CANYON FUEL COMPANY, LLC

FILE IN Expandable 03012007
Refer to Record No. 0002
in C0070034, 2007, Incoming
for additional information

BANNING LOADOUT

2006 MIDTERM PERMIT REVIEW

C/007/034

MARCH 1, 2007

CHAPTER 1

LEGAL AND FINANCIAL

APPENDIX 1-5

FORM 2800-14
(August 1985)

Issuing Office
Price Field Office

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
RIGHT-OF-WAY
SERIAL NUMBER UTU-33855-01

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1. A right-of-way renewal is hereby granted pursuant to Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761).

2. Nature of Interest:

   a. By this instrument, the holder:

      Canyon Fuel Company, LLC
      6955 Union Park Center, Suite 540
      Midvale, Utah 84047

      receives a right to operate, maintain and terminate a tramroad accessing the Banning coal loadout on public lands described as follows:

      Salt Lake Meridian, Utah
      T. 15 S., R. 12 E.,
      sec. 15, SW¼NW¼,W½SW¼;
      sec. 22, NW¼NW¼.

   b. The right-of-way granted herein is 5,280 feet in length and 80 feet in width, encompassing a total area of approximately 9.70 acres, more or less.

   c. This instrument shall terminate five (5) years from its effective date unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.

   d. This instrument may be renewed. If renewed, the right-of-way or permit shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.

   e. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully satisfied the obligations and/or liabilities accruing herein before or on account of the expiration or prior termination of the grant.

3. Rental:

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer, unless specifically exempted from such payment by regulation. Provided, however, the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application of sound business management principles, and so far as practicable and feasible, in accordance with comparable commercial practices.

4. Terms and Conditions:

a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations, part 2880.

b. Upon grant termination by the authorized officer, all improvements shall be removed from the public lands within 90 days, or otherwise disposed of as provided in paragraph (4)(d), or as directed by the authorized officer.

c. Each grant issued for a term of 20 years or more shall, at a minimum, be reviewed by the authorized officer at the end of the 20th year and at regular intervals thereafter not to exceed 10 years. Provided, however, a right-of-way or permit granted herein may be reviewed at any time deemed necessary by the authorized officer.

d. The stipulations, plans, maps, or designs set forth in the original right-of-way grant are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.

e. Failure of the holder to comply with applicable law or any provision of this right-of-way grant or permit shall constitute grounds for suspension or termination thereof.

f. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.

g. Ninety (90) days prior to termination of the right-of-way, the holder shall contact the authorized officer to arrange a joint inspection of the right-of-way area. This inspection will be held to agree to an acceptable termination (and rehabilitation) plan. This plan shall include, but is not limited to, removal of facilities, drainage structures or surface material, recontouring, topsoiling, or seeding. The authorized officer must approve the plan in writing prior to the holder's commencement of any termination activities.

IN WITNESS WHEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant or permit.

(Signature of Holder)	(Signature of Authorized Officer)
James E. Florczak Vice-President (Title)	Field Manager Acting (Title)
October 23, 2001 (Date)	10/29/01 (Effective Date of Grant)

CHAPTER 5

ENGINEERING

R645-301-526.100 Mine Structures and Facilities

R645-301-526.110 Existing Structures. *A description of each existing structure proposed to be used in connection with or to facilitate the coal mining and reclamation operation. The description will include:*

The structures and facilities that are used in connection with or to facilitate the Banning Loadout activities are located off U.S. Highway 6-50 near Sunnyside Junction, Carbon County, Utah. Table 5-1 lists and Exhibit 5-2 show all the structures and facilities.

There are five buildings at the Banning Loadout (Exhibit 5-2). Two primary and three support buildings. The two primary buildings are the main control building and the silo control building. The main control building houses items necessary for operations of the site along with the electrical controls which distribute power to the site. The silo control building controls the vibrating feeders and conveyor belt system that feed the coal silo.

The three support facilities are the fiberglass shack, wooden shack and the temporary scale house. The fiberglass shack houses the controls and equipment used in discharging a dust suppressing agent from the 2000 gallon underground storage tank. This dust suppressing agent, when in use, will be sprayed upon the coal once loaded into the train car. The wooden shack houses the controls and equipment used in discharging a deicing agent from the 8500 and 6400 gallon above ground storage tanks. The deicing agent, also when in use, will be sprayed within an empty train car and prior to loading. All chemicals used at the site are non-hazardous.

The Applicant reserves the right to relocate the support facilities in the future to better accommodate planned improvements. The temporary scale house operates the scales used when coal quality conditions deem it necessary to facilitate a coal blending procedure. To assist in the monitoring of Soldier Creek Coal Company's coal quality, an ash analyzer was installed at a point along the 60 inch conveyor belt (Exhibit 5-2). Power to the site is supplied by a substation and all power lines at the site are run underground. The remaining structures (Table 5-1) serve self explanatory purposed associated with the operation.

Water for dust suppression and fire fighting needs is collected from the water well and stored in the 8,000 gal. storage tank. The excess water that collects under the truck dump, the reclaim tunnel and the main control building is settled and then discharged into the sediment pond or an unnamed wash under UPDES permit UTG-040011. Culinary water is supplied by the operator in bottles and stored in the main control building.

There are two separate communication systems provided at Banning Loadout. The first is a mobile two-way radio set installed in the

large equipment and in communication with Coal Service's main office. The second is a hand held telephone with its base located within the main control building. Sanitary wastes are collected for disposal by a licensed disposal company.

Between the Fall of 2005 and the Spring of 2006 structures and equipment were sold and removed from the Banning Loadout Facility. Table 5-2, Exhibits 5-2 and 7-1 have been updated to reflect the structures and equipment sold and removed.

The haulage road used to transport coal to the site, splits off of U.S. Highway 6-50 just after Sunnyside Junction. The road parallels the highway for approximately 1,200 feet then curves toward the loadout facilities. Parts of the permit area lie within 100 feet of U.S. Highway 6-50 right-of-way. There are no plans to relocate any road in the area and access to the lands south of the facilities by landowners and interest holding parties will be maintained.

~~The Applicant plans to use all existing structures to facilitate operations and to replace or repair the structures with items of similar performance standards throughout the life-of-operations. All existing structures are shown on Exhibit 5-2.The structures meet the performance standards of the ACT and provide adequate compliance so that no significant harm to the environment, public health or the safety will result from the use of the structures.~~

The design and construction of the haulage road was submitted to and approved by the BLM prior to construction. The road was constructed as per BLM requirements and preconstruction conference between Authorized Officer and Applicant. The road was resurfaced during 1988 as part of the regular maintenance to insure adherence to the original design. All drainage control devices originally installed during construction are being maintained free from debris that could impair the functions of the devices.

All drainage from the railroad company's main line and the spur are kept separate from the surface disturbance drainage. This drainage flows parallel to the main line and toward the south end of the loadout facility (Exhibit 5-2). All other support facilities are maintained and used in a manner which prevents, to the extent possible, damage to the environment.

All facilities will be removed upon final reclamation, except the main line track, substation, sediment pond and a portion of the haul road as shown on Exhibit 5-6~~/5-6A~~. A post-mining land-use change leaving the substation for use by the current land owner is being proposed by the operator. If approved by UDOGM, the substation will be removed for the permit and disturbed area and

remain intact for use by the land owner. ~~If the post mining land use change is not approved the reclamation contours reflecting the removal of the substation are provided on Exhibit 5-6A.~~

R645-310-526.111 Location

Facilities are shown on Exhibit 5-2

R645-301-526.112 *Plans or photographs of the structure which describe or show its current condition;*

Table 5-1

R645-301-526.113 *Approximate dates on which construction of the existing structure was begun and completed;*

Table 5-1

R645-301-526.114 *A showing, including relevant monitoring data or other evidence, how the structure meets the requirements of R645-301;*

Table 5-1

R645-301-526.115 *A compliance plan for each existing structure proposed to be modified or reconstructed for use in connection with or to facilitate coal mining and reclamation operations. The compliance plan will include:*

N/A There are no plans to modify or reconstruct these facilities.

R645-301-526.115.1, R645-301-526.115.2, R645-301-526.115.3, and R645-301-526.115.4 are not applicable to this operation and have therefore been omitted.

N/A

R645-301-526.116 *The measures to be used to ensure that the interests of the public and landowners affected are protected if the applicant seeks to have the Division approve:*

Refer to Section R645-301-521.133.1

R645-301-526.116.1 *Conducting the proposed coal mining and reclamation operations within 100 feet of the right-of-way line of any public road, except where mine ccess or haul roads join that right-of-way; or*

Refer to Section R645-301-521.133.1

~~TABLE 5-1~~

~~EXISTING STRUCTURES AND FACILITIES TO BE USED AT BANNING LOADOUT FOR PERMITTED OPERATIONS~~

~~STRUCTURES~~	~~DATE OF CONSTRUCTION~~	~~TYPE OF CONSTRUCTION~~	~~PRESENT CONDITION~~	~~LOCATION~~	~~PERFORMANCE STANDARDS~~
~~Belt Magnet Street Structure~~	~~1978~~	~~Prefabricated~~	~~"~~	~~"~~	~~"~~
~~#2 Conveyor Steel Structure~~	~~1978~~	~~30" Belt, Covered~~	~~"~~	~~"~~	~~"~~
~~Screen~~	~~1982~~	~~Vibrating Screen~~	~~"~~	~~"~~	~~"~~
~~Crusher Enclosed Impact Mill (Cedar Rapids)~~	~~1978~~	~~Prefabricated~~	~~"~~	~~"~~	~~"~~
~~#3 Conveyor Steel Structure~~	~~1978~~	~~36" Belt, Covered~~	~~"~~	~~"~~	~~"~~
~~#4 Conveyor Radial Stacker Covered Steel Structure (Pemco)~~	~~1978~~	~~Prefabricated 36"~~	~~"~~	~~"~~	~~"~~

~~TABLE 5-1 (Continued)~~

~~EXISTING STRUCTURES AND FACILITIES TO BE USED AT BANNING LOADOUT FOR PERMITTED OPERATIONS~~

~~STRUCTURES~~	~~DATE OF CONSTRUCTION~~	~~TYPE OF CONSTRUCTION~~	~~PRESENT CONDITION~~	~~LOCATION~~	~~PERFORMANCE STANDARDS~~
~~Reclaim Tunnel and Walls with a Multi-Plate Arch~~	~~1978~~	~~Concrete Floor~~	~~" "~~	~~"~~	
~~Feeders Steel Feeders~~	~~1978~~	~~Electro-Mechanical~~	~~Excellent~~	~~Shown on Exhibit~~	~~Meets Standards of UMC R645-301-526~~
~~#5 Conveyor Structure~~	~~1978~~	~~46" Belt, Steel~~	~~" "~~	~~"~~	
~~#6 Conveyor Steel Structure~~	~~1978~~	~~60" Belt, Covered~~	~~" "~~	~~"~~	
~~Belt Scales Weighing System~~	~~1978~~	~~Prefabricated~~	~~" "~~	~~"~~	
~~Silo-Control Building Building~~	~~1978~~	~~Enclosed Steel Silo and Concrete-Block~~	~~" "~~	~~"~~	
~~Escape Tunnel & Fan~~	~~1978~~	~~24" CMP with Fan~~	~~" "~~	~~"~~	
~~Diesel Tank~~	~~1978~~	~~Steel Tank~~	~~" "~~	~~"~~	
~~Water Tank~~	~~1978~~	~~Steel Tank~~	~~" "~~	~~"~~	

~~TABLE 5-1 (Continued)~~

~~EXISTING STRUCTURES AND FACILITIES TO BE USED AT BANNING LOADOUT FOR PERMITTED OPERATIONS~~

~~STRUCTURES~~	~~DATE OF CONSTRUCTION~~	~~TYPE OF CONSTRUCTION~~	~~PRESENT CONDITION~~	~~PERFORMANCE LOCATION~~	~~STANDARDS~~
~~Dust Control Tank~~	~~1983~~	~~Steel Tank~~	~~"~~	~~"~~	~~"~~
~~2 Deicing Tanks - Polyethylene~~	~~1990~~	~~Cross Link~~	~~"~~	~~"~~	~~"~~
~~Shack~~	~~1990~~	~~Wood and Concrete~~	~~"~~	~~"~~	~~"~~
~~Ash Analyzers~~	~~1990~~	~~Steel~~	~~Excellent~~	~~Shown on Exhibit 5-2~~	~~Meets Standards of UMC R645-301-526~~
~~Scale House~~	~~Temporary~~	~~Wood~~	~~"~~	~~"~~	~~"~~
~~Main Control Building~~	~~1977-78~~	~~Concrete and Block~~	~~"~~	~~"~~	~~"~~
~~Fence~~	~~1977-78~~	~~Chain-Link~~	~~"~~	~~"~~	~~"~~
~~Shack~~	~~1983~~	~~Fiberglass~~	~~"~~	~~"~~	~~"~~
~~Tramroad (Resurfaced)~~	~~1976-77 1988~~	~~Asphalt~~	~~"~~	~~"~~	~~"~~

~~TABLE 5-1 (Continued)~~

~~EXISTING STRUCTURES AND FACILITIES TO BE USED AT BANNING LOADOUT FOR PERMITTED OPERATIONS~~

~~DATE OF STRUCTURES~~	~~TYPE OF CONSTRUCTION~~	~~PRESENT CONSTRUCTION~~	~~PERFORMANCE CONDITION~~	~~LOCATION~~	~~STANDARDS~~
~~*Main Line Track~~	~~Predates Operation~~	~~Track~~	~~"~~	~~"~~	~~"~~
~~**Loading Spur~~	~~1976~~	~~Track~~	~~"~~	~~"~~	~~"~~
~~Berms, Embankment and Sedimentation Pond~~	~~1988~~	~~Soil~~	~~"~~	~~"~~	~~"~~
~~Substation Concrete~~	~~1989~~	~~Steel and~~	~~"~~	~~"~~	~~"~~
~~Sampling System~~	~~1994~~	~~Conveyor~~	~~(See Appendix 5-1)~~		

~~* Denver and Rio Grande Western Railroad owns this line.~~
~~**Denver and Rio Grande Western Railroad will own spur at the completion of the operation.~~

TABLE 5-1

EXISTING STRUCTURES AND FACILITIES TO BE USED AT BANNING LOADOUT FOR PERMITTED OPERATIONS

STRUCTURES	YEAR CONSTRUCTED	TYPE OF CONSTRUCTION	PRESENT CONDITION	SHOWN ON EXHIBIT	PERFORMANCE STANDARDS
Truck Dump - Compacted Soil Ramp	1978	Steel Frame and Asphalt	Fair	5-2	UMC R645-301-526
#1 Conveyor - 30" Covered Belt	1978	Steel	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526
Belt Magnet	1978	Prefabrication	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526
#2 Conveyor - 30" Covered Belt	1978	Steel	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526
Screen	1982	Vibrating Screen	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526
Crusher	1978	Prefabricated Enclosed Impact Mill	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526
#3 Conveyor - 36" Covered Belt	1978	Steel	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526
#4 Conveyor - 36" Covered Belt	1978	Prefabricated Radial Stacker Steel	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526
Reclaim Tunnel	1978	Concrete Floor & Walls with Multi-plate Arch	Good	5-2	UMC R645-301-526
Feeders	1978	Electro Mechanical Steel	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526

TABLE 5-1

EXISTING STRUCTURES AND FACILITIES TO BE USED AT BANNING LOADOUT FOR PERMITTED OPERATIONS

STRUCTURES	YEAR CONSTRUCTED	TYPE OF CONSTRUCTION	CONDITION	SHOWN ON EXHIBIT	PERFORMANCE STANDARDS
#5 Conveyor - 46" Belt	1978	Steel	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526
#6 Conveyor - 60" Covered Belt	1978	Steel	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526
Belt Scales	1978	Prefabricated Weighing System	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526
Silo Control Building	1978	Enclosed Steel Silo and Concrete-Block Building	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526
Escape Tunnel & Fan	1978	24" CMP with Fan	Fair	5-2	UMC R645-301-526
Diesel Tank	1978	Steel Tank	Good	5-2	UMC R645-301-526
Water Tank	1978	Steel Tank	Good	5-2	UMC R645-301-526
Dust Control Tank	1983	Steel Tank	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526
2 Deicing Tanks	1990	Cross Link Polyethylene	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526
Shack	1990	Wood and Concrete	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526
Shack	1983	Fiberglass	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526

TABLE 5-1

EXISTING STRUCTURES AND FACILITIES TO BE USED AT BANNING LOADOUT FOR PERMITTED OPERATIONS

STRUCTURES	YEAR CONSTRUCTED	TYPE OF CONSTRUCTION	PRESENT CONDITION	SHOWN ON EXHIBIT	PERFORMANCE STANDARDS
Ash Analyzers	1990	Steel	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526
Scale House	Temporary	Wood	Poor	5-2	UMC R645-301-526
Main Control Building	1977-78	Concrete & Block	Fair	5-2	UMC R645-301-526
Fence	1977-78	Chain-link	Good	5-2	UMC R645-301-526
Tramroad (Resurfaced)	1976 - 77 1988	Asphalt	Good	5-2	UMC R645-301-526
Main Line Track*	Predates Operations	Track	Good	5-2	UMC R645-301-526
Loading Spur***	1976	Track	Good	5-2	UMC R645-301-526
Berms, Embankments and Sediment Pond	1988	Soil	Good	5-2	UMC R645-301-526
Substation	1989	Steel and Concrete	Removed from DAB 2007	Previously shown on 5-2	UMC R645-301-526
Sampling System	1994	Conveyor	Removed Aug - Dec 2005	Previously shown on 5-2	UMC R645-301-526
					UMC R645-301-526

* Denver and Rio Grande Western Railroad owns this line.

**Denver and Rio Grande Western Railroad will own spur at the completion of the operation.

APPENDIX 5-3

SC3 SOLDIER CREEK COAL CO.
Telephone (801) 637-6360
P.O. Box I
Price, Utah 84501

March 15, 1990

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

Re: Substation Construction, As-built Details
Soldier Creek Coal Company
Banning Loadout, ACT/007/034

Dear Mr. Haddock:

I have enclosed Drawing D224 which describes the as-built details of the new substation facility at Banning Loadout. This facility was constructed in accordance to the Soldier Creek Coal Company (SCCC) plans dated September 20, 1989 and October 13, 1989.

In order to direct drainage from the substation into the sediment pond, construction of an elevated pad was required. Material for the pad construction was salvaged from an area immediately south of sediment pond, where excess material from the pond construction had been stockpiled. Unfortunately, to facilitate drainage, the pad was constructed to such a height that the out-slope (2H:1V) extended beyond the previously approved permit boundary. Therefore, SCCC is requesting an incidental boundary change (IBC) as detailed on the enclosed drawing. Please note that SCCC is the surface owner of all property requested within the IBC.

In addition to the IBC, a small area drainage exemption for the area outside the immediate substation is requested. This area basically lies between the limits of disturbance and the existing drainage ditch as detailed on the enclosed drawing (approx. 0.9 acres). Several alternative sediment control methods have been provided to prevent the contribution of sediment to runoff outside the permit area. A description of these methods which have been implemented is as follows:

1. Drainage from the actual substation facility flows into the sedimentation pond. The constructed slope of the facility, as well as a berm installed on three sides insures proper

JUL 20 1990

drainage. The complete site is also covered with two inch diameter gravel to further enhance sediment control.

2. The immediate outslope of the substation pad was constructed to have a maximum slope of 2H:1V. The surface has also been stabilized with a two inch diameter gravel covering.

3. All areas disturbed in conjunction with the substation construction (which were not covered with gravel), have been reseeded in accordance with the approved MRP. Straw mulch was also applied followed by traversing the surface with a cleated track dozer.

4. A retention basin was constructed south of the sedimentation pond. This basin collects drainage from approximately 0.38 acres and has a capacity of approximately 12,400 gallons.

   The expected runoff volume from a design storm can be determined using the SCS runoff curve number technique (consistent with the methodology described within the approved MRP). Using the 10-yr, 24-hr precipitation depth of 1.78 inches and a curve number of 81 (cultivated land with conservation treatment, hydrologic soil group D), the direct runoff was calculated to be 0.47 inches. This results in a total design runoff volume 4,850 gallons which is only 39% of the basin capacity.

5. Reseeded areas which do not drain to the retention basin are located on extremely flat topography. A defined drainage system cannot be observed and it appears that any excess precipitation will pond within or adjacent to the disturbed sites.

Following Division approval of the requested IBC and small area drainage exemption, thirteen copies of the appropriate information shall be submitted for direct incorporation into the approved MRP.

Please contact me if you have any questions concerning this matter.

Sincerely,

SOLDIER CREEK COAL COMPANY

Dave Spillman

David G. Spillman
Mine Engineer

Enclosure

DGS/sm

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

Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Dianne R. Nielson, Ph.D.
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

May 2, 1990

Mr. Rick Olsen, President
Soldier Creek Coal Company
P. O. Box I
Price, Utah 84501

Dear Mr. Olsen:

Re: Conditional Approval Amendment, Substation As-Built Designs, Soldier Creek Coal Company, Banning Siding Loadout, ACT/007/034-90A, Folder #3, Carbon County, Utah

The submittal received on March 16, 1990 regarding the above- noted permitting action was reviewed by Mike DeWeese of the Division's technical staff.

The submittal will be considered complete upon receipt of the information outlined in the attached memo. Please submit this information by June 1, 1990.

Thank you for your cooperation in resolving this matter.

Sincerely,

Daron R. Haddock

Daron R. Haddock
Permit Supervisor

djh
Attachment
cc: J. Helfrich, DOGM
BT45/13

an equal opportunity employer

JUL 20 1990

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

Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Dianne R. Nielson, Ph.D.
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

March 29, 1990

TO: Daron Haddock, Permit Supervisor

FROM: Mike DeWeese, Reclamation Hydrologist MD

RE: Amendment, Substation As-Built Designs, Soldier Creek Coal Company, Banning Siding Loadout, ACT/007/034-90A, Folder #2, Carbon County, Utah

SUMMARY:

Soldier Creek Coal Company (SCCC) has completed construction of the substation at the Banning Loadout Facility. Construction of the substation pad required disturbance beyond the approved permit area. SCCC is requesting an Incidental Boundary Change and a small area exemption for the additional disturbance.

ANALYSIS:

The proposed boundary change encompasses 0.54 acres of additional area within the permit boundary, as illustrated by Exhibit 5.2-1. This area essentially forms a corridor around the southwest corner of the facility which incorporates all disturbance within the permit area.

The substation pad and outslope have been covered with gravel to provide effective sediment control. The remainder of the disturbed area has been reseeded and mulched with straw crimped into the surface. This portion of the disturbed area is located on flat terrain and possesses a low sediment yield potential.

All surface runoff from the substation pad will report to the sedimentation pond for treatment. Treatment for other disturbance is provide by a small catch basin located just south of the sedimentation pond. SCCC has demonstrated that this structure contains over twice the capacity necessary to contain the 10 year 24 hour design storm runoff.

RECOMMENDATIONS:

SCCC must include the entire area within the boundary labeled "limits of disturbance" as a small area exemption and clearly delineate it as such on Exhibit 5.2-1. The disturbed area boundary must be revised along the IBC to accurately identify the actual limits of surface disturbance associated with the substation construction. Upon receiving these necessary revisions, the Division recommends that this amendment be approved.

cc: B Team
BT6033/31-32

PROPOSED BANNING LOADOUT SUBSTATION

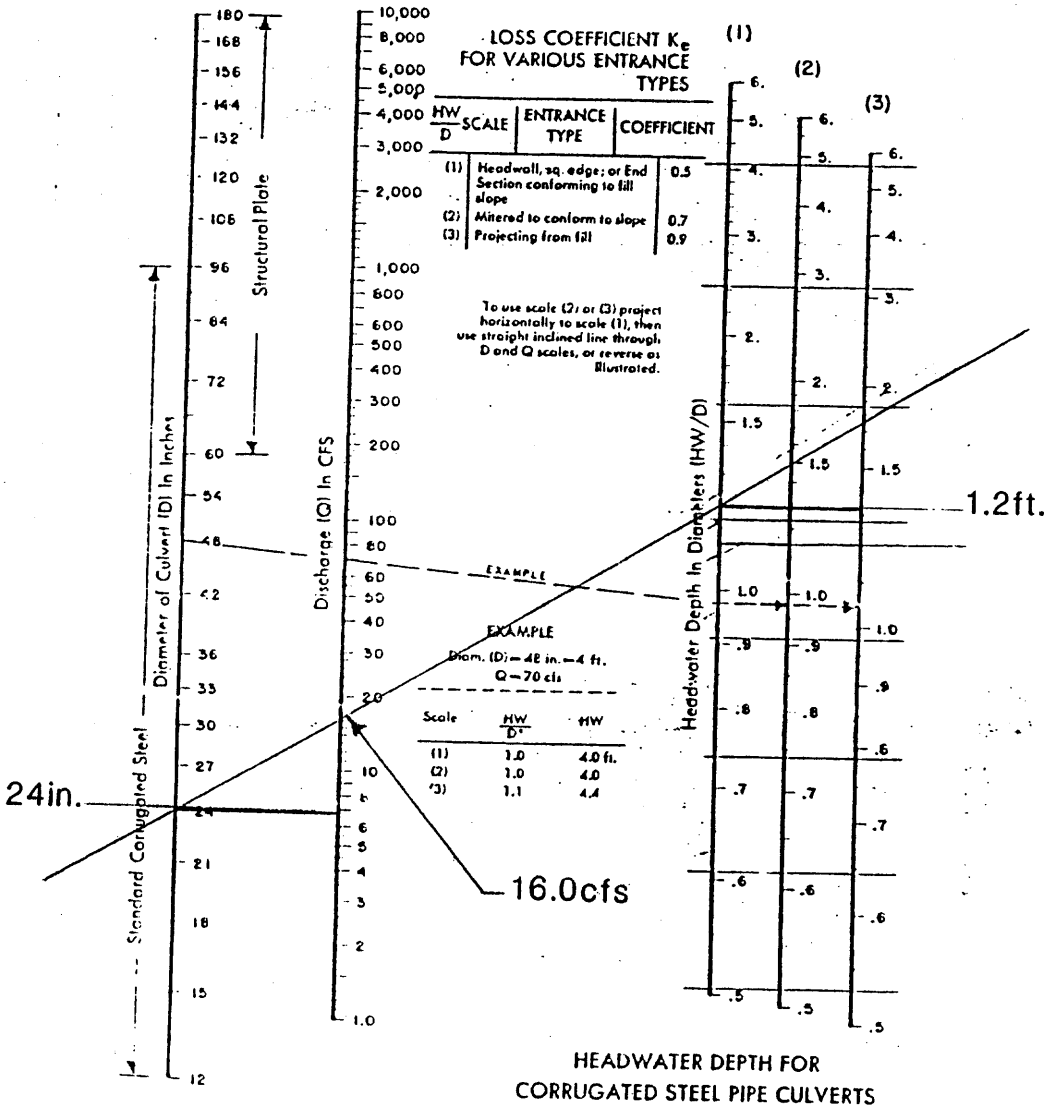
CONSTRUCTION, INCORPORATION, USE AND RECLAMATION

Construction of the proposed substation shall be done in the area shown on the revised Exhibit 5.2-1. The construction shall consist of building a graveled pad, installation of the 2000 K.V.A. Substation, installation of an adequate fence and gate system to enclose the substation area, and construction of a proper runoff and drainage system to prevent runoff from flowing into undisturbed areas. The runoff and drainage system will use the existing sediment pond for treatment of all runoff and drainage encountered from the substation area.

The proposed substation area shall be constructed in such a manner so that existing drainage systems can be used and will not be constrained or altered in any way. To ensure drainage from existing areas be confined to the sedimentation pond, a 24 inch culvert shall be installed at the point where the substation access road crosses the existing drainage ditch. Referring to the nomograph (Exhibit 1.1), it is shown that a 24 inch culvert with a 1.2 feet headwater is capable of handling 16 cubic feet per second (CFS) of flow (16 CFS is the sedimentation pond design for a 25 yr. 24 hr. storm. Refer to Appendix II for calculations.) From these figures, a 25 year, 24 hour storm design criteria is obtained. This is well in excess of the required design constraints of a 10 year, 24 hour storm.

The proposed substation installation shall be used to supply power for the existing Banning Loadout facilities. This new system will replace the diesel powered generators presently being used.

Reclamation of the substation area shall be in accordance to our approved Reclamation Plan. All work done to reclaim the substation area will be done to conform to all constraints of the existing permit.



HEADWATER DEPTH FOR CORRUGATED STEEL PIPE CULVERTS WITH INLET CONTROL

Fig. 4-18. *Inlet control* nomograph for corrugated steel *pipe* culverts. The manufacturers recommend keeping *HW/D* to a maximum of 1.5

BANNING CULVERT DESIGN
AVERAGE BASIN SLOPE CALCULATIONS

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

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

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 (ft^2)

<u>WATERSHED #I</u> (C.M.P. No. 1)

C.I. = 78,100'
C.I. = 20'
Area = 301,644,288 ft^2
Hydraulic length = 38,500'
Average Slope = .518%
T_c = 18.25

<u>WATERSHED #II</u> (C.M.P. No. 2)

Hydraulic Length = 1300'
Average Slope = .518% (Use Area I Slope)
Area = 1,040,000 ft^2
T_c = 1.21

<u>WATERSHED #III</u> (C.M.P. No. 3)

Hydraulic Length = 750'
Average Slope = .518 (Use Area I Slope)
Area = 525,000 ft^2
T_c = .78

REVISED
JAN 26 1993

TIME OF CONCENTRATION

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

L = Watershed Lag (hr)
h_1 = 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.

Watershed	Area (Acres)	Time of Peak Discharge(HR)	Peak Discharge(CFS)	Runoff (Acre-ft)
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".

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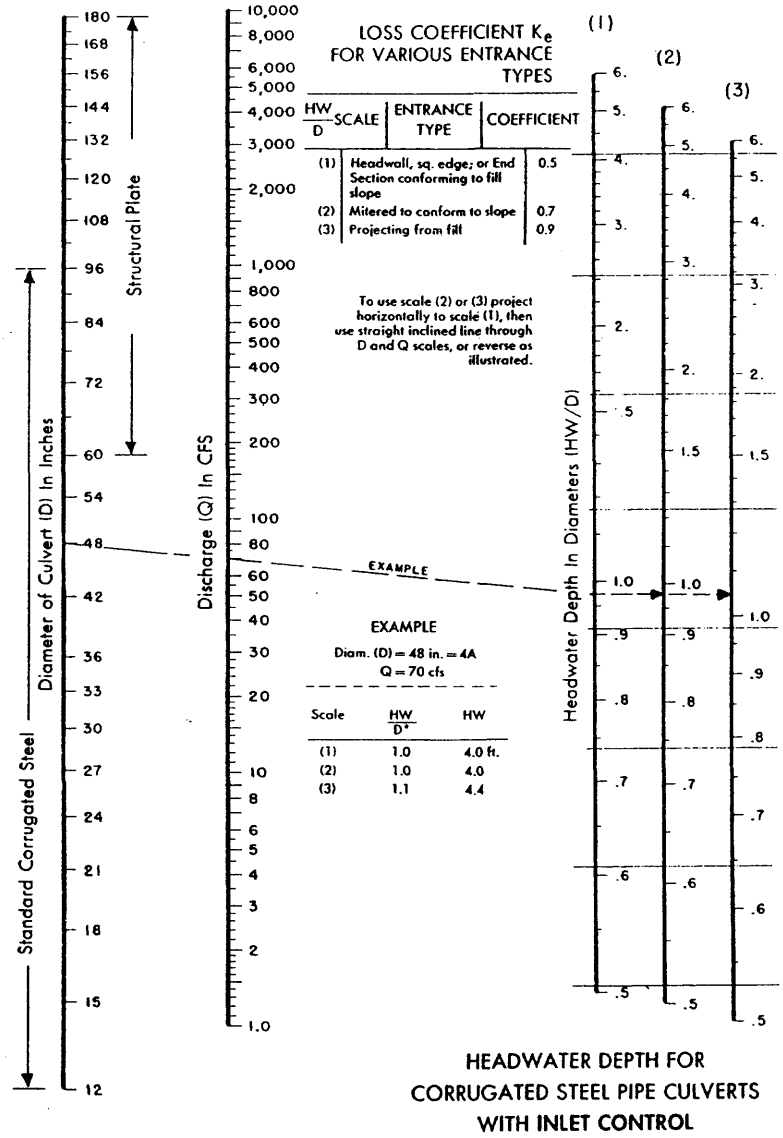

Fig. 4-18. ***Inlet control*** **nomograph for corrugated steel *pipe* culverts. The manufacturers recommend keeping *HW/D* to a maximum of 1.5 and preferably to no more than 1.0.**

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Expanded Permit Area
Runoff Calculations

The following calculations are to determine the total runoff from the expanded permit area approximately 30 feet by 850 feet.

Methods

The Soil Conservation Service (1972), has quantified precipitation runoff volume, from a particular rainfall event, by the runoff curve number technique. According to the curve number methodology, the algebraic and hydrologic relations between soil, moisture, soil-cover conditions, and rainfall can define total runoff by the following equations:

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

and

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

P = 1.25" (10YR-6HR)
CN = 70
Q = .033 in.

Where Q is the direct runoff in inches; P is the rainfall in inches; S is the maximum potential difference between P and Q at the beginning of the storm; and CN is the dimensionless expression of S referred to as the curve number.

Based upon the above formulas and an area of (30' x 850') the total runoff for a design storm will be 70 ft^3 or 525 gallons. This flow will be treated by two silt fences, refer to Exhibit 5.2-1.

Most of the treated runoff will discharge to the "discontinuous gully." This gully will also receive runoff from undisturbed areas, refer to Exhibit 5.2-1. Preliminary calculation indicate that the gully will not discharge during a design storm.

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Road Diversion Design

The plate labeled "Proposed Haulage Road" depicts a typical cross-section which details the road shoulder drainage ditch. This ditch is shown as being triangular in shape with 5:1 (H:V) side slopes and 2 foot deep. The following information is presented as a determination of the adequacy of this design.

Following review of the topographic information, it was determined that the southern 1/3 of haulage road would receive the most runoff. Therefore, an area beginning near the No. 1 CMP and ending at the southern end of the haulage road (which will remain after final reclamation), was used for design evaluation (see Exhibit 2.1-1). This area is approximately 1,100 feet long and 40 feet wide. The width has been measured from the center of the road pavement, extending beyond the drainage ditch. The watershed characteristics were evaluated utilizing the SCS curve number methodology and the computer program Sedimot II, Version 1.00. Open channel flows were also evaluated using a computer program, FlowMaster I (Copyright 1991, Haestad Methods, Inc.). The summarized results are as follows:

Watershed Design Summary

Area (acres)	-	1.0
Average Slope (%)	-	1.3
Curve Number	-	90
Hydraulic Length (ft)	-	1,100
Time of Concentration(hrs)	-	0.35
Design Storm	-	10yr - 6 hr
Precipitation Depth (ins)	-	1.25
Storm Type	-	SCS Type "B"
Peak Flow (cfs)	-	0.33
Runoff (ins)	-	0.49
Runoff Volume (acre-ft)	-	0.04

Road Drainage Ditch Design Summary

Channel	-	Triangular
Left Side Slope	-	5 : 1 (H:V)
Right Side Slope	-	5 : 1 (H:V)
Channel Slope	-	0.013 ft/ft
Flow 10 yr - 6 hr	-	0.33 cfs
Manning's n	-	0.025
Flow Velocity	-	1.49 fps
Flow Depth	-	0.21 ft
Flow Top Width	-	2.10 ft
Flow Area	-	0.22 ft^2

The above information shows the peak flow depth, resulting from a design storm, will only be 0.21 ft. This is substantially less than the available capacity of the ditch, therefore, it is determined to be adequate for the purpose it is intended.

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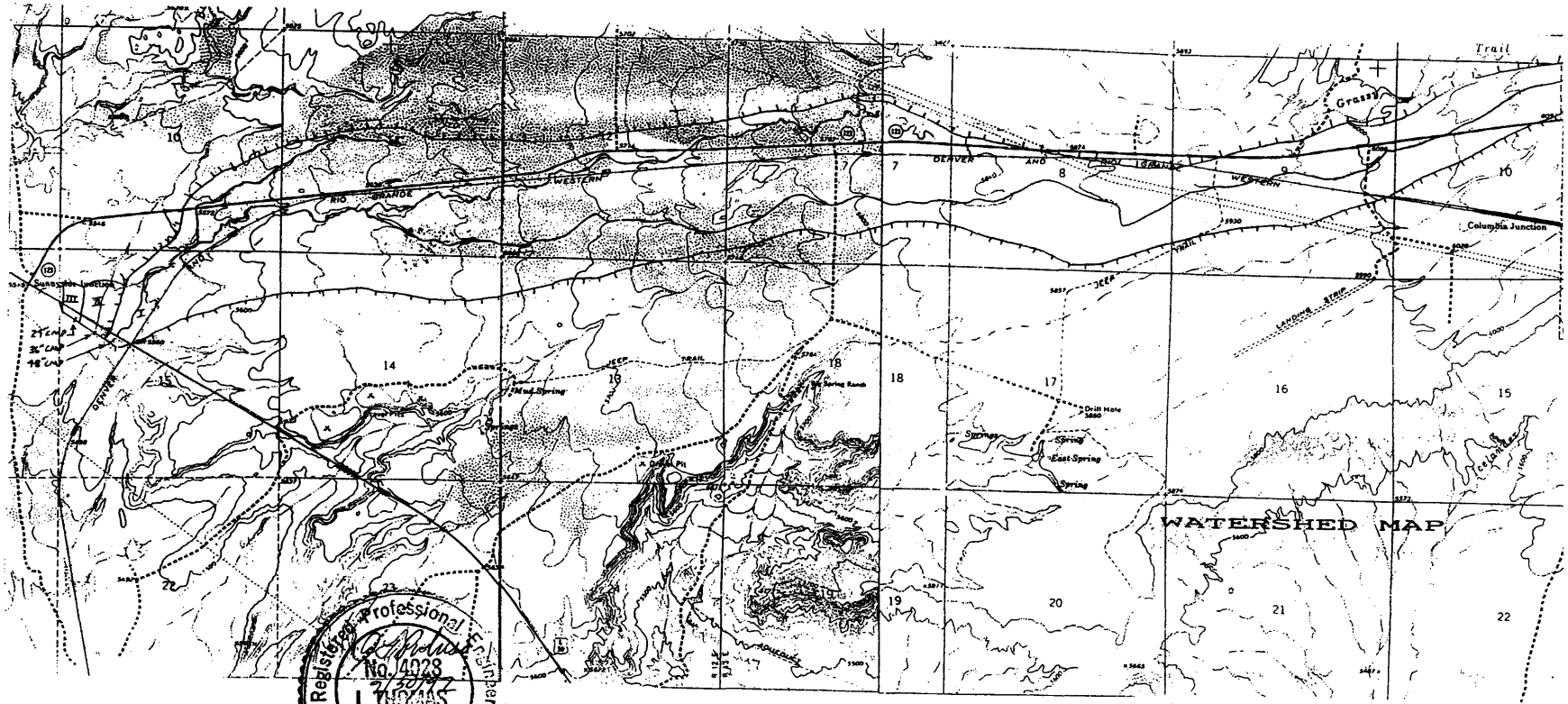

Registered Professional Engineer
No. 4028
J. THOMAS PALUSO
State of Utah

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.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

2810
UTU-33855
(U-066)

IN REPLY REFER TO

Moab District
Price River Resource Area
900 North 700 East
Price, Utah 84501
(801) 637-4584

SEP 16 1992

Mr. Tom Paluso
Soldier Creek Coal Company
P. O. Box I
Price, Utah 84501

Dear Mr. Paluso:

In response to your letter regarding the construction standards for the road leading to the Banning Siding, we offer the following comments. On October 18, 1976, the Bureau of Land Management issued right-of-way UTU-33855 to Soldier Creek Coal Company for a 40 foot wide access road, over the following described public lands: Salt Lake Meridian, Utah, T. 15 S., R. 12 E., sec.15, SW4NW4, W2SW4, and sec. 22, NW4NW4. At the time the road was constructed it met our road building standards. The road appears to be in excellent condition and does not appear to be contributing to any off-site environmental impacts.

If you have any additional questions please feel free to contact Mark Mackiewicz of my staff at (801) 637-4584.

Sincerely yours,

Mark E. Bailey

Area Manager

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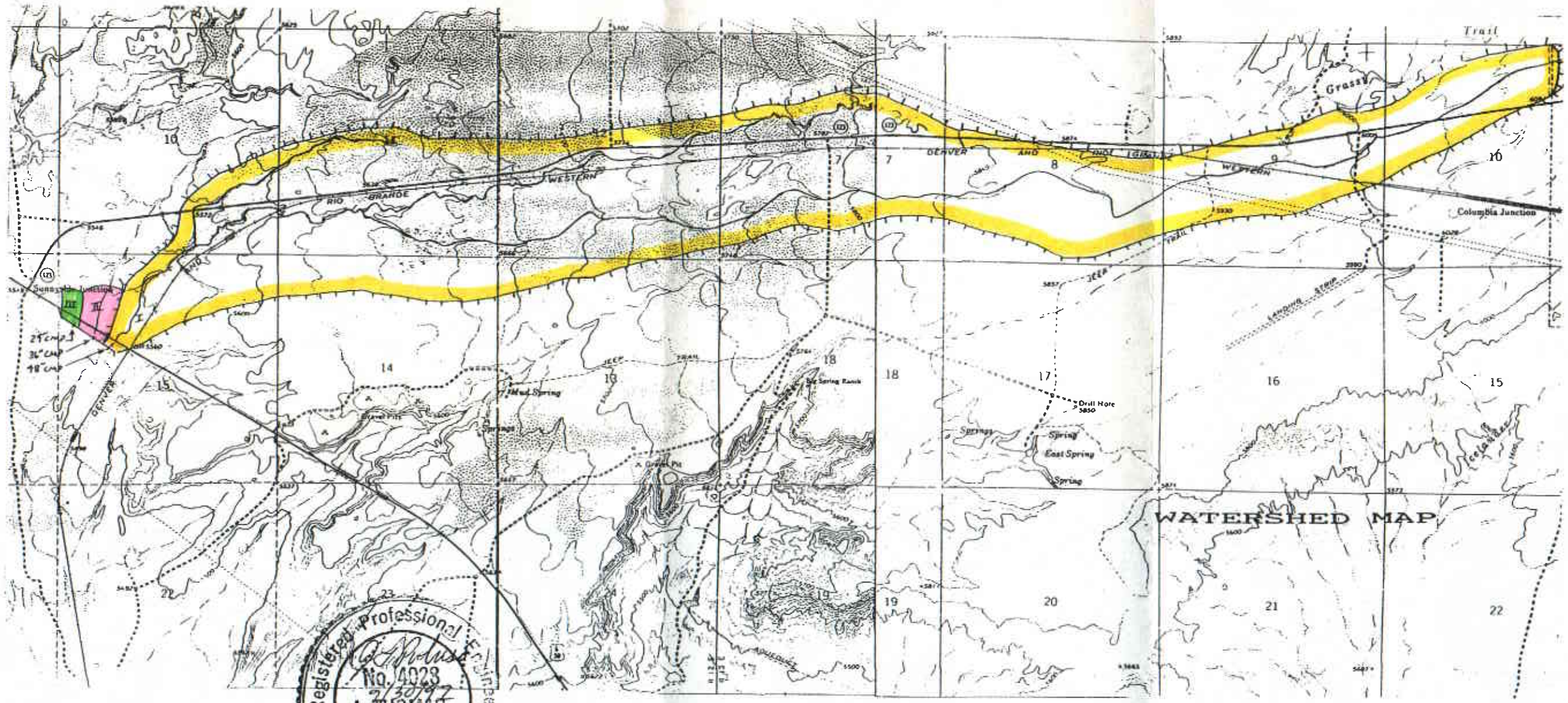
JAN 26 1993

APPENDIX 5-3

WATERSHED #I

WATERSHED #II

WATERSHED #III



Registered Professional Engineer
No. 4023
J. THOMAS PALUSO
State of Utah

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.

CHAPTER 7

HYDROLOGY

BANNING LOADOUT PERMIT

Canyon Fuel Co., LLC - Soldier Canyon

CHAPTER 7

HYDROLOGY

R645-301-700 Hydrology

This chapter will provide hydrologic information as required for the permit application.

R645-301-710 Introduction

Chapter 7 of this document presents a discussion of hydrologic conditions in the Banning Loadout permit and adjacent areas. Conclusions drawn herein are based upon a field reconnaissance of the area, published literature, and design calculations as described subsequently. This work was authorized by Soldier Creek Coal Company and completed by Richard B. White, P.E. of EarthFax Engineering, Inc., Salt Lake City, Utah.

R645-301-711 General Requirements. Each permit application will include descriptions of:

The following sections will provide descriptions of the hydrologic resources, proposed operations and potential impacts to the hydrologic balance and methods and calculations utilized to achieve compliance with hydrologic design criteria and plans.

R645-301-711.100 Existing hydrologic resources as given under R645-301-720.

Existing hydrologic resources are discussed under Section R645-301-720.

R645-301-711.200 Proposed operations and potential impacts to the hydrologic balance as given under R645-301-730.

Proposed operations and potential impacts to the hydrologic balance are detailed under Section R645-301-730.

R645-301-711.300 The methods and calculations utilized to achieve compliance with hydrologic design criteria and plans given under R645-301-740.

Methods and calculations utilized to achieve compliance with hydrologic design criteria and plan are discussed under Section R645-301-740.

R645-301-711.400 Applicable hydrologic performance standards as given under R654-301-750.

Compliance with performance standards is discussed in relevant sections of this Chapter and reiterated in Section R645-301-750.

R645-301-711.500 Reclamation activities as given under R645-301-760.

Reclamation hydrology is discussed under Section R645-301-760 of this Chapter.

R645-301-712 Certification. All cross sections, maps and plans required by R645-301-722 as appropriate, and R645-301-731.700 will be prepared and certified according to R645-301-512.

All cross sections, maps and plans required by R645-301-722 as appropriate, and R645-301-731.700 will be prepared under the direction of, and certified by, a qualified, registered professional engineer.

R645-301-713 Inspection

Impoundment inspections are made as described in Section R645-301-514.300 of Chapter 5 ~~3~~.

R645-301-720 Environmental Description

R645-301-721 General Requirements

Surface Water

The Banning Loadout is located within the watershed of Grassy Trail Creek, a tributary of the Price River. Waddell et al. (1981) estimated that the average flow of Grassy Trail Creek at Highway 6 (i.e. within one mile of the site) is approximately 560 acre-feet per year. With an upstream drainage area of 113.0 square miles (Waddell, 1981), this results in a yield of less than 0.10 inch per year. Of the limited quantity of surface water that is yielded by the creek, most originates at high elevations within the watershed (Mundorff, 1972). The general lack of runoff being contributed in the lower elevations of the watershed

(such as the area occupied by the Banning Loadout) is the result of:

1. Limited precipitation. Average annual precipitation at the Banning Loadout adjacent areas is less than eight inches (Waddell et al., 1981). Most of this amount is required to satisfy soil moisture deficits, thus allowing only limited runoff.

2. Geologic conditions. The loadout is situated on the Mancos Shale, a relatively impermeable formation that occurs at the surface in most of the region surrounding the loadout. Due to the impermeable nature of this formation, it is a poor recharge source and does not transmit water readily. Thus, baseflow contributions to Grassy Trail Creek origination in the area of the loadout are very limited.

Due to the typically low flow of Grassy Trail Creek, no continuous gauging records have been maintained for the stream. Personal observation indicates that the stream can be classified as ephemeral, flowing in the early spring as a result of snowmelt from higher elevations. Stream flow other than the end of spring is normally limited to occasional thunderstorms.

Mundorff (1972) reported the results of analyses of five water samples collected from Grassy Trail Creek immediately upstream from U.S. Highway 6. The total dissolved solids concentrations of these samples ranged from 872 to 2510 milligrams per liter, with the concentrations generally being inversely related to the flow rate (i.e., the higher the flow rate, the lower the concentration). This water was of mixed cationic type but was strongly sulfitic (as is typical of water crossing the Mancos Shale).

Waddell et al. (1981) indicates that the total dissolved solids concentrations of water in Grassy Trail Creek can be expected to reach maximums in excess of 6000 milligrams per liter downstream from the loadout and upstream from the confluence with the Price River. Due to

the poor quality of the water in Grassy Trail Creek and elsewhere in the lower Price River Basin, no extensive development or use of surface water has occurred in the region surrounding the loadout facility.

Little information is available concerning suspended sediment concentrations in surface water adjacent to the loadout facility. Waddell et al. (1981) estimated the average annual sediment yield of undisturbed land in the vicinity of the loadout to be between 0.5 and 1.0 acre-foot per square mile per year. This yield was estimated to increase to between 1.0 and 3.0 acre-feet per square mile per year in most of the area downstream from the loadout and upstream from the confluence with the Price River.

Groundwater

According to Hood and Patterson (1984), the shaley units of the Mancos Shale have a very low permeability and serve as confining beds for underlying formations rather than as aquifers. The relatively non-transmissive character of the Mancos Shale was also borne out by the research of Jobin (1962).

As a result of the low permeability of the Mancos Shale, this formation has not been developed in the region of the loadout facility for beneficial use except by the Applicant for use in dust suppression and fire protection at the facility. Drillhole data from petroleum exploration holes in the region suggest that the Mancos Shale, where saturated, contains water that is moderately to very saline (Waddell et al., 1981). This further limits the desirability of the Mancos as a source of groundwater. Given the mineralogy of the formation (which, according to Waddell et al. [1981],includes large quantities of the soluble salts, gypsum [CaSO42H20], mirabilite [Na2SO410H2)], and thenardite [Na2SO4]), it is probable that groundwater in the Mancos Shale contains a predominance of sodium, calcium, and sulfate.

R645301-722 Cross Sections and Maps

The application contains maps showing the following relevant data:

R645-301-722.100 Subsurface Water

N/A The only subsurface water encountered is in the sump located by the truck dump as shown on Exhibit 7-1.

R645-301-722.200 Surface Water

Surface water bodies are shown on Exhibits 5-1 and 7-1 of this application.

R645-301-722.300 Water Monitoring Stations

The only established surface water monitoring station is at the outlet of the sediment pond as shown on Exhibits 7-1 and 7-2.

R645-301-722.400 Water Wells

N/A There are no water wells in the permit or adjacent areas. A sump does exist near the truck dump as shown on Exhibit 7-1.

R645-301-722.500 Contour Maps

Existing land configuration is shown on Exhibits 5-1 and 7-1.

R645-301-723 Sampling and Analysis

All water quality sampling and analysis will be conducted according to the methodology in the current edition of "Standard Methods for the Examination of Water and Wastewater" or the methodology in 40 CFR Parts 136 and 434.

R645-301-724 Baseline Information

R645-301-724.100 Ground Water Information

Ground water information and water users claims are provided in Appendix 7-1.

R645-301-724.200 Surface Water Information

Surface water information, including analyses and U.P.D.E.S. Reports on the Sediment Pond Discharge are provided in Appendix 7-2 and in the UDOGM water database.

R645-301-724.300 Geologic Information

Relevant geologic information is provided in Chapter 6 and in Section R645-301-721 of this Chapter.

R645-301-724.310

See Chapter 6 and Section R645-301-728.

R645-301-724.320

See Chapters 5 and 6 and Section R645-301-760.

R645-301-724.400 Climatological Information

Complete climatological information is provided in Appendix 7-3 of this Chapter.

R645-301-724.410

See Appendix 7-3

R645-301-724.411

See Appendix 7-3

R645-301-724.412

See Appendix 7-3

R645-301-724.413

See Appendix 7-3

R645-301-724.420 Additional Data

To be provided at the request of the Division.

R645-301-724.500 Supplemental Information

The PHC determination does not indicate that adverse impacts will occur

to the hydrologic balance on or off the permit area, or that acid-forming or toxic-forming material is present that may result in the contamination of ground-water or surface-water supplies (See Section R645-301-728.

R645-301-724.600 Survey of Renewable Resource Lands

N/A There will be no mining here; therefore, no subsidence or impacts to renewable resources from subsidence will occur.

R645-301-725 Baseline Cumulative Impact Area Information

R645-301-725.100 Hydrologic & Geologic Information

The hydrologic information provided in this Chapter and the geologic information provided in Chapter 6 are assumed adequate to assess the probable cumulative hydrologic impacts of the operation on surface and ground water systems. This is an on-going and permitted operation, and this information has been previously provided as required.

R645-301-725.200 Information not Available

N/A Relevant information is available, and has been provided.

R645-301-725.300

N/A

R645-301-726 Modeling

N/A No modeling is planned for this site.

R645-301-727 Alternative Water Source Information

N/A This is not a surface coal mine.

R645-301-728 Probable Hydrologic Consequences (PHC) Determination

R645-301-728.100 PHC Determination

Surface Water

Runoff- and sediment-control facilities have been designed for the

Banning Loadout in accordance with applicable Division regulations. These facilities were designed to safely convey and control runoff from the appropriate design storm events.

The ephemeral nature of streamflow in the vicinity of the Banning Loadout and the naturally high salinity of the Mancos Shale on which the site is situated suggests that local streamflow has the potential of containing high suspended sediment and total dissolved solids concentrations. As a result, background surface-water quality is considered poor and beneficial use of the water is non-existent. With the existence of poor background water quality, lack of beneficial use, and the proposed runoff- and sediment-control facilities, surface-water impacts to adjacent areas will be minimized.

Groundwater

The primary potential for impacts to groundwater from the Banning Loadout will be from leaching of the coal. Metals which leach from the coal are normally most mobile in acidic environments. The alkaline nature of the soil at the site will preclude significant migration of metals to groundwater.

The potential also exists for leaching of some hydrocarbons from the coal. Although the magnitude of this potential cannot be quantified, natural biologic degradation of the hydrocarbons should minimize potential impacts.

Data presented in Section R645-301-721 indicate that groundwater in the vicinity of the loadout is naturally saline. In addition, the formation that underlies the site is negligibly transmissive. Thus, development of the uppermost saturated zone beneath the site has not occurred. This will further limit potential impacts to groundwater from the loadout area.

R645-301-728.200 Basis for Determination

The PHC determination is based on soils, geologic and hydrologic data provided in Chapters 2, 6, and 7 respectively.

R645-301-728.300 PHC Findings

The PHC Determination provided in Section R645-301-728.100 provides the following findings:

R645-301-728.310

No adverse impacts will occur to the hydrologic balance;

R645-301-728.320

No acid-forming or toxic-forming materials are present which could result in the contamination of surface or ground water supplies;

R645-301-728.330 Possible impacts of the operation on:

R645-301-728.331 Sediment yield;

R645-301-728.332 Water quality;

R645-301-728.333 Flooding or stream flow alteration;

R645-301-728.334 Ground water and surface water availability;

R645-301-728.335 N/A

R645-301-728.340 N/A

R645301-728.400 Division Review

The requirement for a new or updated PHC determination is to be determined by the Division.

R645-301-729 Cumulative Hydrologic Impact Assessment (CHIA)

R645-301-729.100

Provided by the Division.

R645-201-729.200

To be reviewed by the Division.

R645-301-730 Operation Plan

R645-301-731 General Requirements

Runoff from the permit area at Banning Loadout will be controlled through the use of berms, embankments, channels, straw bale dikes, silt fence dams and a sedimentation pond. The area that contains the loadout facilities will be enclosed by berms, embankments and channels that direct the runoff around the site into the sedimentation pond (Exhibit 7-1). ~~A small portion of the site located in the extreme southeast corner will pass runoff through a straw bale dike or silt fence.~~ Runoff from the haulage road will be directed toward the closest natural drainage point.

R645-302-731.100 Hydrologic-Balance Protection

R645-301-731.110 Ground-Water Protection

The primary potential for effects to groundwater from the Banning Loadout facility will come from potential leaching of constituents from the coal to the groundwater. To determine the potential for this to occur, a grab sample of coal was collected from the mine and submitted for analysis. To determine the potential for this to occur, this sample was collected from the mine and submitted for analysis for the following parameters: acid-base potential; total non-sulfate sulfur; total organic sulfur; percent calcium carbonate; pH, sodium absorption ratio; nitrate-nitrogen; electrical conductivity; and water extractable boron, selenium, copper, molybdenum, arsenic, barium, cadmium, lead, mercury, and zinc. The analysis will follow the "Standard Methods of Analysis", American Society of Agronomy, Mono. No. 9, 1982, except for the acid-base potential. The acid-base potential will be calculated according to the U.S. EPA document 600/2-78-054, Method 3.2. The Applicant reserves the right to exclude

any of the water extractable items if testing shows that they are not presenting potentially harmful amounts.

Coal samples will be collected and tested quarterly for one year, 1989, and annually from the mine after 1989 or when the general location of mining operations drastically change the coal quality.

On an annual basis, all coal-quality monitoring data collected from the site during the previous year will be summarized and submitted to the Division. Raw data received from the laboratories will also be included, along with an interpretation of the analytical results and any proposals for changes in the monitoring plan. These data and interpretations will be included with the annual report that presents the surface-water data.

R645-301-731.111

See previous Section R645-301-731.110.

R645-301-731.112

N/A

R645-301-731.120 Surface Water Protection

During discharge of water from the dewatering device and (where possible) from the spillway of the sedimentation pond, at least one sample will be collected from the discharge point. Samples thus collected will be submitted to an independent laboratory for analyses for parameters required by the UPDES permit. ~~of total suspended solids, settleable solids, total dissolved solids, oil and grease, total iron, total manganese, and pH.~~ Analytical results will be submitted to the Regulatory Authority in accordance with the UPDES permit (See Appendix 7-4).

Due to the ephemeral nature of the area in which the Banning Loadout is situated (with its resulting low flow and high natural variability), monitoring of surface-water in natural stream channels in the area is

infeasible. Hence, routine surface-water monitoring at the site will be in accordance with the UPDES permit for the sedimentation pond. Data thus collected will be submitted to the Regulatory Authority in accordance with the UPDES permit (Appendix 7-4).

~~On an annual basis, all~~ Surface-water monitoring data collected from the site ~~during the previous year~~ will be summarized and submitted to the Regulatory Authority. Raw data received from the laboratories will also be included, along with an interpretation of the analytical results per Attachment A, Special Conditions permit C/007/034. ~~and any proposals for changes in the monitoring plan~~.

R645-301-731.121

See previous Section R645-301-731.120

R645-301-731.122

See Section R645-301-731.120.

R645-301-731.200 Water Monitoring

R645-301-731.210 Ground Water Monitoring

A sample of the groundwater in the underlying aquifer was collected and analyzed for the complete groundwater parameter list. A copy of the results is located in Appendix 7-1. The sample was collected in the sump adjacent to the truck dump that was mistakenly called a water well. The applicant will continue to sample the sump on an annual basis and submit these results to the Regulatory Authority. The sampling will be done during the late fall. The operational analyses will be as follows:

FIELD MEASUREMENTS

Ph	pH units
Specific Conductivity	us/cm@25°
Temperature	°C

R645-301-731.211 through R645-301-731.215

N/A

R645-301-731.220 Surface Water Monitoring

As indicated in Section R645-301-731.120, the only surface water monitoring proposed is the collection of UPDES Discharge samples from the sedimentation pond. No other surface water monitoring is proposed. See Appendix 7-2, 7-4 and 7-5.

R645-301-731.221

See previous Section R645-301-731.220.

R645-301-731.222 Monitoring Plan

During discharge of water from the dewatering device and (where possible) from the spillway of the sedimentation pond, at least one sample will be collected from the discharge point. Samples thus collected will be submitted to an independent laboratory for analyses for parameters required by the UPDES permit. ~~of total suspended solids, settleable solids, total dissolved solids, oil and grease, total iron, total manganese, and pH.~~ Analytical results will be submitted to the Regulatory Authority in accordance with the UPDES permit.

Due to the ephemeral nature of the area in which the Banning Loadout is situated (with its resulting low flow and high natural variability), monitoring of surface-water in natural stream channels in the area is infeasible. Hence, routine surface-water monitoring at the site will be in accordance with the UPDES permit for the sedimentation pond. Data thus collected will be submitted to the Regulatory Authority in accordance with the UPDES permit (See Appendix 7-4).

R645-301-731.222.1

See previous Section R645-301-731.222.

R645-301-731.222.2

See Section R645-301-731-222.

R645-301-731.223 Submittal of Data

Surface water monitoring data will be submitted on a quarterly basis. When analyses indicate non-compliance with permit conditions, the operator will promptly notify the Division and immediately take remedial actions.

R645-301-731.224 Duration of Monitoring

Surface water monitoring will continue through the operations period and through the reclamation period until requirements for Phase II Bond Release are met.

R645-301-731.224.1

N/A

R645-301-731.224.2

N/A

R645-301-731.225 Monitoring Devices

All equipment, structures and other devices used in conjunction with water monitoring will be properly installed, maintained and operated, and will be removed when no longer required.

R645-301-731.300 Acid-Forming and Toxic-Forming Materials

R645-301-731.310 Drainage

There are no known acid or toxic forming materials on this site; however, should such materials be identified, drainage from the material will be protected by:

R645-301-731.311

Burial of the materials beneath a minimum of 4' of non-acid, non-toxic materials (See Section R645-301-528.350);

R645-301-731.312

Storing materials in a bermed area until such time as they can be buried.

R645-301-731.320 Storage, Burial or Treatment

Storage, burial or treatment of acid or toxic forming materials will be in accordance with the Material Handling Plan in Section R645-301-521 and Section R645-301-528.350 on Chapter 5.

R645-301-731.400 Transfer of Wells

N/A There are no wells or exploratory holes on this site.

R645-301-731.500 Discharges

The only planned discharges from this property will be in the form of water and potentially, coal processing waste.

R645-301-731.510 Discharges into an Underground Mine

N/A There are no mines at this location.

R645-301-731.511 through R645-301-731.511.4

N/A There are no mines at this location.

R645-301-731.512 Discharges

The only proposed discharges from this site are:

R645-301-731.512.1 Water;

R645-301-731.512.2 Coal Processing Waste.

R645-301-731.512.3 through R645-301-731.512.7

N/A

R645-301-731.513 Water From Underground Workings

N/A There are no underground workings at this site.

R645-301-731.520 Gravity Discharges

N/A There are no gravity discharges from underground coal mining at this site.

R645-301-731.521

N/A

R645-301-731.522

N/A

R645-301-731.600 Stream Buffer Zones

N/A There are no perennial or intermittent streams associated with this site. All drainage is considered ephemeral.

R645-301-731.611 through R645-301-731.620

N/A

R645-301-731.700 Cross Sections and Maps

The following maps are provided in this application (All maps are prepared and certified according to R645-301-512):

R645-301-731.710 Water Intakes and Discharges

Exhibit 7-1;

R645-301-731.720 Hydrologic Facilities

Exhibit 7-1;

R645-301-731.730 Water Monitoring

Exhibit 7-1;

R645-301-731.740 Sediment Pond - Location

Exhibit 7-1;

R645-301-731.750 Sediment Pond - Details

Exhibits 7-2 and 7-3.

R645-301-731.760 Other Maps Required by Division

N/A

R645-301-731.800 Water Rights and Replacement

N/A This is not a surface mining operation.

R645-301-732Sediment Control Measures

The following sections will describe sediment control measures used at this site:

R465-301-732.100 Siltation Structures

There is one sediment pond on the site. Sediment pond design and other run off control criteria are provided in Appendices 7-6,7-7and 7-9.

R645-301-732.200 Sedimentation Ponds

As noted in Exhibit 7-1, a sedimentation pond has been constructed at the loadout site. 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 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.

The dewatering device for the sedimentation pond consists 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 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 down-turned 90° elbow has been installed at the inlet end 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 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 has been installed to provide a bypass for water during events larger than those for which the pond was designed.

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 was constructed in 6-inch lifts and compacted by repeated passes of grader/loader equipment. Compaction continued until the density of the material was at least 90 percent of maximum Proctor density. With a 6-foot maximum embankment height, the embankment 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 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 were installed.

All construction on the pond 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) 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) were followed where appropriate during reclamation of the areas disturbed by pond construction.

Sediment Pond calculations are provided in Appendix 7-6

R645-301-732.210

The sediment pond will not be removed according to the reclamation schedule shown in Table 5.2 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 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.

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. The substation and pad area were removed from the disturbed and permitted area in 2004, when the substation was sold to East Carbonics Inc. The land on which the substation sits was also sold to East Carbonics.

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 sedimentation pond have sufficient capacity to safely pass the peak flow resulting from the 25 year, 24-hour precipitation event (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

The sediment pond is the only impoundment on the site.

R645-301-733.100 General Plan

Plans for the 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 structure 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

The sediment pond will not be removed and reclaimed during final reclamation.

R645-301-733.210

The sediment pond was designed to comply with applicable regulations and does not meet the size or other criteria of 30 CFR 77-216.

R645-301-733.220 Permanent

The sedimentation pond will not be removed during final reclamation.

R645-301-733.221

N/A

R645-301-733.222

N/A

R645-301-733.223

N/A

R645-301-733.224

N/A

R645-301-733.225

N/A

R645-301-733.226

N/A

R645-301-733.230 Temporary Impoundments

The sediment pond is not considered temporary.

R645-301-733.240 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.

R645-301-737 Noncoal Mine Waste

Noncoal mine waste will be stored and disposed of as described in Section R645-301-521 and in compliance with R-645-301-747.

R645-301-738 Temporary Casing and Sealing of Wells

N/A There are no wells at this operation.

R645-301-740 Design Criteria and Plans

R645-301-741 General Requirements

The following sections will outline site-specific plans for the control of drainage from disturbed and undisturbed areas.

R645-301-742 Sediment Control Measures

R645-301-742.100 General Requirements

Alternate Sediment Control Areas (ASCA)

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~~ west of the substation. The area contains 0.43~~08~~ acres. ~~The runoff is treated by a silt fence.~~ Vegetative filters are used to reduce overland flow velocities, reduce runoff volumes and trap sediment.

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 silt fences. See Appendix 7-9 for runoff calculations.

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 silt fences. 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 silt fence. 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 silt fence. 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 sections,

appropriate sediment control measures will be designed, constructed and maintained using the best technology currently available to:

R645-301-742.111

Prevent, to the extent possible, additional contributions of sediment to streamflow or to runoff outside the permit area:

R645-301-742.112

Meet the effluent limitations under R645-301-751 (See Section R645-301-751);

R645-301-742.113

Minimize erosion to the extent possible.

R645-301-742.120 Sediment Control Practices

The following sediment control methods are used on this site:

R645-301-121

Retaining sediment within disturbed areas; This is accomplished by directing all disturbed area drainage to silt fences or straw bales or to the sediment pond.

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 structure on site is the sediment pond.

R645-301-742.210 General Requirements

Siltation structures are designed, constructed and maintained to meet the following requirements:

R645-301-742.211

Prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids and sediment to streamflow or runoff outside the permit area;

R645-301-742.212

The design drawings are certified.

R645-301-742.213

N/A The siltation structures are not designed to impound water;

R645-301-742.214

N/A There is no water from underground workings.

R645-301-742.220 Sedimentation Ponds

The sedimentation pond details are described in Sections R645-301-732.200, and R645-301-733. Design details are provided in Appendix 7-6 and on Exhibits 7-2 and 7-3.

R645-301-742.221 Additional Criteria

In addition to the above, the sediment pond will meet the following criteria:

R645-301-742.221.1

Be used individually;

R645-301-742.221.2

Is located within the disturbed area and not near any perennial stream;

R645-301-742.221.3

Is designed, constructed and maintained to:

R645-301-742.221.31

Provide adequate sediment storage volume (See Appendix 7-6);

R645-301-742.221.32

Provide adequate detention time to allow the effluent from the pond to meet Utah and federal effluent limitations (See Appendix 7-6);

R645-301-742.221.33

Contain the 10 year, 24-hour precipitation event (See Appendix 7-6);

R645-301-742.221.34

Provide a non-clogging dewatering device (See Appendix 7-6 and Exhibit 7-3);

R645-301-742.221.35

Minimize, to the extent possible, short circuiting (See Exhibits 7-1,7-2, and 7-3);

R645-301-742.221.36

Provide periodic sediment removal sufficient to maintain adequate volume for the design event (See Section R645-301-732.200);

R645-301-742.221.37

Ensure against excessive settlement (See Section R645-301-732.200);

R645-301-742.221.38

Be free of sod, large roots, frozen soil, and acid or toxic forming coal processing waste (See Section R645-301-732.100);

R645-301-742.221.39

Be compacted properly (See Section R645-301-732.200).

R645-301-742.222 Ponds Meeting MSHA 30 CFR 77.216(a)

N/A This pond does not meet the size or other qualifying criteria of MSHA 30 CFR 77.216 (a).

R645-301-742.223 Ponds not Meeting MSHA 30 CFR 77.216 (a).

The pond is equipped with a combination principal and emergency spillway that will safely discharge a 25-year, 6-hour precipitation event (See Appendix 7-6 and Exhibits 7-1, 7-2 and 7-3);

R645-301-742.223.1

N/A

R645-301-742.223.2

N/A

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

Other ~~the~~ treatment facilities ~~are~~ will be designed to treat the 10 year 24 hour precipitation event. ~~from the 0.38 acre drainage~~

R645-301-742.232

N/A See following section.

R645-301-742.240 Exemptions

SAE Area 1. 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. 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. It covers 0.36 acres, see Appendix 7-9 for runoff calculations. SAE Area 1 was removed from Exhibit 7-1 because of a post-mining land use change approved by the Division in 2006, which excluded the substation area where the SAE was located from the permit area and as directed under Task ID #2619.

R645-301-742.300 Diversions

Diversion details are described in Section R645-301-732.300 and shown on Exhibit 7-1 and Figure 7-3.

R645-301-742.310 General Requirements

R645-301-742.311

N/A There are no abandoned or reclaimed areas or underground mines at this site.

645-301-742.312 Design, Location, Construction, Maintenance, Use

A 24-inch culvert was installed at the point where the substation access road crosses the existing drainage ditch. Referring to the nomograph (Exhibit 1.1, Appendix 7-9) it is shown that a 24-inch culvert with a 1.2 feet headwater is capable of handling 16 cubic feet per second (CFS) of flow. However, it should be noted that the culvert only carries a portion of the surface flow reporting to the sediment pond. The sizing of the culvert is well in excess of the required design constraints of a 10-year, 24-hour storm. As discussed in Appendix 7-6 the sediment pond design for a 25-year 24- hour storm is 16 CFS. See Appendix 5-3 for additional culvert design information.

As shown on Exhibit 7-1, Figure 7-3 and described in Section R645-301-732.300, all diversions and appurtenant structures are designed, located, constructed, maintained and used to meet the following requirements:

R645-301-742.312.1

Be stable;

R645-301-742.312.2

Provide protection against flooding and resultant damage to life and property;

R645-301-742.312.3

Prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow outside the permit area;

R645-301-742.312.4

Comply with all applicable local, Utah and federal laws and regulations.

R645-301-742.313 Removal

As indicated in the reclamation plan, all diversions are temporary and will be removed when no longer needed or upon final reclamation. The only structures planned to be left on a permanent basis will be a portion of the haul road with 3 existing culverts. This road and drainage control has been designed in accordance with provisions of the B.L.M. Right-of-Way, and will be left as part of the right-of-way agreement. All other diversions will be removed and the area restored.

R645-301-742.314

Other requirements may be specified by the Division.

R645-301-742.320 Diversion of Perennial and Intermittent Streams

N/A There are no perennial or intermittent streams on, or adjacent to, this site.

R645-301-742.321 through R645-301-742.324

N/A

R645-301-742.330 Diversion of Miscellaneous Flows

N/A There are no flows such as ground water or ephemeral streams diverted at this site. Culverts are installed to direct runoff collecting along the road to natural drainages below.

R645-301-742.331 through R645-301-742.333

N/A

R645-301-742.400 Road Drainage

The haulage road accessing the Banning Loadout from U.S. Highway 6 is a center-crowned road that sheds water to both sides.

Three ditch-relief culverts currently exist to convey runoff rom undisturbed areas beneath the haulage road to the natural drainage system. These culvert will be inspected routinely through the life of the loadout facility and repaired as needed. Roads and road drainage details are shown on Exhibit 7-1 and 7-1a. Road design is detailed in Chapter 5.

R645-301-742.410 All Roads

All roads on site are considered primary roads, and are designed, constructed and maintained to meet the following criteria:

R645-301-742.411

The design and construction of all roads is appropriate for the type and size of equipment used, and incorporate appropriate limits for surface drainage control, culvert placement, culvert size, and other design established by the Division (and B.L.M.). See Chapter 5 for road design details and appropriate maps.

R645-301-742.412

Refer to Section R645-301-742.411. The design and construction of all roads is appropriate for the type and size of equipment used, and incorporate appropriate limits for surface drainage control, culvert placement, culvert size, and other design established by the Division (and B.L.M.). See Chapter 5 for road design details and appropriate maps.

R645-301-742.413

Roads are located to minimize downstream sedimentation and flooding (See Exhibit 7-1).

R645-301-742.420 Primary Roads

As indicated, all roads on site are considered primary roads.

R645-301-742.421 Location

All roads are located on the most stable available surfaces.

R645-301-742.422 Stream Fords

N/A There are no stream fords here.

R645-301-742.423 Drainage Control

The primary roads are designed, constructed and maintained to have adequate drainage control using road ditches and culverts. The drainage control systems are capable of handling at least a 10 year - 6 hour precipitation event. The road is constructed to B.L.M. specifications.

R645-301-742.423.2

Culverts are constructed to avoid plugging or collapse and erosion at inlets and outlets per B.L.M. specifications.

R645-301-742.423.3

Drainage ditches are designed to prevent uncontrolled drainage over the road surface and embankments. The road and ditches are designed according to B.L.M. requirements on the Right-of-Way.

R645-301-742.423.4

N/A There is no alteration of natural stream channels.

R645-301-742.423.5

N/A There are no stream channel crossings.

R645-301-743 Impoundments

Impoundments are described under Section R645-301-733 and shown on

Exhibit 7-1. Sediment pond design and details are provided in Appendix 7-6 and on Exhibits 7-2 and 7-3.

R645-301-743.100 General Requirements

The following information is provided relevant to the sediment pond:

R645-301-743.110

N/A The pond does not meet the size or other criteria of MSHA 30 CFR 77.216(a).

R645-301-743.120

The pond is designed under the direction of, and certified by, a qualified, registered professional engineer (See Appendix 7-8). Adequate freeboard is provided as shown on Exhibits 7-2 and 7-3 and described in Appendix 7-6.

R645-301-743.130

The pond is equipped with a combination of principal and emergency spillways adequate to safely pass the design precipitation event.

R645-301-743.131 through R645-301-743.132

N/A

R645-301-743.140 Inspections

Impoundments are inspected as described in Section R645-301-514.300.

R645-301-743.200

N/A

R645-301-743.300 Design Event for Spillways

Spillways are designed to safely pass the runoff from a 25-year, 6-hour event (See Appendix 7-6).

R645-301-744 Discharge Structures

R645-301-744.100 Controls

The pond discharge is equipped with a riprap splash apron as shown on Exhibit 7-2 and detailed in Appendix 7-7.

R645-301-744.200 Design

The outlet structure and protection are designed according to standard engineering design procedures as shown in Appendices 7-6 and 7-7.

R645-301-745 Disposal of Excess Spoil

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

R645-301-745.100 through R645-301-745.400

N/A

R645-301-746 Coal Mine Waste

The only coal mine waste that will potentially be produced here is coal processing waste. There are no plans to dispose of this material on site.

R645-301-746.100 General Requirements

R645-301-746.110 Disposal

Disposal of coal processing waste is discussed in Section R645-301-513.300 in Chapter 5. There will be no disposal on this site.

R645-301-746.120

N.A There will be no disposal at this site.

R645-301-746.200 Refuse Piles

N/A There are no refuse piles here.

R645-301-746.210 through R645-301-746.222

N/A

R645-301-746.300 Impounding Structures

N/A There are no impounding structures constructed of or impounding coal mine waste.

R645-301-746.310 through R645-301-746.340

N/A

R645-301-746.400 Return of Coal Processing Waste to Abandoned Underground Workings

Methods of disposal for coal processing waste are discussed in Section R645-301-513.300 in Chapter 5. There will be no disposal at this site.

R645-301-746.410

See Section R645-301-513.300.

R645-301-746.420

See Section R645-301-513.300.

R645-301-746.430

See Section R645-301-513.300.

R645-301-747 Disposal of Noncoal Mine Waste

Disposal of noncoal mine waste is detailed under Section R645-301-521 of Chapter 5.

R645-301-747.100

Noncoal mine waste will be placed and stored in a controlled manner (i.e. dumpsters, bermed areas) on a temporary basis only until removal and final disposal in the Carbon County Landfill or other state-approved solid waste disposal area.

R645-301-747.200

Placement and storage of noncoal mine waste will be only temporary, and will be in a controlled manner to prevent contamination of surface or ground water from runoff. Dumpsters and/or bermed areas will be used to prevent runoff.

R645-301-747.300

N/A There are no plans to dispose of noncoal mine waste on site.

R645-301-748 Casing and Sealing of Wells

N/A There are no wells on this site.

R645-301-750 Performance Standards

All mining and reclamation operations will be conducted to minimize disturbance to the hydrologic balance within the permit and adjacent areas, to prevent material damage to the hydrologic balance outside the permit area and support postmining land uses in accordance with the terms and conditions of the approved permit and the performance standards of R645-301- and R645-302.

R645-301-751 Water Quality Standards and Effluent Limitations

Discharges of water will be made in compliance with all Utah and federal water quality laws and regulations and with effluent limitations for coal mining promulgated by the U.S.E.P.A. set forth in 40 CFR Part 434.

R645-301-752 Sediment Control Measures

Sediment control measures will be located, constructed, maintained and reclaimed as described in Sections R645-301-732, R645-301-742 and R645-301-760,

R645-301-752.100

Siltation Structures and Diversions will be located, maintained, constructed and reclaimed according to plans and designs given under R645-301-732, R645-301-742 and R645-301-763.

R645-301-752.200 Road Drainage

Roads will be located, designed, constructed, reconstructed, used, maintained and reclaimed according to R645-301-732.400 and R645-301-742.400 and R645-301-762 and to achieve the following:

R645-301-752.210

Control or prevent erosion, siltation and the air pollution attendant to erosion by vegetating or otherwise stabilizing all exposed surfaces in accordance with current, prudent engineering practices;

R645-301-752.220
Control or prevent additional contributions of suspended solids to stream flow or runoff outside the permit area;

R645-301-752.230
Neither cause nor contribute to, directly or indirectly, the violation of effluent standards given under R645-301-751;

R645-301-752.240
Minimize the diminution to or degradation of the quality or quantity of surface- and ground-water systems; and

R645-301-752.250
Refrain from significantly altering the normal flow of water in streambeds or drainage channels.

R645-301-753 Impoundments and Discharge Structure
Impoundments and discharge structures will be located, maintained, constructed and reclaimed to comply with R645-301-733, R645-301-734, R-645-301-743, R645-301-745 and R645-301-760.

R645-301-754 Disposal of Excess Spoil, Coal Mine Waste and Noncoal Mine Waste.
Disposal areas for excess spoil, coal mine waste and noncoal mine waste will be located, maintained, constructed and reclaimed to comply with R645-301-735, R645-301-736, R645-301-745, R645-301-746, R645-301-747, and R645-301-760.

R645-301-755 Casing and Sealing of Wells
N/A There are no wells at this site.

R645-301-760 Reclamation
Reclamation of the minesite is detailed in Section R645-301-540 of Chapter 5. Only those reclamation procedures pertinent to hydrology are repeated in this section.

R645-301-761 General Requirements

All drainage controls at Banning will remain intact until the final grading of the site of the postmining surface configuration. After this time, all controls will be removed except for the sedimentation pond and associated outflow structures (Exhibit 5-6). With the exception of the sedimentation pond, all associated outflow structures will be recontoured and revegetated after the quality of the drainage entering the pond meets applicable requirements. Also, once revegetation requirements are met, these drainage controls will be removed from the site.

The timetable for the removal of all drainage control structure is shown in Section R645-301-540. The sedimentation pond and silt-fence dam and/or straw bale dikes will be controls left on the site until standards are met by drainage at the site. No stream channel diversions will be incorporated in the reclamation plan. Monitoring of water at the site will continue until Phase II Bond Release is obtained.

The water sump will be plugged during the structure removal and site cleanup. There is no acid or toxic forming materials at the site, but if any are found or used during the operation they will be removed and properly disposed of by the Applicant, prior to reclamation of the property.

There are no perennial or intermittent streams within 100 feet of the permit area which contain a biological community.

R645-301-762 Roads

As indicated in Section R645-301-540, a portion of the haul road will be left in place per agreement with the B.L.M. for the Right-of-Way. This road is shown on Exhibit 5-6. All other roads will be removed and reclaimed.

R645-301-762.100

Natural drainage patterns will be restored on the reclaimed site.

R645-301-762.200

The area will be reclaimed to Approximate Original Contour.

R645-301-763 Siltation Structures

Siltation structures are temporary and will be removed when no longer required.

R645-301-763.100

Siltation structures will be maintained until removal is authorized by the Division and the disturbed area has been stabilized and revegetated.

R645-301-763.200

Upon removal, the land on which the structure was located will be regraded and revegetated according to the reclamation plan.

R645-301-764 Structure Removal

A Reclamation Timetable (Table 5-2) is provided in Chapter 5, which includes a schedule for structure removal.

R645-301-765 Permanent Casing and Sealing of Wells

N/A There are no wells at this site.

REFERENCES

Barfield, B.J., R.C. Warner, and C.T. Haan. 1981. Applied Hydrology and Sedimentology for Disturbed Areas. Oklahoma Technical Press. Stillwater, Oklahoma.

Hood, J.W. and D.J. Patterson. 1984. Bedrock Aquifers in the Northern San Rafael Swell Area, Utah, With Special Emphasis on the Navajo Sandstone. Technical Publication No. 78. Utah Department of Natural Resources. Salt Lake City, Utah.

Jobin, D.A. 1962. Relation of the Transmissive Character of the Sedimentary Rocks of the Colorado Plateau to the Distribution of Uranium Deposits. U.S. Geological Survey Bulletin 1124. Washington, D.C.

Mundorff, J.C. 1972. Reconnaissance of Chemical Quality of Surface Water and Fluvial Sediment in the Price River Basin, Utah. Technical Publication No. 39. Utah Department of Natural Resources. Salt Lake City, Utah.

U.S. Environmental Protection Agency. 1976. Erosion and Sediment Control Surface Mining in the Eastern U.S. Publication No. EPA 625/3-76-006. Cincinnati, Ohio.

U.S. Environmental Protection Agency. 1986. Test Methods for Evaluating Solid Waste - Volume 1C: Laboratory Manual, Physical and Chemical Methods. Publication No. SW-846, Third Edition. Washington, D.C.

Waddell, K.M., P.K. Contratto, C.T. Sumsion, and J.R. Butler. 1981. Hydrologic Reconnaissance of the Wasatch Plateau-Book Cliffs Coal-Fields Area, Utah. U.S. Geological Survey Water-Supply Paper 2068. Washington, D.C.

CHAPTER 7

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APPENDIX 7-4

Utah!
Where ideas connect
Department of Environmental Quality
Division of Water Quality
288 North 1460 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870
(801) 538-6146
(801) 538-6016 Fax
(801) 536-4414 T.D.D.
www.deq.utah.gov

Michael O. Leavitt
Governor
Dianne R. Nielson, Ph.D.
Executive Director
Don A. Ostler, P.E.
Director

Water Quality Board
K.C. Shaw, P.E.
Chairman
William R. Williams
Vice-Chairman
Robert G. Adams
Nan Bunker
Ray M. Child, C.P.A.
Neil K. Kochenour, M.D.
Dianne R. Nielson, Ph.D.
Ronald Sims, Ph.D.
Douglas E. Thompson, Mayor
J. Ann Wechsler
Don A. Ostler, P.E.
Executive Secretary

April 24, 2003

RECEIVED
MAY - 6 2003
CLEAR CREEK MINE PROJECT

CERTIFIED MAIL
(Return Receipt Requested)

Mr. Gary Taylor, Senior Environmental Engineer
Canyon Fuel Company, LLC
Banning Loadout Facility
P.O. Box 1029
Wellington, UT 84542

Dear Mr. Taylor:

Subject: UPDES General Coal Mining Permit No. UTG040011, Canyon Fuel Company, LLC - Banning Loadout Facility

Enclosed is your copy of the signed general permit. Coverage becomes effective on May 1, 2003 and all the requirements and conditions of the permit are in effect at that time. Preprinted discharge Monitoring Report forms (EPA Form 3320-1), for self-monitoring and reporting requirements as specified in the permit, will be sent to you as soon as possible.

As the agency charged with the administration of issuing UPDES Permits, we are continuously looking for ways to improve our quality of service to you. In an effort to improve the State UPDES permitting process we are asking for your input. Since our customer permittee base is limited, your input is important. Please take a few moments to complete the enclosed questionnaire. The results will be used to improve our quality and responsiveness to our permittees and give us feed back on customer satisfaction. We will address the issues you have identified on an ongoing basis.

A fee schedule was included in the Utah Department of Environmental Quality budget appropriation request at the direction of the Legislature and in accordance with Utah code annotated 19-1-201. The fee schedule, as approved by the Legislature, includes a charge for the issuance of a UPDES permit. Please remit $1,800.00 within 30 days of receipt of this letter to:

Department of Environmental quality
Division of Water Quality
ATTN: Stacy Carroll
P.O. Box 144870
Salt Lake City, Utah 84114-4870

If you have any questions, please contact Chris Imbrogno at (801) 538-6628.

Sincerely,

Gayle Smith, P.E., Manager
Permits and Compliance Section

GJS:CI:mc

Enclosure

cc: Division of Oil, Gas & Mining (w/encl)
Claron D. Bjork, Southeastern Utah District Health Dept. (w/encl)
Dave Ariotti, District Engineer (w/encl)
Stacy Carroll, DWQ Accounts (wo/encl)

U:\WQ\PERMITS\Cimbrogno\wp\Facility\2003GenCoalPerMrgLtr.doc

STATE OF UTAH
DIVISION OF WATER QUALITY
DEPARTMENT OF ENVIRONMENTAL QUALITY
SALT LAKE CITY, UTAH

AUTHORIZATION TO DISCHARGE UNDER THE

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM
(UPDES)

GENERAL PERMIT FOR COAL MINING

In compliance with provisions of the Utah *Water Quality Act, Title 19, Chapter 5, Utah Code Annotated ("UCA") 1953, as amended* (the *"Act"*),

Canyon Fuel Company, LLC – Banning Loadout Facility

as identified in the application No. UTG040011 is authorized to discharge from all outfall(s) to receiving waters named:

Grassy Trail Creek

in accordance with discharge point(s), effluent limitations, monitoring requirements and other conditions as set forth herein.

This permit shall become effective on May 1, 2003.

This permit and the authorization to discharge shall expire at midnight, April 30, 2008.

Signed this 28th day of April, 2003.

Don A. Ostler
Executive Secretary
Utah Water Quality Board

C. Description of Discharge Point(s).

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a UPDES permit is a violation of the *Act* and may be subject to penalties under the *Act*. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge may be subject to criminal penalties as provided under the *Act*.

Outfall Number	Location of Discharge Point(s)
001	Groundwater discharge to unnamed ditch to Grassy Trail Creek. Latitude 39°31'00", Longitude 110°34'00".
002	Sediment Pond discharge to unnamed ditch to Grassy Trail Creek. Latitude 39°31'00", Longitude 110°34'00".

D. Narrative Standard.

It shall be unlawful, and a violation of this permit, for the permittee to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum or other nuisances such as color, odor or taste, or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by bioassay or other tests performed in accordance with standard procedures.

E. Specific Limitations and Self-monitoring Requirements.

1. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall(s) 001, 002. Such discharges shall be limited and monitored by the permittee as specified below:

	Discharge Limitations a/			Monitoring Requirements	
Effluent Characteristics	Average 30-Day	Average 7-Day	Daily Maximum	Measurement Frequency	Sample Type
Flow, MGD	N/A	N/A	NA	Monthly	Measured b/
Oil & Grease, mg/L	N/A	N/A	10c/	Monthly	Grab
Total Iron, mg/L	N/A	N/A	1.0	Monthly	Grab e/
Total Suspended Solids, mg/L	25	35	70	Monthly	Grab e/
Total Dissolved Solids, mg/L	500 d/	N/A	NA	Monthly	Grab e/

The pH shall not be less than 6.5 standard units nor greater than 9.0 standard units in any sample and shall be monitored monthly by a grab sample.

There shall be no visible sheen or floating solids or visible foam in other than trace amounts.

There shall be no discharge of sanitary wastes or process water from coal preparation plants.

APPENDIX 7-9

APPENDIX 7-9

HYDROLOGIC CALCULATIONS

CIVIL SOFTWARE DESIGN

SEDCAD+ Version 3

ASCA 1 BANNING

by

Name: Gary E. Taylor

Company Name: UTAH FUEL COMPANY
File Name: D:\SEDCAD3\ASCA1

Date: 09-09-1994

Civil Software Design -- SEDCAD+ Version 3.1
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Company Name: UTAH FUEL COMPANY
Filename: D:\SEDCAD3\ASCA1 User: Gary E. Taylor
Date: 09-09-1994 Time: 14:47:17
ASCA 1 Banning
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	0.43	63	S	0.053	0.000	0.000	0.0	0.00	0.00
	Type: Null Label: ASCA 1								
111 Structure	0.43							0.00	
111 Total IN/OUT	0.43							0.00	0.00

APPENDIX 7-9

CIVIL SOFTWARE DESIGN

SEDCAD+ Version 3

SAE NO. 1 BANNING LOADOUT

LICENSED PROFESSIONAL ENGINEER
No. 162604
BARRY J. BARNUM
STATE OF UTAH

by

Name: Gary E. Taylor

Company Name: UTAH FUEL COMPANY
File Name: D:\SEDCAD3\SAE1

Date: 03-27-1995

Requested TO BE REMOVED
FROM TEXT + DRAWING
Exhibit 7-1 BY STEVE FLUKE
TASK ID # 2619, JANUARY 31, 2007

INCORPORATED
EFFECTIVE:
AUG 07 1995
UTAH DIVISION OIL, GAS AND MINING

Civil Software Design -- SEDCAD+ Version 3.1
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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

INCORPORATED
EFFECTIVE:
AUG 07 1995
UTAH DIVISION OIL, GAS AND MINING

Civil Software Design -- SEDCAD+ Version 3.1
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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 #	SED (tons)	SCp (mg/l)	SSp (ml/l)	24VW (ml/l)	24AA (ml/l)
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

INCORPORATED
EFFECTIVE:
AUG 07 1995
UTAH DIVISION OIL, GAS AND MINING

CIVIL SOFTWARE DESIGN

SEDCAD+ Version 3

ASCA NO.2 BANNING LOADOUT

LICENSED PROFESSIONAL ENGINEER
No. 162604
BARRY W. BARNUM
STATE OF UTAH

by

Name: Gary E. Taylor

Company Name: UTAH FUEL COMPANY
File Name: D:\SEDCAD3\ASCA2

Date: 03-27-1995

INCORPORATED
EFFECTIVE:
AUG 07 1995
UTAH DIVISION OIL, GAS AND MINING

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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

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UTAH DIVISION OIL, GAS AND MINING

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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	Tt (hrs)	PS #	SED (tons)	SCp (mg/l)	SSp (ml/l)	24VW (ml/l)	24AA (ml/l)
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

INCORPORATED
EFFECTIVE:
AUG 07 1995
UTAH DIVISION OIL, GAS AND MINING

CIVIL SOFTWARE DESIGN

SEDCAD+ Version 3

ASCA NO. 3 BANNING LOADOUT

LICENSED PROFESSIONAL ENGINEER
No. 162604
GARRY W. BARNUM
STATE OF UTAH

by

Name: Gary E. Taylor

Company Name: UTAH FUEL COMPANY
File Name: D:\SEDCAD3\ASCA3

Date: 03-27-1995

INCORPORATED
EFFECTIVE:
AUG 07 1995
UTAH DIVISION OIL, GAS AND MINING

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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

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EFFECTIVE:
AUG 07 1995
UTAH DIVISION OIL, GAS AND MINING

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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

INCORPORATED
EFFECTIVE:
AUG 07 1995
UTAH DIVISION OIL, GAS AND MINING

CIVIL SOFTWARE DESIGN

SEDCAD+ Version 3

ASCA NO. 4 BANNING LOADOUT

LICENSED PROFESSIONAL ENGINEER
No. 162604
BARRY J. BARNUM
STATE OF UTAH

by

Name: Gary E. Taylor

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

Date: 03-27-1995

INCORPORATED
EFFECTIVE:
AUG 07 1995
UTAH DIVISION OIL, GAS AND MINING

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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

INCORPORATED
EFFECTIVE:
AUG 07 1995
UTAH DIVISION OIL, GAS AND MINING

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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

	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	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

INCORPORATED
EFFECTIVE:
AUG 07 1995
UTAH DIVISION OIL, GAS AND MINING

CIVIL SOFTWARE DESIGN

SEDCAD+ Version 3

ASCA NO. 5 BANNING LOADOUT

LICENSED PROFESSIONAL ENGINEER
No. 162604
BARRY J. BARNUM
STATE OF UTAH

by

Name: Gary E. Taylor

Company Name: UTAH FUEL COMPANY
File Name: D:\SEDCAD3\ASCA5

Date: 03-27-1995

INCORPORATED
EFFECTIVE:
AUG 07 1995
UTAH DIVISION OIL, GAS AND MINING

Civil Software Design -- SEDCAD+ Version 3.1

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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

INCORPORATED
EFFECTIVE:
AUG 07 1995
UTAH DIVISION OIL, GAS AND MINING

Civil Software Design -- SEDCAD+ Version 3.1
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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

INCORPORATED
EFFECTIVE:
AUG 07 1995
UTAH DIVISION OIL, GAS AND MINING

SC3 SOLDIER CREEK COAL CO.
Telephone (801) 637-6360
P.O. Box I
Price, Utah 84501

March 15, 1990

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

Re: Substation Construction, As-built Details
Soldier Creek Coal Company
Banning Loadout, ACT/007/034

Dear Mr. Haddock:

I have enclosed Drawing D224 which describes the as-built details of the new substation facility at Banning Loadout. This facility was constructed in accordance to the Soldier Creek Coal Company (SCCC) plans dated September 20, 1989 and October 13, 1989.

In order to direct drainage from the substation into the sediment pond, construction of an elevated pad was required. Material for the pad construction was salvaged from an area immediately south of sediment pond, where excess material from the pond construction had been stockpiled. Unfortunately, to facilitate drainage, the pad was constructed to such a height that the out-slope (2H:1V) extended beyond the previously approved permit boundary. Therefore, SCCC is requesting an incidental boundary change (IBC) as detailed on the enclosed drawing. Please note that SCCC is the surface owner of all property requested within the IBC.

In addition to the IBC, a small area drainage exemption for the area outside the immediate substation is requested. This area basically lies between the limits of disturbance and the existing drainage ditch as detailed on the enclosed drawing (approx. 0.9 acres). Several alternative sediment control methods have been provided to prevent the contribution of sediment to runoff outside the permit area. A description of these methods which have been implemented is as follows:

1. Drainage from the actual substation facility flows into the sedimentation pond. The constructed slope of the facility, as well as a berm installed on three sides insures proper

JUL 20 1990

drainage. The complete site is also covered with two inch diameter gravel to further enhance sediment control.

2. The immediate outslope of the substation pad was constructed to have a maximum slope of 2H:1V. The surface has also been stabilized with a two inch diameter gravel covering.

3. All areas disturbed in conjunction with the substation construction (which were not covered with gravel), have been reseeded in accordance with the approved MRP. Straw mulch was also applied followed by traversing the surface with a cleated track dozer.

4. A retention basin was constructed south of the sedimentation pond. This basin collects drainage from approximately 0.38 acres and has a capacity of approximately 12,400 gallons.

   The expected runoff volume from a design storm can be determined using the SCS runoff curve number technique (consistent with the methodology described within the approved MRP). Using the 10-yr, 24-hr precipitation depth of 1.78 inches and a curve number of 81 (cultivated land with conservation treatment, hydrologic soil group D), the direct runoff was calculated to be 0.47 inches. This results in a total design runoff volume 4,850 gallons which is only 39% of the basin capacity.

5. Reseeded areas which do not drain to the retention basin are located on extremely flat topography. A defined drainage system cannot be observed and it appears that any excess precipitation will pond within or adjacent to the disturbed sites.

Following Division approval of the requested IBC and small area drainage exemption, thirteen copies of the appropriate information shall be submitted for direct incorporation into the approved MRP.

Please contact me if you have any questions concerning this matter.

Sincerely,

SOLDIER CREEK COAL COMPANY

Dave Spillman

David G. Spillman
Mine Engineer

Enclosure

DGS/sm

PROPOSED BANNING LOADOUT SUBSTATION

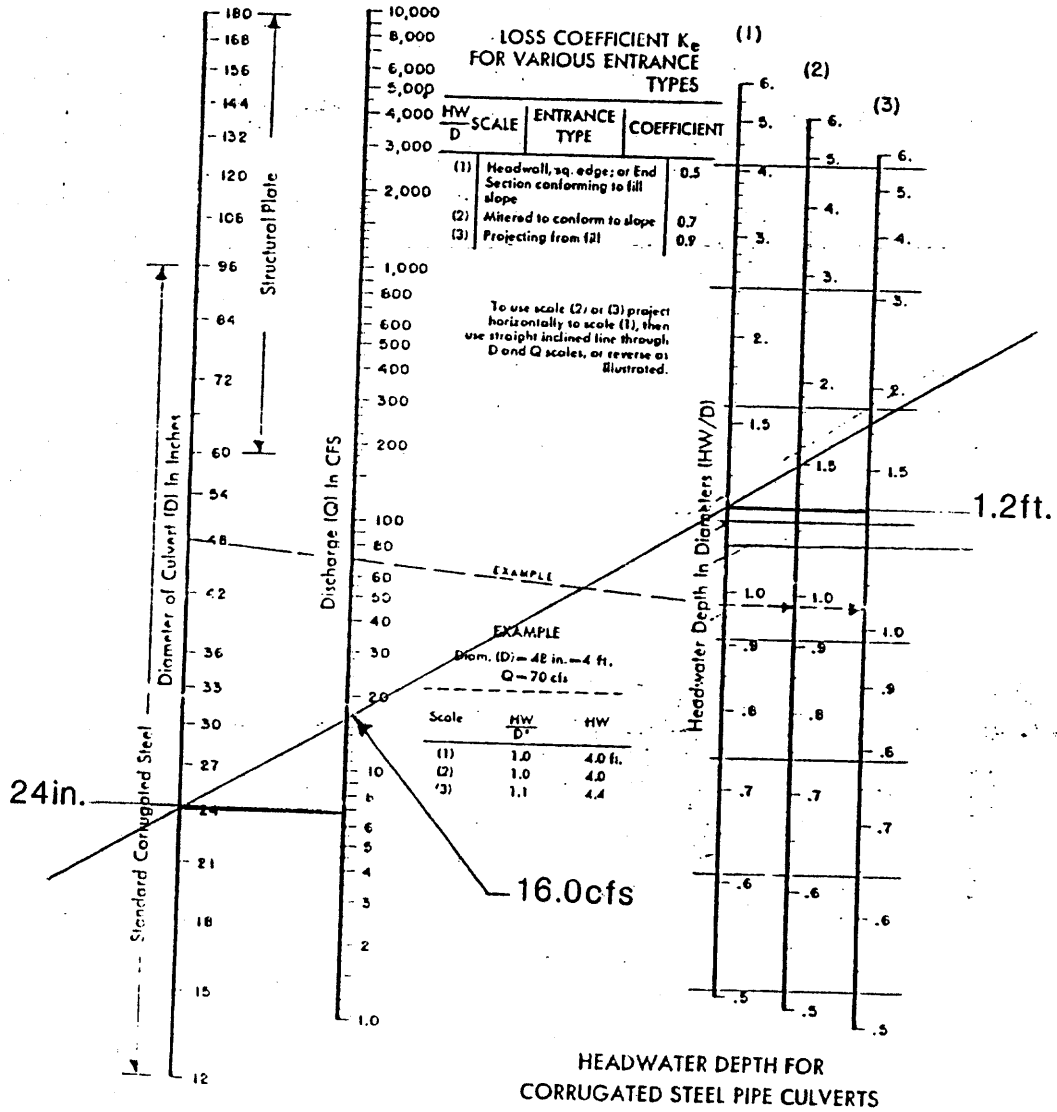
CONSTRUCTION, INCORPORATION, USE AND RECLAMATION

Construction of the proposed substation shall be done in the area shown on the revised Exhibit 5.2-1. The construction shall consist of building a graveled pad, installation of the 2000 K.V.A. Substation, installation of an adequate fence and gate system to enclose the substation area, and construction of a proper runoff and drainage system to prevent runoff from flowing into undisturbed areas. The runoff and drainage system will use the existing sediment pond for treatment of all runoff and drainage encountered from the substation area.

The proposed substation area shall be constructed in such a manner so that existing drainage systems can be used and will not be constrained or altered in any way. To ensure drainage from existing areas be confined to the sedimentation pond, a 24 inch culvert shall be installed at the point where the substation access road crosses the existing drainage ditch. Referring to the nomograph (Exhibit 1.1), it is shown that a 24 inch culvert with a 1.2 feet headwater is capable of handling 16 cubic feet per second (CFS) of flow (16 CFS is the sedimentation pond design for a 25 yr. 24 hr. storm. Refer to Appendix II for calculations.) From these figures, a 25 year, 24 hour storm design criteria is obtained. This is well in excess of the required design constraints of a 10 year, 24 hour storm.

The proposed substation installation shall be used to supply power for the existing Banning Loadout facilities. This new system will replace the diesel powered generators presently being used.

Reclamation of the substation area shall be in accordance to our approved Reclamation Plan. All work done to reclaim the substation area will be done to conform to all constraints of the existing permit.



HEADWATER DEPTH FOR CORRUGATED STEEL PIPE CULVERTS WITH INLET CONTROL

Fig. 4-18. *Inlet control* nomograph for corrugated steel *pipe* culverts. The manufacturers recommend keeping *HW/D* to a maximum of 1.5

Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Dianne R. Nielson, Ph.D.
Division Director

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

May 2, 1990

Mr. Rick Olsen, President
Soldier Creek Coal Company
P. O. Box I
Price, Utah 84501

Dear Mr. Olsen:

Re: Conditional Approval Amendment, Substation As-Built Designs, Soldier Creek Coal Company, Banning Siding Loadout, ACT/007/034-90A, Folder #3, Carbon County, Utah

The submittal received on March 16, 1990 regarding the above- noted permitting action was reviewed by Mike DeWeese of the Division's technical staff.

The submittal will be considered complete upon receipt of the information outlined in the attached memo. Please submit this information by June 1, 1990.

Thank you for your cooperation in resolving this matter.

Sincerely,

Daron R. Haddock

Daron R. Haddock
Permit Supervisor

djh
Attachment
cc: J. Helfrich, DOGM
BT45/13

an equal opportunity employer

JUL 20 1990

Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Dianne R. Nielson, Ph.D.
Division Director

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

March 29, 1990

TO: Daron Haddock, Permit Supervisor

FROM: Mike DeWeese, Reclamation Hydrologist MD

RE: Amendment, Substation As-Built Designs, Soldier Creek Coal Company, Banning Siding Loadout, ACT/007/034-90A, Folder #2, Carbon County, Utah

SUMMARY:

Soldier Creek Coal Company (SCCC) has completed construction of the substation at the Banning Loadout Facility. Construction of the substation pad required disturbance beyond the approved permit area. SCCC is requesting an Incidental Boundary Change and a small area exemption for the additional disturbance.

ANALYSIS:

The proposed boundary change encompasses 0.54 acres of additional area within the permit boundary, as illustrated by Exhibit 5.2-1. This area essentially forms a corridor around the southwest corner of the facility which incorporates all disturbance within the permit area.

The substation pad and outslope have been covered with gravel to provide effective sediment control. The remainder of the disturbed area has been reseeded and mulched with straw crimped into the surface. This portion of the disturbed area is located on flat terrain and possesses a low sediment yield potential.

All surface runoff from the substation pad will report to the sedimentation pond for treatment. Treatment for other disturbance is provide by a small catch basin located just south of the sedimentation pond. SCCC has demonstrated that this structure contains over twice the capacity necessary to contain the 10 year 24 hour design storm runoff.

RECOMMENDATIONS:

SCCC must include the entire area within the boundary labeled "limits of disturbance" as a small area exemption and clearly delineate it as such on Exhibit 5.2-1. The disturbed area boundary must be revised along the IBC to accurately identify the actual limits of surface disturbance associated with the substation construction. Upon receiving these necessary revisions, the Division recommends that this amendment be approved.

cc: B Team
BT6033/31-32

CHAPTER 8

BONDING

APPENDIX 8-1

Bonding Calculations

Direct Costs

Subtotal Demolition and Removal	$77,765.00	
Subtotal Backfilling and Grading	$51,338.00	
Subtotal Revegetation	$58,634.00	
Direct Costs	$187,737.00	
Indirect Costs		
Mob/Demob	$18,774.00	10.0%
Contingency	$9,387.00	5.0%
Engineering Redesign	$4,693.00	2.5%
Main Office Expense	$12,766.00	6.8%
Project Mainagement Fee	$4,693.00	2.5%
Subtotal Indirect Costs	$50,313.00	26.8%
Total Cost	$238,050.00	
Escalation factor		0.012
Number of years		5
Escalation	$14,630.00	
Reclamation Cost Escalated to 2011 dollars	$252,680.00	
Bond Amount (rounded to nearest $1,000)	$253,000.00	
Bond Posted 2003 dollars	$350,000.00	
Difference Between Cost Estimate and Bond	$97,000.00	
Percent Difference	38.34%	

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Conveyor Structure 01																			24618
	Multi Plate Arches 02																			16047
	Tanks Bins Etc 03																			3664
	Building 04																			1433
	Fence 05																			11895
	Concrete 06																			6752
	Asphalt 07																			13356
	Total																			77765

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Conveyor Structure 01																			
	Structure's Demolition Cost	Steel Bld. Large	02220 110 0012	0.26	/CF													60075	CF	15620
	Structure's Vol. Demolished																0.1	6008	CF	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight											489				LB/CF		1469	TON	
	Truck's Capacity											16				Ton				
	Haulage											1				HR				
	Transportation Cost Steel Truck	Truck dump 16 ton payload	01 54 33 20 5300	435.96	/day													11.5	day	5014
	Transportation Cost Steel Truck Drive	Truck Driver, Heavy	Trhv	$43.30	HR													92	HR	3984
	Disposal Cost Steel																			
	Subtotal																			24618
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			24618

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Multi Plate Arches 02																			
	Structure's Demolition Cost	Steel Bld. Large	02220 110 0012	0.26	/CF													39150	CF	10179
	Structure's Vol. Demolished																0.1	3915	CF	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight											489				LB/CF		957	TON	
	Truck's Capacity											16				Ton				
	Haulage											1				HR				
	Transportation Cost Steel Truck	Truck dump 16 ton payload	01 54 33 20 5300	435.96	/day													7.5	day	3270
	Transportation Cost Steel Truck Drive	Truck Driver, Heavy	Trftv	$43.30	HR													60	HR	2598
	Disposal Cost Steel																			
	Subtotal																			16047
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			16047

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Tanks Bins Etc 03																			
	Structure's Demolition Cost	Steel Bld. Large	02220 110 0012	0.26	/CF													8910	CF	2317
	Structure's Vol. Demolished																0.1	891	CF	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight											489				LB/CF		218	TON	
	Truck's Capacity											16				Ton				
	Haulage											1				HR				
	Transportation Cost Steel Truck	Truck dump 16 ton payload	01 54 33 20 5300	435.96	/day													1.7	day	741
	Transportation Cost Steel Truck Drive	Truck Driver, Heavy	Trhv	$43.30	HR													14	HR	606
	Disposal Cost Steel																			
	Subtotal																			3664
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			3664

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Building 04																			
	Structure's Demolition Cost	Steel Bld. Large	02220 110 0012	0.26	/CF	/CF												4590	CF	1193
	Structure's Vol. Demolished																0.35	60	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel	City Services	City Service Price	4	/CY													60	CY	240
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			1433
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			1433

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Fence 05																			
	Structure's Demolition Cost	Chain link remove 8'-10'	02220 220 1700	3.05	/LF	3900										FT		3900	FT	11895
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			11895
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			11895

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Concrete 06																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemo1	6.81	/CY						290					CY		290	CY	1975
	Concrete's Vol. Demolished																1.3	377	CY	
	Loading Cost	Front end loader 3 CY	02315 424 1300	1.43	/CY													377	CY	539
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. md. tri	02315 490 0320	3.49	/CY													377	CY	1316
	Disposal Costs	On site disposal	02220 240 5550	7.75	/CY													377	CY	2922
	Subtotal																			6752
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			6752

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Asphalt 07																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Asphalt Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemo1	6.81	/CY						963					CY		963	CY	6558
	Concrete's Vol. Demolished																1.3	1252	CY	
	Loading Cost	Front end loader 3 CY	02315 424 1300	1.43	/CY													1252	CY	1790
	Transportation Cost																			
	Disposal Costs	City Services	City Service Price	4	/CY													1252	CY	5008
	Subtotal																			13356
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			13356

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Backfilling and Grading 01															27056
Load Coal 02															5756
Haul Topsoil and Riprap 03															18526
Subtotal															51338

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Backfilling and Grading 01															
Rough Grade															
D9R Semi-U EROPS (9-54) (2H2005)	18485	80.3	0.1	55.4	259.26	1	259.26	$/HR					64	HR	16593
CLAB					42.65	0.5	21.33	$/HR					64	HR	1365
Rip															
D9R Semi-U EROPS (9-54) (2H2005)	18485	80.3	0.1	55.4	259.26	1	259.26	$/HR					30	HR	7778
Multi-Shank Ripper 260-359 P (9-61) (2nd2005)	2300	7.55	0.1		22.68	1	22.68	$/HR					30	HR	680
CLAB					42.65	0.5	21.33	$/HR					30	HR	640
Subtotal															27056

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Load Coal 02															
988G EROPS (9-37) (2nd2005) 2005	9010	40.05	0.1	55.4	155.77	1	155.77	$/HR					32.5	HR	5063
CLAB					42.65	0.5	21.33	$/HR					32.5	HR	693
Subtotal															5756

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Haul Topsoil and Riprap 03															
6X4 70,000lbs 12-18 CY (20-11) (2nd2005)	3725	31.25	0.1	43.3	100.96	5	504.8	$/HR					30.3	HR	15295
CLAB					42.65	2.5	106.63	$/HR					30.3	HR	3231
Subtotal															18526

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Banning Loadout																			
	Pocking (340 CY/AC)	Excavation Bulk Bank 2 CY (322BL)	M023154240260	1.74	/CY					21.4								7276	CY	12660
	Seeding	Hydro Spreader (equip. & labor) B-81 80MS	Reveg002	19.8	/MSF					21.4								932.18	MSF	18457
	Seeding Material	Seed	Banning07341	504.22	$/AC					21.4								21.4	AC	10790
	Mulch	Hay bale	Reveg007	61.6	/ton					21.4		21.4				Ton		21.4	AC	1318
	Fertilizer	Fetilizer Hydro Spread	M029351000180	3.95	/MSF					21.4								932.18	MSF	3682
	Subtotal																			46907
	Reseeding																			
	25% reseeding rate																			11727
	Subtotal																			11727
	Total																			58634