

0019



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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Salt Lake City, Utah 84180-1203
801-538-5340

ACT/007/004

Folder 2

1993

UTAH DIVISION OF OIL, GAS AND MINING FACSIMILE TRANSMISSION COVER SHEET

DATE: September 3, 1993

FAX # 1-303-980-2303

ATTN: Richard Allison

COMPANY AMAX

FROM: Sharon Falvey

DEPARTMENT: DOG M

NUMBER OF PAGES BEING SENT (INCLUDING THIS ONE): 3

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MESSAGES:



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

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September 3, 1993

Mr. Richard H. Allison, Jr. P.E.
Project Supervisor
AMAX Coal West, Inc.
165 South Union Boulevard, Suite 1000
P.O. Box 280219
Lakewood, Colorado 80228-0219

Re: NOV N92-39-7-1, Refuse Ditch CGDR-3A-CGD-7 (lower), AMAX Coal West Inc., Castle Gate Mine, ACT/007/004, Folder #2, Carbon County, Utah

Dear Mr. Allison:

On August 31, 1993 we discussed the need for the Division to determine if the completed ditch CGDR-3 meets the stated conditions of the proposed design as identified in the approved plan (approval memo June 3, 1993). At that time, I indicated I would return to the School House Refuse Pile on September 2, 1993. I did return to gather the data and survey information as indicated.

At this time I have not assimilated all of the data to make a final determination. I am also waiting for analysis of the filter blanket material prior to making a determination regarding compliance with design criteria. However, the following list outlines the areas for which I have concern on construction implementation.

1. The depth and grading of riprap. The riprap appeared to be lacking in the finer grade of materials and contained many voids between the larger rock. Clean angular small fraction material may be needed to fill these voids. Information gathered to determine the grade of the riprap is being analyzed.
2. The gravel filter blanket did not appear to meet sizing criteria. The first sample the Division obtained, prior to riprap placement, was too finely graded. A second gravel sample was obtained following riprap placement and will be used to determine the adequacy of gradation. The filter blanket material used was rounded river rock and sand; not, crushed angular rock.



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ACT/007/004
September 3, 1993

3. A portion of the channel, located where an old road above sediment pond 013 meets the ditch, does not meet design depth requirements. Data from a measured depth profile will be used to determine if that section will meet regulatory requirements for the grade that exists at that point. Other depth profiles will be analyzed. In addition, the left bank (downstream) at this point may require additional riprap on the ditch. The locations at the first and second terrace (from the bottom of the pile) may also need additional riprap enforcement on the banks of the ditch.
4. The channel more closely approximates a parabola than a trapezoid.

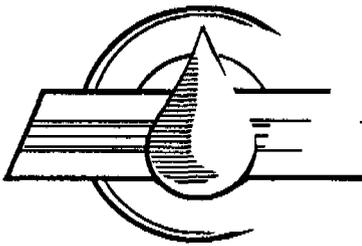
Please contact me for any questions, concerns, and comments on these issues.

Sincerely,



Sharon Falvey
Senior Reclamation Specialist

DESCDR3.LET



Crawford Environmental Specialists, Inc.

GEOTECHNICAL ENVIRONMENTAL SERVICE COMPANY

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SEP 16 1993

DIVISION OF
OIL, GAS & MINING

September 13, 1993

Division of Oil Gas and Mining
3 Triad Center - Suite 350
Salt Lake City, Utah 84180-1203

Attention: Ms. Sharon Falvey

Subject: Gradation Analysis - P.O. # 584143
Filter Blanket Material
Castle Gate Mine

Crawford Environmental Job No. 342047

Dear Mr. Baker:

Submitted herewith are the results of our gradation analysis.

We appreciated the opportunity to be of service to you on this project. If we can be of further assistance or if you have any questions regarding this project, please do not hesitate to contact the undersigned.

Sincerely,
Crawford Environmental Specialists, Inc.

Phillip T. Pack
Staff Engineer

PROCTOR & CLASSIFICATION WORKSHEET

PREP RUN

DATE _____

TOTAL NO. _____

BY _____

POINT NUMBER	1		2		3		4		5		6	
ML H ₂ O ADDED												
Wt. of mold and wet soil												
Wt. of mold												
Wt. of wet soil												
Wet Density ^{lbs} / _{ft³}												
DISH NUMBER	OVEN	STOVE										
Wt. of dish and wet soil												
Wt. of dish and dry soil												
Wt. of dish												
Wt. of water												
Wt. of dry soil												
Moisture Content (%)												
Dry Density ^{lbs} / _{ft³}												

Weight of pan → 485.95g

GRADATION			
DISH NO.			
Wt of dish and D ₆₀			
Wt of dish			
D ₆₀ (Dry Soil)			
Sieve Size	Cumulative Wt. Ret.	Percent Passing	Other
		100	
1"	678.6	79.8	
3/4"	793.6	75.2	
1/2"	1149.1	64.2	
3/8"	1493.6	53.4	
4	2266.4	29.3	
8	2510.7	21.4	
16	2617.2	18.4	
30	2676.4	15.9	
60	2800.1	12.4	
100	2741.9	8.2	
200	3025.4	3.4	
Date: 9/9	By: PTP.		

Dish NO. _____		ATTERBERG LIMITS	
NO. OF BLOWS	P. L.	BLOWS	K
Crucible NO.		20	.974
Wt. of dish and wet soil		21	.979
Wt. of dish and dry soil		22	.985
Wt. of dish		23	.990
Wt. of water		24	.985
Wt. of dry soil		25	1.000
Water content W _n		26	1.005
Date: _____	By: _____	27	1.009
		28	1.014
		29	1.018
		30	1.022
LIQUID LIMIT _____		PLASTIC INDEX _____	

JOB NO. 342047 SAMPLE NO. _____ DATE IN 9/1/93

PROJECT Oil-Gas & Mining

JOB LOCATION School House Canyon (CORD3-Post Rip Rap)

ON SITE IMPORT SWELLS

LOAD INCREMENTS _____

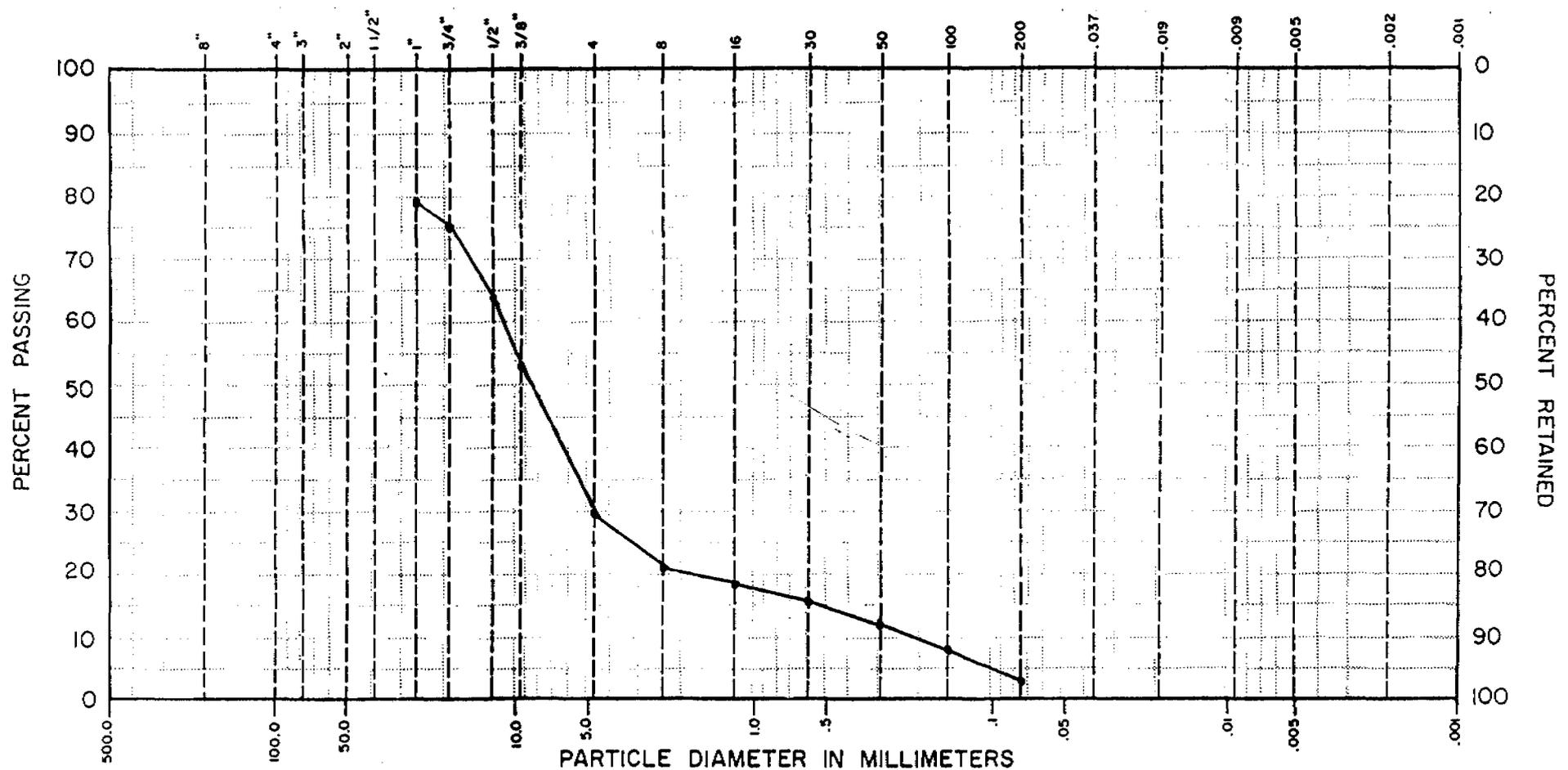
PROCTOR METHOD: D-698; D-1557; A, B, C, D

OPTIMUM VALUES _____ LB/FT³ @ % MOISTURE

SOIL DESCRIPTION _____

brass 200 → 3.4

SIEVE ANALYSIS		HYDROMETER ANALYSIS
Sieve Openings In Inches	U.S. Standard Sieves	Size Of Particles In Millimeters



COBBLES TO BOULDERS	Coarse	Fine	Coarse	Medium	Fine	CLAY (Plastic) TO SILT (Non-Plastic)
	GRAVEL		SAND			

BORING NO.	SAMPLE NO.	DEPTH IN FEET	PL	LL	PI	NAT. WC	SOIL DESCRIPTION	CRAWFORD ENVIRONMENTAL <small>GEOTECHNICAL ENVIRONMENTAL ENGINEERING SERVICES</small>	
							CGRD3 #2 - Past Rip Rap Placement.	GRADATION ANALYSIS	
								DRAWN BY: PTP	JOB NO. 342047
								DATE: 9/8	PLATE

AMAX COAL WEST, INC.

A Subsidiary of AMAX Coal Industries, Inc.

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SEP 13 1993



DIVISION OF
OIL, GAS & MINING

September 10, 1993

Ms. Sharon Falvey
Utah Division of Oil, Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

RE: NOV No. 92-39-7-1

Dear Sharon:

Thank you for all the time and effort you spent on the refuse pile ditch. Our objectives are the same for this project which are to construct the diversion as required by the approved MRP. I would like to respond to your letter dated 3 September, 1993 which was faxed late that day. I have received no original through the mail as of this date.

The refuse pile ditch was substantially complete at 5:15 p.m. on August 31, 1993. By this I mean, that the riprap was in place and the ditch was capable of conveying a major storm event. The ditch was completed substantially according to the plans which in my opinion qualifies for abatement of the violation. However, as the engineer who must certify the construction, I was, and as of this date am still, lacking information to certify the construction as required by R645-301-742.324. This is a broad certification which covers all aspects of the project such as erosion control and conveyance. Before I place my stamp on it, I want to make sure the project substantially meets design specifications.

The first two paragraphs of your September 3 letter suggest that the Division must approve of the construction of the ditch. No where in the regulations is approval of the construction by the Division mentioned as a requirement after construction. The design must be approved by the Division. However, according to the regulation mentioned above, the construction must be approved by a registered professional engineer. The DOGM is not required by law to make a determination as to the adequacy of the construction. That burden is on the Professional Engineer.

Note: minimum design criteria - 741-General Reg. - Divisions will be held according to plan + Des. 9-5

Contrary to popular opinion, engineering is not an exact science or profession. Hydrology is an area which is one of the least exacting when compared to mechanical, electrical and aerospace engineering. All of the engineering disciplines require judgement. Hydrology, as you know, requires inputs of judgement at every step in the design process. Hopefully, the person making judgements is well trained and has a lot of experience to draw upon.

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SEP 13 1993

DIVISION OF
OIL, GAS & MINING

Letter to Sharon Falvey
September 10, 1993
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Your first numbered paragraph expresses a concern with the voids in the riprap. I have a certification from Blackhawk Engineering that the riprap meets a d_{50} size of 24". However, it has been my experience with this large size of riprap that segregation occurs during placement and additional fine material sometimes needs to be placed to fill voids. I, too, noticed a few areas which could use some placement of coarse material. I have instructed Siaperas to find some 3" minus course aggregate which will have very little fine material which will pass through a no. 16 sieve. I will call you or Daron to let you know when this material will be placed.

The second paragraph relates to the filter blanket. The contractor did have a gradation problem with the upper third of the ditch. I took a sample on August 26 and it did not meet the gradation standard. The contractor added more course material to the blanket on August 27. I again sampled the blanket and lab results showed that the blanket was within the specification. I also had the contractor remove riprap approximately 100 feet upstream from the bottom of the ditch to verify its adequacy. This is the same location where you took your samples. The lab report showed that it was acceptable filter blanket material. Your statement that river rock and sand was used is correct. However, is no requirement to use crushed angular material.

Your last two paragraphs concern the channel as built configuration and depth. On August 31 and September 1, I field measured the channel. There were a couple of areas which were lacking about 6" depth when compared to the design. I instructed the contractor to place more riprap on the sides in those areas to provide more freeboard. None of the areas which I measured were less than the design flow depth of .71 ft. The parabolicness of the channel will not affect the capacity as long as the cross sectional areas and hydraulic radius are close to the design. No trapezoidal channel is perfectly flat. Consideration has to be given to the size of the riprap to be placed and the construction environment of steep slopes. The important aspect of the channel is, will it convey the design storm event? 752,100

After my field measurements were taken, I instructed Blackhawk Engineering to survey the ditch and obtain measurements for reach lengths and cross sections so that Earthfax could verify the ability of the ditch to convey the design flows. I also instructed Earthfax to contact you as to the limitations of the program with respect to nonstandard sections (somewhat parabolic). After talking with Bill Hendrickson, we decided to use a conservative approach. A 5' board will be placed level across the bottom of the channel. The depth will be measured from the bottom of the board to the top of the channel for each discernable reach length. The locations will be at critical sites which appear to be the narrowest or shallowest. This new cross section information will be given to Earthfax for analysis.

ALBANY, NY 12242-1500

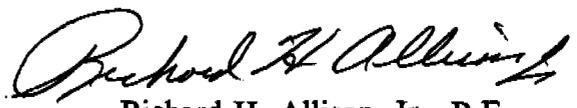
SEP 13 1993

Letter to Sharon Falvey
September 10, 1993
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DIVISION OF
OIL, GAS & MINING

Again thank you for your time and effort on this project. As soon as I get the results from Earthfax, I will be able to make a decision on the certification of the construction. I spoke with Daron on September 9 and he has informed me that he is extending the abatement date to September 23 so that the certification information can be analyzed. As I stated, AMAX considers the NOV abated because of substantial completeness. However, I can appreciate Daron's concerns.

Sincerely,



Richard H. Allison, Jr., P.E.
Project Supervisor

RHA:njt

cc: Daron Haddock
Steve Laird
Tom Lien