

EarthFax
Engineering, Inc.
Engineers/Scientists

JUN 17 1985

DIVISION OF OIL
GAS & MINING

June 13, 1985

RE:Contract 85-5323
May Monthly Report

Mr. Dave Hooper
Reclamation Hydrologist
Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Dave:

Contract No. 85-5323 was executed on May 24, 1985 and contract work by EarthFax Engineering, Inc. began immediately thereafter. During the last week of May the seep and spring inventory was completed (Appendix A), we met with yourself and Tom Suchoski of DOGM, and Mr. Leonard Maki, the mine operator, and we selected locations for the installation of the sediment samplers and the stream gaging stations.

Seep and Spring Inventory

The seep and spring inventory was conducted from May 27 through June 3, 1985. A total of 33 seeps and springs were located, the locations were plotted on a site map and the appropriate water quantity and water quality data were obtained. One note of particular importance deals with the flow from the intermittent stream near the east end of the property, that is the flow comes from a spring which emerges some 50 feet upstream of the property boundary. A thorough investigation of the watershed above the site did not reveal any additional base flow or seeps and springs. Only a few of the springs in the area of investigation had evidence to substantiate that the spring was a source of water for wildlife.

Site Meeting

On Tuesday May 28, 1985 Tom Suchoski and yourself of DOGM, along with Mr. Leonard Maki operator of the Boyer Mine, and Richard White and myself of EarthFax Engineering, Inc. met at the site to discuss the site itself and the proposed location of the stream gaging stations and sediment

June 13, 1985
Mr. Dave Hooper
page 2

samplers. We inspected the proposed mine facilities location and discussed the need to place the stream gaging station on the intermittent stream above the proposed disturbed area at the mine site. We inspected each of the three proposed locations for the sediment samplers which were to be placed in the ephemeral channels. We also inspected the two areas, both upstream and downstream from the site, where the monthly stream monitoring activities would be conducted. In addition, the downstream monitoring station would also be used for installation of the stream gage. During the site visit Mr. Maki introduced us to Mr. Bill Boyer and Mr. Angus Pace, both local landowners, and obtained their verbal permission for us to cross their property during the term of the contract.

Stream Gaging Stations and Sediment Samplers

The stream gaging stations and sediment samplers were all installed on Monday, June 3, 1985. During installation, the base flow on Chalk Creek, both upstream and downstream of the site were collected, as well as water quality samples. In addition, water quantity and water quality data were obtained on the intermittent stream which flows along the eastern perimeter of the property. Data from these areas will be included with the June Monthly report. No base flow was observed in the ephemeral channels.

Rain Gage

The continuous recording rain gage was installed on Thursday, June 30, 1985. It was placed on the area which was discussed during our May 28 site meeting. A low wall, of dead brush, was constructed around the perimeter of the rain gage to protect it from livestock and to shield it from ready visibility.

We have scheduled our next monthly visit for Friday, June 28, 1985. If you have any questions, desire a different format in our monthly reports or need additional information, please call.

Sincerely,



Randolph B. Gainer
Project Manager

Appendix A

Seep & Spring Survey
27 May 1985

SP-1

Flowing well w/ 6" steel casing

$Q = 4 \text{ gpm (est)}$

Temp = 14.5°C

EC = $700 \text{ } \mu\text{mhos/cm @ } 14.5^\circ\text{C}$

pH = 6.48

SP-2

Diffuse seepage from alluvium between
terrace top and stream (seepage area = $10' \text{ in diameter}$)

$Q \approx 1 \text{ gpm}$

$T = 8^\circ\text{C}$

EC = $800 \text{ } \mu\text{mhos/cm @ } 19^\circ\text{C}$

pH = 6.84

SP-3

Area of diffuse seepage ($40' \text{ diameter}$) from
alluvium on terrace top

$Q \approx 5 \text{ gpm}$

$T = 10^\circ\text{C}$

EC = $850 \text{ } \mu\text{mhos/cm @ } 20^\circ\text{C}$

pH = 7.10

SP-4

Diffuse seepage (d=80'), no flow, on terrace,
small areas of ponding. Wiregrass, cotton.

SP-5

Same as above, with d=10'

SP-6

Diffuse seepage along 200' of channel side (east-facing
bank). From residual soil over conglomerate?

Q (total) = 4 gpm

T = 10°C

EC = 690 $\mu\text{mhos/cm}$ @ 24°C

pH = 7.03

SP-7

Diffuse seepage (100' x 700'). No flow. No
ponding. Wiregrass.

SP-8

Issues from bottom of channel (alluvium/soil
over conglomerate)

Q = 3 gpm

T = 11°C

EC = 490 $\mu\text{mhos/cm}$ @ 15°C

pH = 7.22

SP-9

Hillside seepage, soil over sandstone

Q = 1/2 gpm

T = 16.5°C

EC = 440 $\mu\text{mhos/cm}$ @ 17°C

pH = 7.21

SP-10

Seep (d=10'). No flow. Soil over sandstone

Seep & Spring Survey (cont.)

28 May 1985

C-30

SP-11

Springs issuing from alluvium approximately 1 ft
above Morby Cr. channel, from east-facing slope.

Q = 3 gpm (total)

T = 8.5°C

EC = 490 $\mu\text{mhos/cm}$ @ 9°C

pH = 6.36

SP-12

From west-facing bank of Morby Cr., approx.
1 ft above channel bottom; iron stains, alluvium

$Q \approx 3 \text{ gpm}$
 $T = 9^\circ\text{C}$

$EC = 480 \text{ } \mu\text{mhos/cm} @ 10^\circ\text{C}$

$pH = 6.44$

SP-13

Springs issuing from east-facing bank of Morby Cr., approx. 2 ft above channel bottom, from alluvium, much moss.

$Q \approx 2 \text{ gpm (total)}$
 $T = 9.5^\circ\text{C}$

$EC = 880 \text{ } \mu\text{mhos/cm} @ 10^\circ\text{C}$

$pH = 6.88$

SP-14

From roadside ditch, fill over conglomerate

$Q \approx 1 \text{ gpm}$
 $T = 11^\circ\text{C}$

$EC = 780 \text{ } \mu\text{mhos/cm} @ 11^\circ\text{C}$

$pH = 6.90$

SP-15

Developed spring serving Church & some residences in Upton. Sampled overflow. Near center of syncline. SS/Sh bedrock

$Q \approx 10 \text{ gpm}$
 $T = 7.5^\circ\text{C}$

$EC = 880 \text{ } \mu\text{mhos/cm} @ 22.5^\circ\text{C}$

$pH = 6.66$

SP-16

Developed spring with watering trough. SS over Sh?

$Q = \frac{1}{2} \text{ gpm}$
 $T = 12^\circ\text{C}$

$EC = 1000 \text{ } \mu\text{mhos/cm} @ 22.5^\circ\text{C}$

$pH = 6.80$

SP-17

Diffuse seepage from area of $\approx 30' \times 150'$. Bermmed at bottom to form pond approx. $10' \times 20' \times 1'$; Moss and duckweed in pond. SS over siltstone.

$Q \approx 3 \text{ gpm (total)}$
 $T = 16^\circ\text{C}$

$EC = 510 \text{ } \mu\text{mhos/cm} @ 21^\circ\text{C}$

$pH = 7.25$

C-30

SP-18

Seep, wire grass, no flow, on hillside. Soil/conglomerate.

SP-19

Bermed below (10'x30'x1'). Soil over colluvium.

 $Q \approx 2 \text{ gpm}$ $T = 18^\circ\text{C}$ $\text{EC} = 800 \text{ } \mu\text{mhos/cm @ } 21^\circ\text{C}$ $\text{pH} = 7.14$

SP-20

Issues from bottom of drainage in alluvium/colluvium.

Seepage from area 30'x100'

 $Q \approx 10 \text{ gpm}$ $T = 14^\circ\text{C}$ $\text{EC} = 220 \text{ } \mu\text{mhos/cm @ } 21^\circ\text{E}$ $\text{pH} = 7.45$

SP-21

Standing water in oxbow of Huff Creek, cattails and wiregrass on edges. 50'x50'x2'

Seep & Spring Survey (cont.)

3 Jun 1985

C-30

SP-22

Seeps from hill side at base of cottonwood and aspen grove. No flow. Small amt. standing water. Soil over conglomerate.

SP-23

At head of ^{recent} small slope failure, base of cottonwoods & aspen. Soil over conglomerate. $Q \approx 1 \text{ gpm}$ $T = 11^\circ\text{C}$ $\text{EC} = 460 \text{ } \mu\text{mhos/cm @ } 18.5^\circ\text{C}$ $\text{pH} = 6.46$

SP-24

Seep at head of old slope failure. No flow. Poorly drained soil.

SP-25

From soil in channel bottom.

 $Q \approx 3 \text{ gpm}$ $T = 10^\circ\text{C}$ $\text{EC} = 410 \text{ } \mu\text{mhos/cm @ } 16^\circ\text{C}$ $\text{pH} = 6.83$

SP-26

From soil in channel bottom. Flows to pond immediately downstream (60' x 40' x 3')

$$Q \approx 2 \text{ gpm}$$

$$T = 11^\circ\text{C}$$

$$\text{EC} = 860 \text{ } \mu\text{mhos/cm @ } 15^\circ\text{C}$$

$$\text{pH} = 6.90$$

SP-27

Seep in road cut, No flow, Small amt. standing water. From soil.

SP-28

From soil/alluvium in channel bottom. Cottonwood and aspen in vicinity. Preliminary development attempt.

$$Q \approx 6 \text{ gpm}$$

$$T = 8^\circ\text{C}$$

$$\text{EC} = 560 \text{ } \mu\text{mhos/cm @ } 12^\circ\text{C}$$

$$\text{pH} = 7.10$$

SP-29

From alluvium on terrace above Morby Creek

$$Q \approx 5 \text{ gpm}$$

$$T = 11^\circ\text{C}$$

$$\text{EC} = 600 \text{ } \mu\text{mhos/cm @ } 11.5^\circ\text{C}$$

$$\text{pH} = 6.85$$

SP-30

Seep from upper edge of alluvium. No flow.

Seepage area \rightarrow 20 ft diameter

SP-31

Same as SP-30. Seepage area \rightarrow 10' diameter

SP-32

Same as SP-30

SP-33

From alluvium, Wiregrass, water cress. Below level of Morby Creek ($\approx 2'$) but separated by 20'.

$$Q \approx 4 \text{ gpm}$$

$$T = 11^\circ\text{C}$$

$$\text{EC} = 710 \text{ } \mu\text{mhos/cm @ } 11^\circ\text{C}$$

$$\text{pH} = 6.89$$

INVOICE NO.1

Client: Utah Division of Oil, Gas,
and Mining
Contract No.: 85-5323

Project No.: C-30

Labor:

Randolph B. Gainer	44.0 hr @ \$30.00	\$1320.00
Richard B. White	39.0 hr @ \$30.00	1170.00

Expenses:

White Exp. Rpt.	\$ 90.45	
Maps (USGS)	5.00	
Supplies (see attached)	194.51	<u>289.96</u>

Total \$2779.96

5804 1354 6/18/85
0135 1364
CARL JR 85-5323
Earth Fax Eng. Inc.
Invoice #10
LOOKS GOOD
GO AHEAD WITH
PAYMENT 580776
S.M.P. PROJECT DAVE H.

13665 E
84123

EarthFax Engineering, Inc.

Time Sheet

Name: Richard B. White Pay Period: 1 May - 31 May 1985

Proj. No.	Pay Item	Description	Date	Date																												Total	PM App.				
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			29	30	31	
C-30	01	Summit Coal Co. SOAP	ST																						8			8	8	7		8	39				
			OT																															8			
—	—	Gen. Admin	ST	4	4																												8				
			OT																																3 1/2		
C-05	01	Strawberry Lake Estates	ST																					3 1/2									3 1/2				
			OT																																6 1/2		
C-27	01	Gennell-Hydro.	ST		1	3					2 1/2																							6 1/2			
			OT																																	7 1/2	
C-25	01	West Desert EIS	ST	4	3	5			8	8	5 1/2	4 1/2	7 1/2		5	1 1/2	3					8	4	2 1/2	1 1/2								7 1/2				
			OT																																	12	
C-20	09	Hercules - State Lization (unbudgeted)	ST								3			8																1				12			
			OT																																	1	
C-28	01	Fife realty - Foundation	ST								1/2	1/2																						1			
			OT																																	16	
C-17		Sunshine - Mine water disp.	ST																					2	6						8			16			
			OT																																	23	
C-29	01	Mercur Hydro. (JSR)	ST												3	6 1/2	5	8							1/2									23			
			OT																																	4	
C-20	05	Hercules - Landfill	ST																																4		
			OT																																		184
Daily Total			ST	8	8	8	/	/	8	8	8	8	8	/	/	8	8	8	8	8	/	/	8	8	8	8	8	/	/	8	8	8	8	8	184		
			OT																																		

Signed: Richard B. White Date: 4 Jun 1985 Recorded: _____

EarthFax Engineering, Inc.

Expense Report

Name: <u>Richard B. White</u>				Date Submitted: <u>11 Jun 1985</u>			
Project Number:	<u>C-30</u>	<u>C-30</u>	<u>C-30</u>	<u>C-30</u>	<u>C-30</u>	<u>C-30</u>	
Date:	<u>24 May 85</u>	<u>27 May 85</u>	<u>28 May 85</u>	<u>29 May 85</u>	<u>30 May 85</u>	<u>31 May 85</u>	

General Expense Item	Amount							Total
Lodging								
Per Diem/Meals		<u>2.50</u>	<u>24.14</u>	<u>3.53</u>		<u>11.16</u>	<u>41.33</u>	
Airfare								
Auto Rental								
Gas								
Field Supplies					<u>1.05</u>		<u>1.05</u>	
Copying	<u>1.32</u>						<u>1.32</u>	
Marketing								
Daily Total	<u>1.32</u>	<u>2.50</u>	<u>24.14</u>	<u>3.53</u>	<u>1.05</u>	<u>11.16</u>	<u>43.70</u>	

Auto Expense Item	Mileage or Amount							Total
Miles Driven	<u>56</u>					<u>131</u>	<u>187</u>	
Charge (@ <u>25¢</u>)	<u>14.00</u>					<u>32.75</u>	<u>46.75</u>	

Expense Summary	
General Expenses	<u>43.70</u>
+ Mileage Expenses	<u>46.75</u>
- Items Billed Directly to Company (Circled)	<u>0</u>
= Total Cash Expense	<u>90.45</u>
- Advances	<u>0</u>
= Balance Due Company / Due Me	<u>90.45</u>

Signed: <u>R. White</u>	
Approved: <u>R. W.</u>	
Recorded:	Refunded:

Instructions:

1. Circle all items billed directly to the company.
2. Obtain and attach copies of receipts whenever possible.
3. Explain all marketing and unusual expenses on a separate sheet.

C-30

U.S. GEOLOGICAL
SURVEY
Your Receipt
Thank You

Maps

* * 2 /
B * 3 5 8

5.00
5.00

F *

B * 3 5 8
B * 3 5 8

5.00 CHK
0.00 TND
CNG

*

*

* 0 0 1 4 5 / 2 8 / 8 5

*

C-30
ERNST
 263-THANK YOU
 05 29 85
 8898 .008
 Crest-stage gage
 supplies
 2
 a 9.99
 1 1/2 19.98
 2 1/2 1.99
 2.25
 a .59
 3 1.33
 23.30 ST
 1.34 TX
 24.64 L
 24.64 CA
 .00 CD

C-30 **ERNST**
 Thank You
 Sed. sampler supplies
 5-29-85
 1 1/2 . . . 1.88
 20
 @ 0.59
 2 1/2 . . . 11.80
 8
 @ 0.69
 2 1/2 . . . 5.52
 * 19.20 Ta
 * 1.10 Tx
 * 20.30 ST
 * 20.30 Ca
 011A005

C-30
 Crest-stage gage/
 Sed. sampler supplies

ALLWOODS HOME CENTER
 5774 SOUTH STATE ST.
 MURRAY UTAH
 84107
 STORE 40 05/30/85

BLM		3.49A
NDW	281.89	3.78A
NDW	202.69	5.38A
NDW	48.29	1.16A
NDW		.69A
NDW		1.39A
PNT		2.19A
NDW	831.67	13.36A
NDW	88.08	.64A
NDW	88.11	.83A
NDW	168.15	2.40A
BLM	482.66	10.64A
TAX		2.65H

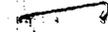
TOTAL 48.65
 CHECK 48.65
 CHANGE .00

1089 723 6 4.23PM

C-30

Sed. sampler
 supplies

RECEIVED MONTHLY
 ALLIANCE EXCHANGE



05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85

05/30/85



WASATCH STEEL

"Your Steel Supermarket"

P.O. Box 21007, Salt Lake City, Utah 84121
 225 West 3300 South, Salt Lake City, Utah 84115
 Phone: (801) 486-4463

C-30
Stilling well supplies

INVOICE
No. 135141

ALL RETURNED MERCHANDISE (WITHIN 10 DAYS) MUST BE ACCOMPANIED BY THIS INVOICE AND IS SUBJECT TO A 20% RESTOCKING CHARGE. ALL SALES AFTER 10 DAYS ARE FINAL. ALL SALES OF CUSTOM CUT STEEL AND USED STEEL ARE FINAL.

CUSTOMER COPY

S _____ S _____
 O _____ SH _____
 L _____ I _____
 D _____ P _____
 T _____ T _____
 O _____ O _____

DATE		CUSTOMER NO		ORDER REC	PULLED BY	LOADED BY	SHIPPED VIA		
CASH	CHECK NO	C.O.D	CHARGE						
AMT. ORD	UNIT	AMT. SHIP	UNIT	DESCRIPTION			PRICE	UNIT	AMOUNT
ACCEPTED BY:							SUB TOTAL		
CREDIT TERMS: The total is due and payable to Wasatch Steel and Engineering, 225 West 3300 South, Salt Lake City, Utah 84115 on the 10th. of the month following purchase. A finance charge at the rate of 2% per month on the delinquent balance will be added on the last day of the month following purchase, and thereafter until the balance is paid. This is an annual rate of 24%. The buyer agrees to pay all costs of collection and including a reasonable attorneys fee if the delinquent account is placed with an attorney and/or with a collection agency. The purchaser hereby acknowledges the title to the above listed property shall remain with Wasatch Steel and Engineering until paid in full and if for any reason the same shall not be paid on the last day of the month following purchase. Wasatch Steel and Engineering may repossess the above merchandise without process of law and may retain for use thereof any money thereto. In consideration of credit extended the buyer by Wasatch Steel and Engineering, in the purchase of goods and services described on this invoice, the buyer accepts the same terms and agrees to pay said account in full.							EXEMPT	TAX	
							TOTAL		

[Handwritten signature and scribbles]

[Handwritten signature]



WASATCH STEEL

"Your Steel Supermarket"

P.O. Box 21007, Salt Lake City, Utah 84121
 225 West 3300 South, Salt Lake City, Utah 84115
 Phone: (801) 486-4463

C-30
Shilling well
Supplies

INVOICE
 No. 135124

ALL RETURNED MERCHANDISE (WITHIN 10 DAYS) MUST BE ACCOMPANIED BY THIS INVOICE AND IS SUBJECT TO A 20% RESTOCKING CHARGE. ALL SALES AFTER 10 DAYS ARE FINAL. ALL SALES OF CUSTOM CUT STEEL AND USED STEEL ARE FINAL.

CUSTOMER COPY

S _____
 O _____
 F _____
 D _____
 T _____
 O _____

S _____
 H _____
 I _____
 P _____
 T _____
 O _____

DATE		CUSTOMER NO		ORDER REC'D	PULLED BY	LOADED BY	SHIPPED VIA		
CASH	CHECK NO	C O D	CHARGE						
AMT ORD	UNIT	AMT SHIP	UNIT	DESCRIPTION		PRICE	UNIT	AMOUNT	
				<i>Paint</i>					
				<i>11 # 1309</i>					
ACCEPTED BY:							SUB TOTAL		<i>18 60</i>
							EXEMPT	TAX	<i>1 01</i>
							TOTAL		<i>19 61</i>

CREDIT TERMS: The total is due and payable to Wasatch Steel and Engineering, 225 West 3300 South, Salt Lake City, Utah 84115 on the 10th. of the month following purchase. A finance charge at the rate of 2% per month on the delinquent balance will be added on the last day of the month following purchase, and thereafter until the balance is paid. This is an annual rate of 24%. The buyer agrees to pay all costs of collection and including a reasonable attorneys fee if the delinquent account is placed with an attorney and/or with a collection agency. The purchaser hereby acknowledges the title to the above listed property shall remain with Wasatch Steel and Engineering until paid in full and if for any reason the same shall not be paid on the last day of the month following purchase, Wasatch Steel and Engineering may repossess the above merchandise without process of law and may retain for use thereof any money thereto. In consideration of credit extended the buyer by Wasatch Steel and Engineering, in the purchase of goods and services described on this invoice, the buyer accepts the same terms and agrees to pay said account in full.