



75 Suttle Street
Durango, CO 81303
970.247.4220 Phone
970.247.4227 Fax
www.greenanalytical.com

12 December 2012

Karen Spray
Colorado Oil and Gas Conservation Commission
PO Box 2651
Durango, CO 81302
RE: COGCC

Enclosed are the results of analyses for samples received by the laboratory on 11/28/12 14:14. The data to follow was performed, in whole or in part, by a subcontract laboratory with an additional report attached.

If you any any further assistance, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads 'Debbie Zufelt'. The script is cursive and fluid, with the first name 'Debbie' and last name 'Zufelt' clearly legible.

Debbie Zufelt
Reports Manager



Colorado Oil and Gas Conservation Commission
PO Box 2651
Durango CO, 81302

Project: COGCC
Project Name / Number: [none]
Project Manager: Karen Spray

Reported:
12/12/12 12:03

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Olson-Smith	1211097-01	Solid	11/28/12 12:50	11/28/12 14:14
IGS-405	1211097-02	Solid	11/28/12 13:25	11/28/12 14:14

Green Analytical Laboratories

A handwritten signature in black ink that reads 'Debbie Zufelt'.

Debbie Zufelt, Reports Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. In no event shall Green Analytical Laboratories be liable for incidental or consequential damages. GALs liability, and clients exclusive remedy for any claim arising, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever, shall be deemed waived unless made in writing and received within thirty days after completion of the applicable service.



Colorado Oil and Gas Conservation Commission
PO Box 2651
Durango CO, 81302

Project: COGCC
Project Name / Number: [none]
Project Manager: Karen Spray

Reported:
12/12/12 12:03

IGS-405**1211097-02 (Solid)**

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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General Chemistry

Alkalinity, Bicarbonate	296			mg/L wet	4	12/03/12	2320 B		ABP
Alkalinity, Carbonate	96.0			mg/L wet	4	12/03/12	2320 B		ABP
Alkalinity, Hydroxide	<10.0	10.0		mg/L wet	4	12/03/12	2320 B		ABP
Alkalinity, Total	392	10.0		mg/L wet	4	12/03/12	2320 B		ABP

Soluble (DI Water Extraction)

Chloride	292	40.0	20.0	mg/kg wet	4	12/03/12	4500Cl- C		ABP
Sulfate	<40.0	40.0	6.52	mg/kg wet	4	12/05/12	4500SO4 E		ABP

Saturated Paste Extraction

Calcium	71.4	10.0	0.066	mg/kg dry	10	12/06/12	200.7		JGS
Conductivity	2600			umhos/cm	1	12/05/12	ASA#9 10-3.3		ACH
Magnesium	11.3	10.0	0.207	mg/kg dry	10	12/06/12	200.7		JGS
pH	7.65			pH Units	1	12/05/12	ASA#9 12-2.6		ACH
Potassium	13.2	10.0	6.17	mg/kg dry	10	12/06/12	200.7		JGS
SAR	14.8			[blank]	1	12/06/12	Calculation		JGS
Sodium	511	10.0	0.234	mg/kg dry	10	12/06/12	200.7		JGS

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Debbie Zufelt, Reports Manager

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PO Box 2651
Durango CO, 81302

Project: COGCC
Project Name / Number: [none]
Project Manager: Karen Spray

Reported:
12/12/12 12:03

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B212018 - General Prep - Wet Chem

Blank (B212018-BLK1)

Prepared & Analyzed: 12/03/12

Alkalinity, Total ND 10.0 mg/L wet

LCS (B212018-BS1)

Prepared & Analyzed: 12/03/12

Alkalinity, Total 98.0 10.0 mg/L wet 100 98.0 85-115

LCS Dup (B212018-BSD1)

Prepared & Analyzed: 12/03/12

Alkalinity, Total 100 10.0 mg/L wet 100 100 85-115 2.02 20

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Debbie Zufelt, Reports Manager

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PO Box 2651
Durango CO, 81302

Project: COGCC
Project Name / Number: [none]
Project Manager: Karen Spray

Reported:
12/12/12 12:03

Soluble (DI Water Extraction) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B212020 - General Prep - Wet Chem

Blank (B212020-BLK1)

Prepared & Analyzed: 12/03/12

Chloride ND 10.0 mg/kg wet

LCS (B212020-BS1)

Prepared & Analyzed: 12/03/12

Chloride 96.0 10.0 mg/kg wet 100 96.0 85-115

LCS Dup (B212020-BSD1)

Prepared & Analyzed: 12/03/12

Chloride 97.0 10.0 mg/kg wet 100 97.0 85-115 1.04 20

Batch B212028 - General Prep - Wet Chem

Blank (B212028-BLK1)

Prepared & Analyzed: 12/05/12

Sulfate ND 10.0 mg/kg wet

LCS (B212028-BS1)

Prepared & Analyzed: 12/05/12

Sulfate 51.0 10.0 mg/kg wet 50.0 102 85-115

LCS Dup (B212028-BSD1)

Prepared & Analyzed: 12/05/12

Sulfate 50.0 10.0 mg/kg wet 50.0 100 85-115 1.98 20

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Debbie Zufelt, Reports Manager

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Colorado Oil and Gas Conservation Commission
PO Box 2651
Durango CO, 81302

Project: COGCC
Project Name / Number: [none]
Project Manager: Karen Spray

Reported:
12/12/12 12:03

Notes and Definitions

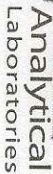
DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
*Results reported on as received basis unless designated as dry.
RPD Relative Percent Difference
LCS Laboratory Control Sample (Blank Spike)
RL Report Limit
MDL Method Detection Limit

Green Analytical Laboratories

A handwritten signature in black ink that reads 'Debbie Zufelt'.

Debbie Zufelt, Reports Manager

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Page 1 of 1

- 1) Ensure proper container packaging.

2) Ship samples promptly following collection.

3) Designate Sample Reject Disposition.

Table 1. - Matrix Type

1 = Surface Water, 2 = Ground Water
3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
6 = Waste, 7 = Other (Specify) _____

Table 1. - Matrix Type

1 = Surface Water, 2 = Ground Water

3 = Soil/Sediment, 4 = Rinsate, 5 = Oil

6 = Waste, 7 = Other (Specify)

FOR GAL USE ONLY

GAL JOB #

1211-097

Client: 1056C
Contact: Karen Spray
Address: PO Box 2657
Deco CO 81302
Phone Number: 970 ~~257~~ 1619
Email: Karen.spray@stat.co.us

Project Name: _____

Samplers Signature:

Green T spray

Lab Name: Green Analytical Laboratories

(970) 247-4220 FAX (970) 247-4227

Address: 75 Suttle Street, Durango, CO 81303

www.greenanalytical.com

Analyses Required

81#

10.0°C

On ice

Comments

Lab Name: Green Analytical Laboratories										(970) 247-4220		FAX (970) 247-4227		Analyses Required																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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Sample ID	Date	Time	Collected by: (Init.)	Matrix Type From Table 1	No. of Containers	Sample Filtered ? Y/N	Unpreserved (Ice Only)	Preservative(s)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

* Sample Reject: [] Return [] Dispose [] Store (30 Days)

December 04, 2012

Debbie Zufelt

Green Analytical Laboratories

75 Suttle Street

Durango, CO 81303

RE: COGCC

Enclosed are the results of analyses for samples received by the laboratory on 11/30/12 12:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 Green Analytical Laboratories
 Debbie Zufelt
 75 Suttle Street
 Durango CO, 81303
 Fax To: (970) 247-4227

 Received: 11/30/2012
 Reported: 12/04/2012
 Project Name: COGCC
 Project Number: 1211-097-01
 Project Location: NOT GIVEN

 Sampling Date: 11/28/2012
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: IGS - 405 (H202887-01)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/03/2012	ND	1.70	85.0	2.00	1.22	
Toluene*	<0.050	0.050	12/03/2012	ND	1.91	95.3	2.00	2.78	
Ethylbenzene*	<0.050	0.050	12/03/2012	ND	1.87	93.3	2.00	3.28	
Total Xylenes*	<0.150	0.150	12/03/2012	ND	5.70	95.0	6.00	3.24	
Total BTX	<0.300	0.300	12/03/2012	ND					

Surrogate: 4-Bromofluorobenzene (PID) 124 % 89.4-126

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	12/03/2012	ND	180	90.2	200	0.988	
DRO >C10-C28	<50.0	50.0	12/03/2012	ND	195	97.5	200	1.26	
EXT DRO >C28-C35	<50.0	50.0	12/03/2012	ND					

Surrogate: 1-Chlorooctane 78.9 % 65.2-140

Surrogate: 1-Chlorooctadecane 81.3 % 63.6-154

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



Cardinal
CHAIN OF CUSTODY RECORD

Page ____ of ____

Client: GREEN ANALYTICAL
Contact: DEBBIE ZUFELT
Address: 75 SUTTLE ST
DURANGO, CO 81303
Phone Number: 970-247-4220
FAX Number: 970-247-4227

NOTES:

- 1) Ensure proper container packaging.
- 2) Ship samples promptly following collection.
- 3) Designate Sample Reject Disposition.

PO# GA12-313

Project Name: COGCC

Table 1. - Matrix Type

1 = Surface Water, 2 = Ground Water
3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
6 = Waste, 7 = Other (Specify) _____

FOR GAL USE ONLY

GAL JOB #

Samplers Signature: Karen Spray

PLEASE CALL WITH ANY QUESTIONS

Lab Name: Green Analytical Laboratories (970) 247-4220 FAX (970) 247-4227		Analyses Required										Comments		
Address: 75 Suttle Street, Durango, CO 81303		Collection		Miscellaneous			Preservative(s)							
Sample ID	Date	Time	Collected by: (Init.)	Matrix Type From Table 1	No. of Containers	Sample Filtered ? Y/N	Unpreserved (Ice Only)	HNO3	HCL	H2SO4	NAOH		Other (Specify)	
H202887- 01 1. IGS-405	11-28-12	1325	KS	3	1		X						X BTEX / TPH	1211-097-01
2.														
3.														
4.														
5.														
6.														
7.														
8.														
9.														
10.														

Relinquished by: <u>Michael Valentine</u>	Date: <u>11-29-12</u>	Time: <u>1600</u>	Received by: <u>Fed Ex</u>	Date: <u>11-29-12</u>	Time: <u>1600</u>
Relinquished by: <u>Fed Ex</u>	Date:	Time:	Received by: <u>Albuquerque</u>	Date: <u>11/30/12</u>	Time: <u>13:00</u>

* Sample Reject: [] Return [] Dispose [] Store (30 Days)

30C #260