



75 Suttle Street  
Durango, CO 81303  
970.247.4220 Phone  
970.247.4227 Fax  
[www.greenanalytical.com](http://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 signature is written in a cursive, flowing style.

Debbie Zufelt  
Reports Manager



Colorado Oil and Gas Conservation Commission	Project: COGCC	
PO Box 2651	Project Name / Number: [none]	<b>Reported:</b>
Durango CO, 81302	Project Manager: Karen Spray	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

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
---------	--------	----	-----	-------	----------	----------	--------	-------	---------

**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

Green Analytical Laboratories

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	Project: COGCC	
PO Box 2651	Project Name / Number: [none]	<b>Reported:</b>
Durango CO, 81302	Project Manager: Karen Spray	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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**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

Green Analytical Laboratories

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	Project: COGCC	
PO Box 2651	Project Name / Number: [none]	<b>Reported:</b>
Durango CO, 81302	Project Manager: Karen Spray	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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B212020 - General Prep - Wet Chem**

<b>Blank (B212020-BLK1)</b>										
Prepared & Analyzed: 12/03/12										
Chloride	ND	10.0	mg/kg wet							
<b>LCS (B212020-BS1)</b>										
Prepared & Analyzed: 12/03/12										
Chloride	96.0	10.0	mg/kg wet	100		96.0	85-115			
<b>LCS Dup (B212020-BSD1)</b>										
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**

<b>Blank (B212028-BLK1)</b>										
Prepared & Analyzed: 12/05/12										
Sulfate	ND	10.0	mg/kg wet							
<b>LCS (B212028-BS1)</b>										
Prepared & Analyzed: 12/05/12										
Sulfate	51.0	10.0	mg/kg wet	50.0		102	85-115			
<b>LCS Dup (B212028-BSD1)</b>										
Prepared & Analyzed: 12/05/12										
Sulfate	50.0	10.0	mg/kg wet	50.0		100	85-115	1.98	20	

Green Analytical Laboratories

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

**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

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.



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](http://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)**

BTEX 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 BTEX	<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

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, 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 by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



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

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, 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 by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



---

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														
Sample ID	Collection		Miscellaneous				Preservative(s)							
	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- 1. IGS-405	11-28-12	1325	KS	3	1		X						X BTEX/TPH	(211-097-01)
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