text{moved}}} \text{ yd}^3 \div \frac{372.55}{\substack{\text{net hourly} \\ \text{production}}} \text{ yd}^3/\text{hr} = \underline{32.48} \text{ hrs}$$

Data Sources:

TABLE 5-3 CONT.

Project Banning

Date _____

WORKSHEET NO. 9

PRODUCTIVITY AND HOURS REQUIRED FOR TRUCK USE

Earthmoving Activity:

Coal Removal

Characterization of Truck Used (type, size, etc.):

40 Ton Bottom Dumps

Description of Truck Use (origin, destination, grade, haul distance, truck capacity, etc.):

Haul Distances -- 10 Miles

Productivity Calculations:

$$\text{Cycle time} = \frac{13.33}{\text{haul time}} + \frac{10.91}{\text{return time}} + \frac{7}{\text{total loading time}} + \frac{.62}{\text{dump and maneuver time}} = \underline{31.86} \text{ min}$$

$$\text{Number of Trucks Required} = \frac{31.86}{\text{truck cycle time}} \div \frac{7}{\text{total loading time}} = \underline{4.55} \text{ use } 5$$

$$\text{Production Rate} = \frac{51.09}{\text{truck capacity}} \text{ yd}^3 \times \frac{5}{\text{\# of trucks}} \div \frac{31.86}{\text{cycle time}} \text{ min} = \underline{8.02} \text{ yd}^3/\text{min}$$

$$\text{Hourly Production} = \frac{8.02}{\text{production rate}} \text{ yd}^3/\text{min} \times \frac{50 \text{ min/hr}}{\text{work hour factor}} = \underline{400.86} \text{ yd}^3/\text{hr}$$

$$\text{Hours Required} = \frac{12,100}{\text{volume to be moved}} \text{ yd}^3 \div \frac{400.86}{\text{hourly production}} \text{ yd}^3/\text{hr} = \underline{30.19} \text{ hrs}$$

Haul - 52,800 ft./3,960 ft./min. = 13.33

Empty - 52,800 ft./ 4,840 ft./min. = 10.91

Data Sources:

TABLE 5-3 CONT.

Project Banning
Date _____

WORKSHEET NO. 14
REVEGETATION COSTS

Name and Description of Area to be Revegetated:

Description of Revegetation Activities:

Reseeding:

$$\begin{array}{ccccccc} \underline{21.4} & \text{acres} \times (\$ & & \text{per acre} + \$ & \underline{1,692} & \text{per acre)} = \$ & \underline{36,209} \\ \text{(\# of acres to} & \text{(\$/acre for seedbed} & & \text{(\$/acre for seeding,} & & \text{(costs} & \\ \text{be reseeded)} & \text{preparation)} & & \text{fertilizing, and} & & \text{for} & \\ & & & \text{mulching)} & & \text{reseeded)} & \end{array}$$

Planting Trees and Shrubs:

$$\begin{array}{ccc} \underline{\hspace{2cm}} & \text{acres} \times \$ & \underline{\hspace{2cm}} \text{ per acre} = \$ \underline{\hspace{2cm}} \\ \text{(\# of acres} & \text{(\$/acre for planting} & \text{(costs for} \\ \text{for planting)} & \text{trees and shrubs)} & \text{planting)} \end{array}$$

Other Revegetation Activity for this Area (e.g., Soil Sampling):

(Describe and provide cost estimate with documentation; use additional sheets if necessary.)

TOTAL REVEGETATION COST FOR THIS AREA = \$ 36,209

Data Sources: Means Construction Cost Data 1995, Edition 53

TABLE 5-3 CONT.

Project Banning

Date _____

WORKSHEET NO. 16

RECLAMATION BOND SUMMARY SHEET

1.	Total Facility and Structure Removal Costs	\$	<u>130,101</u>
2.	Total Earthmoving Costs		<u>33,194</u>
3.	Total Revegetation Costs		<u>36,209</u>
4.	Total Other Reclamation Activities Costs		<u> </u>
5.	Subtotal: Total Direct Costs		<u>199,504</u>
6.	Mobilization and Demobilization (at <u>3</u> % of Item 5) (1% to 5% of Item 5)		<u>5,985</u>
7.	Contingencies (at <u>10</u> % of Item 5) (see Table 4)		<u>19,950</u>
8.	Engineering Redesign Fee (at <u>10</u> % of Item 5) (see Graph 1)		<u>19,950</u>
9.	Contractor Profit and Overhead (at <u>11</u> % of Item 5) (see Graph 2)		<u>21,945</u>
10.	Reclamation Management Fee (at <u>6</u> % of Item 5) (see Graph 3)		<u>11,970</u>
11.	GRAND TOTAL BOND AMOUNT (Sum of Items 5 through 10)	\$	<u>279,304</u>

Engineering News Record Cost Index: _____ Date: _____

CHAPTER 5

LIST OF EXHIBITS

EXHIBIT	5-1	PERMIT AREA MAP
EXHIBIT	5-2	BANNING LOADOUT - SURFACE FACILITIES
EXHIBIT	5-3	CROSS SECTIONS - BANNING LOADOUT
EXHIBIT	5-4	SURFACE OWNERSHIP
EXHIBIT	5-5	SUBSURFACE OWNERSHIP
EXHIBIT	5-6	FINAL CONTOUR MAP
EXHIBIT	5-7	TRANSPORTATION FACILITIES MAP - ROAD DESIGN DETAILS

LIST OF APPENDICES

APPENDIX	5-1	SURFACE FACILITIES
APPENDIX	5-2	SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN
APPENDIX	5-3	CULVERT SIZING CALCULATIONS

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APPENDIX 5-3

CULVERT SIZING CALCULATIONS

APPENDIX 5-3

BANNING CULVERT DESIGN AVERAGE BASIN SLOPE CALCULATIONS

The average slope within a drainage basin can be calculated with the following formula:

$$\text{Avg. Slope} = \frac{(\sum C.I.) (C.I.)}{\text{AREA}}$$

Where $\sum C.I.$ = The summation of the measured length of the contour lines within the drainage basin at a specific contour interval (ft)

C.I. = The specific contour interval used above (ft)

AREA = Total area of the drainage basin (ft²)

WATERSHED #I (C.M.P. No. 1)

C.I. = 78,100'
C.I. = 20'
Area = 301,644,288 ft²
Hydraulic length = 38,500'
Average Slope = .518%
T_c = 18.25

WATERSHED #II (C.M.P. No. 2)

Hydraulic Length = 1300'
Average Slope = .518% (Use Area I Slope)
Area = 1,040,000 ft²
T_c = 1.21

WATERSHED #III (C.M.P. No. 3)

Hydraulic Length = 750'
Average Slope = .518 (Use Area I Slope)
Area = 525,000 ft²
T_c = .78

TIME OF CONCENTRATION

$$L = \frac{(h_1^{0.8})(S + 1)^{0.7}}{1900 Y^{0.5}}$$

L = Watershed Lag (hr)
 h₁ = Hydraulic Length (ft)
 S = $\frac{1000}{CN} - 10$
 Y = Average Slope

L = .6T_c As per SCS (1972)

CURVE NUMBER SELECTION

The soil at Banning Loadout has been identified as Ravola Series (see Banning MRP). Ravola soil is described as being very deep and well drained. Permeability is moderate and runoff is expected to be medium. According to Table 2.19 (Applied Hydrology and Sedimentology for Disturbed Areas, 1985) this soil would be considered within SCS hydrologic soil group B. Table 2.20 (Applied Hydrology and Sedimentology for Disturbed Areas, 1985) shows the soil group curve number for range land in good condition and range land in poor condition to be 79 and 61 respectively. Assuming the range land at Banning to be in fair condition, then averaging the curve number values results in a curve number of 70.

CONCLUSION

Watershed I, II and III were run on Sedimot II. The following table gives the results of the various runs.

<u>Watershed</u>	<u>Area (Acres)</u>	<u>Time of Peak Discharge (HR)</u>	<u>Peak Discharge (CFS)</u>	<u>Runoff (Acre-ft)</u>
I	6925	16.5	5.44	19.04
I	5000	7.3	20.61	13.75
I	6925	7.3	28.55	19.04
II	23.9	6.3	.18	.07
III	12.1	6.1	.11	.03

Based upon the limitations of the Sedimot II program, maximum acreage (5000-acres) and maximum time of concentration (3-hours), three runs were made on Watershed I. The results are low enough to not warrant additional refinement.

The maximum flow to each of the three culverts No. 3 - 24", No. 2 - 36" and No. 1 - 48" are well within the limits of the culverts. See attach nomograph from the "Handbook of Steel Drainage & Highway Construction Products".

HYDRAULICS OF CULVERTS

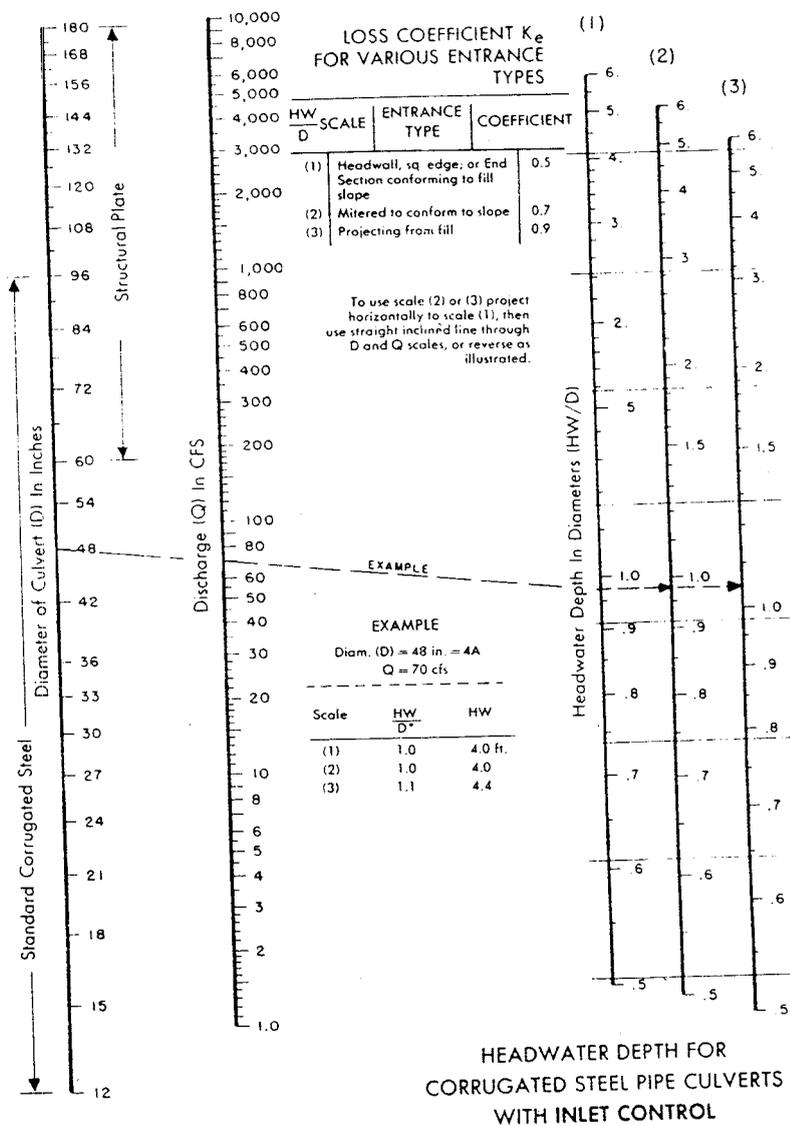
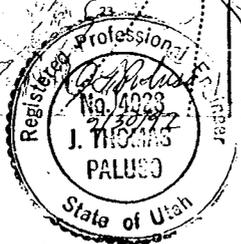
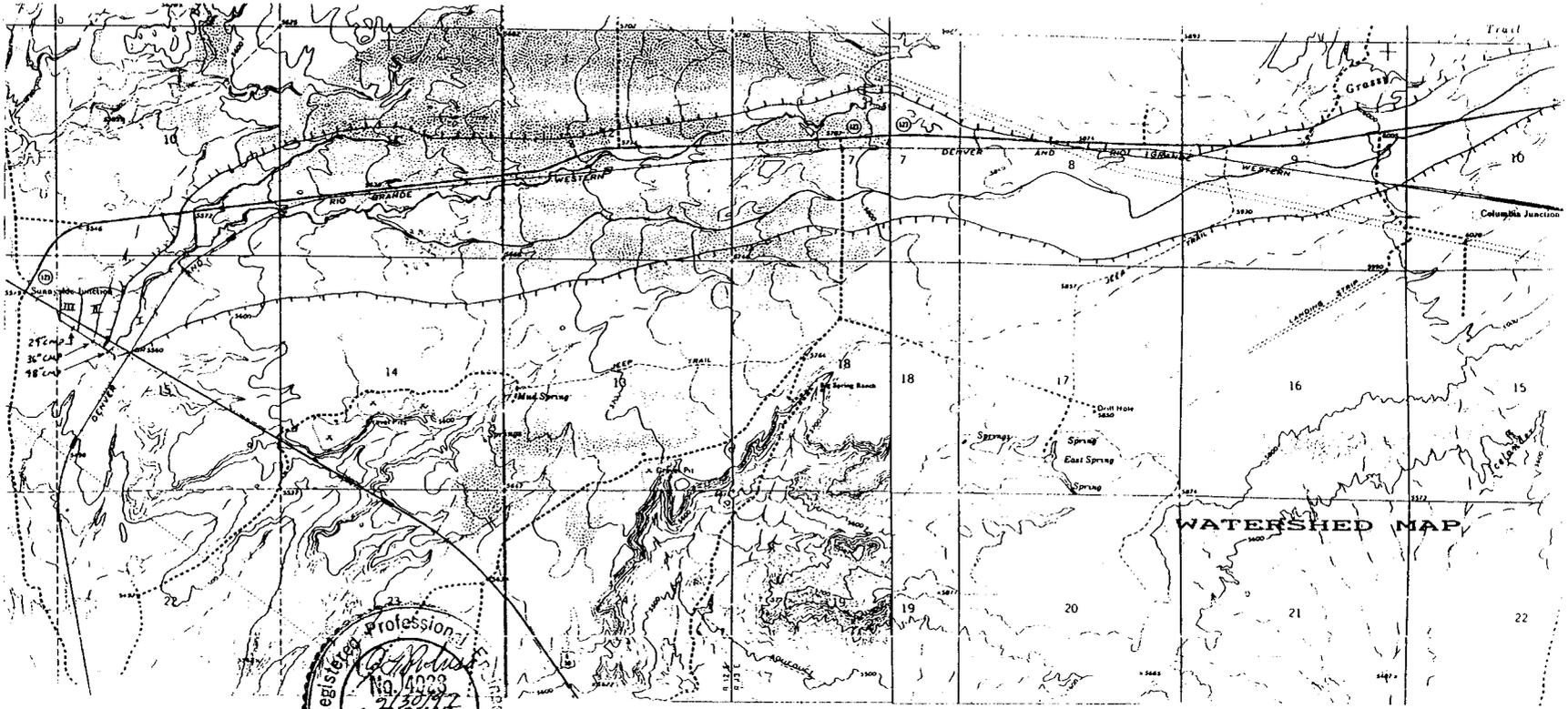


Fig. 4-18. Inlet control nomograph for corrugated steel pipe culverts. The manufacturers recommend keeping HW/D to a maximum of 1.5 and preferably to no more than 1.0.



I, being a professional engineer hereby certify that this map was prepared by me or under my direct supervision and that all information contained thereon is true and correct to the best of my knowledge and information

As noted in Exhibit 7-1, a new sedimentation pond has been constructed at the loadout site. ~~The construction of a new pond was determined to be necessary to provide adequate sizing and allow easier cleanout.~~ Calculations performed to design the pond and its appurtenant structures are contained in Appendix 7-6. Plans, sections, and details of the pond facilities are provided in Exhibits 7-2 and 7-3.

Runoff to the sedimentation pond from the 10-year, 24-hour storm was determined to be 1.18 acre-feet. Required sediment storage for the pond was calculated to be 0.27 acre-foot. Hence, the pond was designed with a total storage volume of 1.45 acre-feet.

The new pond is designed with interior slopes of 3h:1v and exterior slopes (where constructed) of 2h:1v. Due to the low relief of the area, the pond will be primarily excavated, with an embankment constructed only in those areas required to bring the elevation of the top of the embankment to 5496.5 feet.

The stage-capacity curve for the sedimentation pond is presented in Figure 7-4. According to this figure, the new pond will provide sediment storage to an elevation of 5488.8 feet and total storage to an elevation of 5495.2 feet. Sediment will be cleaned out of the pond when it reaches an elevation of 5487.6 feet (the elevation sediment storage volume). Two steel stakes will be placed at the locations shown on Exhibit 7-2 to mark the sediment cleanout elevation.

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~~The existing sedimentation pond will be retained during as much of the construction of the new pond as possible to provide interim sediment control. Construction of the new pond will begin at its west side, with work proceeding to the east, thus providing a berm and or containment basin for sediment control during the entire construction activity.~~

The dewatering device for the new sedimentation pond will consist of 2-inch pipe extending into the pond and valved near its outlet at the adjacent ephemeral stream channel (see Exhibit 7-3). The valve box will be locked to prevent unauthorized dewatering of the pond. A riprapped splash apron ~~will be~~ has been constructed at the outlet of the principal spillway and dewatering pipe to prevent excessive erosion. Details concerning the design of this apron are contained in Appendix 7-7.

No anti-vortex device will be provided on the dewatering pipe since flow rates (and, hence vortex conditions) can be manually regulated by the gate valve. However, a downturned 90° elbow ~~will be~~ has been installed at the inlet and of the pipe to minimize skimming from the surface of the pond during dewatering.

During passage of the peak flow resulting from the 25-year, 24-hour precipitation event, the peak stage in the new pond will be 0.9 foot above the crest of the principal spillway and the emergency spillway this depth of flow will not cause outflow from the emergency spillway during the design event. Nonetheless, an emergency spillway ~~will be~~ has been installed to provide a bypass for water during events larger than those for which the pond was designed.

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The pond has been designed with a minimum top width equivalent to $(H+35)/5$, where H is the height of the embankment above natural ground surface. The embankment portion ~~will be~~ ~~was~~ constructed in 6-inch lifts and compacted by repeated passes of grader/loader equipment. Compaction ~~will~~ ~~continued~~ until the density of the material ~~is~~ ~~was~~ at least 90 percent of maximum Proctor density. With a 6-foot maximum embankment height, the embankment ~~will be~~ ~~was~~ constructed to an initial top elevation of 5498.0 feet, allowing for settlement to a final elevation of 5497.2 feet.

Anti-seep collars ~~will be~~ ~~were~~ installed on the spillway conduit to increase the flow path and reduce the potential for piping of the soil. The collars were designed in accordance with the U.S. Environmental Protection Agency (1976) as indicated in Appendix 7-6. Two anti-seep collars ~~will be~~ ~~were~~ installed.

All construction on the ~~new~~ pond ~~will be~~ ~~was~~ supervised by a registered Professional Engineer who is licensed in the State of Utah. An as-built report will be prepared and certified by the supervisory Professional Engineer for submittal to the Regulatory Authority following completion of construction activities. This as-built report will include a discussion of problems encountered during construction and will present plans and sections of the constructed pond and appurtenant structures.

Following construction of the sedimentation pond, all disturbed areas associated with pond construction (with the exception of the interior of the pond) ~~will be~~ ~~were~~ revegetated with the approved seed mixture. Mulching, fertilizing, and other reclamation procedures outlined in Chapter 5 of this PAP (except initial soil ripping to a

depth of 18 inches) ~~will be~~ ~~were~~ followed where appropriate during reclamation of the areas disturbed by pond construction. ~~The existing pond located at the site will be revegetated in the same manner.~~

Sediment Pond calculations are provided in Appendix 7-6

R645-301-732.210

The ~~new~~ sediment pond will be ~~permanent and is designed and constructed according to regulations.~~ ~~removed according to the reclamation schedule shown in Table 5.2, page 5-67 of this permit.~~

R645-301-732.220

N/A There are no coal processing waste dams or embankments at this site. The pond does not meet the size or other criteria of 30 CFR 77.216(a).

R645-301-732.300 Diversions

Runoff control at the loadout site will be provided primarily by maintenance and construction of existing and new berms and ~~construction of a new~~ ~~the~~ sedimentation pond. A plan view of the site and the proposed runoff-control measures is provided in Exhibit 7-1.

Berms currently exist around most of the periphery of the loadout site except those portions of the south and west fences where diversion channels exist. Where berms exist, they will be repaired where necessary to meet the minimum design criteria of the "compact berm" shown in Figure 7-3. Where berms do not exist around the periphery, they will be so constructed. R03/28/95

The drive-through shown in Figure 7-3 will be constructed in areas subject to vehicular traffic. These areas include the two exit gates adjacent to the coaling tower and the exit gate along the south fence. An embankment shown in Figure 7-3 will be constructed in the southeast corner of the site. This embankment will direct runoff toward the drainage channel and sedimentation pond.

The runoff originating between the embankment and the fence line, including the test plot area, will not be directed toward the sedimentation pond. This runoff will be directed toward a silt fence on the southern portion of the property. Locations for the embankment and silt fence are shown on Exhibit 7-1. SCCC is requesting a small area exception for this area.

The substation pad area shown in Exhibit 7-1 **is** graveled to enhance stability. The outslope of the substation area **is** also graveled. However, runoff flow from the outslope area will not be directed toward the sedimentation pond. Sufficient thickness of gravel will be applied to the outslope area. This will meet the minimum effluent specifications for all drainage flow from the outslope area. **SCCC has classified this as a small area** exemption for the outslope area.

All berms and embankments will be inspected at routinely for damage and deterioration. Any repairs that are necessary to maintain the integrity of the structure will be made as soon as possible.

Calculations contained in Appendix 7-6 indicate that the ditches leading to the ~~existing~~ sedimentation pond have sufficient capacity to safely pass the peak flow resulting from the 25 year, 24-hour precipitation event

R03/28/95

(i.e., the spillway design event). These ditches will be regraded where necessary to ensure that they maintain the cross section noted in Figure 7-5. Excess material from grading of the ditches will be sidecast to the outer slope away from the loadout site, thus permitting free drainage from the site into the ditches and providing additional control against spillage out of the ditches to uncontrolled areas.

R645-301-732.400 Road Drainage

Road drainage is discussed under Section R645-301-732.100

R645-301-732.410 Alteration or Relocation of Natural Drainageway

N/A There are no plans to alter or relocate a natural drainageway.

R645-301-732.420 Ditch Relief Culverts

Three ditch relief culverts are installed to convey runoff from undisturbed areas beneath the haulage road to the natural drainage system. Inlet ends of the culverts are protected with rock headwalls.

R645-301-733 Impoundments

~~There are 2 impoundments located on the site—a closed basin inside the truck dump loop and the sediment pond.~~
~~The sediment pond is the only impoundment on the site.~~

R645-301-733.100 General Plan

~~Plans for the retention basin and closed basin at the truck dump are shown on Exhibit 7-1. Plans for the~~

R03/28/95

sediment pond are provided in Section R645-301-732.200, Appendix 7-6 and Exhibits 7-2 and 7-3.

R645-301-733.110

All plans and maps are prepared and certified according to R645-301-512;

R645-301-733.120

Maps and cross sections are provided as described above;

R645-301-733.130

Narratives describing the structures are provided in Section R645-301-732.100, 732.200 and 733.

R645-301-733.140

Surveys are provided in Exhibits 7-1, 7-2 and 7-3;

R645-301-733.150

Assessment of hydrologic impacts are provided in Appendix 7-6 and Section R645-301-732.200;

R645-301-733.160

N/A Structures have been constructed under approved plans.

R645-301-733.200 *Permanent and Temporary Impoundments*

~~All impoundments, with the exception of the sediment pond, on the site are considered temporary. The sediment pond will be removed and reclaimed during final reclamation.~~

R03/28/95

R645-301-733.210

~~Impoundments are~~ The sediment pond was designed to comply with applicable regulations. ~~No impoundments and does not~~ meet the size or other criteria of 30 CFR 77-216.

R645-301-733.220 *Permanent*

The sedimentation pond will be removed during final reclamation. ~~is designed to be a permanent feature that will exist for wildlife enhancement as stated in R645 301 342.~~

R645-301-733.221

~~N/A The sediment pond will adequately meet the size and configuration standards needed for its use as set out in R645 301 342.~~

R645-301-733.222

~~N/A All standards will be met for the permanent impoundment.~~

R645-301-733.223

~~N/A The sediment pond will be capable of maintaining its intended use as set out in R645 301 342, as a wildlife enhancement feature.~~

R645-301-733.224

~~N/A All standards will be met as intended.~~

R645-301-733.225

~~N/A Quality will not be diminished, but will be an enhancement to existing wildlife resources.~~

R03/28/95

R645-301-733.226

~~N/A The sediment pond is considered to be suitable for the enhancement of existing wildlife resources as set out by R645-301-342.~~

R645-301-733.230 *Temporary Impoundments*

~~All impoundments, with the exception of the sediment pond, are temporary and are constructed as shown. The sediment pond is considered temporary in that it will be removed during final reclamation.~~

24R645-301-733.240 Notification of Hazard

If any examination or inspection discloses that a potential hazard exists, the person who examined the impoundment will promptly inform the Division as indicated in Section R64-301-515.200.

R645-301-734 *Discharge Structures*

Discharge structures will be constructed and maintained to comply with R645-301744. Discharge structures are detailed in Appendix 7-6 and an Exhibits 7-2 and 7-3.

R645-301-735 *Disposal of Excess Spoil*

N/A There are no plans to dispose of excess spoil at this site.

R645-301-736 *Coal Mine Waste*

N/A There are no plans to dispose of coal mine waste at this site.

R03/28/95

structure to less than 0.5 acre (as recommended by the U.S. Environment Protection Agency, 1976) and help reduce sediment from flowing off the site.

Where straw-bale dikes are **to be installed as shown in** (Figure 7-1).

Silt-fence check dams are **to be installed as shown in** (Figure 7-2).

All straw-bale dikes and silt fences will be inspected routinely for damage and deterioration. Required repairs and replacements will be made **as soon as possible**.

Three ditch-relief culverts currently exist to convey runoff from undisturbed areas beneath the haulage road to the natural drainage system. These culverts will be inspected at routinely through the life of the loadout facility and repaired as needed.

R645-301-742.100 General Requirements

Alternate Sediment Control Areas

The following areas have been identified as alternate sediment control areas and are identified on Exhibit 7-1.

Area 1

This area is located adjacent to and north of the substation. The area contains .43 acres. The runoff is treated by a silt fence. (See P. 1 & 2 Appendix 7 - 9 for runoff calculations).

Area 2.

This area is located in the southern corner of the permit area. The area contains 0.82 acres. The runoff is treated by siltfences. See Appendix 7-9 for runoff calculations.

R03/28/05

Area 3.

This area is located in the northeastern corner of the permit and runs west paralleling the haul road. The area contains 0.40 acres. The runoff is treated by siltfences. See Appendix 7-9 for runoff calculations.

Area 4.

This area is located west of Area 3. This area contains 0.05 acres and is treated by a siltfence. See Appendix 7-9 for runoff calculations.

Area 5.

This area is located in the northwestern corner of the permit area and is parallel to the haul road. The area contains 0.16 acres. The runoff is treated with a siltfence. See Appendix 7-9 for runoff calculations.

R645-301-742.110 Design, Construction and Maintenance

As described in Section R645-301-732 and other applicable

R03/28/95

R645-301-742.122

Diverting runoff away from disturbed areas; This is accomplished by routing undisturbed drainage through culverts beneath the haul road and then to natural channels, and by the use of berms to prevent intermingling of disturbed and undisturbed drainage;

R645-301-742.123

Diverting runoff using protected channels or pipes so as not to cause additional erosion; The majority of the drainage is directed carried in ditches and culverts at non-erosive velocities to the sediment pond (See Exhibit 7-1);

R645-301-742.124

Using straw dikes, silt fences **and** vegetative filters to reduce overland flow velocities, reduce runoff volumes or trap sediment; (See Exhibit 7-1 and Section R645-301-732);

R645-301-742.125

Treating with chemicals; The haul road surface is paved;

R645-301-742.126 N/A

R645-301-742.200 *Siltation Structures*

The only siltation structures on site **is** the sediment pond.

R645-301-742.210 *General Requirements*

R03/28/95

R645-301-742.223.4 *Variance from Requirements*

N/A The pond has a combination spillway.

R645-301-742.225 *Exception to R645-301-742.224* N/A

R645-301-742.225.1 N/A

R645-301-742.225.2 N/A

R645-301-742.230 *Other Treatment Facilities*

None

R645-301-742.231

The treatment facility is designed to treat the 10 year - 24 hour precipitation event from the 0.38 acre drainage area;

R645-301-742.232

N/A See following section.

R645-301-742.240 *Exemptions*

SAE Area 1. ~~The substation~~ This area is classified as exempt from the requirements of R645-301-742.200, R645-301-763, and other alternate sediment control measures since it drains such a small area and ~~the area has a layer of gravel sufficiently thick so that any runoff from the area will meet the minimum effluent specifications.~~ It is located on the south side of the permit area. The area is relatively flat and the hydraulic length is so short that it does not produce any runoff. This area is identified on Exhibit 7-1 as Exempt Area No. 1. It covers .26 0.36 acres (See P. 3 & 4 Appendix 7-9 for runoff calculations.)

R03/28/95

APPENDIX 7-9

CIVIL SOFTWARE DESIGN

SEDCAD+ Version 3

ASCA NO.2 BANNING LOADOUT

by

Name: Gary E. Taylor

Company Name: UTAH FUEL COMPANY

File Name: D:\SEDCAD3\ASCA2

Date: 03-27-1995

Company Name: UTAH FUEL COMPANY

Filename: D:\SEDCAD3\ASCA2 User: Gary E. Taylor

Date: 03-27-1995 Time: 11:36:10

ASCA No.2 Banning Loadout

Storm: 1.78 inches, 10 year-24 hour, SCS Type II

Hydrograph Convolution Interval: 0.1 hr

=====
GENERAL INPUT TABLE
=====

Specific Gravity: 2.50

Submerged Bulk Specific Gravity: 1.25

Particle Size Distribution(s):

Size (mm)	composite % Finer
0.1500	100.00
0.1000	94.00
0.0500	80.00
0.0100	31.00
0.0050	20.00
0.0010	4.00
0.0001	0.00

Company Name: UTAH FUEL COMPANY

Filename: D:\SEDCAD3\ASCA2 User: Gary E. Taylor

Date: 03-27-1995 Time: 11:36:10

ASCA No.2 Banning Loadout

Storm: 1.78 inches, 10 year-24 hour, SCS Type II

Hydrograph Convolution Interval: 0.1 hr

=====
 SUBWATERSHED/STRUCTURE INPUT/OUTPUT TABLE
 =====

-Hydrology-

JBS SWS	Area (ac)	CN UHS	Tc (hrs)	K (hrs)	X	Base- Flow (cfs)	Runoff Volume (ac-ft)	Peak Discharge (cfs)
111 1	0.82	65 M	0.014	0.014	0.268	0.0	0.01	0.02
		Type: Null	Label: ASCA NO. 2					
111 Structure	0.82						0.01	
111 Total IN/OUT	0.82						0.01	0.02

=====
 SUBWATERSHED/STRUCTURE INPUT/OUTPUT TABLE
 =====

-Sedimentology-

- SED: Sediment
- SCp: Peak Sediment Concentration
- SSp: Peak Settleable Concentration
- 24VW: Volume Weighted Average Settleable Concentration - Peak 24 hours
- 24AA: Arithmetic Average Settleable Concentration - Peak 24 hours

JBS SWS	K	L (ft)	S (%)	CP	PS		SED (tons)	SCp (mg/L)	SSp (ml/L)	24VW (ml/L)	24AA (ml/L)
					Tt (hrs)	#					
R 111 1	0.32	101.0	2.8	0.700	0.014	1	0.0				
		Type: Null		Label: ASCA NO. 2							
111 Structure							0.0				
111 Total IN/OUT							0.0	37872	20.85	20.75	0.09

CIVIL SOFTWARE DESIGN

SEDCAD+ Version 3

ASCA NO. 3 BANNING LOADOUT

by

Name: Gary E. Taylor

Company Name: UTAH FUEL COMPANY

File Name: D:\SEDCAD3\ASCA3

Date: 03-27-1995

Civil Software Design -- SEDCAD+ Version 3.1
Copyright (C) 1987-1992. Pamela J. Schwab. All rights reserved.

Company Name: UTAH FUEL COMPANY

Filename: D:\SEDCAD3\ASCA3 User: Gary E. Taylor

Date: 03-27-1995 Time: 11:48:30

ASCA No. 3 Banning Loadout

Storm: 1.78 inches, 10 year-24 hour, SCS Type II

Hydrograph Convolution Interval: 0.1 hr

=====
GENERAL INPUT TABLE
=====

Specific Gravity: 2.50
Submerged Bulk Specific Gravity: 1.25

Particle Size Distribution(s):

Size (mm)	composite % Finer
0.1500	100.00
0.1000	94.00
0.0500	80.00
0.0100	31.00
0.0050	20.00
0.0010	4.00
0.0001	0.00

Company Name: UTAH FUEL COMPANY
 Filename: D:\SEDCAD3\ASCA3 User: Gary E. Taylor
 Date: 03-27-1995 Time: 11:48:30
 ASCA No. 3 Banning Loadout
 Storm: 1.78 inches, 10 year-24 hour, SCS Type II
 Hydrograph Convolution Interval: 0.1 hr

=====
 SUBWATERSHED/STRUCTURE INPUT/OUTPUT TABLE
 =====

-Hydrology-

JBS SWS	Area (ac)	CN	UHS	Tc (hrs)	K (hrs)	X	Base- Flow (cfs)	Runoff Volume (ac-ft)	Peak Discharge (cfs)
111 1	0.40	65	M	0.138	0.142	0.184	0.0	0.00	0.00
		Type: Null		Label: Asca N. 3					
111 Structure	0.40							0.00	
111 Total IN/OUT	0.40							0.00	0.00

=====
 SUBWATERSHED/STRUCTURE INPUT/OUTPUT TABLE
 =====

-Sedimentology-

SED: Sediment
 SCp: Peak Sediment Concentration
 SSp: Peak Settleable Concentration
 24VW: Volume Weighted Average Settleable Concentration - Peak 24 hours
 24AA: Arithmetic Average Settleable Concentration - Peak 24 hours

JBS SWS	K	L (ft)	S (%)	CP	Tt (hrs)	PS #	SED (tons)	SCp (mg/l)	SSp (ml/l)	24VW (ml/l)	24AA (ml/l)
R 111 1	0.32	500.3	1.7	0.700	0.142	1	0.0				
		Type: Null		Label: Asca N. 3							
111 Structure							0.0				
111 Total IN/OUT							0.0	130236	2.73	2.49	0.04

CIVIL SOFTWARE DESIGN

SEDCAD+ Version 3

ASCA NO. 4 BANNING LOADOUT

by

Name: Gary E. Taylor

Company Name: UTAH FUEL COMPANY
File Name: D:\SEDCAD3\ASCA4

Date: 03-27-1995

Civil Software Design -- SEDCAD+ Version 3.1
Copyright (C) 1987-1992. Pamela J. Schwab. All rights reserved.

Company Name: UTAH FUEL COMPANY

Filename: D:\SEDCAD3\ASCA4 User: Gary E. Taylor

Date: 03-27-1995 Time: 11:54:06

ASCA NO. 4 Banning Loadout

Storm: 1.78 inches, 10 year-24 hour, SCS Type II

Hydrograph Convolution Interval: 0.1 hr

=====
GENERAL INPUT TABLE
=====

Specific Gravity: 2.50
Submerged Bulk Specific Gravity: 1.25

Particle Size Distribution(s):

Size (mm)	composite % Finer
0.1500	100.00
0.1000	94.00
0.0500	80.00
0.0100	31.00
0.0050	20.00
0.0010	4.00
0.0001	0.00

Company Name: UTAH FUEL COMPANY

Filename: D:\SEDCAD3\ASCA4 User: Gary E. Taylor

Date: 03-27-1995 Time: 11:54:06

ASCA NO. 4 Banning Loadout

Storm: 1.78 inches, 10 year-24 hour, SCS Type II

Hydrograph Convolution Interval: 0.1 hr

=====
 SUBWATERSHED/STRUCTURE INPUT/OUTPUT TABLE
 =====

-Hydrology-

JBS SWS	Area (ac)	CN	UHS	Tc (hrs)	K (hrs)	X	Base- Flow (cfs)	Runoff Volume (ac-ft)	Peak Discharge (cfs)	
111 1	0.05	65	M	0.018	0.019	0.227	0.0	0.00	0.00	
		Type: Null		Label: ASCA No. 4						
111 Structure	0.05								0.00	
111 Total IN/OUT	0.05								0.00	0.00

=====
 SUBWATERSHED/STRUCTURE INPUT/OUTPUT TABLE
 =====

-Sedimentology-

SED: Sediment

SCp: Peak Sediment Concentration

SSp: Peak Settleable Concentration

24VW: Volume Weighted Average Settleable Concentration - Peak 24 hours

24AA: Arithmetic Average Settleable Concentration - Peak 24 hours

PS

JBS SWS	K	L (ft)	S (%)	CP	Tt (hrs)	#	SED (tons)	SCp (mg/l)	SSp (ml/l)	24VW (ml/l)	24AA (ml/l)
R 111 1	0.32	93.0	1.6	0.700	0.019	1	0.0				
		Type: Null		Label: ASCA No. 4							
111 Structure							0.0				
111 Total IN/OUT							0.0	0	0.00	0.00	0.00

CIVIL SOFTWARE DESIGN

SEDCAD+ Version 3

ASCA NO. 5 BANNING LOADOUT

by

Name: Gary E. Taylor

Company Name: UTAH FUEL COMPANY

File Name: D:\SEDCAD3\ASCA5

Date: 03-27-1995

Company Name: UTAH FUEL COMPANY

Filename: D:\SEDCAD3\ASCA5 User: Gary E. Taylor

Date: 03-27-1995 Time: 11:59:45

ASCA NO. 5 Banning Loadout

Storm: 1.78 inches, 10 year-24 hour, SCS Type II

Hydrograph Convolution Interval: 0.1 hr

=====
GENERAL INPUT TABLE
=====

Specific Gravity: 2.50
Submerged Bulk Specific Gravity: 1.25

Particle Size Distribution(s):

Size (mm)	composite % Finer
0.1500	100.00
0.1000	94.00
0.0500	80.00
0.0100	31.00
0.0050	20.00
0.0010	4.00
0.0001	0.00

Company Name: UTAH FUEL COMPANY

Filename: D:\SEDCAD3\ASCA5 User: Gary E. Taylor

Date: 03-27-1995 Time: 11:59:45

ASCA NO. 5 Banning Loadout

Storm: 1.78 inches, 10 year-24 hour, SCS Type II

Hydrograph Convolution Interval: 0.1 hr

=====
 SUBWATERSHED/STRUCTURE INPUT/OUTPUT TABLE
 =====

-Hydrology-

JBS SWS	Area (ac)	CN UHS	Tc (hrs)	K (hrs)	X	Base- Flow (cfs)	Runoff Volume (ac-ft)	Peak Discharge (cfs)	
111 1	0.16	65 M	0.056	0.056	0.228	0.0	0.00	0.00	
		Type: Null	Label: ASCA No.5						
111 Structure	0.16							0.00	
111 Total IN/OUT	0.16							0.00	0.00

=====
 SUBWATERSHED/STRUCTURE INPUT/OUTPUT TABLE
 =====

-Sedimentology-

SED: Sediment
 SCp: Peak Sediment Concentration
 SSp: Peak Settleable Concentration
 24VW: Volume Weighted Average Settleable Concentration - Peak 24 hours
 24AA: Arithmetic Average Settleable Concentration - Peak 24 hours

JBS SWS	K	L (ft)	S (%)	CP	Tt (hrs)	PS #	SED (tons)	SCp (mg/l)	SSp (ml/l)	24VW (ml/l)	24AA (ml/l)
R 111 1	0.32	244.0	8.7	0.700	0.056	1	0.0				
		Type: Null		Label: ASCA No.5							
111 Structure							0.0				
111 Total IN/OUT							0.0	0	0.00	0.00	0.00

CIVIL SOFTWARE DESIGN

SEDCAD+ Version 3

SAE NO. 1 BANNING LOADOUT

by

Name: Gary E. Taylor

Company Name: UTAH FUEL COMPANY

File Name: D:\SEDCAD3\SAE1

Date: 03-27-1995

Company Name: UTAH FUEL COMPANY

Filename: D:\SEDCAD3\SAE1 User: Gary E. Taylor

Date: 03-27-1995 Time: 12:46:28

SAE No. 1 Banning Loadout

Storm: 1.78 inches, 10 year-24 hour, SCS Type II

Hydrograph Convolution Interval: 0.1 hr

=====
GENERAL INPUT TABLE
=====

Specific Gravity: 2.50

Submerged Bulk Specific Gravity: 1.25

Particle Size Distribution(s):

Size (mm)	composite % Finer
0.1500	100.00
0.1000	94.00
0.0500	80.00
0.0100	31.00
0.0050	20.00
0.0010	4.00
0.0001	0.00

Company Name: UTAH FUEL COMPANY
 Filename: D:\SEDCAD3\SAE1 User: Gary E. Taylor
 Date: 03-27-1995 Time: 12:46:28
 SAE No. 1 Banning Loadout
 Storm: 1.78 inches, 10 year-24 hour, SCS Type II
 Hydrograph Convolution Interval: 0.1 hr

=====
 SUBWATERSHED/STRUCTURE INPUT/OUTPUT TABLE
 =====

-Hydrology-

JBS SWS	Area (ac)	CN	UHS	Tc (hrs)	K (hrs)	X	Base- Flow (cfs)	Runoff Volume (ac-ft)	Peak Discharge (cfs)
111 1	0.36	65	M	0.015	0.016	0.234	0.0	0.00	0.00
	Type: Null		Label: SAE NO. 1						
111 Structure	0.36							0.00	
111 Total IN/OUT	0.36							0.00	0.00

=====
 SUBWATERSHED/STRUCTURE INPUT/OUTPUT TABLE
 =====

-Sedimentology-

SED: Sediment
 SCp: Peak Sediment Concentration
 SSp: Peak Settleable Concentration
 24VW: Volume Weighted Average Settleable Concentration - Peak 24 hours
 24AA: Arithmetic Average Settleable Concentration - Peak 24 hours

JBS SWS	K	L (ft)	S (%)	CP	Tt (hrs)	PS		SCp (mg/l)	SSp (ml/l)	24VW (ml/l)	24AA (ml/l)
						#	SED (tons)				
R 111 1	0.03	84.5	1.7	0.700	0.016	1	0.0				
	Type: Null		Label: SAE NO. 1								
111 Structure							0.0				
111 Total IN/OUT							0.0	0	0.00	0.00	0.00

EXAMPLE

22 March 1995

G. TAYLOR

WATERSHED IS LOCATED IN EASTERN UTAH. THE ENTIRE WATERSHED IS 100 ACRES IN SIZE. THE WATERSHED IS PRELIMINARILY SAGEBRUSH. THE SOILS PREDOMINATELY RAYOLA AND SLICKSPOTS WITH ABOUT 70% AND 30% RESPECTIVELY. AVERAGE LAND SLOPE IS AROUND 2%. THE MAXIMUM FLOW LENGTH IS AROUND 5000 FT. ELEVATION DIFFERENCE OF 450 FEET.

- a. ESTIMATE THE 25YR - 24HR PEAK FLOW
- b. ESTIMATE THE 2HR - 6HR PEAK FLOW

SOLUTION FOR a.

NOAA ATLAS 25YR - 24HR, $P = 2.1$ INCHES

FROM SCS CROPCHANGING SURVEY CN FOR RAYOLA IS A B TYPE WITH A CN = 65; FOR SLICKSPOTS IS A B TYPE WITH A CN = 61

$$CN = .7(65) + .3(61) = 65$$

RUNOFF

$$Q = \frac{(P - 0.25)^2}{P + 0.35} \quad \text{Eq. 3.21}$$

$$S = \frac{1000}{CN} - 10 \quad \text{Eq. 3.22}$$

$$S = \frac{1000}{65} - 10 = 5.38$$

$$Q = \frac{(2.1 - 0.2(5.38))^2}{2.1 + 0.9(5.38)} \cdot \frac{(1.02)^5}{6.41}$$

0.16 INCHES

SCS - TRSS METHOD

$$q_p = q_u A Q T_p \quad \text{Eq. 3.72}$$



$$\text{LOG}(q_w) = C_0 + C_1 \text{LOG } t_c + C_2 (\text{LOG } t_c)^2 \quad \text{Eq. 3.73}$$

TYPE II

I_c/P

$$I_c = 0.25 = 108$$

I_c/P

$$\frac{108}{510} = .21$$

FROM TABLE 3.26 PAGE 36

$$C_0 = 2.20282$$

$$C_1 = -0.51599$$

$$C_2 = -0.01259$$

$$t_c = 0.0078 L^{0.77} (L/H)^{0.335}$$

Eq. 3.51

$$t_c = 0.0078 (5000)^{0.77} \left(\frac{5000}{450} \right)^{0.335}$$

$$t_c = 13.90 \text{ MINUTES} = .23$$

$$\text{LOG}(q_w) = 2.20282 - 0.51599 \text{LOG}(.23) - 0.01259 (\text{LOG}(.23))^2$$

$$= 2.20282 - 0.51599(-.64) - 0.01259(.40)$$

$$= 2.20282 + .33 - 0.01 =$$

$$= 2.52$$

$$q_w = 10^{2.52} = 333.29 \text{ cfs/lin./mile}$$

$F_a = 1$ 0% OF POND OR SWAMP AREAS

$$q_p = 333.29 \text{ cfs/lin./mile} \times \frac{100}{640} \text{ MILES} \times 0.16 \text{ IN} \times 1$$

$$= 8.33 \text{ cfs } 25\% \text{ - } 24 \text{ HR.}$$

SOLUTION FOR b.

NOAA ATLAS 21R - 6HR, P = .8 INCHES

RUNOFF

$$Q = \frac{(P - .25)^2}{P + .85}$$

$$S = \frac{1000}{CA} - 10$$

$$S = \frac{1000}{65} - 10 = 5.38$$

$$Q = \frac{(.8 - 0.2(5.38))^2}{.8 + 0.8(5.38)}$$

$$= \frac{.08}{5.11}$$

0.02 INCHES

SCS - TR55 METHOD

$$\log(q_u) = C_0 + C_1 \log t_c + C_2 (\log t_c)^2$$

TYPE II

$$I_a = 0.25 : 0.2(5.38) = 1.08 \quad I_a/P = \frac{1.08}{.8} = 1.35$$

$I_a/P > .5$ ASSUME COEFFICIENTS FOR $I_a/P = .50$

$$C_0 = 2.20292$$

$$C_1 = -0.51599$$

$$C_2 = -0.01259$$

$t_c = 13.90$ MINUTE OR .23 FROM THE ABOVE EXAMPLE

$$\log q_u = 2.20292 - 0.51599 \log(.23) - 0.01259 (\log(.23))^2$$

$$= 2.20292 - 0.51599 (-.64) - 0.01259 (.40)$$

$$= 2.20292 + .33 - 0.01$$

$$= 2.52$$



$$q_u = 10^{2.52} \cdot 333.29 \text{ cfs/in/mile}$$

$$F_u = 1 \quad 0\% \text{ OF PORES OR SWAMP AREAS}$$

$$q_p = 333.29 \text{ cfs/m. mile} \cdot \frac{100}{643} \text{ mile} \cdot 0.02 \text{ in} \cdot 1$$
$$= 1.04 \text{ cfs} \quad 27A - 6 \text{ in.}$$

REFERENCE - HAN, C.T., B.J. BARFIELD, J.C. HAYS - DESIGN HYDROLOGY
AND SEDIMENTOLOGY FOR SMALL CATCHMENTS

PERMIT CHANGE TRACKING FORM

DATE RECEIVED	1/18/94	PERMIT NUMBER	ACT/003/034
Title of Proposal:	Reformatted Plan	PERMIT CHANGE #	94C
Description:	Review was due 10/23, extended to 11/30	PERMITTEE	Soldier Creek Coal Co.
		MINE NAME	Banning Student

<input type="checkbox"/> 15 DAY INITIAL RESPONSE TO PERMIT CHANGE APPLICATION <input type="checkbox"/> Notice of Review Status of proposed permit change sent to the Permittee. <input type="checkbox"/> Request additional review copies prior to Division/Other Agency review. <input type="checkbox"/> Notice of Approval of Publication. (If change is a Significant Revision.) <input type="checkbox"/> Notice of request to modify proposed permit change prior to approval.	DATE DUE	DATE DONE	RESULT	
			<input type="checkbox"/> ACCEPTED	<input type="checkbox"/> REJECTED
			Permit Change Classification	
			<input type="checkbox"/> Significant Permit Revision	
			<input type="checkbox"/> Permit Amendment	
		<input type="checkbox"/> Incidental Boundary Change		

REVIEW TRACKING	INITIAL REVIEW		MODIFIED REVIEW		FINAL REVIEW AND FINDINGS	
DOGM REVIEWER	DUE	DONE	DUE	DONE	DUE	DONE
<input type="checkbox"/> Administrative						
<input type="checkbox"/> Biology						
<input type="checkbox"/> Engineering						
<input type="checkbox"/> Geology						
<input type="checkbox"/> Soils						
<input type="checkbox"/> Hydrology						
<input type="checkbox"/> Bonding						
<input type="checkbox"/> AVS Check						

COORDINATED REVIEWS	DUE	DONE	DUE	DONE	DUE	DONE
<input type="checkbox"/> OSMRE						
<input type="checkbox"/> US Forest Service						
<input type="checkbox"/> Bureau of Land Management						
<input type="checkbox"/> US Fish and Wildlife Service						
<input type="checkbox"/> US National Parks Service						
<input type="checkbox"/> UT Environmental Quality						
<input type="checkbox"/> UT Water Resources						
<input type="checkbox"/> UT Water Rights						
<input type="checkbox"/> UT Wildlife Resources						
<input type="checkbox"/> UT State History						
<input type="checkbox"/> Other						

<input type="checkbox"/> Public Notice/Comment/Hearing Complete (If the permit change is a Significant Revision)	<input type="checkbox"/> Permit Change Approval Form signed and approved effective as of this date. <input type="checkbox"/> Permit Change Denied.
<input type="checkbox"/> Copies of permit change marked and ready for MRP.	<input type="checkbox"/> Notice of <input type="checkbox"/> Approval <input type="checkbox"/> Denial to Permittee.
<input type="checkbox"/> Special Conditions/Stipulations written for approval.	<input type="checkbox"/> Copy of Approved Permit Change to File.
<input type="checkbox"/> TA and CHIA modified as required.	<input type="checkbox"/> Copy of Approved Permit Change to Permittee.
<input type="checkbox"/> Permit Change Approval Form ready for approval.	<input type="checkbox"/> Copies to Other Agencies and Price Field Office.



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

Michael O. Leavitt
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801-538-5319 (TDD)

January 24, 1994

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

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

Dear Mr. Olsen:

On January 18, 1994, the Division received copies of your newly reformatted Mining and Reclamation Plan for the Banning Loadout. It is our understanding that deficiencies identified during the permit renewal process have been responded to in this submittal.

We need to move forward and want to establish that your new plan, with the updated responses to deficiencies, is now the approved plan and will be the one you will be held to. Any remaining deficiencies or problems in your plan will be dealt with as they are identified. We will no longer be working out of the old plan.

Thank you for your cooperation during the permitting process. Please call if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Daron R. Haddock".

Daron R. Haddock
Permit Supervisor

cc: S. Demczak, PFO
APPRPLAN.BAN



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

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801-538-5319 (TDD)

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,

A handwritten signature in black ink that reads "Daron R. Haddock".

Daron R. Haddock
Permit Supervisor

Enclosure

cc: P. Baker
P. Grubaugh-Littig
S. Johnson
J. Smith
W. Western

COVERMID.BAN



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 Hydrologic Resource Information
through
R645-301-726; 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 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 Reclamational 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.



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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April 28, 1995

TO: Daron Haddock, Permit Supervisor

FROM: Paul Baker, Reclamation Biologist 

RE: Draft Review, Reformatted Plan Review, Banning Siding Loadout, Soldier Creek Coal Company, ACT/007/034, Working File, Carbon County, Utah

SYNOPSIS

On about March 29, 1995, the Division received a response to deficiencies noted in a December 13, 1994, review of the Banning operation and reclamation plan. Soldier Creek Coal Company reformatted the Banning plan when the permit was renewed in 1993.

The previous review of biology sections was not a complete technical analysis of the plan. Rather, it only outlined deficiencies. This document is a review of Soldier Creek's response to the deficiencies. One last problem remains.

When Soldier Creek has finished amending the plan in this round of reviews, the Division should update the Banning Technical Analysis.

ANALYSIS

R645-301-330

Operation Plan

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.

Deficiencies:



None.

R645-301-341

Revegetation

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.

Deficiencies:

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

RECOMMENDATIONS

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

When completed with this round of review, the Division should update the Banning Technical Analysis.



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

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April 24, 1995

TO: Daron Haddock, Permit Supervisor

FROM: Steven M. Johnson, Reclamation Hydrologist 

RE: Draft Review, Reformatted Plan, Banning Loadout, Soldier Creek Coal Company, ACT/007/034, Working File, County, Utah

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 in March 30, 1995. The revised pages and one map were review on April 1995. This review addresses the hydrology of the plan. **This memorandum supersedes the for the same topic dated April 10, 1995.**

ANALYSIS

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

HYDROLOGIC INFORMATION

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

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 peak 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

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 that 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.

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.

RECOMMENDATION

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

1. 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) they must be designed to convey the flow resulting from the 100-year, 6-hour event.

2. Table 5-2 should be modified to show the time period that the siltation structures will be removed in final reclamation.
3. 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.
4. 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.

BANNG2TA.SJ



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

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April 17, 1995

TO: Daron Haddock, Permit Supervisor

FROM: Wayne H. Western, Reclamation Engineer *WHW*

RE: Newly Formatted Plan, Soldier Creek Coal Company, Banning Siding Loadout, ACT/007/034-94C, Folder #2, Carbon County, Utah

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:

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.



Findings:

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.

Recommendations:

Approve the Operator's request to not include a description of the retention pond in the MRP. Approve the idea of removing the sediment pond as part of the final reclamation, but require the Operator to include sediment pond removal in the reclamation plan.

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.



State of Utah

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April 13, 1995

TO: Daron Haddock, Permit Supervisor

FROM: Steven M. Johnson, Reclamation Hydrologist

A handwritten signature in black ink, appearing to read 'SMTJ'.

RE: Draft Review, Reformatted Plan, Banning Loadout, Soldier Creek Coal Company, ACT/007/034, Working File, County, Utah

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 in March 30, 1995. The revised pages and one map were review on April 1995. This review addresses the hydrology of the plan.

ANALYSIS

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.

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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.

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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

HYDROLOGIC INFORMATION

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

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.

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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 peak flows that are larger than the required peak flow.

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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.

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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 that 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.

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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.

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.

RECOMMENDATION

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

1. 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) they must be designed to convey the flow resulting from the 100-year, 6-hour event.
2. Table 5-2 should be modified to show the time period that the siltation structures will be removed in final reclamation.



State of Utah
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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,

A handwritten signature in black ink that reads "Daron R. Haddock".

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 analyzes 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 peak 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 that 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) they 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.