Lupe Carrasco
Environmental Coordinator

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).

CORPORATE ADDRESS
One Concho Center | 600 West Illinois Avenue | Midland, Texas 79701
PHONE 432.683.7443 | FAX 432.683.7441

LOCAL ADDRESS
Concho West | 2208 Main Street | Artesia, New Mexico 88210
PHONE 575.748.6940 | FAX 575.746.2096

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 ft^2).
- **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 ft^2).
- **S3**: No excavation other than an initial scrape (~750 ft^2).
- **S4**: Excavate down to 3' and backfill with a 2' cap of packed caliche and 1' of topsoil with enough loft to prevent pooling (~2,500ft^2).
- **S5**: No excavation other than an initial scrape (~2,500 ft^2).

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
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 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

Form C-14
Revised October 10, 200

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

Release Notification and Corrective Action

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

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	25	17S	29E					Eddy

Latitude 32.80371 Longitude 104.03036

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 400bbls	Volume Recovered 100bbls
Source of Release Valve	Date and Hour of Occurrence 05-27-2014	Date and Hour of Discovery 05-27-2014 11:30am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Jeff Robertson - BLM	
By Whom? Michelle Mullins	Date and Hour 06-06-2014 2:29pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

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 remediation work.

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 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

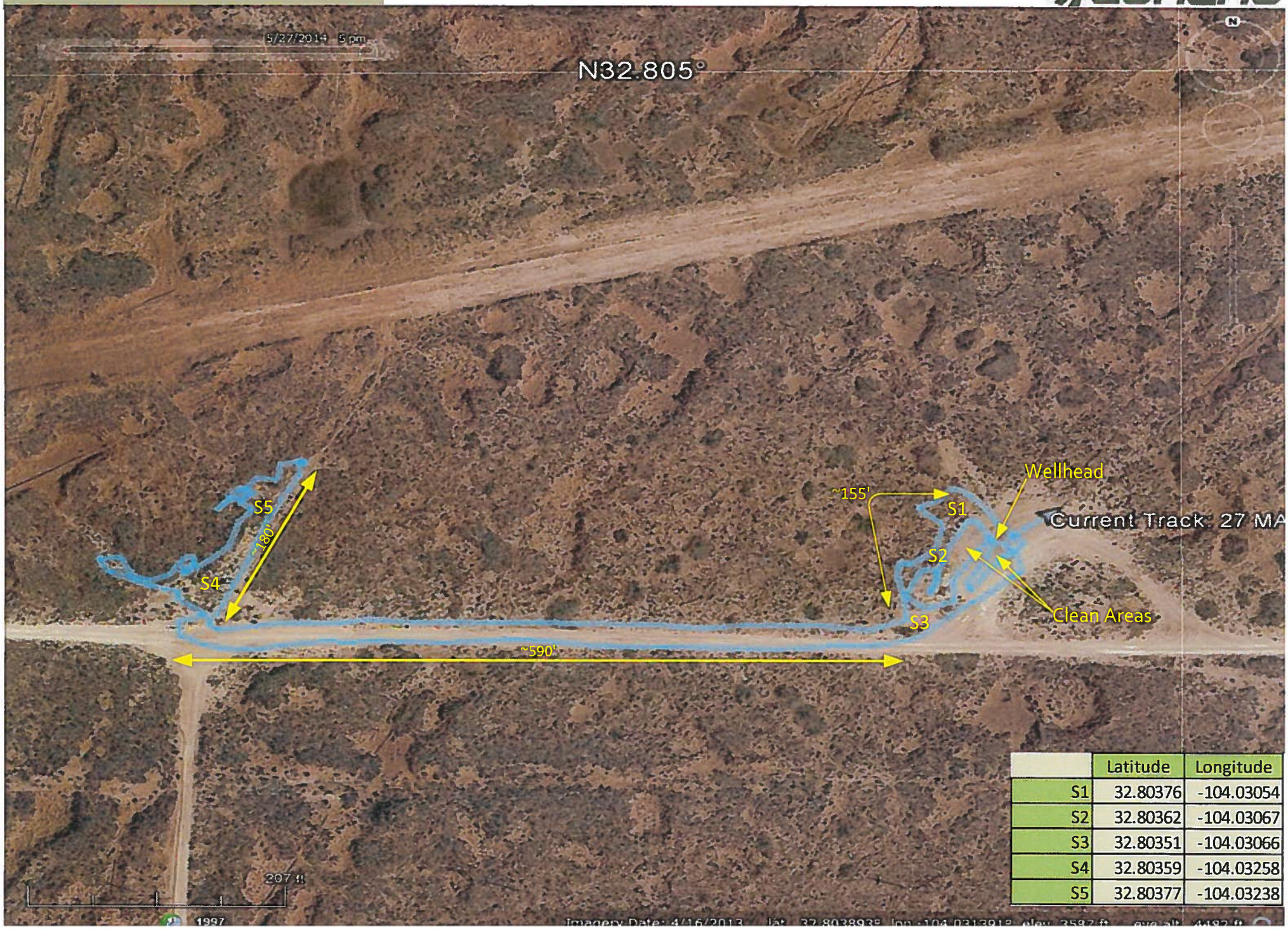
Signature: Robert Grubbs Jr.	OIL CONSERVATION DIVISION		
Printed Name: Robert Grubbs Jr.	Approved by District Supervisor:		
Title: Senior Environmental Coordinator	Approval Date:	Expiration Date:	
E-mail Address: rgrubbs@concho.com	Conditions of Approval:		Attached ☐
Date: 06-06-2014 Phone: 432-661-6601			

Attach Additional Sheets If Necessary

May 27, 2014

BKU #182

CONCHO



	Latitude	Longitude
S1	32.80376	-104.03054
S2	32.80362	-104.03067
S3	32.80351	-104.03066
S4	32.80359	-104.03258
S5	32.80377	-104.03238

BKU #182

Site Ranking: Zero

Depth to GW per Trend Map: > 175'

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
S2	**DRO**	**GRO**	**TPH**	**BTEX**	**Cl-**
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
S4	**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 exceed RRALs per NMOCD Guidelines (1993)

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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 www.tceq.texas.gov/field/qa/lab_accred_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.

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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	06/11/2014	Sampling Date:	06/06/2014
Reported:	06/19/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S1 1' (H401783-01)

BTEX 8021B mg/kg **Analyzed 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 (PID *106 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed 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 **Analyzed 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 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *137 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	06/11/2014	Sampling Date:	06/06/2014
Reported:	06/19/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S1 3' (H401783-02)

BTEX 8021B mg/kg **Analyzed 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 (PIC *107 %* *89.4-126*

Chloride, SM4500Cl-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 **Analyzed 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 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *83.3 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	06/11/2014	Sampling Date:	06/06/2014
Reported:	06/19/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S1 4.5' (H401783-03)

BTEX 8021B mg/kg **Analyzed 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 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

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 **Analyzed 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 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *86.6 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	06/11/2014	Sampling Date:	06/06/2014
Reported:	06/19/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S2 1' (H401783-04)

8TEX 8021B mg/kg **Analyzed 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 (PID *106 %* *89.4-126*

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 **Analyzed 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 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *78.6 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	06/11/2014	Sampling Date:	06/06/2014
Reported:	06/19/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S2 3' (H401783-05)

BTEX 8021B mg/kg **Analyzed 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 (PID *107 %* *89.4-126*

Chloride, SM4500Cl-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 **Analyzed 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 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *123 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	06/11/2014	Sampling Date:	06/06/2014
Reported:	06/19/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S2 5' (H401783-06)

BTEX 8021B mg/kg **Analyzed 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 (PID *106 %* *89.4-126*

Chloride, SM4500Cl-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 **Analyzed 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 *97.1 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *122 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	06/11/2014	Sampling Date:	06/06/2014
Reported:	06/19/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S3 1' (H401783-07)

BTEX 8021B mg/kg **Analyzed 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 (PID *107 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**816**	16.0	06/16/2014	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<100	100	06/17/2014	ND	165	82.4	200	0.946	
DRO >C10-C28	**311**	100	06/17/2014	ND	173	86.4	200	5.13	

Surrogate: 1-Chlorooctane *67.3 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *138 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	06/11/2014	Sampling Date:	06/06/2014
Reported:	06/19/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S3 3' (H401783-08)

BTEX 8021B mg/kg **Analyzed 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 (PID *107 %* *89.4-126*

Chloride, SM4500Cl-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 **Analyzed 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 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *141 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	06/11/2014	Sampling Date:	06/06/2014
Reported:	06/19/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S4 1' (H401783-09)

BTEX 8021B mg/kg **Analyzed 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 (PID *106 %* *89.4-126*

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 **Analyzed 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 *94.8 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *112 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	06/11/2014	Sampling Date:	06/06/2014
Reported:	06/19/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S4 3' (H401783-10)

BTEX 8021B mg/kg **Analyzed 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 (PID *106 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**4000**	16.0	06/16/2014	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed 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 *91.1 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *104 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	06/11/2014	Sampling Date:	06/06/2014
Reported:	06/19/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S4 5' (H401783-11)

BTEX 8021B mg/kg **Analyzed 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 (PID *107 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed 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 **Analyzed 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 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *107 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	06/11/2014	Sampling Date:	06/06/2014
Reported:	06/19/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S5 1' (H401783-14)

BTEX 8021B mg/kg **Analyzed 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 (PID *106 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed 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 **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	**30.1**	10.0	06/18/2014	ND	216	108	200	8.55	

Surrogate: 1-Chlorooctane *93.0 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *108 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	06/11/2014	Sampling Date:	06/06/2014
Reported:	06/19/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S5 3' (H401783-15)

BTEX 8021B mg/kg **Analyzed 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 (PID *106 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed 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 **Analyzed 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 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *119 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	06/11/2014	Sampling Date:	06/06/2014
Reported:	06/19/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S5 5' (H401783-16)

BTEX 8021B mg/kg **Analyzed 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 (PID *106 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed 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 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *112 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	06/11/2014	Sampling Date:	06/06/2014
Reported:	06/19/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S5 7' (H401783-17)

BTEX 8021B mg/kg **Analyzed 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 (PID *107 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	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 **Analyzed 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 *90.0 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *102 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

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

Celey D. Keene, Lab Director/Quality Manager

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	COG Operating LLC
Project Manager:	Amanda Trujillo
Address:	2208 West Main
City:	Artesia
State:	NM
Zip	88210
Phone #:	(575) 748-6930
Fax #:	
Project #:	
Project Owner:	
Project Name:	BKU 182
Project Location:	Sec 25 T17S R29E
Sampler Name:	Amanda Trujillo

BILL TO

P.O. #:	
Company:	COG Operating LLC
Attn:	Robert McNeill
Address:	600 W Illinois
City:	Midland
State: TX	Zip: 79701
Phone #:	(432) 221-0388
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING DATE	TIME	BTEX	TPH	Chloride
H401783																	
1	S1 1'	1				x					x		6/6/14	9:40 AM	x	x	x
2	S1 3'	1				x					x		6/6/14	9:40 AM	x	x	x
3	S1 4.5'	1				x					x		6/6/14	9:40 AM	x	x	x
4	S2 1'	1				x					x		6/6/14	9:40 AM	x	x	x
5	S2 3'	1				x					x		6/6/14	9:40 AM	x	x	x
6	S2 5'	1				x					x		6/6/14	9:40 AM	x	x	x
7	S3 1'	1				x					x		6/6/14	9:40 AM	x	x	x
8	S3 3'	1				x					x		6/6/14	9:40 AM	x	x	x

Relinquished By:	Date: 6/11/14 Time: 11:30am	Received By:	
Relinquished By:	Date: 6/11/14 Time: 2:40	Received By:	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	2.4°C	Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials)

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:

FORM-000 R 2.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

#54

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: COG Operating LLC
Project Manager: Amanda Trujillo
Address: 2208 West Main
City: Artesia **State:** NM **Zip** 88210
Phone #: (575) 748-6930 **Fax #:**
Project #: **Project Owner:**
Project Name: BKU 182
Project Location: Sec 25 T17S R29E
Sampler Name: Amanda Trujillo

BILL TO
P.O. #:
Company: COG Operating LLC
Attn: Robert McNeill
Address: 600 W Illinois
City: Midland
State: TX **Zip:** 79701
Phone #: (432) 221-0388
Fax #:

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING DATE	TIME	BTEX	TPH	Chloride
9	S4 1'	1				x					x		6/6/14	9:40 AM	x	x	x
10	S4 3'	1				x					x		6/6/14	9:40 AM	x	x	x
11	S4 5'	1				x					x		6/6/14	9:40 AM	x	x	x
12	S4 7'	1				x					x		6/6/14	9:40 AM	x	x	x
13	S4 9'	1				x					x		6/6/14	9:40 AM	x	x	x
14	S5 1'	1				x					x		6/6/14	9:40 AM	x	x	x
15	S5 3'	1				x					x		6/6/14	9:40 AM	x	x	x
16	S5 5'	1				x					x		6/6/14	9:40 AM	x	x	x
17	S5 7'	1				x					x		6/6/14	9:40	x	x	x

Relinquished By: Date: 6/11/14 Time: 1:30 pm **Received By:**
Relinquished By: Date: 6/11/14 Time: 2:40 **Received By:** Jodi Henson
Delivered By: (Circle One)
Sampler - UPS - Bus - Other:
Sample Condition: Cool ☑ Yes ☐ No (2.4°C) Intact ☑ Yes ☐ No
CHECKED BY: (Initials)

Phone Result: ☐ Yes ☐ No **Add'l Phone #:**
Fax Result: ☐ Yes ☐ No **Add'l Fax #:**
REMARKS:
Please hold Samples S4 7' and S4 9' until results have been received by COG for other samples

FORM-000 R 2.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

#54

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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 www.tceq.texas.gov/field/qa/lab_accred_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.

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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	08/08/2014	Sampling Date:	08/06/2014
Reported:	08/12/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S1 5' (H402443-01)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3360**	16.0	08/11/2014	ND	400	100	400	0.00	

Sample ID: S1 7' (H402443-02)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1260**	16.0	08/11/2014	ND	400	100	400	0.00	

Sample ID: S1 9' (H402443-03)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1310**	16.0	08/11/2014	ND	400	100	400	0.00	

Sample ID: S1 11' (H402443-04)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2160**	16.0	08/11/2014	ND	400	100	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	08/08/2014	Sampling Date:	08/06/2014
Reported:	08/12/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S1 13' (H402443-05)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1920**	16.0	08/11/2014	ND	400	100	400	0.00	

Sample ID: S1 15' (H402443-06)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1680**	16.0	08/11/2014	ND	400	100	400	0.00	

Sample ID: S2 7' (H402443-07)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3520**	16.0	08/11/2014	ND	400	100	400	0.00	

Sample ID: S2 9' (H402443-08)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2800**	16.0	08/11/2014	ND	400	100	400	0.00	

Sample ID: S2 11' (H402443-09)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1390**	16.0	08/11/2014	ND	400	100	400	0.00	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	08/08/2014	Sampling Date:	08/06/2014
Reported:	08/12/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S2 13' (H402443-10)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**736**	16.0	08/11/2014	ND	400	100	400	0.00	

Sample ID: S2 15' (H402443-11)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**560**	16.0	08/11/2014	ND	400	100	400	0.00	

Sample ID: S3 5' (H402443-12)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1380**	16.0	08/11/2014	ND	400	100	400	0.00	

Sample ID: S3 7' (H402443-13)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1310**	16.0	08/11/2014	ND	400	100	400	0.00	

Sample ID: S3 9' (H402443-14)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1520**	16.0	08/11/2014	ND	400	100	400	0.00	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	08/08/2014	Sampling Date:	08/06/2014
Reported:	08/12/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S3 11' (H402443-15)

Chloride, SM4500Cl-B mg/kg **Analyzed 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' (H402443-16)

Chloride, SM4500Cl-B mg/kg **Analyzed 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' (H402443-17)

Chloride, SM4500Cl-B mg/kg **Analyzed 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' (H402443-18)

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

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, SM4500Cl-B mg/kg **Analyzed 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	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	08/08/2014	Sampling Date:	08/06/2014
Reported:	08/12/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S4 13' (H402443-20)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**304**	16.0	08/11/2014	ND	400	100	400	3.92	

Sample ID: S4 15' (H402443-21)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**832**	16.0	08/11/2014	ND	400	100	400	3.92	

Sample ID: S4 17' (H402443-22)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**656**	16.0	08/11/2014	ND	400	100	400	3.92	

Sample ID: S4 19' (H402443-23)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**560**	16.0	08/11/2014	ND	400	100	400	3.92	

Sample ID: S4 21' (H402443-24)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**752**	16.0	08/11/2014	ND	400	100	400	3.92	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	08/08/2014	Sampling Date:	08/06/2014
Reported:	08/12/2014	Sampling Type:	Soil
Project Name:	BKU #182	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	SEC 25 T17S R29E		

Sample ID: S3 13' (H402443-25)

Chloride, SM4500Cl-B **mg/kg** **Analyzed 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	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	COG Operating LLC
Project Manager:	Amanda Trujillo
Address:	2208 West Main
City:	Artesia
State: NM	Zip 88210
Phone #:	(575) 748-6930
Fax #:	
Project #:	BKU #182
Project Owner:	
Project Name:	BKU #182
Project Location:	
Sampler Name:	

BILL TO

P.O. #:	
Company:	COG Operating LLC
Attn:	Robert McNeill
Address:	600 W Illinois
City:	Midland
State: TX	Zip: 79701
Phone #:	(432) 221-0388
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING DATE	TIME	BTEX	TPH	Chloride
H402443																	
1	S1 5'												8/6/14	9am			X
2	S1 7'																
3	S1 9'																
4	S1 11'																
5	S1 13'																
6	S1 15'																
7	S2 7'																
8	S2 9'																
9	S2 11'																
10	S2 13'												8/6/14	9am			X

Relinquished By:	Date: 8/8/14	Received By:
Gio Carrasco	Time: 10:15am	Jodi Henson
Relinquished By:	Date:	Received By:
	Time:	

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:
atrujillo@concho.com
gcarrasco@concho.com

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 23.8°C

Sample Condition: Cool ☐ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) #610

FORM-006 R 2.0

CARDINAL

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	COG Operating LLC
Project Manager:	Amanda Trujillo
Address:	2208 West Main
City:	Artesia
State:	NM
Zip	88210
Phone #:	(575) 748-6930
Fax #:	
Project #:	
Project Owner:	
Project Name:	BKU #182
Project Location:	
Sampler Name:	

BILL TO

P.O. #:	
Company:	COG Operating LLC
Attn:	Robert McNeill
Address:	600 W Illinois
City:	Midland
State: TX	Zip: 79701
Phone #:	(432) 221-0388
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING DATE	TIME	BTEX	TPH	Chloride
H402443																	
11	S2 15'												8/6/14	9am			X
12	S3 5'																
13	S3 7																
14	S3 9																
15	S3 11																
16	S3 15																
17	S4 7'																
18	S4 9'																
19	S4 11'																
20	S4 13'												8/6/14	9Am			X

Relinquished By: Gm Carrasco	Date: 8/8/14 Time: 10:15am	Received By: Jodi Henson	
Relinquished By:	Date: Time:	Received By:	

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 23.8°C

Sample Condition: Cool ☐ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) JH

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:
atrujillo@concho.com
gcarrasco@concho.com

CARDINAL

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	COG Operating LLC
Project Manager:	Amanda Trujillo
Address:	2208 West Main
City:	Artesia
State: NM	Zip 88210
Phone #:	(575) 748-6930
Fax #:	
Project #:	
Project Owner:	
Project Name:	BKU #182
Project Location:	
Sampler Name:	

BILL TO

P.O. #:	
Company:	COG Operating LLC
Attn:	Robert McNeill
Address:	600 W Illinois
City:	Midland
State: TX	Zip: 79701
Phone #:	(432) 221-0388
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING DATE	TIME	BTEX	TPH	Chloride
H402443																	
21	S1 15'												8/6/14	9am			X
22	S4 17'																
23	S4 19'																
24	S4 21'												8/6/14	9am			X
25	S3 13												8/6/14	9am			X

Relinquished By: Jon Carrasco	Date: 8/8/14 Time: 10:15 am	Received By: Jodi Henson	
Relinquished By:	Date: Time:	Received By:	

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:
atrujillo@conchо.com
gcarrasco@conchо.com

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 23.8°C

Sample Condition: Cool ☐ Yes Intact ☐ Yes

CHECKED BY: (Initials) JH

FORM-006 R 2.0