



0004

STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Scott M. Matheson, Governor  
Temple A. Reynolds, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

November 1, 1984

Mr. Allen P. Childs, Engineer  
Natomas Coal Company  
P. O. Box 370  
Grangeville, Utah 84537-0370

Dear Mr. Childs:

RE: Revision Request for Diversion Ditch Dated August 21,  
1984, Natomas Coal Company, Trail Mountain Mine,  
ACT/015/009, #3, Emery County, Utah

This letter is to respond to your August 21, 1984 request for a revision on the diversion ditch on the east perimeter of your property boundary.

Division Hydrologist John Whitehead has reviewed your proposal, and as he has discussed with you, some problems exist. The primary one being the practicality of riprapping a disturbed area ditch which would need to be cleaned periodically. On October 11, 1984, you met with John and Tom Munson on-site to discuss the alternative measures for this ditch. The possibilities of asphaltting or concreting the stretch of ditch identified in your revision request were discussed. At present, the Division awaits your response to these alternative suggestions. No further action will be taken on this matter until we hear from you.

Sincerely,

D. Wayne Hedberg  
Permit Supervisor/  
Reclamation Hydrologist

JW/btb

cc: Allen Klein  
Joe Helfrich  
Sandy Pruitt  
John Whitehead  
92940-19

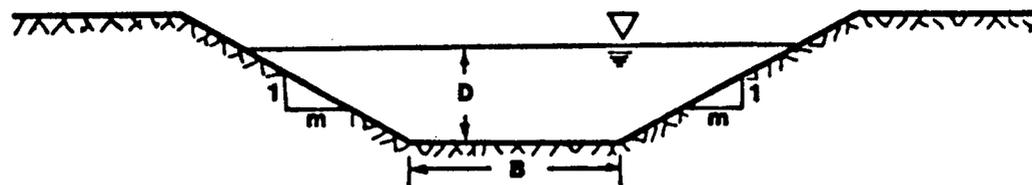


Figure 1.. Trapezoidal diversion cross-section to be used in runoff control for the Trail Mountain Mine.

Table 1

Design Criteria and Calculations for Diversion Ditch

Manning's, n	0.038	
Maximum Slope (Smax) ft/ft	0.093	
Channel Side Slope (m)	1.500	
Bottom Width (B), ft	2.000	
Flow Depth (D) at Smax, ft	1.300	
Flow Area at Smax, ft <sup>2</sup>	2.530	
Wetted Perimeter at Smax, ft	4.690	
Hydraulic Radius at Smax, ft	0.540	
Velocity at Smax, fps	7.940	20.1
Discharge, cfs	11.600	
Freeboard, ft	0.500	
Total Required channel Dept, ft	2.040	
Mean Rock Diameter (D <sub>50</sub> )	0.750	

RECEIVED

AUG 24 1984

DIVISION OF OIL  
GAS & MINING



**Diamond Shamrock**  
Coal Company

August 21, 1984

Wayne Hedberg  
State of Utah  
Utah Division of Oil, Gas and Mining  
4241 State Office Building  
Salt Lake City, Utah 84114

RE: Diversion Ditch

Dear Wayne;

At present, Trail Mountain Coal Company has installed on the east perimeter of its property boundry a 1900 foot diversion system of half-round culvert and berm to convey runoff from the disturbed area to a sedimentation pond. The culvert and berm system was designed to pass runoff from the 10-year, 24-hour storm event.

Once runoff flows into the half-round culvert, the system works to perfection. However, at the minesite, we are having problems with a 600 foot section of this system in getting runoff into the half-round. Runoff in this section flows under the half-round causing damage to the half-round and unnecessary erosion. For this reason I request of the Division to be allowed to use in conjunction with the half-round culvert and berm a diversion ditch (see fig. 1 and table 1) in the problem area.

Your immediate attention to this matter would be greatly appreciated. Should you need additional information or have any further questions, please feel free to contact me at 748-2140.

Sincerely;

TRAIL MOUNTAIN COAL COMPANY

Allen P. Childs  
Engineer

Enclosures

cc: Dave Lof/UDOGM

APC/gg

D = 0.59  
A = 1.52  
W.P. = 3.95

D = 0.54  
A = 1.52  
W.P. = 3.95

D = 0.56 W.P. = 4.02  
A = 1.59 1.04 @ .042

Table 7-7. Peak flows and peak flow design related information for diversion ditches and culverts.

1,330 @ .042

Structure	Disturbed Area ac	Undisturbed Area ac	Total Area mi <sup>2</sup>	Weighted Cn	Design Storm in	S in	Runoff (Q) in	Hydraulic Length ft	Average Watershed Slope %	Watershed Log hr	t <sub>p</sub> hr	AD hr	$\frac{484AQ}{t_p}$	C t <sub>3 P</sub>	Peak Flow (q) cfs
Cottonwood Canyon Culvert	—	11,969	18.7	57	3.2	7.54	0.31	40,000	36.5	1.74	2.09	1.0	1341.3	3.70	510.0
Side Canyon Culvert	—	366	0.57	80	2.4	2.5	0.82	6,375	49.12	0.199	0.22	0.04	1032	.83	80.1
Sediment Pond Diversion 1	8.8	14.7	0.04	78.5	2.4	2.74	0.75	1,900	52.7	0.08	0.09	0.08	144.4	3.91	20.1
	-5.0	18.0													

W.P. 3.948  
D = 0.54  
A = 1.51

D = 0.54  
A = 1.52  
W.P. = 3.95  
1,330 @ .042

~~4.02~~ W.P.  
D = 0.54  
A = 1.52  
W.P. = 3.95  
1,330 @ .042

.040  
D = 0.53  
A = 1.47  
W.P. = 3.90  
1,320 @ .042

FIRST MAIN - 2.5  
TYRRE 2 - 18.2  
TR 55 - 24.9  
.149 = SLOPE  
1.5 = SLOPE

.044 ASSUMED