



September 4, 2014

Oil Conservation Division District 2 – Artesia 811 S. First St. Artesia, NM 88210

Re: Burch Keely Unit #182 30-015-03095 Sec. 25, T17S-R29E Eddy County, NM

Mr. Mike Bratcher,

COG Operating LLC would like to submit for your consideration the enclosed work plan for the above captioned well. The plan is in response to the C-141 initial report dated May 6, 2014.

### **Background**

The release was caused by a valve in the wrong position, allowing fluid to go out a different port. The situation was remediated by installing bull plugs on all open ports. The impacted area from the wellhead ran into the pasture, then along the road approximately 590 feet before re-entering the pasture and traveling an additional 180'.

### Groundwater

Based on the Chevron Trend Maps, the release area would be classified at a site ranking of Zero due to the depth of groundwater at approximately 175'. No well information could be found for Section 23 per NMOSE.

### Soil Assessment and Analytical Results

Initial soil samples were taken on 6-6-14 with approximate sample locations depicted on the attached Site Diagram. Samples indicated TPH and BTEX were within RRALs for a site ranking of zero. Chloride concentrations were elevated for sample points S1, S2, S3, & S4, therefore further delineation was conducted (see attached Sample Summary Table and Analytical Results).

### **Work Plan**

COG Operating LLC proposes the following remediation plan:

- **S1**: Excavate down to 3' and backfill with a 2' cap of packed caliche and 1' of topsoil with enough loft to prevent pooling (~1,110 ft²).
- **S2**: Excavate down to 3' and backfill with a 2' cap of packed caliche and 1' of topsoil with enough loft to prevent pooling (~850 ft²).
- $S_3$ : No excavation other than an initial scrape (~750 ft<sup>2</sup>).
- **S4**: Excavate down to 3' and backfill with a 2' cap of packed caliche and 1' of topsoil with enough loft to prevent pooling (~2,500ft²).
- **S5**: No excavation other than an initial scrape (~2,500 ft²).

All impacted material excavated will be hauled to an approved NMOCD facility for disposal. The excavated or disturbed areas will be reseeded in the spring of 2015 with a BLM approved seed mixture.

If there are no objections or further stipulations, COG Operating LLC would like to begin the remediation process based on approval of this work plan. Please feel free to contact me with any questions or concerns at (575) 725-0787.

Sincerely,

Lupe Carrasco

**Environmental Scientist** 

### **Enclosed**

- (1) C-141 Initial (copy)
- (2) Site Diagram and Summary Table
- (3) Laboratory Analysis

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1301 Rio Brazos Road, Aztec, NM 87410
ict IV
10 S. St. Francis Dr., Santa Fe, NM 87505

### State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe. NM 87505

**Release Notification and Corrective Action** 

Form C-14 Revised October 10, 200

Submit 2 Copies to approprial District Office in accordanc with Rule 116 on bac side of fon

### **OPERATOR** Initial Report Final Rep Name of Company **COG OPERATING LLC** Contact Robert McNeill Address 600 West Illinois Avenue, Midland, TX 79701 Telephone No. 432-230-0077 **Facility Name** Burch Keely Unit #182 **Facility Type** Injection Well Surface Owner Federal Mineral Owner Lease No. (API#) 30-015-03095 **LOCATION OF RELEASE** I Init Letter Section Township Range Feet from the North/South Line Feet from the East/West Line County K 25 175 29E Eddy Latitude 32.80371 Longitude 104.03036 NATURE OF RELEASE Type of Release Volume of Release Volume Recovered Produced water 400bbls 100bbls Source of Release Date and Hour of Occurrence Date and Hour of Discovery Valve 05-27-2014 05-27-2014 11:30am Was Immediate Notice Given? If YES, To Whom? Jeff Robertson - BLM By Whom? Michelle Mullins Date and Hour 06-06-2014 2:29pm Was a Watercourse Reached? If YES, Volume Impacting the Watercourse. ☐ Yes ☒ No if a Watercourse was Impacted, Describe Fully.\* Describe Cause of Problem and Remedial Action Taken.\* The valve was in the wrong position, allowing the fluid to go out a different port. Make sure valves are in the correct position and all other port has bull plugs on them. Describe Area Affected and Cleanup Action Taken.\* Initially 400bbls of produced water were released. We were able to recover 100bbls with a vacuum truck. All free fluids have been recovered. Concho will have the spill site sampled to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD/BLM for approval prior to any significant

report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. OIL CONSERVATION DIVISION Ralet L Signature: Approved by District Supervisor: Printed Name: Robert Grubbs Jr. Title: Senior Environmental Coordinator Approval Date: **Expiration Date:** E-mail Address: rgrubbs@concho.com Conditions of Approval: Attached 06-06-2014 Phone: 432-661-6601

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141

mach Additional Sheets If Necessary

remediation work.



### BKU #182

### Site Ranking: Zero

Depth to GW per Trend Map: > 175'

Depth	o GW per I	rena Map:	> 1/5		
S1	DRO	GRO	TPH	BTEX	Cl-
1'	2130	ND	ND	2130	720
3'	ND	ND	ND	ND	3240
4.5	18.5	ND	ND	18.5	3360
5'					3360
7'					1260
9'					1310
11'					2160
13'					1920
15'					1680
<b>S2</b>	DRO	GRO	TPH	BTEX	CI-
1'	35.8	ND	ND	35.8	1420
3'	ND	ND	ND	ND	2280
5'	ND	ND	ND	ND	5680
7'					3520
9'					2800
11'					1390
13'					736
15'					560
S3	DRO	GRO	TPH	BTEX	Cl-
1'	311	ND	ND	311	816
3'	347	ND	ND	347	1300
5'					1380
7'					1310
9'					1520
11'					896
15'					336
54	DRO	GRO	TPH	BTEX	Cl-
1'	ND	ND	ND	ND	3920
3'	ND	ND	ND	ND	4000
5'	ND	ND	ND	ND	9300
7'					432
9'					352
11'					400
13'					304
15'					832
17'					656
19'					560
21'					752
S5	DRO	GRO	TPH	BTEX	Cl-
1'	30.1	ND	ND	30.1	80
3'	52.9	ND	ND	52.9	144
5'	ND	ND	ND	ND	32
7'	ND	ND	ND	ND	64
Bold	values exce	ed RRALs p	er NMOCD	Guidelines	(1993)



June 19, 2014

**AMANDA TRUJILLO** 

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: BKU #182

Enclosed are the results of analyses for samples received by the laboratory on 06/11/14 14:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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 <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accredited certif.html.

Cardinal Laboratories is accreditated 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.

Celey D. Keine

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



COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

06/11/2014

Reported:

06/19/2014

Project Name:

BKU #182

Project Number:

NONE GIVEN

Project Location:

SEC 25 T17S R29E

Sampling Date:

ng Date:

06/06/2014

Soil

Sampling Type: Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: S1 1' (H401783-01)

BTEX 8021B	mg/	'kg	Analyze	d By: CK			501		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2014	ND	2.05	102	2.00	0.355	
Toluene*	<0.050	0.050	06/13/2014	ND	2.21	111	2.00	1.10	
Ethylbenzene*	<0.050	0.050	06/13/2014	ND	2.00	99.9	2.00	0.225	
Total Xylenes*	<0.150	0.150	06/13/2014	ND	6.24	104	6.00	0.594	
Total BTEX	<0.300	0.300	06/13/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	106 9	% 89.4-12	6						
hloride, SM4500CI-B mg/kg		kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	720	16.0	06/16/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2014	ND	165	82.4	200	0.946	
DRO >C10-C28	2130	10.0	06/18/2014	ND	173	86.4	200	5.13	
Surrogate: 1-Chlorooctane	78.5	% 65.2-14	0						- 10 TO
Surrogate: 1-Chlorooctadecane	137 9	63.6-15	4						

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\*=Accredited Analyte

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 2 of 19



COG OPERATING **AMANDA TRUJILLO** P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

06/11/2014

Reported:

06/19/2014

Project Name:

BKU #182

Project Number:

NONE GIVEN

Project Location:

SEC 25 T17S R29E

Sampling Date:

06/06/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By: Jodi Henson

### Sample ID: S1 3' (H401783-02)

BTEX 8021B	mg/	kg	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2014	ND	2.05	102	2.00	0.355	
Toluene*	<0.050	0.050	06/13/2014	ND	2.21	111	2.00	1.10	
Ethylbenzene*	<0.050	0.050	06/13/2014	ND	2.00	99.9	2.00	0.225	
Total Xylenes*	<0.150	0.150	06/13/2014	ND	6.24	104	6.00	0.594	
Total BTEX	<0.300	0.300	06/13/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	107 9	% 89.4-12	6						
Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3240	16.0	06/16/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2014	ND	165	82.4	200	0.946	
DRO >C10-C28	<10.0	10.0	06/18/2014	ND	173	86.4	200	5.13	
Surrogate: 1-Chlorooctane	71.4	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	83.3	63.6-15	4						

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Celeg & Keens



COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

06/11/2014

Reported:

06/19/2014

Project Name:

BKU #182

Project Number:

NONE GIVEN

Project Location:

SEC 25 T17S R29E

Sampling Date:

06/06/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: S1 4.5' (H401783-03)

BTEX 8021B	mg/	kg	Analyze	d By: CK		20			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2014	ND	2.05	102	2.00	0.355	
Toluene*	<0.050	0.050	06/13/2014	ND	2.21	111	2.00	1.10	
Ethylbenzene*	<0.050	0.050	06/13/2014	ND	2.00	99.9	2.00	0.225	
Total Xylenes*	<0.150	0.150	06/13/2014	ND	6.24	104	6.00	0.594	
Total BTEX	<0.300	0.300	06/13/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIC	107 9	6 89.4-12	6	5 3				Track to the	
Chloride, SM4500Cl-B	mg/	kg	Analyzed By: HM						72.20
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3360	16.0	06/16/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2014	ND	165	82.4	200	0.946	
DRO >C10-C28	18.5	10.0	06/18/2014	ND	173	86.4	200	5.13	
Surrogate: 1-Chlorooctane	75.2 9	% 65.2-140	0						
Surrogate: 1-Chlorooctadecane	86.65	63.6-15	4						

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Celey D. Keene, Lab Director/Quality Manager

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COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

06/11/2014

Reported:

06/19/2014

Project Name:

BKU #182

Project Number: Project Location: NONE GIVEN SEC 25 T17S R29E Sampling Date:

06/06/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

### Sample ID: S2 1' (H401783-04)

8TEX 8021B	mg/	kg	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2014	ND	2.05	102	2.00	0.355	
Toluene*	<0.050	0.050	06/13/2014	ND	2.21	111	2.00	1.10	
Ethylbenzene*	<0.050	0.050	06/13/2014	ND	2.00	99.9	2.00	0.225	
Total Xylenes*	<0.150	0.150	06/13/2014	ND	6.24	104	6.00	0.594	
Total BTEX	<0.300	0.300	06/13/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	106 9	6 89.4-12	6						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1420	16.0	06/16/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2014	ND	165	82.4	200	0.946	
DRO >C10-C28	35.8	10.0	06/18/2014	ND	173	86.4	200	5.13	
Surrogate: 1-Chlorooctane	71.2 9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	78.69	63.6-15	4						

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Celey D. Keene, Lab Director/Quality Manager

Page 5 of 19

COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

06/11/2014

Reported:

06/19/2014

Project Name:

BKU #182

Project Number:

NONE GIVEN

SEC 25 T17S R29E

Project Location:

Sampling Date:

06/06/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: S2 3' (H401783-05)

BTEX 8021B	mg/	kg	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2014	ND	2.05	102	2.00	0.355	
Toluene*	<0.050	0.050	06/13/2014	ND	2.21	111	2.00	1.10	
Ethylbenzene*	<0.050	0.050	06/13/2014	ND	2.00	99.9	2.00	0.225	
Total Xylenes*	<0.150	0.150	06/13/2014	ND	6.24	104	6.00	0.594	
Total BTEX	<0.300	0.300	06/13/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	107 9	% 89.4-12	б						5.0
Chloride, SM4500CI-B	mg/	kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2280	16.0	06/16/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2014	ND	165	82.4	200	0.946	
DRO >C10-C28	<10.0	10.0	06/18/2014	ND	173	86.4	200	5.13	
Surrogate: 1-Chlorooctane	95.5	% 65.2-14	0				****		
Surrogate: 1-Chlorooctadecane	123 9	63.6-15	4						

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\*=Accredited Analyte

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

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### Analytical Results For:

COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

06/11/2014

Reported:

06/19/2014

Project Name:

BKU #182 NONE GIVEN

Project Number: Project Location:

SEC 25 T17S R29E

Sampling Date:

06/06/2014

.

Sampling Type: Sampling Condition: Soil Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: S2 5' (H401783-06)

BTEX 8021B	mg/	kg	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2014	ND	2.05	102	2.00	0.355	
Toluene*	<0.050	0.050	06/13/2014	ND	2.21	111	2.00	1.10	
Ethylbenzene*	<0.050	0.050	06/13/2014	ND	2.00	99.9	2.00	0.225	
Total Xylenes*	<0.150	0.150	06/13/2014	ND	6.24	104	6.00	0.594	
Total BTEX	<0.300	0.300	06/13/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	1069	% 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5680	16.0	06/16/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2014	ND	165	82.4	200	0.946	
DRO >C10-C28	<10.0	10.0	06/18/2014	ND	173	86.4	200	5.13	
Surrogate: 1-Chlorooctane	97.19	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	122 9	63.6-15	4						

### Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keine



COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

06/11/2014

Reported:

06/19/2014

Project Name:

BKU #182

Project Number: Project Location:

NONE GIVEN

SEC 25 T17S R29E

Sampling Date:

06/06/2014

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Jodi Henson

Sample ID: S3 1' (H401783-07)

Result	Reporting Limit	Analyzed	Method Blank			Ukrasi-		
< 0.200			Metriod blank	BS	% Recovery	True Value QC	RPD	Qualifier
-0.200	0.200	06/13/2014	ND	2.05	102	2.00	0.355	
<0.200	0.200	06/13/2014	ND	2.21	111	2.00	1.10	
<0.200	0.200	06/13/2014	ND	2.00	99.9	2.00	0.225	
<0.600	0.600	06/13/2014	ND	6.24	104	6.00	0.594	
<1.20	1.20	06/13/2014	ND					
107 9	6 89.4-12	5						
mg/kg		Analyze	d By: HM			120		
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
816	16.0	06/16/2014	ND	416	104	400	0.00	
mg/	kg	Analyze	d By: M5					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<100	100	06/17/2014	ND	165	82.4	200	0.946	
311	100	06/17/2014	ND	173	86.4	200	5.13	
67.3 9	65.2-140	)						
138 %	63.6-15-	1						
	<0.200 <0.600 <1.20 107 9 mg/ Result 816 mg/ Result <100 311	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0,200

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### Analytical Results For:

COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

06/11/2014

Reported:

06/19/2014

Project Name:

BKU #182

Project Number:

NONE GIVEN

Project Location:

SEC 25 T17S R29E

Sampling Date:

06/06/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: S3 3' (H401783-08)

BTEX 8021B	mg/	kg	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	06/13/2014	ND	2.05	102	2.00	0.355	
Toluene*	<0.200	0.200	06/13/2014	ND	2.21	111	2.00	1.10	
Ethylbenzene*	<0.200	0.200	06/13/2014	ND	2.00	99.9	2.00	0.225	
Total Xylenes*	<0.600	0.600	06/13/2014	ND	6.24	104	6.00	0.594	
Total BTEX	<1.20	1.20	06/13/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	107 9	6 89.4-12	6						-27
Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1300	16.0	06/16/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2014	ND	165	82.4	200	0.946	
DRO >C10-C28	347	10.0	06/18/2014	ND	173	86.4	200	5.13	
Surrogate: 1-Chlorooctane	98.3	65.2-14	0						
Surrogate: 1-Chlorooctadecane	1419	63.6-15	4						

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Celey D. Keene, Lab Director/Quality Manager

Page 9 of 19



### Analytical Results For:

COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

06/11/2014

Reported:

06/19/2014

Project Name:

BKU #182

Project Number:

NONE GIVEN

Project Location:

SEC 25 T17S R29E

Sampling Date:

06/06/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

### Sample ID: S4 1' (H401783-09)

BTEX 8021B	mg/	kg	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2014	ND	2.05	102	2.00	0.355	
Toluene*	<0.050	0.050	06/13/2014	ND	2.21	111	2.00	1.10	
Ethylbenzene*	<0.050	0.050	06/13/2014	ND	2.00	99.9	2.00	0.225	
Total Xylenes*	<0.150	0.150	06/13/2014	ND	6.24	104	6.00	0.594	
Total BTEX	<0.300	0.300	06/13/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	1069	6 89.4-12	б						
Chloride, SM4500Cl-B	mg/	kg	Analyzed By: HM			-			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3920	16.0	06/16/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2014	ND	165	82.4	200	0.946	
DRO >C10-C28	<10.0	10.0	06/18/2014	ND	173	86.4	200	5.13	
Surrogate: I-Chlorooctane	94.8 9	65.2-14	0						_
Surrogate: 1-Chlorooctadecane	1129	63.6-15	4						

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Celey D. Keene, Lab Director/Quality Manager

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COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

06/11/2014

Reported:

06/19/2014

Project Name:

BKU #182

Project Number:

NONE GIVEN

Project Location: SEC 25 T17S R29E

Sampling Date:

06/06/2014

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Jodi Henson

### Sample ID: S4 3' (H401783-10)

mg/	kg	Analyze	d By: CK					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<0.050	0.050	06/13/2014	ND	2.05	102	2.00	0.355	
<0.050	0.050	06/13/2014	ND	2.21	111	2.00	1.10	
<0.050	0.050	06/13/2014	ND	2.00	99.9	2.00	0.225	
<0.150	0.150	06/13/2014	ND	6.24	104	6.00	0.594	
<0.300	0.300	06/13/2014	ND					
106 9	% 89.4-12	6						
mg/	mg/kg		Analyzed By: HM					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
4000	16.0	06/16/2014	ND	416	104	400	0.00	
mg/	kg	Analyze	d By: MS					
Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<10.0	10.0	06/18/2014	ND	207	104	200	7.29	
<10.0	10.0	06/18/2014	ND	216	108	200	8.55	
			ND	216	108	200	8.55	-
	<0.050 <0.050 <0.050 <0.150 <0.300  1069 mg/ Result 4000 mg/ Result	<0.050 0.050 <0.050 0.050 <0.050 0.050 <0.150 0.150 <0.300 0.300  106 % 89.4-120 mg/kg  Result Reporting Limit 4000 16.0 mg/kg  Result Reporting Limit	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

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### Analytical Results For:

COG OPERATING
AMANDA TRUJILLO
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:

06/11/2014

Reported:

06/19/2014

Project Name:

BKU #182

Project Number: Project Location:

NONE GIVEN SEC 25 T17S R29E Sampling Date:

06/06/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: S4 5' (H401783-11)

BTEX 8021B	mg	/kg	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2014	ND	2.05	102	2.00	0.355	
Toluene*	<0.050	0.050	06/13/2014	ND	2.21	111	2.00	1.10	
Ethylbenzene*	<0.050	0.050	06/13/2014	ND	2.00	99.9	2.00	0.225	
Total Xylenes*	<0.150	0.150	06/13/2014	ND	6.24	104	6.00	0.594	
Total BTEX	<0.300	0.300	06/13/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	107	% 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9300	16.0	06/16/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2014	ND	207	104	200	7.29	
DRO >C10-C28	<10.0	10.0	06/18/2014	ND	216	108	200	8.55	
Surrogate: 1-Chlorooctane	89.2	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	107 9	% 63.6-15	4						

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COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

06/11/2014

Reported:

06/19/2014

Project Name:

BKU #182

Project Number:

NONE GIVEN

Project Location:

SEC 25 T17S R29E

Sampling Date:

06/06/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

### Sample ID: S5 1' (H401783-14)

BTEX 8021B	mg/	kg	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2014	ND	2.05	102	2.00	0.355	
Toluene*	<0.050	0.050	06/13/2014	ND	2.21	111	2.00	1.10	
Ethylbenzene*	<0.050	0.050	06/13/2014	ND	2.00	99.9	2.00	0.225	
Total Xylenes*	<0.150	0.150	06/13/2014	ND	6.24	104	6.00	0.594	
Total BTEX	<0.300	0.300	06/13/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	1069	89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	06/18/2014	ND	432	108	400	3.64	
TPH 8015M	mg/	kg	Analyze	d By: M5					_
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2014	ND	207	104	200	7.29	
DRO >C10-C28	30.1	10.0	06/18/2014	ND	216	108	200	8.55	
Surrogate: 1-Chlorooctane	93.0 9	% 65.2-14	)			1,111			
Surrogate: 1-Chlorooctadecane	108 %	63.6-15	1						

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COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

06/11/2014

Reported:

06/19/2014

Project Name:

BKU #182

Project Number: Project Location:

NONE GIVEN

SEC 25 T17S R29E

Sampling Date:

06/06/2014

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Jodi Henson

Sample ID: S5 3' (H401783-15)

BTEX 8021B	mg/	kg	Analyze	d By: CK		_			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2014	ND	2.05	102	2.00	0.355	
Toluene*	<0.050	0.050	06/13/2014	ND	2.21	111	2.00	1.10	
Ethylbenzene*	<0.050	0.050	06/13/2014	ND	2.00	99.9	2.00	0.225	
Total Xylenes*	<0.150	0.150	06/13/2014	ND	6.24	104	6.00	0.594	
Total BTEX	<0.300	0.300	06/13/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	106 9	% 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	06/18/2014	ND	432	108	400	3.64	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2014	ND	207	104	200	7.29	
DRO >C10-C28	52.9	10.0	06/18/2014	ND	216	108	200	8.55	
Surrogate: 1-Chlorooctane	97.9 9	65.2-14	0						
Surrogate: 1-Chlorooctadecane	1199	63.6-15	4						

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COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

06/11/2014

Reported:

06/19/2014

Project Name:

BKU #182

Project Number:

NONE GIVEN

Project Location:

SEC 25 T17S R29E

Sampling Date:

06/06/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

### Sample ID: S5 5' (H401783-16)

BTEX 8021B	mg/	'kg	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2014	ND	2.05	102	2.00	0.355	
Toluene*	<0.050	0.050	06/13/2014	ND	2.21	111	2.00	1.10	
Ethylbenzene*	<0.050	0.050	06/13/2014	ND	2.00	99.9	2.00	0.225	
Total Xylenes*	<0.150	0.150	06/13/2014	ND	6.24	104	6.00	0.594	
Total BTEX	<0.300	0.300	06/13/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	1069	% 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/18/2014	ND	432	108	400	3.64	
TPH 8015M	mg/	kg	Analyzed By: M5						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2014	ND	207	104	200	7.29	
DRO >C10-C28	<10.0	10.0	06/18/2014	ND	216	108	200	8.55	
Surrogate: 1-Chlorooctane	95.4	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	112 9	63.6-15							

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### Analytical Results For:

COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

06/11/2014

Reported:

06/19/2014

Project Name:

BKU #182

Project Number:

NONE GIVEN

Project Location:

SEC 25 T17S R29E

Sampling Date:

06/06/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

### Sample ID: S5 7' (H401783-17)

BTEX 8021B	mg/	kg	Analyze	d By: CK			36805		
Analyte	Result	Reporting Limit	Analyzed	Method Biank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/13/2014	ND	2.05	102	2.00	0.355	
Toluene*	<0.050	0.050	06/13/2014	ND	2.21	111	2.00	1.10	
Ethylbenzene*	<0.050	0.050	06/13/2014	ND	2.00	99.9	2.00	0.225	
Total Xylenes*	<0.150	0.150	06/13/2014	ND	6.24	104	6.00	0.594	
Total BTEX	<0.300	0.300	06/13/2014	ND					
Surrogate: 4-Bromofluorobenzene (PIL	107	% 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: HM					
Analyte	Resuit	Reporting Limit	Analyzed	Method Biank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/18/2014	ND	432	108	400	3.64	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Resuit	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2014	ND	207	104	200	7.29	
DRO >C10-C28	<10.0	10.0	06/18/2014	ND	216	108	200	8.55	
Surrogate: 1-Chlorooctane	90.0	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	102 9	63.6-15	4						

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

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ND

### **Notes and Definitions**

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. Chioride by SM4500Ci-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

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Celey D. Keina



### 101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Company Name:	COG Operating LLC		١	١	١						R	8/1-170	1000 1000 1000 1000 1000 1000 1000 100				ANALTON ARECTO
Project Manager:	Amanda Trujillo							P.O. #:	*						$\exists$	$\neg$	
Address: 2208 W	2208 West Main						_	Company:	P	3		COG Operating LLC	ating LLC				
칥	State: NM	N.	Zip	ço	88210	0		Attn	3			Robert McNeill	Neil				
Phone #:	(575) 748-6930 Fax #:							Address:	de.	.55		600 W Illinois	llinois	-			
Project #:	Project Owner:	ner:					_	City:	*			Midland	α.				
ame:	BKU 182							State: TX	e:	¥		Zip: 79701	01			<del></del>	
Project Location:	Sec 25 T17S R29E							P	200	#	(43	Phone #: (432) 221-0388	60				
Sampler Name:	Amanda Trujillo							Fax #:	<b> </b>	1					_		
FOR LAB USE ONLY	TANA TERRETARIA				MATRIX	꽂			R	S	PRESERV.	SAMPLING	NG				
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	ВТЕХ	TPH	Chloride	
	S1 1'	_	_		×					×		6/6/14	9:40 AM	×	×	×	
	S1 3'	_			×					×		6/6/14	9:40 AM	×	×	×	
_	S1 4.5	-1			×					×		6/6/14	9:40 AM	×	×	×	
	S2 1'	_		-	×					×		6/6/14	9:40 AM	×	×	×	
- 1	S2 3'	-			×					×		6/6/14	9:40 AM	×	×	×	Property of the Control of the Contr
	\$2.5'	_,			×					×		6/6/14	9:40 AM	×	×	×	
\S.	S3 1'			-	×					×		6/6/14	9:40 AM	×	×	×	
9.1	S3 3			-	×					×		6/6/14	9:40 AM	×	×	^ ×	
				-							-			Т	+	+	
									_								

aralyze. All claims including those for negligence and any other cause whatconver shall be deemed welved unless made in writing and neesked by Cardinal within 30 days after completion of the applicable service in no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profile incurred by client, its substitutions.

Date: Received By:  Time: Sample Condition CHECKED BY:  Cool Intact: [Initials]	Relinquished By:  Delivered By: (Circle One)	ָבָי. י	A CAPE	the second secon
Phone Result:	2 8	I Milia	Date: Received BV:	and a strong of the strong and dain is based upon any of the above
☐ Yes ☐ No Add'l Phone #: ☐ Yes ☐ No Add'l Fax #:	51	Fax Result:	Phone Result:	stated reasons or otherwise.
□ No Add'i Phone #: □ No Add'i Fax #:		□ Yes	☐ Yes	
Add'l Phone #: Add'l Fax #:		O No	ON D	
		Add'I Fax #:	Add'I Phone #:	



101 East Marland, Hobbs, NM 88240

COG Operating LLC	5	les S4 7'	Samp er san	hold or oth	REMARKS: Please hold Samples S COG for other samples	CHECKED BY:	CHECKED	By:	eived By:	- Call		11 Court 11 14 150 150 150 150 150 150 150 150 150 150	Blinguished By:  Defivered By: (Circle One)	Relinquished By:
COG Operating LLC				vise. Cesult:	Phone R	rofits incurred by cl	ruse, or loss of p and upon any of t	uptions, loss o ch claim is ban	business inter s of whether su H By:	Celve	No.	performance of services hereunder by I	hardmai be liable for incide they out of or related to the	Relinquished B
COG Operating LLC			able	for the	by the client to completion or	to the amount paid within 30 days after	L shall be limited wed by Continal	contract or tor	hether based of deas made in v	n fanta	ny claim deemed	ability and client's exclusive remedy for a	nd Damages, Cardina's its	PLEASE NOTE: Labity
COG Operating LLC		7	7		7	h1910	76		*		-		1 25	
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COG Operating LLC		×	×		9:40 AM		×		×		-		S4 9'	
COG Operating LLC		×	×	Т	9:40 AN	6/6/14	×		×		-		\$47'	
COG Operating LLC  ### Amanda Trujillo    Company: COG Operating LLC		×	×		9:40 AN	6/6/14	×		×		-		S4 5	
COG Operating LLC		×	×	Т	9:40 AN	6/6/14	×		×		-		S4 3'	
COG Operating LLC	And the state of t	×	×	T	9:40 AN	6/6/14	×		×		-		S4 1'	
COG Operating LLC  : Amanda Trujiilo  : State: NM    State: NM   Zip   88210   Attn:   Robert McNeill		Chloride	ТРН	BTEX	TIME	DATE	ACID/BASE: ICE / COOL OTHER:	SLUDGE OTHER:		and the second second	The second secon	ple I.D.	Sam	Lab I.D.
COG Operating LLC  Ramanda Trujiilo  State: NM Zip 88210 Attn: Robert McNeill  (575) 748-6930 Fax #: Address: 600 W Illinois  Project Owner: City: Midland  Project Owner: State: TX Zip: 79701  State: TX Zip: 79701  Phone #: (432) 221-0388					ရ	SAMPLIN	PRESERV.		MATR	1	4	Jillo	Amanda Tru	Sampler Name:
COG Operating LLC  Amanda Trujillo  Nest Main  State: NM  Zip  88210  Attn:  Robert McNeill  (575) 748-6930  Fax #:  Address:  City:  Midland  Project Owner:  State: TX  Zip: 79701						2) 221-0388	me #: (432	ı P				S R29E		Project Location
COG Operating LLC  Amanda Trujiilo  West Main  State: NM  Zip  88210  Attn:  Robert McNeill  (575) 748-6930  Fax #:  City:  Midland  AMALYSIS  ANALYSIS  Company: COG Operating LLC  Company: COG Operating LLC  Company: GOG Operating LLC  City: Midland			,			Zip: 79/01	e: TX	Sta					BKU 182	Project Name:
COG Operating LLC  Robert Main  State: NM  Zip  88210  AMALYSIS  Company: COG Operating LLC  Company: COG Operating LLC  AMALYSIS  Address: 600 W Illinois						Midland	!	CF				Project Owner:		Project #:
COG Operating LLC  Amanda Trujiilo  P.O. #:  Company: COG Operating LLC  Company: COG Operating LLC  Company: COG Operating LLC  Attn: Robert McNeill					S.	000 W IIIin	ress:	Add					(575) 748-693	Phone #:
COG Operating LLC  R.O. #:  AMALYSIS  ANALYSIS  Company: COG Operating LLC  Company: COG Operating LLC					1	Robert McNe	-	Attr	88210	ö	N	State: NM		City: Artesia
COG Operating LLC  Amanda Trujillo  P.O. #:  ANALYSIS					ng LLC	COG Operati		Con					West Main	Address: 2208
COG Operating LLC ANALYSIS							**	P.0				illo		roject Manager
	ANALYSIS REQUEST			70,000	1	170	8/1	100 40 1 100 40 1 100 40 1 100 40 1 100 40 1 100 40 1				ing LLC		Company Name:

CHECKED BY:

Sampler - UPS - Bus - Other:



August 12, 2014

AMANDA TRUJILLO

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: BKU #182

Enclosed are the results of analyses for samples received by the laboratory on 08/08/14 10:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accredited certif.html.

Cardinal Laboratories is accreditated 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.

Celey D. Keene

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:

COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

08/08/2014

Reported:

08/12/2014

Project Name: Project Number:

BKU #182 NONE GIVEN

Project Location:

Analyte

SEC 25 T17S R29E

Sampling Date:

08/06/2014

Sampling Type:

BS

400

Soil

Sampling Condition: Sample Received By: \*\* (See Notes)

Jodi Henson

Sample ID: S1 5' (H402443-01)

Chioride, SM4500CI-B

Chloride

Chloride

Chloride

mg/kg

Result

3360

Result

1260

Analyzed By: HM

Analyzed

08/11/2014

08/11/2014

Method Blank

% Recovery

100

True Value QC 400

RPD

Qualifier

Qualifier

Oualifier

Oualifier

0.00

Sample ID: S1 7' (H402443-02)

Chloride, SM4500CI-B

mg/kg

Analyzed By: HM

Analyte

Reporting Limit Analyzed 16.0

16.0

Reporting Limit

16.0

Method Blank

ND

ND

BS

400

BS

400

% Recovery 100

True Value QC 400

RPD

0.00

Sample ID: S1 9' (H402443-03)

Chloride, SM4500CI-B

mg/kg

Analyzed By: HM

Analyte Result Reporting Limit 1310 16.0

Analyzed 08/11/2014 Method Blank

ND

% Recovery

True Value QC

400

RPD

0.00

Sample ID: S1 11' (H402443-04)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: HM

Reporting Limit Analyte Result Chloride 2160

Analyzed

08/11/2014

Method Blank ND

BS 400 % Recovery 100

100

True Value QC 400

**RPD** 0.00

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Celeg L. Kuna-



COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 NONE Fax To:

Received:

08/08/2014

Reported:

08/12/2014

Project Name:

BKU #182

Project Number:

NONE GIVEN

Project Location:

Analyte

Analyte

SEC 25 T17S R29E

Sampling Date:

08/06/2014

Sampling Type:

Soil

Sampling Condition: Sample Received By: \*\* (See Notes) Jodi Henson

Sample ID: S1 13' (H402443-05)

Chloride, SM4500Cl-B

mg/kg

Result

1920

Analyzed By: HM

Method Blank

BS

400

% Recovery True Value QC

RPD

Qualifier 0.00

Sample ID: S1 15' (H402443-06)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: HM

Method Blank

ND

BS

% Recovery

100

True Value OC

RPD

**Qualifier** 

Qualifier

Chloride

Chloride

Result 1680

16.0

Reporting Limit

Reporting Limit

16.0

Analyzed 08/11/2014

Analyzed

08/11/2014

ND

400

100

400

400

0.00

Sample ID: S2 7' (H402443-07)

Chloride, SM4500CI-B

mg/kg

Analyzed By: HM

Analyte

Result Reporting Limit 3520

Analyzed

Method Blank

BS

% Recovery 100

% Recovery

100

True Value QC

400

RPD

Chloride

Result

2800

16.0

Reporting Limit

16.0

08/11/2014

Analyzed

08/11/2014

ND

400

0.00

Sample ID: S2 9' (H402443-08)

Chloride, SM4500Cl-B

Analyte

mg/kg

Analyzed By: HM

Method Blank BS

True Value QC RPD

Qualifier

Chloride

Chloride

Sample ID: S2 11' (H402443-09)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: HM

Analyte

Result

1390

Reporting Limit 16.0

Analyzed 08/11/2014 Method Blank ND

ND

RS 400

400

% Recovery 100

True Value QC 400

400

RPD

0.00

0.00

Qualifier

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Celegi Kreena





COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

08/08/2014

Reported:

08/12/2014

Project Name: Project Number: BKU #182 NONE GIVEN

Project Location:

Analyte

Analyte

SEC 25 T17S R29E

Sampling Date:

08/06/2014

Sampling Type:

Soil

Sampling Condition: Sample Received By: \*\* (See Notes) Jodi Henson

Sample ID: S2 13' (H402443-10)

Ch	loric	đe,	SM	145	00	Q.	-B

Chloride

Chloride

mg/	kg
-----	----

Result

736

560

### Analyzed By: HM

Analyzed

08/11/2014

08/11/2014

Method Blank ND

BS

100

100

400

400

BS

400

% Recovery True Value QC

400

400

400

400

RPD 0.00

Qualifier

Qualifier

Qualifier

Sample ID: S2 15' (H402443-11)

Chloride, S	M4500CI-B
-------------	-----------

### mg/kg

### Analyzed By: HM

Reporting Limit Result Analyzed

16.0

Reporting Limit

16.0

Method Blank ND

BS % Recovery True Value QC

RPD

0.00

Sample ID: S3 5' (H402443-12)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: HM

Analyte Chloride

Result Reporting Limit 1380 16.0

Reporting Limit

16.0

Reporting Limit

16.0

Analyzed 08/11/2014

Method Blank

% Recovery

True Value OC

RPD 0.00

0.00

Sample ID: S3 7' (H402443-13)

Chloride, SM4500Cl-B

Chloride

mg/kg

Result

1310

Result

1520

Analyzed By: HM

Method Blank

ND

ND

BS 400 % Recovery 100

100

True Value QC

RPD Qualifier

Sample ID: S3 9' (H402443-14)

Analyte

Chloride, SM4500Cl-B

mg/kg

Analyzed By: HM

Analyte Chloride

Analyzed

08/11/2014

Analyzed

08/11/2014

Method Blank ND

BS 400 % Recovery 100

True Value QC **RPD** 400 0.00 Qualifier

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COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

08/08/2014

Reported:

08/12/2014

Project Name:

BKU #182

Project Number:

NONE GIVEN

Project Location:

SEC 25 T17S R29E

Sampling Date:

08/06/2014

Sampling Type:

Soil

Sampling Condition:

\*\* (See Notes)

Sample Received By:

Jodi Henson

### Sample ID: S3 11' (H402443-15)

Chloride, SM4500Cl-B	mg	/kg	Analyze	ed By: HM				_,	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	896	16.0	08/11/2014	ND	400	100	400	0.00	
Sample ID: S3 15' (H402	2443-16)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: HM					_
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	08/11/2014	ND	400	100	400	3.92	
Sample ID: S4 7' (H4024	l <b>43-17</b> )								
Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	08/11/2014	ND	400	100	400	3.92	
Sample ID: S4 9' (H4024	l <b>43-18</b> )								
dil-di- charped p	•	<b>1</b> 1	4-04	d m 1114					

Chloride, SM4500CI-B	mg,	/kg	Analyze	а ву: нм					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	08/11/2014	ND	400	100	400	3.92	

### Sample ID: S4 11' (H402443-19)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	08/11/2014	ND	400	100	400	3.92	

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Celey D. Keine





COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

08/08/2014

Reported:

08/12/2014

Project Name: Project Number: BKU #182

Project Location:

Analyte

Analyte

NONE GIVEN

SEC 25 T17S R29E

Sampling Date:

08/06/2014

Sampling Type:

Soil

Sampling Condition: Sample Received By: \*\* (See Notes) Jodi Henson

Sample ID: S4 13' (H402443-20)

Chloride	e, SM450	DOCI-B
----------	----------	--------

### mg/kg

### Analyzed By: HM

08/11/2014

Reporting Limit Result 304

Method Blank Analyzed

ND

BS

400

% Recovery 100

True Value QC

RPD Qualifier

Chloride

Sample ID: S4 15' (H402443-21)

Chloride, SM4500Cl-B

### mg/kg

### Analyzed By: HM

Method Blank

BS

% Recovery

True Value QC

RPD

Qualifier

Qualifier

Qualifier

Chloride

Result

832

Result

Reporting Limit 16.0

Reporting Limit

16.0

16.0

Analyzed 08/11/2014

ND

400

100

400

400

3.92

3.92

Chloride

Sample ID: S4 17' (H402443-22)

### Chloride, SM4500CI-B

mg/kg

Analyzed By: HM

Analyte

Reporting Limit 656 16.0

Analyzed 08/11/2014 Method Blank ND

BS 400 % Recovery 100

True Value QC 400

RPD

3,92

Sample ID: S4 19' (H402443-23)

Analyte

Chloride, SM4500Cl-B

mg/kg

Result

560

Analyzed By: HM

Analyzed

08/11/2014

Method Blank

ND

BS

400

% Recovery

100

True Value QC

RPD

3.92

Chloride

Sample ID: S4 21' (H402443-24)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: HM

Chloride

Result 752

Reporting Limit Analyzed 16.0 08/11/2014 Method Blank ND

BS 400 % Recovery 100

True Value QC 400

400

**RPD** 3.92

Qualifier

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Analyte

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Celeg L. Keina



### Analytical Results For:

COG OPERATING AMANDA TRUJILLO P. O. BOX 1630 ARTESIA NM, 88210 Fax To: NONE

Received:

08/08/2014

Reported:

08/12/2014

Project Name:

BKU #182

Project Number: Project Location:

NONE GIVEN

SEC 25 T17S R29E

Sampling Date:

08/06/2014

Sampling Type:

Coil

Sampling Condition:

\*\* (See Notes)

Sample Received By:

Jodi Henson

### Sample ID: S3 13' (H402443-25)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	448	16.0	08/11/2014	ND	400	100	400	3.92	

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Celey D. Kuna



### **Notes and Definitions**

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. Keine



## 101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

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Project Name: BKU #182		State: TX Zip: 79701	
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